



**Lloyd Stream and Wetland Restoration Site
Annual Monitoring Report**

Year 1 of 5 (2007)

Onslow County, North Carolina

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**Lloyd Stream and Wetland
Restoration Site**

Year 1 Monitoring Report

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North Carolina Ecosystem
Enhancement Program

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1. Executive Summary

Restoration Systems (Restoration Systems) has completed construction and first year monitoring of the Lloyd Stream and Wetland Restoration Site (hereinafter referred to as the “Site”) to assist the North Carolina Ecosystem Enhancement Program (EEP) in fulfilling restoration goals in the region. The Site is located approximately 1 mile southeast of Richlands and 5 miles northwest of Jacksonville, in Onslow County (Figure 1). The Site contains 22.5 acres of hydric soil, two unnamed tributaries (UTs) to the New River, riparian buffer, and upland slopes. An undisturbed reach of Bullard Branch approximately 25 miles northwest of the Site in Duplin County was utilized as the reference reach (Figure 2). The drainage basin size is approximately 1.4 square mile at the Site outfall.

The primary goals of this stream and wetland restoration project focus on improving water quality, enhancing flood attenuation, and restoring aquatic and riparian habitat and will be accomplished by:

- Removing nonpoint sources of pollution associated with agricultural production including (a) removal of livestock from streams, stream banks, and floodplains; (b) cessation of broadcasting fertilizer, pesticides, and other agricultural materials into and adjacent to Site streams and wetlands; and (c) provide a vegetative buffer adjacent to streams and wetlands to treat surface runoff.
- Reducing sedimentation within on-Site and downstream receiving waters through (a) a reduction of bank erosion associated with hoof shear, vegetation maintenance, and agricultural plowing to Site streams and (b) providing a forested vegetative buffer adjacent to Site streams and wetlands.
- Reestablishing stream stability and the capacity to transport watershed flows and sediment loads by restoring stable dimension, pattern, and profile.
- Promoting floodwater attenuation through (a) reconnecting bankfull stream flows to the abandoned floodplain terrace; (b) restoring secondary, entrenched tributaries thereby reducing floodwater velocities within smaller catchment basins; (c) restoring depressional floodplain wetlands and increasing storage capacity for floodwaters within the Site; and (d) revegetating Site floodplains to increase frictional resistance on floodwaters crossing Site floodplains.
- Improving aquatic habitat by enhancing stream bed variability.
- Providing wildlife habitat including a forested riparian corridor within a region of the state highly dissected by agricultural land use.

The objectives of the Lloyd Stream and Wetland Restoration Project include the following:

- Restore a minimum of 4,750 linear feet of stream within two UTs to the New River.
- Restore a minimum of 3.3 acres of jurisdictional riverine wetland and restore a minimum of 3.1 acres of jurisdictional non-riverine wetland.
- Reforest approximately 23.1 acres of floodplain and interstream divide with native forest species.

The streams on Site were restored by relocating the existing channels and reconnecting them to their original floodplain (Priority 1 Restoration). The old, dredged and straightened channel was abandoned and backfilled. Channel inverts were reestablished at 0.8 to 1.2 feet in depth to rehydrate hydric Muckalee soils adjacent to Site streams, resulting in the restoration of jurisdictional hydrology to riverine wetlands. In addition, drainage ditches were filled to rehydrate hydric Rains soils within the Site, resulting in the restoration of jurisdictional hydrology to nonriverine wetlands. Spoil piles located on site as a result of past dredging activities were also removed. Reference Forest Ecosystem (RFE) data, on-Site observations, and community descriptions from *Classification of the Natural Communities of North Carolina* (Schafale and Weakley 1990) were used to develop the primary plant community associations that were promoted during community restoration activities.

As constructed, the Site provides 5,858 linear feet of stream restoration, 3.1 acres of non-riverine wetland restoration, and 3.3 acres of riverine wetland restoration.

Results from the 2007 monitoring effort indicate that the restored streams on Site are maintaining stability. The pattern, profile, and dimension of the restored channels are within the designed ranges. The log vanes that were installed appear to be functioning as intended and there were no areas of significant bank erosion observed.

None of the groundwater gauges at the site (including the reference gauge) achieved the defined success criteria for hydrology, saturation (free water) within 1 foot of the soil surface for a minimum of 8 percent (20 consecutive days) of the growing season for riverine wetlands and 10 percent (24 consecutive days) of the growing season for non-riverine wetlands, in the First Monitoring Year (Year 2007). Annual precipitation to date (46.67 inches) is approximately 10 inches below average (56.4 inches) according to gauge stations near the site (SCONC 2007). Due to the extreme drought North Carolina has endured this year, a comparison was also made between the Site groundwater gauges and the reference gauge. All but one of the groundwater gauges (LG3) at the Site exhibited saturation within 1 foot of the soil surface more often and for longer periods of time than the reference gauge. Based on this comparison, it is anticipated that if normal rainfall had occurred, the restoration area and reference wetland would have met the defined success criteria.

Vegetation plots across the Site were well above the required 320 stems per acre with a total of 720 tree stems per acre in the First Monitoring Year (Year 2007). Stream bank vegetation also appears to be establishing well despite the severe drought conditions. One of the five vegetation plots (Plot 5) was below the required 320 stems per acre, with a total of 280 stems per acre. With the expected natural recruitment of character tree species and the continued survival of existing stems, this plot should meet success criteria in future monitoring years.

2. Project Background

Restoration Systems, LLC has completed construction and first year monitoring of stream and wetland restoration at the Lloyd Stream and Wetland Restoration Site (Site). This project was constructed to provide mitigation credits to the North Carolina Ecosystem Enhancement Program (NCEEP). A 24.26-acre conservation easement has been placed on the Site to incorporate all restoration activities. The Site contains 22.5 acres of hydric soil, two UTs to the New River, riparian buffer, and upland slopes. An undisturbed reach of Bullard Branch approximately 25 miles northwest of the Site in Duplin County was utilized as the reference reach (Figure 2). The two UTs to the New River and adjacent floodplain represent the primary hydrologic features of the Site. The drainage basin size is approximately 1.4 square mile at the Site outfall.

Prior to restoration, Site land use, including livestock grazing, removal of riparian vegetation, and straightening and rerouting of stream channels, had resulted in degraded water quality, unstable channel characteristics (stream entrenchment, erosion, and bank collapse), and decreased wetland function.

Construction of the Site was authorized under the United States Army Corps of Engineers Permit Number 2006-41033-067 (issued in September 2006) and the North Carolina Division of Water Quality Certification Number 061346, conditioned upon final agency approval of the Detailed Stream and Wetland Mitigation Plan. The plan was approved in August 2006 and Backwater Environmental, a subsidiary of the Osborne Company, Inc., initiated construction in November 2006. Primary construction and planting activities were performed over a 5-month period, from November 2006 through March 2007. As-built Mitigation Plans, dated May 2007 (amended July 2007), were completed after all Site work was finished and monitoring gauges and plots were installed.

2.1 Project Goals and Objectives

The primary goals of this stream and wetland restoration project focus on improving water quality, enhancing flood attenuation, and restoring aquatic and riparian habitat and will be accomplished by:

- Removing nonpoint sources of pollution associated with agricultural production including (a) removal of livestock from streams, stream banks, and floodplains; (b) cessation of broadcasting fertilizer, pesticides, and other agricultural materials into and adjacent to Site streams and wetlands; and (c) provide a vegetative buffer adjacent to streams and wetlands to treat surface runoff.
- Reducing sedimentation within on-Site and downstream receiving waters through (a) a reduction of bank erosion associated with hoof shear, vegetation maintenance, and agricultural plowing to Site streams and (b) providing a forested vegetative buffer adjacent to Site streams and wetlands.
- Reestablishing stream stability and the capacity to transport watershed flows and sediment loads by restoring stable dimension, pattern, and profile.

- Promoting floodwater attenuation through (a) reconnecting bankfull stream flows to the abandoned floodplain terrace; (b) restoring secondary, entrenched tributaries thereby reducing floodwater velocities within smaller catchment basins; (c) restoring depressional floodplain wetlands and increasing storage capacity for floodwaters within the Site; and (d) revegetating Site floodplains to increase frictional resistance on floodwaters crossing Site floodplains.
- Improving aquatic habitat by enhancing stream bed variability.
- Providing wildlife habitat including a forested riparian corridor within a region of the state highly dissected by agricultural land use.

The objectives of the Lloyd Stream and Wetland Restoration Project include the following:

- Restore a minimum of 4,750 linear feet of stream within two UTs to the New River.
- Restore a minimum of 3.3 acres of jurisdictional riverine wetland and restore a minimum of 3.1 acres of jurisdictional non-riverine wetland.
- Reforest approximately 23.1 acres of floodplain and interstream divide with native forest species.

2.2 Project Structure, Restoration Type, and Approach

2.2.1 Historic Conditions

Prior to restoration, the streams on site had been impacted by ditching, vegetation clearing, hoof shear from cattle and horses, and erosive flows and were characterized by excessive incision. The main tributary had been relocated from its original floodplain position to a linear ditch excavated along the edge of cleared pasture land. The eastern tributary was not receiving natural stream flows because a berm had been placed near the eastern property boundary that was redirected flows away from the eastern tributary and into a linear ditch that drained into roadside ditches.

Hydric soil limits were mapped in the field during January 2006. Based on field surveys and groundwater models, it was determined that jurisdictional wetlands did not occur within the Site prior to restoration, with the exception of an approximately 0.5-acre area located near the Site outfall. Areas within the Site which may have historically contained jurisdictional wetlands had been significantly disturbed by compaction due to livestock grazing; relocation, dredging, straightening, and rerouting of on-Site streams; ditching of fields; and removal of vegetation and were effectively drained below jurisdictional wetland hydrology thresholds.

2.2.2 Restoration Approach

The entire Site is located within a floodplain that was suitable for design channel excavation on new location (Priority 1 Restoration). The stream was constructed on new location and the old, dredged and straightened

channel was abandoned and backfilled. Primary activities designed to restore the channel on new location include (1) belt-width preparation and grading, (2) floodplain bench excavation, (3) channel excavation, (4) installation of channel plugs, (5) backfilling of the abandoned channel, (6) ditch rerouting, (7) installation of in-stream structures and a Terracell drop structure at the Site outfall, and (8) construction of a culverted channel crossing.

Channel inverts were reestablished at 0.8 to 1.2 feet in depth to rehydrate hydric Muckalee soils adjacent to Site streams, resulting in the restoration of jurisdictional hydrology to riverine wetlands. In addition, drainage ditches were filled to rehydrate hydric Rains soils within the Site, resulting in the restoration of jurisdictional hydrology to nonriverine wetlands. Spoil piles located on Site as a result of past dredging activities were also removed.

Reference Forest Ecosystem (RFE) data, on-Site observations, and community descriptions from *Classification of the Natural Communities of North Carolina* (Schafale and Weakley 1990) were used to develop the primary plant community associations that were promoted during community restoration activities.

Community associations that were utilized to develop primary plant community associations include 1) Coastal Plain Small Stream Swamp/Nonriverine Wet Hardwood Forest and 2) stream-side assemblage. Planting elements are listed below.

Coastal Plain Small Stream Swamp/Nonriverine Wet Hardwood Forest

1. Swamp chestnut oak (*Quercus michauxii*)
2. Laurel oak (*Quercus laurifolia*)
3. Cherrybark oak (*Quercus falcate* var. *pagodaefolia*)
4. American elm (*Ulmus americana*)
5. Green ash (*Fraxinus americana*)
6. Sweetbay (*Magnolia virginiana*)
7. Silky dogwood (*Cornus amomum*)

Stream-Side Assemblage

1. Black willow (*Salix nigra*)
2. Silky dogwood (*Cornus amomum*)
3. Buttonbush (*Cephalanthus occidentalis*)
4. Elderberry (*Sambucus canadensis*)

The RFE for this project is located immediately upstream of the Site (Figure 1). The RFE supports plant community and landform characteristics that restoration efforts attempt to emulate. Table 1 lists vegetative species present within the RFE. Table A-1 lists the number and type of species that were planted at the site.

Monitoring of Site restoration efforts will be performed until success criteria are fulfilled. Monitoring will be conducted for the stream channel, as well as wetland components of hydrology, and vegetation. The Monitoring Plan View Map is presented in Appendix D. A summary of the project restoration components is presented in Table 2.

