Town of Bluffton May River Monitoring Program: Stormwater Sampling Study



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	July 2005-May 2006





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 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.





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.





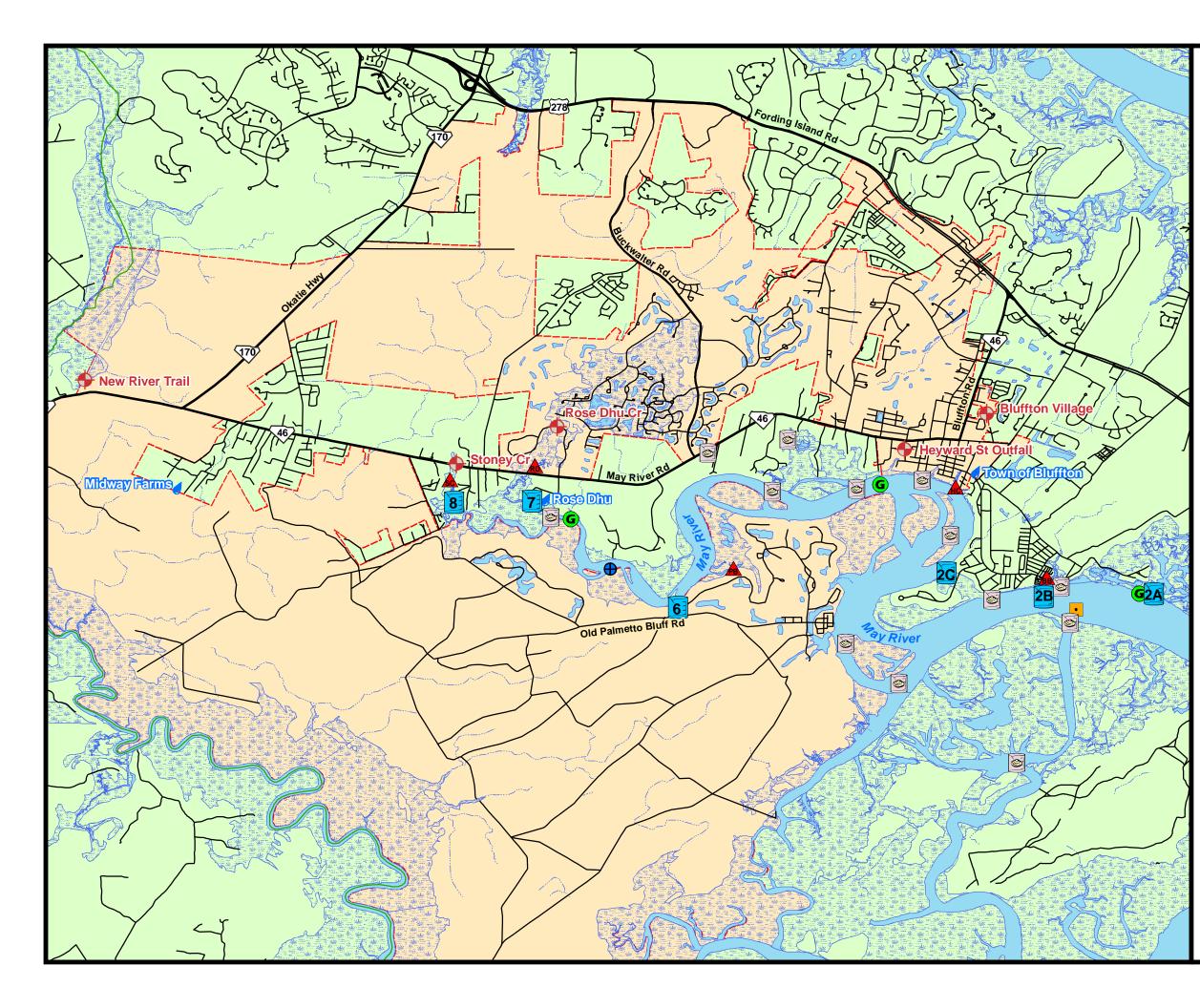


FIGURE 1

Town of Bluffton May River Monitoring Project



Legend

- 🥑 🛛 Rain Gauge
- Project Sampling Locations
- DHEC Ambient Stations
- SCECAP Sample Locations

 DHEC Shellfish Monitoring Site

- G USGS Continuous Gauges
 - May River Baseline Study Headwater Tidal Creek Sample Points
- 6

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.



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.





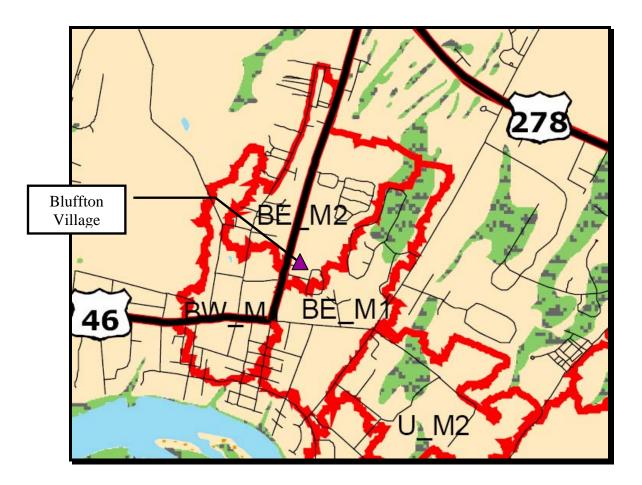


Figure 2: Bluffton Village sample point tributary area (from Beaufort County SMMP)

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.

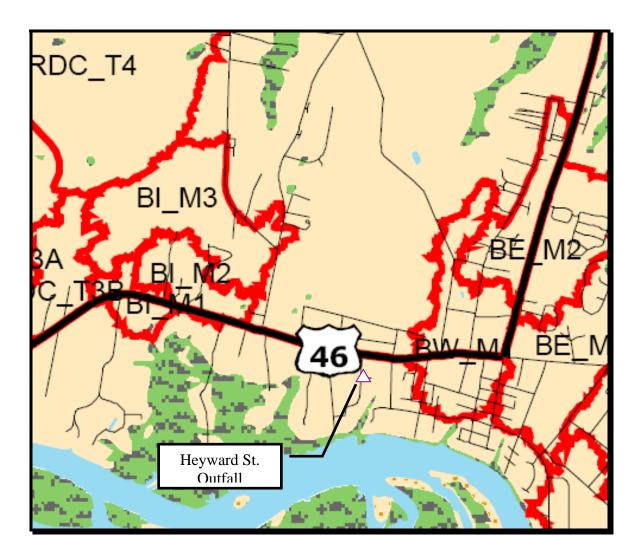


Figure 5: Heyward Street sample point tributary area (from Beaufort County SMMP)





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.

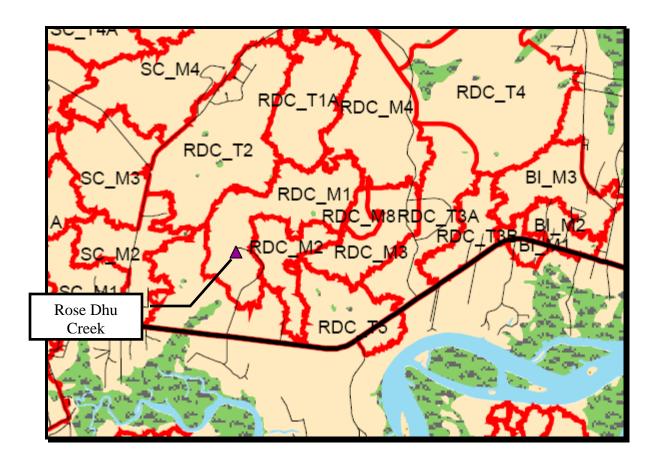


Figure 9: Dhu Creek sample point tributary area (from Beaufort County SMMP)



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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.

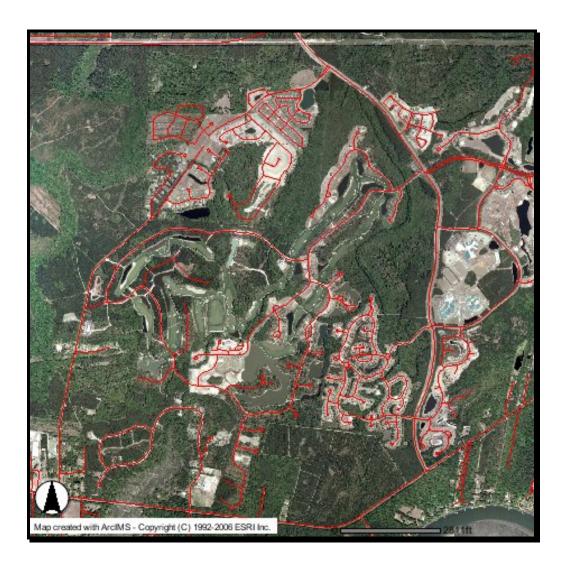


Figure 10: Aerial photo of Rose Dhu Creek tributary area



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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.





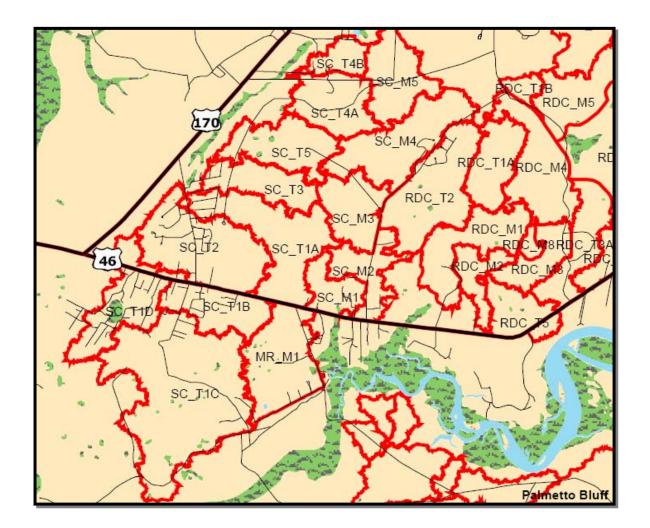


Figure 14: Stoney Creek sample point tributary area (from Beaufort County SMMP)

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.

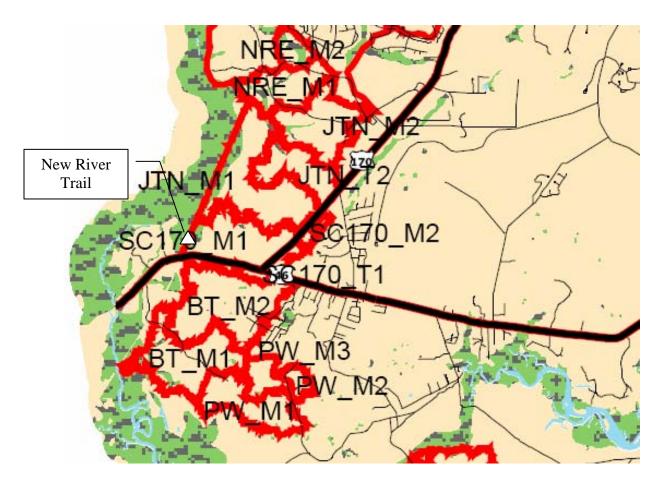


Figure 17: New River Trail sample point tributary area (from Beaufort County SMMP)

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	Bluffton Village/Heyward Street	Rose Dhu/Stoney Creek	New River Trail				
Date	(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.



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 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 75^{th} 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.





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
- 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.



⁽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.

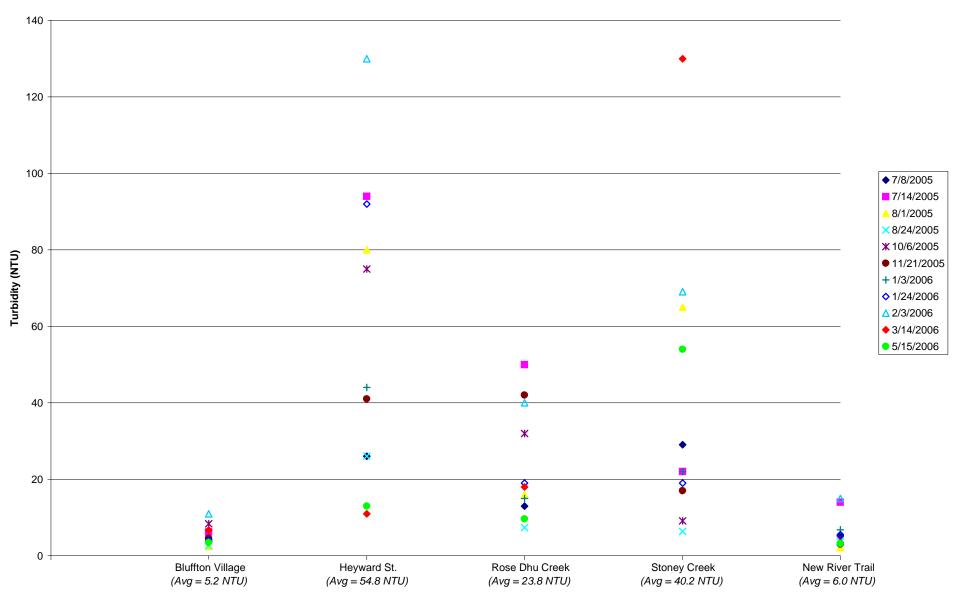
⁽²⁾ Van Dolah, R.F, et al. *The Condition of South Carolina's Estuarine and Coastal Habitats During 2001-2002, Technical Report No. 100.* SCECAP, 2004.





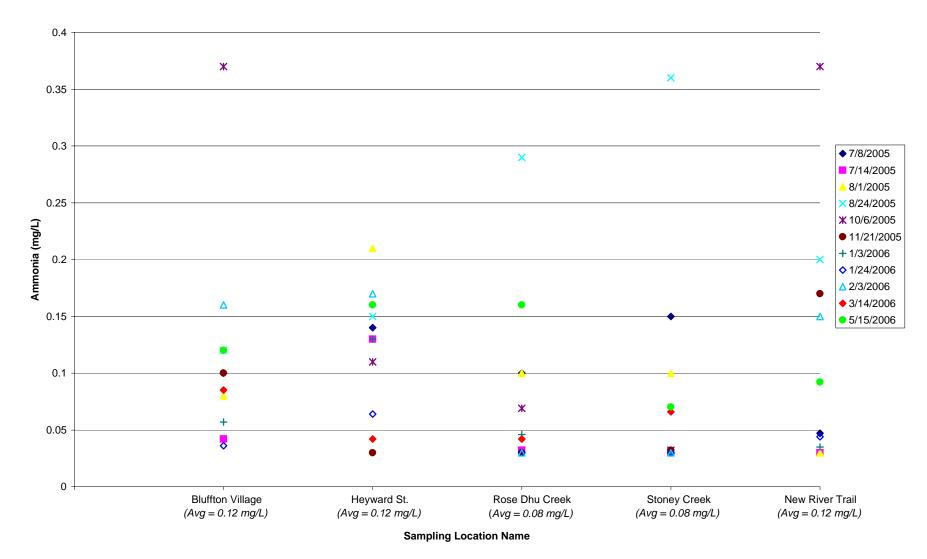
APPENDIX A

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

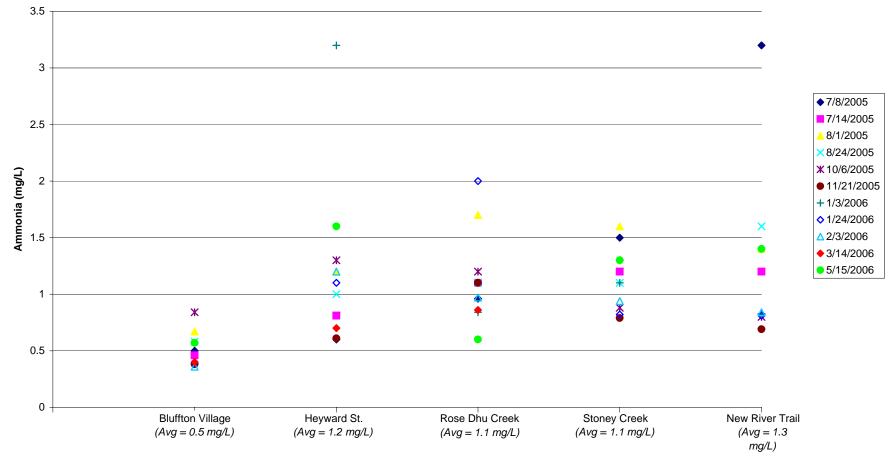


Sampling Location Name

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

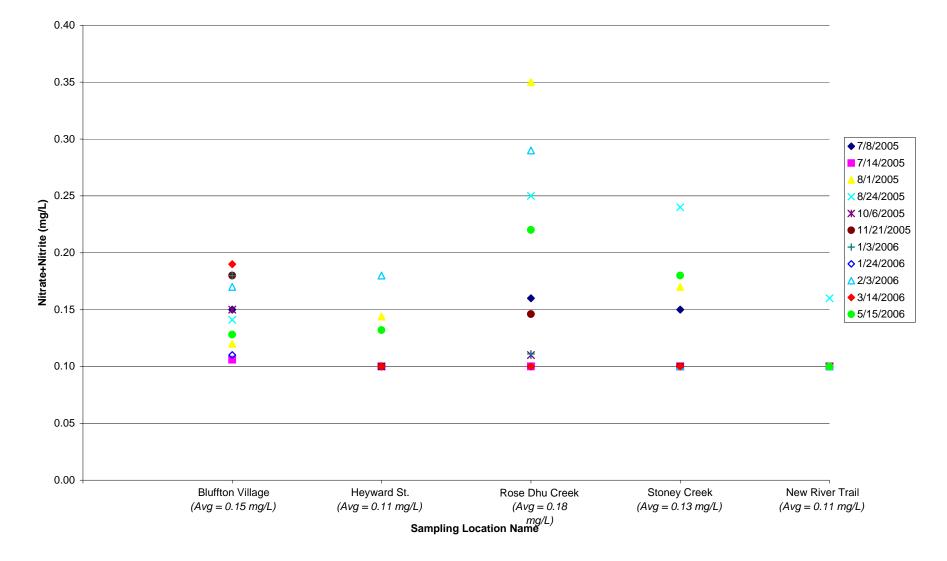


Attachment 3 TKN (mg/L) at Town of Bluffton Sampling Locations (July 2005-May 2006)



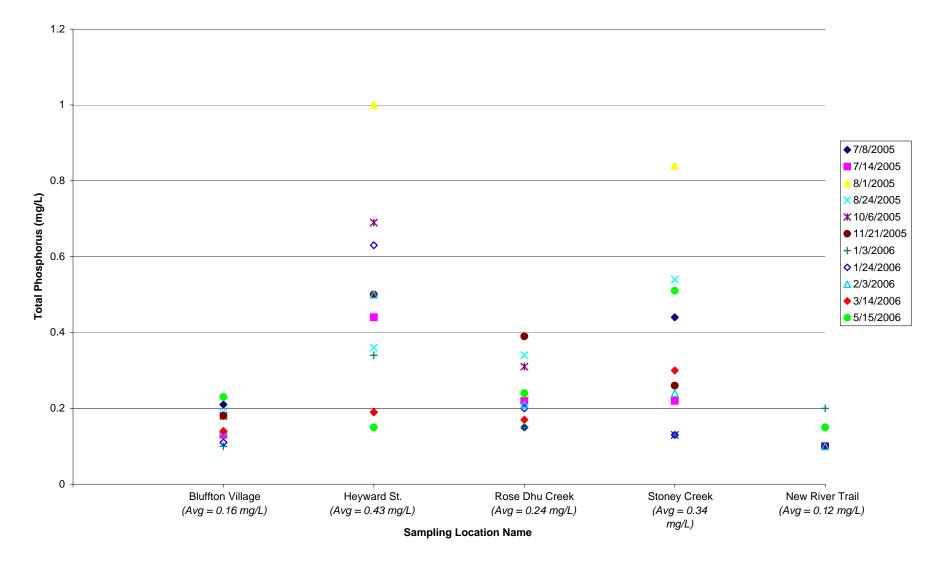
Sampling Location Name

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



	Attachment 5					
	Total Nit	trogen Concer	ntration (mg/L) (ca	lculated)		
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	Mean	Mean	Mean	Mean	
	0.67	1.26	1.31	1.27	1.38	

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



	Attachment 7				
F	ecal Colifo	orm Concer	ntration (CF	U/100 mL)	
	Bluffton	Heyward	Rose Dhu	Stoney	New River
Date	Village (2)	St. ⁽¹⁾	Creek	Creek	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	

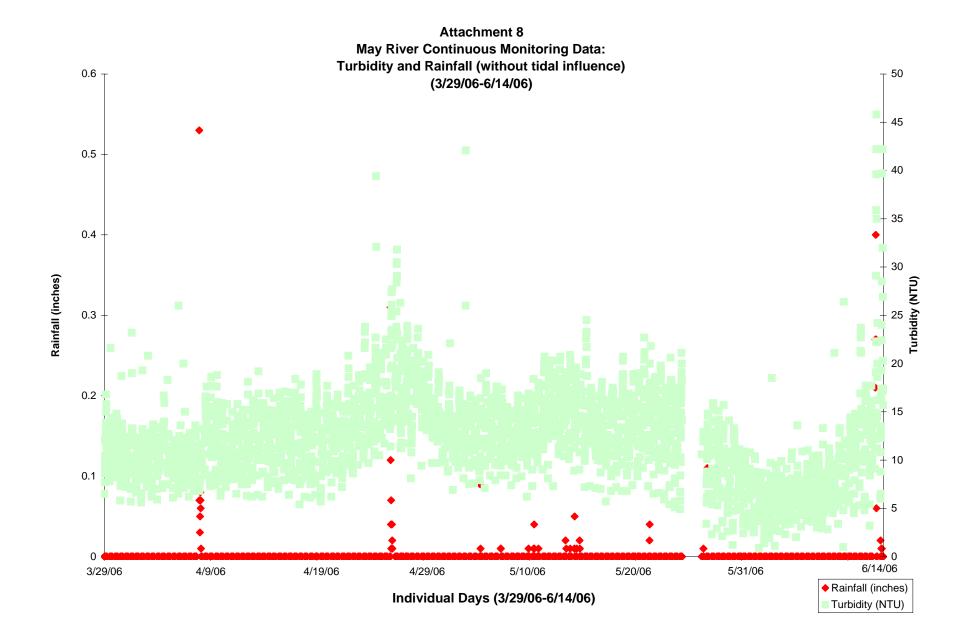
(1) Duplicate sample performed on 7/8/05

(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



APPENDIX B



ANALYTICAL REPORT

Job Number: 680-16618-1

Job Description: Town of Blufton

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

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.



METHOD SUMMARY

Client: Hodgins Engineering Consulting

Description		Lab Location	Method	Р	reparatior	n Method
Matrix: Water						
Turbidity, Nephelometric		STL-SAV	MCAWW	180.1		
Nitrogen (Ammonia, Colorimetric, Au	tomated Phenate)	STL-SAV	MCAWW	350.1		
Nitrogen, Total Kjeldahl (Colorimetric Digester, AAII)	, Semi-Automated Block	STL-SAV	MCAWW	351.2		
Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV			MCAWW	351.2
Nitrogen, Nitrate-Nitrite (Colorimetric Reduction)	, Automated, Cadmium	STL-SAV	MCAWW	353.2		
Nitrogen, Nitrite (Colorimetric, Autom Reduction)	ated, Cadmium	STL-SAV	MCAWW	353.2		
Total Phosphorus Sample Digestion for Tot	al Phosphorous	STL-SAV STL-SAV	EPA 365	.4	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

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: Client Matrix:	680-16618-1 Water		Date Sampled: Date Received:	
Analyte	Result	Qual Units	RL	Dil Method
Ammonia	0.12 Anly Batch: 680-45959	mg/L Date Analyzed 05/26/2006 1740	0.030	1.0 350.1
Nitrogen, Kjeldahl	0.57 Anly Batch: 680-44935 Prep Batch: 680-44750	mg/L Date Analyzed 05/17/2006 1030 Date Prepared: 05/15/2006 1500	0.20	1.0 351.2
Nitrogen, Nitrate	0.078 Anly Batch: 680-45117	mg/L Date Analyzed 05/16/2006 1005	0.050	1.0 353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-45103	U mg/L Date Analyzed 05/16/2006 1036	0.050	1.0 353.2
Phosphorus	0.23 Anly Batch: 680-44978 Prep Batch: 680-44752	mg/L Date Analyzed 05/15/2006 1344 Date Prepared: 05/15/2006 1530	0.10	1.0 365.4
Analyte	Result	Qual Units	RL	Dil Method
Turbidity	3.4 Anly Batch: 680-44944	NTU Date Analyzed 05/16/2006 1715	0.10	1.0 180.1

		General Chemistry		
Client Sample ID:	Heyward Street			
Lab Sample ID: Client Matrix:	680-16618-2 Water		Date Sampled: Date Received:	
Analyte	Result	Qual Units	RL	Dil Method
Ammonia	0.16 Anly Batch: 680-45959	mg/L Date Analyzed 05/26/2006 1740	0.030	1.0 350.1
Nitrogen, Kjeldahl	1.6 Anly Batch: 680-44935 Prep Batch: 680-44750	mg/L Date Analyzed 05/17/2006 1030 Date Prepared: 05/15/2006 1500	0.20	1.0 351.2
Nitrogen, Nitrate	0.082 Anly Batch: 680-45117	mg/L Date Analyzed 05/16/2006 1005	0.050	1.0 353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-45103	U mg/L Date Analyzed 05/16/2006 1036	0.050	1.0 353.2
Phosphorus	0.15 Anly Batch: 680-44978 Prep Batch: 680-44752	mg/L Date Analyzed 05/15/2006 1344 Date Prepared: 05/15/2006 1530	0.10	1.0 365.4
Analyte	Result	Qual Units	RL	Dil Method
Turbidity	13 Anly Batch: 680-44944	NTU Date Analyzed 05/16/2006 1715	0.10	1.0 180.1

		General Chemistry		
Client Sample ID:	Rose Dhu Creek			
Lab Sample ID: Client Matrix:	680-16618-3 Water		Date Sampled: Date Received:	05/15/2006 0710 05/15/2006 0830
Analyte	Result	Qual Units	RL	Dil Method
Ammonia	0.070 Anly Batch: 680-45959	mg/L Date Analyzed 05/26/2006 1740	0.030	1.0 350.1
Nitrogen, Kjeldahl	0.60 Anly Batch: 680-44935 Prep Batch: 680-44750	mg/L Date Analyzed 05/17/2006 1030 Date Prepared: 05/15/2006 1500	0.20	1.0 351.2
Nitrogen, Nitrate	0.17 Anly Batch: 680-45117	mg/L Date Analyzed 05/16/2006 1005	0.050	1.0 353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-45103	U mg/L Date Analyzed 05/16/2006 1036	0.050	1.0 353.2
Phosphorus	0.24 Anly Batch: 680-44978 Prep Batch: 680-44752	mg/L Date Analyzed 05/15/2006 1344 Date Prepared: 05/15/2006 1530	0.10	1.0 365.4
Analyte	Result	Qual Units	RL	Dil Method
Turbidity	9.6 Anly Batch: 680-44944	NTU Date Analyzed 05/16/2006 1715	0.10	1.0 180.1

