Town of Bluffton
May River Monitoring Program:
Stormwater Sampling Study

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January 2007
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EXECUTIVE SUMMARY

The purpose of this stormwater sampling study for the Town of Bluffton (Town) was to provide follow-up sampling to the 2004 Environmental and Ecological Assessment of the May River that was prepared for the Town by South Carolina Department of Natural Resources (SC DNR), United States Geological Survey (USGS), and National Oceanic and Atmospheric Administration (NOAA). The Town contracted with BP Barber and Hodgins Engineering Consulting, LLC (HEC) to conduct a series of stormwater sampling events from July 2005-May 2006 at five sampling locations throughout the Town. Stormwater samples from these sampling locations were analyzed for the following parameters: turbidity, nitrogen compounds (ammonia, total Kjeldahl nitrogen (TKN), nitrate, and nitrite), total phosphorus, and fecal coliform.

In general, sample results from eleven storm events taken during this time period indicated that surface water quality at the five sampling locations was being impacted by sediment, nutrients, and fecal coliform. BP Barber and HEC recommend a continuation of this stormwater sampling program on a quarterly basis, as well as a more detailed source tracking program, to identify and mitigate the sources of these water quality impacts. Furthermore, BP Barber and HEC recommend that the Town implement an illicit discharge and detection (ID&D) program for stormwater, land development standards that require a minimum level of erosion and sediment control management practices, and a stormwater management and sediment reduction program that will include the passage of a stormwater ordinance. The Town should also review construction plans and stormwater management/sediment control plans for proposed development projects, perform routine inspections of these projects, and enforce penalties for entities not implementing appropriate erosion and sediment control management practices.

The Town began a continuous monitoring program in late March 2006 for the following water quality parameters at one sampling site on the May River: depth (water level), turbidity, water temperature, specific conductance, DO concentration, DO saturation percentage, salinity, and pH. Data from the sampling probe will be reviewed at regular intervals to assess changes from the baseline conditions noted in the 2004 May River baseline study, as well as any correlation with water quality impacts that may be identified in future stormwater sampling events.

SECTION 1: INTRODUCTION

May River Baseline Study

In 2002-2003, the Marine Resources Research Institute of the South Carolina Department of Natural Resources (SC DNR), the United States Geological Survey (USGS), South Carolina District (USGS), and the National Oceanic and Atmospheric Administration's Center for Coastal Environmental Health and Biomolecular Research (NOAA-CCEHBR) were commissioned by the Town of Bluffton (Town) to conduct a multidisciplinary study of the May River. The May River was designated as an Outstanding Resource Water (ORW) by the South Carolina Department of Health and Environmental Control (SC DHEC) in 2001. The 2002-2003 study was primarily conducted to establish baseline water quality conditions within the May River, including water, sediment, and biological quality, prior to major development activities in the watershed. Prior to this baseline study, limited data were available on the water quality of the May River; previously, SC DHEC and SC DNR had sampled at a few stations along the May River as part of their existing monitoring programs. (1)

As part of the baseline study, SC DNR, USGS, and NOAA project team members chose to sample the following four types of habitats: headwater tidal creeks, larger tidal creeks, open water, and oyster reefs. In the May River baseline study, headwater tidal creeks were defined as a "600 m section of the creek starting at the point where water depth in the channel was approximately 1 m deep at mean high tide." (1) Fecal coliform, phytoplankton, and water quality parameters were sampled on the headwater tidal creeks for one year from spring 2002 through winter 2003. Additionally, in summer 2002, the benthic community, nektonic community, sediment chemistry and toxicity, and other water quality indicators (*e.g.*, bacterial typing) were conducted for the headwater tidal creeks, and samples from two of these creeks were also analyzed for certain wastewater indicators during the 1-year study. (1) The other three types of habitats (larger tidal creeks, open water, and oyster reefs) will not be discussed in detail in the introduction of this report.

The remainder of this introduction will focus on the conclusions and recommendations presented in the 2002-2003 May River baseline study for water quality in headwater tidal creeks. The baseline study concluded that water quality conditions in the headwater tidal creeks were fair, with Rose Dhu, Stoney, and Brighton Beach Creeks showing signs of stress. However, the baseline study noted that the stressful conditions in these three creeks likely resulted from natural phenomena, rather than from human activities; this conclusion was based on the researchers' evaluation of land use patterns in the vicinity of these creeks. The baseline study also noted that many of the water quality standards used to classify the May River's water quality were developed for large, deep water systems, and that headwater tidal creeks, which are naturally stressful systems, would likely have higher values for these water quality parameters. (1)

Some of the recommendations that resulted from the May River baseline study were as follows (1):

- Consider extending the continuous monitoring of the May River after the conclusion of the baseline study with one or more of the existing USGS gauges
- Institute strict best management practices (BMPs), including minimizing the use of septic systems, maximizing naturally vegetated buffers, and the latest technologies for stormwater ponds and septic systems, to minimize impacts to the May River from the upper May River watershed
- Conduct seasonal fecal coliform sampling of the May River and perform additional sampling in the headwater systems to target upland sources; perform source tracking to properly assess the bacteria sources
- Conduct future water quality, sediment quality, and biotic condition studies in tidal creeks to assess whether conditions degrade as development occurs; water quality monitoring should be conducted more frequently than sediment and biotic condition sampling

- Focus sampling efforts on the following parameters: dissolved oxygen (DO), salinity, turbidity, chlorophyll-α, pH, nutrients, fecal coliforms, and potentially total organic carbon (TOC) and/or dissolved organic carbon

Town of Bluffton Stormwater Sampling Program

The Bluffton Town Council's decision to continue water quality monitoring was based upon recommendations from the May River baseline assessment, as well as citizen input. The assessment advised monitoring parameters such as dissolved oxygen, salinity, turbidity, chlorophyll-*a*, pH, nutrients, fecal coliform, and total and/or dissolved organic carbon. In order to address the recommendations in a cost-effective manner, Town staff consulted with various parties including: SC DHEC, Beaufort County Stormwater Utility, Bill Hodgins (HEC), Rich Claytor (Horsley Witten) and the Town of Bluffton Watershed Advisory Committee. From these consultations, it was determined the parameters of greatest concern included turbidity, phosphorus, nitrogen, and fecal coliform. Furthermore, with the proposed Beaufort County Stormwater Utility Water Quality Monitoring Program and the existing SC DHEC sampling program, it was also determined that monitoring certain pollutants from stormwater runoff and the installation of a continuous monitoring station at the headwaters of the May River could deliver meaningful data. The overall goal was to have three monitoring elements consisting of a professional, volunteer, and mechanical component that would co-exist and result in a dynamic, useful, and cost-effective monitoring program.

The stormwater sampling program originated with recommendations from the Beaufort County Clean Water Task Force in 1998, when the Task Force challenged Beaufort County to conduct sampling to verify that the stormwater best management practices (BMPs) required by the County Development Standards Ordinance would accomplish the pollutant removal assumed in County guidance manuals. In winter 2005, the Town's Watershed Advisory Committee and Town Council echoed the concerns of the Task Force and sought recommendations from SC DHEC and the SC Office of USGS for a monitoring program. Realizing that assistance from the Beaufort County Stormwater Utility would not come until a Stormwater Management Master Plan (SMMP) was completed for Beaufort County, the Town took the recommendations from SC DHEC and USGS and prepared a request for proposal (RFP) for a summer stormwater sampling

program. The Town ultimately contracted with BP Barber and HEC to conduct a series of stormwater sampling events from July 2005 through May 2006.

The following five sampling locations were chosen by the Town, BP Barber, and HEC to assess potential water quality impacts to the May River from stormwater runoff from upland sources into the headwater tidal creeks:

1) Bluffton Village (ditch in the vicinity of the Town library)

2) Heyward Street outfall

3) Rose Dhu Creek

4) Stoney Creek

5) New River Trail

The locations of the project sampling points are illustrated in Figure 1. Of these five locations, only the Stoney Creek sampling point is in closest proximity to any of the sampling locations from the May River baseline study. The Rose Dhu Creek sampling location in the current sampling program is approximately 0.5 mile upland from the Rose Dhu Creek location utilized in the May River baseline study. The New River Trail location was chosen to serve as a reference location in the current sampling program, since very little development had occurred in the vicinity of this sampling location when the sampling program began. The Bluffton Village sampling location was chosen to represent water quality within a heavily developed area in the Town and County.

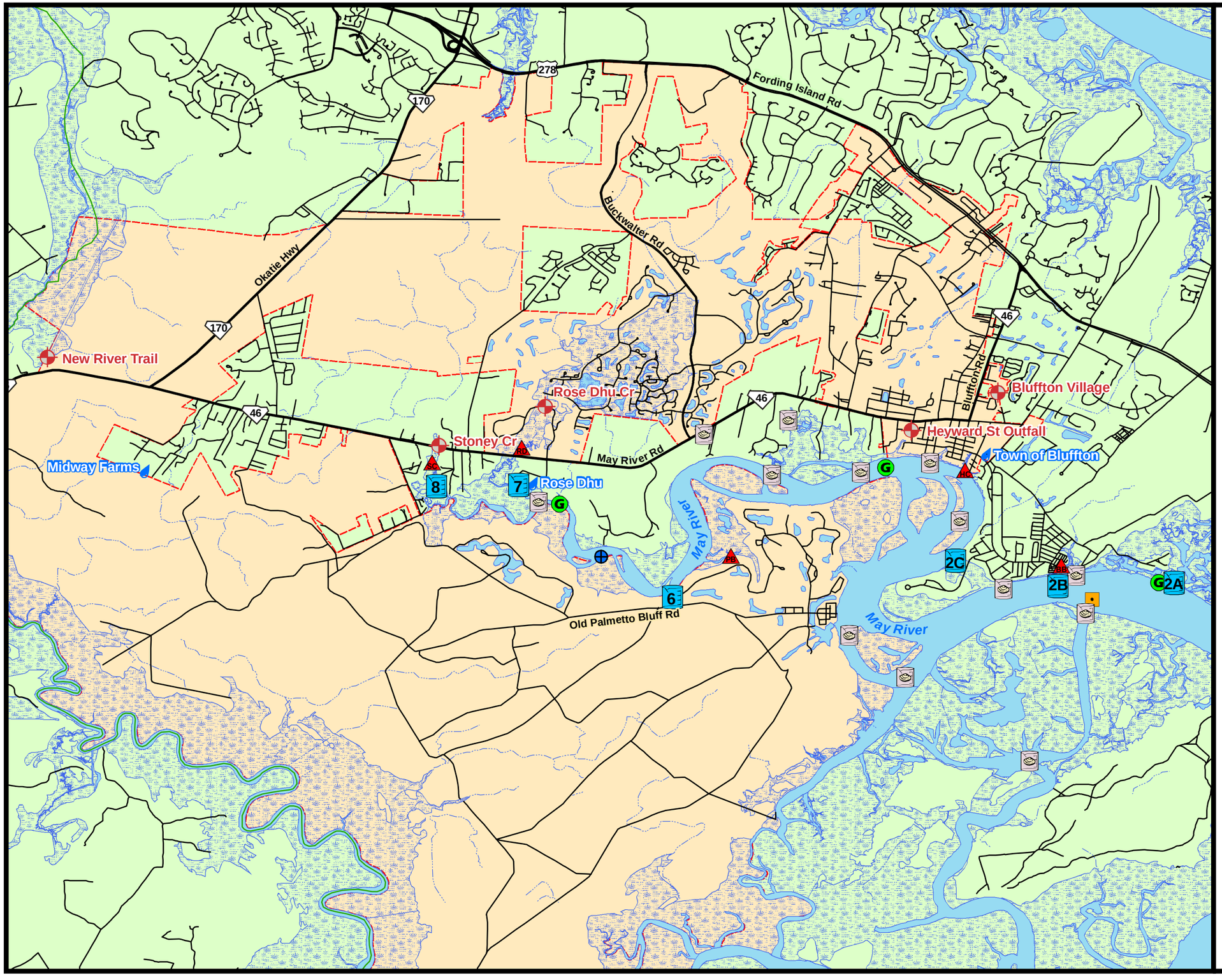

FIGURE 1

Town of Bluffton May River Monitoring Project

N

Legend

- Rain Gauge
- Project Sampling Locations
- DHEC Ambient Stations
- SCECAP Sample Locations
- DHEC Shellfish Monitoring Site
- USGS Continuous Gauges
- May River Baseline Study Headwater Tidal Creek Sample Points
- Volunteer Monitoring Sites

1 0.5 0 1

Miles

January 2007

Note: Town Limits from Town of Bluffton Official Zoning District Map, Adopted by Town Council on May 12, 2004. Final Revision November 11, 2004. Additional data provided by the town.

BP Barber

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Samples from these locations were analyzed for the following water quality parameters by Severn Trent Laboratories (STL) in Savannah, Georgia:

- Turbidity
- Nitrogen (nitrate, nitrite, total Kjeldahl, and ammonia)
- Phosphorus, and
- Fecal coliform

These parameters are a subset of the water quality parameters recommended by researchers involved in the May River baseline study. It should be noted that the May River baseline study did not focus on stormwater events, whereas the current sampling program is centered around evaluating water quality impacts from stormwater events. In addition, the sampling locations for this project are typically upland from the headwater tidal creek sample points utilized during the baseline study. Concentrations of certain pollutants at the project sampling points may be higher since these sample points would likely see lower flow rates than the baseline study sampling points.

Stormwater Sampling Point Descriptions

A. Bluffton Village

The Bluffton Village sample point is at the head of the RC&D ditch, opposite the outfall of the Bluffton Library detention pond, Myrtle Park, and developed areas of Beaufort County north of the library (see Figure 2). Just prior to this location, three concrete pipes with diameters greater than 42 inches drain stormwater under the Bluffton Village development. The Beaufort County Stormwater Management Master Plan (SMMP) shows the tributary area (BE_M2) to this point as everything south of the Bluffton Parkway between Goethe Road and the Lake Linden development along Burnt Church Road.

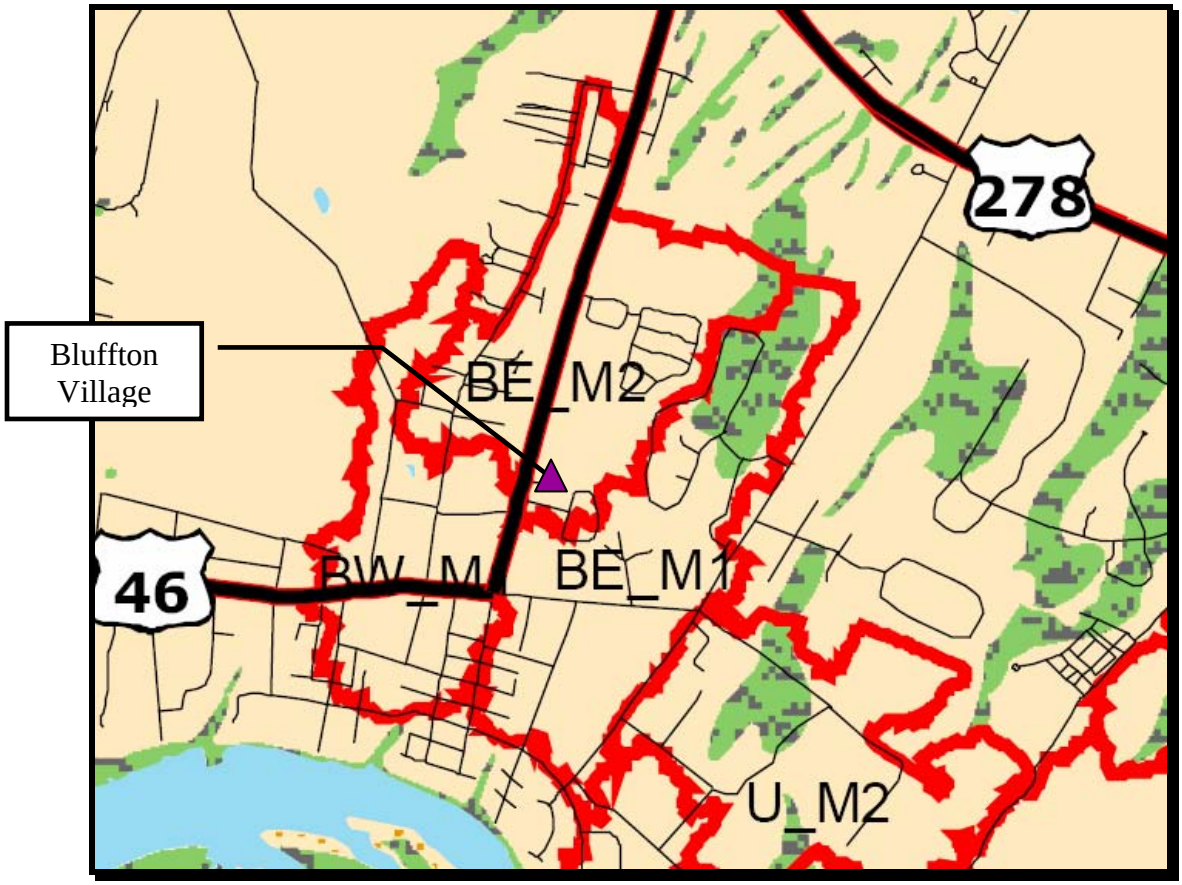


Figure 2: Bluffton Village sample point tributary area (from Beaufort County SMMP)

Most of the drainage area has been disturbed by land development in the past seven years, but the detention systems have stabilized such that the loss of sediment to the sample point should be minimal. The SMMP predicts that septic tank coverage in this area is 78%. Detailed information on public sewer extents is not currently known. The Bluffton Village sample point is shown in Figure 3, while the area downstream of this outfall is shown in Figure 4.

Figure 3: Bluffton Village stormwater outfall (RC&D ditch)

Figure 4: RC&D ditch downstream of Bluffton Village sample point.

B. Heyward Street Outfall

This sample point is below the stilling basin at the outfall of the storm sewer servicing Bluffton Park, Pine Oak Street and the northernmost 500 feet of Heyward Street (see Figure 5). Below the basin, the water forms the head of Verdier Cove. The buried storm sewer empties into a rock-lined basin and discharges over a rip-rap outfall into the vegetated drainage way.

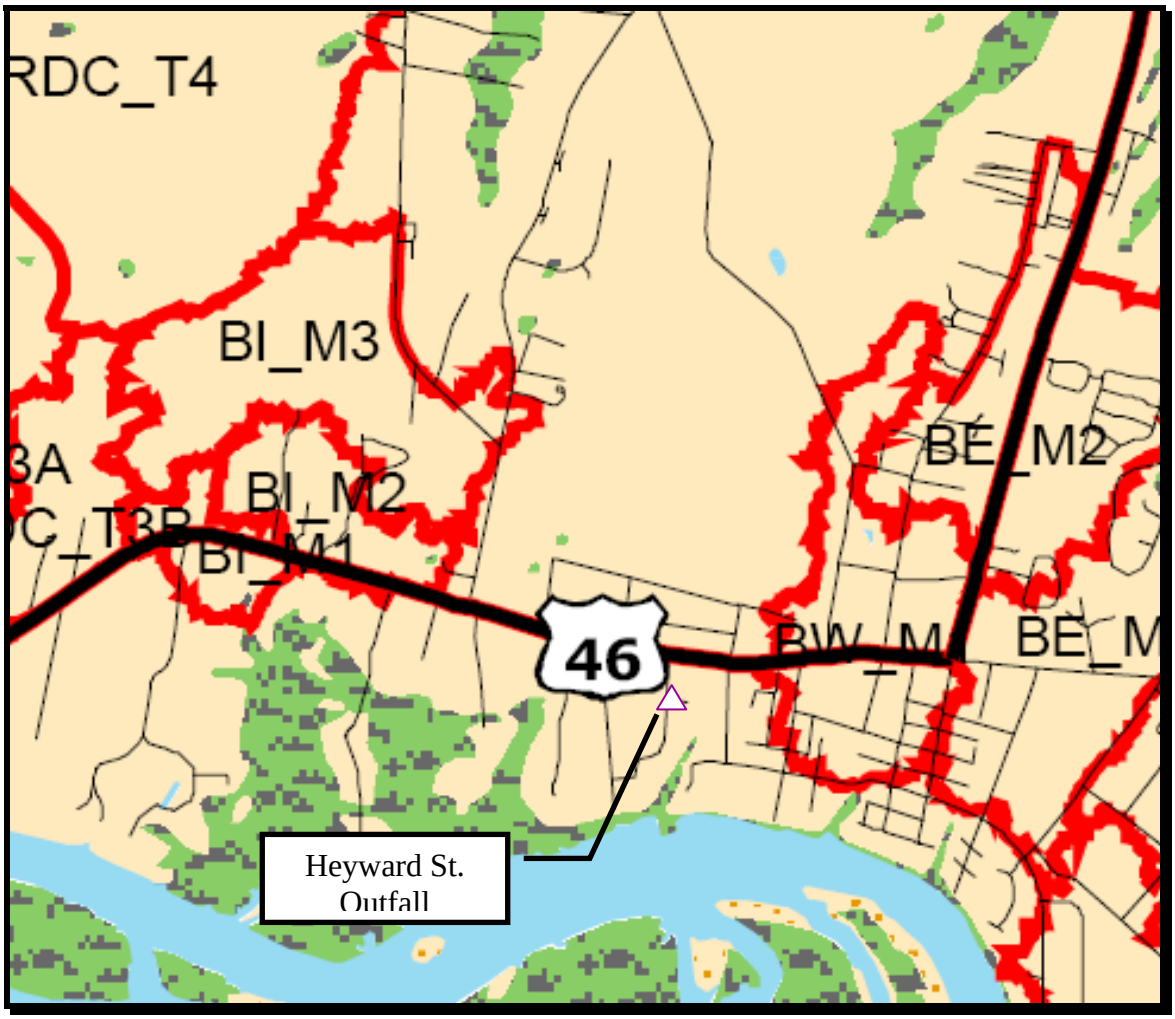


Figure 5: Heyward Street sample point tributary area (from Beaufort County SMMP)

Because of new construction in the Bluffton Park area, stormwater from significant areas of the Schults tract is directed away from the Colleton River tributaries to the May River through Verdier Cove via the sampled outfall on Heyward Street. Tributary area is all disturbed with active land development for single-family residences that began in 2004. A series of wet detention ponds collect runoff from the Bluffton Park area prior to discharge to the Pine Oak Street drain. Three photos of the Heyward Street area are shown as Figures 6 through 8. A silt fence was placed near the storm drain for the Heyward Street outfall for a portion of this stormwater study to capture sediment that was being transported down the street during storm events.

Figure 6: Stormwater drain and silt fence prior to Heyward Street outfall

Figure 7: Heyward Street outfall

Figure 8: Downstream of Heyward Street outfall (Verdier Cove)

C. Rose Dhu Creek

This sample point is from a bridge within the Rose Dhu Creek Plantation development prior to entering its active development area (see Figure 9). The creek is tidal, but without stormwater, the creek can be nearly dry during the summer months. The SMMP states that the tributary area to Rose Dhu Creek is 3,755 acres. The sample point is downstream of the Hampton Hall residential and golf course development and downstream of residential communities along Buckwalter Parkway.

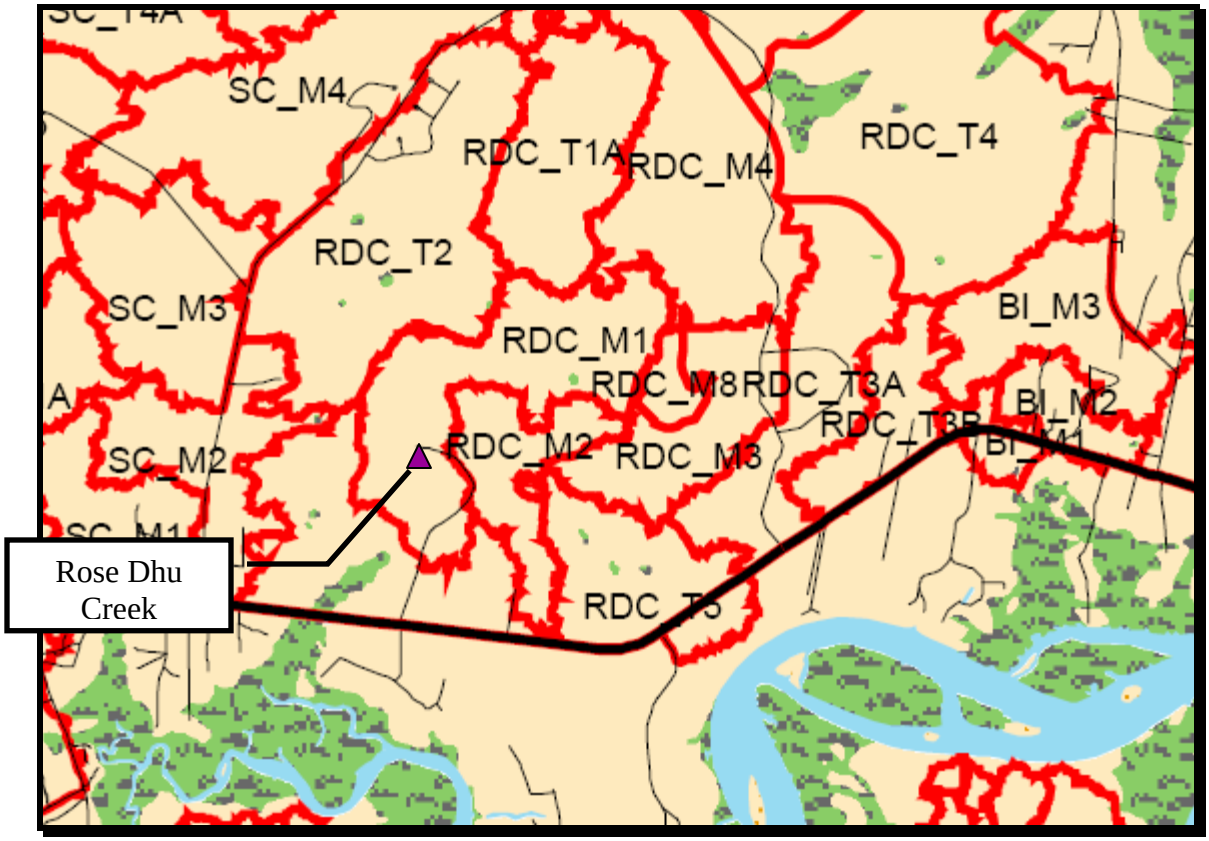


Figure 9: Dhu Creek sample point tributary area (from Beaufort County SMMP)

The 2004 aerial photo below (Figure 10) of the area west of Buckwalter Parkway and north of Highway 46 illustrates the land use conditions very well. Overall impervious surface of the Rose Dhu Creek watershed is to increase to 18% in the future scenario predicted by the SMMP. Figures 11 through 13 illustrate the Rose Dhu Creek sample point and the area downstream of this sample point.

Figure 10: Aerial photo of Rose Dhu Creek tributary area

Figure 11: Rose Dhu Creek sample point

Figure 12: Downstream of Rose Dhu Creek sample point

Figure 13: Downstream of Rose Dhu Creek sample point

D. Stoney Creek

This sample point is at the Highway 46 Bridge over Stoney Creek (Figure 14). The channel is very narrow (<20 feet) at all but high tide. Upstream of this location is land that has been in silviculture until September-October 2005, when development began on a lake-golf-residential community. Drainage into Stoney Creek noted in the SMMP includes significant areas both north and south of Highway 46 in unincorporated Pritchardville. Overall the Stoney Creek watershed is the largest subwatershed of the May River at 4,935 acres.