2.3 Location and Setting

The Lloyd Site is located approximately 1 mile southeast of Richlands and 5 miles northwest of Jacksonville, in Onslow County (Figure 1). The Site is located in United States Geological Survey (USGS) Hydrologic Unit (HU) 03030001010030 (North Carolina Division of Water Quality [NCDWQ] Subbasin 03-05-02) of the White Oak River Basin and will service the USGS 8-digit HU 03030001 (USGS 1974). The Site watershed is characterized by agricultural land, pasture, forest land, and low-density residential development; less than five percent of the upstream watershed is composed of impervious surface. Residential development becomes more concentrated south of the watershed in the City of Jacksonville and north of the watershed in the Town of Richlands. The Site is surrounded by active pasture, fallow fields, and forest stands. Pasture is currently grazed by livestock including cattle and horses, but livestock have been fenced out of the restoration area.

Directions to the Site:

Follow I-40 east to exit 373 (NC 24), turn left onto NC 24 heading east to Richlands, turn left onto Gum Branch Road and the Site will be on the left in approximately 3 miles.

2.4 History and Background

Tables 3, 4, and 5 provide reporting and milestone history; contact information for all designers, contractors, and suppliers; and relevant project background information respectively.

3. Project Condition and Monitoring Results

3.1 Vegetation Assessment

3.1.1 Vegetation Monitoring Procedure

Restoration monitoring procedures for vegetation are designed in accordance with the CVS/EEP Vegetation Monitoring Guidelines (Peet 1998). Plot vegetation received visual evaluation during periodic reading of monitoring gauges to ascertain the general conditions and degree of overtopping of planted species by weeds. Quantitative sampling of vegetation was performed on September 24 for the First Monitoring Year (Year 2007). Subsequently, quantitative sampling of vegetation will be performed between September 1 and October 30, of each growing season, until the vegetation success criteria are achieved.

During quantitative vegetation sampling in the first year, five sample plots (10 meters by 10 meters) were randomly placed within the Site. Sample-plot locations are depicted in the Monitoring Plan View and Monitoring Devices Map (Appendix D). Vegetation parameters monitored within each plot include species composition, density, height, diameter at decimeter height (ddh), and vigor. Visual observations of the percent cover of shrub and herbaceous species were also recorded.

3.1.2 Vegetation Success Criteria

Success criteria have been established to verify that the vegetation component supports community elements necessary for forest development. Success criteria are dependent upon the density and growth of characteristic forest species. Additional success criteria are dependent upon density and growth of "Characteristic Tree Species." Characteristic Tree Species include planted species along with species identified through visual inventory of an approved reference (relatively undisturbed) forest community used to orient the project design. All canopy tree species planted and identified in the reference forest will be utilized to define "Characteristic Tree Species" as termed in the success criteria.

An average density of 320 stems per acre of Characteristic Tree Species must be surviving in the first three monitoring years. Subsequently, 290 Characteristic Tree Species per acre must be surviving in year 4 and 260 Characteristic Tree Species per acre in year 5. Planted species must represent a minimum of 30 percent of the required stems per acre total (96 stems/acre). Each naturally recruited Characteristic Tree Species may represent up to 10 percent of the required stems per acre total. In essence, seven naturally recruited Characteristic Tree Species may represent a maximum of 70 percent of the required stems per acre total. Additional stems of naturally recruited species above the 10 percent and 70 percent thresholds are discarded from the statistical analysis. The remaining 30 percent is reserved for planted Characteristic

Tree Species (oaks, etc.) as a seed source for species maintenance during midsuccessional phases of forest development.

If vegetation success criteria are not achieved based on average density calculations from combined plots over the entire restoration area, supplemental planting may be performed with tree species approved by regulatory agencies. Supplemental planting will be performed as needed until achievement of vegetation success criteria.

3.1.3 Vegetation Sampling Results and Comparison to Success Criteria

Quantitative sampling of vegetation occurred in September 2007. Results are summarized in Table A-2 (Appendix A). Additional data and photographs of each plot are provided in Appendix A. Vegetation success criteria for year 1 (320 tree stems per acre) were exceeded for the 2007 annual monitoring year with 720 tree stems per acre across the Site. Four out of five vegetation plots met or exceeded vegetation success criteria in Year 1, with three out of five plots totaling more than 700 stems per acre each. Given the expected natural recruitment of character tree species and the survival of existing stems, plot five is expected to meet success criteria in future monitoring years. The vegetation plots are representative of the restoration site and supplemental planting is not warranted at this time. Future monitoring will determine if supplemental plantings are necessary.

3.1.4 Vegetation Problem Areas

There were no vegetation problem areas observed during the first monitoring year (Year 2007).

3.2 Stream Assessment

3.2.1 Stream Monitoring Procedure

Restoration monitoring procedures for onsite streams are designed in accordance with the USACE Stream Mitigation Guidelines (2003).

Three stream reaches were monitored for geomorphic activity as depicted in the monitoring plan view (Appendix D). Reach 1 begins in the upstream portion of the main tributary (T1) and extends approximately 1,180 feet downstream to its confluence with the eastern tributary (T2). Reach 2 begins in the middle portion of T2 and extends approximately 1,345 feet downstream to its confluence with T1. Reach 3 begins at the confluence of the two tributaries and extends downstream approximately 917 feet. All reaches combined for approximately 3,442 linear feet of monitored stream channel. Annual monitoring within each reach included measurements of 4 permanently monumented channel cross-

sections (two riffles and two pools), substrate pebble counts, and channel bed/water surface profile. Data collected for each reach included the following:

Dimension

Bankfull cross-sectional area, bankfull width, average depth, maximum depth, pool width, pool maximum depth, entrenchment ratio, width-depth ratio, bank height ratio, wetted perimeter, floodprone width, and hydraulic radius.

Pattern

Radius of curvature, belt width, meander width ratio, meander wavelength, and sinuosity.

Profile

Average water surface slope, bankfull slope, valley slope, riffle slope, pool slope, pool to pool spacing, pool length, and riffle length.

Substrate

D16, D35, D50, D84, D95

Each reach was subsequently classified according to stream geometry and substrate (Rosgen 1996). Year 1 monitoring data was compared to design parameters to determine the overall condition of each reach because the As-built survey was not of sufficient detail to use as a baseline for monitoring. Fifteen photo points were set up during the first monitoring year to document changes in the stream and riparian buffer throughout the monitoring period. The Monitoring Plan View and Monitoring Devices Map show the location of each photo point (Appendix D).

Bank Stability Assessments will be conducted during year 5 of the monitoring period. The entire project will be classified into the Bank Erosion Hazard Index (BEHI) categories and accompanied by a Near Bank Stress (NBS) assessment for the purpose of describing the entire project bank footage in the various hazard categories and to produce project sediment export estimates.

3.2.2 Stream Success Criteria

Success criteria for stream restoration will include (1) successful classification of the reach as a functioning stream system (Rosgen 1996) and (2) channel variables indicative of a stable stream system.

The channel configuration will be measured on an annual basis in order to track changes in channel geometry, profile, or substrate. These data will be utilized to determine the success in restoring stream channel stability. Specifically, the width-to-depth ratio should characterize an E-type and/or a borderline E-type/C-type channel (\bullet 18), bank-height ratios indicative of a stable or moderately unstable channel, and

minimal changes in cross-sectional area, channel width, and/or bank erosion along the monitoring reach. In addition, channel abandonment and/or shoot cutoffs must not occur and sinuosity values must remain at approximately 1.3 (thalweg distance/straight-line distance). The field indicator of bankfull will be described in each monitoring year and indicated on a representative channel cross-section figure. If the stream channel is down-cutting or the channel width is enlarging due to bank erosion, additional bank or slope stabilization methods will be employed.

Some areas within the design channel may be expected to form low-slope, braided, stream/swamp complexes similar to Muckalee swamps in the area. These stream/swamp complexes would not be considered unstable; however, footage of stream channel restoration in these reaches will be recalculated from distance along the thalweg (1.3 sinuosity) to distance along the valley (1.0 sinuosity).

Visual assessment of in-stream structures will be conducted to determine if failure has occurred. Failure of a structure may be indicated by collapse of the structure, undermining of the structure, abandonment of the channel around the structure, and/or stream flow beneath the structure.

3.2.3 Stream Monitoring Results and Comparison to Success Criteria

Data collected during the first monitoring year was compared to the design parameters as defined in Table 6. Each monitored reach exhibited stable dimension, pattern, and profile. The top of bank was used as the bankfull indicator for Year 1 monitoring. Bankfull width, area, and depth at each cross section fell within or very near the proposed ranges. The thalweg profile for each reach was characterized by well defined riffle and pool features. The pools appeared to be sufficiently deep throughout the project, with pool depth to bankfull mean depth ratios of 2.6 to 3.7. The average water surface slope (0.0033 ft/ft) and bankfull slope (0.0033 ft/ft) for Reach 2 were identical. Reach 3 also exhibited similar average water surface (0.0034 ft/ft) and bankfull (0.0029 ft/ft) slopes. The average water surface slopes for Reaches 2 and 3 are slightly higher than the designed average water surface slope (0.0025 ft/ft) but these reaches are located in the steepest portion of the project. The average water surface slope for Reach 1 could not be measured because the stream was dry at the time of the first year monitoring surveys, with the exception of small pockets of standing water in some of the pools. The bankfull slope for Reach 1 was 0.0003 ft/ft. The average bank height ratio for each reach was 1.0. Reaches 2 and 3 are classified as E5 stream types, with average width to depth ratios of 10.0 and average entrenchment ratios of 13.8. Reach 1 is classified as an E5/6 stream type with an average width to depth ratio of 10.3 and entrenchment ratio of 8.5.

There was no visual evidence of significant bank erosion during Year 1 monitoring. During a site visit in September 2007, the majority of the project streams were dry due to the severe drought. Herbaceous vegetation was present in the stream bed in Reaches 2 and 3 at this time. During monitoring surveys in November 2007 (with water present in Reaches 2 and 3), the herbaceous vegetation was no longer present in

the stream bed, however herbaceous vegetation and live stakes had established on the stream banks providing excellent bank protection.

Four log vanes were evaluated within the monitoring reaches and all appeared to be functioning properly. Deep pools were present downstream of each log vane and there was little to no erosion associated with each vane. The location of each log vane is depicted in the Monitoring Plan View and Monitoring Devices Map (Appendix D).

A bankfull event was not visually verified during the Year 1 monitoring effort. According to the Site Restoration Plan (2006), the project streams were designed to accommodate a bankfull event with a 0.1 to 0.3 year return interval. Data for gauge stations within close proximity to the site and of similar drainage area do not exist. The gauge stations within Onslow County are on larger rivers with drainage areas greater than 90 square miles. Rain data were evaluated to determine the significant rain events during 2007 that may have generated a bankfull discharge at the Site. Eight instances occurred where the daily precipitation totaled greater than 1.0 inch (Table 7); however, it is uncertain whether a bankfull event occurred as a result of these rain events. Groundwater gauges LG1 and LG4 are located in the floodplain of the restored channel. LG1 exhibited groundwater elevations above the surface on April 15th and April 16th. LG4 exhibited groundwater elevations above the surface on April 15th through the 17th, May 6th, July 7th through the 9th, and August 11th through the 13th. These data provide evidence that there was surface water in the floodplain several times throughout the first monitoring year.

Please refer to Tables 8a through 8c for detailed information regarding the Year 1 monitoring stream assessment. In Table 9A, the 90% value in line item B represents a small portion of pools that were shallower than the minimum design depth of 1.8 feet. These shallower pools are evident on the Reach 1 profile found in Appendix B. Due to the drought the stream was dry over most of the summer and herbaceous vegetation colonized the stream bed in some locations. It is likely that this vegetation trapped sediment during flow events and caused some of the pools to fill in. In Table 9B, the 95% value in line item E represents a few localized areas of scour along the stream bed. These areas were small and inconsequential and do not represent a threat to the overall stability of the reach. In Table 9C, the 90% value in line item F represents minor scour along the stream-bank in a few areas throughout the reach, primarily along the toe of bank. This scour does not compromise overall bank stability and was not representative of the overall reach condition.

3.2.4 Stream Problem Areas

No problem areas were observed during Year 1 monitoring (2007).