		General Chemistry		
Client Sample ID:	Stoney Greek			
Lab Sample ID: Client Matrix:	680-16618-4 Water		Date Sampled: Date Received:	05/15/2006 0720 05/15/2006 0830
Analyte	Result	Qual Units	RL	Dil Method
Ammonia	0.18 Anly Batch: 680-45959	mg/L Date Analyzed 05/26/2006 1740	0.030	1.0 350.1
Nitrogen, Kjeldahl	1.3 Anly Batch: 680-44935 Prep Batch: 680-44750	mg/L Date Analyzed 05/17/2006 1030 Date Prepared: 05/15/2006 1500	0.20	1.0 351.2
Nitrogen, Nitrate	0.13 Anly Batch: 680-45117	mg/L Date Analyzed 05/19/2006 1105	0.050	1.0 353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-45103	U mg/L Date Analyzed 05/16/2006 1036	0.050	1.0 353.2
Phosphorus	0.51 Anly Batch: 680-44978 Prep Batch: 680-44752	mg/L Date Analyzed 05/15/2006 1344 Date Prepared: 05/15/2006 1530	0.10	1.0 365.4
Analyte	Result	Qual Units	RL	Dil Method
Turbidity	54 Anly Batch: 680-44944	NTU Date Analyzed 05/16/2006 1715	0.10	1.0 180.1

		General Chemistry			
Client Sample ID:	New River Trail				
Lab Sample ID: Client Matrix:	680-16618-5 Water		Date Sampled: Date Received:		15/2006 0735 15/2006 0830
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.092 Anly Batch: 680-45959	mg/L Date Analyzed 05/26/2006 1740	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.4 Anly Batch: 680-44935 Prep Batch: 680-44750	mg/L Date Analyzed 05/17/2006 1030 Date Prepared: 05/15/2006 1500	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-45117	U mg/L Date Analyzed 05/16/2006 1005	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-45103	U mg/L Date Analyzed 05/16/2006 1036	0.050	1.0	353.2
Phosphorus	0.15 Anly Batch: 680-44978 Prep Batch: 680-44752	mg/L Date Analyzed 05/15/2006 1344 Date Prepared: 05/15/2006 1530	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	3.2 Anly Batch: 680-44944	NTU Date Analyzed 05/16/2006 1715	0.10	1.0	180.1

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

Client: Hodgins Engineering Consulting

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 Qu	Ial RL
Turbidity	0.10 U	0.10

Matrix Duplicate - Batch: 680-44944

Method: 180.1 Preparation: N/A

nalysis Batch: 680-44944 rep Batch: N/A nits: NTU Sample Result/Qual Result		Instrument ID: No Equipment Assig Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 30 mL		
	RPD	Limit	Qual	
	Qual Result 3.21			

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Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-45959

Job Number: 680-16618-1

Method: 350.1 Preparation: N/A

Lab Sample ID: M Client Matrix: W Dilution: 1. Date Analyzed: 05 Date Prepared: N/	ater 0 5/26/2006 1732	Analysis Batch: Prep Batch: N/A Units: mg/L	680-45959		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 Cor Laboratory Cor	ntrol/ ntrol Duplicate Recover	y Report - Batch:	680-45959		Method: 350.1 Preparation: N/A
LCS Lab Sample I Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-45959/2 Water 1.0 05/26/2006 1732 N/A	Analysis Batch: Prep Batch: N/A Units: mg/L		L	nstrument ID: KoneLab1 ab File ID: N/A iitial Weight/Volume: 2 mL inal Weight/Volume: 2 mL
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-45959/3 Water 1.0 05/26/2006 1732 N/A	Analysis Batch: Prep Batch: N/A Units:mg/L		L Ir	nstrument ID: KoneLab1 ab File ID: N/A nitial Weight/Volume: 2 mL inal Weight/Volume: 2 mL
Analyte		<u>% Rec.</u> LCS LCSD	Limit	RPD	RPD Limit LCS Qual LCSD Qual
Ammonia		94 94	90 - 110	0	30

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Client: Hodgins Engineering Consulting

Matrix Sniko/

Quality Control	Results

Matrix Spike/ Matrix Spike Dupli	cate Recovery Repo	ort - Batcl	h: 680-45	Method: 350.1 0-45959 Preparation: N/A				
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/26/2006 1740 N/A		s Batch: 6 atch: N/A	680-45959	La Ini			
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/26/2006 1840 N/A		s Batch: 6 atch: N/A	680-45959	La Ini	strument ID: Ko b File ID: N// tial Weight/Volu nal Weight/Volu	A ime: 10 mL	
Analyte		<u>% R</u> MS	MSD	Limit	RPD	RPD Limit	MS Qual MSD Qual	
Ammonia		90	90	90 - 110	0	30		

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-44750

Job Number: 680-16618-1

Method: 351.2 Preparation: 351.2

Lab Sample ID:MB 680Client Matrix:WaterDilution:1.0Date Analyzed:05/17/2Date Prepared:05/15/2	2006 1030	Analysis Batch: 680-44935 Prep Batch: 680-44750 Units: mg/L			Instrument ID: No Equipment Assigne 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: 6	80-44750			Method: 351.2 Preparation: 35 [,]	1.2		
Lab Sample ID: LCS 68 Client Matrix: Water Dilution: 1.0 Date Analyzed: 05/17/2 Date Prepared: 05/15/2	2006 1030	Analysis Batch: Prep Batch: 680 Units:mg/L			Instrument ID: No Lab File ID: N/A Initial Weight/Volur Final Weight/Volun	ne: 40 mL		
Analyte		Spike Amount	Result	% R6	ec. Limit	Qual		
Nitrogen, Kjeldahl		1.00	0.86	86	75 - 12	5		
Matrix Spike/ Matrix Spike Duplica	ate Recovery Repo	rt - Batch: 680-4	4750		Method: 351.2 Preparation: 35 ⁷	1.2		
Client Matrix:VDilution:1Date Analyzed:0	580-16618-1 Water I.0 95/17/2006 1030 95/15/2006 1500	Analysis Batch: Prep Batch: 680			Instrument ID: No Lab File ID: N/ Initial Weight/Volun Final Weight/Volun	ne: 20 mL		
Date Analyzed: 0		Analysis Batch: Prep Batch: 680			Instrument ID: No Lab File ID: N/A Initial Weight/Volur Final Weight/Volun	ne: 20 mL		
Analyte		<u>% Rec.</u> MS MSD	Limit	RP	D RPD Limit	MS Qual MSD Qual		

118

89

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

Nitrogen, Kjeldahl

75 - 125

18

40

Method Blank - Batch: 680-45103

Client: Hodgins Engineering Consulting

Date Prepared: N	/A				J.
Analyte		Res	sult	Qual	RL
Nitrogen, Nitrite		0.0	50	U	0.050
Laboratory Con Laboratory Con	ntrol/ ntrol Duplicate Recove	ery Report - Bat	ch: 680-4510	03	Method: 353.2 Preparation: N/A
LCS Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	ID: LCS 680-45103/2 Water 1.0 05/16/2006 1036 N/A	Analysis Bat Prep Batch: Units: mg/L		3	Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-45103/3 Water 1.0 05/16/2006 1036 N/A	Analysis Bat Prep Batch: Units:mg/L	ch: 680-45103 N/A	3	Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Analyte		<u>% Rec.</u> LCS LC	SD Limit	RPD	D RPD Limit LCS Qual LCSD Qual
Nitrogen, Nitrite		97 97	80 - 12	20 0	30

Analysis Batch: 680-45103

Prep Batch: N/A

Units: mg/L

Lab Sample ID: MB 680-45103/1

Water

1.0 Date Analyzed: 05/16/2006 1036

Client Matrix:

Dilution:

Method: 353.2 **Preparation: N/A**

Lab File ID:

Instrument ID: No Equipment Assigned

N/A

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

Quality Control Results

Client: Hodgins Engineering Consulting

Matrix Spike/

Quality	Control	Results
---------	---------	---------

Job Number: 680-16618-1

Matrix Spike/ Matrix Spike Dup	licate Recovery Rep	oort - Bat	5103		ethod: 353.2 reparation: N		
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/16/2006 1036 N/A	,	sis Batch: 6 Batch: N/A	80-45103	La In		
MSD Lab Sample ID Client Matrix: Dilution: Date Analyzed: Date Prepared:	: 680-16618-1 Water 1.0 05/16/2006 1036 N/A		sis Batch: 6 3atch: N/A	80-45103	La In	strument ID: N ab File ID: N itial Weight/Vol nal Weight/Vol	ume: 10 mL
Analyte		<u>%</u> MS	<u>Rec.</u> MSD	Limit	RPD	RPD Limit	MS Qual MSD Qual
Nitrogen, Nitrite		114	113	80 - 120	1	30	

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Laboratory Control/ Laboratory Control Dupli LCS Lab Sample ID: LCS 680gned Client Matrix: Water Dilution: 1.0 05/16/20 Date Analyzed: Date Prepared: N/A LCSD Lab Sample ID: LCSD 680-45117/3 Analysis Batch: 680-45117 Instrument ID: No Equipment Assigned Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units:mg/L Initial Weight/Volume: 10 mL 05/16/2006 1005 Date Analyzed: Final Weight/Volume: 10 mL Date Prepared: N/A % Rec. Analyte LCS LCSD Limit RPD RPD Limit LCS Qual LCSD Qual Nitrogen, Nitrate 103 105 80 - 120 2 30

Analysis Batch: 680-45117

Prep Batch: N/A

Units: mg/L

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-45117

Water

1.0

Date Analyzed: 05/16/2006 1005

Lab Sample ID: MB 680-45117/1

Client Matrix:

Date Prepared: N/A

Nitrogen, Nitrate

Dilution:

Analyte

Quality Control Results

Instrument ID: No Equipment Assigned

N/A

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

Job Number: 680-16618-1

Method: 353.2 Preparation: N/A

Lab File ID:

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	Result		Qual		RL
	0.050		U		0.050
licate Recovery F	Report - Batch:	680-45117		Method: 353.2 Preparation: N/A	
)-45117/2	Analysis Batch: Prep Batch: N/A Units: mg/L	680-45117		Instrument ID: No Equ Lab File ID: N/A Initial Weight/Volume:	
006 1005	onito. Ing/E			Final Weight/Volume:	

Client: Hodgins Engineering Consulting

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

MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/16/2006 1005 N/A	Analysis Prep Bat	Batch: 68 ch: N/A	30-45117	La Ini		
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/16/2006 1005 N/A	Analysis Prep Bat	Batch: 68 ch: N/A	30-45117	La Ini	strument ID: No b File ID: N/ tial Weight/Volu nal Weight/Volu	ume: 10 mL
Analyte Nitrogen, Nitrate		_	<u>c.</u> MSD 108	Limit 80 - 120	RPD	RPD Limit	MS Qual MSD Qual

Quality Control Results

Method: 353.2

Preparation: N/A

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-44752

Job Number: 680-16618-1

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID:MB 6Client Matrix:WateDilution:1.0Date Analyzed:05/1Date Prepared:05/1	-	Batch: 680	680-44978 D-44752		Instrument ID: No E Lab File ID: N/A Initial Weight/Volum Final Weight/Volum	ne: 40 mL	Assigned	
Analyte			Result	t	Qual		RL	
Phosphorus			0.10		U		0.10	
Laboratory Contro	ol Sample - Batch:	680-4475	2			Method: 365.4 Preparation: 365	5.2/365.3	
Lab Sample ID:LCSClient Matrix:WateDilution:1.0Date Analyzed:05/1Date Prepared:05/1	er 5/2006 1344	-	Batch: 680	680-44978)-44752		Instrument ID: No E Lab File ID: N/A Initial Weight/Volum Final Weight/Volum	ne: 40 mL	Assigned
Analyte		Spike	Amount	Result	% Re	ec. Limit		Qual
Phosphorus		1.00		1.1	111	60 - 14	0	
Matrix Spike/ Matrix Spike Dupl	icate Recovery Re	oort - Bate	ch: 680-4	4752		Method: 365.4 Preparation: 365	5.2/365.3	
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/15/2006 1344 05/15/2006 1530	•	sis Batch: 3atch: 680	680-44978)-44752		Instrument ID: No Lab File ID: N// Initial Weight/Volum Final Weight/Volum	ne: 20 ml	-
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-16618-1 Water 1.0 05/15/2006 1344 05/15/2006 1530	-	sis Batch: 3atch: 680	680-44978)-44752		Instrument ID: No E Lab File ID: N/A Initial Weight/Volum Final Weight/Volum	ne: 20 mL	Assigned
Apoluto			Rec.	l insi4			Mc Ouel M	
Analyte		MS	MSD	Limit	RP	D RPD Limit	MS Qual	NSD Quai

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

	(SIGNATURE) FOR LABORATIORY BY: DATE TIME CUSTODY INTACT CUSTODY SEAL NO. STL SAVANNAH LABOR	LABORATORY US	RECEIVED BY: (SIGNATURE) DATE TIME RECEIVED BY: (SIGNATURE) DATE TIME	RELINQUISHED BY: (SIGNATURE) DATE TIME TIME SIGNATURE) DATE TIME DATE TIME		5/15/26 0735 New River Trail-	15/06 DTW Stoney Creek 1111	15/26 0710 Rove Dhu Creek 1 1 1 1	-	5/15/0630 Bluffton Village 1 1 1 1	AQUE SOLIE AIR NONA	CONTING THIS WORK (if applicable)	C) OR LIQU	GRAB (G	PM CLIENT PHONE CLIENT FAX 843-757-1952 843-757-5234 SOLVER SOLVER	CT MANAGER P.O. NUMBER CONTRACT NO.			SEVERN
		LABORAT	RECEIVED BY: (SIGNATURE)								COMI	POSITE ((OUS (WA	C) OR	GRAB (G	CLIENT FAX		T LOCATION		HAIN OF CUSTODY RECORD
	STL SAVANNAH	ORY USE ONLY	DATE	DATE				-			NONA	XYY	N	H3			· · · ·	Alternate Laborato	
	LABORATORY REMARKS		TIME RECEIVED BY: (SIGNATURE)	TIME RELINQUISHED BY: (SIGNATURE)			-				NUMBER OF CONTAINERS SUBMITTED		TN	urbi 02/	dit NC	۶ <u> </u>	REQUIRED ANALYSIS	ry Name/Location Phone: Fax:	
STL8240-680 (12/02)			DATE	TURE) DATE							REMARKS	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	DATE DUE	DELIVERY (SURCHARGE)	DATE DUE	STANDARD REPORT DELIVERY	PAGE		Website: www.stl-inc.com Phone: (912) 354-7858 Fax: (912) 352-0165



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

Description	Lab Location	Method P	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 Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	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

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: Client Matrix:	680-14589-1 Water		Date Sampled: Date Received:		4/2006 1600 4/2006 1730
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.085 Anly Batch: 680-39531	mg/L Date Analyzed 03/21/2006 1458	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.40 Anly Batch: 680-39246 Prep Batch: 680-39035	mg/L Date Analyzed 03/17/2006 1228 Date Prepared: 03/15/2006 1130	0.20	1.0	351.2
Nitrogen, Nitrate	0.14 Anly Batch: 680-39107	mg/L Date Analyzed 03/15/2006 0119	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-39127	U mg/L Date Analyzed 03/15/2006 2240	0.050	1.0	353.2
Phosphorus	0.14 Anly Batch: 680-39247 Prep Batch: 680-39038	mg/L Date Analyzed 03/17/2006 1412 Date Prepared: 03/15/2006 1130	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	6.7 Anly Batch: 680-39141	B NTU Date Analyzed 03/15/2006 1400	0.10	1.0	180.1
Coliform, Fecal	40 Anly Batch: 680-38875	CFU/100mL Date Analyzed 03/14/2006 1816	10	10	9222D

		General Chemistry			
Client Sample ID:	Heywood Street				
Lab Sample ID: Client Matrix:	680-14589-2 Water		Date Sampled: Date Received:		14/2006 1610 14/2006 1730
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.042 Anly Batch: 680-39531	mg/L Date Analyzed 03/21/2006 1506	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.70 Anly Batch: 680-39246 Prep Batch: 680-39035	mg/L Date Analyzed 03/17/2006 1235 Date Prepared: 03/15/2006 1130	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-39107	U mg/L Date Analyzed 03/15/2006 0119	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-39127	U mg/L Date Analyzed 03/15/2006 2240	0.050	1.0	353.2
Phosphorus	0.19 Anly Batch: 680-39247 Prep Batch: 680-39038	mg/L Date Analyzed 03/17/2006 1412 Date Prepared: 03/15/2006 1130	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	11 Anly Batch: 680-39141	B NTU Date Analyzed 03/15/2006 1400	0.10	1.0	180.1
Coliform, Fecal	30 Anly Batch: 680-38875	CFU/100mL Date Analyzed 03/14/2006 1816	5.0	5.0	9222D

		General Chemistry			
Client Sample ID:	Rose Dhu Creek				
Lab Sample ID: Client Matrix:	680-14589-3 Water		Date Sampled: Date Received:		4/2006 1625 4/2006 1730
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.066 Anly Batch: 680-39531	mg/L Date Analyzed 03/21/2006 1506	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.86 Anly Batch: 680-39246 Prep Batch: 680-39035	mg/L Date Analyzed 03/17/2006 1235 Date Prepared: 03/15/2006 1130	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-39107	U mg/L Date Analyzed 03/15/2006 0119	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-39127	U mg/L Date Analyzed 03/15/2006 2240	0.050	1.0	353.2
Phosphorus	0.17 Anly Batch: 680-39247 Prep Batch: 680-39038	mg/L Date Analyzed 03/17/2006 1422 Date Prepared: 03/15/2006 1130	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	18 Anly Batch: 680-39141	B NTU Date Analyzed 03/15/2006 1400	0.10	1.0	180.1
Coliform, Fecal	560 Anly Batch: 680-38875	CFU/100mL Date Analyzed 03/14/2006 1816	5.0	5.0	9222D

General Chemistry							
Client Sample ID:	Stoney Creek						
Lab Sample ID: Client Matrix:	680-14589-4 Water	Date Sample Date Receive		4/2006 1640 4/2006 1730			
Analyte	Result Qual Units	RL	Dil	Method			
Ammonia	0.21 mg/L Anly Batch: 680-39531 Date Analyzed 03/	0.030 21/2006 1506	1.0	350.1			
Nitrogen, Kjeldahl	, , ,	0.20 17/2006 1235 15/2006 1130	1.0	351.2			
Nitrogen, Nitrate	0.050 U mg/L Anly Batch: 680-39107 Date Analyzed 03/	0.050 15/2006 0119	1.0	353.2			
Nitrogen, Nitrite	0.050 U mg/L Anly Batch: 680-39127 Date Analyzed 03/	0.050 15/2006 2240	1.0	353.2			
Phosphorus	5	0.10 17/2006 1422 15/2006 1130	1.0	365.4			
Analyte	Result Qual Units	RL	Dil	Method			
Turbidity	130 B NTU Anly Batch: 680-39141 Date Analyzed 03/	0.10 15/2006 1400	1.0	180.1			
Coliform, Fecal	1200 CFU/10 Anly Batch: 680-38875 Date Analyzed 03/	0mL 50 14/2006 1816	50	9222D			

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

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Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units: NTU Initial Weight/Volume: Date Analyzed: 03/15/2006 1400 Final Weight/Volume: 30 mL Date Prepared: N/A Analyte Result Qual RL Turbidity 0.11 0.10 Analyte Spike Amount Result % Rec. Limit Qual

Analysis Batch: 680-39141

Method Blank - Batch: 680-39141

Lab Sample ID: MB 680-39141/1

Client: Hodgins Engineering Consulting

Method: 180.1 **Preparation: N/A**

Quality	Control	Results
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Instrument ID: No Equipment Assigned

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-39531

Method: 350.1 Preparation: N/A

Lab Sample ID: M Client Matrix: W Dilution: 1. Date Analyzed: 03 Date Prepared: N	/ater 0 8/21/2006 1458	Analysis Batch: 0 Prep Batch: N/A Units: mg/L	680-39531	Lab Initia	ument ID: KoneLab File ID: N/A I Weight/Volume: 2 I Weight/Volume: 2	mL
Analyte		Result		Qual		RL
Ammonia Laboratory Cor Laboratory Cor	ntrol/ ntrol Duplicate Recove	0.030 ery Report - Batch:	680-39531		hod: 350.1 paration: N/A	0.030
LCS Lab Sample I Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-39531/2 Water 1.0 03/21/2006 1458 N/A	Analysis Batch: Prep Batch: N/A Units: mg/L		Lab F Initial	5	1 2 mL 2 mL
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-39531/3 Water 1.0 03/21/2006 1458 N/A	Analysis Batch: Prep Batch: N/A Units:mg/L		Lab F Initial	ment ID: KoneLa ile ID: N/A Weight/Volume: 2 Weight/Volume: 2	mL
Analyte		<u>% Rec.</u> LCS LCSD	Limit	RPD	RPD Limit LCS C	Qual LCSD Qual
Ammonia		95 94	90 - 110) 1	30	

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-39035

Job Number: 680-14589-1

Method: 351.2 Preparation: 351.2

Analyte	Spike	Amount Resu	lt % Rec.	Limit	Qual
Lab Sample ID:LCS 680-Client Matrix:WaterDilution:1.0Date Analyzed:03/17/200Date Prepared:03/15/200	Prep E Units:r 06 1249	sis Batch: 680-39 Batch: 680-39035 mg/L	Lab Fi Initial	nent ID: KoneLab2 le ID: N/A Weight/Volume: 40 Veight/Volume: 40	
	ample - Batch: 680-3903		Metho	od: 351.2 aration: 351.2	20
Analyte Nitrogen, Kjeldahl		Result	Qual	R	L 20
Lab Sample ID: MB 680-3 Client Matrix: Water Dilution: 1.0 Date Analyzed: 03/17/200 Date Prepared: 03/15/200	Prep E Units: 06 1249	sis Batch: 680-39 Batch: 680-39035 mg/L	Lab Fi Initial	nent ID: KoneLab2 le ID: N/A Weight/Volume: 40 Veight/Volume: 40	

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

MS

101

% Rec.

MSD

100

Nitrogen, Nitrate

Dilution:

Analyte

Date Analyzed:

Date Prepared:

Analyte Spike Amount

1.0

N/A

03/15/2006 0119

Nitrogen, Nitrate		1.00	0.93	93	80 - 120
Matrix Spike/ Matrix Spike Duplicate Recovery Repo		ort - Batch: 680-3	39107	Method: 353.2 Preparation: N/A	
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-14589-1 Water 1.0 03/15/2006 0119 N/A	Analysis Batch: 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: Client Matrix:	680-14589-1 Water	Analysis Batch: Prep Batch: N/A			Instrument ID: KoneLab2 Lab File ID: N/A

Analyte Result Qual Nitrogen, Nitrate 0.050 U

Laboratory Control Sample - Batch: 680-39107

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-39107

Water

1.0

Date Analyzed: 03/16/2006 0119

Lab Sample ID: MB 680-39107/1

Client Matrix:

Date Prepared: N/A

Dilution:

Dilution:

Date Prepared: N/A

Method: 353.2 Preparation: N/A

Limit

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

RPD Limit

30

Volume: 10
Volume: 10
`

Result

% Rec.

RPD

1

Instrument ID: KoneLab2 Lab Sample ID: LCS 680-39107/2 Analysis Batch: 680-39107 Client Matrix: Water 1.0 0 mL Date Analyzed: 03/16/2 0

Analysis Batch: 680-39107

Prep Batch: N/A

Units: mg/L

Method: 353.2 Preparation: N/A

Lab File ID:

Instrument ID: KoneLab2

N/A

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

Job Number: 680-14589-1

RL

0.050

mL

MS Qual MSD Qual

Qual

Quality Control Results

Limit

80 - 120

L

A Ν Μ

Analysis Batch: 680-39127

Prep Batch: N/A

Units: mg/L

Μ

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

Page 13 of 16

Quality Control Results

Job Number: 680-14589-1

Method: 353.2 **Preparation: N/A**

Lab File ID: N/A

Instrument ID: KoneLab2

Initial Weight/Volume: 10 mL

Date Analyzed: 03/1 Date Prepared: N/A		onns. mg/L			Final Weight/Volume: 10 m	
Analyte		Res	ult	Qual	RL	
Nitrogen, Nitrite		0.05	50	U	0.03	50
Laboratory Contr	ol Sample - Batch:	680-39127			Method: 353.2 Preparation: N/A	
Lab Sample ID: LCS Client Matrix: Wat Dilution: 1.0 Date Analyzed: 03/1 Date Prepared: N/A	er 15/2006 2240	Analysis Batch Prep Batch: N/ Units:mg/L		L	nstrument ID: KoneLab2 .ab File ID: N/A nitial Weight/Volume: 10 m Final Weight/Volume: 10 m	
Analyte		Spike Amount	Result	% Rec	. Limit	Qual
Nitrogen, Nitrite		1.00	1.0	101	80 - 120	
Matrix Spike/ Matrix Spike Dup	licate Recovery Re	port - Batch: 680)-39127		Method: 353.2 Preparation: N/A	
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-14589-1 Water 1.0 03/15/2006 2240 N/A	Analysis Batch Prep Batch: N		L	nstrument ID: KoneLab2 Lab File ID: N/A nitial Weight/Volume: 10 Final Weight/Volume: 10	
MSD Lab Sample ID Client Matrix: Dilution: Date Analyzed: Date Prepared:	: 680-14589-1 Water 1.0 03/15/2006 2240 N/A	Analysis Batch Prep Batch: N		L	nstrument ID: KoneLab2 .ab File ID: N/A nitial Weight/Volume: 10 m Final Weight/Volume: 10 m	
Analyte		<u>% Rec.</u> MS MSD	Limit	RPD	RPD Limit MS Qual	MSD Qual
Nitrogen, Nitrite		106 107	80 - 120		30	

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-39127

Lab Sample ID: MB 680-39127/1

1.0

Client Matrix: Water

Dilution:

Page 14 of 16

|--|

Quality Control Results

Job Number: 680-14589-1

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID:MB 680-39037/1-BClient Matrix:WaterDilution:1.0Date Analyzed:03/17/2006Date Prepared:03/15/2006	Analysis Batch: 680-39247 Prep Batch: 680-39038 Units: mg/L		ment ID: KoneLab2 iile ID: N/A Weight/Volume: 40 mL Weight/Volume: 40 mL
Analyte	Result	Qual	RL
Phosphorus	0.10	U	0.10
Method Blank - Batch: 680-39038			od: 365.4 aration: 365.2/365.3
Lab Sample ID:MB 680-39038/1-AClient Matrix:WaterDilution:1.0Date Analyzed:03/17/2006 1402Date Prepared:03/15/2006 1130	Analysis Batch: 680-39247 Prep Batch: 680-39038 Units: mg/L	Lab F Initial	iment ID: KoneLab2 iile ID: N/A Weight/Volume: 40 mL Weight/Volume: 40 mL
Analyte	Result	Qual	RL
Analyte Phosphorus	Result 0.10	Qual U	RL 0.10
•	0.10	U	
Phosphorus	0.10	U Meth Prep Instru Lab F Initial	0.10 nod: 365.4
Phosphorus Laboratory Control Sample - Batch: 68 Lab Sample ID: LCS 680-39038/3-A Client Matrix: Water Dilution: 1.0 Date Analyzed: 03/17/2006 1402	0.10 30-39038 Analysis Batch: 680-39247 Prep Batch: 680-39038	U Meth Prep Instru Lab F Initial	0.10 nod: 365.4 aration: 365.2/365.3 ment ID: KoneLab2 file ID: N/A Weight/Volume: 40 mL