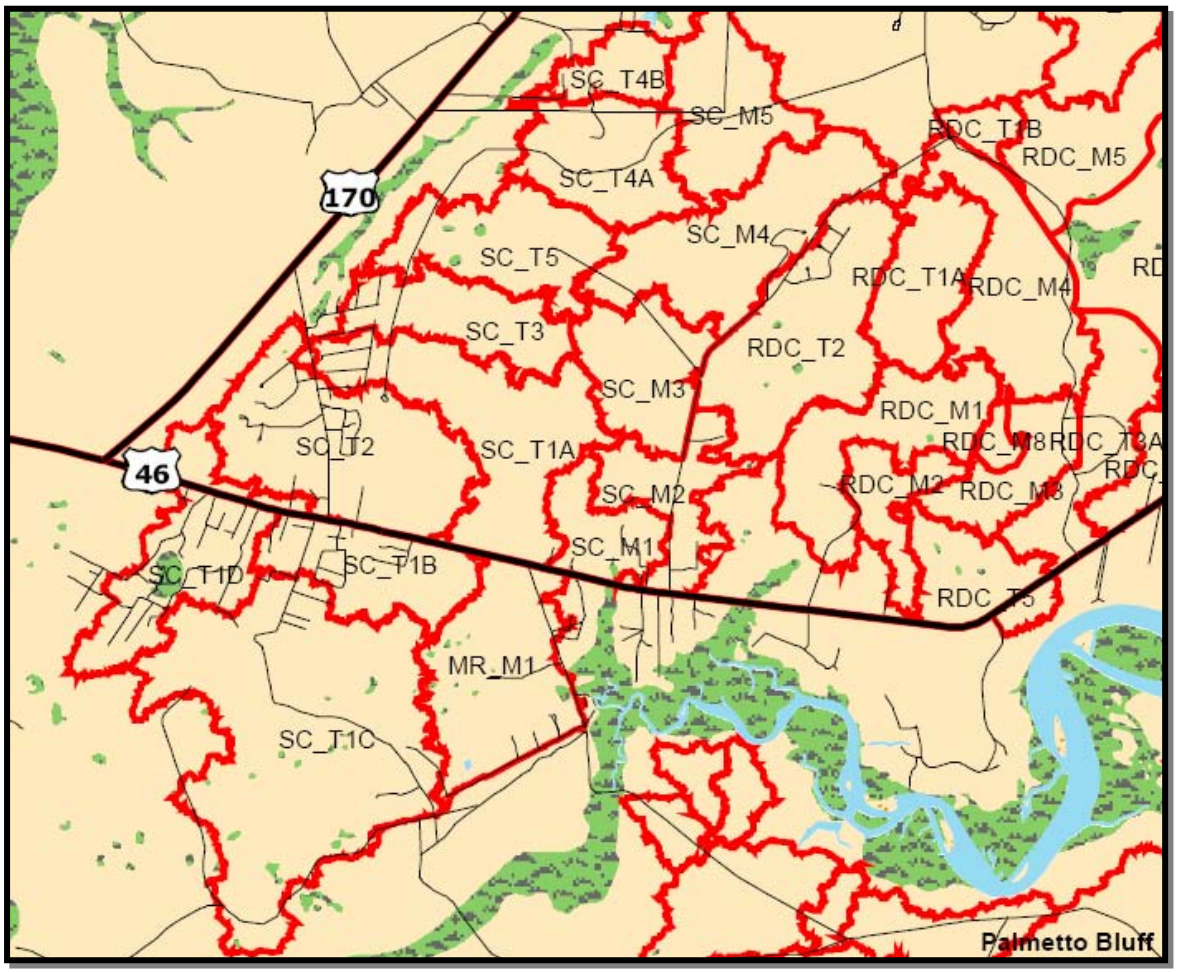


Figure 14: Stoney Creek sample point tributary area (from Beaufort County SMMP)

Current land use is agriculture (inactive), silviculture (active), low-density residential, wetland, highway, and open space. A boat repair shop is located near Stoney Creek north of Highway 46 and west of Old Miller Road. On the east side of Old Miller Road, the Hampton Hall maintenance area is tributary to a roadside ditch that enters Stoney Creek through a County drain. Photos of the creek upstream of the sample point and the sample point itself are shown as Figures 15 and 16.

Figure 15: Upstream of Stoney Creek sample point

Figure 16: Stoney Creek sample point

E. New River Trail

This sample point should be considered a reference site because it is the least disturbed tributary area leading to a natural drain that is publicly accessible in Bluffton. The sample point is where the drain is confined to a discharge pipe to cross under the old Seaboard Railroad bed. The drainage area is currently forested on the north side of Highway 170 (see Figure 17). A small wetland area, possibly a shallow borrow pit for the highway overpass over the old Seaboard Railroad, is a tributary to the sample point.

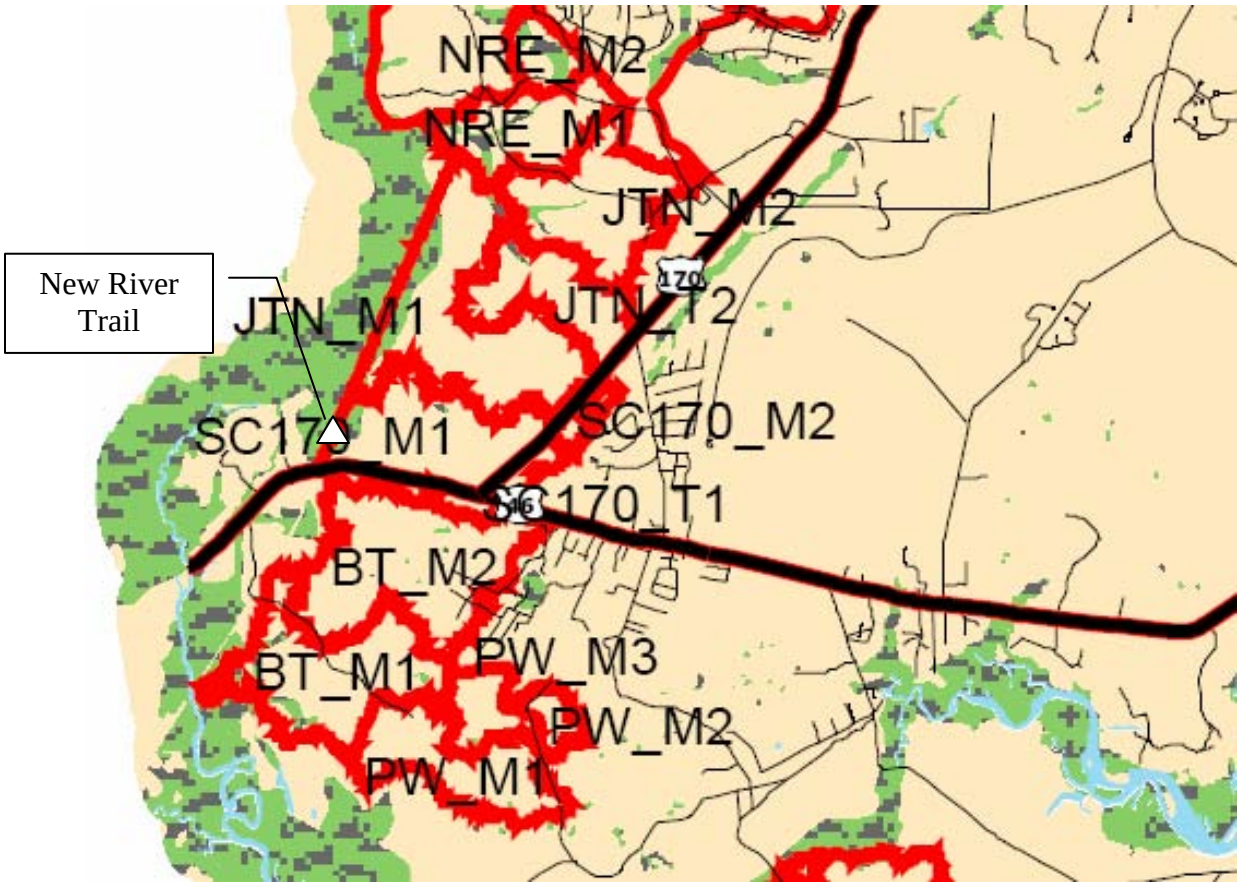


Figure 17: New River Trail sample point tributary area (from Beaufort County SMMP)

Land development on the south side of Highway 170, which began in fall 2005, may change the water quality characteristics at the sample point and make it an unacceptable reference site. Similarly, land development on the north side of Highway 170 is occurring at the time of this report.

Figure 18: New River Trail sample point

Figure 19: New River Trail wetlands near sample point

F. Rainfall Events

Three (3) different rain gauges were utilized to determine whether each storm event could be deemed a "qualifying storm event." A qualifying storm event was defined as a storm event greater than 0.1 inch in magnitude and occurring at least 72 hours from the previously measurable (>0.1 inch rainfall) storm event. Each qualifying storm event was classified as a small (<0.75 inch), medium (0.75-1.25 inches), or large (>1.25 inches) event. The Town's goal was to conduct four sampling events from each qualifying storm event size; however, only eleven of the twelve events could be completed during the course of this project.

The rain gauges utilized during this stormwater sampling study were located as follows:

- Bluffton Town Hall: closest to the tributary areas for the Bluffton Village and Heyward Street sample points
- May River Plantation: closest to Rose Dhu Creek and eastern tributary area of Stoney Creek
- Pritchardville: closest to the western tributary areas of Stoney Creek and the New River Trail sample point

Stormwater samples were collected within 24 hours of the start of each storm event. Due to geographic variations, the stormwater sampling locations did not always experience a qualifying storm event concurrently. If one sampling location experienced a qualifying event per one of the three rain gauges, all of the sampling locations were sampled as part of this event. A summary of the rainfall totals for the first 24-hour period of each storm event, as well as the corresponding classification for each storm event, are illustrated in Table 1.

Table 1 Rainfall and Storm Event Summary July 2005-May 2006			
Storm Event Date	**Bluffton Village/Heyward Street**	**Rose Dhu/Stoney Creek**	**New River Trail**
	(Precipitation (inches)/Storm Classification)		
7/7 -7/8/05	0.08 – Small	0.15 – Small	0.12 – Small
7/13-7/14/05	2.24 – Large	2.81 – Large	5.44 – Large
7/31-8/1/05	0.92 – Medium	0.61 – Small	0.91 – Medium
8/23-8/24/05	0.22 – Small	0.09 – Small	0.07 – Small
10/5-10/6/05	0.75 – Medium	6.19 – Large	5.84 – Large
11/20-11/21/05	4.81 – Large	2.53 – Large	2.70 – Large
1/2/-1/3/06	0.83 – Medium	0.91 – Medium	0.83 – Medium
1/23-1/24/06	0.87 – Medium	1.1 – Medium	0.96 – Medium
2/2-2/3/06	1.77 – Large	1.89 – Large	0.04 – Small [1]
3/14/06	0.24 – Small	0.10 – Small	0.17-Small
5/15/06	0.98 – Medium	0.28 – Small	1.28 – Large

[1] No rainfall data for 2/2/06

On average, this project captured three small qualifying events, four medium events, and four large events. Although the original scope of the project entailed twelve qualifying events, one of the major objectives of this study was to obtain a variety of storm event sizes over the course of the study. Several spring storms were not sampled due to previous sampling of comparable storm events, the requirement that storm events be at least 72 hours apart, and the limited hold time for fecal coliform, which precluded sampling over weekends.

SECTION 2: STORMWATER SAMPLING PROGRAM RESULTS

Turbidity

The turbidity levels at the five sampling locations were compared to the maximum State saltwater standard for turbidity of 25 NTU. This State saltwater turbidity standard (South Carolina Regulation 61-68.G.11) generally applies to tidal saltwaters suitable for primary and secondary recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption. Although some of the sample points utilized in this study may not meet this definition (*e.g.*, Bluffton Village and Heyward Street), some of the sample points may meet the definition (*e.g.*, Rose Dhu Creek and Stoney Creek).

Of the five sampling locations, only the Bluffton Village location (behind the library) and the New River Trail location have consistently met the state turbidity standard. The Stoney Creek and Rose Dhu locations were able to meet this standard during six and seven of the eleven sampling events, respectively. (It should also be noted that this stormwater study ended prior to issuance of a development permit for Hampton Lakes; therefore, no turbidity data is available for the Stoney Creek sampling location to correlate with the Hampton Lakes development activity.) The Heyward Street location was greater than the 25 NTU standard during nine of the eleven sampling events. Attachment 1 of Appendix A illustrates the sampling results for turbidity at the sampling sites from July 2005-May 2006. It should be noted that the New River Trail site was not sampled during the March 2006 sampling event.

Exceedances of the 25 NTU State saltwater standard did not appear to be dependent upon the size of the storm event for the Bluffton Village, Heyward Street, Stoney Creek, and New River Trail sample locations. However, exceedances of this standard at the Rose Dhu Creek sample location typically coincided with large qualifying storm events.

A 2004 report prepared by the South Carolina Estuarine and Coastal Assessment Program (SCECAP) notes that South Carolina's estuarine waters are naturally turbid compared with many other states, and that exceptionally high turbidity levels may be harmful to marine life. SCECAP

would consider turbidity values greater than 25 NTU to be poor for its monitoring program; values between 15 and 25 NTU would be considered fair for SCECAP samples. The SCECAP monitoring program noted an average turbidity of 21 NTU in tidal creeks during 2001-2002 [(2)]. Based on average turbidity values for the five sampling locations in the Town's stormwater sampling project, two locations would likely be classified by SCECAP standards as good, one as fair, and two as poor.

The May River baseline study notes that the state turbidity standard is based on the 90th percentile of turbidity values found in SC DHEC's saltwater database, which includes data mostly from large estuaries and does not include turbidity data from headwater tidal creeks. The May River baseline study reported a forested site average turbidity of 168 NTU for four samples and a suburban site average turbidity of 42 NTU for two samples. (Though the baseline study presented an average value of forested sites as 168 NTU, the original data for samples collected during the baseline study at the Stoney Creek and Rose Dhu sample points yielded average turbidity values of 70 NTU and 105 NTU, respectively. It should also be noted that the baseline study considered its Rose Dhu Creek and Stoney Creek sample points forested sites and the Heyward Cove sample point a suburban site.) The stormwater sampling conducted as part of this project presents the results of eleven sampling events at four sampling locations and ten sampling events at one sampling location. Based on these sampling events, the average turbidity for the one forested site utilized in this project (New River Trail) is 6.0 NTU, while the average turbidity for the four suburban sites (Bluffton Village, Rose Dhu Creek, Stoney Creek, and Heyward Street) is 31 NTU. It is possible that the higher average turbidity levels reported in the May River baseline study may have been reduced with an increased number of samples. The May River baseline study also noted that "the turbidity levels in tidal creeks may be naturally higher due to the shallow depths of these systems combined with re-suspension of the bottom sediments due to tidal currents." Nevertheless, in some state and local sediment and erosion control regulations, turbidity is used as a measure of compliance.

In mid-February 2006, a stop work order on construction activities in Bluffton Park was issued by the Town due to a silt plume that entered the May River from Verdier Cove. The water quality impacts of these construction activities are evident in the sampling results from the Heyward Street sampling location on February 3, 2006, when the turbidity at this location

measured 130 NTU. Enforcement actions taken by SC DHEC Office of Ocean and Coastal Resource Management (OCRM) on several phases of the Bluffton Park project brought about changes in erosion and sediment control practices. Presumably, these changes produced the improvement in turbidity results for the March and May 2006 stormwater sampling events, when turbidity values at the Heyward Street sampling location were less than the state turbidity standard.

Nitrogen (Ammonia, TKN, Nitrate, and Nitrite)

A. Ammonia

The May River baseline study noted that "the amount of biologically available nutrients, mainly phosphorus and nitrogen compounds, is an important factor in ecosystem health" since elevated nutrient levels can lead to the growth of algal blooms and other aquatic plants. In turn, the growth of aquatic plants or algal blooms can lead to elevated biological oxygen demand (BOD) concentrations, changes in dissolved oxygen (DO) concentrations, elevated turbidity, odor issues, and the production of potential human and biotic toxins [(1)].

Ammonia concentrations were consistently less than 0.4 mg/L during the eleven sampling events at all sampling locations. The mean ammonia concentrations observed during the ten months of this study ranged from 0.08 mg/L (Rose Dhu and Stoney Creeks) to 0.12 mg/L (Bluffton Village, Heyward Street, and New River Trail). The mean ammonia concentrations observed during the ten months of this project are notably less than the mean ammonia concentrations observed during the baseline study. (The mean ammonia concentrations in headwater tidal creeks sampled during the May River baseline study ranged from 0.08 mg/L at Heyward Cove Creek to 0.50 mg/L at Rose Dhu Creek [(1)]). Attachment 2 of Appendix A illustrates the sampling results for ammonia at the five sampling sites from July 2005-May 2006.

The May River baseline study also noted that ammonia concentrations in the May River appeared to increase when the amount of particulate matter, phosphorus, and inorganic carbon increased in the headwater tidal creeks in the May River. Since only turbidity and phosphorus were sampled in this stormwater sampling study, the ammonia concentration trends over the ten month period of this study were compared with the concentration trends observed with turbidity

and phosphorus. Overall, most of the sampling points in this study showed no distinct correlation between ammonia concentrations and turbidity or phosphorus concentrations; however, the Rose Dhu and Stoney Creek sampling points may have shown a slight correlation between ammonia and phosphorus concentrations over the course of this study.

B. TKN

TKN is the sum of total organic nitrogen and total or dissolved ammonia forms. The mean TKN concentrations observed during the first nine months of this study ranged from 0.5 mg/L (Bluffton Village) to 1.3 mg/L (New River Trail). This is a narrower range than the mean concentrations observed during the 2004 May River baseline study. (The baseline study reported mean TKN concentrations in suburban creeks of 1.0 mg/L and mean TKN concentrations in forested creeks of 2.26 mg/L [(1)].) The sampling results from July 2005-May 2006 are shown in Attachment 3 of Appendix A.

During this study, the magnitude of TKN concentrations was fairly consistent between the five sampling sites; however, the May River baseline study reported that TKN concentrations in forested creeks were significantly higher than suburban creeks [(1)]. In addition, based on the ammonia concentrations presented in the previous subsection, it appears that total organic nitrogen, rather than ammonia, is the predominant form of nitrogen observed in the ecosystem; this observation is consistent with the May River baseline study.

C. Nitrate/Nitrite

Nitrate and nitrite concentrations were added together to be consistent with the 2004 May River baseline study. Nitrate/nitrite concentrations were consistently less than 0.4 mg/L during the eleven sampling events of this project at all sampling locations, with most sampling results being less than 0.2 mg/L. Mean nitrate/nitrite concentrations ranged from 0.11 mg/L (Heyward Street and New River Trail) to 0.18 mg/L (Rose Dhu Creek); the mean concentrations observed during this stormwater study are substantially higher than the mean concentrations observed in the 2004 May River baseline study. (The baseline study noted that mean nitrate plus nitrite concentrations observed during the study were extremely low in comparison to other forms of nitrogen, varying from 0.010 mg/L at Palmetto Bluff Creek to 0.076 mg/L at Heyward Cove

Creek [(1)].)The July 2005-May 2006 nitrate/nitrite sampling results are shown in Attachment 4 of Appendix A.

Total Nitrogen

SCECAP represented total nitrogen (TN) as the sum of nitrate/nitrite and TKN and noted the following enrichment classifications based on TN concentrations and historical water quality records:

- TN concentrations less than 0.95 mg/L: normal
- TN concentrations greater than 0.95 mg/L and less than 1.29 mg/L: moderately enriched waters
- TN concentrations greater than 1.29 mg/L: highly enriched waters

A TN concentration of 0.95 mg/L represented the 75th percentile of historical water quality data collected by the South Carolina Department of Health and Environmental Control (SC DHEC), while a TN concentration of 1.29 mg/L represented the 90th percentile of those historical records. (It should be noted that the SC DHEC historical water quality database is primarily obtained from larger open water bodies, and SCECAP cautioned in its technical report against "interpreting data from tidal creek sites since high or low values observed for some parameters may represent 'normal' conditions [(3)].")

Nitrate/nitrite and TKN concentrations from the Town's stormwater study were summed together to obtain TN concentrations for each sampling site over the course of this study and are shown in Attachment 5 of Appendix A. Mean TN concentrations ranged from 0.67 mg/L (Bluffton Village) to 1.38 mg/L (New River Trail); of the five sampling points, the Heyward Street, Rose Dhu Creek, Stoney Creek, and New River Trail sampling sites would be classified as highly enriched waters for TN, based on the SC DHEC historical water quality database. The 2004 SCECAP report noted that the average concentration of TN measured from tidal creek sites was 0.53 mg/L in 2001-2002 [(2)], which is approximately one-half of the average TN concentrations seen at most of the stormwater sampling sites in the Town's stormwater sampling

study. Sampling events that resulted in moderate to highly enriched concentrations of TN at the five sampling points did not appear to be dependent upon the size of the storm event.

Phosphorus

Mean total phosphorus concentrations at the five sampling sites ranged from 0.12 mg/L (New River Trail) to 0.43 mg/L (Heyward Street) during the course of this project. This range is narrower than the mean total phosphorus range observed during the 2004 May River baseline study. (The baseline study reported mean total phosphorus concentrations at headwater tidal creeks ranged from 0.15 mg/L at Heyward Cove Creek to 0.82 mg/L at Rose Dhu Creek [(1)]). Of the five sampling sites, Heyward Street and Stoney Creek exhibited the greatest variability in phosphorus concentrations. Attachment 6 of Appendix A illustrates the total phosphorus concentrations at the five sampling sites for the eleven sampling events of this project.

In SCECAP's 2004 technical report, SCECAP noted the following enrichment classifications based on total phosphorus concentrations and historical water quality records [(2)]:

- Total phosphorus (P) concentrations less than 0.09 mg/L: good
- Total P concentrations greater than 0.09 mg/L and less than 0.17 mg/L: moderately enriched waters
- Total P concentrations greater than 0.17 mg/L: highly enriched waters

A total P concentration of 0.09 mg/L represented the 75th percentile of historical water quality data collected by SC DHEC, while a total P concentration of 0.17 mg/L represented the 90th percentile of those historical records. The 2004 SCECAP report noted that the average total P concentration measured by SC DHEC in 2001-2002 was 0.073 mg/L at its tidal creek sampling locations [(2)]; this average total P concentration was less than any of the mean total P concentrations derived from the Town's stormwater sampling project. Of the five sampling locations, the New River Trail and Bluffton Village sampling points would be considered moderately enriched for total P, while the Rose Dhu, Heyward Street, and Stoney Creek sampling points would meet the highly enriched classification. Sampling events that resulted in moderate to highly enriched concentrations of total P at the five sampling points did not appear to be dependent upon the size of the storm event.

The May River baseline study also cited correlations among total P concentrations and turbidity. Of the three sampling sites in this stormwater sampling project that were considered highly enriched for total P, two of these sites (Heyward Street and Stoney Creek) had mean turbidity values that exceeded the 25 NTU recreational saltwater standard, while the Rose Dhu sampling site barely met the saltwater standard with a mean turbidity value of 24 NTU. Of the two sampling sites in this stormwater sampling project that were considered moderately enriched for total P, the Bluffton Village and New River Trail sampling sites had mean turbidity values of 5.2 NTU and 6.0 NTU, respectively.

The 2004 May River baseline study noted that "mean total P concentrations were higher in forested creeks than suburban creeks" [(1)], but this trend was not seen in the Town's stormwater sampling study as the only forested location, New River Trail, actually had the lowest average P concentration of the five sampling locations.

Fecal Coliform

In SCECAP's 2004 technical report, SCECAP stated that "coliform bacteria are present in the digestive tracts and feces of all warm-blooded animals, and public health studies have established correlations between adverse human health effects and the concentration of fecal coliform bacteria in recreational, drinking, and shellfish harvesting waters." SCECAP noted that they considered any sample with a fecal coliform concentration greater than 43 colony forming units/100 mL (CFU/100 mL) to represent fair water quality conditions, while any sample with a fecal coliform concentration greater than 400 CFU/100 mL would represent poor water quality conditions [(2)]. The State saltwater standard for fecal coliform is based on a 30-day geometric mean; due to the timing of the storm events, it was generally difficult to have more than one sampling event occur within a 30-day window. Although eleven sampling events were conducted for the other water quality parameters, only ten fecal coliform sampling events were conducted for four of the Town's sampling sites, due to the shorter hold time allowed for fecal analysis. In addition, the New River Trail sampling location was only sampled nine times for fecal coliform.

Of the 56 samples (including duplicate samples) taken as part of this stormwater sampling project, only 15 samples had fecal coliform concentrations less than or equal to 400 colony CFU/100 mL and only six samples had fecal coliform concentrations less than or equal to 43 CFU/100 mL. All sample sites had concentrations too numerous to count (TNTC) during the October 6, 2005 sampling event. The July 2005-March 2006 fecal coliform results are contained in Attachment 7 of Appendix A. Of the five sampling locations, the Bluffton Village site met SCECAP's definition of fair water quality approximately 50% of the time, while the Stoney Creek location met SCECAP's definition of poor water quality during all sampling events. Sampling events that resulted in fair to poor water quality conditions for fecal coliform at the five sampling points did not appear to be dependent upon the size of the storm event.

It should be noted that the Rose Dhu sampling location is in Rose Dhu Plantation, which is an equestrian community. Although the Rose Dhu sampling point is presumably upstream of drainage discharge from the corrals and barn in this community, Rose Dhu Creek is still impacted by tidal fluctuations, and horses were observed during the study period in the vicinity of a drain directed toward Rose Dhu Creek. Therefore, there is a possibility that fecal coliform levels at the Rose Dhu sampling location could have been impacted by its location in this equestrian community.

The fecal coliform sampling method utilized during this stormwater sampling project was the membrane filter test, Standard Method 9222. This method has a greater precision than the most probable number (MPN) method, Standard Method 9221, which utilizes probability rather than actual plate counts. Two of the limitations of the membrane filter test involve turbidity interferences or background bacteria interferences. The sampling results for the sampling events in this project were reviewed to determine whether high turbidity levels may have contributed to elevated fecal coliform levels; however, two of the sampling sites with relatively low turbidity levels over the course of the sampling events (Bluffton Village and New River Trail) experienced elevated fecal coliform levels (>400 CFU/100 mL) during a number of the sampling events.

Over the course of the ten sampling events, more than 70% of the samples underwent dilution in order to count the fecal colonies. Typically, the samples are diluted until the counted

colonies are between 20 and 80 coliform colonies, and the sum of the coliform colonies and background colonies are not more than 200 colonies. Then the samples with results that meet these criteria are multiplied by the appropriate dilution factor to gain a total fecal count for each specimen.

SC DHEC's Beaufort District Office staff was consulted on knowledge of historical fecal coliform levels in the local area. SC DHEC maintained a sample site at the head of Heyward Cove from March 15, 1999-June 18, 2003 for the purpose of monitoring fecal coliform in the freshwater flow coming from what is known as the RC&D ditch, located at the intersection of Bruin Road and Pritchard Street in Bluffton. During this four-year period, 45 samples were collected; 14 of the samples had fecal coliform levels greater than or equal to 920 CFU, with 10 of these 14 samples having levels greater than or equal to 1,600 CFU. In another drainage ditch monitored during the same timeframe in the Broad Creek headwaters on Hilton Head Island, SC DHEC found that from 55 samples, 22 were greater than or equal to 920 CFU, of which 15 were greater than or equal to 1,600 CFU. SC DHEC notes that the bacteria can be of human, pet, wildlife, or soil origin, and that results exceeding 1,600 CFU in an undiluted sample from a drainage ditch are not unusual.

With construction activity in the watershed, it has been SC DHEC's experience locally to see shellfish bacteria monitoring begin to identify exceedances of the state fecal coliform standard for shellfish harvesting, which is based on a geometric mean of five consecutive samples within a 30-day time period. In order to pinpoint the sources of the elevated fecal coliform levels, SC DHEC recommended taking additional samples further up in the stormwater collection system or establishing a bacteria source tracking study. This stormwater study is an initial step in addressing SC DHEC's recommendation, but more extensive sampling will need to be conducted to isolate the fecal coliform sources potentially impacting the headwater tidal creeks that flow into the May River.