3.3 Wetland Assessment

3.3.1 Wetland Monitoring Procedure

Four groundwater monitoring gauges were installed at the Site during the first monitoring year and an additional groundwater monitoring gauge was installed on a reference site to monitor groundwater hydrology. These gauges were downloaded monthly during the first monitoring year. Hydrological sampling will continue throughout the growing season, for the remainder of the monitoring period, at intervals necessary to satisfy the hydrology success criteria within each design unit (USEPA 1990). The Monitoring Plan View and Monitoring Devices Map show the location of each gauge (Appendix D).

3.3.2 Wetland Success Criteria

Target hydrological characteristics include saturation or inundation for at least 10 percent within Rains soils (nonriverine wetlands) and 8 percent within Muckalee soils (riverine wetlands) of the growing season, during average climatic conditions. This value is based on DRAINMOD simulations for 42 years of rainfall data in an old field stage. These areas are expected to support hydrophytic vegetation. If wetland parameters are marginal as indicated by vegetation and/or hydrology monitoring, a jurisdictional determination will be performed in these areas.

Hydrological contingency will require consultation with hydrologists and regulatory agencies if wetland hydrology enhancement is not achieved. Floodplain surface modifications, including construction of ephemeral pools, represent a likely mechanism to increase the floodplain area in support of jurisdictional wetlands. Recommendations for contingency to establish wetland hydrology will be implemented and monitored until Hydrology Success Criteria are achieved.

3.3.3 Wetland Monitoring Results and Comparison to Success Criteria

Monitoring gauges LG2 and LG3 are located within the non-riverine wetland restoration area and the reference gauge (LRG1) for the site is just east of this area. Gauges LG1 and LG4 are located within riverine wetland restoration areas adjacent to the upstream portion of the eastern tributary and downstream portion of the main tributary, respectively. All monitoring gauges are depicted in the Monitoring Plan View (Appendix D). North Carolina has endured a severe drought throughout 2007. Annual precipitation to date (46.67 inches) is approximately 10 inches below average (56.4 inches) according to gauge stations near the site (SCONC 2007).

None of the groundwater gauges at the site (including the reference gauge) achieved the defined success criteria for hydrology, saturation (free water) within 1 foot of the soil surface for a minimum of 8 percent (20 consecutive days) of the growing season for riverine wetlands and 10 percent (24 consecutive days) of

the growing season for non-riverine wetlands, in the First Monitoring Year (Year 2007). Due to the extreme drought North Carolina has endured this year, a comparison was also made between the Site groundwater gauges and the reference gauge. All but one of the groundwater gauges (LG3) at the Site exhibited saturation within 1 foot of the soil surface more often and for longer periods of time than the reference gauge. Based on this comparison, it is anticipated that if normal rainfall had occurred, the restoration area and reference wetland would have met the defined success criteria.

3.3.4 Wetland Problem Areas

No wetland problem areas were observed during Year 1 monitoring activities.

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Tables

**Table 1. Reference Forest Ecosystem
Lloyd Stream and Wetland Restoration Site – Contract # 16-D06003-1**

Tree Species	Number of Individuals¹	Relative Density (%)	Frequency¹ (%)	Relative Frequency (%)	Basal Area¹ (ft²/acre)	Relative Basal Area (%)	Importance Value
Red maple (<i>Acer rubrum</i>)	1	1.6	25	3.7	2.0	2.0	0.02
Ironwood (<i>Carpinus caroliniana</i>)	12	19.0	100	14.8	3.8	3.7	0.13
Pignut hickory (<i>Carya glabra</i>)	4	6.3	50	7.4	8.1	7.9	0.07
Dogwood (<i>Cornus</i> sp.)	2	3.2	25	3.7	0.8	0.8	0.03
Ash (<i>Fraxinus</i> sp.)	2	3.2	25	3.7	1.0	1.0	0.03
American holly (<i>Ilex opaca</i>)	4	6.3	50	7.4	2.2	2.1	0.05
Sweetgum (<i>Liquidambar styraciflua</i>)	15	23.8	100	14.8	16.1	15.7	0.18
Yellow poplar (<i>Liriodendron tulipifera</i>)	5	7.9	75	11.1	17.0	16.6	0.12
White oak (<i>Quercus alba</i>)	3	4.8	50	7.4	9.6	9.4	0.07
Water oak (<i>Quercus nigra</i>)	2	3.2	25	3.7	1.0	1.0	0.03
Laurel oak (<i>Quercus laurifolia</i>)	2	3.2	50	7.4	15.1	14.7	0.08
Swamp chestnut oak (<i>Quercus michauxii</i>)	1	1.6	25	3.7	3.5	3.4	0.03
Cherrybark oak (<i>Quercus pagoda</i>)	10	15.9	75	11.1	22.2	21.7	0.16
TOTALS	63	100	675	100	102.4	100	1.00

¹ Sum of four 0.1-acre plots.

**Table 2. Project Restoration Components
Lloyd Stream and Wetland Restoration Site – Contract # 16-D06003-1**

Project Segment or Reach ID	Existing Feet/Acres	Type	Approach	Footage or Acreage	Mitigation Ratio	Mitigation Units	Stationing	Comment
Tributary T-1 (upstream of confluence w/Tributary T-2)	N/A	R	P1	1,606 lf	1:1	1,606	0+00 – 16+06	Channel restoration, relocation with the use of in-stream structures
Tributary T-1 (downstream of confluence w/Tributary T-2)	N/A	R	P1	1,190 lf	1:1	1,190	16+06 – 27+96	Channel restoration, relocation with the use of in-stream structures
Tributary T-2	N/A	R	P1	3,062 lf	1:1	3,062	0+00 – 30+62	Channel restoration, relocation with the use of in-stream structures
Non-Riparian Wetland	-	R	-	3.1 ac	1:1	3.1	-	Restoration of wetlands
Riparian Wetland Area 1	-	R	-	3.3 ac	1:1	3.3	-	Restoration of wetlands
Mitigation Unit Summations								
Stream (lf)	Riverine Wetland (Ac)	Non-Riverine Wetland (Ac)	Total Wetland (Ac)	Buffer (Ac)	Comment			
5,858	3.3	3.1	6.4	-	Entire restoration site is surrounded by cattle pasture. Cattle are fenced out.			

R = Restoration
EI = Enhancement I
N/A = Not Available

EII = Enhancement II
S = Stabilization

P1 = Priority I
P2 = Priority II

P3 = Priority III
SS = Stream Bank Stabilization

**Table 3. Project Activity and Reporting History
Lloyd Stream and Wetland Restoration Site – Contract # 16-D06003-1**

Activity or Report	Data Collection Complete	Actual Completion or Delivery
Restoration Plan	Unknown	June 2006
Construction	Unknown	March 2007
Planting Activities	Unknown	March 2007
Mitigation Plan / As-Built (Year 0 Monitoring – Baseline)	March 2007	May 2007, Amended July 2007
Year 1 Monitoring	November 2007	December 2007

Table 4. Project Contacts Table
Lloyd Stream and Wetland Restoration Site – Contract #16-D06003-1

<p>Designer Axiom Environmental, Inc.</p>	<p>2126 Rowland Pond Drive Willow Spring, NC 27592 W. Grant Lewis (919) 215-1693</p>
<p>Construction Contractor Backwater Environmental, Inc.</p>	<p>P.O. Box 1654 Pittsboro, North Carolina 27312 Wes Newell (919) 523-4375</p>
<p>Planting Contractor Carolina Silvics</p>	<p>908 Indian Trail Road Edenton, NC 27932 Dwight McKinney (919) 523-4375</p>
<p>Monitoring Performers (Year 1 Stream, Vegetation, and Wetland Monitoring) ARACDIS G&M of North Carolina, Inc.</p>	<p>801 Corporate Center Drive, Suite 300 Raleigh, NC 27607 Ben Furr and Keven Duerr (919) 854-1282</p>

**Table 5. Project Background Table
Lloyd Stream and Wetland Restoration Site – Contract #16-D06003-1**

Project County	Onslow
Drainage Area (at project outfall)	1.4 mi ²
Drainage Impervious Cover Estimate (%)	< 5%
Stream Order	T1 (u/s of confluence) – 2 nd
	T1 (d/s of confluence) – 2 nd
	T2 – 1st
Physiographic Region	Coastal Plain
Ecoregion	Middle Atlantic Coastal Plain – Carolina Flatwoods
Rosgen Classification of As-Built	E5/6
Cowardin Classification	Riverine Wetlands – PFO1J
	Non-Riverine Wetlands – PFO1A
Dominant Soil Types	Reach 1 – Goldsboro, Muckalee and Grifton
	Reach 2 – Rains, Craven, Grifton, and Muckalee
	Reach 3– Muckalee and Craven
Reference Site ID	Bullard Branch, Duplin County
USGS HUC for Project and Reference	Project - 03030001
	Reference - 03030007
NCDWQ Sub-basin for Project and Reference	Project – 03-05-02
	Reference – 03-06-22
NCDWQ classification for Project and Reference	Project – C; NSW
	Reference – C; Sw
Any portion of any project segment 303(d) listed?	No
Any portion of any segment upstream of a 303(d) listed segment?	No
Reasons for 303(d) listing or stressor	N/A
% of project easement fenced	100%

Table 6. Baseline Morphology and Hydraulic Summary
Lloyd Stream and Wetland Restoration Site - Contract #16-D06003-1
Entire Project - 5,858 lf

Parameter	USGS Gage Data			Eastern Tributary			Main Tributary			Project Reference Stream			Design			As-Built		
	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med
Dimension																		
BF Width (ft)				4.6	7.2	6.5	6.3	8.4	7.1	N/A	N/A	9.3	7.7	11	9.4	7.9	7.9	8.9
Floodprone Width (ft)				7.8	10.2	9	8.7	10.8	9.3	150	250	225	150	250	225	N/A	N/A	N/A
BF Cross Sectional Area (ft ²)				6.1	6.2	6.1	6.7	7.2	6.9	N/A	N/A	11.6	6.1	12.1	N/A	N/A	N/A	N/A
BF Mean Depth (ft)				0.8	1.3	1	0.8	1.1	1	N/A	N/A	1.2	0.8	1.2	1	N/A	N/A	N/A
BF Max Depth (ft)				1.2	1.7	1.4	0.9	1.3	1.3	N/A	N/A	2.3	1	2.3	1.6	1.2	1.6	1.3
Width/Depth Ratio				3.5	8.6	6.5	5.9	10.5	7	N/A	N/A	7.4	7	12	10	N/A	N/A	N/A
Entrenchment Ratio				1.3	1.8	1.5	1.1	1.5	1.4	16.1	26.9	24.2	16	27	24	N/A	N/A	N/A
Bank Height Ratio				4.5	9	6.4	4.9	5.2	5.1	N/A	N/A	1	1	1.3	1	N/A	N/A	N/A
Wetted Perimeter (ft)				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydraulic Radius (ft)				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pattern																		
Channel Beltwidth (ft)				No distinctive pattern due			No distinctive pattern due			21	36	34	15	77	31	N/A	N/A	N/A
Radius of Curvature (ft)				to channel straightening			to channel straightening			13.7	18.6	16.1	15	44	21	18	53	23
Meander Wavelength (ft)				activities			activities			55	82	71	46	154	75	N/A	N/A	N/A
Meander Width Ratio										2.3	3.9	3.7	2	7	4	N/A	N/A	N/A
Profile																		
Riffle Length (ft)				No distinctive repetitive			No distinctive repetitive			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Riffle Slope (ft/ft)				pattern of riffles and pools			pattern of riffles and pools			0.007	0.016	0.0129	0.0007	0.0064	0.0033	N/A	N/A	N/A
Pool Length (ft)				due to channel			due to channel			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pool Spacing (ft)				straightening activities			straightening activities			32	55	43	31	77	47	N/A	N/A	N/A
Substrate																		
d50 (mm)				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
d84 (mm)				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Additonal Reach Parameters																		
Valley Length (ft)				N/A			N/A			N/A			N/A			N/A		
Channel Length (ft)				N/A			N/A			N/A			5,858			N/A		
Sinuosity				1.02			1.02			1.37			1.3-1.4			N/A		
Water Surface Slope (ft/ft)				0.0043			0.0032			0.004			0.0025			N/A		
BF Slope (ft/ft)				N/A			N/A			N/A			0.0025			N/A		
Rosgen Classification				G5/6			G5/6			E6			E5/6			N/A		