Client: Hodgins Engineering Consulting

Quality Control Results

Job Number: 680-14589-1

Client: Hodgins Engineering Consulting

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

	Result	Quai	
Coliform, Fecal	1.0	U	1.0

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

STL8240-680 (12/02)			•				
			6 20-14589		N0	3/14/06 1730	アプ
		LABORATORY REMARKS	STL SAVANNAH LOG NO.	CUSTODY SEAL NO.		DATE TIME	(SIGNATURE)
			USE ONLY	LABORATORY USE ONLY			
TIME	DATE	TIME RECEIVED BY: (SIGNATURE)	DATE		RECEIVED BY: (SIGNATURE)	DATE TIME	RECEIVED BY: TSIGNATURE)
TIME	DATE	TIME RELINQUISHED BY: (SIGNATURE)	DATE	IATURE)	RELINQUISHED BY: (SIGNATURE)	2/14/06 ITME	RELINQUISHED BY: (SIGNATURE)
						TORUCIALS HEALT	1 annin
Pa						I TONEY CIEST	ŦĀ
ge			-				
16						Rise Dhu Creek	ringht 1625
of						Humbord Street	3/14/02 16(B
16						Buffton Village	3/14/06 1600
NRKS	REMARKS	NUMBER OF CONTAINERS SUBMITTED		AQUE SOLII AIR		SAMPLE IDENTIFICATION	DATE TIME
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	NUMBER OF COO PER SHIPMENT:	Z		OUS (WA D OR SEN			TING THIS
	DATE DUE	14		ATER) AISOL		Rhift SC 29911	CLIENT ADDRESS
	EXPEDITED REPORT DELIVERY (SURCHARGE)	INDi IH3/	10 (011, 5 10-2/1 10-2/		Low	CLIENT E-MAIL	lain 5
	DATE DUE		ND- ND- ND- ND- ND- ND- ND- ND- ND- ND-	INDIC	CLIENT FAX	CLIENT PHONE	CLIENT (SITE) PN
ŘT	STANDARD REPORT DELIVERY	ty ecal	VT,) 3 Dz Phe	ATE	CONTRACT NO.	P.O. NUMBER	SIL (LAB) PROJECT MANAGER
OF	PAGE	REQUIRED ANALYSIS	×,	MATRIX TYPE	PROJECT LOCATION (STATE)	PROJECT NO.	Built
		Alternate Laboratory Name/Jocation Phone: Fax:	Alternate Laborat				TRENT
	stl-inc.com 54-7858 -0165	Website: www.stl-inc.com Avenue Phone: (912) 354-7858 1404 Fax: (912) 352-0165	STL Savannah 5102 LaRoche Avenu Savannah, GA 31404	CORD	N OF CUSIODY RE	ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD	SEVERN
		Serial Number 75141					

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ie:

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

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Description	Lab Location	Method F	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	STL-SAV	MCAWW 351.2	
Digester, AAII) 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 Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	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

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

Job Number: 680-13205-1

		General Chemistry			
Client Sample ID:	Bluffton Village				
Lab Sample ID: Client Matrix:	680-13205-1 Water		Date Sampled: Date Received:		03/2006 0745 03/2006 1056
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.16 Anly Batch: 680-36146	mg/L Date Analyzed 02/10/2006 1038	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.36 Anly Batch: 680-36575 Prep Batch: 680-36539	mg/L Date Analyzed 02/15/2006 1321 Date Prepared: 02/14/2006 1500	0.20	1.0	351.2
Nitrogen, Nitrate	0.12 Anly Batch: 680-35625	mg/L Date Analyzed 02/03/2006 1235	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-35642	U mg/L Date Analyzed 02/03/2006 1156	0.050	1.0	353.2
Phosphorus	0.14 Anly Batch: 680-36578 Prep Batch: 680-36538	mg/L Date Analyzed 02/15/2006 1648 Date Prepared: 02/14/2006 1500	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	11 Anly Batch: 680-35485	NTU Date Analyzed 02/03/2006 1115	0.10	1.0	180.1
Coliform, Fecal	890 Anly Batch: 680-35362	CFU/100mL Date Analyzed 02/03/2006 1136	5.0	5.0	9222D
Client Sample ID:	Heyward Street				
Lab Sample ID: Client Matrix:	680-13205-2 Water		Date Sampled: Date Received:)3/2006 0800)3/2006 1056

Job Number: 680-13205-1

Date Received: 02/03/2006 1056

		General Chemistry			
Client Sample ID:	Heyward Street				
Lab Sample ID: Client Matrix:	680-13205-2 Water		Date Sampled: Date Received		03/2006 0800 03/2006 1056
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.17 Anly Batch: 680-36146	mg/L Date Analyzed 02/10/2006 1038	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.2 Anly Batch: 680-36575 Prep Batch: 680-36539	mg/L Date Analyzed 02/15/2006 1331 Date Prepared: 02/14/2006 1500	0.20	1.0	351.2
Nitrogen, Nitrate	0.13 Anly Batch: 680-35625	mg/L Date Analyzed 02/03/2006 1235	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-35642	U mg/L Date Analyzed 02/03/2006 1156	0.050	1.0	353.2
Phosphorus	0.50 Anly Batch: 680-36578 Prep Batch: 680-36538	mg/L Date Analyzed 02/15/2006 1648 Date Prepared: 02/14/2006 1500	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Furbidity	130 Anly Batch: 680-35485	NTU Date Analyzed 02/03/2006 1115	0.10	1.0	180.1
Coliform, Fecal	550 Anly Batch: 680-35362	CFU/100mL Date Analyzed 02/03/2006 1136	5.0	5.0	9222D
Client Sample ID:	Rose Dhu Creek				
Lab Sample ID:	680-13205-3		Date Sampled:	02/0	03/2006 0830

STL Savannah

Client Matrix:

Water

Job Number: 680-13205-1

General Chemistry							
Client Sample ID:	Rose Dhu Creek						
Lab Sample ID: Client Matrix:	680-13205-3 Water		Date Sampled: Date Received		03/2006 0830 03/2006 1056		
Analyte	Result	Qual Units	RL	Dil	Method		
Ammonia	0.030 Anly Batch: 680-36146	U mg/L Date Analyzed 02/10/2006 1038	0.030	1.0	350.1		
Nitrogen, Kjeldahl	0.97 Anly Batch: 680-36575 Prep Batch: 680-36539	mg/L Date Analyzed 02/15/2006 1331 Date Prepared: 02/14/2006 1500	0.20	1.0	351.2		
Nitrogen, Nitrate	0.24 Anly Batch: 680-35625	mg/L Date Analyzed 02/03/2006 1235	0.050	1.0	353.2		
Nitrogen, Nitrite	0.050 Anly Batch: 680-35642	U mg/L Date Analyzed 02/03/2006 1156	0.050	1.0	353.2		
Phosphorus	0.21 Anly Batch: 680-36578 Prep Batch: 680-36538	mg/L Date Analyzed 02/15/2006 1648 Date Prepared: 02/14/2006 1500	0.10	1.0	365.4		
Analyte	Result	Qual Units	RL	Dil	Method		
Turbidity	40 Anly Batch: 680-35485	NTU Date Analyzed 02/03/2006 1115	0.10	1.0	180.1		
Coliform, Fecal	300 Anly Batch: 680-35362	CFU/100mL Date Analyzed 02/03/2006 1136	50	50	9222D		
Client Sample ID:	Stoney Creek						

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

 Date Received:
 02/03/2006
 1056

Job Number: 680-13205-1

General Chemistry						
Client Sample ID:	Stoney Creek					
Lab Sample ID: Client Matrix:	680-13205-4 Water		Date Sampled: Date Received		03/2006 0850 03/2006 1056	
Analyte	Result	Qual Units	RL	Dil	Method	
Ammonia	0.030 Anly Batch: 680-36146	U mg/L Date Analyzed 02/10/2006 1038	0.030	1.0	350.1	
Nitrogen, Kjeldahl	0.94 Anly Batch: 680-36575 Prep Batch: 680-36539	mg/L Date Analyzed 02/15/2006 1331 Date Prepared: 02/14/2006 1500	0.20	1.0	351.2	
Nitrogen, Nitrate	0.050 Anly Batch: 680-35625	U mg/L Date Analyzed 02/03/2006 1235	0.050	1.0	353.2	
Nitrogen, Nitrite	0.050 Anly Batch: 680-35642	U mg/L Date Analyzed 02/03/2006 1156	0.050	1.0	353.2	
Phosphorus	0.24 Anly Batch: 680-36578 Prep Batch: 680-36538	mg/L Date Analyzed 02/15/2006 1648 Date Prepared: 02/14/2006 1500	0.10	1.0	365.4	
Analyte	Result	Qual Units	RL	Dil	Method	
Turbidity	69 Anly Batch: 680-35485	NTU Date Analyzed 02/03/2006 1115	0.10	1.0	180.1	
Coliform, Fecal	3200 Anly Batch: 680-35362	CFU/100mL Date Analyzed 02/03/2006 1136	50	50	9222D	
Client Sample ID:	New River Trail					
Lab Sample ID: Client Matrix:	680-13205-5 Water		Date Sampled: Date Received		03/2006 0920 03/2006 1056	

		General Chemistry			
Client Sample ID:	New River Trail				
Lab Sample ID: Client Matrix:	680-13205-5 Water		Date Sampled: Date Received:		03/2006 0920 03/2006 1056
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.15 Anly Batch: 680-36146	mg/L Date Analyzed 02/10/2006 1038	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.84 Anly Batch: 680-36575 Prep Batch: 680-36539	mg/L Date Analyzed 02/15/2006 1331 Date Prepared: 02/14/2006 1500	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-35625	U mg/L Date Analyzed 02/03/2006 1235	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-35642	U mg/L Date Analyzed 02/03/2006 1156	0.050	1.0	353.2
Phosphorus	0.10 Anly Batch: 680-36578 Prep Batch: 680-36538	U mg/L Date Analyzed 02/15/2006 1648 Date Prepared: 02/14/2006 1500	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	15 Anly Batch: 680-35485	NTU Date Analyzed 02/03/2006 1115	0.10	1.0	180.1
Coliform, Fecal	780 Anly Batch: 680-35362	CFU/100mL Date Analyzed 02/03/2006 1136	2.0	2.0	9222D

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

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Client: Hodgins Engineering Consulting

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: 68 Prep Batch: N/A Units: NTU	30-35485	Instrument ID: No Equipme Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 30 r	-
Analyte	Result	Qual	R	L
Turbidity	0.10	U	0.1	10
Analyte	Spike Amount	Result % Re	c. Limit	Qual

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-36146

Method: 350.1 Preparation: N/A

Lab Sample ID: M Client Matrix: W Dilution: 1. Date Analyzed: 02 Date Prepared: N/	ater 0 2/10/2006 0908	Analysis Batch: 6 Prep Batch: N/A Units: mg/L	580-36146	L	nstrument ID: Ki .ab File ID: Ni nitial Weight/Vol Final Weight/Volu	/A ume: 2 mL	
Analyte		Result		Qual		RL	
Ammonia		0.030		U		0.03	30
Laboratory Cor Laboratory Cor	ntrol/ ntrol Duplicate Recove	ry Report - Batch:	680-36146		Method: 350.1 Preparation: N		
LCS Lab Sample I Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-36146/2 Water 1.0 02/10/2006 0908 N/A	Analysis Batch: Prep Batch: N/A Units: mg/L		La Ini	strument ID: K ab File ID: N/A itial Weight/Volu nal Weight/Volur	me: 2 m	
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	ID: LCSD 680-36146/3 Water 1.0 02/10/2006 0908 N/A	Analysis Batch: Prep Batch: N/A Units:mg/L		La	strument ID: ab File ID: N/A itial Weight/Volu nal Weight/Volur	me: 2 mL	
Analyte		<u>% Rec.</u> LCS LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ammonia		92 92	90 - 110	0	30		

Quality Control Results

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-36539

Job Number: 680-13205-1

Method: 351.2 Preparation: 351.2

Lab Sample ID:MB 680-36539/1-AClient Matrix:WaterDilution:1.0Date Analyzed:02/15/2006Date Prepared:02/14/2006		Analysis Batch: Prep Batch: 680 Units: mg/L			Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 Final Weight/Volume: 40	
Analyte		Result	t	Qual	R	L
Nitrogen, Kjeldahl		0.20		U	0.:	20
Laboratory Contro	ol Sample - Batch:	680-36539			Method: 351.2 Preparation: 351.2	
Lab Sample ID: LCSClient Matrix:WateDilution:1.0Date Analyzed:02/15Date Prepared:02/14	er 5/2006 1321	Analysis Batch: Prep Batch: 680 Units:mg/L			Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 Final Weight/Volume: 40	
Analyte		Spike Amount	Result	% Re	ec. Limit	Qual
Nitrogen, Kjeldahl		1.00	0.98	98	75 - 125	
Matrix Spike/ Matrix Spike Dupli	icate Recovery Rep	ort - Batch: 680-3	86539		Method: 351.2 Preparation: 351.2	
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-13205-1 Water 1.0 02/15/2006 1331 02/14/2006 1500	Analysis Batch: Prep Batch: 68(Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 Final Weight/Volume: 20	mL mL
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-13205-1 Water 1.0 02/15/2006 1331 02/14/2006 1500	Analysis Batch: Prep Batch: 680			Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 Final Weight/Volume: 20	
Analyte		<u>% Rec.</u> MS MSD	l imit	RP	D RPD Limit MS Qua	al MSD Qua

Analyte	MS	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.

Method Blank - Batch:	680-35625	

Quality Control Results

Job Number: 680-13205-1

Method: 353.2 **Preparation: N/A**

Lab Sample ID:MB 680-35625/4Client Matrix:WaterDilution:1.0Date Analyzed:02/03/2006Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units: mg/L			Instrument ID: Lab File ID: Initial Weight/V Final Weight/V	N/A ′olume: 10		
Analyte	Result	t	Qual		F	RL	
Nitrogen, Nitrate	0.050		U		0	.050	
Laboratory Control Sample - Batch:	680-35625			Method: 353 Preparation:			
Lab Sample ID:LCS 680-35625/1Client Matrix:WaterDilution:1.0Date Analyzed:02/03/2006 1037Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units:mg/L			Instrument ID: Lab File ID: Initial Weight/V Final Weight/Vo	N/A ′olume: 10		
Analyte	Spike Amount	Result	% R	lec. Lin	nit		Qual
Nitrogen, Nitrate	1.00	0.99	99	80	- 120		
Matrix Duplicate - Batch: 680-35625	i			Method: 353 Preparation:			
Lab Sample ID: 680-13205-1 Client Matrix: Water Dilution: 1.0 Date Analyzed: 02/03/2006 1322 Date Prepared: N/A	Analysis Batch: 68 Prep Batch: N/A Units: mg/L	0-35625		Instrument ID: Lab File ID: Initial Weight/V Final Weight/Ve	N/A ′olume: 10		
Analyte	Sample Result/C)ual	Result	RPD	Limit		Qual
Nitrogen, Nitrate	0.12		0.13	1	30		

Page 13 of 17

Client: Hodgins Engineering Consulting

Nitrogen, Nitrite

0.050

	Prep Batch: N/A	
	Units:mg/L	
015		

Laboratory Control Sample - Batch: 680-35642

Method: 353.2

NC

30

U

Method: 353.2 **Preparation: N/A**

Lab File ID:

Qual

U

Instrument ID: KoneLab2

N/A

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

Dilution: 1.0 Date Analyzed: 02/03/2006 1015 Date Prepared: N/A	Units:mg/L		Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL			
Date Flepared. WA						
Analyte	Spike Amount	Result	% Rec.	Limit	Qual	
Nitrogen, Nitrite	1.00	1.0	102	80 - 120		
Matrix Duplicate - Batch: 680-35642				od: 353.2 aration: N/A		

Ма Lab Sample ID: 680-13205-1 Analysis Batch: 680-35642 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units: mg/L Initial Weight/Volume: 10 mL Date Analyzed: 02/03/2006 1156 Final Weight/Volume: 10 mL Date Prepared: N/A Analyte Sample Result/Qual Result RPD Limit Qual

U

0.050

		Preparation: N/A
Lab Sample ID:LCS 680-35642/2Client Matrix:WaterDilution:1.0Date Analyzed:02/03/2006Date 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

Analysis Batch: 680-35642

Result

Prep Batch: N/A

Units: mg/L

Nitrogen, Nitrite 0.050

Method Blank - Batch: 680-35642

Water

1.0 Date Analyzed: 02/03/2006 1015

Lab Sample ID: MB 680-35642/1

Client Matrix:

Date Prepared: N/A

Dilution:

Analyte

Client: Hodgins Engineering Consulting

Quality Control Results

Job Number: 680-13205-1

RL

0.050

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-36538

Job Number: 680-13205-1

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 02/1 Date Prepared: 02/1	er 5/2006 1638	Analysis Batch: Prep Batch: 68 Units: mg/L			Instrument ID: K Lab File ID: N Initial Weight/Vo Final Weight/Vol	I/A lume: 40 mL	
Analyte		Resu	ılt	Qual		RL	
Phosphorus		0.10		U		0.10	
Laboratory Contro	ol Sample - Batch:	680-36538			Method: 365.4 Preparation: 3		
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 02/1 Date Prepared: 02/1	er 5/2006 1638	Analysis Batch: Prep Batch: 68 Units:mg/L			Instrument ID: K Lab File ID: N Initial Weight/Vo Final Weight/Vol	I/A lume: 40 mL	
Analyte		Spike Amount	Result	% Re	c. Limi	t	Qual
Phosphorus		1.00	1.1	112	60 -	140	
Matrix Spike/ Matrix Spike Dupl	icate Recovery Rep	oort - Batch: 680	-36538		Method: 365.4 Preparation: 3		
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-13205-1 Water 1.0 02/15/2006 1648 02/14/2006 1500	Analysis Batch: Prep Batch: 68					
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-13205-1 Water 1.0 02/15/2006 1648 02/14/2006 1500	Analysis Batch: Prep Batch: 68			Instrument ID: K Lab File ID: N Initial Weight/Vo Final Weight/Vol	I/A lume: 20 mL	
		<u>% Rec.</u>					
Analyte		MS MSD	Limit	RPD		MS Qual	MSD Qual
Phosphorus		113 118	60 - 140	4	40		

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

Page 16 of 17

Method Blank - Batch:	680-35362	

Quality	Control	Results
---------	---------	---------

Job Number: 680-13205-1

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: 680-3536 Prep Batch: N/A Units: CFU/100mL	52	Instrument ID: Lab File ID: Initial Weight/\ Final Weight/\	N/A /olume:	It Assigned
Analyte	Result	Qual		RL	
Coliform, Fecal	1.0	U		1.0	
Matrix Duplicate - Batch: 680-35362			Method: 922 Preparation:		
Lab Sample ID:680-13205-5Client Matrix:WaterDilution:2.0Date Analyzed:02/03/2006Date Prepared:N/A	Analysis Batch: 680-35362 Prep Batch: N/A Units: CFU/100mL		Instrument ID: Lab File ID: Initial Weight/\ Final Weight/\	N/A /olume:	it Assigned
Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Coliform, Fecal	780	670	16	200	

Client: Hodgins Engineering Consulting

STL8240-680 (12/02)	STL8:					k		Č	1000									F
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ANALYTICAL REPORT

FEB 0 6 2006

Job Number: 680-12859-1

Job Description: Town of Bluffton

For:

Hodgins Engineering Consulting 84 Bridle Court Bluffton, SC 29910

Attention: Mr. Bill Hodgins

Lathin mith

f√ 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

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METHOD SUMMARY

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Description	Lab Location	Method Preparation Method
Matrix: Water		
Turbidity, Nephelometric	STL-SAV	MCAVWV 180.1
Nitrogen (Ammonia, Colorimetric, Automated Phenate)	STL-SAV	MCAVWV 350.1
Nitrogen, Total Kjeldahl (Colorimetric, Semi-Automated Block	STL-SAV	MCAWW 351.2
Digester, AAII) 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 MCAWW 365.2/365.3
Sample Digestion for Total Phosphorous	STL-SAV	WCAVVV 305.2/305.3
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

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

		General Chemistry			
Client Sample ID:	Bluffton Village				
Lab Sample ID: Client Matrix:	680-12859-1 Water		Date Sampled: Date Received:		4/2006 0800 4/2006 1043
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.036 Anly Batch: 680-34915	mg/L Date Analyzed 01/30/2006 1323	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.39 Anly Batch: 680-35184 Prep Batch: 680-34953	mg/L Date Analyzed 02/01/2006 1451 Date Prepared: 01/30/2006 1000	0.20	1.0	351.2
Nitrogen, Nitrate	0.060 Anly Batch: 680-34598	mg/L Date Analyzed 01/24/2006 1214	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-34620	U mg/L Date Analyzed 01/24/2006 1513	0.050	1.0	353.2
Phosphorus	0.11 Anly Batch: 680-35181 Prep Batch: 680-34951	mg/L Date Analyzed 02/01/2006 1320 Date Prepared: 01/30/2006 1000	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	4.2 Anly Batch: 680-34706	NTU Date Analyzed 01/27/2006 0910	0.10	1.0	180.1
Coliform, Fecal	390 Anly Batch: 680-34381	CFU/100mL Date Analyzed 01/24/2006 1129	1.0	1.0	9222D
Client Sample ID:	Heyward Street				
Lab Sample ID: Client Matrix:	680-12859-2 Water		Date Sampled: Date Received:		4/2006 0820 4/2006 104

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

		General	Chemistry			
Client Sample ID:	Heyward Street					
Lab Sample ID: Client Matrix:	680-12859-2 Water			Date Sampled: Date Received:		24/2006 0820 24/2006 1043
Analyte	Result	Qual Ur	nits	RL	Dil	Method
Ammonia	0.064 Anly Batch: 680-34915		g/L 01/30/2006 1252	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.1 Anly Batch: 680-35184 Prep Batch: 680-34953	Date Analyzed	g/L 02/01/2006 1451 01/30/2006 1000	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-34598		g/L 01/24/2006 1214	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-34620		g/L 01/24/2006 1513	0.050	1.0	353.2
Phosphorus	0.63 Anly Batch: 680-35181 Prep Batch: 680-34951	Date Analyzed	g/L 02/01/2006 1349 01/30/2006 1000	0.10	1.0	365.4
Analyte	Result		nits	RL	Dil	Method
Turbidity	92 Anly Batch: 680-34706		TU 01/27/2006 0910	0.10	1.0	180.1
Coliform, Fecal	490 Anly Batch: 680-34381		⁻ U/100mL 01/24/2006 1129	5.0	5.0	9222D
Client Sample ID:	Rose Dhu Creek					

Lab Sample ID:	680-12859-3		Date Sampled:	01/24/2006 0900
Client Matrix:	Water		Date Received:	01/24/2006 1043

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

		General	l Chemistry			
Client Sample ID:	Rose Dhu Creek					
Lab Sample ID: Client Matrix:	680-12859-3 Water			Date Sampled: Date Received:		24/2006 0900 24/2006 1043
Analyte	Result	Qual L	Jnits	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-34915		ng/L 01/30/2006 1252	0.030	1.0	350.1
Nitrogen, Kjeldahl	2.0 Anly Batch: 680-35184 Prep Batch: 680-34953	Date Analyzed	ng/L 02/01/2006 1451 : 01/30/2006 1000	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-34598		ng/L 01/24/2006 1214	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-34620		ng/L 01/24/2006 1513	0.050	1.0	353.2
Phosphorus	0.20 Anly Batch: 680-35181 Prep Batch: 680-34951	Date Analyzed	ng/L 02/01/2006 1330 : 01/30/2006 1000	0.10	1.0	365.4
Analyte	Result	Qual L	Jnits	RL	Dil	Method
Turbidity	19 Anly Batch: 680-34706		ITU 01/27/2006 0910	0.10	1.0	180.1
Coliform, Fecal	1300 Anly Batch: 680-34381		CFU/100mL 01/24/2006 1129	5.0	5.0	9222D
Client Sample ID:	Stoney Creek					

Lab Sample ID: 680-12859-4	Date Sampled:	01/24/2006 0920
Client Matrix: Water	Date Received:	01/24/2006 1043

Job Number: 680-12859-1

		General Chemistry			
Client Sample ID:	Stoney Creek				
Lab Sample ID: Client Matrix:	680-12859-4 Water		Date Sampled: Date Received:		24/2006 0920 24/2006 1043
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-34915	U mg/L Date Analyzed 01/30/2006 1300	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.82 Anly Batch: 680-35184 Prep Batch: 680-34953	mg/L Date Analyzed 02/01/2006 1451 Date Prepared: 01/30/2006 1000	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-34598	U mg/L Date Analyzed 01/24/2006 1214	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-34620	U mg/L Date Analyzed 01/24/2006 1513	0.050	1.0	353.2
Phosphorus	0.13 Anly Batch: 680-35181 Prep Batch: 680-34951	mg/L Date Analyzed 02/01/2006 1330 Date Prepared: 01/30/2006 1000	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	19 Anly Batch: 680-34706	NTU Date Analyzed 01/27/2006 0910	0.10	1.0	180.1
Coliform, Fecal	2000 Anly Batch: 680-34381	CFU/100mL Date Analyzed 01/24/2006 1129	5.0	5.0	9222D
Client Sample ID:	New River Trail				
Lab Sample ID: Client Matrix:	680-12859-5 Water		Date Sampled: Date Received:		24/2006 0945 24/2006 1043

Job Number: 680-12859-1

		General Chemistry			
Client Sample ID:	New River Trail				
Lab Sample ID: Client Matrix:	680-12859-5 Water		Date Sampled: Date Received:		24/2006 0945 24/2006 1043
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.044 Anly Batch: 680-34915	mg/L Date Analyzed 01/30/2006 1300	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.81 Anly Batch: 680-35184 Prep Batch: 680-34953	mg/L Date Analyzed 02/01/2006 1451 Date Prepared: 01/30/2006 1000	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-34598	U mg/L Date Analyzed 01/24/2006 1214	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-34620	U mg/L Date Analyzed 01/24/2006 1513	0.050	1.0	353.2
Phosphorus	0.10 Anly Batch: 680-35181 Prep Batch: 680-34951	U mg/L Date Analyzed 02/01/2006 1330 Date Prepared: 01/30/2006 1000	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	5.5 Anly Batch: 680-34706	NTU Date Analyzed 01/27/2006 0910	0.10	1.0	180.1
Coliform, Fecal	250 Anly Batch: 680-34381	CFU/100mL Date Analyzed 01/24/2006 1129	2.0	2.0	9222D

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.	

Job Number: 680-12859-1

Client: Hodgins Engineering Consulting

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
Turbidity	0.10	U 0.10
Analyte	Spike Amount Result	% Rec. Limit Qual

Method: 350.1

Preparation: N/A

Job Number: 680-12859-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-34915

Lab Sample ID: MB 680-34915/1 Instrument ID: KoneLab1 Analysis Batch: 680-34915 Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units: mg/L Initial Weight/Volume: 2 mL Date Analyzed: 01/30/2006 1252 Final Weight/Volume: 2 mL Date Prepared: N/A RL Analyte Result Qual 0.030 11 0.030 Ammonia Method: 350.1 Laboratory Control/ Laboratory Control Duplicate Recovery Report - Batch: 680-34915 **Preparation: N/A** LCS Lab Sample ID: LCS 680-34915/2 Analysis Batch: 680-34915 Instrument ID: KoneLab1 Prep Batch: N/A Lab File ID: N/A Client Matrix: Water Units: mg/L Initial Weight/Volume: 2 mL Dilution: 1.0 01/30/2006 1252 Final Weight/Volume: 2 mL Date Analyzed: N/A Date Prepared: Instrument ID: KoneLab1 LCSD Lab Sample ID: LCSD 680-34915/3 Analysis Batch: 680-34915 Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units: mg/L Initial Weight/Volume: 2 mL Date Analyzed: 01/30/2006 1252 Final Weight/Volume: 2 mL Date Prepared: N/A

		<u>% Rec.</u>			
Analyte	LC	S LCSD I	imit RPD.	RPD Limit LCS	Qual LCSD Qual
Ammonia	10	0 101 §	90 - 110 1	30	an in an
, uninoma					

Client: Hodgins Engineering Consulting

Water

01/30/2006 1323

1.0

N/A

MS Lab Sample ID: 680-12859-1

Job Number: 680-12859-1

Matrix Spike/

Client Matrix:

Date Analyzed:

Date Prepared:

Dilution:

Matrix Spike Duplicate Recovery Report - Batch: 680-34915

Instrument ID:	KoneLab1
Lab File ID:	N/A
Initial Weight/V	olume: 10 mL

Final Weight/Volume: 10 mL

Method: 350.1

Preparation: 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		
			평균형 등 가슴이 걸릴 것 같은 것을 가는 것으로 많이 많다.