Hard copies of the stormwater sampling results for all parameters are contained in Appendix B.

SECTION 3: MAY RIVER CONTINUOUS MONITORING PROGRAM

As noted in the introduction to this report, two of the recommendations from the May River baseline study were to:

1. Consider extending the continuous monitoring of the May River after the conclusion of the baseline study with one or more of the existing USGS gauges

2. Focus sampling efforts on the following parameters: dissolved oxygen (DO), salinity, turbidity, chlorophyll-α, pH, nutrients, fecal coliforms, and potentially total organic carbon (TOC) and/or dissolved organic carbon

In order to address these recommendations, the Town purchased one YSI sampling probes to begin its own continuous monitoring program of the May River, independent of the stormwater sampling program initiated by the Town in July 2005. This sampling probe was previously mounted from a dock approximately 100 yards upstream of one of the USGS sampling probe locations utilized in the May River baseline study. The Town's sampling probe on the May River began logging data on March 29, 2006 and was removed in June 2006. The probe is pictured in Figure 20. The Town has purchased two additional sampling probes in order to continue its continuous monitoring program of the May River.

Figure 20: May River sample probe location

The USGS probe from the May River baseline study was used to measure water level, velocity, water temperature, specific conductance, and dissolved oxygen (DO) concentration. The Town's fixed YSI sampling probe collects time, depth (water level), water temperature, specific conductance, DO concentration, DO saturation percentage, salinity, turbidity, and pH data; the data are recorded at 15-minute intervals, stored in a data logger, and downloaded on a weekly basis.

A noticeable increase in turbidity was recorded by the Town's YSI sampling probe from 4/24/06-4/28/06 (Attachment 8 in Appendix A). However, only approximately 14 of these sampling points taken over this 5-day period actually exceeded the 25 NTU State saltwater turbidity standard, when accounting for potential tidal influences. In addition, a rainfall event of

0.64 inch occurred during the early morning hours of 4/26/06-4/27/06, which may have influenced the turbidity values over this time period. A second major increase in turbidity was noted from 6/13/06-6/14/06, but this increase was likely attributed to large rainfall events associated with Tropical Storm Alberto.

The baseline study noted that the May River has limited flushing and long residence times, which demonstrated the importance of reducing contaminant loading to the river. The example given in the baseline study was that the effects of a 4.8-inch rainfall event were observed for more than 60 days, based on specific conductance readings [(1)]. The Town's YSI sampling probe will allow the Town to continue monitoring the flushing characteristics and residence times of the May River.

Detailed analysis of the remaining parameter results (depth, water temperature, specific conductance, DO concentration, DO saturation percentage, salinity, turbidity, and pH) will be reserved until additional data is collected from the YSI sampling probe. The data for the period collected during this study are included as Attachment 9 in Appendix A. It should be noted that the USGS gauge utilized during the May River baseline study collected data from June 2002-September 2003. Most of the trends observed during the May River baseline study using the USGS gauge were noticed over an extended time period; therefore, it is not likely that major trends will be observed with the Town's current YSI sampling probe until more data can be collected. The Town has purchased two additional sampling probes for continuous monitoring efforts related to the May River.

Volunteers in the local community also undertook a volunteer water quality monitoring effort from January through August 2006. Additional information related to this effort is included in Appendix C.

SECTION 4: CONCLUSIONS AND RECOMMENDATIONS

Turbidity levels at the Heyward Street and Stoney Creek sampling locations averaged above the State saltwater turbidity standard of 25 NTU, while the Rose Dhu Creek sampling location was slightly less than the turbidity standard. One source of sediment may be construction sites that have not undertaken adequate best management practices (BMPs) for sediment and erosion control. It is recommended that turbidity sampling continue on a quarterly basis (minimum) at the sampling locations, as well areas upland of these sampling locations, in order to assess major sediment contribution areas. The Bluffton Village and New River Trail sampling locations did not appear to be adversely affected by sediment runoff, based on the results of this study; however, the Town may wish to continue turbidity monitoring at these two locations for background purposes. During the baseline study, grain size evaluations of sediment at the headwater tidal creek sample points were conducted to compare relative amounts of sandy, land-derived soils to the finer grained sediment particles (*e.g.,* silts and clays) typically seen in tidal creek and open water area [(1)]. Based on the turbidity levels noted during this stormwater sampling study, it is recommended that the Town conduct another round of grain size evaluations at the baseline study sample sites to determine if the headwater tidal creeks are experiencing an increase in deposition of land-derived soils.

Concentrations of the various nutrients observed in this stormwater sampling study, with the exception of ammonia, were at levels that may warrant additional monitoring and source tracking. Nitrogen compounds (ammonia, nitrate-nitrite, TKN) can typically be traced to fecal matter or fertilizers, while phosphorus compounds may result from detergents or fertilizers. These nutrients can enter surface water through sewer overflows and/or stormwater runoff containing animal waste, fertilizers, or detergents. We also recommend continued minimum quarterly monitoring and source tracking for fecal coliform at the five sampling locations. The high fecal coliform counts noted in this study may be due to natural sources (*i.e.,* wildlife or pets), but this hypothesis should be confirmed with more a more detailed analysis of upland sources. Eventually, the Town may decide to include the following water quality parameters in its sampling program, which have been included in watershed assessments in other states: pH,

conductivity, DO, biological oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), ortho phosphate, zinc, lead, copper, cadmium, hardness, and *Enterococci* bacteria. Alternately, since the May River has been designated an Outstanding Resource Water (ORW) and the local community would like for the May River to retain this status, the Town may opt to include not only the parameters for ORWs but also those for shellfish harvesting waters listed in SC Regulation 61-68 in its overall monitoring program. If the Town opts to perform the grain-size analysis and expand its monitoring program, the Town may also wish to consider a study of the benthic community to fully implement one of the recommendations of the May River baseline study.

Grab samples were used for this stormwater sampling study. For additional stormwater sampling events, the Town may want to consider performing the quarterly stormwater monitoring events using composite samplers (*e.g.*, ISCO). If composite sampling is implemented, it would be beneficial to measure flow rates to correlate with future water quality sampling results. (It should be noted that any additional bacterial sampling will still need to be conducted as grab samples.)

In order to control sediment, nutrient, fecal coliform and/or *E. coli* runoff into the storm sewer system, and ultimately to the May River, we further recommend that the Town implement an illicit discharge and detection (ID&D) program, which will include completion of storm sewer maps for the Town, the preparation of a stormwater ordinance, and visual identification of illicit discharges to the storm sewer system. The stormwater ordinance should address the following goals:

- Identifying and eliminating illicit discharges
- Locating problem areas and their respective source(s)
- Locating/correcting illicit discharges
- Educating construction interests about evolving methods for controlling erosion and sediment control.

As part of its land development standards, the Town should require an appropriate minimum level of erosion and sediment control management practices (stabilization and structural), regardless of site acreage. The Town should develop a Stormwater Management and Sediment Reduction Program, including an ordinance that will control stormwater runoff pollution and enforce the reduction of such pollution through the implementation of BMPs. As part of this plan, the Town should review submitted construction plans, including checking the certifying engineer's runoff assumptions and stormwater calculations, check for the use of required BMPs, conduct site inspections, and ensure ordinance enforcement. It is in the best interest of the Town to develop an effective stormwater management program independent of SC DHEC's program since ultimately the responsibility of the stormwater runoff will be with the Town after construction is complete. SC DHEC does not have available staffing to have the local presence necessary for effective inspections and enforcement.

The Town should establish a program where they review the stormwater management and sediment control plans for proposed development projects. Each plan should be checked for compliance with the Town's developed plan. At a minimum, the plan should make the following provisions in order to be successful:

- Perform regular site inspections and designate proper authority for enforcement
- Impose penalties on any person failing to comply with the plan, thus giving the Town the right to issue cease and desist orders to ensure compliance
- Respond to public concerns regarding stormwater, sedimentation or erosion control through a hotline or other communication tool
- Require private development interests and public entities desiring to construct site improvements to submit plans for land disturbing activities to the Town for review

The Town should designate a staff person to inspect and enforce the implementation of erosion and sediment control management practices. Set penalties should be established to ensure compliance with standards.

The May River continuous monitoring probe logged data at one location for approximately three months in 2006. After less than 3 months of data collection, any noticeable increases in turbidity at this sample location appear to coincide with rainfall events. The Town has purchased two additional probes, and it is recommended that the continuous monitoring probe be commenced again to assist the Town in correlating any future stormwater quality data at upland sources with water quality data from the May River.

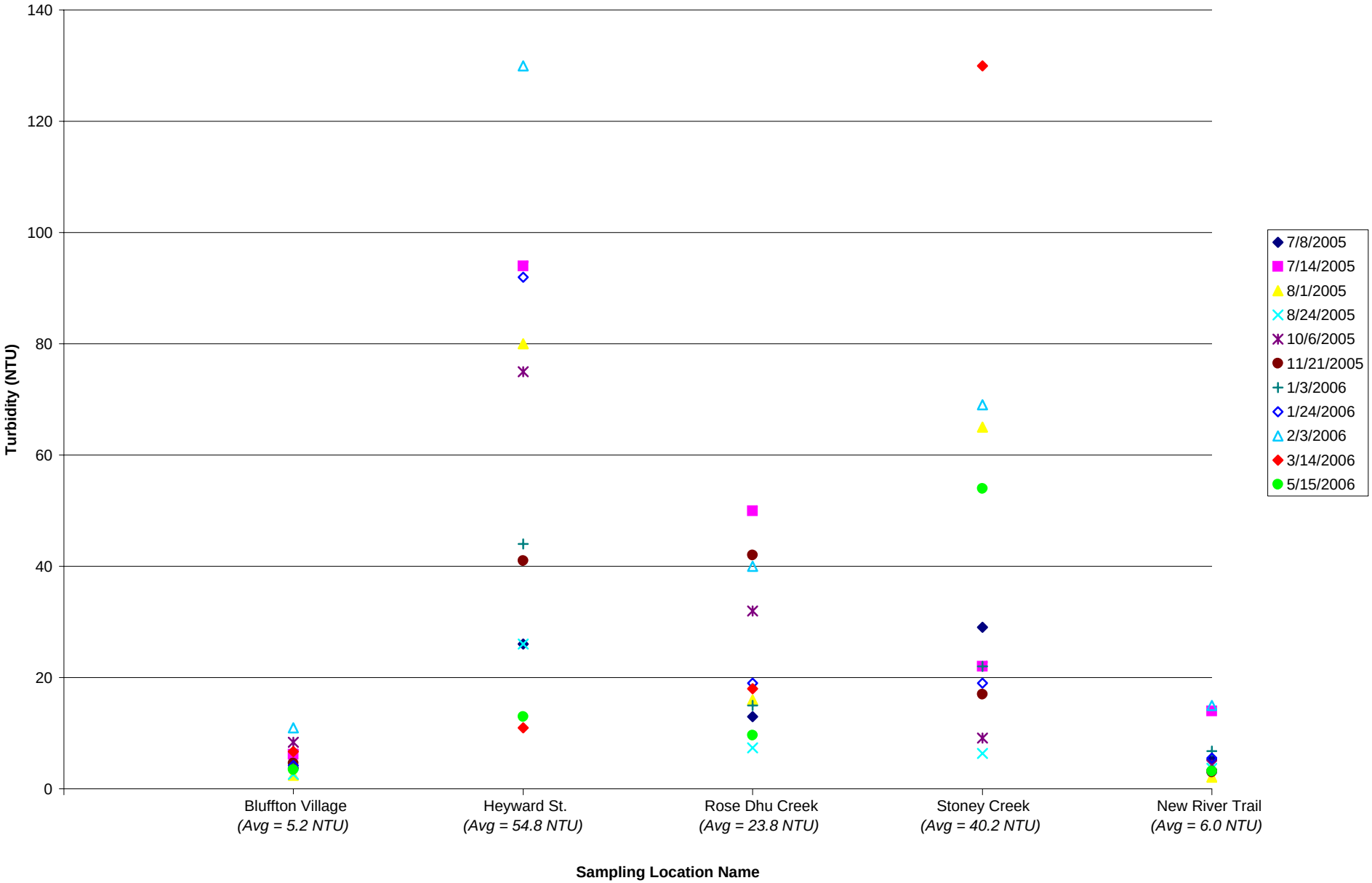
SECTION 5: REFERENCES

(1) Sanger, D.M., et al. *A Baseline Assessment of Environmental and Biological Conditions in the May River, Beaufort County, South Carolina.* SC DNR, USGS, and NOAA, 2004.

(2) Van Dolah, R.F, et al. *The Condition of South Carolina's Estuarine and Coastal Habitats During 2001-2002, Technical Report No. 100.* SCECAP, 2004.

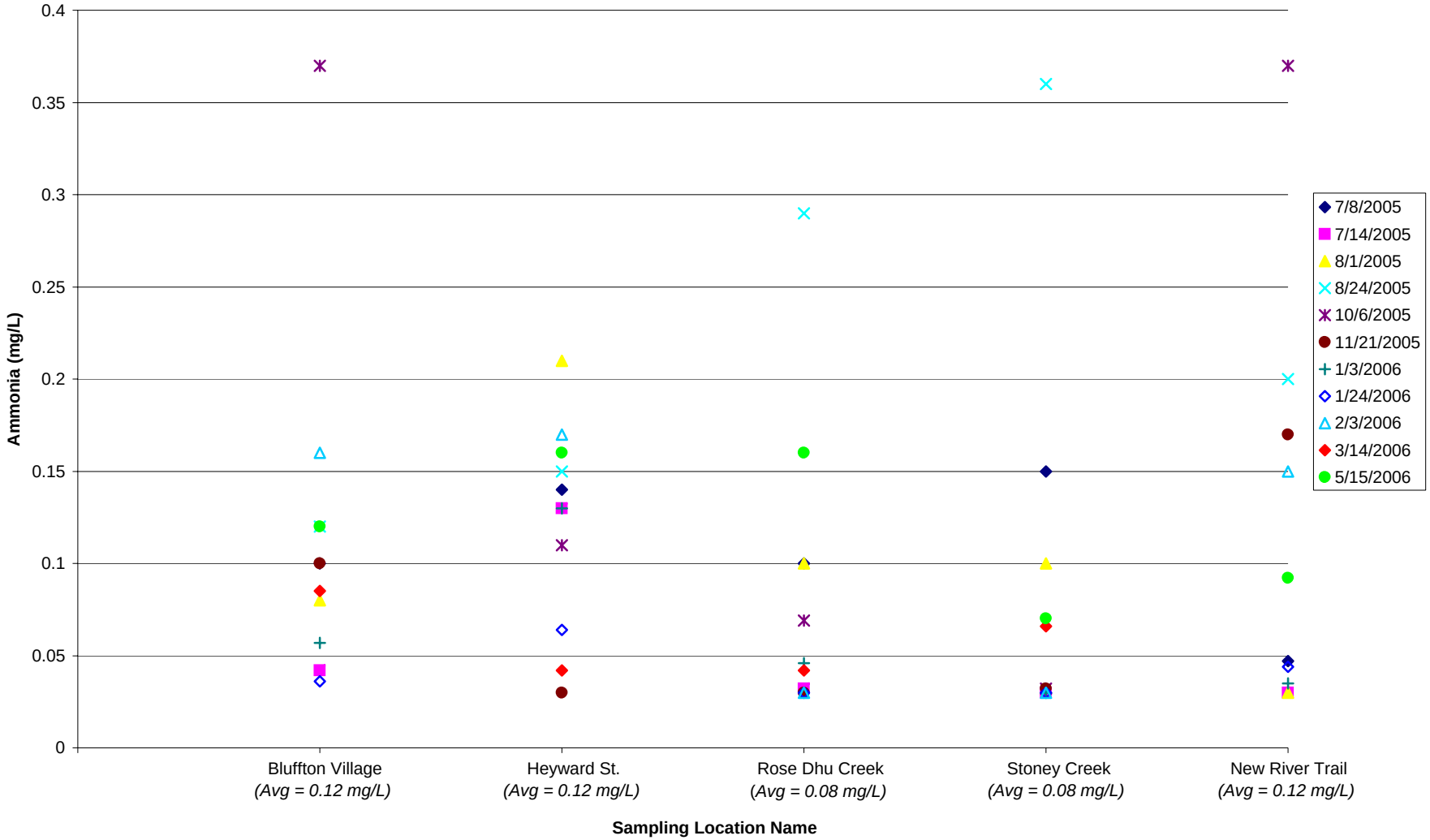
APPENDIX A

Attachment 1
Turbidity (NTU) at Town of Bluffton Sampling Locations
(July 2005-May 2006)



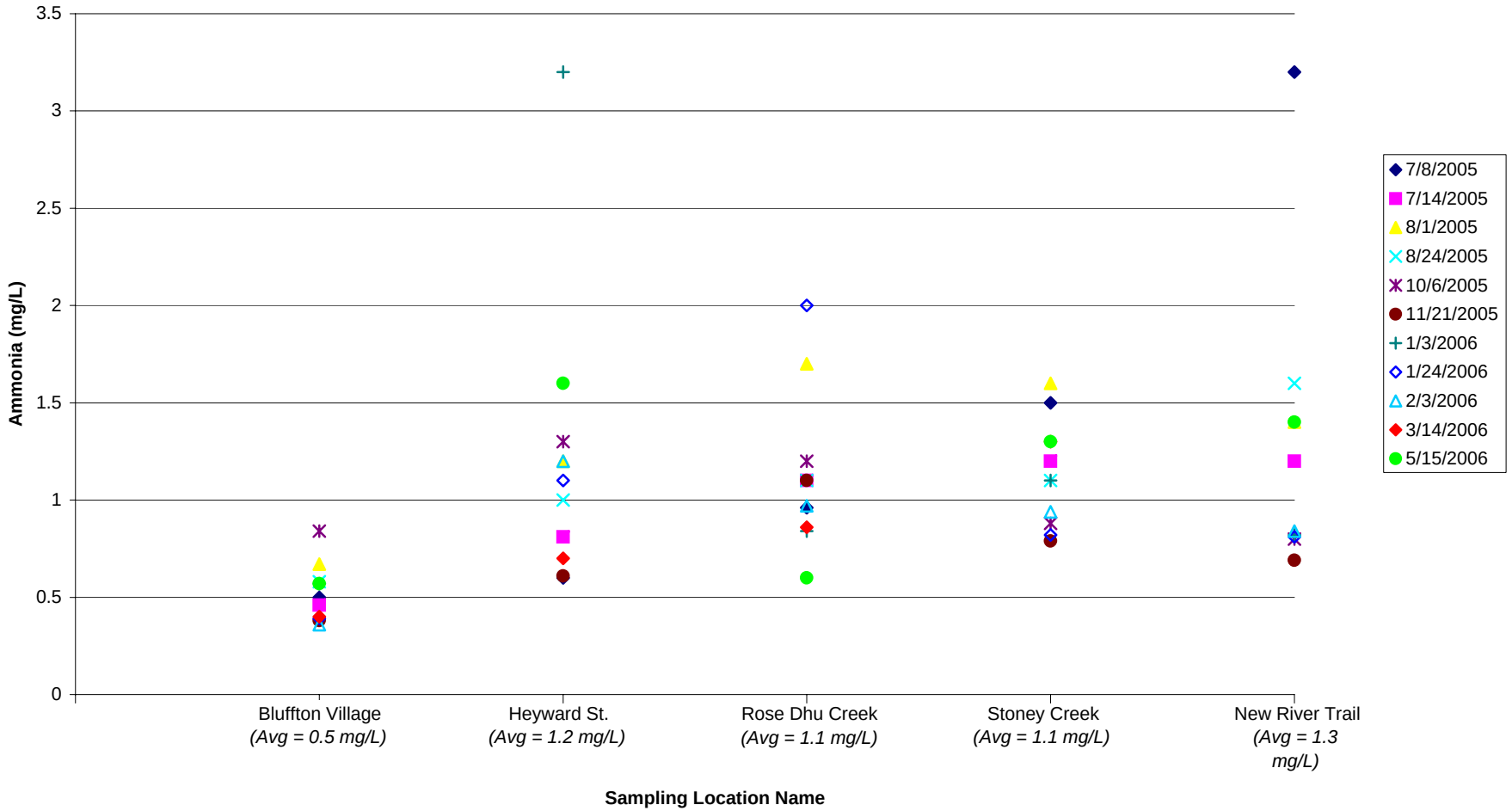
July 2006
B.P. Barber & Associates, Inc.

Attachment 2
Ammonia (mg/L) at Town of Bluffton Sampling Locations
(July 2005-May 2006)



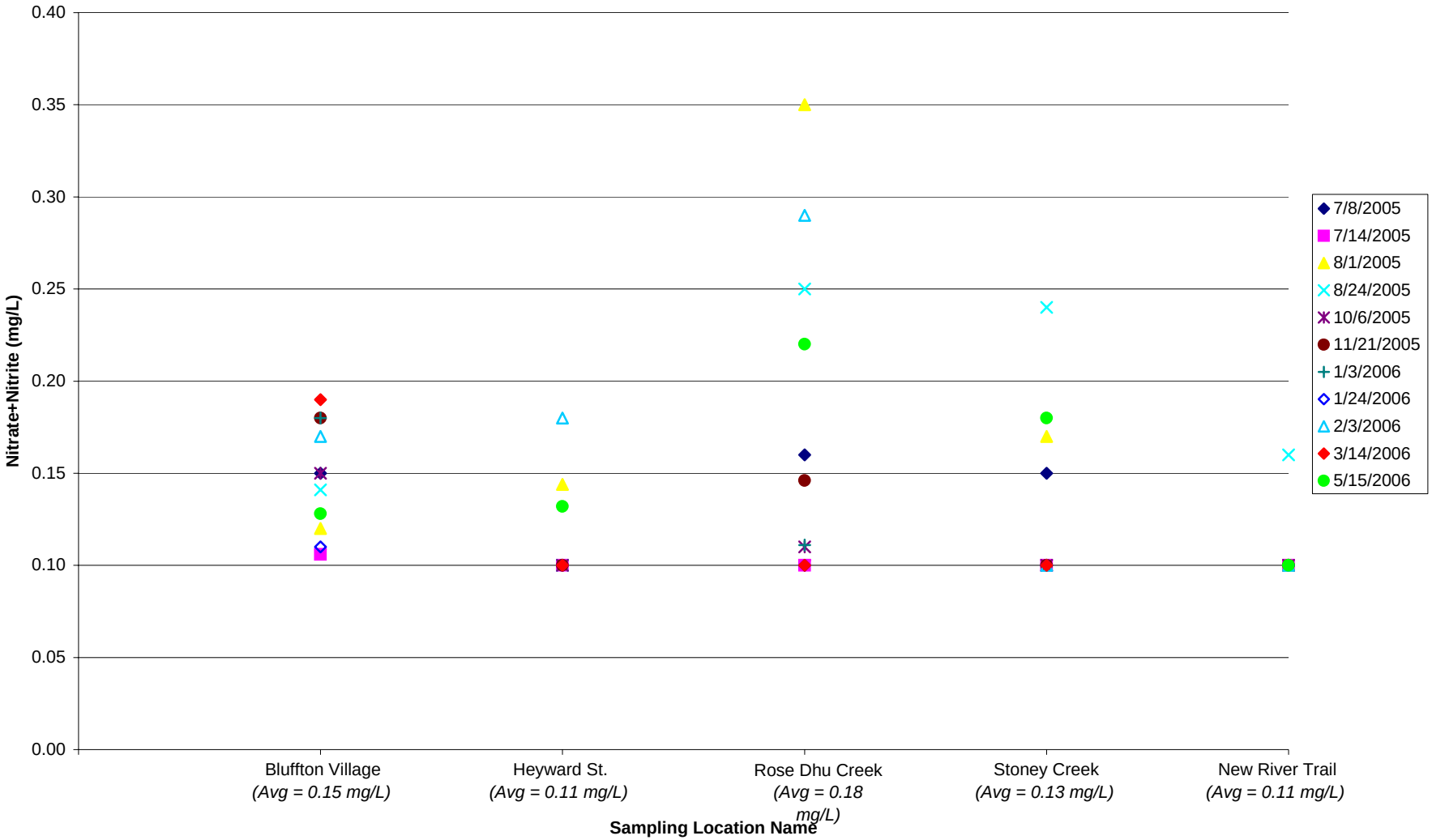
July 2006
B.P. Barber & Associates, Inc.

Attachment 3
TKN (mg/L) at Town of Bluffton Sampling Locations
(July 2005-May 2006)



July 2006
B.P. Barber & Associates, Inc.

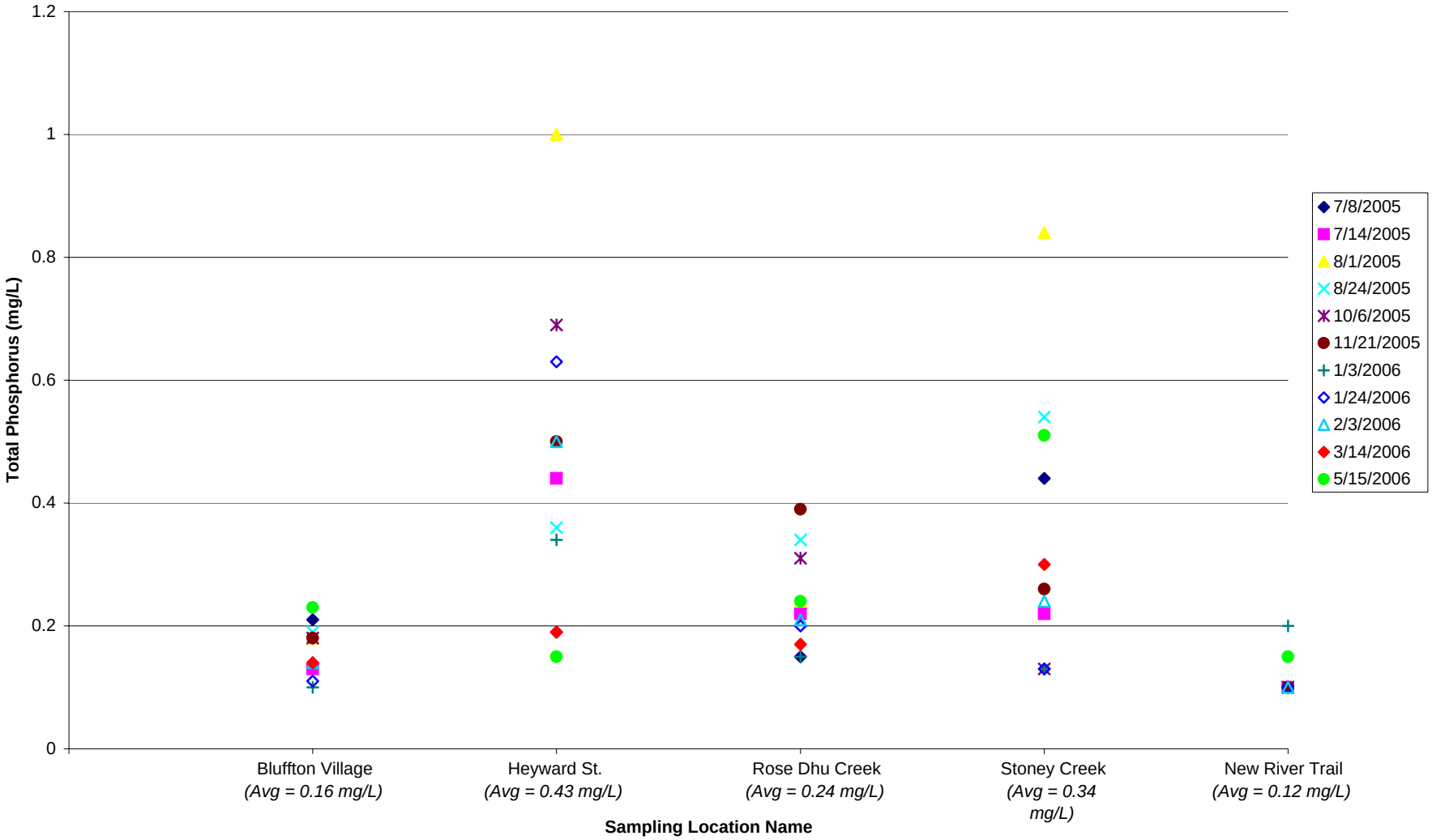
Attachment 4
Nitrate+Nitrite (mg/L) at Town of Bluffton Sampling Locations
(July 2005-May 2006)



July 2006
B.P. Barber & Associates, Inc.