N/A = Not Available

**Table 7. Possible Bankfull Precipitation Events
Lloyd Stream and Wetland Restoration Site – Contract # 16-D06003-1**

Date of Occurrence	Daily Precipitation Total	SCONC Station	Photo # (if available)
5/18/07	1.1	314471 - Jacksonville	N/A
6/3/07	1.25	314471 - Jacksonville	N/A
6/30/07	1.39	314471 - Jacksonville	N/A
7/21/07	2.05	314471 - Jacksonville	N/A
8/12/07	1.52	314471 - Jacksonville	N/A
8/22/07	1.26	314471 - Jacksonville	N/A
9/20/07	1.54	314144 – Hoffman Forest	N/A
9/21/07	1.54	314144 – Hoffman Forest	N/A

N/A = Not available

**Table 8A. Morphology and Hydraulic Monitoring Summary
Lloyd Stream and Wetland Restoration Site - Contract #16-D06003-1
Reach 1 (T1 u/s of confluence) - 1,180 lf**

Parameter	Cross Section 5 Riffle						Cross Section 6 Max Pool						Cross Section 7 Max Pool						Cross Section 8 Riffle								
	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+			
Dimension																											
BF Width (ft)	8.1						11.5						13.4						7.4								
Floodprone Width (ft)	39						63						>100						>90								
BF Cross Sectional Area (ft ²)	6.1						11.2						14.6						5.5								
BF Mean Depth (ft)	0.8						1						1.1						0.7								
BF Max Depth (ft)	1.1						2						2.1						1.1								
Width/Depth Ratio	10.7						11.8						12.3						9.9								
Entrenchment Ratio	4.8						5.5						7.5						12.2								
Bank Height Ratio	1						1						1						1								
Wetted Perimeter (ft)	8.7						12.4						14.3						7.9								
Hydraulic Radius (ft)	0.7						0.9						1						0.7								
Substrate																											
d50 (mm)	<0.1						<0.1						<0.1						<0.1								
d84 (mm)	<0.1						<0.1						<0.1						<0.1								
Parameter	MY-01 (2007)			MY-02 (2008)			MY-03 (2009)			MY-04 (2010)			MY-05 (2011)			MY-5+ (2012)											
	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med						
Pattern																											
Channel Beltwidth (ft)	15	61	32																								
Radius of Curvature (ft)	16	31	21																								
Meander Wavelength (ft)	61	111	76																								
Meander Width Ratio	2.5	10.2	5.3																								
Profile																											
Riffle Length (ft)	7	32	18																								
Riffle Slope (ft/ft)																											
Pool Length (ft)	8	47	22																								
Pool Spacing (ft)	25	66	48																								
Additonal Reach Parameters																											
Valley Length (ft)	928																										
Channel Length (ft)	1,180																										
Sinuosity	1.3																										
Water Surface Slope (ft/ft)	no water in ch.																										
BF Slope (ft/ft)	0.0003																										
Rosgen Classification	E5/6																										

Table 8B. Morphology and Hydraulic Monitoring Summary
Lloyd Stream and Wetland Restoration Site - Contract #16-D06003-1
Reach 2 (T2) - 1,345 lf

Parameter	Cross Section 1 Max Pool						Cross Section 2 Riffle						Cross Section 3 Max Pool						Cross Section 4 Riffle					
	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+
Dimension																								
BF Width (ft)	12.7						8.3						11.7						7.4					
Floodprone Width (ft)	>100						>100						>150						120					
BF Cross Sectional Area (ft ²)	16.7						7.3						22.3						5.4					
BF Mean Depth (ft)	1.3						0.9						1.9						0.7					
BF Max Depth (ft)	2.7						1.4						3.3						1.2					
Width/Depth Ratio	9.6						9.5						6.1						10.2					
Entrenchment Ratio	7.9						12						12.8						16.2					
Bank Height Ratio	1						1						1						1					
Wetted Perimeter (ft)	14.3						8.9						14.1						7.9					
Hydraulic Radius (ft)	1.2						0.8						1.6						0.7					
Substrate																								
d50 (mm)	0.3						0.3						0.3						0.3					
d84 (mm)	6						6						6						6					
Parameter	MY-01 (2007)			MY-02 (2008)			MY-03 (2009)			MY-04 (2010)			MY-05 (2011)			MY-5+ (2012)								
	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med						
Pattern																								
Channel Beltwidth (ft)	17	58	34																					
Radius of Curvature (ft)	18	31	21																					
Meander Wavelength (ft)	53	113	85																					
Meander Width Ratio	2.8	9.7	5.7																					
Profile																								
Riffle Length (ft)	6	44	20																					
Riffle Slope (ft/ft)	0	0.037	0.011																					
Pool Length (ft)	5	66	22																					
Pool Spacing (ft)	24	100	54																					
Additional Reach Parameters																								
Valley Length (ft)	1005																							
Channel Length (ft)	1,343																							
Sinuosity	1.3																							
Water Surface Slope (ft/ft)	0.0033																							
BF Slope (ft/ft)	0.0033																							
Rosgen Classification	E5																							

Table 8C. Morphology and Hydraulic Monitoring Summary
Lloyd Stream and Wetland Restoration Site - Contract #16-D06003-1
Reach 3 (T1 d/s of confluence) - 917 lf

Parameter	Cross Section 9 Max Pool						Cross Section 10 Riffle						Cross Section 11 Max Pool						Cross Section 12 Riffle					
	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+	MY1	MY2	MY3	MY4	MY5	MY+
Dimension																								
BF Width (ft)	14.7						10.9						13.1						10.1					
Floodprone Width (ft)	>200						>110						>230						>170					
BF Cross Sectional Area (ft ²)	21.2						11.1						19.3						10.6					
BF Mean Depth (ft)	1.4						1						1.5						1					
BF Max Depth (ft)	2.9						1.7						2.9						1.7					
Width/Depth Ratio	10.1						10.8						8.8						9.6					
Entrenchment Ratio	13.6						10.1						17.6						16.9					
Bank Height Ratio	1						1						1						1					
Wetted Perimeter (ft)	16.1						11.5						14.6						11					
Hydraulic Radius (ft)	1.3						1						1.3						1					
Substrate																								
d50 (mm)	0.1						0.1						0.1						0.1					
d84 (mm)	1						1						1						1					
Parameter	MY-01 (2007)			MY-02 (2008)			MY-03 (2009)			MY-04 (2010)			MY-05 (2011)			MY-5+ (2012)								
	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med	Min	Max	Med						
Pattern																								
Channel Beltwidth (ft)	24	64	43																					
Radius of Curvature (ft)	19	33	23																					
Meander Wavelength (ft)	64	106	91																					
Meander Width Ratio	2.2	5.8	3.9																					
Profile																								
Riffle Length (ft)	12	33	19																					
Riffle Slope (ft/ft)	0	0.03	0.01																					
Pool Length (ft)	15	64	29																					
Pool Spacing (ft)	38	83	56																					
Additional Reach Parameter																								
Valley Length (ft)	649																							
Channel Length (ft)	917																							
Sinuosity	1.4																							
Water Surface Slope (ft/ft)	0.0034																							
BF Slope (ft/ft)	0.0029																							
Rosgen Classification	E5																							

**Exhibit Table 9A. Categorical Stream Feature Visual Stability Assessment
Lloyd Stream and Wetland Restoration Site – Contract #16-D06003-1
Reach 1 (T1 u/s of confluence) – 1,180 lf**

Feature	Initial	MY-01
A. Riffles	100%	100%
B. Pools	100%	90%
C. Thalweg	100%	100%
D. Meanders	100%	100%
E. Bed General	100%	100%
F. Bank Condition	100%	100%
G. Log Vanes	100%	100%

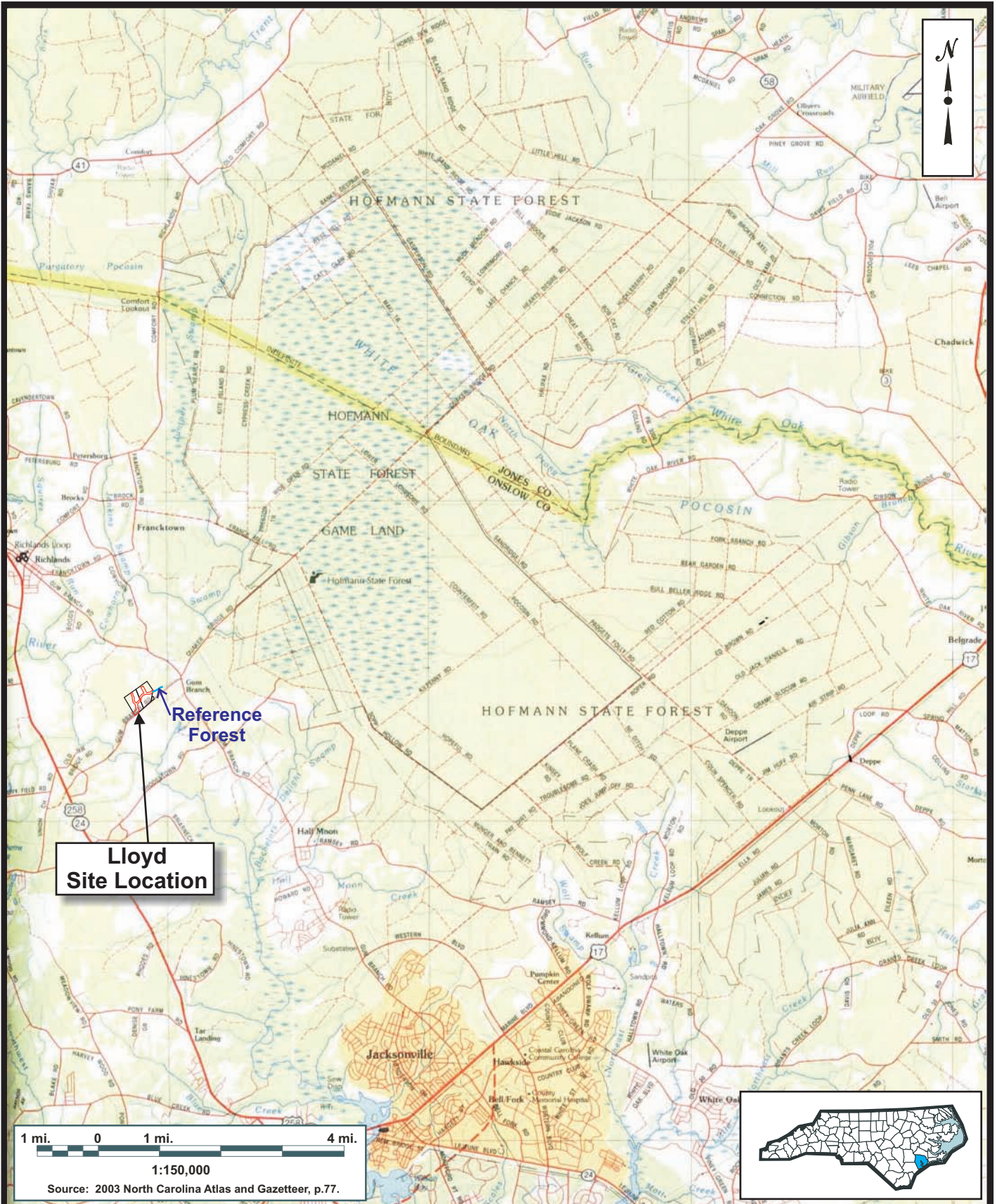
**Exhibit Table 9B. Categorical Stream Feature Visual Stability Assessment
Lloyd Stream and Wetland Restoration Site – Contract #16-D06003-1
Reach 2 (T2) – 1,345 lf**

Feature	Initial	MY-01
A. Riffles	100%	100%
B. Pools	100%	100%
C. Thalweg	100%	100%
D. Meanders	100%	100%
E. Bed General	100%	95%
F. Bank Condition	100%	100%
G. Log Vanes	100%	100%

**Exhibit Table 9C. Categorical Stream Feature Visual Stability Assessment
Lloyd Stream and Wetland Restoration Site – Contract #16-D06003-1
Reach 3 (T1 d/s of confluence) – 917 lf**

Feature	Initial	MY-01
A. Riffles	100%	100%
B. Pools	100%	100%
C. Thalweg	100%	100%
D. Meanders	100%	100%
E. Bed General	100%	100%
F. Bank Condition	100%	90%
G. Log Vanes	100%	100%

Figures




801 Corporate Center Dr
Suite 300
Raleigh, NC 27607
Tel. 919.854.1282
Fax. 919.854.5448

SITE LOCATION
LLOYD RESTORATION SITE
Onslow County, North Carolina

FIGURE 1




 801 Corporate Center Dr
 Suite 300
 Raleigh, NC 27607
 Tel. 919.854.1282
 Fax. 919.854.5448

REFERENCE STREAM REACH LOCATION
LLOYD RESTORATION SITE
 Onslow County, North Carolina

FIGURE 2

Appendix A

Vegetative Data

**Table A-1. Planted Tree Species
Lloyd Stream and Wetland Restoration Site – Contract # 16-D06003-1**

Vegetation Association (Planting Area)	Coastal Plain Small Stream Swamp/Nonriverine Wet Hardwoods Forest	
Area (acres)	23.1	
SPECIES	Total Number Planted	Percentage of Total
Pawpaw (<i>Asimina triloba</i>)	2000	7.15
River birch (<i>Betula nigra</i>)	2000	7.15
Mockernut hickory (<i>Carya alba</i>)	2000	7.15
Water hickory (<i>Carya aquatica</i>)	2000	7.15
Sugarberry (<i>Celtis laevigata</i>)	2000	7.15
Buttonbush (<i>Cephalanthus occidentalis</i>)	2000	7.15
Green ash (<i>Fraxinus pennsylvanica</i>)	2000	7.15
Black walnut (<i>Juglans nigra</i>)	2000	7.15
Black gum (<i>Nyssa sylvatica</i>)	2000	7.15
Sycamore (<i>Platanus occidentalis</i>)	2000	7.15
Cherrybark oak (<i>Quercus pagodaefolia</i>)	2000	7.15
Water oak (<i>Quercus nigra</i>)	2000	7.15
Willow oak (<i>Quercus phellos</i>)	2000	7.15
American elm (<i>Ulmus americana</i>)	2000	7.15
TOTAL	28,000	100

TABLE A-2. 2007 VEGETATION MONITORING DATA AND RESULTS

Lloyd Stream and Wetland Restoration Site - Contract #16-D06003-1

Note: Each plot totals 0.025 acre in size.