Analysis Batch: 680-34915

Prep Batch: N/A

	<u>% Rec.</u>		
Analyte	MS MSD Limit	RPD RPD Limit MS Qu	al MSD Qual
Ammonia	96 96 90 - 110	0 30	
		물건을 알려 있는 것이 아니는 것이 같아.	

Job Number: 680-12859-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-34953 Method: 351.2 Preparation: 351.2 Lab Sample ID: MB 680-34953/1-A Analysis Batch: 680-35184 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: 680-34953 Lab File ID: N/A Dilution: 1.0 Units: mg/L Initial Weight/Volume: 40 mL Date Analyzed: 02/01/2006 1441 Final Weight/Volume: 40 mL Date Prepared: 01/30/2006 1000 RL Analyte Result Qual 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 Analysis Batch: 680-35184 Instrument ID: KoneLab2 Prep Batch: 680-34953 Lab File ID: N/A Client Matrix: Water Initial Weight/Volume: 40 mL Dilution: 1.0 Units: mg/L Final Weight/Volume: 40 mL Date Analyzed: 02/01/2006 1441 Date Prepared: 01/30/2006 1000 % Rec. Limit Qual Spike Amount Result Analyte 1.0 102 75 - 125 1.00 Nitrogen, Kjeldahl Method: 351.2 Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-34953 Preparation: 351.2 Analysis Batch: 680-35184 Instrument ID: KoneLab2 MS Lab Sample ID: 680-12859-1 Lab File ID: N/A Client Matrix: Water Prep Batch: 680-34953 Initial Weight/Volume: 20 mL Dilution: 1.0 Final Weight/Volume: 20 mL Date Analyzed: 02/01/2006 1800 Date Prepared: 01/30/2006 1000 MSD Lab Sample ID: 680-12859-1 Analysis Batch: 680-35184 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: 680-34953 Lab File ID: N/A Dilution: 1.0 Initial Weight/Volume: 20 mL Date Analyzed: 02/01/2006 1800 Final Weight/Volume: 20 mL Date Prepared: 01/30/2006 1000 % Rec. MS MSD RPD **RPD** Limit MS Qual MSD Qual Analyte Limit

Nitrogen.	Kieldahl		105	96 75	- 125	6	40

Client: Hodgins Engineering Consulting

Job Number: 680-12859-1

Method Blank - Batch: 680-34598

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

Method: 353.2 Preparation: N/A

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

Analysis Batch: 680-34598

Prep Batch: N/A

Units: mg/L

Laboratory Control Sample - Batch: 680-34598

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

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

Method: 353.2 Preparation: N/A

Instrument ID: Kon	eLab2
Lab File ID: N/A	
Initial Weight/Volun	ne: 10 mL
Final Weight/Volum	ne: 10 mL

Analyte)		Spike Amou	nt Resi	ılt	% Rec.	Limit	Qual
ang possision of the sol of the sol of the		 		ถ้าและสามพัฒนาสมบาทสามาร์สามาร์				 ฉ่านการสารางการสารางการสา
Nitroge	n, 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	Analysis Batch: 680-34598	Instrument ID: KoneLab2
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Units: mg/L	Initial Weight/Volume: 10 mL
Date Analyzed: 01/24/2006 1214		Final Weight/Volume: 10 mL
Date Prepared: N/A		

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

Job Number: 680-12859-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-34620

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

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

Method: 353.2 Preparation: N/A

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

Analyte			Result	Qu	al	
Nitrogen, Nitrite			0.050 U		0.050	
Laboratory Con Laboratory Con	ntrol/ ntrol Duplicate Recove	ry Report -	Batch: 68	80-34620	Method: 353.2 Preparation: N/A	
LCS Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	ID: LCS 680-34620/2 Water 1.0 01/24/2006 1507 N/A		Batch: 68 tch: N/A ng/L	0-34620	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL	
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-34620/3 Water 1.0 01/24/2006 1507 N/A		Batch: 68 tch: N/A g/L	0-34620	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL	
Analyte		LCS	Rec. LCSD	Limit	RPD RPD Limit LCS Qual LC	CSD Qual
Analyte Nitrogen, Nitrite		LCS 103	LCSD 104	Limit 80 - 120	RPDRPD LimitLC130	S Qual L

Job Number: 680-12859-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-34620

Method: 353.2 Preparation: N/A

Lab Sample ID: 680-	12859-5	Analysis Batch: 680-34620	Instrument ID: KoneLab2
Client Matrix: Wate	r (* 1997) 1997 - Jack Market, skieler (* 1997)	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0		Units: mg/L	Initial Weight/Volume: 10 mL
Date Analyzed: 01/24	4/2006 1513		Final Weight/Volume: 10 mL
Date Prepared: N/A			

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

Job Number: 680-12859-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-34951

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

Analyte		Result	Qual	RL
Phosphorus		0.10	U	0.10

Analysis Batch: 680-35181

Prep Batch: 680-34951

Units: mg/L

Laboratory Control Sample - Batch: 680-34951

Method: 365.4 Preparation: 365.2/365.3

Method: 365.4

Lab File ID:

Preparation: 365.2/365.3

N/A

Initial Weight/Volume: 40 mL

Final Weight/Volume: 40 mL

Instrument ID: KoneLab2

Lab Sample ID: LCS 680-34951/2-A	Analysis Batch: 680-35181	Instrument ID: KoneLab2
Client Matrix: Water	Prep Batch: 680-34951	Lab File ID: N/A
Dilution: 1.0	Units: mg/L	Initial Weight/Volume: 40 mL
Date Analyzed: 02/01/2006 1319		Final Weight/Volume: 40 mL
Date Prepared: 01/30/2006 1000		

Analyte	Spike Amount Result	% Rec. Limit	Qual
Phosphorus	1.00 1.1	108 60 - 140	
Matrix Spike/ Matrix Spike Duplicate Recovery Re	port - Batch: 680-34951	Method: 365.4 Preparation: 365.2	365.3

Matrix Spike Duplicate Recovery Report - Batch: 680-34951

MS Lab Sample ID: 680-12859-1 Analysis Batch: 680-35181 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: 680-34951 Lab File ID: N/A Dilution: 1.0 Initial Weight/Volume: 20 mL Date Analyzed: 02/01/2006 1741 Final Weight/Volume: 20 mL Date Prepared: 01/30/2006 1000 MSD Lab Sample ID: 680-12859-1 Instrument ID: KoneLab2 Analysis Batch: 680-35181 Client Matrix: Water Prep Batch: 680-34951 Lab File ID: N/A Dilution: 10 Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL Date Analyzed: 02/01/2006 1741 Date Prepared: 01/30/2006 1000

				<u>% Rec.</u>										
Analyte			MS	М	SD	Limit		RPD	RPD	Limit	MS Q	ual MS	SD Qual	
Phosphorus			106	5 1(08	60 - 1	40	1	40					

Lab File ID: N/A Initial Weight/Volume:

Final Weight/Volume:

RPD

Limit

Qual

Client: Hodgins Engineering Consulting

Client Matrix: Water

Date Prepared: N/A

1.0

Date Analyzed: 01/24/2006 1129

Dilution:

Analyte

Coliform, Fecal

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	Analysis Batch: 680-34381		Instrument ID: No Equipment Assigned

Prep Batch: N/A

Units: CFU/100mL

Sample Result/Qual

Result

>200

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	V E S	T R	PROJECT REFI	CI IENT (CITE) DAM	OLIENI (SILE)	H CLIENT NAME	CLIENT ADDRESS V	COMPANY COI	SAM DATE	90/172/2 Pat	P/zu/bk	8/24/06	Weilble	Ved lob					RELINQUISHEC	RECEIVED BY: (SIGNATURE) EARPTY CONTAINER		RECEIVED FOR

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

Description	Lab Location	Method P	reparation 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 Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	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

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: Client Matrix:	680-12220-1 Water		Date Sampled: Date Received:		03/2006 0835 03/2006 1040
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.057 Anly Batch: 680-32824	mg/L Date Analyzed 01/04/2006 1047	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.57 Anly Batch: 680-33467 Prep Batch: 680-33015	mg/L Date Analyzed 01/11/2006 1656 Date Prepared: 01/06/2006 1005	0.20	1.0	351.2
Nitrogen, Nitrate	0.13 Anly Batch: 680-32925	mg/L Date Analyzed 01/03/2006 2029	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-32976	U mg/L Date Analyzed 01/03/2006 1711	0.050	1.0	353.2
Phosphorus	0.10 Anly Batch: 680-33322 Prep Batch: 680-33014	mg/L Date Analyzed 01/09/2006 2043 Date Prepared: 01/06/2006 1005	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	3.7 Anly Batch: 680-33025	NTU Date Analyzed 01/04/2006 1700	0.10	1.0	180.1
Coliform, Fecal	17 Anly Batch: 680-32688	CFU/100mL Date Analyzed 01/03/2006 1137	1.0	1.0	9222D
Client Sample ID:	Heyward Street				
Lab Sample ID: Client Matrix:	680-12220-2 Water		Date Sampled: Date Received:		03/2006 0850 03/2006 1040

Job Number: 680-12220-1

		General Chemistry			
Client Sample ID:	Heyward Street				
Lab Sample ID: Client Matrix:	680-12220-2 Water		Date Sampled: Date Received		03/2006 0850 03/2006 1040
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.13 Anly Batch: 680-32824	mg/L Date Analyzed 01/04/2006 1047	0.030	1.0	350.1
Nitrogen, Kjeldahl	3.2 Anly Batch: 680-33467 Prep Batch: 680-33015	mg/L Date Analyzed 01/11/2006 1656 Date Prepared: 01/06/2006 1005	0.20	1.0	351.2
litrogen, Nitrate	0.050 Anly Batch: 680-32925	U mg/L Date Analyzed 01/03/2006 2029	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-32976	U mg/L Date Analyzed 01/03/2006 1711	0.050	1.0	353.2
Phosphorus	0.34 Anly Batch: 680-33322 Prep Batch: 680-33014	mg/L Date Analyzed 01/09/2006 2043 Date Prepared: 01/06/2006 1005	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
urbidity	44 Anly Batch: 680-33025	NTU Date Analyzed 01/04/2006 1700	0.10	1.0	180.1
Coliform, Fecal	83 Anly Batch: 680-32688	CFU/100mL Date Analyzed 01/03/2006 1137	1.0	1.0	9222D
Client Sample ID:	Rose Dhu Creek				
_ab Sample ID:	680-12220-3		Date Sampled:	01/0	03/2006 0915

Date Received: 01/03/2006 1040

Client Matrix:

Water

Job Number: 680-12220-1

Date Received: 01/03/2006 1040

		General Chemistry			
Client Sample ID:	Rose Dhu Creek				
Lab Sample ID: Client Matrix:	680-12220-3 Water		Date Sampled: Date Received:		03/2006 0915 03/2006 1040
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.046 Anly Batch: 680-32824	mg/L Date Analyzed 01/04/2006 1047	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.84 Anly Batch: 680-33467 Prep Batch: 680-33015	mg/L Date Analyzed 01/11/2006 1823 Date Prepared: 01/06/2006 1005	0.20	1.0	351.2
Nitrogen, Nitrate	0.061 Anly Batch: 680-32925	mg/L Date Analyzed 01/03/2006 2029	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-32976	U mg/L Date Analyzed 01/03/2006 1711	0.050	1.0	353.2
Phosphorus	0.15 Anly Batch: 680-33322 Prep Batch: 680-33014	mg/L Date Analyzed 01/09/2006 2043 Date Prepared: 01/06/2006 1005	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	15 Anly Batch: 680-33025	NTU Date Analyzed 01/04/2006 1700	0.10	1.0	180.1
Coliform, Fecal	400 Anly Batch: 680-32688	CFU/100mL Date Analyzed 01/03/2006 1137	10	10	9222D
Client Sample ID:	Stoney Creek				
Lab Sample ID:	680-12220-4		Date Sampled:		03/2006 0930

Client Matrix: Water

Job Number: 680-12220-1

Date Received: 01/03/2006 1040

		General Chemistry			
Client Sample ID:	Stoney Creek				
Lab Sample ID: Client Matrix:	680-12220-4 Water		Date Sampled: Date Received:		03/2006 0930 03/2006 1040
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-32824	U mg/L Date Analyzed 01/04/2006 1047	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.1 Anly Batch: 680-33467 Prep Batch: 680-33015	mg/L Date Analyzed 01/11/2006 1814 Date Prepared: 01/06/2006 1005	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-32925	U mg/L Date Analyzed 01/03/2006 2030	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-32976	U mg/L Date Analyzed 01/03/2006 1711	0.050	1.0	353.2
Phosphorus	0.13 Anly Batch: 680-33322 Prep Batch: 680-33014	mg/L Date Analyzed 01/09/2006 2053 Date Prepared: 01/06/2006 1005	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	22 Anly Batch: 680-33025	NTU Date Analyzed 01/04/2006 1700	0.10	1.0	180.1
Coliform, Fecal	500 Anly Batch: 680-32688	CFU/100mL Date Analyzed 01/03/2006 1137	10	10	9222D
Client Sample ID:	New River Trail				
Lab Sample ID:	680-12220-5		Date Sampled:	01/0	03/2006 0930

Client Matrix:

Water

		General Chemistry			
Client Sample ID:	New River Trail				
Lab Sample ID: Client Matrix:	680-12220-5 Water		Date Sampled: Date Received:		3/2006 0930 3/2006 1040
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.035 Anly Batch: 680-32824	mg/L Date Analyzed 01/04/2006 1047	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.82 Anly Batch: 680-33467 Prep Batch: 680-33015	mg/L Date Analyzed 01/11/2006 1814 Date Prepared: 01/06/2006 1005	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-32925	U mg/L Date Analyzed 01/03/2006 2030	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-32976	U mg/L Date Analyzed 01/03/2006 1711	0.050	1.0	353.2
Phosphorus	0.20 Anly Batch: 680-33322 Prep Batch: 680-33014	mg/L Date Analyzed 01/09/2006 2053 Date Prepared: 01/06/2006 1005	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	6.8 Anly Batch: 680-33025	NTU Date Analyzed 01/04/2006 1700	0.10	1.0	180.1
Coliform, Fecal	150 Anly Batch: 680-32688	CFU/100mL Date Analyzed 01/03/2006 1137	1.0	1.0	9222D

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

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: 680-33 Prep Batch: N/A Units: NTU	Lab File Initial W	ent ID: No Equipment Assig e ID: N/A /eight/Volume: /eight/Volume: 30 mL	ŋned
Analyte	Result	Qual	RL	
Turbidity	0.10	U	0.10	
Analyte	Spike Amount Resu	It % Rec.	Limit Q	lual

Quality Control Results

Laboratory Control Duplicate Recovery Report - Batch: 680-32824

LCS Lab Sample I Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-32824/2 Water 1.0 01/04/2006 1038 N/A	Prep I	sis Batch: 0 Batch: N/A mg/L	680-32824	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		,	Batch: N/A	680-32824	Lab Initia	rument ID: KoneLab1 File ID: N/A al Weight/Volume: 2 mL al Weight/Volume: 2 mL					
Analyte		LCS	<u>6 Rec.</u> LCSD	Limit	RPD	RPD Limit LCS Qual LCSD Qua					
Ammonia		98	98	90 - 110	0	30					

Analysis Batch: 680-32824

Result

0.030

Prep Batch: N/A

Units: mg/L

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-32824

Lab Sample ID: MB 680-32824/1

Water

1.0 Date Analyzed: 01/04/2006 1038

Client Matrix:

Date Prepared: N/A

Laboratory Control/

Dilution:

Analyte

Ammonia

Method: 350.1 **Preparation: N/A**

Instrument ID: KoneLab1

N/A

Initial Weight/Volume: 2 mL

Final Weight/Volume: 2 mL

Lab File ID:

Method: 350.1

Preparation: N/A

Qual

U

Quality	Control	Results
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Job Number: 680-12220-1

RL

0.030

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-33015

	Vater .0 1/11/2006 1814	Analysis B Prep Batcl Units: mg	n: 680-33			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 Co Laboratory Co	ntrol/ ntrol Duplicate Recover	y Report -	Batch: 6	80-33015		Method: 351.2 Preparation: 351.2					
LCS Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	ID: LCS 680-33015/2-A Water 1.0 01/11/2006 1814 01/06/2006 1005	•	Batch: 68 ch: 680-3 ng/L			Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL Final Weight/Volume: 40 mL					
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-33015/3-A Water 1.0 01/11/2006 1814 01/06/2006 1005	•	Batch: 68 ch: 680-3 g/L			Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL Final Weight/Volume: 40 mL					
Analyte		<u>% R</u> LCS	<u>lec.</u> LCSD	Limit	RF	PD RPD Limit LCS Qual LCSD Q	ual				
Nitrogen, Kjeldahl		109	105	75 - 125	4	40					

Method: 351.2 Preparation: 351.2

Method: 351.2

Preparation: 351.2

Client: Hodgins Engineering Consulting

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

Job Number: 680-12220-1

*

MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-12220-3 Water 1.0 01/11/2006 1823 01/06/2006 1005	Analysis Batch: 68 Prep Batch: 680-3		Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL					
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-12220-3 Water 1.0 01/11/2006 1814 01/06/2006 1005	Analysis Batch: 68 Prep Batch: 680-3		Instrument ID: Ko Lab File ID: N/ Initial Weight/Volu Final Weight/Volu	A ume: 20 mL				
Analyte		<u>% Rec.</u> MS MSD	Limit	RPD RPD Limit	MS Qual MSD Qual				

Nitrogen, Kjeldahl 114 126 75 - 125 6 40

Client: Hodgins Engineering Consulting

Analysis Batch: 680-32925

Prep Batch: N/A

Method Blank - Batch: 680-32925

Water

Lab Sample ID: MB 680-32925/2

Client Matrix:

Units: mg/L Dilution: 1.0 Initial Weight/Volume: 10 mL Date Analyzed: 01/04/2006 2007 Final Weight/Volume: 10 mL Date Prepared: N/A RL Analyte Result Qual Nitrogen, Nitrate 0.050 U 0.050 Method: 353.2 Laboratory Control Sample - Batch: 680-32925 Preparation: N/A Instrument ID: KoneLab2 Lab Sample ID: LCS 680-32925/3 Analysis Batch: 680-32925 Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units:mg/L Initial Weight/Volume: 10 mL Date Analyzed: 01/04/2006 2007 Final Weight/Volume: 10 mL Date Prepared: N/A Analyte Spike Amount Result % Rec. Limit Qual 80 - 120 Nitrogen, Nitrate 1.00 0.99 99 Method: 353.2 Matrix Duplicate - Batch: 680-32925 Preparation: N/A Instrument ID: KoneLab2 Lab Sample ID: 680-12220-3 Analysis Batch: 680-32925 Client Matrix: Water Prep Batch: N/A Lab File ID: N/A Dilution: 1.0 Units: mg/L Initial Weight/Volume: 10 mL Date Analyzed: 01/03/2006 2029 Final Weight/Volume: 10 mL Date Prepared: N/A Analyte Sample Result/Qual Result RPD Limit Qual Nitrogen, Nitrate 0.061 0.060 2 30

Quality Control Results

Job Number: 680-12220-1

Method: 353.2 Preparation: N/A

Lab File ID:

Instrument ID: KoneLab2

N/A

Page 14 of 19

Nitrogen, Nitrite

111

Date Prepared: N/A	3/2000 1/11			T ina	i weight volume. To T	
Analyte		Result		Qual	R	_
Nitrogen, Nitrite		0.050		U	0.0	050
Laboratory Contro	ol Sample - Batch:	680-32976			hod: 353.2 paration: N/A	
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 01/0 Date Prepared: N/A	er	Analysis Batch: Prep Batch: N/A Units:mg/L	680-32976	Lab Initia	ument ID: KoneLab2 File ID: N/A I Weight/Volume: 10 r I Weight/Volume: 10 r	
Analyte		Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite		1.00	1.0	104	80 - 120	
Matrix Spike/ Matrix Spike Dupl	icate Recovery Rep	oort - Batch: 680-3	2976		hod: 353.2 paration: N/A	
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-12220-1 Water 1.0 01/03/2006 1711 N/A	Analysis Batch: Prep Batch: N/A	680-32976	Lab Initia	ument ID: KoneLab2 File ID: N/A I Weight/Volume: 10 I Weight/Volume: 10	mL mL
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-12220-1 Water 1.0 01/03/2006 1711 N/A	Analysis Batch: Prep Batch: N/A	680-32976	Lab Initia	ument ID: KoneLab2 File ID: N/A I Weight/Volume: 10 r I Weight/Volume: 10 r	
Analyte		<u>% Rec.</u> MS MSD	Limit	RPD	RPD Limit MS Qua	I MSD Qual

Analysis Batch: 680-32976

Prep Batch: N/A

Units: mg/L

Method Blank - Batch: 680-32976

Lab Sample ID: MB 680-32976/1

Water

1.0 Date Analyzed: 01/03/2006 1711

Client Matrix:

Dilution:

Client: Hodgins Engineering Consulting

Method: 353.2 **Preparation: N/A**

Lab File ID: N/A

Instrument ID: KoneLab2

Initial Weight/Volume: 10 mL

Final Weight/Volume: 10 mL

Quality Control Results

Job Number: 680-12220-1

80 - 120

0

30

111

Client: Hodgins Engineering Consulting

Laboratory Control/

Phosphorus

Method Blank - Batch: 680-33014			Method: 365.4 Preparation: 365.2/365.3
Lab Sample ID:MB 680-33014/1-AClient Matrix:WaterDilution:1.0Date Analyzed:01/09/20062031Date Prepared:01/06/20061005	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

U

Method: 365.4

Preparation: 365.2/365.3

Date Prepared: 01/06/2006

Laboratory Control Duplicate Recovery Report - Batch: 680-33014

0.10

LCS Lab Sample ID: LCS 680-33014/2-A Instrument ID: KoneLab2 Analysis Batch: 680-33322 Client Matrix: Water Prep Batch: 680-33014 Lab File ID: N/A Dilution: 1.0 Units: mg/L Initial Weight/Volume: 40 mL 01/09/2006 2031 Final Weight/Volume: Date Analyzed: 40 mL Date Prepared: 01/06/2006 1005 LCSD Lab Sample ID: LCSD 680-33014/3-A Analysis Batch: 680-33322 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: 680-33014 Lab File ID: N/A Dilution: 1.0 Units:mg/L Initial Weight/Volume: 40 mL 01/09/2006 2031 Date Analyzed: Final Weight/Volume: 40 mL Date Prepared: 01/06/2006 1005 % Rec. Analyte LCS LCSD Limit RPD RPD Limit LCS Qual LCSD Qual Phosphorus 111 111 60 - 140 0 40

Quality Control Results

Job Number: 680-12220-1

0.10

Method: 365.4

Preparation: 365.2/365.3

Client: Hodgins Engineering Consulting

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

Job Number: 680-12220-1

MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-12220-3 Water 1.0 01/09/2006 2043 01/06/2006 1005	Analysis Batch: 680-33322 Prep Batch: 680-33014	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-12220-3 Water 1.0 01/09/2006 2043 01/06/2006 1005	Analysis Batch: 680-33322 Prep Batch: 680-33014	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL
Analyte		<u>% Rec.</u> MS MSD Limit	RPD RPD Limit MS Qual MSD Qual

 Phosphorus
 115
 104
 60 - 140
 9
 40

Job Number: 680-12220-1

Client: Hodgins Engineering Consulting

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

	Result	Quai	
Coliform, Fecal	1.0	U	1.0

ک ر	RECEIVED FOR LABORATORY BY:		RECEIVED BY: (SIGNATURE)	RELINQUISTED BY: (SIGNATURE)		V3/06 0850 News	V3/06 6930 Stoner	1/3/06 0915 Rose D	1/3/06 0850 Heywoord	1/366 0835 Bluff	DATE TIME	CTING THIS WORK (if ap	Ф	CLIENT NAME V	CLIENT (SITE) PM	B. Kickleing	burn of Bluffton	TRENT O	SEVERN OT	
toho jolol	DATE TIME		DATE TIME	VATE TIME		River Trail	Creek	hur Creek	5	ton Village	SAMPLE IDENTIFICATION	-	Lifton SC. 29910	CLIENT E-MAIL	CLIENT PHONE 843 757-1952	P.O. NUMBER	PROJECT NO.		ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD	
	TODY INTACT	LA	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)										permits, com	CLIENT FAX 845 DDC	CONTRACT NO.	PROJECT LOCATION (STATE)		I OF CUSTODY REC	
	CUSTODY	LABORATORY USE ONLY		URE)		Ø	8	5	6	X	AQUE Solie Air	OUS (W D OR SE	ATER) MISOL				MATRIX TYPE			
Leso-12220	STL SAVANNAH	SE ONLY	DATE	DATE			-				N	イユイ	N N A	itrate itrate	/NO:	eln	10-3 0-3	> Alternate Laboratory Name/Location	5102 LaRoche Avenue Savannah, GA 31404	
	LABORATORY REMARKS		TIME	TIME		-	-	-		-	MBER OF CON	K V	A Î.	vo; pl	brug	\$/TI		tory Name/Lo	venue 404	
	Y REMARKS		RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)		Ν	2	2	1 1	2	NUMBER OF CONTAINERS SUBMITTED		Fe	cal (2 y 2 life	orin	Required Analysis			Serial Number 75101
			ATURE)	(SIGNATURE)							-							Phone: Fax:	Website: www.stl-inc.com Phone: (912) 354-7858 Fax: (912) 352-0165	75101
			DATE	DATE	P. D. 6						RE	PER SHIPMEN	DATE DUE	EAPEDITED REPORT DELIVERY (SURCHARGE)	DATE DUE	STANDARD REPORT DELIVERY	PAGE		ott-inc.com 54-7858 -0165	
			TIME	TIME		P	age	9 19	of	19	REMARKS	PER SHIPMENT:				PORT	OF			

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

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: 680-10774-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Turbidity	STL-SAV	MCAWW SI	М 2130-В
Ammonia	STL-SAV	MCAWW 35	50.1
Total Kjeldahl Nitrogen Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV STL-SAV	MCAWW 35	51.2 MCAWW 351.2
Nitrate	STL-SAV	MCAWW 35	53.2
Nitrite as Nitrogen	STL-SAV	MCAWW 35	53.2
Total Phosphorus Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	MCAWW 365.2/365.3
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222	D
Membrane Filter Technique - Fecal Coliform Procedure	STL-SAV	SM18 9222	D

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

and a

			Date/Time	Date/Time
Lab Sample ID	Client Sample ID	Client Matrix	Sampled	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

Client: Hodgins Engineering Consulting

		General Chemistry			
Client Sample ID:	Bluffton Village				
_ab Sample ID: Client Matrix:	680-10774-1 Water		Date Sampled: Date Received:		21/2005 0900 21/2005 1100
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.10 Anly Batch: 680-29167	mg/L Date Analyzed 11/23/2005 1459	0.030	1.0	350.1
TKN	0.38 Anly Batch: 680-29646 Prep Batch: 680-29453	mg/L Date Analyzed 11/30/2005 1500 Date Prepared: 11/28/2005 1800	0.20	1.0	351.2
Nitrogen, Nitrate	0.13 Anly Batch: 680-29095	mg/L Date Analyzed 11/22/2005 1853	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-29109	U mg/L Date Analyzed 11/22/2005 1749	0.050	1.0	353.2
Phosphorus, Total	0.18 Anly Batch: 680-29609 Prep Batch: 680-29447	mg/L Date Analyzed 11/30/2005 1228 Date Prepared: 11/28/2005 1800	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	4.6 Anly Batch: 680-29465	NTU Date Analyzed 11/22/2005 1745	0.10	1.0	SM 2130-E
Fecal Coliform	>2000 Anly Batch: 680-29399	CFU/100mL Date Analyzed 11/21/2005 1215	1.0	1.0	9222D
Client Sample ID:	Heyword Street				
Lab Sample ID: Client Matrix:	680-10774-2 Water		Date Sampled: Date Received:		21/2005 0920 21/2005 1100