Attachment 5					
Total Nitrogen Concentration (mg/L) (calculated)					
Date	Bluffton Village	Heyward St.	Rose Dhu Creek	Stoney Creek	New River Trail
7/8/2005	0.65	0.70	1.12	1.65	3.30
7/8/2005		0.60			
7/14/2005	0.57	0.91	1.20	1.30	1.30
8/1/2005	0.79	1.34	2.05	1.77	1.50
8/24/2005	0.72	1.10	1.35	1.34	1.76
10/6/2005	0.99	1.40	1.31	0.98	0.90
11/21/2005	0.56	0.71	1.25	0.89	0.79
1/3/2006	0.75	3.30	0.95	1.20	0.92
1/24/2006	0.50	1.20	2.10	0.92	0.91
2/3/2006	0.54	1.38	1.26	1.04	0.94
3/14/2006	0.59	0.80	0.96	1.40	
5/15/2006	0.70	1.73	0.82	1.48	1.50
	Mean 0.67	Mean 1.26	Mean 1.31	Mean 1.27	Mean 1.38

Attachment 6
Total Phosphorus (mg/L) at Town of Bluffton Sampling Locations
(July 2005-May 2006)



July 2006
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Attachment 7					
Fecal Coliform Concentration (CFU/100 mL)					
Date	Bluffton Village [2]	Heyward St. [1]	Rose Dhu Creek	Stoney Creek	New River Trail [2]
7/8/2005	2	2	2	710	360
		100			
7/14/2005	>800	1,800	4,800	660	1,100
					1,000
8/1/2005	>800	>2,000	>2,000	>2,000	1,600
					1,700
8/24/2005	820	860	610	510	420
	720				
10/6/2005	TNTC	TNTC	TNTC	TNTC	TNTC
	TNTC				
11/21/2005	>2,000	>2,000	>2,000	>2,000	>2,000
1/3/2006	17	83	400	500	150
1/24/2006	390	490	1,300	2,000	250
	>200				
2/3/2006	890	550	300	3,200	780
					670
3/14/2006	40	30	560	1,200	

(1) Duplicate sample performed on 7/8/05

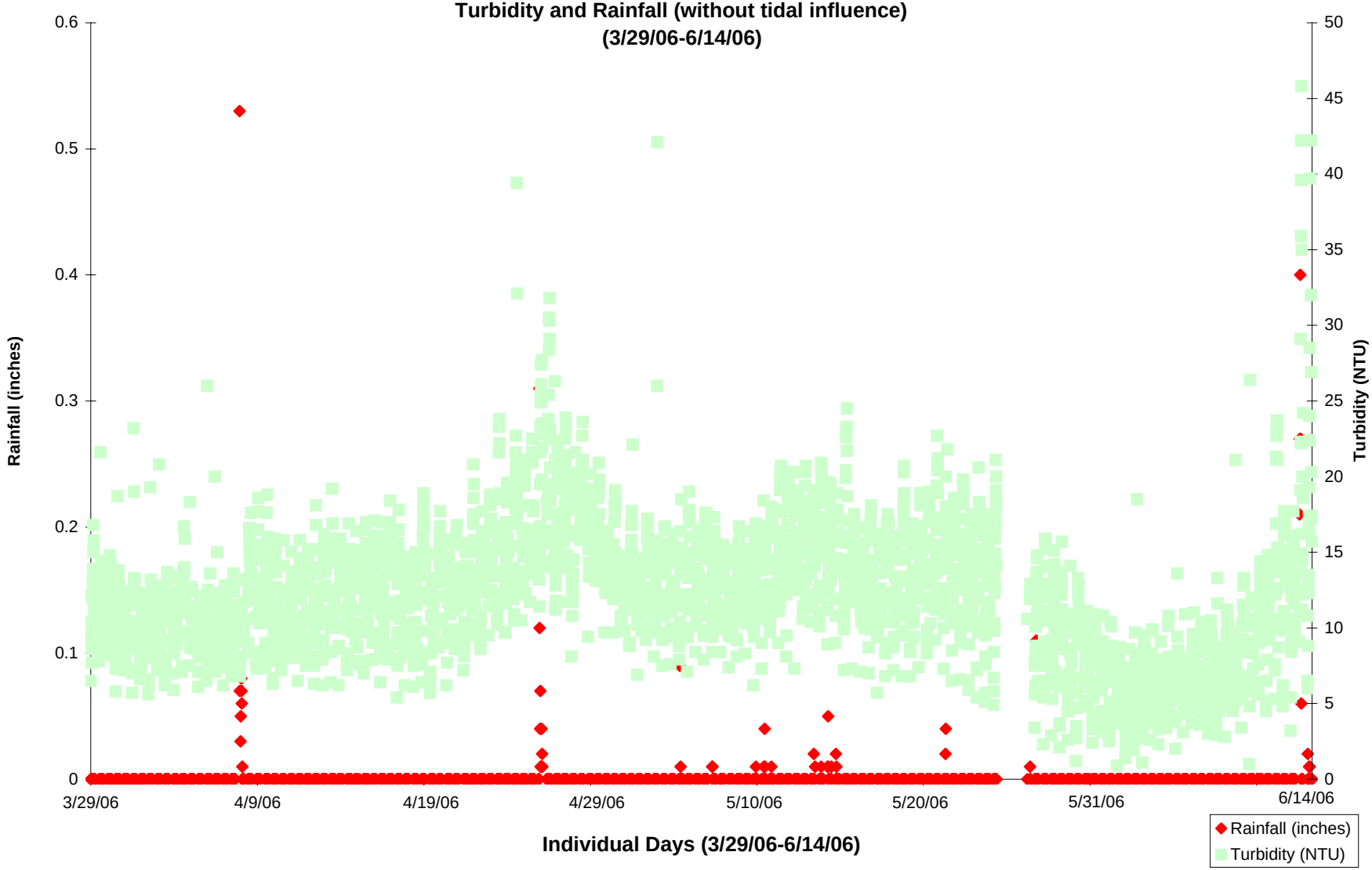
(2) Duplicate sample performed on 1/24/06

TNTC: too numerous to count

No shading indicates no dilution

	Dilution Factor (DF)=2
	DF=5
	DF=10
	DF=50

Attachment 8
May River Continuous Monitoring Data:
Turbidity and Rainfall (without tidal influence)
(3/29/06-6/14/06)



July 2006
B.P. Barber & Associates, Inc.

APPENDIX B

ANALYTICAL REPORT

Job Number: 680-16618-1

Job Description: Town of Bluffton

For:
Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
05/31/2006

Project Manager: Bernard Kirkland

METHOD SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-16618-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-16618-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-16618-1	Bluffton Village	Water	05/15/2006 0630	05/15/2006 0830
680-16618-2	Heyward Street	Water	05/15/2006 0645	05/15/2006 0830
680-16618-3	Rose Dhu Creek	Water	05/15/2006 0710	05/15/2006 0830
680-16618-4	Stoney Greek	Water	05/15/2006 0720	05/15/2006 0830
680-16618-5	New River Trail	Water	05/15/2006 0735	05/15/2006 0830

General Chemistry

Client Sample ID: Bluffton Village

Lab Sample ID: 680-16618-1 Date Sampled: 05/15/2006 0630
Client Matrix: Water Date Received: 05/15/2006 0830

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.12		mg/L	0.030	1.0	350.1
	Anly Batch: 680-45959	Date Analyzed	05/26/2006 1740			
Nitrogen, Kjeldahl	0.57		mg/L	0.20	1.0	351.2
	Anly Batch: 680-44935	Date Analyzed	05/17/2006 1030			
	Prep Batch: 680-44750	Date Prepared:	05/15/2006 1500			
Nitrogen, Nitrate	0.078		mg/L	0.050	1.0	353.2
	Anly Batch: 680-45117	Date Analyzed	05/16/2006 1005			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-45103	Date Analyzed	05/16/2006 1036			
Phosphorus	0.23		mg/L	0.10	1.0	365.4
	Anly Batch: 680-44978	Date Analyzed	05/15/2006 1344			
	Prep Batch: 680-44752	Date Prepared:	05/15/2006 1530			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	3.4		NTU	0.10	1.0	180.1
	Anly Batch: 680-44944	Date Analyzed	05/16/2006 1715			

General Chemistry

Client Sample ID: **Heyward Street**

Lab Sample ID: 680-16618-2 Date Sampled: 05/15/2006 0645
Client Matrix: Water Date Received: 05/15/2006 0830

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.16		mg/L	0.030	1.0	350.1
	Anly Batch: 680-45959	Date Analyzed	05/26/2006 1740			
Nitrogen, Kjeldahl	1.6		mg/L	0.20	1.0	351.2
	Anly Batch: 680-44935	Date Analyzed	05/17/2006 1030			
	Prep Batch: 680-44750	Date Prepared:	05/15/2006 1500			
Nitrogen, Nitrate	0.082		mg/L	0.050	1.0	353.2
	Anly Batch: 680-45117	Date Analyzed	05/16/2006 1005			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-45103	Date Analyzed	05/16/2006 1036			
Phosphorus	0.15		mg/L	0.10	1.0	365.4
	Anly Batch: 680-44978	Date Analyzed	05/15/2006 1344			
	Prep Batch: 680-44752	Date Prepared:	05/15/2006 1530			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	13		NTU	0.10	1.0	180.1
	Anly Batch: 680-44944	Date Analyzed	05/16/2006 1715			

General Chemistry

Client Sample ID: **Rose Dhu Creek**

Lab Sample ID: 680-16618-3 Date Sampled: 05/15/2006 0710
Client Matrix: Water Date Received: 05/15/2006 0830

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.070		mg/L	0.030	1.0	350.1
	Anly Batch: 680-45959	Date Analyzed	05/26/2006 1740			
Nitrogen, Kjeldahl	0.60		mg/L	0.20	1.0	351.2
	Anly Batch: 680-44935	Date Analyzed	05/17/2006 1030			
	Prep Batch: 680-44750	Date Prepared:	05/15/2006 1500			
Nitrogen, Nitrate	0.17		mg/L	0.050	1.0	353.2
	Anly Batch: 680-45117	Date Analyzed	05/16/2006 1005			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-45103	Date Analyzed	05/16/2006 1036			
Phosphorus	0.24		mg/L	0.10	1.0	365.4
	Anly Batch: 680-44978	Date Analyzed	05/15/2006 1344			
	Prep Batch: 680-44752	Date Prepared:	05/15/2006 1530			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	9.6		NTU	0.10	1.0	180.1
	Anly Batch: 680-44944	Date Analyzed	05/16/2006 1715			

General Chemistry

Client Sample ID: Stoney Greek

Lab Sample ID: 680-16618-4 Date Sampled: 05/15/2006 0720
Client Matrix: Water Date Received: 05/15/2006 0830

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.18		mg/L	0.030	1.0	350.1
	Anly Batch: 680-45959	Date Analyzed	05/26/2006 1740			
Nitrogen, Kjeldahl	1.3		mg/L	0.20	1.0	351.2
	Anly Batch: 680-44935	Date Analyzed	05/17/2006 1030			
	Prep Batch: 680-44750	Date Prepared:	05/15/2006 1500			
Nitrogen, Nitrate	0.13		mg/L	0.050	1.0	353.2
	Anly Batch: 680-45117	Date Analyzed	05/19/2006 1105			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-45103	Date Analyzed	05/16/2006 1036			
Phosphorus	0.51		mg/L	0.10	1.0	365.4
	Anly Batch: 680-44978	Date Analyzed	05/15/2006 1344			
	Prep Batch: 680-44752	Date Prepared:	05/15/2006 1530			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	54		NTU	0.10	1.0	180.1
	Anly Batch: 680-44944	Date Analyzed	05/16/2006 1715			

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-16618-5
Client Matrix: Water

Date Sampled: 05/15/2006 0735
Date Received: 05/15/2006 0830

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.092		mg/L	0.030	1.0	350.1
	Anly Batch: 680-45959	Date Analyzed	05/26/2006 1740			
Nitrogen, Kjeldahl	1.4		mg/L	0.20	1.0	351.2
	Anly Batch: 680-44935	Date Analyzed	05/17/2006 1030			
	Prep Batch: 680-44750	Date Prepared:	05/15/2006 1500			
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-45117	Date Analyzed	05/16/2006 1005			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-45103	Date Analyzed	05/16/2006 1036			
Phosphorus	0.15		mg/L	0.10	1.0	365.4
	Anly Batch: 680-44978	Date Analyzed	05/15/2006 1344			
	Prep Batch: 680-44752	Date Prepared:	05/15/2006 1530			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	3.2		NTU	0.10	1.0	180.1
	Anly Batch: 680-44944	Date Analyzed	05/16/2006 1715			

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-16618-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.

Client: Hodgins Engineering Consulting

Job Number: 680-16618-1

Method Blank - Batch: 680-44944

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-44944/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1715
Date Prepared: N/A

Analysis Batch: 680-44944
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Matrix Duplicate - Batch: 680-44944

Method: 180.1
Preparation: N/A

Lab Sample ID: 680-16618-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1715
Date Prepared: N/A

Analysis Batch: 680-44944
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Turbidity	3.19	3.21	1	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-16618-1

Method Blank - Batch: 680-45959

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-45959/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/26/2006 1732
Date Prepared: N/A

Analysis Batch: 680-45959
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-45959

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-45959/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/26/2006 1732
Date Prepared: N/A

Analysis Batch: 680-45959
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-45959/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/26/2006 1732
Date Prepared: N/A

Analysis Batch: 680-45959
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	94	94	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-16618-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-45959

Method: 350.1
Preparation: N/A

MS Lab Sample ID:	680-16618-1	Analysis Batch:	680-45959	Instrument ID:	KoneLab1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	05/26/2006 1740			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-16618-1	Analysis Batch:	680-45959	Instrument ID:	KoneLab1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	05/26/2006 1840			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia	90	90	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-16618-1

Method Blank - Batch: 680-44750

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-44750/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/17/2006 1030
Date Prepared: 05/15/2006 1500

Analysis Batch: 680-44935
Prep Batch: 680-44750
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-44750

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-44750/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/17/2006 1030
Date Prepared: 05/15/2006 1500

Analysis Batch: 680-44935
Prep Batch: 680-44750
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	0.86	86	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-44750

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-16618-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/17/2006 1030
Date Prepared: 05/15/2006 1500

Analysis Batch: 680-44935
Prep Batch: 680-44750

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-16618-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/17/2006 1030
Date Prepared: 05/15/2006 1500

Analysis Batch: 680-44935
Prep Batch: 680-44750

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	89	118	75 - 125	18	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-16618-1

Method Blank - Batch: 680-45103

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-45103/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1036
Date Prepared: N/A

Analysis Batch: 680-45103
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-45103

Method: 353.2
Preparation: N/A

LCS Lab Sample ID: LCS 680-45103/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1036
Date Prepared: N/A

Analysis Batch: 680-45103
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 680-45103/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1036
Date Prepared: N/A

Analysis Batch: 680-45103
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrogen, Nitrite	97	97	80 - 120	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-16618-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-45103

Method: 353.2
Preparation: N/A

MS Lab Sample ID:	680-16618-1	Analysis Batch:	680-45103	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	05/16/2006 1036			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-16618-1	Analysis Batch:	680-45103	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	05/16/2006 1036			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite	114	113	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-16618-1

Method Blank - Batch: 680-45117

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-45117/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1005
Date Prepared: N/A

Analysis Batch: 680-45117
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-45117

Method: 353.2
Preparation: N/A

LCS Lab Sample ID: LCS 680-45117/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1005
Date Prepared: N/A

Analysis Batch: 680-45117
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 680-45117/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/16/2006 1005
Date Prepared: N/A

Analysis Batch: 680-45117
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrogen, Nitrate	103	105	80 - 120	2	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-16618-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-45117

Method: 353.2
Preparation: N/A

MS Lab Sample ID:	680-16618-1	Analysis Batch:	680-45117	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	05/16/2006 1005			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-16618-1	Analysis Batch:	680-45117	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	05/16/2006 1005			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	106	108	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-16618-1

Method Blank - Batch: 680-44752

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-44752/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/15/2006 1344
Date Prepared: 05/15/2006 1530

Analysis Batch: 680-44978
Prep Batch: 680-44752
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-44752

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-44752/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/15/2006 1344
Date Prepared: 05/15/2006 1530

Analysis Batch: 680-44978
Prep Batch: 680-44752
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	111	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-44752

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-16618-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/15/2006 1344
Date Prepared: 05/15/2006 1530

Analysis Batch: 680-44978
Prep Batch: 680-44752

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-16618-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/15/2006 1344
Date Prepared: 05/15/2006 1530

Analysis Batch: 680-44978
Prep Batch: 680-44752

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	112	115	60 - 140	2	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 90952

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
B. Kirkland		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
W. Hodgins	843-757-1952	843-757-5234
CLIENT NAME	CLIENT E-MAIL	
Hodgins Engineering	billh@waterpermits.com	
CLIENT ADDRESS		
84 Bridle Ct Bluffton, SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT,...)

REQUIRED ANALYSIS: NH_3 | NO_2/NO_3 | TKN / T Phos | Turbidity | NO_2/NO_3

PRESERVATIVE: Y | Y | Y | N | N

PAGE ____ OF ____

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,...)	NUMBER OF CONTAINERS SUBMITTED					REMARKS
5/15/06	0630	Bluffton Village						1	1	1	1	1	
5/15/06	0645	Heyward Street						1	1	1	1	1	
5/15/06	0710	Rose Dhu Creek						1	1	1	1	1	
5/15/06	0720	Stoney Creek						1	1	1	1	1	
5/15/06	0735	New River Trail						1	1	1	1	1	

TEMP.: 0.8

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RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS W Hodgins	5/15/06	8:30						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
Rusty Hubbard	5-15-06	0830	YES ◯ NO ◯		680-14618	

STL8240-680 (12/02)

ANALYTICAL REPORT

Job Number: 680-14589-1

Job Description: Town of Blufton-Stormwater Sampling

For:
Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
03/22/2006

Project Manager: Bernard Kirkland

METHOD SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-14589-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-14589-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-14589-1	Bluffton Village	Water	03/14/2006 1600	03/14/2006 1730
680-14589-2	Heywood Street	Water	03/14/2006 1610	03/14/2006 1730
680-14589-3	Rose Dhu Creek	Water	03/14/2006 1625	03/14/2006 1730
680-14589-4	Stoney Creek	Water	03/14/2006 1640	03/14/2006 1730

General Chemistry

Client Sample ID: Bluffton Village

Lab Sample ID: 680-14589-1 Date Sampled: 03/14/2006 1600
Client Matrix: Water Date Received: 03/14/2006 1730

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.085		mg/L	0.030	1.0	350.1
	Anly Batch: 680-39531	Date Analyzed	03/21/2006 1458			
Nitrogen, Kjeldahl	0.40		mg/L	0.20	1.0	351.2
	Anly Batch: 680-39246	Date Analyzed	03/17/2006 1228			
	Prep Batch: 680-39035	Date Prepared:	03/15/2006 1130			
Nitrogen, Nitrate	0.14		mg/L	0.050	1.0	353.2
	Anly Batch: 680-39107	Date Analyzed	03/15/2006 0119			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39127	Date Analyzed	03/15/2006 2240			
Phosphorus	0.14		mg/L	0.10	1.0	365.4
	Anly Batch: 680-39247	Date Analyzed	03/17/2006 1412			
	Prep Batch: 680-39038	Date Prepared:	03/15/2006 1130			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	6.7	B	NTU	0.10	1.0	180.1
	Anly Batch: 680-39141	Date Analyzed	03/15/2006 1400			
Coliform, Fecal	40		CFU/100mL	10	10	9222D
	Anly Batch: 680-38875	Date Analyzed	03/14/2006 1816			

General Chemistry

Client Sample ID: Heywood Street

Lab Sample ID: 680-14589-2
Client Matrix: Water

Date Sampled: 03/14/2006 1610
Date Received: 03/14/2006 1730

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.042		mg/L	0.030	1.0	350.1
	Anly Batch: 680-39531	Date Analyzed	03/21/2006 1506			
Nitrogen, Kjeldahl	0.70		mg/L	0.20	1.0	351.2
	Anly Batch: 680-39246	Date Analyzed	03/17/2006 1235			
	Prep Batch: 680-39035	Date Prepared:	03/15/2006 1130			
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39107	Date Analyzed	03/15/2006 0119			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39127	Date Analyzed	03/15/2006 2240			
Phosphorus	0.19		mg/L	0.10	1.0	365.4
	Anly Batch: 680-39247	Date Analyzed	03/17/2006 1412			
	Prep Batch: 680-39038	Date Prepared:	03/15/2006 1130			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	11	B	NTU	0.10	1.0	180.1
	Anly Batch: 680-39141	Date Analyzed	03/15/2006 1400			
Coliform, Fecal	30		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-38875	Date Analyzed	03/14/2006 1816			

General Chemistry

Client Sample ID: **Rose Dhu Creek**

Lab Sample ID: 680-14589-3 Date Sampled: 03/14/2006 1625
Client Matrix: Water Date Received: 03/14/2006 1730

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.066		mg/L	0.030	1.0	350.1
	Anly Batch: 680-39531	Date Analyzed	03/21/2006 1506			
Nitrogen, Kjeldahl	0.86		mg/L	0.20	1.0	351.2
	Anly Batch: 680-39246	Date Analyzed	03/17/2006 1235			
	Prep Batch: 680-39035	Date Prepared:	03/15/2006 1130			
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39107	Date Analyzed	03/15/2006 0119			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39127	Date Analyzed	03/15/2006 2240			
Phosphorus	0.17		mg/L	0.10	1.0	365.4
	Anly Batch: 680-39247	Date Analyzed	03/17/2006 1422			
	Prep Batch: 680-39038	Date Prepared:	03/15/2006 1130			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	18	B	NTU	0.10	1.0	180.1
	Anly Batch: 680-39141	Date Analyzed	03/15/2006 1400			
Coliform, Fecal	560		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-38875	Date Analyzed	03/14/2006 1816			

General Chemistry

Client Sample ID: Stoney Creek

Lab Sample ID: 680-14589-4 Date Sampled: 03/14/2006 1640
Client Matrix: Water Date Received: 03/14/2006 1730

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.21		mg/L	0.030	1.0	350.1
	Anly Batch: 680-39531	Date Analyzed	03/21/2006 1506			
Nitrogen, Kjeldahl	1.3		mg/L	0.20	1.0	351.2
	Anly Batch: 680-39246	Date Analyzed	03/17/2006 1235			
	Prep Batch: 680-39035	Date Prepared:	03/15/2006 1130			
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39107	Date Analyzed	03/15/2006 0119			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-39127	Date Analyzed	03/15/2006 2240			
Phosphorus	0.30		mg/L	0.10	1.0	365.4
	Anly Batch: 680-39247	Date Analyzed	03/17/2006 1422			
	Prep Batch: 680-39038	Date Prepared:	03/15/2006 1130			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	130	B	NTU	0.10	1.0	180.1
	Anly Batch: 680-39141	Date Analyzed	03/15/2006 1400			
Coliform, Fecal	1200		CFU/100mL	50	50	9222D
	Anly Batch: 680-38875	Date Analyzed	03/14/2006 1816			

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-14589-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.
	B	Compound was found in the blank and sample.