Community	Small Stream Swamp/Non-Riverine Wet Hardwood Forest							Total Stems/Acre Counting Towards Success Criteria**
Species*	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Total Stems for Plots 1-5	Total Stems/Acre	
Character Tree Species (count toward success)								
<i>Betula nigra</i> (river birch)	2		4		2	8	64	64
<i>Carya</i> sp. (hickory)		8				8	64	64
<i>Celtis laevigata</i> (hackberry)	5		2		3	10	80	80
<i>Cornus amomum</i> (silky dogwood)				6		6	48	48
<i>Fraxinus pennsylvanica</i> (green ash)		8				8	64	64
<i>Liquidambar styraciflua</i> (sweetgum)	2					2	16	16
<i>Nyssa sylvatica</i> (blackgum)	5	2	1	3		11	88	88
<i>Platanus occidentalis</i> (sycamore)			19		1	20	160	160
Unknown					3	3	24	24
<i>Quercus michauxii</i> (swamp chestnut oak)						0	0	0
<i>Quercus nigra</i> (water oak)				1		1	8	8
<i>Quercus phellos</i> (willow oak)			5			5	40	40
<i>Salix nigra</i> (black willow)			1			1	8	8
<i>Ulmus americana</i> (American elm)	6			1		7	56	56
TOTAL STEMS/PLOT	20	18	32	11	9	90	720	720
TOTAL STEMS/PLOT COUNTING TOWARDS SUCCESS CRITERIA	19	18	32	9	7			
TOTAL STEMS/ACRE COUNTING TOWARDS SUCCESS CRITERIA	760	720	1280	360	280			

* Planted species are in bold.

*Planted species must represent a minimum of 30 percent of the required stems per acre total (96 stems/acre). Each naturally recruited Characteristic Tree Species may represent up to 10 percent of the required stems per acre total (32 stems/acre).

Report Prepared By Ben Furr
Date Prepared 11/2/2007 10:16

database name CVS_EEP_EntryTool_v220.mdb
database location C:
computer name NC1L-BFURR

DESCRIPTION OF WORKSHEETS IN THIS DOCUMENT-----

Metadata This worksheet, which is a summary of the project and the project data.
Proj, planted Each project is listed with its PLANTED stems, for each year. This excludes live stakes and lists stems per acre.
Proj, total stems Each project is listed with its TOTAL stems, for each year. This includes live stakes, all planted stems, and all natural/volunteer stems. Listed in stems per acre.
Plots List of plots surveyed.
Vigor Frequency distribution of vigor classes.
Vigor by Spp Frequency distribution of vigor classes listed by species.
Damage List of most frequent damage classes with number of occurrences and percent of total stems impacted by each.
Damage by Spp Damage values tallied by type for each species.
Damage by Plot Damage values tallied by type for each plot.
ALL Stems by Plot and spp Count of total living stems of each species (planted and natural volunteers combined) for each plot; dead and missing stems are excluded.

PROJECT SUMMARY-----

Project Code Lloyd
project Name Lloyd Restoration Site
Description Stream and Wetland Restoration Site in Onslow County
River Basin White Oak
length(ft) 5,858
stream-to-edge width (ft)
area (sq m)
Required Plots (calculated)
Sampled Plots 5

Living planted stems, excluding live stakes, per acre: Negative (red) numbers indicate the project failed to reach requirements in a particular year.

Project Code	Project Name	River Basin	Year 2007
Lloyd	Lloyd Restoration Site	White Oak	615.12

Total stems, including planted stems of all kinds (including live stakes) and natural/volunteer stems:

Project Code	Project Name	River Basin	Year 2007
Lloyd	Lloyd Restoration Site	White Oak	728.4341574

Vigor

vigor	Count	Percent
2	25	32.9
3	35	46.1
4	16	21.1

Vigor by Species

	Species	4	3	2	1	0	Missing
	Betula nigra	5	1	2			
	Celtis laevigata	4	6				
	Cornus amomum	3	3				
	Fraxinus pennsylvanica		1	7			
	Nyssa sylvatica		4	7			
	Quercus nigra			1			
	Quercus phellos		1	4			
	Salix nigra	1					
	Carya		4	4			
	Platanus occidentalis		8				
	Ulmus americana	2	5				
	Unknown	1	2				
TOT:	12	16	35	25			

Total Living Stems EXCLUDING Live Stakes	Planted Living Stems per ACRE
20	728.4341574
18	728.4341574
32	809.371286
11	445.1542073
9	364.2170787

Planted Living Stems EXCLUDING Live Stakes PER ACRE	# species
728.4341574	4
728.4341574	3
809.371286	6
445.1542073	4
364.2170787	4

	Species	All Damage Categories				
		(no damage)	Deer	Drought	Insects	
	Betula nigra	8	5	1	2	
	Carya	8	1		7	
	Celtis laevigata	10	3	4	2	1
	Cornus amomum	6	3			3
	Fraxinus pennsylvanica	8			8	
	Nyssa sylvatica	11			10	1
	Platanus occidentalis	8			3	5
	Quercus nigra	1			1	
	Quercus phellos	5	1		4	
	Salix nigra	1	1			
	Ulmus americana	7	2		4	1
	Unknown	3	1	2		
TOT:	12	76	17	7	41	11

Damage	Count	Percent Of Stems
Drought	41	53.9
(no damage)	17	22.4
Insects	11	14.5
Deer	7	9.2

	Plot	All Damage Categories				
		(no damage)	Deer	Drought	Insects	
	Lloyd-BNF-LV1-year:2007	18	4	2	11	1
	Lloyd-BNF-LV2-year:2007	18	1		17	
	Lloyd-BNF-LV3-year:2007	20	5	1	9	5
	Lloyd-BNF-LV4-year:2007	11	3		3	5
	Lloyd-BNF-LV5-year:2007	9	4	4	1	
TOT:	5	76	17	7	41	11

Species	Total Planted Stems		avg# stems	plot	plot	plot	plot	plot
	# plots							
Betula nigra	8	3	2.67	2		4		2
Carya	8	1	8		8			
Celtis laevigata	10	3	3.33	5		2		3
Cornus amomum	6	1	6				6	
Fraxinus pennsylvanica	8	1	8		8			
Nyssa sylvatica	11	4	2.75	5	2	1	3	
Platanus occidentalis	8	2	4			7		1
Quercus nigra	1	1	1				1	
Quercus phellos	5	1	5			5		
Salix nigra	1	1	1			1		
Ulmus americana	7	2	3.5	6			1	
Unknown	3	1	3					3
TOT: 12	76	12		18	18	20	11	9

Species	Total Stems		avg# stems	Lloyd-BNF-LV1-year:2007	Lloyd-BNF-LV2-year:2007	Lloyd-BNF-LV3-year:2007	Lloyd-BNF-LV4-year:2007	Lloyd-BNF-LV5-year:2007
	# plots							
Betula nigra	8	3	2.67	2		4		2
Celtis laevigata	10	3	3.33	5		2		3
Cornus amomum	6	1	6				6	
Fraxinus pennsylvanica	8	1	8		8			
Liquidambar styraciflua	2	1	2	2				
Nyssa sylvatica	11	4	2.75	5	2	1	3	
Quercus nigra	1	1	1				1	
Quercus phellos	5	1	5			5		
Salix nigra	1	1	1			1		
Carya	8	1	8		8			
Platanus occidentalis	20	2	10			19		1
Ulmus americana	7	2	3.5	6			1	
Unknown	3	1	3					3
TOT: 13	90	13		20	18	32	11	9

**Lloyd Stream and Wetland Restoration Site
Year 1 (2007) Annual Monitoring Report
Vegetation Photographs Taken September 2007**



Plot LV1



Plot LV2



Plot LV3



Plot LV4

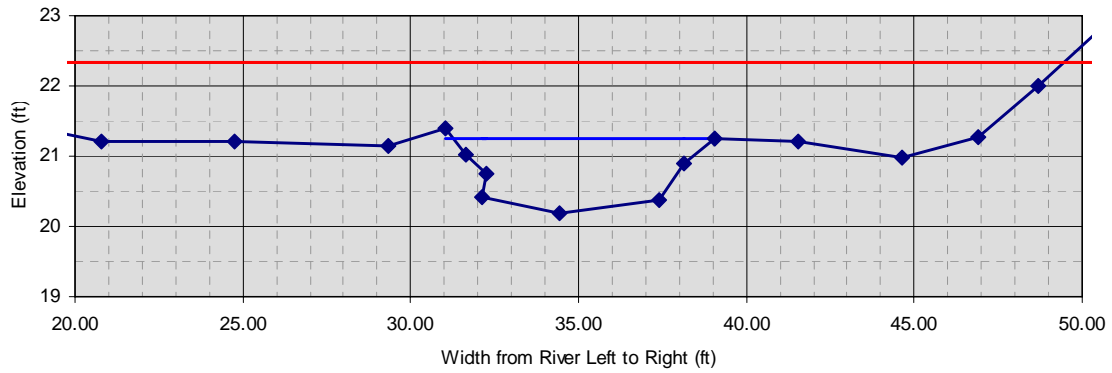


Plot LV5

Appendix B

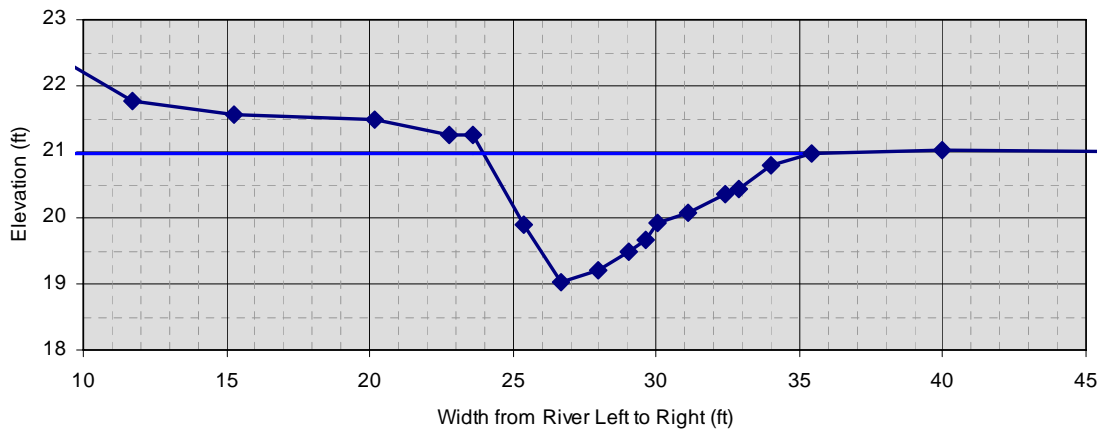
Stream Data

Reach 1 - X5 Riffle Lloyd Stream and Wetland Restoration Site



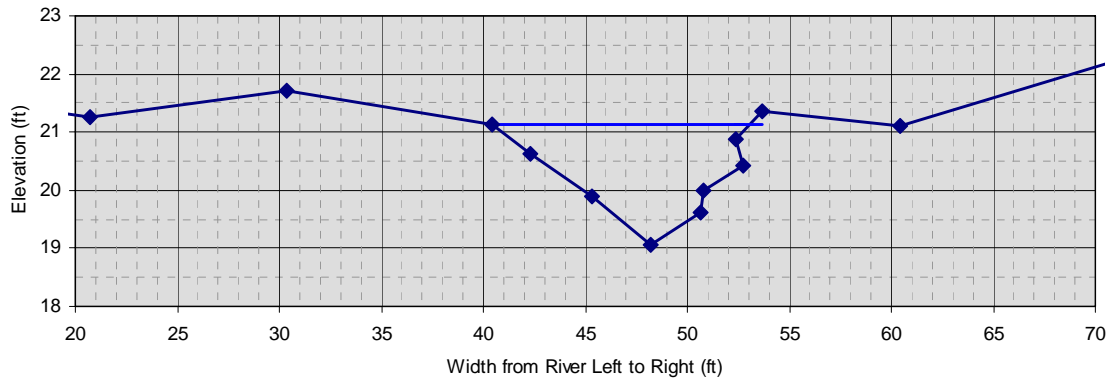
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1.1	bank ht	10.7	w/d ratio	
39.000	W flood prone area	4.8	ent ratio	