Client: Hodgins Engineering Consulting

		General Chemistry			
Client Sample ID:	Heyword Street				
	80-10774-2 Vater		Date Sampled: Date Received:		1/2005 0920 1/2005 1100
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-29167	mg/L Date Analyzed 11/23/2005 1459	0.030	1.0	350.1
ΓKN	0.61 Anly Batch: 680-29646 Prep Batch: 680-29453	mg/L Date Analyzed 11/30/2005 1500 Date Prepared: 11/28/2005 1800	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-29095	U mg/L Date Analyzed 11/22/2005 1853	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-29109	U mg/L Date Analyzed 11/22/2005 1749	0.050	1.0	353.2
Phosphorus, Total	0.50 Anly Batch: 680-29609 Prep Batch: 680-29447	mg/L Date Analyzed 11/30/2005 1229 Date Prepared: 11/28/2005 1800	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Furbidity	41 Anly Batch: 680-29465	NTU Date Analyzed 11/22/2005 1745	0.10	1.0	SM 2130-B
Fecal Coliform	>2000 Anly Batch: 680-29399	CFU/100mL Date Analyzed 11/21/2005 1215	1.0	1.0	9222D
Client Sample ID:	Rose Dhu Creek				
	680-10774-3 Vater		Date Sampled: Date Received:		1/2005 0940 1/2005 1100

		General Chemistry			
Client Sample ID:	Rose Dhu Creek				
_ab Sample ID: Client Matrix:	680-10774-3 Water		Date Sampled: Date Received:		1/2005 0940 1/2005 1100
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-29167	U mg/L Date Analyzed 11/23/2005 1459	0.030	1.0	350.1
TKN	1.1	mg/L	0.20	1.0	351.2
IKN	Anly Batch: 680-29646 Prep Batch: 680-29453	Date Analyzed 11/30/2005 1500 Date Prepared: 11/28/2005 1800	0.20	1.0	001.2
Nitrogen, Nitrate	0.096 Anly Batch: 680-29095	mg/L Date Analyzed 11/22/2005 1853	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-29109	U mg/L Date Analyzed 11/22/2005 1749	0.050	1.0	353.2
Phosphorus, Total	0.39 Anly Batch: 680-29609 Prep Batch: 680-29447	mg/L Date Analyzed 11/30/2005 1229 Date Prepared: 11/28/2005 1800	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	42 Anly Batch: 680-29465	NTU Date Analyzed 11/22/2005 1745	0.10	1.0	SM 2130-B
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		Date Sampled:		1/2005 0950
Client Matrix:	Water		Date Received:	11/2	1/2005 1100

		General Chemistry			
Client Sample ID:	Stoney Creek				
and a surface care	680-10774-4 Water		Date Sampled: Date Received:		21/2005 0950 21/2005 1100
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.032 Anly Batch: 680-29167	mg/L Date Analyzed 11/23/2005 1507	0.030	1.0	350.1
TKN	0.79 Anly Batch: 680-29646 Prep Batch: 680-29453	mg/L Date Analyzed 11/30/2005 1509 Date Prepared: 11/28/2005 1800	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-29095	U mg/L Date Analyzed 11/22/2005 1853	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-29109	U mg/L Date Analyzed 11/22/2005 1749	0.050	1.0	353.2
Phosphorus, Total	0.26 Anly Batch: 680-29609 Prep Batch: 680-29447	mg/L Date Analyzed 11/30/2005 1240 Date Prepared: 11/28/2005 1800	0.10	1.0	365.4
Analyta	Result	Qual Units	RL	Dil	Method
Analyte Turbidity	17 Anly Batch: 680-29465	NTU Date Analyzed 11/22/2005 1745	0.10	1.0	SM 2130-E
Fecal Coliform	>2000 Anly Batch: 680-29399	CFU/100mL Date Analyzed 11/21/2005 1215	1.0	1.0	9222D
Client Sample ID:	New River Trail				
	680-10774-5 Water		Date Sampled: Date Received:		21/2005 101 21/2005 110

		General Chemistry			
Client Sample ID:	New River Trail				
Lab Sample ID: Client Matrix:	680-10774-5 Water		Date Sampl Date Receiv		21/2005 1010 21/2005 1100
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.17 Anly Batch: 680-29167	mg/L Date Analyzed 11/23/2005 1507	0.030	1.0	350.1
TKN	0.69 Anly Batch: 680-29646 Prep Batch: 680-29453	mg/L Date Analyzed 11/30/2005 1509 Date Prepared: 11/28/2005 1800	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-29095	U mg/L Date Analyzed 11/22/2005 1853	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-29109	U mg/L Date Analyzed 11/22/2005 1749	0.050	1.0	353.2
Phosphorus, Total	0.10 Anly Batch: 680-29609 Prep Batch: 680-29447	U mg/L Date Analyzed 11/30/2005 1240 Date Prepared: 11/28/2005 1800	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	3.0 Anly Batch: 680-29465	NTU Date Analyzed 11/22/2005 1745	0.10	1.0	SM 2130-B
Fecal Coliform	>2000 Anly Batch: 680-29399	CFU/100mL Date Analyzed 11/21/2005 1215	1.0	1.0	9222D

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

Lab Section	Qualifier	Description	· · · ·		
General Chemistry					
	U	Analyte was no	t detected at or ab	ove the reporting	limit.

Job Number: 680-10774-1

Client: Hodgins Engineering Consulting

Method Blank - Ba	atch: 680-29109				Method: 10-107-0-04-1 Preparation: N/A	
Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 11/2: Date Prepared: N/A	er	Analysis Batch: Prep Batch: N/A Units: mg/L	680-29109		Instrument ID: No Equipment A Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL	Assigned
Analyte		Result		Qual	RL	
Nitrogen, Nitrite		0.050		U	0.050	
Laboratory Contro	ol Sample - Batch:	680-29109			Method: 353.2 Preparation: N/A	
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 11/2: Date Prepared: N/A	er	Analysis Batch: Prep Batch: N/A Units:mg/L	680-29109		Instrument ID: No Equipment A Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL	Assigned
		Spike Amount 1.00	Result 1.0	% Re 100	ec. Limit 80 - 120	Qual
Analyte Nitrogen, Nitrite Matrix Spike/ Matrix Spike Dupli	icate Recovery Rep	1.00	1.0			Qual
Nitrogen, Nitrite Matrix Spike/ Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	icate Recovery Rep 680-10774-1 Water 1.0 11/22/2005 1749 N/A	1.00	1.0 1.0		80 - 120 Method: 353.2	Assigned
Nitrogen, Nitrite Matrix Spike/ Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	680-10774-1 Water 1.0 11/22/2005 1749 N/A	1.00 o ort - Batch: 680-2 Analysis Batch:	1.0 2 9109 680-29109		80 - 120 Method: 353.2 Preparation: N/A Instrument ID: No Equipment Lab File ID: N/A Initial Weight/Volume: 10 ml	Assigned - -
Nitrogen, Nitrite Matrix Spike/	680-10774-1 Water 1.0 11/22/2005 1749 N/A 680-10774-1 Water 1.0 11/22/2005 1749	1.00 Fort - Batch: 680-2 Analysis Batch: Prep Batch: N/A Analysis Batch:	1.0 2 9109 680-29109		80 - 120 Method: 353.2 Preparation: N/A Instrument ID: No Equipment Lab File ID: N/A Initial Weight/Volume: 10 ml Final Weight/Volume: 10 mL Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL	Assigned

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-29167

Job Number: 680-10774-1

Method: 350.1 Preparation: N/A

Lab Sample ID: MB 680-29 Client Matrix: Water Dilution: 1.0 Date Analyzed: 11/23/2005 Date Prepared: N/A	Prep Batch Units: mg/		Instrument ID: Kone Lab File ID: N/A Initial Weight/Volume Final Weight/Volume	e: 2 mL
Analyte	e de la constante de la constan Reference de la constante de la	Result	Qual	RL
Ammonia).030		0.030
Laboratory Control/ Laboratory Control Dup	blicate Recovery Report - E	Batch: 680-29167	Method: 350.1 7 Preparation: N/A	
LCS Lab Sample ID: LCS 68 Client Matrix: Water Dilution: 1.0 Date Analyzed: 11/23/2 Date Prepared: N/A	30-29167/2 Analysis E Prep Batc Units: mg 2005 1459		Instrument ID: Kone Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume:	
LCSD Lab Sample ID: LCSE Client Matrix: Water Dilution: 1.0 Date Analyzed: 11/23/2 Date Prepared: N/A	0 680-29167/3 Analysis E Prep Batc Units: mg/ 2005 1459		Instrument ID: Kon Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume:	eLab1 2 mL 2 mL
Analyte	<u>% Re</u> LCS L	<u>ec.</u> _CSD Limit	RPD RPD Limit L	.CS Qual LCSD Qual
Ammonia	****	101 90 - 110		

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Ba	atch: 680-29453			Method: 351.2 Preparation: 351.2
Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 11/30 Date Prepared: 11/20	er 0/2005 1436	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 Contro	ol Sample - Batch:	680-29453		Method: 351.2 Preparation: 351.2
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0	er	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
· · · · · · · · · · · · · · · · · · ·				
Date Prepared: 11/2		Spike Amount Result 1.00 1.0	% R 100	ec. Limit Qual 75 - 125
Matrix Spike/	8/2005 1800		*****	ana na mana na Mana na mana na
Date Prepared: 11/24 Analyte TKN Matrix Spike/	8/2005 1800	1.00 1.0	*****	75 - 125 Method: 351.2
Date Prepared: 11/2 Analyte TKN Matrix Spike/ Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	8/2005 1800 icate Recovery Rep 680-10774-1 Water 1.0 11/30/2005 1500 11/28/2005 1800	1.00 1.0 nort - Batch: 680-29453 Analysis Batch: 680-29646	*****	75 - 125 Method: 351.2 Preparation: 351.2 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL
Date Prepared: 11/24 Analyte TKN Matrix Spike/ Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	8/2005 1800 icate Recovery Rep 680-10774-1 Water 1.0 11/30/2005 1500 11/28/2005 1800 680-10774-1 Water 1.0 10 10 10 10 10 10 10 10 10 1	1.00 1.0 nort - Batch: 680-29453 Analysis Batch: 680-29646 Prep Batch: 680-29453	*****	75 - 125 Method: 351.2 Preparation: 351.2 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL

Job Number: 680-10774-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-29095

Method: 353.2 Preparation: N/A

Client Matrix:WateDilution:1.0Date Analyzed:11/22Date Prepared:N/A		Analysis Batch: 6 Prep Batch: N/A Units: mg/L	380-29095		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	ena esperante de construction de la	0.050		U	0.050
Laboratory Contro	ol Sample - Batch:	680-29095			Method: 353.2 Preparation: N/A
Lab Sample ID:LCSClient Matrix:WateDilution:1.0Date Analyzed:11/22Date Prepared:N/A	er	Analysis Batch: 6 Prep Batch: N/A Units:mg/L	380-29095		Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Analyte Nitrogen, Nitrate		Spike Amount 1.00	Result	% Re 99	c. Limit Qual 80 - 120
Matrix Spike/ Matrix Spike Dupli	icate Recovery Rep	ort - Batch: 680-29	9095		Method: 353.2 Preparation: N/A
MS Lab Sample ID:	680-10774-1	Analysis Batch: 6	380-29095		
	680-10774-1 Water 1.0 11/22/2005 1853 N/A	Analysis Batch: 6 Prep Batch: N/A	380-29095		Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	Water 1.0 11/22/2005 1853 N/A				Initial Weight/Volume: 10 mL
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	Water 1.0 11/22/2005 1853 N/A 680-10774-1 Water 1.0 11/22/2005 1853	Prep Batch: N/A Analysis Batch: 6		RPC	Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29447

Method: 365.4 Preparation: 365.2/365.3

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: 6	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 Phosphorus, Total	Spike Amount Result	% R 103	ec. Limit Qual 60 - 140
Matrix Spike/ Matrix Spike Duplicate Recovery Rep	ort - Batch: 680-29447		Method: 365.4 Preparation: 365.2/365.3
MS Lab Sample ID:680-10774-1Client Matrix:WaterDilution:1.0Date Analyzed:11/30/2005 1229Date 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:680-10774-1Client Matrix:WaterDilution:1.0Date Analyzed:11/30/2005 1229Date 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	<u>% Rec.</u> MS MSD Limit	RP	D RPD Limit MS Qual MSD Qua

Client: Hodgins Engineering Consulting

Job Number: 680-10774-1

Method Blank - Batch: 680-29399

Method: 9222D Preparation: N/A

Lab Sample ID:	MB 680-293	399/1	Analysis Batch: 68	30-29399	Instrument ID: No Equi	pment Assigned
Client Matrix:	Water		Prep Batch: N/A		Lab File ID: N/A	
Dilution:	1.0		Units: CFU/100ml	-	Initial Weight/Volume:	
Date Analyzed:	11/21/2005	1215			Final Weight/Volume:	
Date Prepared:	N/A					
Analyte			Result	Qual		RL

Analyte		Result	Qual	RL	
Fecal Coliform		1.0	U	1.0	

Job Number: 680-10774-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-29465

Method: SM 2130-B Preparation: N/A

Lab Sample ID:	MB 680-29465/1	Analysis Batch:	680-29465	Instrument ID: No Equipn	nent Assigned
Client Matrix:	Water	Prep Batch: N/A		Lab File ID: N/A	
Dilution:	1.0	Units: NTU		Initial Weight/Volume:	
Date Analyzed:	11/22/2005 1745			Final Weight/Volume: 30	mL
Date Prepared:	N/A				

Analyte	Resu	ult Qual	RL
Turbidity	0.10	U	0.10

Strl Savamati Suzanda Savamati, GA 31 404 Website: www.st Fax: (912) 3524 Alternate Laboratory Name/Location Phone: (912) 3524 Alternate Laboratory Name/Location Phone: (912) 3524 Alternate Laboratory Name/Location Phone: Fax: (912) 3524 Alternation Alternation	Strington Strington Website: www.strington 5102 LaRocine Avenue Fax: (912) 3524 Alternate Laboratory Name/Location Phone: (912) 3524 Alternate Laboratory Name/Location Phone: (912) 3524 Alternate Laboratory Name/Location Phone: Fax: (912) 3524 Alternate Laboratory Name/Location Phone: (912) 3524 Alternate Laboratory Name/Location Phone: Fax: (912) 3524 Alternate Laboratory Name/Location Fax: (912) 3524 Alternation Alternation Alternation Alternation <	V RECORD Strt Savannah Sitot Savannah Sitot Savannah Alternate Laboratory Name/Location Website: www.st Farmer Farmer (912) 3524 ON Alternate Laboratory Name/Location Phone: Farmer Farm	20m 38		OF	STANDARD REPORT DELIVERY DATE DUE	DELIVERY (SURCHARGE) DATE DUE NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	REMARKS	· · · · · · · · · · · · · · · · · · ·				Signal (19	والمتحافظ المستعاد المستعاد والمتعادية والمستعادية والمستعادية والمستعاد والمعالية	0 140		DATE	DATE TIME		
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STL8240-680 (12/02)

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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

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

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Page 1 of 16

METHOD SUMMARY

Client: Hodgins Engineering Consulting

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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	STL-SAV	MCAWW 351.2
Digester, AAII) Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV	MCAWW 351.2
Nitrogen, Nitrate-Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAVWV 353.2
Nitrogen, Nitrite (Colorimetric, Automated, Cadmium Reduction)	STL-SAV	MCAVW 353.2
Total Phosphorus Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4 MCAVWV 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

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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

Job Number: 680-9103-1

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		General Chemistry			
Client Sample ID:	Bluffton Village				
Lab Sample ID: Client Matrix:	680-9103-1 Water		Date Sampled: Date Received:		6/2005 1430 6/2005 1620
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.37 Anly Batch: 680-25504	mg/L Date Analyzed 10/18/2005 1210	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.84 Anly Batch: 680-25406 Prep Batch: 680-25191	mg/L Date Analyzed 10/17/2005 1607 Date Prepared: 10/14/2005 1700	0.20	1.0	351.2
Nitrogen, Nitrate	0.10 Anly Batch: 680-24587	mg/L Date Analyzed 10/07/2005 1225	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-24683	U mg/L Date Analyzed 10/07/2005 1154	0.050	1.0	353.2
Phosphorus	0.18 Anly Batch: 680-25382 Prep Batch: 680-25190	mg/L Date Analyzed 10/17/2005 1446 Date Prepared: 10/14/2005 1700	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	8.4 Anly Batch: 680-24502	NTU Date Analyzed 10/07/2005 1400	0.10	1.0	180.1
Coliform, Fecal	TNTC Anly Batch: 680-25308	CFU/100mL Date Analyzed 10/06/2005 1650	1.0	1.0	9222D

Job Number: 680-9103-1

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		General Chemistry			
Client Sample ID:	Heyward Street				
Lab Sample ID: Client Matrix:	680-9103-2 Water		Date Sampled: Date Received:		6/2005 1403 6/2005 1620
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.11 Anly Batch: 680-25504	mg/L Date Analyzed 10/18/2005 1210	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.3 Anly Batch: 680-25406 Prep Batch: 680-25191	mg/L Date Analyzed 10/17/2005 1615 Date Prepared: 10/14/2005 1700	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-24587	U mg/L Date Analyzed 10/07/2005 1225	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-24683	U mg/L Date Analyzed 10/07/2005 1154	0.050	1.0	353.2
Phosphorus	0.69 Anly Batch: 680-25382 Prep Batch: 680-25190	mg/L Date Analyzed 10/17/2005 1446 Date Prepared: 10/14/2005 1700	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	75 Anly Batch: 680-24502	NTU Date Analyzed 10/07/2005 1400	0.10	1.0	180.1
Coliform, Fecal	TNTC Anly Batch: 680-25308	CFU/100mL Date Analyzed 10/06/2005 1650	10	10	9222D

		General Chemistry			
Client Sample ID:	Rose Dhu Creek				
Lab Sample ID: Client Matrix:	680-9103-3 Water		Date Sampled: Date Received:		06/2005 1510 06/2005 1620
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.069 Anly Batch: 680-25504	mg/L Date Analyzed 10/18/2005 1210	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.2 Anly Batch: 680-25406 Prep Batch: 680-25191	mg/L Date Analyzed 10/17/2005 1615 Date Prepared: 10/14/2005 1700	0.20	1.0	351.2
Nitrogen, Nitrate	0.060 Anly Batch: 680-24587	mg/L Date Analyzed 10/07/2005 1225	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-24683	U mg/L Date Analyzed 10/07/2005 1154	0.050	1.0	353.2
Phosphorus	0.31 Anly Batch: 680-25382 Prep Batch: 680-25190	mg/L Date Analyzed 10/17/2005 1446 Date Prepared: 10/14/2005 1700	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	32 Anly Batch: 680-24502	NTU Date Analyzed 10/07/2005 1400	0.10	1.0	180.1
Coliform, Fecal	TNTC Anly Batch: 680-25308	CFU/100mL Date Analyzed 10/06/2005 1650	1.0	1.0	9222D

		General Chemistry			
Client Sample ID:	Stoney Creek				
Lab Sample ID: Client Matrix:	680-9103-4 Water		Date Sampled: Date Received:		6/2005 1540 6/2005 1620
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.032 Anly Batch: 680-25504	mg/L Date Analyzed 10/18/2005 1210	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.88 Anly Batch: 680-25406 Prep Batch: 680-25191	mg/L Date Analyzed 10/17/2005 1615 Date Prepared: 10/14/2005 1700	0.21	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-24587	U mg/L Date Analyzed 10/07/2005 1225	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-24683	U mg/L Date Analyzed 10/07/2005 1154	0.050	1.0	353.2
Phosphorus	0.13 Anly Batch: 680-25382 Prep Batch: 680-25190	mg/L Date Analyzed 10/17/2005 1446 Date Prepared: 10/14/2005 1700	0.11	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	9.1 Anly Batch: 680-24502	NTU Date Analyzed 10/07/2005 1400	0.10	1.0	180.1
Coliform, Fecal	TNTC Anly Batch: 680-25308	CFU/100mL Date Analyzed 10/06/2005 1650	1.0	1.0	9222D

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		General Chemistry			
Client Sample ID:	New River Trail				
ab Sample ID: Client Matrix:	680-9103-5 Water		Date Sampled: Date Received:		06/2005 1255 06/2005 1620
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.37 Anly Batch: 680-25504	mg/L Date Analyzed 10/18/2005 1218	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.80 Anly Batch: 680-25406 Prep Batch: 680-25191	mg/L Date Analyzed 10/17/2005 1615 Date Prepared: 10/14/2005 1700	0.20	1.0	351.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-24587	U mg/L Date Analyzed 10/07/2005 1225	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-24683	U mg/L Date Analyzed 10/07/2005 1154	0.050	1.0	353.2
Phosphorus	0.10 Anly Batch: 680-25382 Prep Batch: 680-25190	U mg/L Date Analyzed 10/17/2005 1446 Date Prepared: 10/14/2005 1700	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	4.3 Anly Batch: 680-24502	NTU Date Analyzed 10/07/2005 1400	0.10	1.0	180.1
Coliform, Fecal	TNTC Anly Batch: 680-25308	CFU/100mL Date Analyzed 10/06/2005 1650	1.0	1.0	9222D
Client Sample ID:	Hwy 170 - Sun City				
Lab Sample ID: Client Matrix:	680-9103-6 Water		Date Sampled: Date Received		06/2005 122 06/2005 162
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	10 Anly Batch: 680-24502	NTU Date Analyzed 10/07/2005 1400	0.10	1.0	180.1

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

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

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: Prep Batch: N/A Units: NTU	Lab File Initial W	Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 30 mL					
Analyte	Result		Qual	R	L			
Turbidity	dity 0.10				10			
Laboratory Control Sample - Batch:		Method: 180.1 Preparation: N/A						
Lab Sample ID:LCS 680-24502/2Client Matrix:WaterDilution:1.0Date Analyzed:10/07/2005 1400Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units: NTU	680-24502	Lab File Initial W	ent ID: No Equipme ID: N/A /eight/Volume: eight/Volume: 30	-			
Analyte	Spike Amount	Result	% Rec.	Limit	Qual			
Turbidity	15.5	16	100	90 - 110				

Method Blank - Batch: 680-24502

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Client: Hodgins Engineering Consulting

Quality Control Results

Method: 180.1

Preparation: N/A

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25504

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Method: 350.1 Preparation: N/A

Lab Sample ID: ME Client Matrix: Wa Dilution: 1.0 Date Analyzed: 10, Date Prepared: N/	ater) /18/2005 1322	Analysis Ba Prep Batch: Units: mg/l	N/A	25504		Instrument ID: Kone Lab File ID: N/A Initial Weight/Volum Final Weight/Volum	e:2 mL	
Analyte		F	Result		Qual		RL	
Ammonia		C	0.030		U		0.030	
Laboratory Con Laboratory Con	trol/ trol Duplicate Recovery	/ Report - E	Batch: 68	80-25504		Method: 350.1 Preparation: N/A	L.	
LCS Lab Sample II Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-25504/22 Water 1.0 10/18/2005 1322 N/A	Analysis F Prep Bato Units: m		0-25504		Instrument ID: Kono Lab File ID: N/A Initial Weight/Volume Final Weight/Volume	e: 2 mL	
	ID: LCSD 680-25504/23 Water 1.0 10/18/2005 1322 N/A	Analysis I Prep Bato Units:mg		0-25504		Instrument ID: Ko Lab File ID: N/A Initial Weight/Volume Final Weight/Volume		
Analyte		<u>% Re</u> LCS	<u>ec.</u> LCSD	Limit	RP	D RPD Limit	LCS Qual	LCSD Qual
Ammonia	e para antinencia fan a mare e partem e mater a constructiva () a en 100 a fan para de para antinen e a seu de	99	98	90 - 110) 1	30	understanden der Standen (der Standen ein der S	999 yan an a

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25191

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Method: 351.2 Preparation: 351.2

Lab Sample ID:MB 680-25191/1-AClient Matrix:WaterDilution:1.0Date Analyzed:10/17/2005Date Prepared:10/14/2005		tch: 680-	680-25406 25191		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: 38	51.2			
Lab Sample ID:LCS 680-25191/2-AClient Matrix:WaterDilution:1.0Date Analyzed:10/17/2005 1607Date Prepared:10/14/2005 1700	-	atch: 680	680-25406 -25191	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL Final Weight/Volume: 40 mL					
Analyte	Spike A	mount	Result	% Re	c. Limit	Qual			
Nitrogen, Kjeldahl	1.00		1.0	103	75 - 1	25			
Matrix Spike/ Matrix Spike Duplicate Recovery R	eport - Batc	h: 680-2	5191		Method: 351.2 Preparation: 3	51.2			
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	•	s Bałch: atch: 680	680-25406)-25191						
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		is Batch: atch: 680	680-25406)-25191		oneLab2 /A ume: 20 mL ume: 20 mL				
	<u>% F</u>		l incit	00		MS Qual MSD Qual			
Analyte	MS	MSD	Limit	RP 7					
Nitrogen, Kjeldahl	82	95	75 - 125	7	40				

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-24587

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Method: 353.2 Preparation: N/A

Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 10/07 Date Prepared: N/A	r	Analysis I Prep Bato Units: m	h: N/A	580-24587		Instrument ID: No Equipment Assigr Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL					
Analyte			Result		Qual		RL				
Nitrogen, Nitrate			0.050	an gana gana gana gana ang kananga dana kana kana kana kana kana kana kan	U	and a staffinger of the state of the	0.050				
Laboratory Contro	ol Sample - Batch: 6	80-24587				Method: 353.2 Preparation: N	ΙΑ				
Lab Sample ID:LCSClient Matrix:WateDilution:1.0Date Analyzed:10/0°Date Prepared:N/A	er	Analysis Prep Bate Units:mg	ch: N/A	680-24587		Instrument ID: No Lab File ID: N/ Initial Weight/Volu Final Weight/Volu	ume: 10 mL				
Analyte		Spike Arr	nount	Result	% Re	ec. Limit	Qual				
Nitrogen, Nitrate		1.00		1.0	103	80 - 1	120				
Matrix Spike/ Matrix Spike Dupl	icate Recovery Repo	ort - Batch:	680-2	4587		Method: 353.2 Preparation: N	/Α				
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-9103-1 Water 1.0 10/07/2005 1225 N/A	Analysis Prep Bat		680-24587	Instrument ID: No Equipment Assign Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL						
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-9103-1 Water 1.0 10/07/2005 1225 N/A	Analysis Prep Bat		680-24587	Instrument ID: No Equipment Assign Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL						
		<u>% Re</u>		linait	חם		MS Qual MSD Qual				
Analyte Nitrogen, Nitrate	a na mandra ana ana ana ana ana ana ana ana ana a	MS 98	MSD 100	Limit 80 - 120	RP 1	D RPD Limit 30	MO QUAI MOD QUAI				
millogen, millate		00	.00	00 ,20	•	~~					

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-24683

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Method: 353.2 Preparation: N/A