Client: Hodgins Engineering Consulting

Job Number: 680-14589-1

Method Blank - Batch: 680-39141

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-39141/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 1400
Date Prepared: N/A

Analysis Batch: 680-39141
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.11		0.10

Analyte	Spike Amount	Result	% Rec.	Limit	Qual

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-14589-1

Method Blank - Batch: 680-39531

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-39531/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/21/2006 1458
Date Prepared: N/A

Analysis Batch: 680-39531
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-39531

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-39531/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/21/2006 1458
Date Prepared: N/A

Analysis Batch: 680-39531
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-39531/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/21/2006 1458
Date Prepared: N/A

Analysis Batch: 680-39531
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	95	94	90 - 110	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-14589-1

Method Blank - Batch: 680-39035

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-39035/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/17/2006 1249
Date Prepared: 03/15/2006 1130

Analysis Batch: 680-39246
Prep Batch: 680-39035
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-39035

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-39035/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/17/2006 1249
Date Prepared: 03/15/2006 1130

Analysis Batch: 680-39246
Prep Batch: 680-39035
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.1	106	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-14589-1

Method Blank - Batch: 680-39107

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-39107/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/16/2006 0119
Date Prepared: N/A

Analysis Batch: 680-39107
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-39107

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-39107/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/16/2006 0119
Date Prepared: N/A

Analysis Batch: 680-39107
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	0.93	93	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-39107

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-14589-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 0119
Date Prepared: N/A

Analysis Batch: 680-39107
Prep Batch: N/A

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-14589-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 0119
Date Prepared: N/A

Analysis Batch: 680-39107
Prep Batch: N/A

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	101	100	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-14589-1

Method Blank - Batch: 680-39127

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-39127/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 2240
Date Prepared: N/A

Analysis Batch: 680-39127
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-39127

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-39127/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 2240
Date Prepared: N/A

Analysis Batch: 680-39127
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	101	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-39127

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-14589-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 2240
Date Prepared: N/A

Analysis Batch: 680-39127
Prep Batch: N/A

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-14589-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 2240
Date Prepared: N/A

Analysis Batch: 680-39127
Prep Batch: N/A

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite	106	107	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-14589-1

Method Blank - Batch: 680-39038

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-39037/1-B
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/17/2006 1422
Date Prepared: 03/15/2006 1130

Analysis Batch: 680-39247
Prep Batch: 680-39038
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Method Blank - Batch: 680-39038

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-39038/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/17/2006 1402
Date Prepared: 03/15/2006 1130

Analysis Batch: 680-39247
Prep Batch: 680-39038
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-39038

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-39038/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/17/2006 1402
Date Prepared: 03/15/2006 1130

Analysis Batch: 680-39247
Prep Batch: 680-39038
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	111	60 - 140	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-14589-1

Method Blank - Batch: 680-38875

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-38875/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 1816
Date Prepared: N/A

Analysis Batch: 680-38875
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 75141

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT STL®

○ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		
STL (LAB) PROJECT MANAGER: B. Kirkland	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: W. Hodgins	CLIENT PHONE: 843-757-1952	CLIENT FAX: 757-5234
CLIENT NAME: Hodgins Engineering	CLIENT E-MAIL: billh@waterpermits.com	
CLIENT ADDRESS: 84 Bridle Ct Bluffton SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT,...)	REQUIRED ANALYSIS: NO2/NO3	REQUIRED ANALYSIS: NO2/NO3	REQUIRED ANALYSIS: TKN/T. Phos	REQUIRED ANALYSIS: Turbidity	REQUIRED ANALYSIS: NH3/ Fecal Coliform	NUMBER OF CONTAINERS SUBMITTED	REMARKS
								Y	N	Y	N	N	PRESERVATIVE	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
3/14/06	1600	Bluffton Village						1	1	1	1	1		
3/14/06	1610	Heyward Street						1	1	1	1	1		
3/14/06	1625	Rose Dhu Creek						1	1	1	1	1		
3/14/06	1640	Stoney Creek						1	1	1	1	1		
3/14/06	11	New River Trail												

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TEMP.: 1.0

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
William Hodgins	3/14/06	1730						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
K C	3/14/06	1730	YES ○ NO ○		680-14589	

STL8240-680 (12/02)

ANALYTICAL REPORT

Job Number: 680-13205-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
02/16/2006

METHOD SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-13205-1	Bluffton Village	Water	02/03/2006 0745	02/03/2006 1056
680-13205-2	Heyward Street	Water	02/03/2006 0800	02/03/2006 1056
680-13205-3	Rose Dhu Creek	Water	02/03/2006 0830	02/03/2006 1056
680-13205-4	Stoney Creek	Water	02/03/2006 0850	02/03/2006 1056
680-13205-5	New River Trail	Water	02/03/2006 0920	02/03/2006 1056

General Chemistry

Client Sample ID: Bluffton Village

Lab Sample ID: 680-13205-1 Date Sampled: 02/03/2006 0745
Client Matrix: Water Date Received: 02/03/2006 1056

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.16		mg/L	0.030	1.0	350.1
	Anly Batch: 680-36146	Date Analyzed 02/10/2006 1038				
Nitrogen, Kjeldahl	0.36		mg/L	0.20	1.0	351.2
	Anly Batch: 680-36575	Date Analyzed 02/15/2006 1321				
	Prep Batch: 680-36539	Date Prepared: 02/14/2006 1500				
Nitrogen, Nitrate	0.12		mg/L	0.050	1.0	353.2
	Anly Batch: 680-35625	Date Analyzed 02/03/2006 1235				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35642	Date Analyzed 02/03/2006 1156				
Phosphorus	0.14		mg/L	0.10	1.0	365.4
	Anly Batch: 680-36578	Date Analyzed 02/15/2006 1648				
	Prep Batch: 680-36538	Date Prepared: 02/14/2006 1500				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	11		NTU	0.10	1.0	180.1
	Anly Batch: 680-35485	Date Analyzed 02/03/2006 1115				
Coliform, Fecal	890		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-35362	Date Analyzed 02/03/2006 1136				

Client Sample ID: Heyward Street

Lab Sample ID: 680-13205-2 Date Sampled: 02/03/2006 0800
Client Matrix: Water Date Received: 02/03/2006 1056

General Chemistry

Client Sample ID: Heyward Street

Lab Sample ID: 680-13205-2 Date Sampled: 02/03/2006 0800
Client Matrix: Water Date Received: 02/03/2006 1056

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.17		mg/L	0.030	1.0	350.1
	Anly Batch: 680-36146		Date Analyzed 02/10/2006 1038			
Nitrogen, Kjeldahl	1.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-36575		Date Analyzed 02/15/2006 1331			
	Prep Batch: 680-36539		Date Prepared: 02/14/2006 1500			
Nitrogen, Nitrate	0.13		mg/L	0.050	1.0	353.2
	Anly Batch: 680-35625		Date Analyzed 02/03/2006 1235			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35642		Date Analyzed 02/03/2006 1156			
Phosphorus	0.50		mg/L	0.10	1.0	365.4
	Anly Batch: 680-36578		Date Analyzed 02/15/2006 1648			
	Prep Batch: 680-36538		Date Prepared: 02/14/2006 1500			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	130		NTU	0.10	1.0	180.1
	Anly Batch: 680-35485		Date Analyzed 02/03/2006 1115			
Coliform, Fecal	550		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-35362		Date Analyzed 02/03/2006 1136			

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-13205-3 Date Sampled: 02/03/2006 0830
Client Matrix: Water Date Received: 02/03/2006 1056

General Chemistry

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-13205-3 Date Sampled: 02/03/2006 0830
Client Matrix: Water Date Received: 02/03/2006 1056

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-36146		Date Analyzed 02/10/2006 1038			
Nitrogen, Kjeldahl	0.97		mg/L	0.20	1.0	351.2
	Anly Batch: 680-36575		Date Analyzed 02/15/2006 1331			
	Prep Batch: 680-36539		Date Prepared: 02/14/2006 1500			
Nitrogen, Nitrate	0.24		mg/L	0.050	1.0	353.2
	Anly Batch: 680-35625		Date Analyzed 02/03/2006 1235			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35642		Date Analyzed 02/03/2006 1156			
Phosphorus	0.21		mg/L	0.10	1.0	365.4
	Anly Batch: 680-36578		Date Analyzed 02/15/2006 1648			
	Prep Batch: 680-36538		Date Prepared: 02/14/2006 1500			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	40		NTU	0.10	1.0	180.1
	Anly Batch: 680-35485		Date Analyzed 02/03/2006 1115			
Coliform, Fecal	300		CFU/100mL	50	50	9222D
	Anly Batch: 680-35362		Date Analyzed 02/03/2006 1136			

Client Sample ID: Stoney Creek

Lab Sample ID: 680-13205-4 Date Sampled: 02/03/2006 0850
Client Matrix: Water Date Received: 02/03/2006 1056

General Chemistry

Client Sample ID: Stoney Creek

Lab Sample ID: 680-13205-4 Date Sampled: 02/03/2006 0850
Client Matrix: Water Date Received: 02/03/2006 1056

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-36146	Date Analyzed 02/10/2006 1038				
Nitrogen, Kjeldahl	0.94		mg/L	0.20	1.0	351.2
	Anly Batch: 680-36575	Date Analyzed 02/15/2006 1331				
	Prep Batch: 680-36539	Date Prepared: 02/14/2006 1500				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35625	Date Analyzed 02/03/2006 1235				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35642	Date Analyzed 02/03/2006 1156				
Phosphorus	0.24		mg/L	0.10	1.0	365.4
	Anly Batch: 680-36578	Date Analyzed 02/15/2006 1648				
	Prep Batch: 680-36538	Date Prepared: 02/14/2006 1500				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	69		NTU	0.10	1.0	180.1
	Anly Batch: 680-35485	Date Analyzed 02/03/2006 1115				
Coliform, Fecal	3200		CFU/100mL	50	50	9222D
	Anly Batch: 680-35362	Date Analyzed 02/03/2006 1136				

Client Sample ID: New River Trail

Lab Sample ID: 680-13205-5 Date Sampled: 02/03/2006 0920
Client Matrix: Water Date Received: 02/03/2006 1056

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-13205-5
Client Matrix: Water

Date Sampled: 02/03/2006 0920
Date Received: 02/03/2006 1056

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.15		mg/L	0.030	1.0	350.1
	Anly Batch: 680-36146	Date Analyzed 02/10/2006 1038				
Nitrogen, Kjeldahl	0.84		mg/L	0.20	1.0	351.2
	Anly Batch: 680-36575	Date Analyzed 02/15/2006 1331				
	Prep Batch: 680-36539	Date Prepared: 02/14/2006 1500				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35625	Date Analyzed 02/03/2006 1235				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-35642	Date Analyzed 02/03/2006 1156				
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-36578	Date Analyzed 02/15/2006 1648				
	Prep Batch: 680-36538	Date Prepared: 02/14/2006 1500				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	15		NTU	0.10	1.0	180.1
	Anly Batch: 680-35485	Date Analyzed 02/03/2006 1115				
Coliform, Fecal	780		CFU/100mL	2.0	2.0	9222D
	Anly Batch: 680-35362	Date Analyzed 02/03/2006 1136				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

Client: Hodgins Engineering Consulting

Job Number: 680-13205-1

Method Blank - Batch: 680-35485

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-35485/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1115
Date Prepared: N/A

Analysis Batch: 680-35485
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Analyte	Spike Amount	Result	% Rec.	Limit	Qual

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-13205-1

Method Blank - Batch: 680-36146

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-36146/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/10/2006 0908
Date Prepared: N/A

Analysis Batch: 680-36146
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-36146

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-36146/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/10/2006 0908
Date Prepared: N/A

Analysis Batch: 680-36146
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-36146/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/10/2006 0908
Date Prepared: N/A

Analysis Batch: 680-36146
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	92	92	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Method Blank - Batch: 680-36539

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-36539/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1321
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36575
Prep Batch: 680-36539
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-36539

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-36539/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1321
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36575
Prep Batch: 680-36539
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	0.98	98	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-36539

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-13205-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1331
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36575
Prep Batch: 680-36539

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-13205-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1331
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36575
Prep Batch: 680-36539

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	53	60	75 - 125	10	40	*	*

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Method Blank - Batch: 680-35625

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-35625/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1111
Date Prepared: N/A

Analysis Batch: 680-35625
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-35625

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-35625/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1037
Date Prepared: N/A

Analysis Batch: 680-35625
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	0.99	99	80 - 120	

Matrix Duplicate - Batch: 680-35625

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-13205-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1322
Date Prepared: N/A

Analysis Batch: 680-35625
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Nitrate	0.12	0.13	1	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Method Blank - Batch: 680-35642

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-35642/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1015
Date Prepared: N/A

Analysis Batch: 680-35642
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-35642

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-35642/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1015
Date Prepared: N/A

Analysis Batch: 680-35642
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	102	80 - 120	

Matrix Duplicate - Batch: 680-35642

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-13205-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1156
Date Prepared: N/A

Analysis Batch: 680-35642
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrogen, Nitrite	0.050	U	0.050	NC	30	U

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-13205-1

Method Blank - Batch: 680-36538

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-36538/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1638
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36578
Prep Batch: 680-36538
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-36538

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-36538/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1638
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36578
Prep Batch: 680-36538
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	112	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-36538

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-13205-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1648
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36578
Prep Batch: 680-36538

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-13205-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/15/2006 1648
Date Prepared: 02/14/2006 1500

Analysis Batch: 680-36578
Prep Batch: 680-36538

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	113	118	60 - 140	4	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-13205-1

Method Blank - Batch: 680-35362

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-35362/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/03/2006 1136
Date Prepared: N/A

Analysis Batch: 680-35362
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-35362

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-13205-5
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 02/03/2006 1136
Date Prepared: N/A

Analysis Batch: 680-35362
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal	780	670	16	200	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 75135

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT STL®

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		SC
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
B. Kirkland		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Bill Hodgins	843-757-1952	757-5234
CLIENT NAME	CLIENT E-MAIL	
Hodgins Engineering	billh@waterpermits.com	
CLIENT ADDRESS		
84 Bridle Ct Bluffton SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT,...))

REQUIRED ANALYSIS: NO_2/NO_3; NO_2/NO_3; NH_3; T. Phos / TKN; Turbidity; Fecal Coliform; Fecal Coliform

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,...)	NO_2/NO_3	NO_2/NO_3	NH_3	T. Phos / TKN	Turbidity	Fecal Coliform	Fecal Coliform	REMARKS
		NUMBER OF CONTAINERS SUBMITTED													
2/3/06	0745	Bluffton Village		X				1	1	1	1	1	2		
2/3/06	0800	Heyward Street		X				1	1	1	1	1	2		
2/3/06	0830	Rose Dhu Creek		X				1	1	1	1	1	2		
2/3/06	0850	Stoney Creek		X				1	1	1	1	1	2		
2/3/06	0910	New River Trail		X				1	1	1	1	1	2		

Page 17 of 17

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
William Hodgins	2/3/06	10:30						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

EMPTY CONTAINERS

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
Lisa Wilson	2/3/06	10:30	YES ◯ NO ◯		680-13705	

STL8240-680 (12/02)

FEB 0 6 2006

ANALYTICAL REPORT

Job Number: 680-12859-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Kathryn Smith

for Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
02/06/2006

Severn Trent Laboratories, Inc.
STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel 912-354-7858 Fax 912-351-3673 www.stl-inc.com

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-12859-1	Bluffton Village	Water	01/24/2006 0800	01/24/2006 1043
680-12859-2	Heyward Street	Water	01/24/2006 0820	01/24/2006 1043
680-12859-3	Rose Dhu Creek	Water	01/24/2006 0900	01/24/2006 1043
680-12859-4	Stoney Creek	Water	01/24/2006 0920	01/24/2006 1043
680-12859-5	New River Trail	Water	01/24/2006 0945	01/24/2006 1043

General Chemistry

Client Sample ID: Bluffton Village

Lab Sample ID: 680-12859-1
Client Matrix: Water

Date Sampled: 01/24/2006 0800
Date Received: 01/24/2006 1043

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.036		mg/L	0.030	1.0	350.1
	Anly Batch: 680-34915	Date Analyzed 01/30/2006 1323				
Nitrogen, Kjeldahl	0.39		mg/L	0.20	1.0	351.2
	Anly Batch: 680-35184	Date Analyzed 02/01/2006 1451				
	Prep Batch: 680-34953	Date Prepared: 01/30/2006 1000				
Nitrogen, Nitrate	0.060		mg/L	0.050	1.0	353.2
	Anly Batch: 680-34598	Date Analyzed 01/24/2006 1214				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34620	Date Analyzed 01/24/2006 1513				
Phosphorus	0.11		mg/L	0.10	1.0	365.4
	Anly Batch: 680-35181	Date Analyzed 02/01/2006 1320				
	Prep Batch: 680-34951	Date Prepared: 01/30/2006 1000				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	4.2		NTU	0.10	1.0	180.1
	Anly Batch: 680-34706	Date Analyzed 01/27/2006 0910				
Coliform, Fecal	390		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-34381	Date Analyzed 01/24/2006 1129				

Client Sample ID: Heyward Street

Lab Sample ID: 680-12859-2
Client Matrix: Water

Date Sampled: 01/24/2006 0820
Date Received: 01/24/2006 1043

General Chemistry

Client Sample ID: Heyward Street

Lab Sample ID: 680-12859-2
Client Matrix: Water

Date Sampled: 01/24/2006 0820
Date Received: 01/24/2006 1043

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.064		mg/L	0.030	1.0	350.1
	Anly Batch: 680-34915	Date Analyzed 01/30/2006 1252				
Nitrogen, Kjeldahl	1.1		mg/L	0.20	1.0	351.2
	Anly Batch: 680-35184	Date Analyzed 02/01/2006 1451				
	Prep Batch: 680-34953	Date Prepared: 01/30/2006 1000				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34598	Date Analyzed 01/24/2006 1214				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34620	Date Analyzed 01/24/2006 1513				
Phosphorus	0.63		mg/L	0.10	1.0	365.4
	Anly Batch: 680-35181	Date Analyzed 02/01/2006 1349				
	Prep Batch: 680-34951	Date Prepared: 01/30/2006 1000				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	92		NTU	0.10	1.0	180.1
	Anly Batch: 680-34706	Date Analyzed 01/27/2006 0910				
Coliform, Fecal	490		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-34381	Date Analyzed 01/24/2006 1129				

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-12859-3
Client Matrix: Water

Date Sampled: 01/24/2006 0900
Date Received: 01/24/2006 1043

General Chemistry

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-12859-3
Client Matrix: Water

Date Sampled: 01/24/2006 0900
Date Received: 01/24/2006 1043

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-34915	Date Analyzed 01/30/2006 1252				
Nitrogen, Kjeldahl	2.0		mg/L	0.20	1.0	351.2
	Anly Batch: 680-35184	Date Analyzed 02/01/2006 1451				
	Prep Batch: 680-34953	Date Prepared: 01/30/2006 1000				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34598	Date Analyzed 01/24/2006 1214				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34620	Date Analyzed 01/24/2006 1513				
Phosphorus	0.20		mg/L	0.10	1.0	365.4
	Anly Batch: 680-35181	Date Analyzed 02/01/2006 1330				
	Prep Batch: 680-34951	Date Prepared: 01/30/2006 1000				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	19		NTU	0.10	1.0	180.1
	Anly Batch: 680-34706	Date Analyzed 01/27/2006 0910				
Coliform, Fecal	1300		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-34381	Date Analyzed 01/24/2006 1129				

Client Sample ID: Stoney Creek

Lab Sample ID: 680-12859-4
Client Matrix: Water

Date Sampled: 01/24/2006 0920
Date Received: 01/24/2006 1043

General Chemistry

Client Sample ID: Stoney Creek

Lab Sample ID: 680-12859-4
Client Matrix: Water

Date Sampled: 01/24/2006 0920
Date Received: 01/24/2006 1043

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-34915	Date Analyzed 01/30/2006 1300				
Nitrogen, Kjeldahl	0.82		mg/L	0.20	1.0	351.2
	Anly Batch: 680-35184	Date Analyzed 02/01/2006 1451				
	Prep Batch: 680-34953	Date Prepared: 01/30/2006 1000				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34598	Date Analyzed 01/24/2006 1214				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34620	Date Analyzed 01/24/2006 1513				
Phosphorus	0.13		mg/L	0.10	1.0	365.4
	Anly Batch: 680-35181	Date Analyzed 02/01/2006 1330				
	Prep Batch: 680-34951	Date Prepared: 01/30/2006 1000				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	19		NTU	0.10	1.0	180.1
	Anly Batch: 680-34706	Date Analyzed 01/27/2006 0910				
Coliform, Fecal	2000		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-34381	Date Analyzed 01/24/2006 1129				

Client Sample ID: New River Trail

Lab Sample ID: 680-12859-5
Client Matrix: Water

Date Sampled: 01/24/2006 0945
Date Received: 01/24/2006 1043

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-12859-5
Client Matrix: Water

Date Sampled: 01/24/2006 0945
Date Received: 01/24/2006 1043

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.044		mg/L	0.030	1.0	350.1
	Anly Batch: 680-34915	Date Analyzed 01/30/2006 1300				
Nitrogen, Kjeldahl	0.81		mg/L	0.20	1.0	351.2
	Anly Batch: 680-35184	Date Analyzed 02/01/2006 1451				
	Prep Batch: 680-34953	Date Prepared: 01/30/2006 1000				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34598	Date Analyzed 01/24/2006 1214				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-34620	Date Analyzed 01/24/2006 1513				
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-35181	Date Analyzed 02/01/2006 1330				
	Prep Batch: 680-34951	Date Prepared: 01/30/2006 1000				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	5.5		NTU	0.10	1.0	180.1
	Anly Batch: 680-34706	Date Analyzed 01/27/2006 0910				
Coliform, Fecal	250		CFU/100mL	2.0	2.0	9222D
	Anly Batch: 680-34381	Date Analyzed 01/24/2006 1129				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34706

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-34706/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/27/2006 0910
Date Prepared: N/A

Analysis Batch: 680-34706
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Analyte	Spike Amount	Result	% Rec.	Limit	Qual

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34915

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-34915/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/30/2006 1252
Date Prepared: N/A

Analysis Batch: 680-34915
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-34915

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-34915/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/30/2006 1252
Date Prepared: N/A

Analysis Batch: 680-34915
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-34915/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/30/2006 1252
Date Prepared: N/A

Analysis Batch: 680-34915
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	100	101	90 - 110	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-34915

Method: 350.1
Preparation: N/A

MS Lab Sample ID:	680-12859-1	Analysis Batch: 680-34915	Instrument ID: KoneLab1
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 10 mL
Date Analyzed:	01/30/2006 1323		Final Weight/Volume: 10 mL
Date Prepared:	N/A		

MSD Lab Sample ID:	680-12859-1	Analysis Batch: 680-34915	Instrument ID: KoneLab1
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 10 mL
Date Analyzed:	01/30/2006 1323		Final Weight/Volume: 10 mL
Date Prepared:	N/A		

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia	96	96	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34953

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-34953/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1441
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35184
Prep Batch: 680-34953
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-34953

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-34953/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1441
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35184
Prep Batch: 680-34953
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.0	102	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-34953

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-12859-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1800
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35184
Prep Batch: 680-34953

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-12859-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1800
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35184
Prep Batch: 680-34953

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	105	96	75 - 125	6	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34598

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-34598/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/25/2006 1150
Date Prepared: N/A

Analysis Batch: 680-34598
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-34598

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-34598/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/25/2006 1150
Date Prepared: N/A

Analysis Batch: 680-34598
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	0.96	96	80 - 120	

Matrix Duplicate - Batch: 680-34598

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-12859-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1214
Date Prepared: N/A

Analysis Batch: 680-34598
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrogen, Nitrate	0.050	U	0.050	NC	30	U

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34620

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-34620/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1507
Date Prepared: N/A

Analysis Batch: 680-34620
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-34620

Method: 353.2
Preparation: N/A

LCS Lab Sample ID: LCS 680-34620/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1507
Date Prepared: N/A

Analysis Batch: 680-34620
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 680-34620/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1507
Date Prepared: N/A

Analysis Batch: 680-34620
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. LCS	% Rec. LCSD	% Rec. Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrogen, Nitrite	103	104	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Matrix Duplicate - Batch: 680-34620

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-12859-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1513
Date Prepared: N/A

Analysis Batch: 680-34620
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrogen, Nitrite	0.050	U	0.050	NC	30	U

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34951

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-34951/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1319
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35181
Prep Batch: 680-34951
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-34951

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-34951/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1319
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35181
Prep Batch: 680-34951
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	108	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-34951

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-12859-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1741
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35181
Prep Batch: 680-34951

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-12859-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 02/01/2006 1741
Date Prepared: 01/30/2006 1000

Analysis Batch: 680-35181
Prep Batch: 680-34951

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	106	108	60 - 140	1	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34381

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-34381/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1129
Date Prepared: N/A

Analysis Batch: 680-34381
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-34381

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-12859-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/24/2006 1129
Date Prepared: N/A

Analysis Batch: 680-34381
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal		>200			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 75140

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT STL®

○ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Bernard Kirkland		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
	843-757-1952	757-5234
CLIENT NAME	CLIENT E-MAIL	
Hodgins Engineering	billh@waterpermits.com	
CLIENT ADDRESS		
84 Bridle Ct Bluffton SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,...)	REQUIRED ANALYSIS: NO_2/NO_3	NO_2/NO_3	NH_3	TKN/Total Phos	Turbidity	Fecal Coliform	NUMBER OF CONTAINERS SUBMITTED	REMARKS
								N	Y	Y	Y	N	Y	PRESERVATIVE	
1/24/06	0800	Bluffton Village						1	1	1	1	1	2		
1/24/06	0820	Heyward Street						1	1	1	1	1	2		
1/24/06	0900	Rose Dhu Creek						1	1	1	1	1	2		
1/24/06	0920	Stoney Creek						1	1	1	1	1	2		
1/24/06	0945	New River Trail						1	1	1	1	1	2		

TEMP: 1.2

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
William Hodgins	1/24/06	1043						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
L. Hughes	1/24/06	10:43	YES ○ NO ○		680-12859	

STL8240-680 (12/02)

ANALYTICAL REPORT

Job Number: 680-12220-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
01/13/2006

METHOD SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-12220-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-12220-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-12220-1	Bluffton Village	Water	01/03/2006 0835	01/03/2006 1040
680-12220-2	Heyward Street	Water	01/03/2006 0850	01/03/2006 1040
680-12220-3	Rose Dhu Creek	Water	01/03/2006 0915	01/03/2006 1040
680-12220-4	Stoney Creek	Water	01/03/2006 0930	01/03/2006 1040
680-12220-5	New River Trail	Water	01/03/2006 0930	01/03/2006 1040

General Chemistry

Client Sample ID: Bluffton Village

Lab Sample ID: 680-12220-1 Date Sampled: 01/03/2006 0835
Client Matrix: Water Date Received: 01/03/2006 1040

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.057		mg/L	0.030	1.0	350.1
	Anly Batch: 680-32824	Date Analyzed 01/04/2006 1047				
Nitrogen, Kjeldahl	0.57		mg/L	0.20	1.0	351.2
	Anly Batch: 680-33467	Date Analyzed 01/11/2006 1656				
	Prep Batch: 680-33015	Date Prepared: 01/06/2006 1005				
Nitrogen, Nitrate	0.13		mg/L	0.050	1.0	353.2
	Anly Batch: 680-32925	Date Analyzed 01/03/2006 2029				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32976	Date Analyzed 01/03/2006 1711				
Phosphorus	0.10		mg/L	0.10	1.0	365.4
	Anly Batch: 680-33322	Date Analyzed 01/09/2006 2043				
	Prep Batch: 680-33014	Date Prepared: 01/06/2006 1005				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	3.7		NTU	0.10	1.0	180.1
	Anly Batch: 680-33025	Date Analyzed 01/04/2006 1700				
Coliform, Fecal	17		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-32688	Date Analyzed 01/03/2006 1137				

Client Sample ID: Heyward Street

Lab Sample ID: 680-12220-2 Date Sampled: 01/03/2006 0850
Client Matrix: Water Date Received: 01/03/2006 1040

General Chemistry

Client Sample ID: Heyward Street

Lab Sample ID: 680-12220-2 Date Sampled: 01/03/2006 0850
Client Matrix: Water Date Received: 01/03/2006 1040

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.13		mg/L	0.030	1.0	350.1
	Anly Batch: 680-32824	Date Analyzed 01/04/2006 1047				
Nitrogen, Kjeldahl	3.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-33467	Date Analyzed 01/11/2006 1656				
	Prep Batch: 680-33015	Date Prepared: 01/06/2006 1005				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32925	Date Analyzed 01/03/2006 2029				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32976	Date Analyzed 01/03/2006 1711				
Phosphorus	0.34		mg/L	0.10	1.0	365.4
	Anly Batch: 680-33322	Date Analyzed 01/09/2006 2043				
	Prep Batch: 680-33014	Date Prepared: 01/06/2006 1005				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	44		NTU	0.10	1.0	180.1
	Anly Batch: 680-33025	Date Analyzed 01/04/2006 1700				
Coliform, Fecal	83		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-32688	Date Analyzed 01/03/2006 1137				

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-12220-3 Date Sampled: 01/03/2006 0915
Client Matrix: Water Date Received: 01/03/2006 1040

General Chemistry

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-12220-3 Date Sampled: 01/03/2006 0915
Client Matrix: Water Date Received: 01/03/2006 1040

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.046		mg/L	0.030	1.0	350.1
	Anly Batch: 680-32824	Date Analyzed 01/04/2006 1047				
Nitrogen, Kjeldahl	0.84		mg/L	0.20	1.0	351.2
	Anly Batch: 680-33467	Date Analyzed 01/11/2006 1823				
	Prep Batch: 680-33015	Date Prepared: 01/06/2006 1005				
Nitrogen, Nitrate	0.061		mg/L	0.050	1.0	353.2
	Anly Batch: 680-32925	Date Analyzed 01/03/2006 2029				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32976	Date Analyzed 01/03/2006 1711				
Phosphorus	0.15		mg/L	0.10	1.0	365.4
	Anly Batch: 680-33322	Date Analyzed 01/09/2006 2043				
	Prep Batch: 680-33014	Date Prepared: 01/06/2006 1005				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	15		NTU	0.10	1.0	180.1
	Anly Batch: 680-33025	Date Analyzed 01/04/2006 1700				
Coliform, Fecal	400		CFU/100mL	10	10	9222D
	Anly Batch: 680-32688	Date Analyzed 01/03/2006 1137				

Client Sample ID: Stoney Creek

Lab Sample ID: 680-12220-4 Date Sampled: 01/03/2006 0930
Client Matrix: Water Date Received: 01/03/2006 1040

General Chemistry

Client Sample ID: Stoney Creek

Lab Sample ID: 680-12220-4 Date Sampled: 01/03/2006 0930
Client Matrix: Water Date Received: 01/03/2006 1040

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-32824	Date Analyzed 01/04/2006 1047				
Nitrogen, Kjeldahl	1.1		mg/L	0.20	1.0	351.2
	Anly Batch: 680-33467	Date Analyzed 01/11/2006 1814				
	Prep Batch: 680-33015	Date Prepared: 01/06/2006 1005				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32925	Date Analyzed 01/03/2006 2030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32976	Date Analyzed 01/03/2006 1711				
Phosphorus	0.13		mg/L	0.10	1.0	365.4
	Anly Batch: 680-33322	Date Analyzed 01/09/2006 2053				
	Prep Batch: 680-33014	Date Prepared: 01/06/2006 1005				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	22		NTU	0.10	1.0	180.1
	Anly Batch: 680-33025	Date Analyzed 01/04/2006 1700				
Coliform, Fecal	500		CFU/100mL	10	10	9222D
	Anly Batch: 680-32688	Date Analyzed 01/03/2006 1137				