Reach 1 - X6 Pool Lloyd Stream and Wetland Restoration Site



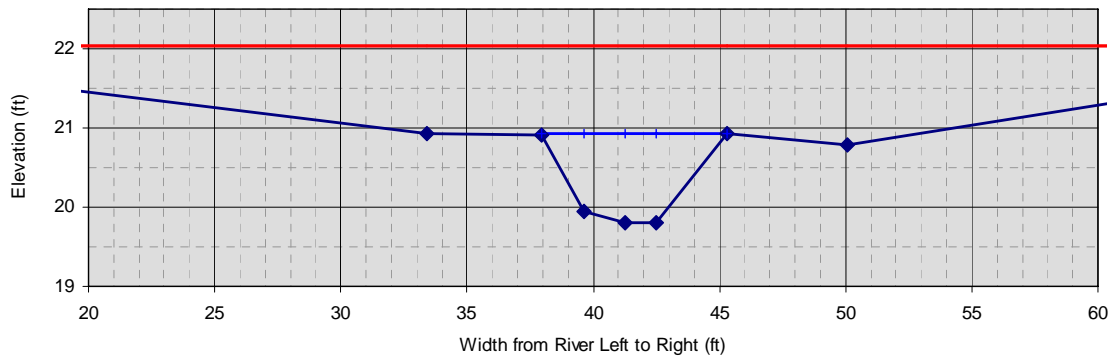
dimensions				
11.2	x-section area	1.0	d mean	
11.5	width	12.4	wet P	
2.0	d max	0.9	hyd radi	
2.0	bank ht	11.8	w/d ratio	
63.0	W flood prone area	5.5	ent ratio	

Reach 1 - X7 Pool Lloyd Stream and Wetland Restoration Site



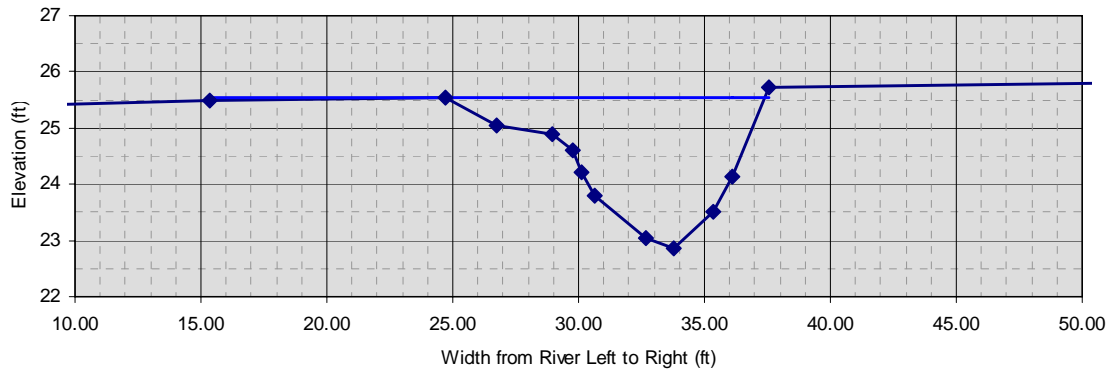
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14.6	x-section area	1.1	d mean	
13.4	width	14.3	wet P	
2.1	d max	1.0	hyd radi	
2.1	bank ht	12.3	w/d ratio	
100.000	W flood prone area	7.5	ent ratio	

Reach 1 - X8 Riffle Lloyd Stream and Wetland Restoration Site



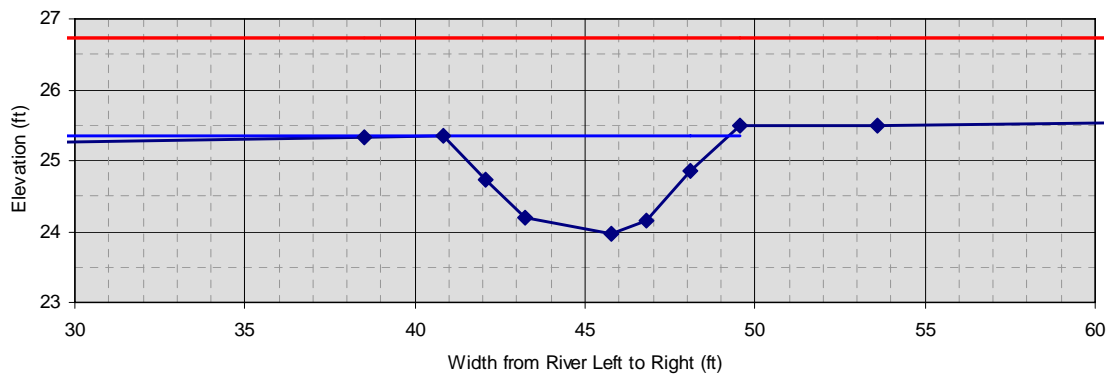
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5.5	x-section area	0.7	d mean	
7.4	width	7.9	wet P	
1.1	d max	0.7	hyd radi	
1.1	bank ht	9.9	w/d ratio	
90.000	W flood prone area	12.2	ent ratio	

Reach 2 - X1 Pool Lloyd Stream and Wetland Restoration Site



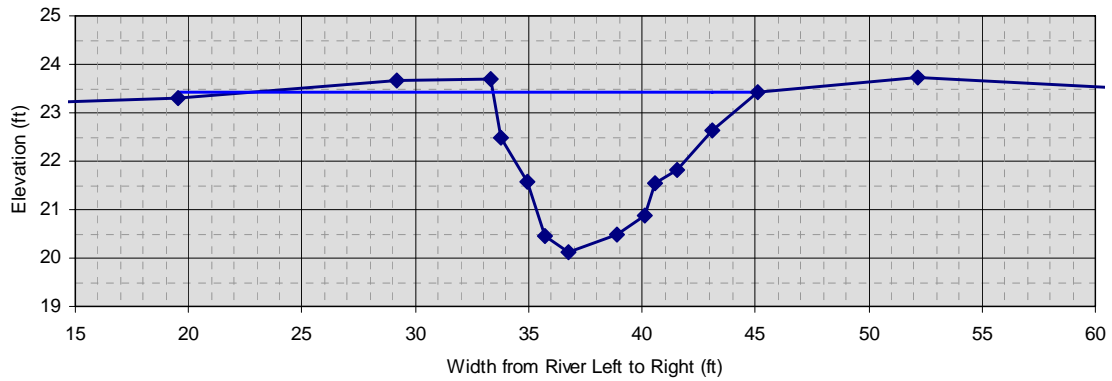
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16.7	x-section area	1.3	d mean	
12.7	width	14.3	wet P	
2.7	d max	1.2	hyd radi	
2.7	bank ht	9.6	w/d ratio	
100.000	W flood prone area	7.9	ent ratio	

Reach 2 - X2 Riffle Lloyd Stream and Wetland Restoration Site



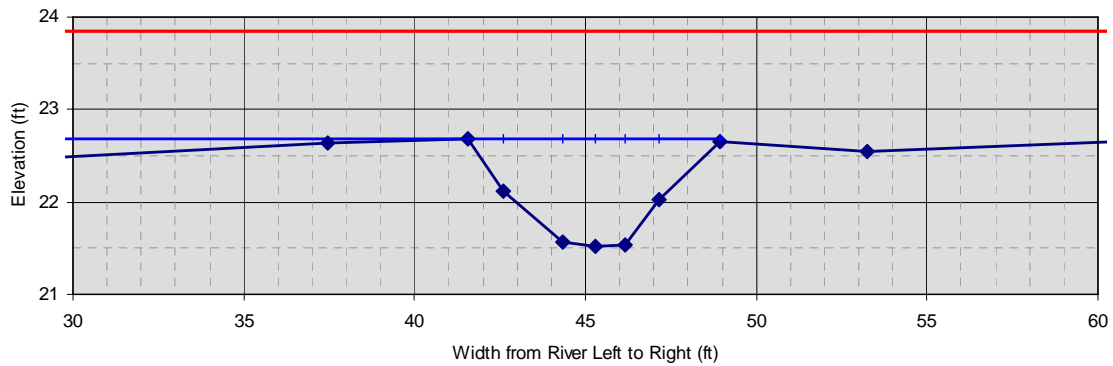
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8.3	width	8.9	wet P	
1.4	d max	0.8	hyd radi	
1.4	bank ht	9.5	w/d ratio	
100.000	W flood prone area	12.0	ent ratio	

Reach 2 - X3 Pool Lloyd Stream and Wetland Restoration Site



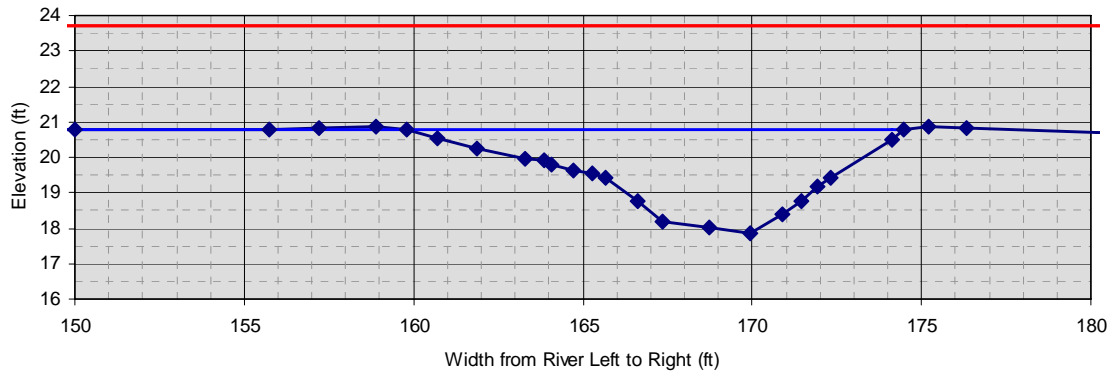
dimensions				
22.3	x-section area	1.9	d mean	
11.7	width	14.1	wet P	
3.3	d max	1.6	hyd radi	
3.3	bank ht	6.1	w/d ratio	
150.000	W flood prone area		ent ratio	12.8