Lab Sample ID:MB 680-24683/1Client Matrix:WaterDilution:1.0Date Analyzed:10/07/2005 1154Date Prepared:N/A		tch: N/A	80-24683		Instrument ID: No Equipment Assign Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL				
Analyte		Result		Qual		RL			
Nitrogen, Nitrite		0.050		U	gan (gang magana) ang bara pari pari pada na sa bara pada na sa bara da kara da kara da kara da kara da kara d	0.050			
Laboratory Control Sample - Batch: 6	80-24683				Method: 353.2 Preparation: N	Ά			
Lab Sample ID:LCS 680-24683/2Client Matrix:WaterDilution:1.0Date Analyzed:10/07/2005 1154Date Prepared:N/A	-	tch: N/A	680-24683		Instrument ID: No Lab File ID: N/ Initial Weight/Volu Final Weight/Volu	ime: 10 mL			
Analyte	Spike A	mount	Result	% Re	c. Limit	Qual			
Nitrogen, Nitrite	1.00		0.99	99	80 - 1	20			
Matrix Spike/ Matrix Spike Duplicate Recovery Rep	ort - Batcl	n: 680-24	4683		Method: 353.2 Preparation: N	/Α			
MS Lab Sample ID:680-9103-1Client Matrix:WaterDilution:1.0Date Analyzed:10/07/2005 1154Date Prepared:N/A	-	s Batch: atch: N/A	680-24683						
MSD Lab Sample ID:680-9103-1Client Matrix:WaterDilution:1.0Date Analyzed:10/07/2005 1154Date Prepared:N/A	-	s Batch: atch: N/A	680-24683	Instrument ID: No Equipment Assig Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL					
	<u>% R</u> MS	<u>ec.</u> MSD	Limit	RPI	D RPD Limit	MS Qual MSD Qual			
Analyte Nitrogen, Nitrite	UNO .	พอบ	LIIIIL						

Client: Hodgins Engineering Consulting

Job Number: 680-9103-1

Method Blank - Batch: 680-25190

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Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID:MBClient Matrix:WatDilution:1.0Date Analyzed:10/1Date Prepared:10/1	er 7/2005 1446	-	Batch: 6 tch: 680-: ng/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	999 yr 1999 yw few few few few few few few few few fe	U	ng, annalan (hai hai an lai di) () () () () () () () () ()	0.10			
Laboratory Contr	ol Sample - Batch:(680-25190				Method: 365.4 Preparation: 365.	.2/365.3			
Lab Sample ID:LCSClient Matrix:WatDilution:1.0Date Analyzed:10/1Date Prepared:10/1	er 17/2005 1446		atch: 680-	680-25382 -25190		Instrument ID: Kone Lab File ID: N/A Initial Weight/Volum Final Weight/Volum	e: 40 mL			
Analyte		Spike A	mount	Result	% Re	c. Limit	Qual			
Phosphorus	anyan na ang ang ang ang ang ang ang ang an	1.00		1.0	104	60 - 140	C			
Matrix Spike/ Matrix Spike Dup	licate Recovery Rep	oort - Batc	h: 680-2	5190		Method: 365.4 Preparation: 365	5.2/365.3			
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-9103-1 Water 1.0 10/17/2005 1446 10/14/2005 1700		s Batch: atch: 680	680-25382 I-25190		Instrument ID: Ko Lab File ID: N// Initial Weight/Volum Final Weight/Volum	ne: 20 mL			
MSD Lab Sample II Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: 680-9103-1 Water 1.0 10/17/2005 1446 10/14/2005 1700		is Batch: atch: 680	680-25382)-25190	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL					
		<u>% F</u>		1 (maile	RP	D RPD Limit	MS Qual MSD Qual			
Analyte		MS 113	MSD 109	Limit 60 - 140	ang panananaké né nakaré né nakaré né biné né n	40 RPD LIIIII				
Phosphorus		113	103	00 - 140						

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

Client: Hodgins Engineering Consulting

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Method	Blank -	Batch:	680-25308

Lab Sample ID: MB 680-25308/1

1.0 Date Analyzed: 10/06/2005 1650

Client Matrix: Water

Date Prepared: N/A

Dilution:

Quality Control Results

Job Number: 680-9103-1

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

Method: 9222D

Preparation: N/A

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	n an fair an	TNTC	

Analysis Batch: 680-25308

Prep Batch: N/A

Units: CFU/100mL

Page 16 of 16

ISIGNATURE	RECEIVED FOR LABORATORY BY:	RECEIVED BY: (SIGNATURE) AMARCEY (ANNE RAPARIAN)	HULLONDER		MARK - HIS	02.21		10/6/25 1540 Sta		10/6/05 1403 17em	10/6/05 1430 Buf	DATE TIME	CTING THIS WORK (IF	Set Bridle C+ Bluff	Hodgins Engineering	CLIENT NAME	Bermand K. y Llaud	Town of Bluffton	PPOLECT DEEEDENGT	SEVERN	
- O	DATE	DATE TIME	10/6/25 1620		Ere-tohatre-	170 - Sun Lity	New River Trail	Staney Creek	Rose Due Creek	Heyword Street	BufftonVillage	SAMPLE IDENTIFICATION	applicable)	ten SC 29910	bill he water parts.	CLIENT FMONE	P.O. NUMBER	PROJECT NO.		SIS REQUEST AIND CHA	
NO O SEAL NO	LABOR	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)		(The Wer							COM	POSITE (EOUS (W	(C) OR ATER)	GRAB	757-5234 (G)	NO.	(STATE) S C T	-	AWALYSIS REQUEST AND CHAIN OF CUSTODY RECORD	
106 NO. 1080-9103	RY USE ONLY	DATE T	DATE T									AIR NON/		S LIQI	UD (OIL LD. NC LLC	3/t 3/1 3	10 NC	TYPE N	Alternate	D STL Savannah 5102 LaRoche Avenue Savannah, GA 31404	1
	NEODATODY DEMADING	TIME RECEIVED BY: (SIGNATURE)	TIME RELINQUISHED BY: (SIGNATURE)				2 1		2)	1 2 (1	1 2 7 1	NUMBER OF CONTAINERS SUBMITTED	XXX	F.	KN Celi 10 Turb	/Phu (fern 20 idit	25 en eq	REQUIRED ANALYSIS	Laboratory Name/Location Phone: Fax:		Serial Number
3		e) DATE	NATURE) DATE	TEMP. 3.								REMARKS	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	DATE DUE	DELIVERY (SURCHARGE)	DATE DUE	STANDARD REPORT DELIVERY	PAGE	:	Website: www.stl-inc.com Phone: (912) 354-7858 Fax: (912) 352-0165	/1465
		TIME	TIME	₩ 							,	KS ·	ERS SUBMITTE		0	-	0	OF			

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

Description	Lab Location	Method P	reparation 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	STL-SAV	MCAWW 351.2	
Digester, AAII) 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 Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	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

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

Job Number: 680-7335-1

General Chemistry

Client Sample ID: TOB08241 (Bluffton Village)

Lab Sample ID: Client Matrix:	680-7335-1 Water		Date Sampled: Date Received:		24/2005 0700 24/2005 1045
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.12 Anly Batch: 680-20870	mg/L Date Analyzed 09/01/2005 1250	0.030	1.0	350.1
Nitrogen, Kjeldahl	0.58 Anly Batch: 680-20835 Prep Batch: 680-20585	mg/L Date Analyzed 08/31/2005 1417 Date Prepared: 08/30/2005 1200	0.20	1.0	351.2
Nitrogen, Nitrate	0.091 Anly Batch: 680-20177	mg/L Date Analyzed 08/24/2005 1451	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-20093	U mg/L Date Analyzed 08/24/2005 1306	0.050	1.0	353.2
Phosphorus	0.19 Anly Batch: 680-20773 Prep Batch: 680-20584	mg/L Date Analyzed 08/31/2005 1205 Date Prepared: 08/30/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	2.6 Anly Batch: 680-20587	NTU Date Analyzed 08/25/2005 1400	0.10	1.0	180.1
Coliform, Fecal	820 Anly Batch: 680-20922	CFU/100mL Date Analyzed 08/24/2005 1230	5.0	5.0	9222D

General Chemistry						
Client Sample ID:	Heyward St.					
Lab Sample ID: Client Matrix:	680-7335-2 Water		Date Sampled: Date Received:		24/2005 0720 24/2005 1045	
Analyte	Result	Qual Units	RL	Dil	Method	
Ammonia	0.15 Anly Batch: 680-20870	mg/L Date Analyzed 09/01/2005 1250	0.030	1.0	350.1	
Nitrogen, Kjeldahl	1.0 Anly Batch: 680-20835 Prep Batch: 680-20585	mg/L Date Analyzed 08/31/2005 1417 Date Prepared: 08/30/2005 1200	0.20	1.0	351.2	
Nitrogen, Nitrate	0.050 Anly Batch: 680-20177	U mg/L Date Analyzed 08/24/2005 1451	0.050	1.0	353.2	
Nitrogen, Nitrite	0.050 Anly Batch: 680-20093	U mg/L Date Analyzed 08/24/2005 1306	0.050	1.0	353.2	
Phosphorus	0.36 Anly Batch: 680-20773 Prep Batch: 680-20584	mg/L Date Analyzed 08/31/2005 1205 Date Prepared: 08/30/2005 1200	0.10	1.0	365.4	
Analyte	Result	Qual Units	RL	Dil	Method	
Turbidity	26 Anly Batch: 680-20587	NTU Date Analyzed 08/25/2005 1400	0.10	1.0	180.1	
Coliform, Fecal	860 Anly Batch: 680-20922	CFU/100mL Date Analyzed 08/24/2005 1230	5.0	5.0	9222D	

General Chemistry							
Client Sample ID:	Rose Dhu Creek						
Lab Sample ID: Client Matrix:	680-7335-3 Water		Date Sampled: Date Received:	08/24/2005 0750 08/24/2005 104			
Analyte	Result	Qual Units	RL	Dil Method			
Ammonia	0.29 Anly Batch: 680-20870	mg/L Date Analyzed 09/01/2005 1250	0.030	1.0 350.1			
Nitrogen, Kjeldahl	1.1 Anly Batch: 680-20835 Prep Batch: 680-20585	mg/L Date Analyzed 08/31/2005 1417 Date Prepared: 08/30/2005 1200	0.20	1.0 351.2			
Nitrogen, Nitrate	0.19 Anly Batch: 680-20177	mg/L Date Analyzed 08/24/2005 1451	0.050	1.0 353.2			
Nitrogen, Nitrite	0.060 Anly Batch: 680-20093	mg/L Date Analyzed 08/24/2005 1306	0.050	1.0 353.2			
Phosphorus	0.34 Anly Batch: 680-20773 Prep Batch: 680-20584	mg/L Date Analyzed 08/31/2005 1205 Date Prepared: 08/30/2005 1200	0.10	1.0 365.4			
Analyte	Result	Qual Units	RL	Dil Method			
Turbidity	7.4 Anly Batch: 680-20587	NTU Date Analyzed 08/25/2005 1400	0.10	1.0 180.1			
Coliform, Fecal	610 Anly Batch: 680-20922	CFU/100mL Date Analyzed 08/24/2005 1230	5.0	5.0 9222D			

General Chemistry							
Client Sample ID:	Stoney Creek						
Lab Sample ID: Client Matrix:	680-7335-4 Water		Date Sampled: Date Received:		24/2005 0810 24/2005 1045		
Analyte	Result	Qual Units	RL	Dil	Method		
Ammonia	0.36 Anly Batch: 680-20870	mg/L Date Analyzed 09/01/2005 1258	0.030	1.0	350.1		
Nitrogen, Kjeldahl	1.1 Anly Batch: 680-20835 Prep Batch: 680-20585	mg/L Date Analyzed 08/31/2005 1417 Date Prepared: 08/30/2005 1200	0.20	1.0	351.2		
Nitrogen, Nitrate	0.19 Anly Batch: 680-20177	mg/L Date Analyzed 08/24/2005 1451	0.050	1.0	353.2		
Nitrogen, Nitrite	0.050 Anly Batch: 680-20093	U mg/L Date Analyzed 08/24/2005 1306	0.050	1.0	353.2		
Phosphorus	0.54 Anly Batch: 680-20773 Prep Batch: 680-20584	mg/L Date Analyzed 08/31/2005 1205 Date Prepared: 08/30/2005 1200	0.10	1.0	365.4		
Analyte	Result	Qual Units	RL	Dil	Method		
Turbidity	6.4 Anly Batch: 680-20587	NTU Date Analyzed 08/25/2005 1400	0.10	1.0	180.1		
Coliform, Fecal	510 Anly Batch: 680-20922	CFU/100mL Date Analyzed 08/24/2005 1230	5.0	5.0	9222D		

General Chemistry							
Client Sample ID:	New River Trail						
Lab Sample ID: Client Matrix:	680-7335-5 Water		Date Sampled: Date Received:	08/24/2005 0835 08/24/2005 1045			
Analyte	Result	Qual Units	RL	Dil Method			
Ammonia	0.20 Anly Batch: 680-20870	mg/L Date Analyzed 09/01/2005 1258	0.030	1.0 350.1			
Nitrogen, Kjeldahl	1.6 Anly Batch: 680-20835 Prep Batch: 680-20585	mg/L Date Analyzed 08/31/2005 1417 Date Prepared: 08/30/2005 1200	0.20	1.0 351.2			
Nitrogen, Nitrate	0.050 Anly Batch: 680-20177	U mg/L Date Analyzed 08/25/2005 1506	0.050	1.0 353.2			
Nitrogen, Nitrite	0.11 Anly Batch: 680-20093	mg/L Date Analyzed 08/24/2005 1310	0.050	1.0 353.2			
Phosphorus	0.10 Anly Batch: 680-20773 Prep Batch: 680-20584	U mg/L Date Analyzed 08/31/2005 1205 Date Prepared: 08/30/2005 1200	0.10	1.0 365.4			
Analyte	Result	Qual Units	RL	Dil Method			
Turbidity	3.7 Anly Batch: 680-20587	NTU Date Analyzed 08/25/2005 1400	0.10	1.0 180.1			
Coliform, Fecal	420 Anly Batch: 680-20922	CFU/100mL Date Analyzed 08/24/2005 1230	5.0	5.0 9222D			

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

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Preparation: N/A

Lab Sample ID:MB 680-20587/1Client Matrix:WaterDilution:1.0Date Analyzed:08/25/2005 1400Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units: NTU	680-20587	Lab Fi Initial	nent ID: No Equipm le ID: N/A Weight/Volume: Veight/Volume: 30	-
Analyte	Resul	t	Qual	I	RL
Turbidity	0.10		U	().10
Laboratory Control Sample - Batch	: 680-20587			od: 180.1 aration: N/A	
Lab Sample ID:LCS 680-20587/2Client Matrix:WaterDilution:1.0Date Analyzed:08/25/2005 1400Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units:NTU	680-20587	Lab Fi Initial	nent ID: No Equipm le ID: N/A Weight/Volume: Veight/Volume: 30	-
Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Turbidity	15.5	16	100	90 - 110	

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-20587

Quality Control Results

Method Blank - Batch: 680-20870

Quality	Control	Results
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Job Number: 680-7335-1

Method: 350.1 Preparation: N/A

Lab Sample ID: M Client Matrix: W Dilution: 1. Date Analyzed: 09 Date Prepared: N	/ater 0 9/01/2005 1242	Analysis Batch: 68 Prep Batch: N/A Units: mg/L	80-20870	Instrument ID: K Lab File ID: N Initial Weight/Vol Final Weight/Vol	/A ume: 2 mL
Analyte		Result	Qua	al	RL
Ammonia		0.030	U		0.030
Laboratory Cor Laboratory Cor	ntrol/ ntrol Duplicate Recove	ry Report - Batch:	680-20870	Method: 350.1 Preparation: N	
LCS Lab Sample I Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-20870/2 Water 1.0 09/01/2005 1242 N/A	Analysis Batch: Prep Batch: N/A Units: mg/L	680-20870	Instrument ID: K Lab File ID: N/A Initial Weight/Volu Final Weight/Volu	me: 2 mL
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-20870/3 Water 1.0 09/01/2005 1242 N/A	Analysis Batch: Prep Batch: N/A Units:mg/L	680-20870	Instrument ID: Lab File ID: N/A Initial Weight/Volu Final Weight/Volu	me: 2 mL
Analyte		<u>% Rec.</u> LCS LCSD	Limit	RPD RPD Limit	LCS Qual LCSD Qual
Ammonia		99 98	90 - 110	1 30	

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-20585

Job Number: 680-7335-1

Method: 351.2 Preparation: 351.2

Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/3 Date Prepared: 08/3	er 1/2005 1417	Prep Bat	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 Contro	ol Sample - Batch:	680-20585				Method: 351.2 Preparation: 3		
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/3 Date Prepared: 08/3	er 1/2005 1417	Analysis Prep Bat Units:mg	ch: 680	680-20835 -20585		Instrument ID: H Lab File ID: N Initial Weight/Vo Final Weight/Vo	N/A blume: 40 mL	
Analyte		Spike An	nount	Result	% Re	c. Lim	it Qual	
Nitrogen, Kjeldahl		1.00		1.0	103	75 -	125	
Matrix Spike/ Matrix Spike Dupl	icate Recovery Rep	oort - Batch	: 680-2	0585		Method: 351.2 Preparation: 3		
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-7335-1 Water 1.0 08/31/2005 1417 08/30/2005 1200	Analysis Prep Bat		680-20835 -20585		Lab File ID:	N/A blume: 20 mL	
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-7335-1 Water 1.0 08/31/2005 1417 08/30/2005 1200	-	Analysis Batch: 680-20835 Prep Batch: 680-20585			Instrument ID: K Lab File ID: N Initial Weight/Vo Final Weight/Vo	V/A blume: 20 mL	
		<u>% Re</u>						
Analyte			MSD	Limit	RPI		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.

Quality Control Results

Job Number: 680-7335-1

Client: Hodgins Engineering Consulting

Lab Sample ID:MB 680-20093/1Client Matrix:WaterDilution:1.0Date Analyzed:08/24/2005 1300Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units: mg/L		Lab Fi Initial V	nent ID: No Equipm le ID: N/A Weight/Volume: 10 Veight/Volume: 10	mL
Analyte	Resul	t	Qual		RL
Nitrogen, Nitrite	0.050		U	(0.050
Laboratory Control Sample - Batch	n: 680-20093			od: 353.2 aration: N/A	
Lab Sample ID:LCS 680-20093/2Client Matrix:WaterDilution:1.0Date Analyzed:08/24/2005Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units:mg/L		Lab Fi Initial ^v	nent ID: No Equipm le ID: N/A Weight/Volume: 10 Veight/Volume: 10	mL
Analyte	Spike Amount	Result	% Rec.	Limit	Qual

Method Blank - Batch: 680-20093

Method: 353.2 Preparation: N/A

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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: Prep Batch: N/A Units: mg/L		Lab Initi	rument ID: No Equipm File ID: N/A al Weight/Volume: 10 al Weight/Volume: 10	mL
Analyte	Resul	t	Qual		RL
Nitrogen, Nitrate	0.050		U	(0.050
Laboratory Control Sample - Batch	n: 680-20177			thod: 353.2 eparation: N/A	
Lab Sample ID:LCS 680-20177/2Client Matrix:WaterDilution:1.0Date Analyzed:08/24/2005Date Prepared:N/A	Analysis Batch: Prep Batch: N/A Units:mg/L		Lab Initi	trument ID: No Equipm File ID: N/A al Weight/Volume: 10 al Weight/Volume: 10	mL
Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrate	1.00	1.0	104	80 - 120	

Client: Hodgins Engineering Consulting

Quality Control Results

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-20584

Job Number: 680-7335-1

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/3 Date Prepared: 08/3	er 1/2005 1205	-	atch: 680	680-20773 -20584		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 Contro	ol Sample - Batch: 6	680-20584				Method: 365.4 Preparation: 365.2/365.3
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/3 Date Prepared: 08/3	er 1/2005 1205	-	atch: 680	680-20773 -20584		Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL Final Weight/Volume: 40 mL
Analyte		Spike A	mount	Result	% R	ec. Limit Qual
Phosphorus		1.00		1.1	108	60 - 140
Matrix Spike/ Matrix Spike Dupl	icate Recovery Rep	ort - Batcl	n: 680-2	0584		Method: 365.4 Preparation: 365.2/365.3
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-7335-1 Water 1.0 08/31/2005 1205 08/30/2005 1200	-	s Batch: atch: 680	680-20773 20584		Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-7335-1 Water 1.0 08/31/2005 1205 08/30/2005 1200		s Batch: atch: 680	680-20773 I-20584		Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL
Analida		<u>% R</u>		1 ::4		
Analyte		MS	MSD	Limit	RP 5	
Phosphorus		103	109	60 - 140	5	40

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

Quality Control Results

Job Number: 680-7335-1

Client: Hodgins Engineering Consulting

Lab Sample ID:MB 680-20922/1Client Matrix:WaterDilution:1.0Date Analyzed:08/24/2005 1230Date Prepared:N/A	Analysis Batch: 680-2092 Prep Batch: N/A Units: CFU/100mL	22	Instrument ID: Lab File ID: Initial Weight/\ Final Weight/\	N/A /olume:	nt Assigned
Analyte	Result	Qual		RI	-
Coliform, Fecal	1.0	U		1.()
Matrix Duplicate - Batch: 680-2092	2		Method: 922 Preparation:		
Lab Sample ID:680-7335-1Client Matrix:WaterDilution:5.0Date Analyzed:08/24/2005Date Prepared:N/A	Analysis Batch: 680-20922 Prep Batch: N/A Units: CFU/100mL		Instrument ID: Lab File ID: Initial Weight/\ Final Weight/\	N/A /olume:	nt Assigned
Analyte	Sample Result/Qual	Result	RPD	Limit	Qual

Method Blank - Batch: 680-20922

Method: 9222D Preparation: N/A

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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

Description	Lab Location	Method P	d 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 Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	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

Job Number: 680-6487-1

General Chemistry

8010501

Lab Sample ID: Client Matrix:	680-6487-1 Water	Date Sampled:08/01/20050900Date Received:08/01/20051350
Analyte	Result Qual Units	RL Dil Method
Phosphorus	0.18 mg/L Anly Batch: 680-18108 Date Analyzed 08/04/2005 1 ⁷ Prep Batch: 680-18032 Date Prepared: 08/03/2005 10	
Nitrogen, Kjeldahl	0.67 mg/L Anly Batch: 680-18127 Date Analyzed 08/04/2005 15 Prep Batch: 680-332 Date Prepared: 08/03/2005 10	
Nitrogen, Nitrite	0.050 U mg/L Anly Batch: 680-17823 Date Analyzed 08/01/2005 17	0.050 1.0 353.2 716
Nitrogen, Nitrate	0.070 mg/L Anly Batch: 680-17880 Date Analyzed 08/03/2005 13	0.050 1.0 353.2 306
Ammonia	0.080 mg/L Anly Batch: 680-18349 Date Analyzed 08/08/2005 09	0.030 1.0 350.1 949

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			

Anly Batch: 680-18617

Job Number: 680-6487-1

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 Qual RL Dil Method Result Units Phosphorus 0.10 1.0 365.4 1.0 mg/L Anly Batch: 680-18108 Date Analyzed 08/04/2005 1155 Prep Batch: 680-18032 Date Prepared: 08/03/2005 1030 0.050 0.050 1.0 Nitrogen, Nitrite U mg/L 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 0.21 Ammonia 0.030 1.0 350.1 mg/L 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 >2000 9222D Coliform, Fecal CFU/100mL 5.0 5.0 Anly Batch: 680-18611 Date Analyzed 08/01/2005 1545 Turbidity 80 NTU 0.10 1.0 180.1

Date Analyzed 08/02/2005 1730

Anly Batch: 680-18611

Job Number: 680-6487-1

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 Qual RL Dil Method Result Units Phosphorus 0.24 0.10 1.0 365.4 mg/L Anly Batch: 680-18108 Date Analyzed 08/04/2005 1155 Prep Batch: 680-18032 Date Prepared: 08/03/2005 1030 0.050 0.050 1.0 Nitrogen, Nitrite U mg/L 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 0.030 1.0 350.1 mg/L 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 16 NTU 180.1 Turbidity 0.10 1.0 Anly Batch: 680-18617 Date Analyzed 08/02/2005 1730 Coliform, Fecal >2000 CFU/100mL 5.0 5.0 9222D

Date Analyzed 08/01/2005 1545

Job Number: 680-6487-1

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 0.10 1.0 365.4 mg/L Anly Batch: 680-18108 Date Analyzed 08/04/2005 1155 Date Prepared: 08/03/2005 1030 Prep Batch: 680-18032 Nitrogen, Nitrite 0.050 U 0.050 1.0 353.2 mg/L 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 0.030 1.0 350.1 mg/L 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			

Job Number: 680-6487-1

General Chemistry

Client Sample ID:	TOB08010505

Lab Sample ID: Client Matrix:	680-6487-5 Water		Date Sampled: Date Received:		01/2005 1115 01/2005 1350
Analyte	Result	Qual Units	RL	Dil	Method
Phosphorus	0.10 Anly Batch: 680-18108 Prep Batch: 680-18032	U mg/L Date Analyzed 08/04/2005 1155 Date Prepared: 08/03/2005 1030	0.10	1.0	365.4
Nitrogen, Nitrite	0.050 Anly Batch: 680-17823	U mg/L Date Analyzed 08/01/2005 1716	0.050	1.0	353.2
Nitrogen, Nitrate	0.050 Anly Batch: 680-17880	U mg/L Date Analyzed 08/03/2005 1315	0.050	1.0	353.2
Ammonia	0.030 Anly Batch: 680-18349	U mg/L Date Analyzed 08/08/2005 0949	0.030	1.0	350.1
Nitrogen, Kjeldahl	1.4 Anly Batch: 680-18127 Prep Batch: 680-332	mg/L Date Analyzed 08/04/2005 1538 Date Prepared: 08/03/2005 1030	0.20	1.0	351.2
Analyte	Result	Qual Units	RL	Dil	Method
Coliform, Fecal	1600 Anly Batch: 680-18611	CFU/100mL Date Analyzed 08/01/2005 1545	5.0	5.0	9222D
Turbidity	2.1 Anly Batch: 680-18617	NTU Date Analyzed 08/02/2005 1730	0.10	1.0	180.1

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.

Quality Control Results

Job Number: 680-6487-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-18617

Method: 180.1 Preparation: N/A

Lab Sample ID: MB 680-18617/1	Analysis Batch: 680-18617	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Units: NTU	Initial Weight/Volume:
Date Analyzed: 08/02/2005 1730		Final Weight/Volume: 30 mL
Date Prepared: N/A		

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

Method Blank - Batch: 680-18349

JOD NUITIDEL.