Client Sample ID: New River Trail

Lab Sample ID: 680-12220-5 Date Sampled: 01/03/2006 0930
Client Matrix: Water Date Received: 01/03/2006 1040

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-12220-5
Client Matrix: Water

Date Sampled: 01/03/2006 0930
Date Received: 01/03/2006 1040

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.035		mg/L	0.030	1.0	350.1
	Anly Batch: 680-32824	Date Analyzed 01/04/2006 1047				
Nitrogen, Kjeldahl	0.82		mg/L	0.20	1.0	351.2
	Anly Batch: 680-33467	Date Analyzed 01/11/2006 1814				
	Prep Batch: 680-33015	Date Prepared: 01/06/2006 1005				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32925	Date Analyzed 01/03/2006 2030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-32976	Date Analyzed 01/03/2006 1711				
Phosphorus	0.20		mg/L	0.10	1.0	365.4
	Anly Batch: 680-33322	Date Analyzed 01/09/2006 2053				
	Prep Batch: 680-33014	Date Prepared: 01/06/2006 1005				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	6.8		NTU	0.10	1.0	180.1
	Anly Batch: 680-33025	Date Analyzed 01/04/2006 1700				
Coliform, Fecal	150		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-32688	Date Analyzed 01/03/2006 1137				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-12220-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Method Blank - Batch: 680-33025

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-33025/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/04/2006 1700
Date Prepared: N/A

Analysis Batch: 680-33025
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Analyte	Spike Amount	Result	% Rec.	Limit	Qual

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Method Blank - Batch: 680-32824

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-32824/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/04/2006 1038
Date Prepared: N/A

Analysis Batch: 680-32824
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-32824

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-32824/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/04/2006 1038
Date Prepared: N/A

Analysis Batch: 680-32824
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-32824/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/04/2006 1038
Date Prepared: N/A

Analysis Batch: 680-32824
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	98	98	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Method Blank - Batch: 680-33015

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-33015/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/11/2006 1814
Date Prepared: 01/06/2006 1005

Analysis Batch: 680-33467
Prep Batch: 680-33015
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-33015

Method: 351.2
Preparation: 351.2

LCS Lab Sample ID: LCS 680-33015/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/11/2006 1814
Date Prepared: 01/06/2006 1005

Analysis Batch: 680-33467
Prep Batch: 680-33015
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

LCSD Lab Sample ID: LCSD 680-33015/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/11/2006 1814
Date Prepared: 01/06/2006 1005

Analysis Batch: 680-33467
Prep Batch: 680-33015
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrogen, Kjeldahl	109	105	75 - 125	4	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-33015

Method: 351.2
Preparation: 351.2

MS Lab Sample ID:	680-12220-3	Analysis Batch:	680-33467	Instrument ID:	KoneLab2
Client Matrix:	Water	Prep Batch:	680-33015	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	20 mL
Date Analyzed:	01/11/2006 1823			Final Weight/Volume:	20 mL
Date Prepared:	01/06/2006 1005				

MSD Lab Sample ID:	680-12220-3	Analysis Batch:	680-33467	Instrument ID:	KoneLab2
Client Matrix:	Water	Prep Batch:	680-33015	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	20 mL
Date Analyzed:	01/11/2006 1814			Final Weight/Volume:	20 mL
Date Prepared:	01/06/2006 1005				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	114	126	75 - 125	6	40		*

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-12220-1

Method Blank - Batch: 680-32925

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-32925/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/04/2006 2007
Date Prepared: N/A

Analysis Batch: 680-32925
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-32925

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-32925/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/04/2006 2007
Date Prepared: N/A

Analysis Batch: 680-32925
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	0.99	99	80 - 120	

Matrix Duplicate - Batch: 680-32925

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-12220-3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/03/2006 2029
Date Prepared: N/A

Analysis Batch: 680-32925
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Nitrate	0.061	0.060	2	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-12220-1

Method Blank - Batch: 680-32976

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-32976/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/03/2006 1711
Date Prepared: N/A

Analysis Batch: 680-32976
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-32976

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-32976/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/03/2006 1711
Date Prepared: N/A

Analysis Batch: 680-32976
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	104	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-32976

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-12220-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/03/2006 1711
Date Prepared: N/A

Analysis Batch: 680-32976
Prep Batch: N/A

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-12220-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/03/2006 1711
Date Prepared: N/A

Analysis Batch: 680-32976
Prep Batch: N/A

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite	111	111	80 - 120	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Method Blank - Batch: 680-33014

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-33014/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/09/2006 2031
Date Prepared: 01/06/2006 1005

Analysis Batch: 680-33322
Prep Batch: 680-33014
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-33014

Method: 365.4
Preparation: 365.2/365.3

LCS Lab Sample ID: LCS 680-33014/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/09/2006 2031
Date Prepared: 01/06/2006 1005

Analysis Batch: 680-33322
Prep Batch: 680-33014
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

LCSD Lab Sample ID: LCSD 680-33014/3-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/09/2006 2031
Date Prepared: 01/06/2006 1005

Analysis Batch: 680-33322
Prep Batch: 680-33014
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Phosphorus	111	111	60 - 140	0	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-33014

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID:	680-12220-3	Analysis Batch:	680-33322	Instrument ID:	KoneLab2
Client Matrix:	Water	Prep Batch:	680-33014	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	20 mL
Date Analyzed:	01/09/2006 2043			Final Weight/Volume:	20 mL
Date Prepared:	01/06/2006 1005				

MSD Lab Sample ID:	680-12220-3	Analysis Batch:	680-33322	Instrument ID:	KoneLab2
Client Matrix:	Water	Prep Batch:	680-33014	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	20 mL
Date Analyzed:	01/09/2006 2043			Final Weight/Volume:	20 mL
Date Prepared:	01/06/2006 1005				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	115	104	60 - 140	9	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-12220-1

Method Blank - Batch: 680-32688

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-32688/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/03/2006 1137
Date Prepared: N/A

Analysis Batch: 680-32688
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 75101

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT STL®

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
B. Kirkland		
CLIENT (SITE) PM	CLIENT PHONE 843	CLIENT FAX 843
Bill Hodgins	757-1952	757-5234
CLIENT NAME	CLIENT E-MAIL	
Hodgins Engineering	billh@waterpermits.com	
CLIENT ADDRESS		
84 Bridle Ct Bluffton, SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF

STANDARD REPORT DELIVERY ( )

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT,...)	REQUIRED ANALYSIS: Nitrate/NO2/NO3	Nitrate/NO2/NO3	Ammonia	Phosphorus/TKN	Turbidity	Fecal Coliform	REMARKS
				Y				N	N	Y	Y	N	Y	
				NUMBER OF CONTAINERS SUBMITTED										
1/3/06	0835	Bluffton Village		D				1	1	1	1	1	2	
1/3/06	0850	Heyward Street		D				1	1	1	1	1	2	
1/3/06	0915	Rose Dhu Creek		D				1	1	1	1	1	2	
1/3/06	0930	Stoney Creek		D				1	1	1	1	1	2	
1/3/06	0950	New River Trail		D				1	1	1	1	1	2	

Page 19 of 19

TEMP. 0.6

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
William Hodgins	1/3/06	1040						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
K Cu	1/3/06 R Cus	1040	YES ( ) NO ( )		6680-12220	

STL8240-680 (12/02)

ANALYTICAL REPORT

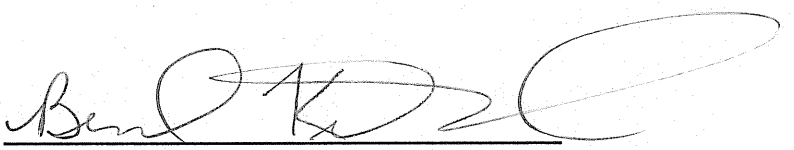
Job Number: 680-10774-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins



Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
12/05/2005

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity	STL-SAV	MCAWW SM 2130-B	
Ammonia	STL-SAV	MCAWW 350.1	
Total Kjeldahl Nitrogen	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrate	STL-SAV	MCAWW 353.2	
Nitrite as Nitrogen	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-10774-1	Bluffton Village	Water	11/21/2005 0900	11/21/2005 1100
680-10774-2	Heyword Street	Water	11/21/2005 0920	11/21/2005 1100
680-10774-3	Rose Dhu Creek	Water	11/21/2005 0940	11/21/2005 1100
680-10774-4	Stoney Creek	Water	11/21/2005 0950	11/21/2005 1100
680-10774-5	New River Trail	Water	11/21/2005 1010	11/21/2005 1100

General Chemistry

Client Sample ID: Bluffton Village

Lab Sample ID: 680-10774-1
Client Matrix: Water

Date Sampled: 11/21/2005 0900
Date Received: 11/21/2005 1100

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.10		mg/L	0.030	1.0	350.1
	Anly Batch: 680-29167	Date Analyzed 11/23/2005 1459				
TKN	0.38		mg/L	0.20	1.0	351.2
	Anly Batch: 680-29646	Date Analyzed 11/30/2005 1500				
	Prep Batch: 680-29453	Date Prepared: 11/28/2005 1800				
Nitrogen, Nitrate	0.13		mg/L	0.050	1.0	353.2
	Anly Batch: 680-29095	Date Analyzed 11/22/2005 1853				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29109	Date Analyzed 11/22/2005 1749				
Phosphorus, Total	0.18		mg/L	0.10	1.0	365.4
	Anly Batch: 680-29609	Date Analyzed 11/30/2005 1228				
	Prep Batch: 680-29447	Date Prepared: 11/28/2005 1800				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	4.6		NTU	0.10	1.0	SM 2130-B
	Anly Batch: 680-29465	Date Analyzed 11/22/2005 1745				
Fecal Coliform	>2000		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-29399	Date Analyzed 11/21/2005 1215				

Client Sample ID: Heyword Street

Lab Sample ID: 680-10774-2
Client Matrix: Water

Date Sampled: 11/21/2005 0920
Date Received: 11/21/2005 1100

General Chemistry

Client Sample ID: Heyword Street

Lab Sample ID: 680-10774-2
Client Matrix: Water

Date Sampled: 11/21/2005 0920
Date Received: 11/21/2005 1100

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030		mg/L	0.030	1.0	350.1
	Anly Batch: 680-29167	Date Analyzed 11/23/2005 1459				
TKN	0.61		mg/L	0.20	1.0	351.2
	Anly Batch: 680-29646	Date Analyzed 11/30/2005 1500				
	Prep Batch: 680-29453	Date Prepared: 11/28/2005 1800				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29095	Date Analyzed 11/22/2005 1853				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29109	Date Analyzed 11/22/2005 1749				
Phosphorus, Total	0.50		mg/L	0.10	1.0	365.4
	Anly Batch: 680-29609	Date Analyzed 11/30/2005 1229				
	Prep Batch: 680-29447	Date Prepared: 11/28/2005 1800				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	41		NTU	0.10	1.0	SM 2130-B
	Anly Batch: 680-29465	Date Analyzed 11/22/2005 1745				
Fecal Coliform	>2000		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-29399	Date Analyzed 11/21/2005 1215				

Client Sample ID: Rose Dhu Creek

Lab Sample ID: 680-10774-3
Client Matrix: Water

Date Sampled: 11/21/2005 0940
Date Received: 11/21/2005 1100

General Chemistry

Client Sample ID: **Rose Dhu Creek**

Lab Sample ID: 680-10774-3
Client Matrix: Water

Date Sampled: 11/21/2005 0940
Date Received: 11/21/2005 1100

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-29167	Date Analyzed 11/23/2005 1459				
TKN	1.1		mg/L	0.20	1.0	351.2
	Anly Batch: 680-29646	Date Analyzed 11/30/2005 1500				
	Prep Batch: 680-29453	Date Prepared: 11/28/2005 1800				
Nitrogen, Nitrate	0.096		mg/L	0.050	1.0	353.2
	Anly Batch: 680-29095	Date Analyzed 11/22/2005 1853				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29109	Date Analyzed 11/22/2005 1749				
Phosphorus, Total	0.39		mg/L	0.10	1.0	365.4
	Anly Batch: 680-29609	Date Analyzed 11/30/2005 1229				
	Prep Batch: 680-29447	Date Prepared: 11/28/2005 1800				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	42		NTU	0.10	1.0	SM 2130-B
	Anly Batch: 680-29465	Date Analyzed 11/22/2005 1745				
Fecal Coliform	>2000		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-29399	Date Analyzed 11/21/2005 1215				

Client Sample ID: **Stoney Creek**

Lab Sample ID: 680-10774-4
Client Matrix: Water

Date Sampled: 11/21/2005 0950
Date Received: 11/21/2005 1100

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

General Chemistry

Client Sample ID: **Stoney Creek**

Lab Sample ID: 680-10774-4
Client Matrix: Water

Date Sampled: 11/21/2005 0950
Date Received: 11/21/2005 1100

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.032		mg/L	0.030	1.0	350.1
	Anly Batch: 680-29167	Date Analyzed 11/23/2005 1507				
TKN	0.79		mg/L	0.20	1.0	351.2
	Anly Batch: 680-29646	Date Analyzed 11/30/2005 1509				
	Prep Batch: 680-29453	Date Prepared: 11/28/2005 1800				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29095	Date Analyzed 11/22/2005 1853				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29109	Date Analyzed 11/22/2005 1749				
Phosphorus, Total	0.26		mg/L	0.10	1.0	365.4
	Anly Batch: 680-29609	Date Analyzed 11/30/2005 1240				
	Prep Batch: 680-29447	Date Prepared: 11/28/2005 1800				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	17		NTU	0.10	1.0	SM 2130-B
	Anly Batch: 680-29465	Date Analyzed 11/22/2005 1745				
Fecal Coliform	>2000		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-29399	Date Analyzed 11/21/2005 1215				

Client Sample ID: **New River Trail**

Lab Sample ID: 680-10774-5
Client Matrix: Water

Date Sampled: 11/21/2005 1010
Date Received: 11/21/2005 1100

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-10774-5
Client Matrix: Water

Date Sampled: 11/21/2005 1010
Date Received: 11/21/2005 1100

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.17		mg/L	0.030	1.0	350.1
	Anly Batch: 680-29167	Date Analyzed 11/23/2005 1507				
TKN	0.69		mg/L	0.20	1.0	351.2
	Anly Batch: 680-29646	Date Analyzed 11/30/2005 1509				
	Prep Batch: 680-29453	Date Prepared: 11/28/2005 1800				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29095	Date Analyzed 11/22/2005 1853				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-29109	Date Analyzed 11/22/2005 1749				
Phosphorus, Total	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-29609	Date Analyzed 11/30/2005 1240				
	Prep Batch: 680-29447	Date Prepared: 11/28/2005 1800				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	3.0		NTU	0.10	1.0	SM 2130-B
	Anly Batch: 680-29465	Date Analyzed 11/22/2005 1745				
Fecal Coliform	>2000		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-29399	Date Analyzed 11/21/2005 1215				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29109

Method: 10-107-0-04-1
Preparation: N/A

Lab Sample ID: MB 680-29109/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1749
Date Prepared: N/A

Analysis Batch: 680-29109
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-29109

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-29109/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1749
Date Prepared: N/A

Analysis Batch: 680-29109
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	100	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-29109

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1749
Date Prepared: N/A

Analysis Batch: 680-29109
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1749
Date Prepared: N/A

Analysis Batch: 680-29109
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite	102	102	80 - 120	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29167

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-29167/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/23/2005 1459
Date Prepared: N/A

Analysis Batch: 680-29167
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-29167

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-29167/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/23/2005 1459
Date Prepared: N/A

Analysis Batch: 680-29167
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-29167/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/23/2005 1459
Date Prepared: N/A

Analysis Batch: 680-29167
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	100	101	90 - 110	2	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29453

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-29453/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1436
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29646
Prep Batch: 680-29453
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
TKN	0.20	U	0.20

Laboratory Control Sample - Batch: 680-29453

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-29453/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1436
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29646
Prep Batch: 680-29453
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
TKN	1.00	1.0	100	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-29453

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1500
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29646
Prep Batch: 680-29453

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1500
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29646
Prep Batch: 680-29453

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
TKN	98	107	75 - 125	7	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29095

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-29095/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1853
Date Prepared: N/A

Analysis Batch: 680-29095
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-29095

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-29095/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1853
Date Prepared: N/A

Analysis Batch: 680-29095
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	0.99	99	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-29095

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1853
Date Prepared: N/A

Analysis Batch: 680-29095
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1853
Date Prepared: N/A

Analysis Batch: 680-29095
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	96	98	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29447

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-29447/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1149
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29609
Prep Batch: 680-29447
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus, Total	0.10	U	0.10

Laboratory Control Sample - Batch: 680-29447

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-29447/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1149
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29609
Prep Batch: 680-29447
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus, Total	1.00	1.0	103	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-29447

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1229
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29609
Prep Batch: 680-29447

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-10774-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/30/2005 1229
Date Prepared: 11/28/2005 1800

Analysis Batch: 680-29609
Prep Batch: 680-29447

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus, Total	99	108	60 - 140	7	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29399

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-29399/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/21/2005 1215
Date Prepared: N/A

Analysis Batch: 680-29399
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Fecal Coliform	1.0	U	1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29465

Method: SM 2130-B
Preparation: N/A

Lab Sample ID: MB 680-29465/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/22/2005 1745
Date Prepared: N/A

Analysis Batch: 680-29465
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 71475

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

○ Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
B. Kirkland		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Bill Hodgins	843-757-1952	757-5234
CLIENT NAME	CLIENT E-MAIL	
Hodgins Engineering	bill@waterpermits.com	
CLIENT ADDRESS		
81 Bridle Ct Bluffton SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT,...)	REQUIRED ANALYSIS: Nitrate/NO_3/NO_2	Nitrate/NO_3/NO_2	Ammonia	Ortho/TKN	Fecal Coliform	Turbidity	Nitrite/NO_2	NUMBER OF CONTAINERS SUBMITTED						REMARKS
								Y	N	Y	Y	Y	N	N							
								PRESERVATIVE													
11/21/05	0900	Bluffton Village													1	1	1	1	2	1	
11/21/05	0920	Hayward Street													1	1	1	1	2	1	
11/21/05	0940	Rose Dhu Creek													1	1	1	1	2	1	
11/21/05	0950	Stoney Creek													1	1	1	1	2	1	
11/21/05	1010	New River Trail													1	1	1	1	2	1	

TEMP. 4.0

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
William Hodgins	11/21/05	1100						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
K Conner	11/21/05	1100	YES ○ NO ○		1680-10774	

STL8240-680 (12/02)

ANALYTICAL REPORT

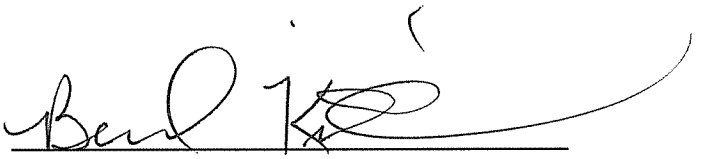
Job Number: 680-9103-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins



Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
10/21/2005

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-9103-1	Bluffton Village	Water	10/06/2005 1430	10/06/2005 1620
680-9103-2	Heyward Street	Water	10/06/2005 1403	10/06/2005 1620
680-9103-3	Rose Dhu Creek	Water	10/06/2005 1510	10/06/2005 1620
680-9103-4	Stoney Creek	Water	10/06/2005 1540	10/06/2005 1620
680-9103-5	New River Trail	Water	10/06/2005 1255	10/06/2005 1620
680-9103-6	Hwy 170 - Sun City	Water	10/06/2005 1220	10/06/2005 1620

General Chemistry

Client Sample ID: **Bluffton Village**

Lab Sample ID: 680-9103-1
Client Matrix: Water

Date Sampled: 10/06/2005 1430
Date Received: 10/06/2005 1620

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.37		mg/L	0.030	1.0	350.1
	Anly Batch: 680-25504	Date Analyzed 10/18/2005 1210				
Nitrogen, Kjeldahl	0.84		mg/L	0.20	1.0	351.2
	Anly Batch: 680-25406	Date Analyzed 10/17/2005 1607				
	Prep Batch: 680-25191	Date Prepared: 10/14/2005 1700				
Nitrogen, Nitrate	0.10		mg/L	0.050	1.0	353.2
	Anly Batch: 680-24587	Date Analyzed 10/07/2005 1225				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24683	Date Analyzed 10/07/2005 1154				
Phosphorus	0.18		mg/L	0.10	1.0	365.4
	Anly Batch: 680-25382	Date Analyzed 10/17/2005 1446				
	Prep Batch: 680-25190	Date Prepared: 10/14/2005 1700				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	8.4		NTU	0.10	1.0	180.1
	Anly Batch: 680-24502	Date Analyzed 10/07/2005 1400				
Coliform, Fecal	TNTC		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-25308	Date Analyzed 10/06/2005 1650				

General Chemistry

Client Sample ID: **Heyward Street**

Lab Sample ID: 680-9103-2
Client Matrix: Water

Date Sampled: 10/06/2005 1403
Date Received: 10/06/2005 1620

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.11		mg/L	0.030	1.0	350.1
	Anly Batch: 680-25504	Date Analyzed 10/18/2005 1210				
Nitrogen, Kjeldahl	1.3		mg/L	0.20	1.0	351.2
	Anly Batch: 680-25406	Date Analyzed 10/17/2005 1615				
	Prep Batch: 680-25191	Date Prepared: 10/14/2005 1700				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24587	Date Analyzed 10/07/2005 1225				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24683	Date Analyzed 10/07/2005 1154				
Phosphorus	0.69		mg/L	0.10	1.0	365.4
	Anly Batch: 680-25382	Date Analyzed 10/17/2005 1446				
	Prep Batch: 680-25190	Date Prepared: 10/14/2005 1700				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	75		NTU	0.10	1.0	180.1
	Anly Batch: 680-24502	Date Analyzed 10/07/2005 1400				
Coliform, Fecal	TNTC		CFU/100mL	10	10	9222D
	Anly Batch: 680-25308	Date Analyzed 10/06/2005 1650				

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

General Chemistry

Client Sample ID: **Rose Dhu Creek**

Lab Sample ID: 680-9103-3
Client Matrix: Water

Date Sampled: 10/06/2005 1510
Date Received: 10/06/2005 1620

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.069		mg/L	0.030	1.0	350.1
	Anly Batch: 680-25504	Date Analyzed 10/18/2005 1210				
Nitrogen, Kjeldahl	1.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-25406	Date Analyzed 10/17/2005 1615				
	Prep Batch: 680-25191	Date Prepared: 10/14/2005 1700				
Nitrogen, Nitrate	0.060		mg/L	0.050	1.0	353.2
	Anly Batch: 680-24587	Date Analyzed 10/07/2005 1225				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24683	Date Analyzed 10/07/2005 1154				
Phosphorus	0.31		mg/L	0.10	1.0	365.4
	Anly Batch: 680-25382	Date Analyzed 10/17/2005 1446				
	Prep Batch: 680-25190	Date Prepared: 10/14/2005 1700				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	32		NTU	0.10	1.0	180.1
	Anly Batch: 680-24502	Date Analyzed 10/07/2005 1400				
Coliform, Fecal	TNTC		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-25308	Date Analyzed 10/06/2005 1650				

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

General Chemistry

Client Sample ID: **Stoney Creek**

Lab Sample ID: 680-9103-4
Client Matrix: Water

Date Sampled: 10/06/2005 1540
Date Received: 10/06/2005 1620

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.032		mg/L	0.030	1.0	350.1
	Anly Batch: 680-25504	Date Analyzed 10/18/2005 1210				
Nitrogen, Kjeldahl	0.88		mg/L	0.21	1.0	351.2
	Anly Batch: 680-25406	Date Analyzed 10/17/2005 1615				
	Prep Batch: 680-25191	Date Prepared: 10/14/2005 1700				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24587	Date Analyzed 10/07/2005 1225				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24683	Date Analyzed 10/07/2005 1154				
Phosphorus	0.13		mg/L	0.11	1.0	365.4
	Anly Batch: 680-25382	Date Analyzed 10/17/2005 1446				
	Prep Batch: 680-25190	Date Prepared: 10/14/2005 1700				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	9.1		NTU	0.10	1.0	180.1
	Anly Batch: 680-24502	Date Analyzed 10/07/2005 1400				
Coliform, Fecal	TNTC		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-25308	Date Analyzed 10/06/2005 1650				

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-9103-5
Client Matrix: Water

Date Sampled: 10/06/2005 1255
Date Received: 10/06/2005 1620

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.37		mg/L	0.030	1.0	350.1
	Anly Batch: 680-25504	Date Analyzed 10/18/2005 1218				
Nitrogen, Kjeldahl	0.80		mg/L	0.20	1.0	351.2
	Anly Batch: 680-25406	Date Analyzed 10/17/2005 1615				
	Prep Batch: 680-25191	Date Prepared: 10/14/2005 1700				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24587	Date Analyzed 10/07/2005 1225				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-24683	Date Analyzed 10/07/2005 1154				
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-25382	Date Analyzed 10/17/2005 1446				
	Prep Batch: 680-25190	Date Prepared: 10/14/2005 1700				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	4.3		NTU	0.10	1.0	180.1
	Anly Batch: 680-24502	Date Analyzed 10/07/2005 1400				
Coliform, Fecal	TNTC		CFU/100mL	1.0	1.0	9222D
	Anly Batch: 680-25308	Date Analyzed 10/06/2005 1650				

Client Sample ID: **Hwy 170 - Sun City**

Lab Sample ID: 680-9103-6
Client Matrix: Water

Date Sampled: 10/06/2005 1220
Date Received: 10/06/2005 1620

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	10		NTU	0.10	1.0	180.1
	Anly Batch: 680-24502	Date Analyzed 10/07/2005 1400				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-24502

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-24502/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1400
Date Prepared: N/A

Analysis Batch: 680-24502
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Laboratory Control Sample - Batch: 680-24502

Method: 180.1
Preparation: N/A

Lab Sample ID: LCS 680-24502/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1400
Date Prepared: N/A

Analysis Batch: 680-24502
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Turbidity	15.5	16	100	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25504

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-25504/21
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/18/2005 1322
Date Prepared: N/A

Analysis Batch: 680-25504
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-25504

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-25504/22
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/18/2005 1322
Date Prepared: N/A

Analysis Batch: 680-25504
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-25504/23
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/18/2005 1322
Date Prepared: N/A

Analysis Batch: 680-25504
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	99	98	90 - 110	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25191

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-25191/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1607
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25406
Prep Batch: 680-25191
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-25191

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-25191/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1607
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25406
Prep Batch: 680-25191
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.0	103	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-25191

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1615
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25406
Prep Batch: 680-25191

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1615
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25406
Prep Batch: 680-25191

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	82	95	75 - 125	7	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-24587

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-24587/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1128
Date Prepared: N/A

Analysis Batch: 680-24587
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-24587

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-24587/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1128
Date Prepared: N/A

Analysis Batch: 680-24587
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	1.0	103	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-24587

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1225
Date Prepared: N/A

Analysis Batch: 680-24587
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1225
Date Prepared: N/A

Analysis Batch: 680-24587
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	98	100	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-24683

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-24683/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1154
Date Prepared: N/A

Analysis Batch: 680-24683
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-24683

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-24683/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1154
Date Prepared: N/A

Analysis Batch: 680-24683
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	0.99	99	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-24683

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1154
Date Prepared: N/A

Analysis Batch: 680-24683
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/07/2005 1154
Date Prepared: N/A