Reach 2 - X4 Riffle Lloyd Stream and Wetland Restoration Site



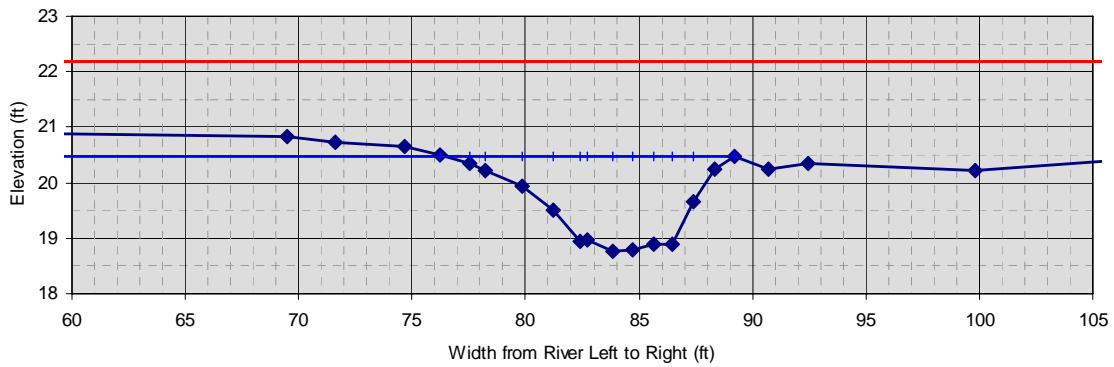
dimensions				
5.4	x-section area	0.7	d mean	
7.4	width	7.9	wet P	
1.2	d max	0.7	hyd radi	
1.2	bank ht	10.2	w/d ratio	
120.000	W flood prone area		ent ratio	16.2

Reach 3 - X9 Pool Lloyd Stream and Wetland Restoration Site



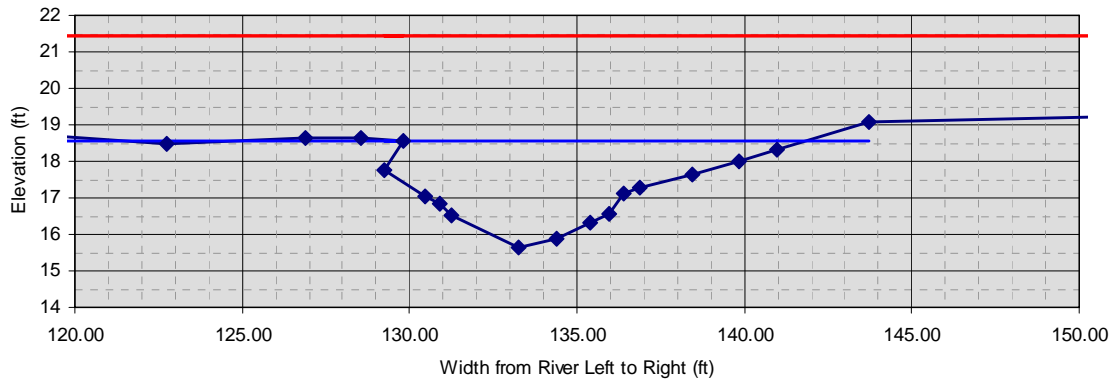
dimensions				
21.2	x-section area		1.4	d mean
14.7	width		16.1	wet P
2.9	d max		1.3	hyd radi
2.9	bank ht		10.1	w/d ratio
200.000	W flood prone area		13.6	ent ratio

Reach 3 - X10 Riffle Lloyd Stream and Wetland Restoration Site



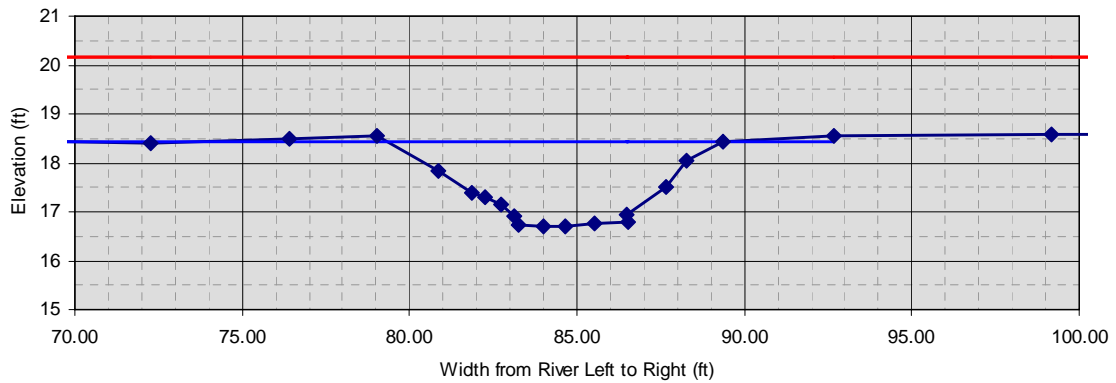
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11.1	x-section area		1.0	d mean
10.9	width		11.5	wet P
1.7	d max		1.0	hyd radi
1.7	bank ht		10.8	w/d ratio
110.000	W flood prone area		10.1	ent ratio

Reach 3 - X11 Pool Lloyd Stream and Wetland Restoration Site

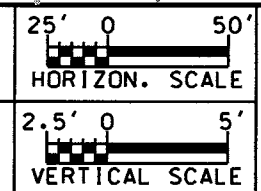
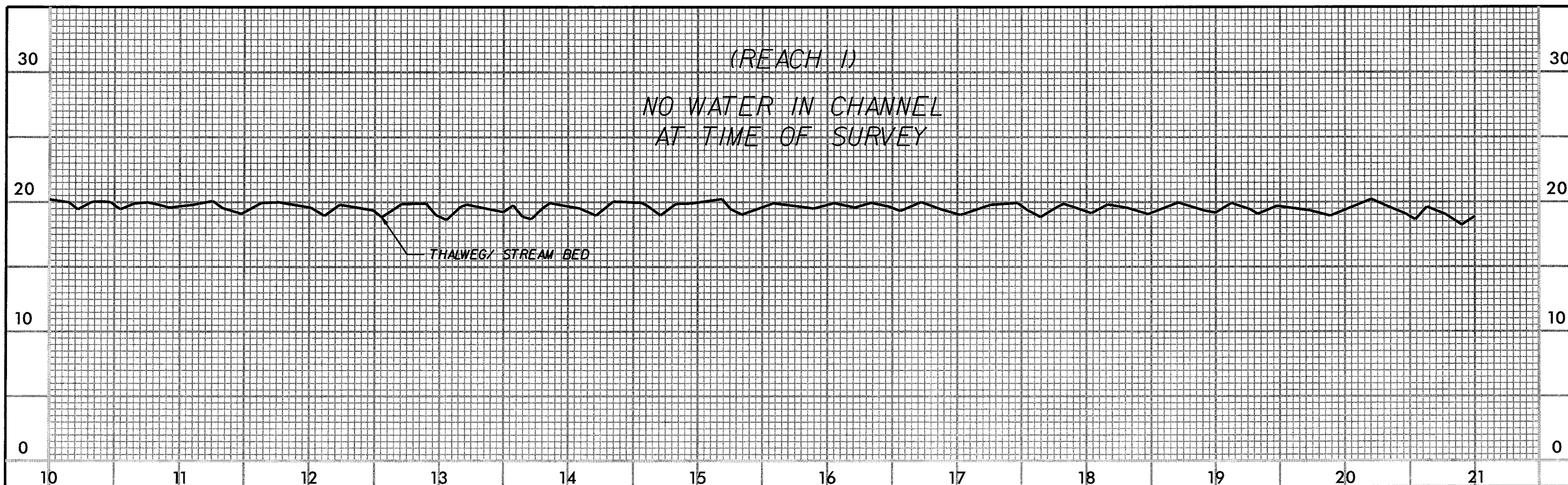


dimensions			
19.3	x-section area	1.5	d mean
13.1	width	14.6	wet P
2.9	d max	1.3	hyd radi
2.9	bank ht	8.8	w/d ratio
230.000	W flood prone area	17.6	ent ratio

Reach 3 - X12 Riffle Lloyd Stream and Wetland Restoration Site



dimensions			
10.6	x-section area	1.0	d mean
10.1	width	11.0	wet P
1.7	d max	1.0	hyd radi
1.7	bank ht	9.6	w/d ratio
170.000	W flood prone area	16.9	ent ratio



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BEN FURR
DESIGN ENGINEER

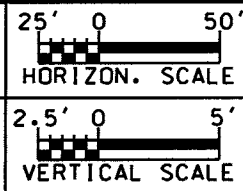
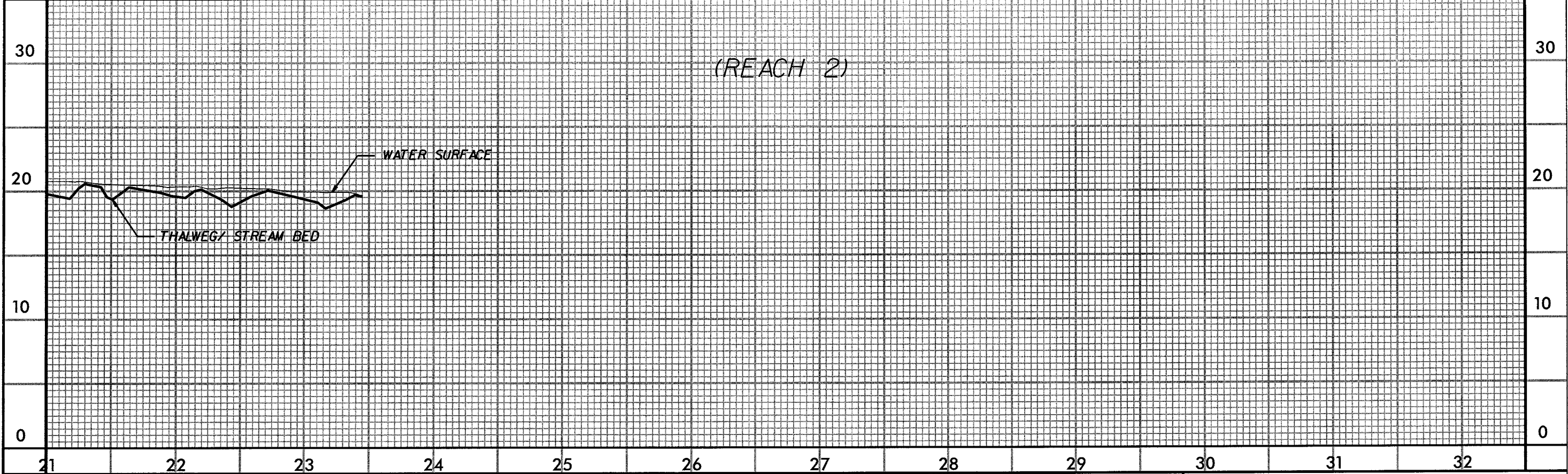
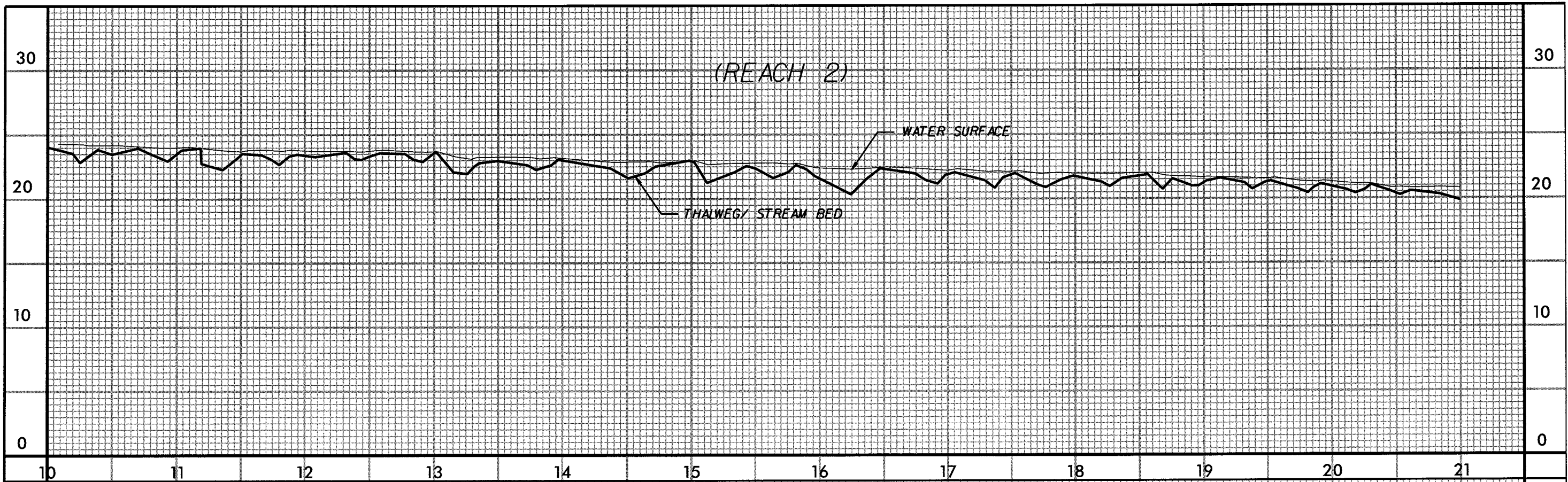
MONITORING PLANS			
NO.	WHO	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1	WMO	12/31/07	DATE OF COMPLETION
	BY	DATE	DESCRIPTION OF REVISION