Method: 350.1 Preparation: N/A

Lab Sample ID: M Client Matrix: W Dilution: 1. Date Analyzed: 0 Date Prepared: N	/ater 0 8/08/2005 0941	Analysis Batch: Prep Batch: N/, Units: mg/L			Instrument ID: KoneLab1 Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 2 mL
Analyte		Resi	ılt	Qual	RL
Ammonia		0.03	0	U	0.030
Laboratory Con Laboratory Con	ntrol/ ntrol Duplicate Recove	ry Report - Bato	h: 680-18349		Method: 350.1 Preparation: N/A
LCS Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-18349/2 Water 1.0 08/08/2005 0941 N/A	Analysis Batc Prep Batch: N Units: mg/L	h: 680-18349 I/A		Instrument ID: KoneLab1 Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 2 mL
LCSD Lab Sample Client Matrix: Dilution: Date Analyzed: Date Prepared:	e ID: LCSD 680-18349/3 Water 1.0 08/08/2005 0941 N/A	Analysis Batc Prep Batch: N Units:mg/L	h: 680-18349 I/A		Instrument ID: KoneLab1 Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 2 mL
Analyte		<u>% Rec.</u> LCS LCS	D Limit	RPD	D RPD Limit LCS Qual LCSD Qual
Ammonia		99 99	90 - 110	1	30

Job Number: 680-6487-1

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-332

Job Number: 680-6487-1

Method: 351.2 Preparation: 351.2

Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/00 Date Prepared: 08/00	er 4/2005 1558	Prep Ba	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 Contro	ol Sample - Batch: 6	80-332				Method: 351.2 Preparation: 351.2
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/00 Date Prepared: 08/00	er 4/2005 1528	•	atch: 680	680-18127)-332		Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL Final Weight/Volume: 40 mL
Analyte		Spike A	mount	Result	% R	ec. Limit Qual
Nitrogen, Kjeldahl		1.00		1.0	103	75 - 125
Matrix Spike/ Matrix Spike Dupl	icate Recovery Rep	ort - Batcl	n: 680-3	32		Method: 351.2 Preparation: 351.2
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-6487-1 Water 1.0 08/04/2005 1528 08/03/2005 1030	•	s Batch: atch: 680	680-18127)-332		Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-6487-1 Water 1.0 08/04/2005 1528 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	
		<u>% R</u>				
Analyte		MS	MSD	Limit	RF	
Nitrogen, Kjeldahl		103	96	75 - 125	4	40

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

Analyte

Nitrogen, Nitrite

Method Blank - Batch: 680-17823

Date Analyzed: 08/01/2005 1706 Date Prepared: N/A	Units. mg/L			/eight/Volume: 10	
Analyte	Resul	t	Qual	I	٦L
Nitrogen, Nitrite	0.050	0.050		C	0.050
Laboratory Control Sample - Batch	680-17823			od: 353.2 ration: 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: Prep Batch: N/A Units:mg/L		Lab File Initial V	nent ID: No Equipm e ID: N/A Veight/Volume: 10 /eight/Volume: 10	mL
Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrogen, Nitrite	1.00	1.0	100	80 - 120	
Matrix Duplicate - Batch: 680-17823	3			od: 353.2 ration: 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: 68 Prep Batch: N/A Units: mg/L	30-17823	Lab File Initial V	nent ID: No Equipm e ID: N/A Veight/Volume: 10 /eight/Volume: 10	mL
					a i

Sample Result/Qual

U

0.050

Analysis Batch: 680-17823

Prep Batch: N/A

Units: mg/L

Client: Hodgins Engineering Consulting

Lab Sample ID: MB 680-17823/1

1.0

Client Matrix: Water

Dilution:

Quality Control Results

Job Number: 680-6487-1

Method: 353.2 **Preparation: N/A**

RPD

NC

Result

0.050

Limit

30

Qual

U

Page 13 of 16

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

Page 14 of 16

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 Nitrogen, Nitrate	Spike Amount	Result	% Rec.	Limit 80 - 120	Qual

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-17880

			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: 68	80-17880		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

Quality Control Results

Method: 353.2

Job Number: 680-6487-1

Quality Control Results

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-18032

Job Number: 680-6487-1

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID: MB 6 Client Matrix: Wate Dilution: 1.0 Date Analyzed: 08/0 Date Prepared: 08/0	er 4/2005 1144	Prep B	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 Contro	ol Sample - Batch:	680-18032	2			Method: 365.4 Preparation: 3		
Lab Sample ID:LCSClient Matrix:WateDilution:1.0Date Analyzed:08/0Date Prepared:08/0	er 4/2005 1144	•	atch: 680	680-18108)-18032		Instrument ID: K Lab File ID: N Initial Weight/Vo Final Weight/Vol	I/A lume: 40 mL	
Analyte		Spike /	Amount	Result	% Re	c. Limi	t	Qual
Phosphorus		1.00		1.1	107	60 -	140	
Matrix Spike/ Matrix Spike Dupl	icate Recovery Rep	port - Batc	h: 680-1	8032		Method: 365.4 Preparation: 3		
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-6487-1 Water 1.0 08/04/2005 1155 08/03/2005 1030	•	is Batch: atch: 680	680-18108)-18032				
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-6487-1 Water 1.0 08/04/2005 1155 08/03/2005 1030	Analysis Batch: 680-18108 Prep Batch: 680-18032			Instrument ID: K Lab File ID: N Initial Weight/Vo Final Weight/Vol	I/A lume: 20 mL		
		<u>% F</u>	Rec.					
Analyte		MS	MSD	Limit	RPD	RPD Limit	MS Qual I	MSD Qual
Phosphorus		108	106	60 - 140	2	40		

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

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Quality Control Results

Method: 9222D **Preparation: N/A**

Job Number: 680-6487-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-18611

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: 680-1861 Prep Batch: N/A Units: CFU/100mL	1	Instrument ID: No Equipment Assigne 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:680-6487-5Client Matrix:WaterDilution:5.0Date Analyzed:08/01/2005Date Prepared:N/A	Analysis Batch: 680-18611 Prep Batch: N/A Units: CFU/100mL		Instrument ID: No Equipment Assigne Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume:	∍d
Analyte	Sample Result/Qual	Result	RPD Limit Qua	1
Coliform, Fecal	1600	1700	6 200	

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

Severn Trent Laboratories, Inc. STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404 Tel 912-3547858 Fax 912-3513673 www.stl-inc.com

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Description	Lab Location	Method Prep	aration 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	M	CAWW 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 Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4 M	CAWW 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

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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

Job Number: 680-5878-1

General Chemistry						
Client Sample ID:	TOB07140501					
Lab Sample ID: Client Matrix:	680-5878-1 Water		Date Sampled: Date Received			
Analyte	Result	Qual Units	RL	Dil	Method	
Ammonia	0.042 Anly Batch: 680-16212	mg/L Date Analyzed 07/15/2005 1309	0.030	1.0	350.1	
Nitrogen, Nitrate	0.056 Anly Batch: 680-16085	mg/L Date Analyzed 07/14/2005 1407	0.050	1.0	353.2	
Nitrogen, Nitrite	0.050 Anly Batch: 680-16252	U mg/L Date Analyzed 07/14/2005 1237	0.050	1.0	353.2	
Nitrogen, Kjeldahl	0.46 Anly Batch: 680-16590 Prep Batch: 680-16433	mg/L Date Analyzed 07/20/2005 1336 Date Prepared: 07/19/2005 1200	0.20	1.0	351.2	
Phosphorus	0.13 Anly Batch: 680-16565 Prep Batch: 680-16430	mg/L Date Analyzed 07/20/2005 1046 Date Prepared: 07/19/2005 1200	0.10	1.0	365.4	
Analyte	Result	Qual Units	RL	Dil	Method	
Turbidity	6.2 Anly Batch: 680-16407	NTU Date Analyzed 07/14/2005 1600	0.10	1.0	180.1	
Coliform, Fecal	>800 Anly Batch: 680-16447	CFU/100mL Date Analyzed 07/14/2005 1245	10	10	9222D	

Job Number: 680-5878-1

		General Chemistry			
Client Sample ID:	TOB07140502				ζ
Lab Sample ID: Client Matrix:	680-5878-2 Water		Date Sampled: Date Received:	07/14/2005 0725 07/14/2005 1011	
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.13 Anly Batch: 680-16212	mg/L Date Analyzed 07/15/2005 1309	0.030	1.0	350.1
Nitrogen, Nitrate	0.050 Anly Batch: 680-16085	U mg/L Date Analyzed 07/14/2005 1407	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-16252	U mg/L Date Analyzed 07/14/2005 1237	0.050	1.0	353.2
Nitrogen, Kjeldahl	0.81 Anly Batch: 680-16590 Prep Batch: 680-16433	mg/L Date Analyzed 07/20/2005 1344 Date Prepared: 07/19/2005 1200	0.20	1.0	351.2
Phosphorus	0.44 Anly Batch: 680-16565 Prep Batch: 680-16430	mg/L Date Analyzed 07/20/2005 1046 Date Prepared: 07/19/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	94 Anly Batch: 680-16407	NTU Date Analyzed 07/14/2005 1600	0.10	1.0	180.1
Coliform, Fecal	1800 Anly Batch: 680-16447	CFU/100mL Date Analyzed 07/14/2005 1245	10	10	9222D

Job Number: 680-5878-1

General Chemistry						
Client Sample ID:	TOB07140503					
Lab Sample ID:	680-5878-3		Date Sampled:	07/14/2005 0800		
Client Matrix:	Water		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: Client Matrix:	680-5878-4 Water		Date Sampled: Date Received:		14/2005 0825 14/2005 1011
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-16212	U mg/L Date Analyzed 07/15/2005 1309	0.030	1.0	350.1
Nitrogen, Nitrate	0.050 Anly Batch: 680-16085	U mg/L Date Analyzed 07/14/2005 1407	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-16252	U mg/L Date Analyzed 07/14/2005 1237	0.050	1.0	353.2
Nitrogen, Kjeldahl	1.2 Anly Batch: 680-16590 Prep Batch: 680-16433	mg/L Date Analyzed 07/20/2005 1344 Date Prepared: 07/19/2005 1200	0.20	1.0	351.2
Phosphorus	0.22 Anly Batch: 680-16565 Prep Batch: 680-16430	mg/L Date Analyzed 07/20/2005 1046 Date Prepared: 07/19/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	22 Anly Batch: 680-16407	NTU Date Analyzed 07/14/2005 1600	0.10	1.0	180.1
Coliform, Fecal	660 Anly Batch: 680-16447	CFU/100mL Date Analyzed 07/14/2005 1245	10	10	9222D

		General Chemistry			
Client Sample ID:	TOB07140505				
Lab Sample ID: Client Matrix:	680-5878-5 Water		Date Sampled: Date Received:		14/2005 0900 14/2005 1011
Analyte	Result	Qual Units	RL	Dil	Method
Ammonia	0.030 Anly Batch: 680-16212	U mg/L Date Analyzed 07/15/2005 1309	0.030	1.0	350.1
Nitrogen, Nitrate	0.050 Anly Batch: 680-16085	U mg/L Date Analyzed 07/14/2005 1407	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-16252	U mg/L Date Analyzed 07/14/2005 1237	0.050	1.0	353.2
Nitrogen, Kjeldahl	1.2 Anly Batch: 680-16590 Prep Batch: 680-16433	mg/L Date Analyzed 07/20/2005 1344 Date Prepared: 07/19/2005 1200	0.20	1.0	351.2
Phosphorus	0.10 Anly Batch: 680-16565 Prep Batch: 680-16430	U mg/L Date Analyzed 07/20/2005 1046 Date Prepared: 07/19/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	14 Anly Batch: 680-16407	NTU Date Analyzed 07/14/2005 1600	0.10	1.0	180.1
Coliform, Fecal	1100 Anly Batch: 680-16447	CFU/100mL Date Analyzed 07/14/2005 1245	5.0	5.0	9222D

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

General Chemistry	Lab Section	Qualifier	Description
	General Chemistry		
	j		
U Analyte was not detected at or above the reporting limit.		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	Analysis Batch: 680-16407	Instrument ID: No Equipment Assigned
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: N/A
Dilution:	1.0	Units: NTU	Initial Weight/Volume:
Date Analyzed:	07/14/2005 1600		Final Weight/Volume: 30 mL
Date Prepared:	N/A		

Analyte	Result	Qual	RL
Turbidity	0.10		0.10
Surrogate	% Rec	Acc	eptance Limits

Matrix Duplicate - Batch: 680-16407

Method: 180.1 Preparation: N/A

Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	Water 1.0 07/14/2005 1600	Analysis Batch: Prep Batch: N/A Units: NTU			Instrument ID: 1 Lab File ID: 1 Initial Weight/Vo Final Weight/Vo	N/A plume:	ssigned
Analyte		Sample Resi	ult/Qual	Result	RPD	Limit	Qual

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Turbidity	14	13	1	30	

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16212

Method: 350.1 Preparation: N/A

Lab Sample ID:MB 680-16212/1Client Matrix:WaterDilution:1.0Date Analyzed:07/15/2005 1300Date 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
	0.030 U	
Laboratory Control/ Laboratory Control Duplicate Recovery	/ Report - Batch: 680-16212	Method: 350.1 Preparation: N/A
LCS Lab Sample ID: LCS 680-16212/2Client Matrix:WaterDilution:1.0Date Analyzed:07/15/2005 1301Date 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 <u>% Rec.</u>	Instrument ID: KoneLab1 Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume: 2 mL
Analyte	LCS LCSD Limit RP	D RPD Limit LCS Qual LCSD Qual
	101 00 00-110 1	00

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-16212

MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5871-L-1 MS Water 1.0 07/15/2005_1301 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: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5871-L-1 MSD Water 1.0 07/15/2005 1301 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

	<u>% R</u>	<u>ec.</u>				
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual MSD Qual
Ammonia	101	99	90 - 110	2	30	

Matrix Duplicate - Batch: 680-16212

Lab Sample ID:680-5897-A-2 DUClient Matrix:WaterDilution:5.0Date Analyzed:07/15/2005 1345Date Prepared:N/A

Analysis Batch: 680-16212 Prep Batch: N/A Units: mg/L

Method: 350.1 Preparation: N/A

Method: 350.1

Preparation: N/A

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

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-AClient Matrix:WaterDilution:1.0Date Analyzed:07/20/2005 1326Date 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	Analysis Batch: 680-16590 Prep Batch: 680-16433 Units:mg/L	Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL
Date Analyzed: 07/20/2005 1326 Date Prepared: 07/19/2005 1200	Units, mg/L	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 Rep	ort - Batch: 680-16433	Method: 351.2 Preparation: 351.2
MS Lab Sample ID:680-5855-D-1-I MSClient Matrix:WaterDilution:1.0Date Analyzed:07/20/2005 1326Date 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 MSDClient Matrix:WaterDilution:1.0Date Analyzed:07/20/2005 1326Date 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	<u>% Rec.</u> MS MSD Limit	RPD RPD Limit MS Qual MSD Qual
Nitrogen, Kjeldahl	85 88 75 - 125	2 40

Job Number: 680-5878-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-16433

Method: 351.2 Preparation: 351.2

Lab Sample ID: 680-5878-1	Analysis Batch: 680-16590	Instrument ID: KoneLab2
Client Matrix: Water	Prep Batch: 680-16433	Lab File ID: N/A
Dilution: 1.0	Units: mg/L	Initial Weight/Volume: 20 mL
Date Analyzed: 07/20/2005 13	344	Final Weight/Volume: 20 mL
Date Prepared: 07/19/2005 12	200	

Analyte	Sample Result/Qua	l Result	RPD	Limit	Qual
Nitrogen, Kjeldahl	0.46	0.54	15	40	

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16085

Method: 353.2 Preparation: N/A

Client Matrix: Wate Dilution: 1.0 Date Analyzed: 07/14 Date Prepared: N/A	580-16085/10 er 4/2005 1600	Analysis Batch: 680-1608 Prep Batch: N/A Units: mg/L	5	Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Analyte	ang sa tamang kang sa sa na	Result	Qual	
Nitrogen, Nitrate		0.050	U	0.050
Laboratory Contro	ol Sample - Batch: 6	80-16085		Method: 353.2
				Preparation: N/A
Lab Sample ID: LCS	680-16085/11	Analysis Batch: 680-1608	5	Instrument ID: No Equipment Assigned
Client Matrix: Wate	ər	Prep Batch: N/A		Lab File ID: N/A
Dilution: 1.0		Units: mg/L		Initial Weight/Volume: 10 mL
Date Analyzed: 07/14	4/2005 1600			Final Weight/Volume: 10 mL
Date Prepared: N/A				
Analyte		Spike Amount Result	% Re	ec. Limit Qual
Nitrogen, Nitrate	te se for a formal de la construction de La construction de la construction d	1.00 1.1	106	80 - 120
Matrix Spike/ Matrix Spike Dupli	icate Recovery Repo	ort - Batch: 680-16085		Method: 353.2 Preparation: N/A
Matrix Spike Dupl			5	Preparation: N/A
Matrix Spike Dupli MS Lab Sample ID:	icate Recovery Repc 680-5855-E-1 MS Water	Analysis Batch: 680-1608	5	Preparation: N/A
Matrix Spike Dupli MS Lab Sample ID: Client Matrix:	680-5855-E-1 MS		5	Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution:	680-5855-E-1 MS Water	Analysis Batch: 680-1608	5	Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	680-5855-E-1 MS Water 1.0	Analysis Batch: 680-1608	5	Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A	Analysis Batch: 680-1608 Prep Batch: N/A		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A 680-5855-E-1 MSD	Analysis Batch: 680-1608 Prep Batch: N/A Analysis Batch: 680-1608		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A	Analysis Batch: 680-1608 Prep Batch: N/A		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A 680-5855-E-1 MSD Water 1.0	Analysis Batch: 680-1608 Prep Batch: N/A Analysis Batch: 680-1608		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A 680-5855-E-1 MSD Water	Analysis Batch: 680-1608 Prep Batch: N/A Analysis Batch: 680-1608		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A 680-5855-E-1 MSD Water 1.0 07/14/2005 1811	Analysis Batch: 680-1608 Prep Batch: N/A Analysis Batch: 680-1608		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A 680-5855-E-1 MSD Water 1.0 07/14/2005 1811	Analysis Batch: 680-1608 Prep Batch: N/A Analysis Batch: 680-1608 Prep Batch: N/A		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL
Matrix Spike Dupli MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed:	680-5855-E-1 MS Water 1.0 07/14/2005 1811 N/A 680-5855-E-1 MSD Water 1.0 07/14/2005 1811	Analysis Batch: 680-1608 Prep Batch: N/A Analysis Batch: 680-1608		Preparation: N/A Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL

Job Number: 680-5878-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-16085

Method: 353.2 Preparation: N/A

Lab Sample ID:	680-5878-1	Analysis Batch: 680-16085	Instrument ID: No Equipment Assigned
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: N/A
Dilution:	1.0	Units: mg/L	Initial Weight/Volume: 10 mL
Date Analyzed:	07/14/2005 1407		Final Weight/Volume: 10 mL
Date Prepared:	N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Nitrogen, Nitrate	0.056	0.054	4	30	

Client: Hodgins Engineering Consulting

Job Number: 680-5878-1

Method Blank - Batch: 680-16252

Method: 353.2 Preparation: N/A

Lab Sample ID: MB Client Matrix: Wate Dilution: 1.0 Date Analyzed: 07/1 Date Prepared: N/A	er	Analysis Batch: Prep Batch: N/A Units: mg/L	680-16252		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	50-09-09-09-09-09-09-09-09-09-09-09-09-09	0.050	tre Die ein for eingen eine tret, einen wittentigt is Marianen	U	0.050
Laboratory Contro	ol Sample - Batch: 6	80-16252			Method: 353.2 Preparation: N/A
Lab Sample ID: LCS Client Matrix: Wate Dilution: 1.0 Date Analyzed: 07/1 Date Prepared: N/A	er	Analysis Batch: Prep Batch: N/A Units:mg/L	680-16252		Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Analyte		Spike Amount	Result	% Re	c. Limit Qual
Nitrogen, Nitrite	an na an ann an an an an an ann an ann ann ann ann ann ann ann ann an a	1.00	1.0	100	80 - 120
Matrix Spike/ Matrix Spike Dupl	icate Recovery Repo	rt - Batch: 680-1	6252		Method: 353.2 Preparation: N/A
MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5855-E-1 MS Water 1.0 07/14/2005 1042 N/A	Analysis Batch: Prep Batch: N/A	680-16252		Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
MSD Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared: Analyte	680-5855-E-1 MSD Water 1.0 07/14/2005 1042 N/A	Analysis Batch: Prep Batch: N/A <u>% Rec.</u> MS MSD	680-16252 Limit	RPE	Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Nitrogen, Nitrite		99 100	80 - 120	1	30

Job Number: 680-5878-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-16252

Method: 353.2 Preparation: N/A

Lab Sample ID: 680-5878-1	Analysis Batch: 680-16252	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Units: mg/L	Initial Weight/Volume: 10 mL
Date Analyzed: 07/14/2005 1237		Final Weight/Volume: 10 mL
Date Prepared: N/A		

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

Job Number: 680-5878-1

Client: Hodgins Engineering Consulting

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: 1.0Analysis Batch: 680-16430 Units: mg/LInstrument ID: KoneLab2 Lab File ID: N/A Hinal Weight/Volume: 40 mLAnalyse7/20/2005 1105 Date Prepared: 07/19/2005 1200ResultQualRLAnalyteResultQualRLPhosphorus0.10U0.10Lab Sample ID: LOS 680-16430/2-A Client Matrix: Water Dilution: 1.0Analysis Batch: 680-16655 Prep Batch: 680-16630Method: 365.4 Preparetion: 365.2/365.3Lab Sample ID: LOS 680-16430/2-A Client Matrix: Water PhosphorusAnalysis Batch: 680-16656 Prep Batch: 680-16630Instrument ID: KoneLab2 Lab File ID: N/A Hinal Weight/Volume: 40 mLAnalyteSpike AmountResult% Rec.LimitQualMatrix Spike/ Matrix Spike/ Matrix Spike/ Dilution: 1.0Spike AmountResult% Rec.LimitQualMstrix Spike/ Dilution: 1.01.001.111160 - 140Method: 365.4 Prepared: 07/19/2005 1200Prep Batch: 680-16430Method: 365.4 Preparetion: 365.2/365.3Ms Lab Sample ID: 680-5855-D-1-F MS Date Analyse1.001.111160 - 140Matrix Spike/ Matrix Spike/ Matrix Spike Outplicate Recovery Report - Batch: 680-16430Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL File					
Client Matrix: Water Dilution: Prep Batch: 680-16430 Units: Lab File ID: mg/L NA Initial Weight/Volume: Au Initial Weight/Volume: ML Date Analyzed: 07/20/2005 100 U 0.10 Initial Weight/Volume: ML Analyte Result Qual RL RL Phosphorus 0.10 U 0.10 0.10 Lab Sample ID: LCS 680-16430/2-A Analysis Batch: 680-16565 Instrument ID: NA Client Matrix: Water Prep Batch: 680-16430 Method: 365.4 Date Analyzed: 07/20/2005 1105 Date Analyzed: 07/20/2005 105 Date Prepared: 07/19/2005 1200 Vints: mg/L Final Weight/Volume: 40 mL Analyte Spike Amount Result % Rec. Limit Qual Phosphorus 1.00 1.1 111 60 - 140 Matrix Spike/ Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: NA Initial Weight/Volume: 20 mL Final Weight/Volume: 2	Lab Sample ID: MB	680-16430/1-A	Analysis Batch: 680-16565		Instrument ID: KoneLab2
Dilution: 1.0 Units: mg/L Initial Weight/Volume: 40 mL Date Analyzed: 07/20/2005 1105 Final Weight/Volume: 40 mL Final Weight/Volume: 40 mL Date Preparete: 07/19/2005 1200 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 Analysis Batch: 680-16430 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: 680-16430 Instrument ID: KoneLab2 Date Analyzet 07/19/2005 1200 Units::mg/L Instrument ID: KoneLab2 Lab File ID: N/A Analyte Spike Amount Result % Rec. Limit Qual Phosphorus 1.00 1.1 111 60 - 140 Matrix Spike/ Matrix Spike/ Matrix Spike/ Matrix Spike/ Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Date Analyzet 07/20/2005 1105 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 2	•		-		
Date Analyzes: 07/20/2005 1105 Date Prepared: 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: Lab Sample ID: LCS 680-16430/2-A Client Matrix: Analysis Batch: 680-16655 Instrument ID: KoneLab2 Lab Sample ID: LOS 680-16430/2-A Diution: Analysis Batch: 680-16430 Instrument ID: KoneLab2 Date Analyzed: 07/19/2005 1200 Units:mg/L Instrument ID: KoneLab2 Analyte Spike Amount Result % Rec. Limit Qual Phosphorus 1.00 1.1 111 60 - 140 Matrix Spike/ Matrix Spike/ Matrix Spike/ Diution: Analysis Batch: 680-16430 Method: 365.4 Preparation: MS Lab Sample ID: 680-5855-D-1-F MS Diate Analysed: O7/19/2005 Analysis Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: NA Diate Analyzed: 07/19/2005 1005 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: NA MS Lab Sample ID: 680-5855-D-1-G MSD Date Analyzed: O7/19/2005 Analysis Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID:			•		
Date Prepared: 07/19/2005 1200 Analyte Result Qual RL Phosphorus 0.10 U 0.10 Laboratory Control Sample - Batch: 680-16430 Method: 365.4 Lab Sample ID: LCS 680-16430/2-A Analysis Batch: 680-16565 Client Matrix: Water Prep Batch: 680-16430 Ditution: 1.0 Units: mg/L Instrument ID: KoneLab2 Lab Sample ID: C/20/2005 1105 Units: mg/L Instrument ID: KoneLab2 Date Analyzed: 07/19/2005 1200 Natrix Spike/ Method: 365.4 Preparet: Analyte Spike Amount Result % Rec. Limit Qual Phosphorus 1.00 1.1 111 60 - 140 Matrix Spike/ Matrix Spike/ Method: 365.4 Preparation: 365.2/365.3 MS Lab Sample ID: 680-5855-D-1-F MS Analysis Batch: 680-16430 Method: 365.4 Date Analyzet: 07/10/2005 Prep Batch: 680-16450 Method: 365.4 Matrix Spike/ Matrix Spike Analysis Batch: 680-16450 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 m		20/2005 1105	011101 1119/2		
Analyte Result Qual RL Phosphorus 0.10 U 0.10 Laboratory Control Sample - Batch: 680-16430 Method: 365.4 Lab Sample ID: LCS 680-16430/2-A Analysis Batch: 680-166565 Instrument ID: KoneLab2 Client Matrix: Water Prep Batch: 680-16630 Units:mg/L Instrument ID: No Dilution: 1.0 1.1 111 60 - 140 Matrix Qual Analyse Spike Amount Result % Rec. Limit Qual Phosphorus 1.00 1.1 111 60 - 140 Matrix Spike/ Matrix Spike/ Method: 365.2/365.3 Ms Lab Sample ID: 680-5855-D-1-F MS Analysis Batch: 680-16565 Client Matrix: Water Prep Batch: 680-16430 Dilution: 1.0 1.1 111 60 - 140 Matrix Spike/ Analysis Batch: 680-16565 Prep Batch: 680-16565 Dilution: 1.0 1.0 1.1 111 60 - 140 Matrix Spike/ Matrix Spike Stoch: Analysis Batch: 680-16565 Engle Moving 20 mL Dilution: 1.0 Dilution: 1.0	•				
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 Analysis Batch: 680-16430 Units: mg/L Instrument ID: KoneLab2 Lab File ID: N/A Initiel Weight/Volume: 40 mL Date Analyzed: 07/20/2005 1105 Date Prepared: 07/19/2005 1200 Spike Amount Result % Rec. Limit Qual Matrix Spike/ Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-16430 1.1 111 60 - 140 Matrix Spike/ Matrix Spike Or/20/2005 1105 Date Analyzed: 07/20/2005 1105 Analysis Batch: 680-16430 Method: 365.4 Prep Batch: 680-16430 MS Lab Sample ID: 680-5855-D-1-F MS Dilution: 1.0 Analysis Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Date Prepared: 07/19/2005 1200 Analysis Batch: 680-16565 Prep Batch: 680-16565 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Dilution: 1.0 Analysis Batch: 680-16565 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Dilution: 1.0 Analysis Batch: 680-16565 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Date Prepared: 07/19/2005 1200 Analysis Batch: 680-16565 Prep Batch: 680-16430	Date i repured. Ori	10/2000 1200			
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 Analysis Batch: 680-16430 Units: mg/L Instrument ID: KoneLab2 Lab File ID: N/A Initiel Weight/Volume: 40 mL Date Analyzed: 07/20/2005 1105 Date Prepared: 07/19/2005 1200 Spike Amount Result % Rec. Limit Qual Matrix Spike/ Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-16430 1.1 111 60 - 140 Matrix Spike/ Matrix Spike Or/20/2005 1105 Date Analyzed: 07/20/2005 1105 Analysis Batch: 680-16430 Method: 365.4 Prep Batch: 680-16430 MS Lab Sample ID: 680-5855-D-1-F MS Dilution: 1.0 Analysis Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Date Prepared: 07/19/2005 1200 Analysis Batch: 680-16565 Prep Batch: 680-16565 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Dilution: 1.0 Analysis Batch: 680-16565 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Dilution: 1.0 Analysis Batch: 680-16565 Prep Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL MSD Lab Sample ID: 680-5855-D-1-G MSD Date Prepared: 07/19/2005 1200 Analysis Batch: 680-16565 Prep 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: 680-16430 Units: mg/L Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 40 mL Final Weight/Volume: 40 mL Analyte Spike Amount Prepared: 07/19/2005 1200 Spike Amount 1.00 Result 1.00 % Rec. Limit Qual Matrix Spike/ Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-16430 Method: 365.4 Prep Batch: 680-16430 Method: 365.4 Preparation: 365.2/365.3 MS Lab Sample ID: 680-5855-D-1-F MS Client Matrix: Analysis Batch: 680-16430 Instrument ID: KoneLab2 Lab File ID: N/A Initial Weight/Volume: 20 mL Final Weight/Volume: 20 mL	Analyte		Result	Qual	RL
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Date Prepared: 07/19/2005 1200 <u>% Rec.</u> Analyte MS MSD Limit RPD RPD Limit MSD Qual					
<u>% Rec.</u> Analyte MS MSD Limit RPD RPD Limit MS Qual MSD Qual	•				Final Weight Volume. 20 mL
Analyte MS MSD Limit RPD RPD Limit MS Qual MSD Qual	Date Frepareo.	01119/2003 1200			
Analyte MS MSD Limit RPD RPD Limit MS Qual MSD Qual					
Phosphorus 106 105 60 - 140 1 40	Analyte		MS MSD Limit	RP	D RPD Limit MS Qual MSD Qual
	Phosphorus		106 105 60 - 140	1	40