Analysis Batch: 680-24683
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite	99	99	80 - 120	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25190

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-25190/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1446
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25382
Prep Batch: 680-25190
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-25190

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-25190/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1446
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25382
Prep Batch: 680-25190
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.0	104	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-25190

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1446
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25382
Prep Batch: 680-25190

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/17/2005 1446
Date Prepared: 10/14/2005 1700

Analysis Batch: 680-25382
Prep Batch: 680-25190

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	113	109	60 - 140	3	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25308

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-25308/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/06/2005 1650
Date Prepared: N/A

Analysis Batch: 680-25308
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-25308

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-9103-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/06/2005 1650
Date Prepared: N/A

Analysis Batch: 680-25308
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal		TNTC			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 71465

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

○ **STL Savannah**
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

○ Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Town of Bluffton		SC
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Bernard Kirkland		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
	843-757-1952	757-5234
CLIENT NAME	CLIENT E-MAIL	
Hodgins Engineering	billh@waterpermits.com	
CLIENT ADDRESS		
84 Bridle Ct Bluffton SC 29910		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE ____ OF ____

STANDARD REPORT DELIVERY ○
DATE DUE ____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE ____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT,...)	REQUIRED ANALYSIS: NO_3/NO_2	NO_3/NO_2	NH_3	TKN/Phos	F. Coliform	NO_2	Turbidity				REMARKS
								N	Y	Y	Y	Y	N	N				
								NUMBER OF CONTAINERS SUBMITTED										
10/6/05	1430	Bluffton Village						1	1	1	1	2	-1					
10/6/05	1403	Hepward Street						1	1	1	1	2	1					
10/6/05	1510	Rose Dhu Creek						1	1	1	1	2	1					
10/6/05	1540	Stoney Creek						1	1	1	1	2	1					
10/6/05	1255	New River Trail						1	1	1	1	2	1					
10/6/05	1220	Hwy 170 - Sun City											1					
10/6/05		Hwy 278 - Okatie E. River																

PRESERVATIVE

TEMP. 3.4

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
William Hodgins	10/6/05	1630						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
	10/6/05	16:20	YES ○ NO ○		680-9103	

STL8240-680 (12/02)

ANALYTICAL REPORT

Job Number: 680-7335-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
09/02/2005

METHOD SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-7335-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-7335-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-7335-1	TOB08241 (Bluffton Village)	Water	08/24/2005 0700	08/24/2005 1045
680-7335-2	Heyward St.	Water	08/24/2005 0720	08/24/2005 1045
680-7335-3	Rose Dhu Creek	Water	08/24/2005 0750	08/24/2005 1045
680-7335-4	Stoney Creek	Water	08/24/2005 0810	08/24/2005 1045
680-7335-5	New River Trail	Water	08/24/2005 0835	08/24/2005 1045

General Chemistry

Client Sample ID: **TOB08241 (Bluffton Village)**

Lab Sample ID: 680-7335-1
Client Matrix: Water

Date Sampled: 08/24/2005 0700
Date Received: 08/24/2005 1045

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.12		mg/L	0.030	1.0	350.1
	Anly Batch: 680-20870	Date Analyzed 09/01/2005 1250				
Nitrogen, Kjeldahl	0.58		mg/L	0.20	1.0	351.2
	Anly Batch: 680-20835	Date Analyzed 08/31/2005 1417				
	Prep Batch: 680-20585	Date Prepared: 08/30/2005 1200				
Nitrogen, Nitrate	0.091		mg/L	0.050	1.0	353.2
	Anly Batch: 680-20177	Date Analyzed 08/24/2005 1451				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-20093	Date Analyzed 08/24/2005 1306				
Phosphorus	0.19		mg/L	0.10	1.0	365.4
	Anly Batch: 680-20773	Date Analyzed 08/31/2005 1205				
	Prep Batch: 680-20584	Date Prepared: 08/30/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	2.6		NTU	0.10	1.0	180.1
	Anly Batch: 680-20587	Date Analyzed 08/25/2005 1400				
Coliform, Fecal	820		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-20922	Date Analyzed 08/24/2005 1230				

General Chemistry

Client Sample ID: **Heyward St.**

Lab Sample ID: 680-7335-2 Date Sampled: 08/24/2005 0720
Client Matrix: Water Date Received: 08/24/2005 1045

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.15		mg/L	0.030	1.0	350.1
	Anly Batch: 680-20870	Date Analyzed 09/01/2005 1250				
Nitrogen, Kjeldahl	1.0		mg/L	0.20	1.0	351.2
	Anly Batch: 680-20835	Date Analyzed 08/31/2005 1417				
	Prep Batch: 680-20585	Date Prepared: 08/30/2005 1200				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-20177	Date Analyzed 08/24/2005 1451				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-20093	Date Analyzed 08/24/2005 1306				
Phosphorus	0.36		mg/L	0.10	1.0	365.4
	Anly Batch: 680-20773	Date Analyzed 08/31/2005 1205				
	Prep Batch: 680-20584	Date Prepared: 08/30/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	26		NTU	0.10	1.0	180.1
	Anly Batch: 680-20587	Date Analyzed 08/25/2005 1400				
Coliform, Fecal	860		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-20922	Date Analyzed 08/24/2005 1230				

General Chemistry

Client Sample ID: **Rose Dhu Creek**

Lab Sample ID: 680-7335-3 Date Sampled: 08/24/2005 0750
Client Matrix: Water Date Received: 08/24/2005 1045

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.29		mg/L	0.030	1.0	350.1
	Anly Batch: 680-20870	Date Analyzed 09/01/2005 1250				
Nitrogen, Kjeldahl	1.1		mg/L	0.20	1.0	351.2
	Anly Batch: 680-20835	Date Analyzed 08/31/2005 1417				
	Prep Batch: 680-20585	Date Prepared: 08/30/2005 1200				
Nitrogen, Nitrate	0.19		mg/L	0.050	1.0	353.2
	Anly Batch: 680-20177	Date Analyzed 08/24/2005 1451				
Nitrogen, Nitrite	0.060		mg/L	0.050	1.0	353.2
	Anly Batch: 680-20093	Date Analyzed 08/24/2005 1306				
Phosphorus	0.34		mg/L	0.10	1.0	365.4
	Anly Batch: 680-20773	Date Analyzed 08/31/2005 1205				
	Prep Batch: 680-20584	Date Prepared: 08/30/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	7.4		NTU	0.10	1.0	180.1
	Anly Batch: 680-20587	Date Analyzed 08/25/2005 1400				
Coliform, Fecal	610		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-20922	Date Analyzed 08/24/2005 1230				

General Chemistry

Client Sample ID: Stoney Creek

Lab Sample ID: 680-7335-4 Date Sampled: 08/24/2005 0810
Client Matrix: Water Date Received: 08/24/2005 1045

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.36		mg/L	0.030	1.0	350.1
	Anly Batch: 680-20870	Date Analyzed 09/01/2005 1258				
Nitrogen, Kjeldahl	1.1		mg/L	0.20	1.0	351.2
	Anly Batch: 680-20835	Date Analyzed 08/31/2005 1417				
	Prep Batch: 680-20585	Date Prepared: 08/30/2005 1200				
Nitrogen, Nitrate	0.19		mg/L	0.050	1.0	353.2
	Anly Batch: 680-20177	Date Analyzed 08/24/2005 1451				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-20093	Date Analyzed 08/24/2005 1306				
Phosphorus	0.54		mg/L	0.10	1.0	365.4
	Anly Batch: 680-20773	Date Analyzed 08/31/2005 1205				
	Prep Batch: 680-20584	Date Prepared: 08/30/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	6.4		NTU	0.10	1.0	180.1
	Anly Batch: 680-20587	Date Analyzed 08/25/2005 1400				
Coliform, Fecal	510		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-20922	Date Analyzed 08/24/2005 1230				

General Chemistry

Client Sample ID: **New River Trail**

Lab Sample ID: 680-7335-5 Date Sampled: 08/24/2005 0835
Client Matrix: Water Date Received: 08/24/2005 1045

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.20		mg/L	0.030	1.0	350.1
	Anly Batch: 680-20870	Date Analyzed 09/01/2005 1258				
Nitrogen, Kjeldahl	1.6		mg/L	0.20	1.0	351.2
	Anly Batch: 680-20835	Date Analyzed 08/31/2005 1417				
	Prep Batch: 680-20585	Date Prepared: 08/30/2005 1200				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-20177	Date Analyzed 08/25/2005 1506				
Nitrogen, Nitrite	0.11		mg/L	0.050	1.0	353.2
	Anly Batch: 680-20093	Date Analyzed 08/24/2005 1310				
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-20773	Date Analyzed 08/31/2005 1205				
	Prep Batch: 680-20584	Date Prepared: 08/30/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	3.7		NTU	0.10	1.0	180.1
	Anly Batch: 680-20587	Date Analyzed 08/25/2005 1400				
Coliform, Fecal	420		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-20922	Date Analyzed 08/24/2005 1230				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-7335-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.
	*	LCS, LCSD, MS, MSD, MD, or Surrogate exceeds the control limits

Client: Hodgins Engineering Consulting

Job Number: 680-7335-1

Method Blank - Batch: 680-20587

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-20587/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2005 1400
Date Prepared: N/A

Analysis Batch: 680-20587
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Laboratory Control Sample - Batch: 680-20587

Method: 180.1
Preparation: N/A

Lab Sample ID: LCS 680-20587/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2005 1400
Date Prepared: N/A

Analysis Batch: 680-20587
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Turbidity	15.5	16	100	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-7335-1

Method Blank - Batch: 680-20870

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-20870/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/01/2005 1242
Date Prepared: N/A

Analysis Batch: 680-20870
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-20870

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-20870/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/01/2005 1242
Date Prepared: N/A

Analysis Batch: 680-20870
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-20870/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/01/2005 1242
Date Prepared: N/A

Analysis Batch: 680-20870
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	99	98	90 - 110	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-7335-1

Method Blank - Batch: 680-20585

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-20585/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1417
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20835
Prep Batch: 680-20585
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-20585

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-20585/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1417
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20835
Prep Batch: 680-20585
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.0	103	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-20585

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-7335-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1417
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20835
Prep Batch: 680-20585

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-7335-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1417
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20835
Prep Batch: 680-20585

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	101	144	75 - 125	24	40		*

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-7335-1

Method Blank - Batch: 680-20093

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-20093/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2005 1300
Date Prepared: N/A

Analysis Batch: 680-20093
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-20093

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-20093/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2005 1300
Date Prepared: N/A

Analysis Batch: 680-20093
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	101	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-7335-1

Method Blank - Batch: 680-20177

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-20177/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2005 1427
Date Prepared: N/A

Analysis Batch: 680-20177
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-20177

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-20177/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2005 1427
Date Prepared: N/A

Analysis Batch: 680-20177
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	1.0	104	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-7335-1

Method Blank - Batch: 680-20584

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-20584/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1205
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20773
Prep Batch: 680-20584
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-20584

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-20584/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1205
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20773
Prep Batch: 680-20584
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	108	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-20584

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-7335-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1205
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20773
Prep Batch: 680-20584

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-7335-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2005 1205
Date Prepared: 08/30/2005 1200

Analysis Batch: 680-20773
Prep Batch: 680-20584

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	103	109	60 - 140	5	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-7335-1

Method Blank - Batch: 680-20922

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-20922/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2005 1230
Date Prepared: N/A

Analysis Batch: 680-20922
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-20922

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-7335-1
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 08/24/2005 1230
Date Prepared: N/A

Analysis Batch: 680-20922
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal	820	720	13	200	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ANALYTICAL REPORT

Job Number: 680-6487-1

Job Description: Stormwater Sampling

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
08/11/2005

METHOD SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-6487-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting Job Number: 680-6487-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-6487-1	TOB08010501	Water	08/01/2005 0900	08/01/2005 1350
680-6487-2	TOB08010502	Water	08/01/2005 0950	08/01/2005 1350
680-6487-3	TOB08010503	Water	08/01/2005 1015	08/01/2005 1350
680-6487-4	TOB08010504	Water	08/01/2005 1045	08/01/2005 1350
680-6487-5	TOB08010505	Water	08/01/2005 1115	08/01/2005 1350

General Chemistry

Client Sample ID: TOB08010501

Lab Sample ID: 680-6487-1 Date Sampled: 08/01/2005 0900
Client Matrix: Water Date Received: 08/01/2005 1350

Analyte	Result	Qual	Units	RL	Dil	Method
Phosphorus	0.18		mg/L	0.10	1.0	365.4
	Anly Batch: 680-18108	Date Analyzed 08/04/2005 1155				
	Prep Batch: 680-18032	Date Prepared: 08/03/2005 1030				
Nitrogen, Kjeldahl	0.67		mg/L	0.20	1.0	351.2
	Anly Batch: 680-18127	Date Analyzed 08/04/2005 1528				
	Prep Batch: 680-332	Date Prepared: 08/03/2005 1030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-17823	Date Analyzed 08/01/2005 1716				
Nitrogen, Nitrate	0.070		mg/L	0.050	1.0	353.2
	Anly Batch: 680-17880	Date Analyzed 08/03/2005 1306				
Ammonia	0.080		mg/L	0.030	1.0	350.1
	Anly Batch: 680-18349	Date Analyzed 08/08/2005 0949				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	2.4		NTU	0.10	1.0	180.1
	Anly Batch: 680-18617	Date Analyzed 08/02/2005 1730				
Coliform, Fecal	>800		CFU/100mL	2.0	2.0	9222D
	Anly Batch: 680-18611	Date Analyzed 08/01/2005 0345				

General Chemistry

Client Sample ID: TOB08010502

Lab Sample ID: 680-6487-2 Date Sampled: 08/01/2005 0950
Client Matrix: Water Date Received: 08/01/2005 1350

Analyte	Result	Qual	Units	RL	Dil	Method
Phosphorus	1.0		mg/L	0.10	1.0	365.4
	Anly Batch: 680-18108	Date Analyzed 08/04/2005 1155				
	Prep Batch: 680-18032	Date Prepared: 08/03/2005 1030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-17823	Date Analyzed 08/01/2005 1716				
Nitrogen, Nitrate	0.094		mg/L	0.050	1.0	353.2
	Anly Batch: 680-17880	Date Analyzed 08/03/2005 1306				
Ammonia	0.21		mg/L	0.030	1.0	350.1
	Anly Batch: 680-18349	Date Analyzed 08/08/2005 0949				
Nitrogen, Kjeldahl	1.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-18127	Date Analyzed 08/04/2005 1528				
	Prep Batch: 680-332	Date Prepared: 08/03/2005 1030				

Analyte	Result	Qual	Units	RL	Dil	Method
Coliform, Fecal	>2000		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-18611	Date Analyzed 08/01/2005 1545				
Turbidity	80		NTU	0.10	1.0	180.1
	Anly Batch: 680-18617	Date Analyzed 08/02/2005 1730				

General Chemistry

Client Sample ID: TOB08010503

Lab Sample ID: 680-6487-3 Date Sampled: 08/01/2005 1015
Client Matrix: Water Date Received: 08/01/2005 1350

Analyte	Result	Qual	Units	RL	Dil	Method
Phosphorus	0.24		mg/L	0.10	1.0	365.4
	Anly Batch: 680-18108	Date Analyzed 08/04/2005 1155				
	Prep Batch: 680-18032	Date Prepared: 08/03/2005 1030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-17823	Date Analyzed 08/01/2005 1716				
Nitrogen, Nitrate	0.30		mg/L	0.050	1.0	353.2
	Anly Batch: 680-17880	Date Analyzed 08/03/2005 1306				
Ammonia	0.10		mg/L	0.030	1.0	350.1
	Anly Batch: 680-18349	Date Analyzed 08/08/2005 0949				
Nitrogen, Kjeldahl	1.7		mg/L	0.20	1.0	351.2
	Anly Batch: 680-18127	Date Analyzed 08/04/2005 1528				
	Prep Batch: 680-332	Date Prepared: 08/03/2005 1030				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	16		NTU	0.10	1.0	180.1
	Anly Batch: 680-18617	Date Analyzed 08/02/2005 1730				
Coliform, Fecal	>2000		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-18611	Date Analyzed 08/01/2005 1545				

General Chemistry

Client Sample ID: TOB08010504

Lab Sample ID: 680-6487-4 Date Sampled: 08/01/2005 1045
Client Matrix: Water Date Received: 08/01/2005 1350

Analyte	Result	Qual	Units	RL	Dil	Method
Phosphorus	0.84		mg/L	0.10	1.0	365.4
	Anly Batch: 680-18108	Date Analyzed 08/04/2005 1155				
	Prep Batch: 680-18032	Date Prepared: 08/03/2005 1030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-17823	Date Analyzed 08/01/2005 1716				
Nitrogen, Nitrate	0.12		mg/L	0.050	1.0	353.2
	Anly Batch: 680-17880	Date Analyzed 08/03/2005 1315				
Ammonia	0.10		mg/L	0.030	1.0	350.1
	Anly Batch: 680-18349	Date Analyzed 08/08/2005 0949				
Nitrogen, Kjeldahl	1.6		mg/L	0.20	1.0	351.2
	Anly Batch: 680-18127	Date Analyzed 08/04/2005 1528				
	Prep Batch: 680-332	Date Prepared: 08/03/2005 1030				

Analyte	Result	Qual	Units	RL	Dil	Method
Coliform, Fecal	>2000		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-18611	Date Analyzed 08/01/2005 1545				
Turbidity	65		NTU	0.10	1.0	180.1
	Anly Batch: 680-18617	Date Analyzed 08/02/2005 1730				

General Chemistry

Client Sample ID: TOB08010505

Lab Sample ID: 680-6487-5
Client Matrix: Water

Date Sampled: 08/01/2005 1115
Date Received: 08/01/2005 1350

Analyte	Result	Qual	Units	RL	Dil	Method
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-18108	Date Analyzed 08/04/2005 1155				
	Prep Batch: 680-18032	Date Prepared: 08/03/2005 1030				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-17823	Date Analyzed 08/01/2005 1716				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-17880	Date Analyzed 08/03/2005 1315				
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-18349	Date Analyzed 08/08/2005 0949				
Nitrogen, Kjeldahl	1.4		mg/L	0.20	1.0	351.2
	Anly Batch: 680-18127	Date Analyzed 08/04/2005 1538				
	Prep Batch: 680-332	Date Prepared: 08/03/2005 1030				

Analyte	Result	Qual	Units	RL	Dil	Method
Coliform, Fecal	1600		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-18611	Date Analyzed 08/01/2005 1545				
Turbidity	2.1		NTU	0.10	1.0	180.1
	Anly Batch: 680-18617	Date Analyzed 08/02/2005 1730				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-6487-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.

Client: Hodgins Engineering Consulting

Job Number: 680-6487-1

Method Blank - Batch: 680-18617

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-18617/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/02/2005 1730
Date Prepared: N/A

Analysis Batch: 680-18617
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-6487-1

Method Blank - Batch: 680-18349

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-18349/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/08/2005 0941
Date Prepared: N/A

Analysis Batch: 680-18349
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-18349

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-18349/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/08/2005 0941
Date Prepared: N/A

Analysis Batch: 680-18349
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-18349/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/08/2005 0941
Date Prepared: N/A

Analysis Batch: 680-18349
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	99	99	90 - 110	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-6487-1

Method Blank - Batch: 680-332

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-332/6-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1558
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18127
Prep Batch: 680-332
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-332

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-332/7-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1528
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18127
Prep Batch: 680-332
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.0	103	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-332

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-6487-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1528
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18127
Prep Batch: 680-332

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-6487-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1528
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18127
Prep Batch: 680-332

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	103	96	75 - 125	4	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting Job Number: 680-6487-1

Method Blank - Batch: 680-17823

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-17823/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/01/2005 1706
Date Prepared: N/A

Analysis Batch: 680-17823
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-17823

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-17823/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/01/2005 1706
Date Prepared: N/A

Analysis Batch: 680-17823
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	100	80 - 120	

Matrix Duplicate - Batch: 680-17823

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-6487-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/01/2005 1716
Date Prepared: N/A

Analysis Batch: 680-17823
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrogen, Nitrite	0.050	U	0.050	NC	30	U

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-6487-1

Method Blank - Batch: 680-17880

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-17880/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/02/2005 1150
Date Prepared: N/A

Analysis Batch: 680-17880
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-17880

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-17880/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/02/2005 1150
Date Prepared: N/A

Analysis Batch: 680-17880
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	1.0	103	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-6487-1

Method Blank - Batch: 680-18032

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-18032/3-B
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1144
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18108
Prep Batch: 680-18032
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-18032

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-18032/4-E
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1144
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18108
Prep Batch: 680-18032
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	107	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-18032

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-6487-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1155
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18108
Prep Batch: 680-18032

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-6487-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/04/2005 1155
Date Prepared: 08/03/2005 1030

Analysis Batch: 680-18108
Prep Batch: 680-18032

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	108	106	60 - 140	2	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-6487-1

Method Blank - Batch: 680-18611

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-18611/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/01/2005 1230
Date Prepared: N/A

Analysis Batch: 680-18611
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-18611

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-6487-5
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 08/01/2005 1545
Date Prepared: N/A

Analysis Batch: 680-18611
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal	1600	1700	6	200	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ANALYTICAL REPORT

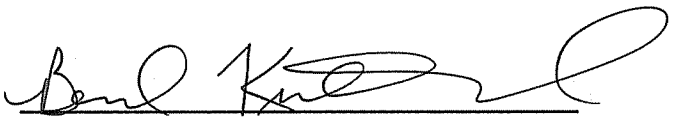
Job Number: 680-5878-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins



Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
07/21/2005

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-5878-1	TOB07140501	Water	07/14/2005 0705	07/14/2005 1011
680-5878-2	TOB07140502	Water	07/14/2005 0725	07/14/2005 1011
680-5878-3	TOB07140503	Water	07/14/2005 0800	07/14/2005 1011
680-5878-4	TOB07140504	Water	07/14/2005 0825	07/14/2005 1011
680-5878-5	TOB07140505	Water	07/14/2005 0900	07/14/2005 1011

General Chemistry

Client Sample ID: **TOB07140501**

Lab Sample ID: 680-5878-1
Client Matrix: Water

Date Sampled: 07/14/2005 0705
Date Received: 07/14/2005 1011

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.042		mg/L	0.030	1.0	350.1
	Anly Batch: 680-16212	Date Analyzed 07/15/2005 1309				
Nitrogen, Nitrate	0.056		mg/L	0.050	1.0	353.2
	Anly Batch: 680-16085	Date Analyzed 07/14/2005 1407				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16252	Date Analyzed 07/14/2005 1237				
Nitrogen, Kjeldahl	0.46		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16590	Date Analyzed 07/20/2005 1336				
	Prep Batch: 680-16433	Date Prepared: 07/19/2005 1200				
Phosphorus	0.13		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16565	Date Analyzed 07/20/2005 1046				
	Prep Batch: 680-16430	Date Prepared: 07/19/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	6.2		NTU	0.10	1.0	180.1
	Anly Batch: 680-16407	Date Analyzed 07/14/2005 1600				
Coliform, Fecal	>800		CFU/100mL	10	10	9222D
	Anly Batch: 680-16447	Date Analyzed 07/14/2005 1245				

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

General Chemistry

Client Sample ID: **TOB07140502**

Lab Sample ID: 680-5878-2
Client Matrix: Water

Date Sampled: 07/14/2005 0725
Date Received: 07/14/2005 1011

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.13		mg/L	0.030	1.0	350.1
	Anly Batch: 680-16212	Date Analyzed 07/15/2005 1309				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16085	Date Analyzed 07/14/2005 1407				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16252	Date Analyzed 07/14/2005 1237				
Nitrogen, Kjeldahl	0.81		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16590	Date Analyzed 07/20/2005 1344				
	Prep Batch: 680-16433	Date Prepared: 07/19/2005 1200				
Phosphorus	0.44		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16565	Date Analyzed 07/20/2005 1046				
	Prep Batch: 680-16430	Date Prepared: 07/19/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	94		NTU	0.10	1.0	180.1
	Anly Batch: 680-16407	Date Analyzed 07/14/2005 1600				
Coliform, Fecal	1800		CFU/100mL	10	10	9222D
	Anly Batch: 680-16447	Date Analyzed 07/14/2005 1245				

General Chemistry

Client Sample ID: **TOB07140503**

Lab Sample ID: 680-5878-3
Client Matrix: Water

Date Sampled: 07/14/2005 0800
Date Received: 07/14/2005 1011

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.032		mg/L	0.030	1.0	350.1
	Anly Batch: 680-16212	Date Analyzed 07/15/2005 1309				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16085	Date Analyzed 07/14/2005 1407				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16252	Date Analyzed 07/14/2005 1237				
Nitrogen, Kjeldahl	1.1		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16590	Date Analyzed 07/20/2005 1344				
	Prep Batch: 680-16433	Date Prepared: 07/19/2005 1200				
Phosphorus	0.22		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16565	Date Analyzed 07/20/2005 1046				
	Prep Batch: 680-16430	Date Prepared: 07/19/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	50		NTU	0.10	1.0	180.1
	Anly Batch: 680-16407	Date Analyzed 07/14/2005 1600				
Coliform, Fecal	4800		CFU/100mL	50	50	9222D
	Anly Batch: 680-16447	Date Analyzed 07/14/2005 1245				

General Chemistry

Client Sample ID: **TOB07140504**

Lab Sample ID: 680-5878-4
Client Matrix: Water

Date Sampled: 07/14/2005 0825
Date Received: 07/14/2005 1011

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-16212	Date Analyzed 07/15/2005 1309				
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16085	Date Analyzed 07/14/2005 1407				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16252	Date Analyzed 07/14/2005 1237				
Nitrogen, Kjeldahl	1.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16590	Date Analyzed 07/20/2005 1344				
	Prep Batch: 680-16433	Date Prepared: 07/19/2005 1200				
Phosphorus	0.22		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16565	Date Analyzed 07/20/2005 1046				
	Prep Batch: 680-16430	Date Prepared: 07/19/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	22		NTU	0.10	1.0	180.1
	Anly Batch: 680-16407	Date Analyzed 07/14/2005 1600				
Coliform, Fecal	660		CFU/100mL	10	10	9222D
	Anly Batch: 680-16447	Date Analyzed 07/14/2005 1245				

General Chemistry

Client Sample ID: **TOB07140505**

Lab Sample ID: 680-5878-5
Client Matrix: Water

Date Sampled: 07/14/2005 0900
Date Received: 07/14/2005 1011

Analyte	Result	Qual	Units	RL	Dil	Method
Ammonia	0.030	U	mg/L	0.030	1.0	350.1
	Anly Batch: 680-16212	Date Analyzed	07/15/2005 1309			
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16085	Date Analyzed	07/14/2005 1407			
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16252	Date Analyzed	07/14/2005 1237			
Nitrogen, Kjeldahl	1.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16590	Date Analyzed	07/20/2005 1344			
	Prep Batch: 680-16433	Date Prepared:	07/19/2005 1200			
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-16565	Date Analyzed	07/20/2005 1046			
	Prep Batch: 680-16430	Date Prepared:	07/19/2005 1200			

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	14		NTU	0.10	1.0	180.1
	Anly Batch: 680-16407	Date Analyzed	07/14/2005 1600			
Coliform, Fecal	1100		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-16447	Date Analyzed	07/14/2005 1245			

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-5878-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16407

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-16407/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1600
Date Prepared: N/A

Analysis Batch: 680-16407
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Surrogate	% Rec	Acceptance Limits

Matrix Duplicate - Batch: 680-16407

Method: 180.1
Preparation: N/A

Lab Sample ID: 680-5878-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1600
Date Prepared: N/A

Analysis Batch: 680-16407
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Turbidity	14	13	1	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16212

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-16212/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1300
Date Prepared: N/A

Analysis Batch: 680-16212
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-16212

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-16212/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1301
Date Prepared: N/A

Analysis Batch: 680-16212
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-16212/12
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1323
Date Prepared: N/A

Analysis Batch: 680-16212
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	101	99	90 - 110	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-16212

Method: 350.1
Preparation: N/A

MS Lab Sample ID: 680-5871-L-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1301
Date Prepared: N/A

Analysis Batch: 680-16212
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-5871-L-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1301
Date Prepared: N/A

Analysis Batch: 680-16212
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia	101	99	90 - 110	2	30		

Matrix Duplicate - Batch: 680-16212

Method: 350.1
Preparation: N/A

Lab Sample ID: 680-5897-A-2 DU
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 07/15/2005 1345
Date Prepared: N/A

Analysis Batch: 680-16212
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Ammonia	7.2	7.3	2	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16433

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-16433/26-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1326
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16590
Prep Batch: 680-16433
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-16433

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-16433/27-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1326
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16590
Prep Batch: 680-16433
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.0	103	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-16433

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-5855-D-1-I MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1326
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16590
Prep Batch: 680-16433

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-5855-D-1-J MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1326
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16590
Prep Batch: 680-16433

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	85	88	75 - 125	2	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Matrix Duplicate - Batch: 680-16433

Method: 351.2
Preparation: 351.2

Lab Sample ID: 680-5878-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1344
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16590
Prep Batch: 680-16433
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Kjeldahl	0.46	0.54	15	40	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16085

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-16085/10
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1600
Date Prepared: N/A

Analysis Batch: 680-16085
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-16085

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-16085/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1600
Date Prepared: N/A

Analysis Batch: 680-16085
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	1.1	106	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-16085

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-5855-E-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1811
Date Prepared: N/A

Analysis Batch: 680-16085
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-5855-E-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1811
Date Prepared: N/A

Analysis Batch: 680-16085
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	98	99	80 - 120	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Matrix Duplicate - Batch: 680-16085

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-5878-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1407
Date Prepared: N/A

Analysis Batch: 680-16085
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Nitrate	0.056	0.054	4	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16252

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-16252/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1042
Date Prepared: N/A

Analysis Batch: 680-16252
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control Sample - Batch: 680-16252

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-16252/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1042
Date Prepared: N/A

Analysis Batch: 680-16252
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	100	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-16252

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-5855-E-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1042
Date Prepared: N/A

Analysis Batch: 680-16252
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-5855-E-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1042
Date Prepared: N/A

Analysis Batch: 680-16252
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrite	99	100	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Matrix Duplicate - Batch: 680-16252

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-5878-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1237
Date Prepared: N/A

Analysis Batch: 680-16252
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrogen, Nitrite	0.050	U	0.050	NC	30	U

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16430

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-16430/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1105
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16565
Prep Batch: 680-16430
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-16430

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-16430/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1105
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16565
Prep Batch: 680-16430
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.1	111	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-16430

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-5855-D-1-F MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1105
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16565
Prep Batch: 680-16430

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-5855-D-1-G MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1105
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16565
Prep Batch: 680-16430

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	106	105	60 - 140	1	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Matrix Duplicate - Batch: 680-16430

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: 680-5878-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/20/2005 1046
Date Prepared: 07/19/2005 1200

Analysis Batch: 680-16565
Prep Batch: 680-16430
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Phosphorus	0.13	0.16	15	40	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16447

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-16447/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/14/2005 1245
Date Prepared: N/A

Analysis Batch: 680-16447
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-16447

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-5878-5
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 07/14/2005 1245
Date Prepared: N/A

Analysis Batch: 680-16447
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal	1100	1000	5	200	

Calculations are performed before rounding to avoid round-off errors in calculated results.