Job Number: 680-5878-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-16430

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID:680-5878-1Client Matrix:WaterDilution:1.0Date Analyzed:07/20/20051046Date Prepared:07/19/20051200	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/Oual Result	RPD Limit	Qual

Analyte	Sample Result/Qual	Result	 Limit Qual
Phosphorus	0.13	0.16	40

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

Client: Hodgins Engineering Consulting

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: 680-164 Prep Batch: N/A Units: CFU/100mL	47	Instrument ID: No Equip Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume:	ment Assigned
Analyte	Result	Qual		RL
Coliform, Fecal	1.00	U	Ħĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸĸ	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 Equipi Lab File ID: N/A Initial Weight/Volume: Final Weight/Volume:	ment Assigned
Analyte	Sample Result/Qual	Result	RPD Limit	Qual
Coliform, Fecal	1100	1000	5 200	in 1999 - En 1995 de la construit à la defension de la construit de la construit de la construit de la constru

ANALYTICAL REPORT

Job Number: 680-5723-1

Job Description: Town of Blufton

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

Severn Trent Laboratories, Inc. STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404 Tel 912-3547858 Fax 912-3513673 www.stl-inc.com

METHOD SUMMARY

Client: Hodgins Engineering Consulting

Description		Lab Location	Method F	Preparation Method
Matrix:	Water			
Turbidity, N	ephelometric	STL-SAV	MCAWW 180.1	
Nitrogen (A	mmonia, Colorimetric, Automated Phenate)	STL-SAV	MCAWW 350.1	
Nitrogen, To Digester, A	otal Kjeldahl (Colorimetric, Semi-Automated Block	STL-SAV	MCAWW 351.2	
Digester, A	Nitrogen, Total Kjeldahl (Colorimetric,	STL-SAV		MCAWW 351.2
Nitrogen, N Reduction)	itrate-Nitrite (Colorimetric, Automated, Cadmium	STL-SAV	MCAWW 353.2	
Nitrogen, N Reduction)	itrite (Colorimetric, Automated, Cadmium	STL-SAV	MCAWW 353.2	
Total Phosp	horus Sample Digestion for Total Phosphorous	STL-SAV STL-SAV	EPA 365.4	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

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

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		General Chemistry			
Client Sample ID:	TOB07090501				
Lab Sample ID: Client Matrix:	680-5723-1 Water		Date Sampled: Date Received:		08/2005 0850 08/2005 1305
Analyte	Result	Qual Units	RL	Dil	Method
Nitrogen, Nitrate	0.10 Anly Batch: 680-15665	mg/L Date Analyzed 07/08/2005 1926	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-15677	U mg/L Date Analyzed 07/08/2005 1748	0.050	1.0	353.2
Nitrogen, Kjeldahl	0.50 Anly Batch: 680-16207 Prep Batch: 680-15940	mg/L Date Analyzed 07/15/2005 1300 Date Prepared: 07/13/2005 1200	0.20	1.0	351.2
Ammonia	0.10 Anly Batch: 680-15926	B mg/L Date Analyzed 07/13/2005 1041	0.030	1.0	350.1
Phosphorus	0.21 Anly Batch: 680-16188 Prep Batch: 680-15939	mg/L Date Analyzed 07/15/2005 1131 Date Prepared: 07/13/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	3.8 Anly Batch: 680-15914	NTU Date Analyzed 07/08/2005 1100	0.10	1.0	180.1
Coliform, Fecal	2.0 Anly Batch: 680-15719	U CFU/100mL Date Analyzed 07/08/2005 1615	2.0	2.0	9222D

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		General Chemistry			
Client Sample ID:	TOB07090502				
Lab Sample ID: Client Matrix:	680-5723-2 Water		Date Sampled: Date Received:		08/2005 0930 08/2005 1305
Analyte	Result	Qual Units	RL	Dil	Method
Nitrogen, Nitrate	0.050 Anly Batch: 680-16554	U mg/L Date Analyzed 07/15/2005 2155	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-15677	U mg/L Date Analyzed 07/08/2005 1748	0.050	1.0	353.2
Nitrogen, Kjeldahl	0.60 Anly Batch: 680-16207 Prep Batch: 680-15940	mg/L Date Analyzed 07/15/2005 1310 Date Prepared: 07/13/2005 1200	0.20	1.0 [°]	351.2
Ammonia	0.14 Anly Batch: 680-15926	B mg/L Date Analyzed 07/13/2005 1041	0.030	1.0	350.1
Phosphorus	0.19 Anly Batch: 680-16188 Prep Batch: 680-15939	mg/L Date Analyzed 07/15/2005 1131 Date Prepared: 07/13/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	26 Anly Batch: 680-15914	NTU Date Analyzed 07/08/2005 1100	0.10	1.0	180.1
Coliform, Fecal	100 Anly Batch: 680-15719	CFU/100mL Date Analyzed 07/08/2005 1615	5.0	5.0	9222D

		General Chemistry			
Client Sample ID:	TOB07090503				
Lab Sample ID: Client Matrix:	680-5723-3 Water		Date Sampled: Date Received:		08/2005 1030 08/2005 1305
Analyte	Result	Qual Units	RL	Dil	Method
Nitrogen, Nitrate	0.11 Anly Batch: 680-15665	mg/L Date Analyzed 07/08/2005 1846	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-15677	U mg/L Date Analyzed 07/08/2005 1750	0.050	1.0	353.2
Nitrogen, Kjeldahl	0.96 Anly Batch: 680-16207 Prep Batch: 680-15940	mg/L Date Analyzed 07/15/2005 1310 Date Prepared: 07/13/2005 1200	0.20	1.0	351.2
Ammonia	0.10 Anly Batch: 680-15926	B mg/L Date Analyzed 07/13/2005 1041	0.030	1.0	350.1
Phosphorus	0.15 Anly Batch: 680-16188 Prep Batch: 680-15939	mg/L Date Analyzed 07/15/2005 1131 Date Prepared: 07/13/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	13 Anly Batch: 680-15914	NTU Date Analyzed 07/08/2005 1100	0.10	1.0	180.1
Coliform, Fecal	2.0 Anly Batch: 680-15719	U CFU/100mL Date Analyzed 07/08/2005 1615	2.0	2.0	9222D

		General Chemistry			
Client Sample ID:	TOB07090504				
Lab Sample ID: Client Matrix:	680-5723-4 Water		Date Sampled: Date Received:		08/2005 1100 08/2005 1305
Analyte	Result	Qual Units	RL	Dil	Method
Nitrogen, Nitrate	0.10 Anly Batch: 680-15665	mg/L Date Analyzed 07/08/2005 1914	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-15677	U mg/L Date Analyzed 07/08/2005 1750	0.050	1.0	353.2
Nitrogen, Kjeldahl	1.5 Anly Batch: 680-16207 Prep Batch: 680-15940	mg/L Date Analyzed 07/15/2005 1310 Date Prepared: 07/13/2005 1200	0.20	1.0	351.2
Ammonia	0.15 Anly Batch: 680-15926	B mg/L Date Analyzed 07/13/2005 1041	0.030	1.0	350.1
Phosphorus	0.44 Anly Batch: 680-16188 Prep Batch: 680-15939	mg/L Date Analyzed 07/15/2005 1131 Date Prepared: 07/13/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	29 Anly Batch: 680-15914	NTU Date Analyzed 07/08/2005 1100	0.10	1.0	180.1
Coliform, Fecal	710 Anly Batch: 680-15719	CFU/100mL Date Analyzed 07/08/2005 1615	5.0	5.0	9222D

		General Chemistry			
Client Sample ID:	TOB07090505				
Lab Sample ID: Client Matrix:	680-5723-5 Water		Date Sampled: Date Received:		08/2005 1215 08/2005 1305
Analyte	Result	Qual Units	RL	Dil	Method
Nitrogen, Nitrate	0.050 Anly Batch: 680-15665	U mg/L Date Analyzed 07/08/2005 1914	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-15677	U mg/L Date Analyzed 07/08/2005 1751	0.050	1.0	353.2
Nitrogen, Kjeldahl	3.2 Anly Batch: 680-16207 Prep Batch: 680-15940	mg/L Date Analyzed 07/15/2005 1310 Date Prepared: 07/13/2005 1200	0.20	1.0	351.2
Ammonia	0.047 Anly Batch: 680-15926	B mg/L Date Analyzed 07/13/2005 1049	0.030	1.0	350.1
Phosphorus	0.10 Anly Batch: 680-16188 Prep Batch: 680-15939	U mg/L Date Analyzed 07/15/2005 1131 Date Prepared: 07/13/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	5.3 Anly Batch: 680-15914	NTU Date Analyzed 07/08/2005 1100	0.10	1.0	180.1
Coliform, Fecal	360 Anly Batch: 680-15719	CFU/100mL Date Analyzed 07/08/2005 1615	10	10	9222D

General Chemistry					
Client Sample ID:	TOB07090502D				
Lab Sample ID: Client Matrix:	680-5723-6 Water		Date Sampled: Date Received:		08/2005 0000 08/2005 1305
Analyte	Result	Qual Units	RL	Dil	Method
Nitrogen, Nitrate	0.050 Anly Batch: 680-16554	U mg/L Date Analyzed 07/15/2005 2155	0.050	1.0	353.2
Nitrogen, Nitrite	0.050 Anly Batch: 680-15677	U mg/L Date Analyzed 07/08/2005 1751	0.050	1.0	353.2
Nitrogen, Kjeldahl	0.50 Anly Batch: 680-16207 Prep Batch: 680-15940	mg/L Date Analyzed 07/15/2005 1310 Date Prepared: 07/13/2005 1200	0.20	1.0	351.2
Ammonia	0.15 Anly Batch: 680-15926	B mg/L Date Analyzed 07/13/2005 1049	0.030	1.0	350.1
Phosphorus	0.18 Anly Batch: 680-16188 Prep Batch: 680-15939	mg/L Date Analyzed 07/15/2005 1138 Date Prepared: 07/13/2005 1200	0.10	1.0	365.4
Analyte	Result	Qual Units	RL	Dil	Method
Turbidity	26 Anly Batch: 680-15914	NTU Date Analyzed 07/08/2005 1100	0.10	1.0	180.1
Coliform, Fecal	2.0 Anly Batch: 680-15719	U CFU/100mL Date Analyzed 07/08/2005 1615	2.0	2.0	9222D

DATA REPORTING QUALIFIERS

Client: Hodgins Engineering Consulting

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

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Job Number: 680-5723-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-15914

Method: 180.1 Preparation: N/A

Lab Sample ID: MB 680-15914/1	Analysis Batch: 680-15914	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Units: NTU	Initial Weight/Volume:
Date Analyzed: 07/08/2005 1100		Final Weight/Volume: 30 mL
Date Prepared: N/A		

Analyte	Result	Qual	RL
Turbidity	0.10	U	0.10
Surrogate	% Rec	Acceptance Limits	

Matrix Duplicate - Batch: 680-15914

Lab Sample ID:680-5633-C-1 DUAiClient Matrix:WaterPiDilution:1.0UDate Analyzed:07/08/2005 1100Date Prepared:N/A

Analysis Batch: 680-15914 Prep Batch: N/A Units: NTU

Method: 180.1 Preparation: N/A

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.

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Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-15926

Quality Control Results

Lab Sample ID: MB 680-15926 Client Matrix: Water Dilution: 1.0 Date Analyzed: 07/13/2005 10 Date Prepared: N/A	Prep Batch: N/A Units: mg/L	680-15926	Instrument ID: Kone Lab File ID: N/A Initial Weight/Volum Final Weight/Volum	ie:
Analyte	Result	Qual		RL
Ammonia	0.030	U		0.030
Laboratory Control/ Laboratory Control Duplic	ate Recovery Report - Batch	: 680-15926	Method: 350.1 Preparation: N/A	
LCS Lab Sample ID: LCS 680-7 Client Matrix: Water Dilution: 1.0 Date Analyzed: 07/13/200 Date Prepared: N/A	Prep Batch: N/A Units: mg/L		Instrument ID: Kone Lab File ID: N/A Initial Weight/Volume Final Weight/Volume	: :
LCSD Lab Sample ID: LCSD 68 Client Matrix: Water Dilution: 1.0 Date Analyzed: 07/13/200 Date Prepared: N/A	Prep Batch: N/A Units:mg/L		Instrument ID: Kor Lab File ID: N/A Initial Weight/Volume Final Weight/Volume:	
Analyte	<u>% Rec.</u> LCS LCSD	Limit RP[D RPD Limit	LCS Qual LCSD Qual
Ammonia	99 98	90 - 110 0	30	n franssammen en en forste franssammen en en al 1 forste fanonen er en en en en en en en en en angeven e vennov

Method: 350.1

Preparation: N/A

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-15926

MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5723-1 Water 1.0 07/13/2005 1041 N/A		rsis Batch: 6 Batch: N/A	680-15926	La Ini			mL
MSD Lab Sample ID Client Matrix: Dilution: Date Analyzed: Date Prepared:	: 680-5723-1 Water 1.0 07/13/2005 1041 N/A		rsis Batch: 0 Batch: N/A	680-15926	La Ini	strument ID: K b File ID: N tial Weight/Vol nal Weight/Vol	/A lume:	L
Analyte		<u>%</u> MS	<u>Rec.</u> MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ammonia		97	98	90 - 110	1	30	В	В
Matrix Duplicate -	Batch: 680-1592	6				ethod: 350.1 eparation: N	I/A	
Lab Sample ID: 680- Client Matrix: Wate Dilution: 1.0 Date Analyzed: 07/1 Date Prepared: N/A	er	Prep Bat	Batch: 680 tch: N/A mg/L)-15926	La Ini	strument ID: K b File ID: N tial Weight/Vol nal Weight/Vol	/A ume:	

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Ammonia	0.77	0.78	1	30	В

Job Number: 680-5723-1

Client: Hodgins Engineering Consulting

Method Blank - Batch	: 680-15940			Method: 351.2 Preparation: 351.2	
Lab Sample ID: MB 680-1 Client Matrix: Water	15940/1-A	Analysis Batch: 680-16207 Prep Batch: 680-15940		Instrument ID: KoneLab2 Lab File ID: N/A	
Dilution: 1.0 Date Analyzed: 07/15/200 Date Prepared: 07/13/200		Units: mg/L		Initial Weight/Volume: 40 Final Weight/Volume: 40	
Analyte		Result	Qual		RL
Nitrogen, Kjeldahl		0.20	U		0.20
Laboratory Control Sa	ample - Batch: 68	30-15940		Method: 351.2 Preparation: 351.2	
Lab Sample ID: LCS 680- Client Matrix: Water	15940/2-A	Analysis Batch: 680-16207 Prep Batch: 680-15940		Instrument ID: KoneLab2 Lab File ID: N/A	2
Dilution: 1.0		Units: mg/L		Initial Weight/Volume: 40) mL
Date Analyzed: 07/15/200 Date Prepared: 07/13/200				Final Weight/Volume: 40) mL
Analyte		Spike Amount Result	% Re	ec. Limit	Qual
Nitrogen, Kjeldahl		1.00 1.0	101	75 - 125	
Matrix Spike/ Matrix Spike Duplicate	e Recovery Repo	rt - Batch: 680-15940		Method: 351.2 Preparation: 351.2	
MS Lab Sample ID: 680 Client Matrix: Wa)-5741-F-1-E MS ter	Analysis Batch: 680-16207 Prep Batch: 680-15940		Instrument ID: KoneLat Lab File ID: N/A	52
Dilution: 1.0				Initial Weight/Volume: 2	20 mL
•	15/2005 1310 13/2005 1200			Final Weight/Volume: 2	20 mL
MOD Lab Carrada ID: 000		Analusia Databu 600 16007		Instrument ID: Kenel ab?	
MSD Lab Sample ID: 680 Client Matrix: Wa		Analysis Batch: 680-16207 Prep Batch: 680-15940		Instrument ID: KoneLab2 Lab File ID: N/A	<u>-</u>
Dilution: 1.0				Initial Weight/Volume: 20	
•	15/2005 1310 13/2005 1200			Final Weight/Volume: 20	mL.
Analyte		<u>% Rec.</u> MS MSD Limit	RP	D RPD Limit MS Q	ual MSD Qual
Nitrogen, Kjeldahl		91 92 75 - 125	1	40	
na ogen, njeludili		01 02 10-120			

Job Number: 680-5723-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-15940

Method: 351.2 Preparation: 351.2

Lab Sample ID:	680-5723-1	Analysis Batch: 680-16207	Instrument ID: KoneLab2
Client Matrix:	Water	Prep Batch: 680-15940	Lab File ID: N/A
Dilution:	1.0	Units: mg/L	Initial Weight/Volume: 20 mL
Date Analyzed:	07/15/2005 1310		Final Weight/Volume: 20 mL
Date Prepared:	07/13/2005 1200		

Analyte	Sample Result/Qual	Result	RPD	Limit Qual
Nitrogen, Kjeldahl	0.50	0.55	9	40

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Method Blank - Batch: 680-15665

Method: 353.2 Preparation: N/A

Lab Sample ID: M Client Matrix: W Dilution: 1. Date Analyzed: 07 Date Prepared: N/	later 0 7/08/2005 1811	Analysis Batch: Prep Batch: N/A Units: mg/L	680-15665		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	i Manda Damina ang mang mang mang mang mang mang man	0.050	**************************************	U	0.050
Laboratory Cor Laboratory Cor	ntrol/ htrol Duplicate Recover	y Report - Batch:	680-15665		Method: 353.2 Preparation: N/A
LCS Lab Sample I Client Matrix: Dilution: Date Analyzed: Date Prepared:	D: LCS 680-15665/2 Water 1.0 07/08/2005 1811 N/A	Analysis Batch: 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 Client Matrix: Dilution: Date Analyzed: Date Prepared:	ID: LCSD 680-15665/3 Water 1.0 07/08/2005 1811 N/A	Analysis Batch: Prep Batch: N/A Units:mg/L <u>% Rec.</u>			Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL
Analyte		LCS LCSD	Limit	RP	D RPD Limit LCS Qual LCSD Qual
Nitrogen, Nitrate		102 104	80 - 120	1.	30

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 680-15665

MS Lab Sample ID: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5684-F-1 MS Water 1.0 07/08/2005 1846 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: Client Matrix: Dilution: Date Analyzed: Date Prepared:	680-5684-F-1 MSD Water 1.0 07/08/2005 1846 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
		<u>% Rec.</u>	

Analyte	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

Method: 353.2

Preparation: N/A

Lab Sample ID: 680-5723-1	Analysis Batch: 680-15665	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Units: mg/L	Initial Weight/Volume: 10 mL
Date Analyzed: 07/08/2005 1926		Final Weight/Volume: 10 mL
Date Prepared: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit Qual
Nitrogen, Nitrate	0.10	0.11	8	30

Job Number: 680-5723-1

Client: Hodgins Engineering Consulting

Method Blank - Batch: 680-15677

Method: 353.2 Preparation: N/A

Lab Sample ID:MB 680-15677/1Client Matrix:WaterDilution:1.0Date Analyzed:07/08/2005 1747Date 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 Recov	ery Report - Batch: 680-1567	7	Method: 353.2 Preparation: N/A
LCS Lab Sample ID: LCS 680-15677/2Client Matrix:WaterDilution:1.0Date Analyzed:07/08/2005 1747Date 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 680-15677/3Client Matrix:WaterDilution:1.0Date Analyzed:07/08/2005 1748Date 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
	<u>% Rec.</u>		
Analyte	LCS LCSD Limit	RPI	D RPD Limit LCS Qual LCSD Qual
Nitrogen, Nitrite	104 104 80 - 12	0 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 Analyte	Analysis Batch: 680-15677 Prep Batch: N/A Units: mg/L Sample Result/Qual F	Result	Instrument ID: No Equipment Assigned Lab File ID: N/A Initial Weight/Volume: 10 mL Final Weight/Volume: 10 mL RPD Limit Qual
Nitrogen, Nitrite	0.050 U 0	.050	NC 30 U

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 - Bat	ch: 680-16554	Method: 353.2 Preparation: N/A
Lab Sample ID:LCS 680-16554/2Client Matrix:WaterDilution:1.0Date Analyzed:07/15/2005 2041Date 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 Matrix Spike/ Matrix Spike Duplicate Recovery	1.00 1.1 Report - Batch: 680-16554	105 80 - 120 Method: 353.2 Preparation: N/A
MS Lab Sample ID:680-5956-C-1 MClient Matrix:WaterDilution:1.0Date Analyzed:07/15/2005 205Date Prepared:N/A	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 MClient Matrix:WaterDilution:1.0Date Analyzed:07/15/2005 205Date Prepared:N/A	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	<u>% Rec.</u> MS MSD Limit	RPD RPD Limit MS Qual MSD Qual
Nitrogen, Nitrate	106 105 80 - 120	2 30

Job Number: 680-5723-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-16554

Method: 353.2 Preparation: N/A

Lab Sample ID: 680-5969-A-1 DU	Analysis Batch: 680-16554	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Units: mg/L	Initial Weight/Volume: 10 mL
Date Analyzed: 07/15/2005 2155		Final Weight/Volume: 10 mL
Date Prepared: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit Qual
Nitrogen, Nitrate	1.3	1.3	4	30

Client: Hodgins Engineering Consulting

Job Number: 680-5723-1

Qual

Method Blank - Batch: 680-15939

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID: MB	680-15939/1-A	Analysis Batch: 6	80-16188		Instrument ID: KoneLat	2
Client Matrix: Wa		Prep Batch: 680-			Lab File ID: N/A	
Dilution: 1.0		Units: mg/L			Initial Weight/Volume: 4	0 mL
Date Analyzed: 07/	15/2005 1035	onitor nigit			Final Weight/Volume: 4	
Date Prepared: 07/						
Buterropulou. on						
Analyte		Result		Qual		RL
Phosphorus		0.10		U		0.10
Laboratory Contr	ol Sample - Batch: 68	30-15939			Method: 365.4	
Laboratory Conti	of dampic - Baton. Oc				Preparation: 365.2/3	65.3
Lab Sample ID: LCS	S 680-15939/2-A	Analysis Batch: 6	80-16188		Instrument ID: KoneLab	n2
Client Matrix: Wa		Prep Batch: 680-			Lab File ID: N/A	-
Dilution: 1.0		Units: mg/L			Initial Weight/Volume: 4	0 mL
Date Analyzed: 07/	15/2005 1035	3			Final Weight/Volume: 4	
Date Prepared: 07/						
		• * • •				~ .
Analyte		Spike Amount	Result	% Re		Qual
Phosphorus		1.00	1.0	101	60 - 140	
Matrix Spike/					Method: 365.4	
	licate Recovery Repo	rt - Batch: 680-15	939		Preparation: 365.2/3	65.3
MS Lab Sample ID:	680-5741-F-1-B MS	Analysis Batch: 6	80-16188		Instrument ID: KoneLa	ab2
Client Matrix:	Water	Prep Batch: 680-1			Lab File ID: N/A	
Dilution:	1.0				Initial Weight/Volume:	20 mL
Date Analyzed:	07/15/2005 1138					20 mL
Date Prepared:	07/13/2005 1200					
MSD Lab Sample ID	: 680-5741-F-1-C MSD	Analysis Batch: 6	80-16188		Instrument ID: KoneLab	2
Client Matrix:	Water	Prep Batch: 680-1			Lab File ID: N/A	
Dilution:	1.0	· · · · · · · · · · · · · · · · · · ·			Initial Weight/Volume: 2	0 mL
Date Analyzed:	07/15/2005 1110				Final Weight/Volume: 2	
Date Prepared:	07/13/2005 1200					
		<u>% Rec.</u>				
Analyte		MS MSD	Limit	RPI	D RPD Limit MS	Qual MSD Qua
Phosphorus		96 96	60 - 140	0	40	
•						

Job Number: 680-5723-1

Client: Hodgins Engineering Consulting

Matrix Duplicate - Batch: 680-15939

Method: 365.4 Preparation: 365.2/365.3

Lab Sample ID:	680-5723-1	Analysis Batch: 680-16188	Instrument ID: KoneLab2
Client Matrix:	Water	Prep Batch: 680-15939	Lab File ID: N/A
Dilution:	1.0	Units: mg/L	Initial Weight/Volume: 20 mL
Date Analyzed:	07/15/2005 1131		Final Weight/Volume: 20 mL
Date Prepared:	07/13/2005 1200		

Analyte	Sample Result/Qual	Result	RPD	Limit Qual	
Phosphorus	0.21	0.22	5	40	

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: 680-157 Prep Batch: N/A Units: CFU/100mL	19	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	

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 sevenmonth 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)

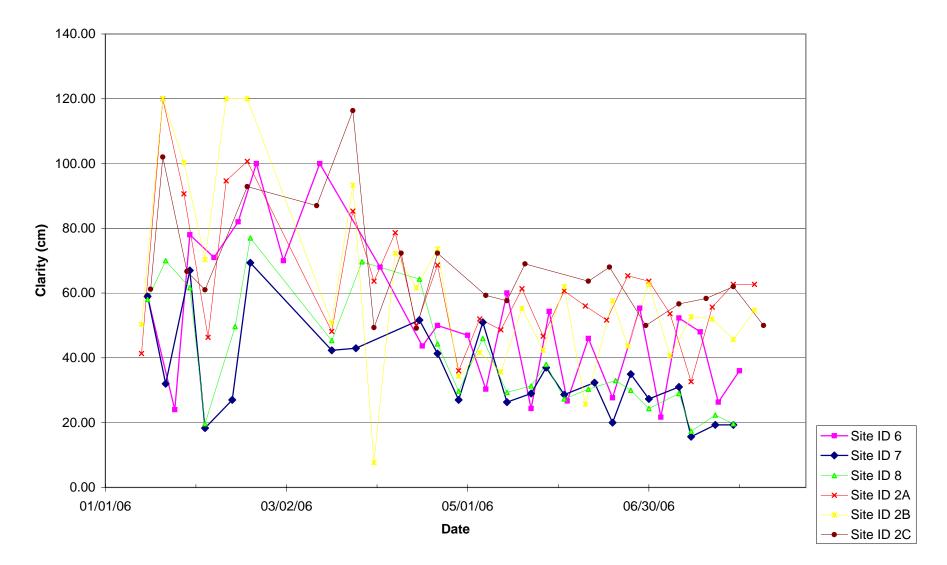


Figure 2: Volunteer Salinity Monitoring Data (January-August 2006)