ANALYTICAL REPORT

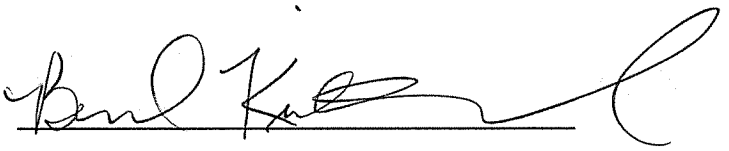
Job Number: 680-5723-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting
84 Bridle Court
Bluffton, SC 29910

Attention: Mr. Bill Hodgins



Bernard Kirkland
Project Manager I
bkirkland@stl-inc.com
07/21/2005

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity, Nephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block Digester, AAII)	STL-SAV	MCAWW 351.2	
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAWW 353.2	
Total Phosphorus	STL-SAV	EPA 365.4	
Sample Digestion for Total Phosphorous	STL-SAV		MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222D	

LAB REFERENCES:

STL-SAV = STL-Savannah

METHOD REFERENCES:

EPA - US Environmental Protection Agency

MCAWW - "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM18 - "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

SAMPLE SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-5723-1	TOB07090501	Water	07/08/2005 0850	07/08/2005 1305
680-5723-2	TOB07090502	Water	07/08/2005 0930	07/08/2005 1305
680-5723-3	TOB07090503	Water	07/08/2005 1030	07/08/2005 1305
680-5723-4	TOB07090504	Water	07/08/2005 1100	07/08/2005 1305
680-5723-5	TOB07090505	Water	07/08/2005 1215	07/08/2005 1305
680-5723-6	TOB07090502D	Water	07/08/2005 0000	07/08/2005 1305

General Chemistry

Client Sample ID: TOB07090501

Lab Sample ID: 680-5723-1
Client Matrix: Water

Date Sampled: 07/08/2005 0850
Date Received: 07/08/2005 1305

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrogen, Nitrate	0.10		mg/L	0.050	1.0	353.2
	Anly Batch: 680-15665	Date Analyzed 07/08/2005 1926				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15677	Date Analyzed 07/08/2005 1748				
Nitrogen, Kjeldahl	0.50		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16207	Date Analyzed 07/15/2005 1300				
	Prep Batch: 680-15940	Date Prepared: 07/13/2005 1200				
Ammonia	0.10	B	mg/L	0.030	1.0	350.1
	Anly Batch: 680-15926	Date Analyzed 07/13/2005 1041				
Phosphorus	0.21		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16188	Date Analyzed 07/15/2005 1131				
	Prep Batch: 680-15939	Date Prepared: 07/13/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	3.8		NTU	0.10	1.0	180.1
	Anly Batch: 680-15914	Date Analyzed 07/08/2005 1100				
Coliform, Fecal	2.0	U	CFU/100mL	2.0	2.0	9222D
	Anly Batch: 680-15719	Date Analyzed 07/08/2005 1615				

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

General Chemistry

Client Sample ID: **TOB07090502**

Lab Sample ID: 680-5723-2
Client Matrix: Water

Date Sampled: 07/08/2005 0930
Date Received: 07/08/2005 1305

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16554	Date Analyzed 07/15/2005 2155				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15677	Date Analyzed 07/08/2005 1748				
Nitrogen, Kjeldahl	0.60		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16207	Date Analyzed 07/15/2005 1310				
	Prep Batch: 680-15940	Date Prepared: 07/13/2005 1200				
Ammonia	0.14	B	mg/L	0.030	1.0	350.1
	Anly Batch: 680-15926	Date Analyzed 07/13/2005 1041				
Phosphorus	0.19		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16188	Date Analyzed 07/15/2005 1131				
	Prep Batch: 680-15939	Date Prepared: 07/13/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	26		NTU	0.10	1.0	180.1
	Anly Batch: 680-15914	Date Analyzed 07/08/2005 1100				
Coliform, Fecal	100		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-15719	Date Analyzed 07/08/2005 1615				

General Chemistry

Client Sample ID: **TOB07090503**

Lab Sample ID: 680-5723-3
Client Matrix: Water

Date Sampled: 07/08/2005 1030
Date Received: 07/08/2005 1305

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrogen, Nitrate	0.11		mg/L	0.050	1.0	353.2
	Anly Batch: 680-15665	Date Analyzed 07/08/2005 1846				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15677	Date Analyzed 07/08/2005 1750				
Nitrogen, Kjeldahl	0.96		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16207	Date Analyzed 07/15/2005 1310				
	Prep Batch: 680-15940	Date Prepared: 07/13/2005 1200				
Ammonia	0.10	B	mg/L	0.030	1.0	350.1
	Anly Batch: 680-15926	Date Analyzed 07/13/2005 1041				
Phosphorus	0.15		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16188	Date Analyzed 07/15/2005 1131				
	Prep Batch: 680-15939	Date Prepared: 07/13/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	13		NTU	0.10	1.0	180.1
	Anly Batch: 680-15914	Date Analyzed 07/08/2005 1100				
Coliform, Fecal	2.0	U	CFU/100mL	2.0	2.0	9222D
	Anly Batch: 680-15719	Date Analyzed 07/08/2005 1615				

General Chemistry

Client Sample ID: **TOB07090504**

Lab Sample ID: 680-5723-4
Client Matrix: Water

Date Sampled: 07/08/2005 1100
Date Received: 07/08/2005 1305

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrogen, Nitrate	0.10		mg/L	0.050	1.0	353.2
	Anly Batch: 680-15665	Date Analyzed 07/08/2005 1914				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15677	Date Analyzed 07/08/2005 1750				
Nitrogen, Kjeldahl	1.5		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16207	Date Analyzed 07/15/2005 1310				
	Prep Batch: 680-15940	Date Prepared: 07/13/2005 1200				
Ammonia	0.15	B	mg/L	0.030	1.0	350.1
	Anly Batch: 680-15926	Date Analyzed 07/13/2005 1041				
Phosphorus	0.44		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16188	Date Analyzed 07/15/2005 1131				
	Prep Batch: 680-15939	Date Prepared: 07/13/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	29		NTU	0.10	1.0	180.1
	Anly Batch: 680-15914	Date Analyzed 07/08/2005 1100				
Coliform, Fecal	710		CFU/100mL	5.0	5.0	9222D
	Anly Batch: 680-15719	Date Analyzed 07/08/2005 1615				

General Chemistry

Client Sample ID: TOB07090505

Lab Sample ID: 680-5723-5
Client Matrix: Water

Date Sampled: 07/08/2005 1215
Date Received: 07/08/2005 1305

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15665	Date Analyzed 07/08/2005 1914				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15677	Date Analyzed 07/08/2005 1751				
Nitrogen, Kjeldahl	3.2		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16207	Date Analyzed 07/15/2005 1310				
	Prep Batch: 680-15940	Date Prepared: 07/13/2005 1200				
Ammonia	0.047	B	mg/L	0.030	1.0	350.1
	Anly Batch: 680-15926	Date Analyzed 07/13/2005 1049				
Phosphorus	0.10	U	mg/L	0.10	1.0	365.4
	Anly Batch: 680-16188	Date Analyzed 07/15/2005 1131				
	Prep Batch: 680-15939	Date Prepared: 07/13/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	5.3		NTU	0.10	1.0	180.1
	Anly Batch: 680-15914	Date Analyzed 07/08/2005 1100				
Coliform, Fecal	360		CFU/100mL	10	10	9222D
	Anly Batch: 680-15719	Date Analyzed 07/08/2005 1615				

General Chemistry

Client Sample ID: **TOB07090502D**

Lab Sample ID: 680-5723-6
Client Matrix: Water

Date Sampled: 07/08/2005 0000
Date Received: 07/08/2005 1305

Analyte	Result	Qual	Units	RL	Dil	Method
Nitrogen, Nitrate	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-16554	Date Analyzed 07/15/2005 2155				
Nitrogen, Nitrite	0.050	U	mg/L	0.050	1.0	353.2
	Anly Batch: 680-15677	Date Analyzed 07/08/2005 1751				
Nitrogen, Kjeldahl	0.50		mg/L	0.20	1.0	351.2
	Anly Batch: 680-16207	Date Analyzed 07/15/2005 1310				
	Prep Batch: 680-15940	Date Prepared: 07/13/2005 1200				
Ammonia	0.15	B	mg/L	0.030	1.0	350.1
	Anly Batch: 680-15926	Date Analyzed 07/13/2005 1049				
Phosphorus	0.18		mg/L	0.10	1.0	365.4
	Anly Batch: 680-16188	Date Analyzed 07/15/2005 1138				
	Prep Batch: 680-15939	Date Prepared: 07/13/2005 1200				

Analyte	Result	Qual	Units	RL	Dil	Method
Turbidity	26		NTU	0.10	1.0	180.1
	Anly Batch: 680-15914	Date Analyzed 07/08/2005 1100				
Coliform, Fecal	2.0	U	CFU/100mL	2.0	2.0	9222D
	Anly Batch: 680-15719	Date Analyzed 07/08/2005 1615				

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting Job Number: 680-5723-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Analyte was not detected at or above the reporting limit.
	B	Compound was found in the blank and sample.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15914

Method: 180.1
Preparation: N/A

Lab Sample ID: MB 680-15914/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1100
Date Prepared: N/A

Analysis Batch: 680-15914
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10

Surrogate	% Rec	Acceptance Limits

Matrix Duplicate - Batch: 680-15914

Method: 180.1
Preparation: N/A

Lab Sample ID: 680-5633-C-1 DU
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1100
Date Prepared: N/A

Analysis Batch: 680-15914
Prep Batch: N/A
Units: NTU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 30 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Turbidity	0.13	0.13	1	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15926

Method: 350.1
Preparation: N/A

Lab Sample ID: MB 680-15926/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/13/2005 1041
Date Prepared: N/A

Analysis Batch: 680-15926
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Ammonia	0.030	U	0.030

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-15926

Method: 350.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-15926/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/13/2005 1041
Date Prepared: N/A

Analysis Batch: 680-15926
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

LCSD Lab Sample ID: LCSD 680-15926/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/13/2005 1041
Date Prepared: N/A

Analysis Batch: 680-15926
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia	99	98	90 - 110	0	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-15926

Method: 350.1
Preparation: N/A

MS Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/13/2005 1041
Date Prepared: N/A

Analysis Batch: 680-15926
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/13/2005 1041
Date Prepared: N/A

Analysis Batch: 680-15926
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia	97	98	90 - 110	1	30	B	B

Matrix Duplicate - Batch: 680-15926

Method: 350.1
Preparation: N/A

Lab Sample ID: 680-5776-F-1 DU
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/13/2005 1056
Date Prepared: N/A

Analysis Batch: 680-15926
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 2 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Ammonia	0.77	0.78	1	30	B

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15940

Method: 351.2
Preparation: 351.2

Lab Sample ID: MB 680-15940/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1300
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16207
Prep Batch: 680-15940
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Nitrogen, Kjeldahl	0.20	U	0.20

Laboratory Control Sample - Batch: 680-15940

Method: 351.2
Preparation: 351.2

Lab Sample ID: LCS 680-15940/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1300
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16207
Prep Batch: 680-15940
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Kjeldahl	1.00	1.0	101	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-15940

Method: 351.2
Preparation: 351.2

MS Lab Sample ID: 680-5741-F-1-E MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1310
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16207
Prep Batch: 680-15940

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-5741-F-1-F MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1310
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16207
Prep Batch: 680-15940

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Kjeldahl	91	92	75 - 125	1	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Duplicate - Batch: 680-15940

Method: 351.2
Preparation: 351.2

Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1310
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16207
Prep Batch: 680-15940
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Kjeldahl	0.50	0.55	9	40	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15665

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-15665/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1811
Date Prepared: N/A

Analysis Batch: 680-15665
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-15665

Method: 353.2
Preparation: N/A

LCS Lab Sample ID: LCS 680-15665/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1811
Date Prepared: N/A

Analysis Batch: 680-15665
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 680-15665/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1811
Date Prepared: N/A

Analysis Batch: 680-15665
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrogen, Nitrate	102	104	80 - 120	1	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-15665

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-5684-F-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1846
Date Prepared: N/A

Analysis Batch: 680-15665
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-5684-F-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1846
Date Prepared: N/A

Analysis Batch: 680-15665
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	96	91	80 - 120	4	30		

Matrix Duplicate - Batch: 680-15665

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1926
Date Prepared: N/A

Analysis Batch: 680-15665
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Nitrate	0.10	0.11	8	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15677

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-15677/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1747
Date Prepared: N/A

Analysis Batch: 680-15677
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrite	0.050	U	0.050

Laboratory Control/
Laboratory Control Duplicate Recovery Report - Batch: 680-15677

Method: 353.2
Preparation: N/A

LCS Lab Sample ID: LCS 680-15677/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1747
Date Prepared: N/A

Analysis Batch: 680-15677
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 680-15677/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1748
Date Prepared: N/A

Analysis Batch: 680-15677
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Nitrogen, Nitrite	104	104	80 - 120	0	30		

Matrix Duplicate - Batch: 680-15677

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1748
Date Prepared: N/A

Analysis Batch: 680-15677
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrogen, Nitrite	0.050	U	0.050	NC	30	U

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-16554

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-16554/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 2041
Date Prepared: N/A

Analysis Batch: 680-16554
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Nitrogen, Nitrate	0.050	U	0.050

Laboratory Control Sample - Batch: 680-16554

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-16554/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 2041
Date Prepared: N/A

Analysis Batch: 680-16554
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	1.1	105	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-16554

Method: 353.2
Preparation: N/A

MS Lab Sample ID: 680-5956-C-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 2052
Date Prepared: N/A

Analysis Batch: 680-16554
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-5956-C-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 2055
Date Prepared: N/A

Analysis Batch: 680-16554
Prep Batch: N/A

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrogen, Nitrate	106	105	80 - 120	2	30		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Duplicate - Batch: 680-16554

Method: 353.2
Preparation: N/A

Lab Sample ID: 680-5969-A-1 DU
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 2155
Date Prepared: N/A

Analysis Batch: 680-16554
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Nitrate	1.3	1.3	4	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15939

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: MB 680-15939/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1035
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16188
Prep Batch: 680-15939
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10

Laboratory Control Sample - Batch: 680-15939

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: LCS 680-15939/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1035
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16188
Prep Batch: 680-15939
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Phosphorus	1.00	1.0	101	60 - 140	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-15939

Method: 365.4
Preparation: 365.2/365.3

MS Lab Sample ID: 680-5741-F-1-B MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1138
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16188
Prep Batch: 680-15939

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

MSD Lab Sample ID: 680-5741-F-1-C MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1110
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16188
Prep Batch: 680-15939

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Phosphorus	96	96	60 - 140	0	40		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Duplicate - Batch: 680-15939

Method: 365.4
Preparation: 365.2/365.3

Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2005 1131
Date Prepared: 07/13/2005 1200

Analysis Batch: 680-16188
Prep Batch: 680-15939
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Phosphorus	0.21	0.22	5	40	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15719

Method: 9222D
Preparation: N/A

Lab Sample ID: MB 680-15719/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/08/2005 1615
Date Prepared: N/A

Analysis Batch: 680-15719
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	RL
Coliform, Fecal	1.0	U	1.0

Matrix Duplicate - Batch: 680-15719

Method: 9222D
Preparation: N/A

Lab Sample ID: 680-5723-1
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 07/08/2005 1615
Date Prepared: N/A

Analysis Batch: 680-15719
Prep Batch: N/A
Units: CFU/100mL

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Coliform, Fecal	2.0	U	440			

Calculations are performed before rounding to avoid round-off errors in calculated results.

APPENDIX C

Town of Bluffton

Evaluation of the Volunteer Monitoring Data

BP Barber was retained to evaluate the data collected to date and provide an overview of the volunteer water quality monitoring effort conducted by the Town of Bluffton (Town) from January-August 2006. This monitoring effort was conducted at six sampling sites and primarily included measurements of clarity and salinity. Additionally, the volunteers also noted rainfall events, water depths, weather conditions, tidal stages and times, and water temperatures to put the water quality data into context.

Monitoring Stations, Sampling Events, and General Definitions

Sampling events were conducted on a weekly basis from January 13-August 7, 2006 at the following six sampling sites. Figure 1 included in Section 1 of the *Town of Bluffton May River Monitoring Program: Stormwater Sampling Study* report illustrates the locations of each of the volunteer monitoring sites.

- Site 2A
- Site 2B
- Site 2C
- Site 6
- Site 7
- Site 8

Clarity measurements indicate the relative amount of sediment, algae, or other materials that are suspended in the water samples. Clarity is typically measured with a transparency tube, which is a 120-cm long clear tube that contains a colored disk at the bottom. To measure clarity, the tube is dropped into the water stream of interest and pulled up once the tube is filled. Then water is slowly released from the side of the tube until the colored disk is visible when viewed from the top of the tube. A lower clarity reading generally indicates a larger amount of suspended solids in the water.

Salinity generally measures the accumulation of salts in a water body and is typically reported in units of parts per trillion. In general, it was fairly difficult to assess the role that tidal influence may have had on clarity and salinity readings, since the volunteer samples were not consistently taken after high tide; in some instances, the time of the high tide was not recorded at all.

Monitoring Results

Clarity

Suspended solids content is typically measured in the laboratory by turbidity testing, which has units of number of turbidity units (NTU). Clarity measurements using transparency tubes are good relative indicators of turbidity, but clarity measurements cannot be directly correlated to turbidity unless samples are viewed for clarity and tested for turbidity concurrently. Therefore, for the purposes of this memorandum, clarity measurements obtained during the volunteer monitoring effort were not compared to turbidity results obtained by South Carolina Department of Health and Environmental Control (SC DHEC) or the South Carolina Estuarine and Coastal Assessment Program (SCECAP) as part of their water quality efforts or to the State turbidity standards. Instead, the clarity measurements were compared between the six sampling sites to observe relative differences.

The clarity readings for the six sites are illustrated in Figure 1. On average, sites 2A, 2B, and 2C had the highest clarity numbers, with averages ranging from approximately 57-66 cm; overall, this appears to indicate lower levels of suspended solids in sites 2A, 2B, and 2C than sites 6, 7, and 8. However, it should be noted that site 2B had the largest range of readings (7.67-120 cm) of the six sampling sites. Sites 7 and 8 had the lowest clarity numbers, with averages of approximately 35 cm and 40 cm, respectively; these two sites also had the smallest range of readings of the six sampling sites. In addition, decreases in clarity appeared to coincide with rainfall events during this seven-month monitoring effort, and clarity measurements were typically higher from January-April 2006, when most of the rainfall events occurred.

Salinity

The salinity readings for the six sites are illustrated in Figure 2. On average, salinity measurements taken during the volunteer monitoring effort were fairly consistent, with their averages ranging from 2.17-2.97 ppt during the seven month monitoring effort. In its 2001-2002 water quality monitoring report, SCECAP noted that the average bottom salinity of all tidal creeks sampled by SCECAP in 2001-2002 was 30.6 ppt, and that these salinity measurements ranged from 9.5-37.4 ppt. In addition, SCECAP's 2001-2002 water quality monitoring report noted that the average bottom salinity for all open water sites sampled by SCECAP during these two years was 29.5 ppt, and that these salinity measurements ranged from 10.0-38.1 ppt.

The salinity measurements taken during the seven-month volunteer monitoring effort were well below the SCECAP values for either tidal creeks or open water sites. Sites 2A, 2B, and 2C had the smallest range in salinity measurements, only varying from 0.25 ppt (sites 2A and 2B) to 0.35 ppt (site 2C). Sites 6, 7, and 8 had the largest

range in salinity measurements, varying from 1.05-1.95 ppt. However, these ranges are still considerably less than the ranges observed during the 2001-2002 SCECAP monitoring. It is also interesting to note that salinity values for sites 6, 7, and 8 were lower in early 2006, when most of the rainfall events occurred, while salinity values for sites 2A, 2B, and 2C did not change considerably during the seven-month volunteer study. Overall, decreases in salinity at the six sampling sites tended to coincide with the various rainfall events observed during the course of the study. In review of this salinity data compared with the salinity data collected by the YSI sonde at a location in the May River downstream of Rose Dhu Creek, it was noted the sonde data was an order of magnitude higher than the data gathered through the volunteer program. Reviewing the procedures for the volunteer program and additional training may be helpful for future data collection. This volunteer program will be very important for future monitoring efforts and analysis of the results will allow the Town to monitor trends to quickly identify potential pollution.

Figure 1:
Volunteer Clarity Monitoring Data (January-August 2006)

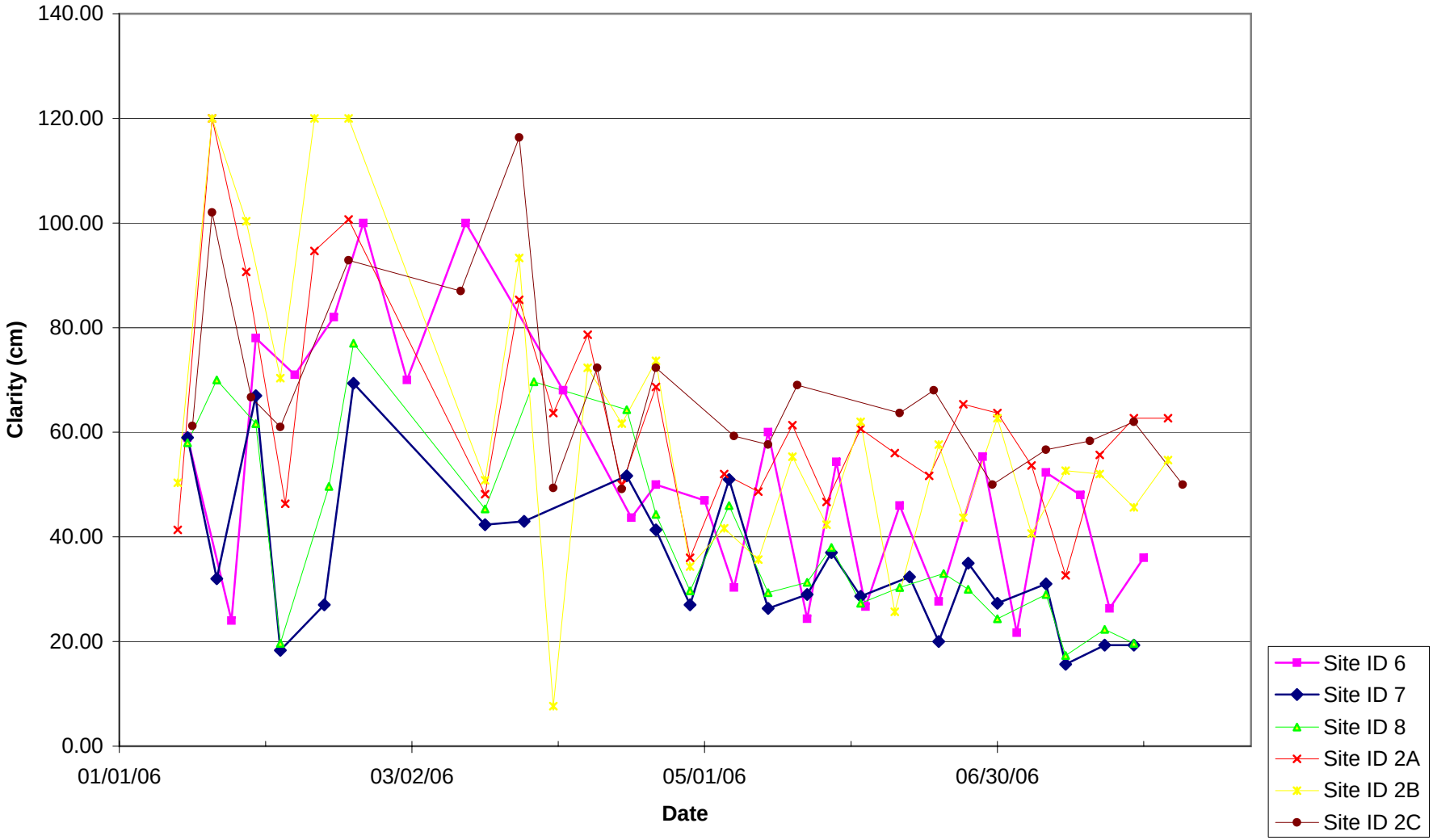


Figure 2:
Volunteer Salinity Monitoring Data (January-August 2006)