RESTORATION SYSTEMS, LLC

LLOYD STREAM AND WETLAND RESTORATION SITE
ONSLow COUNTY, NORTH CAROLINA

REACH 1 PROFILE

Date: \$DATE\$
Filename: \$FILES\$



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 G & M of North Carolina, Inc.
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 Raleigh, NC 27607-5073
 Tel: 919/854-1282 Fax: 919/854-5448

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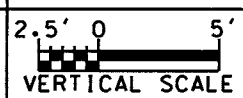
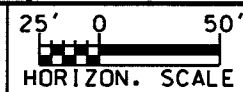
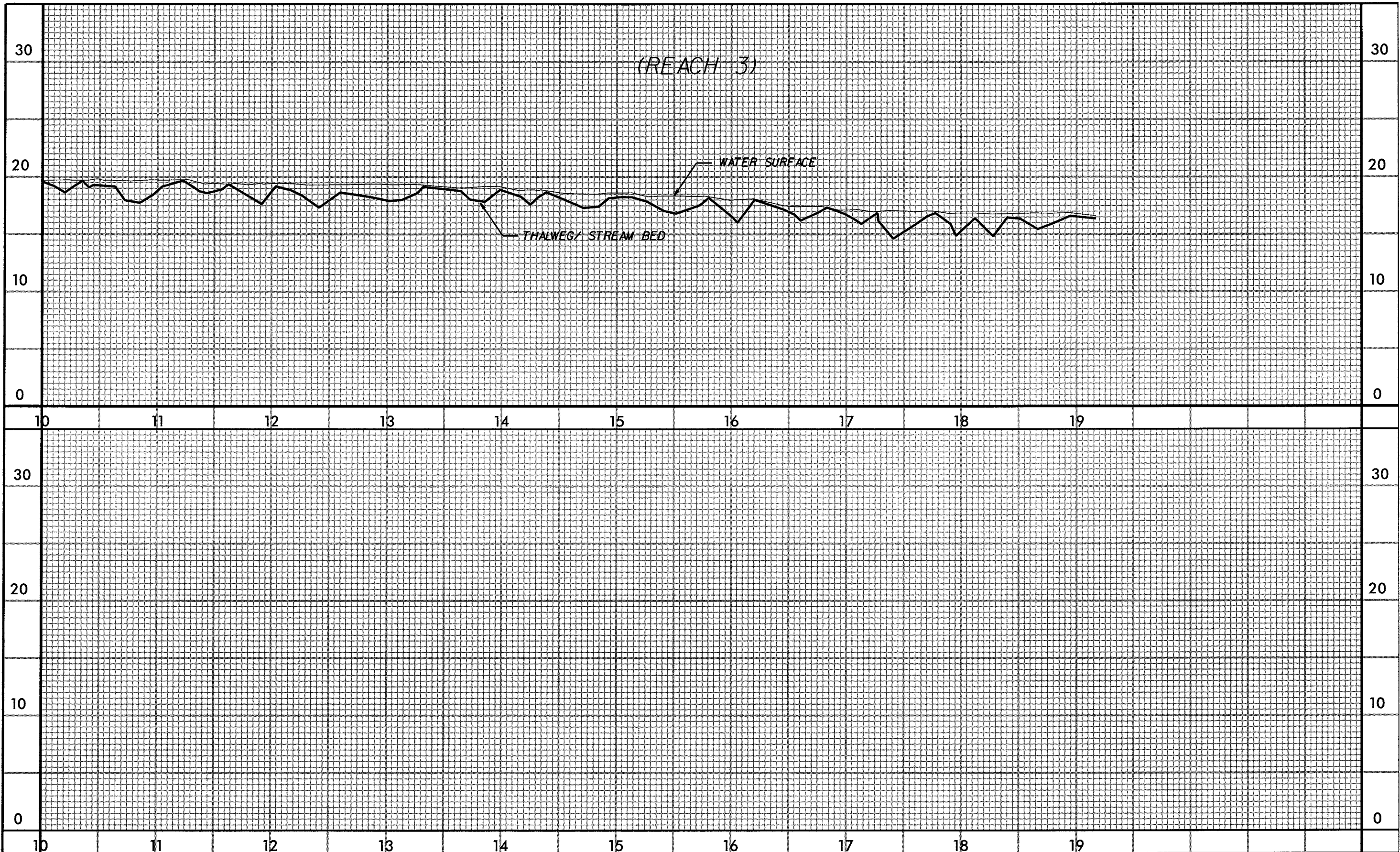
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NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
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RESTORATION SYSTEMS, LLC

LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

REACH 2 PROFILE

Dates: 12/31/07
 Files: 12/31/07



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MONITORING PLANS

NO.	BY	DATE	DESCRIPTION OF REVISION
5			
4			
3			
2			
1	WMO	12/31/07	DATE OF COMPLETION

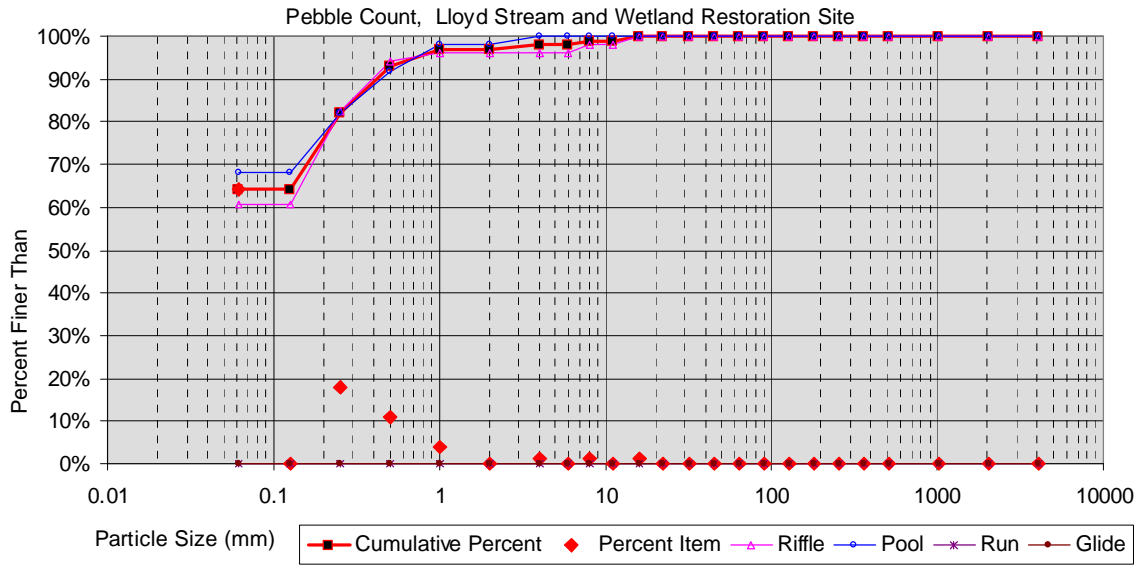
RESTORATION SYSTEMS, LLC

**LLOYD STREAM AND WETLAND
RESTORATION SITE**
ONSLOW COUNTY, NORTH CAROLINA

REACH 3 PROFILE

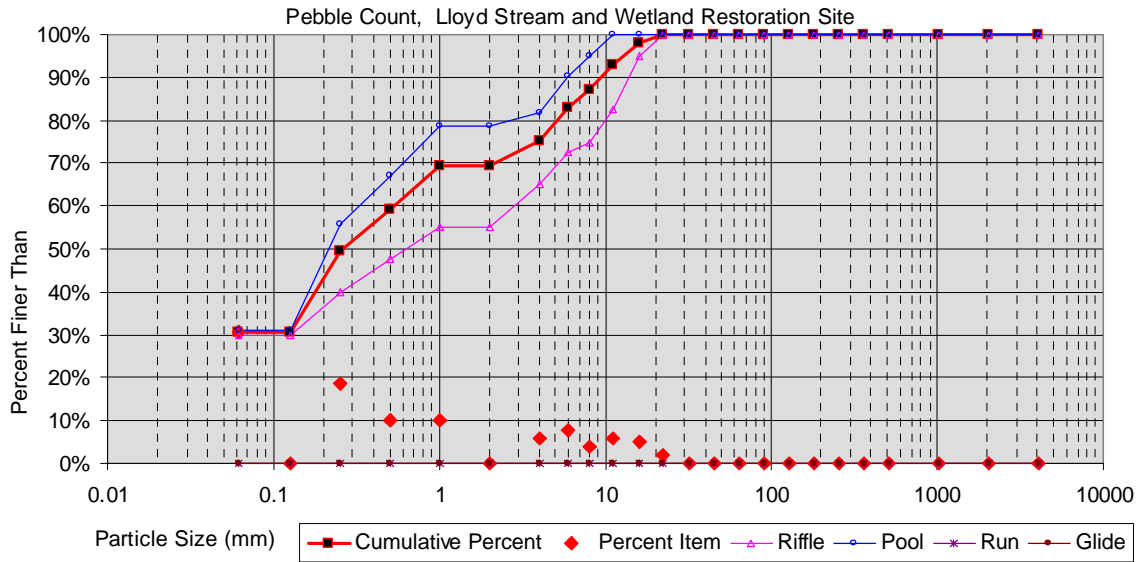
DATE: 12/31/07
FILE: 12/31/07

Pebble Count – Reach 1



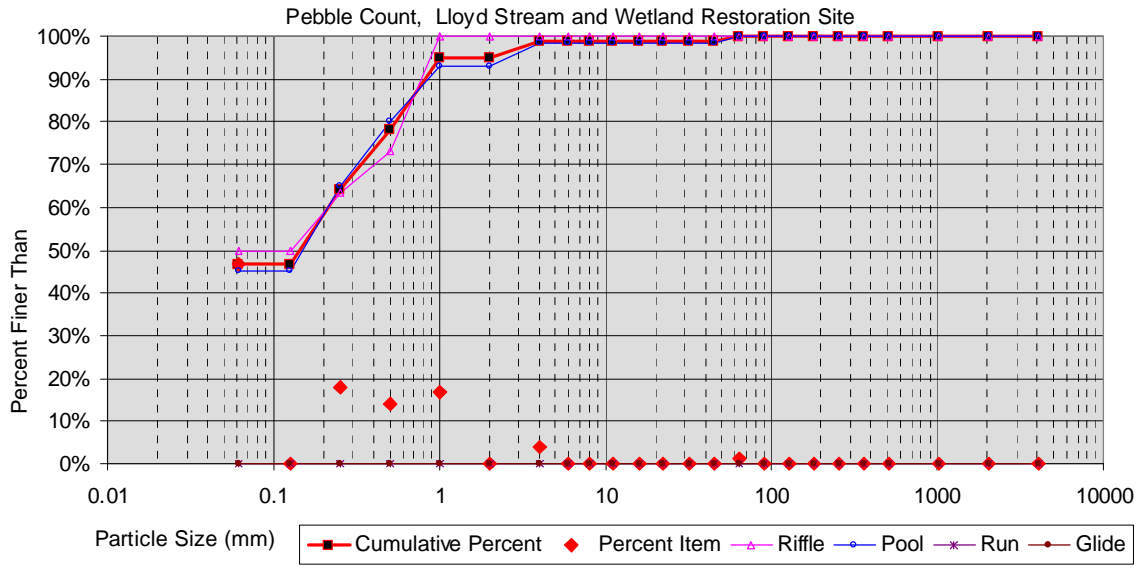
Size percent less than (mm)					Percent by substrate type					
D16	D35	D50	D84	D95	Silt/clay	sand	gravel	cobble	boulder	bedrock
#N/A	#N/A	#N/A	0	1	64%	33%	3%	0%	0%	0%

Pebble Count – Reach 2



Size percent less than (mm)					Percent by substrate type					
D16	D35	D50	D84	D95	Silt/clay	sand	gravel	cobble	boulder	bedrock
#N/A	0.15	0.3	6	13	31%	39%	31%	0%	0%	0%

Pebble Count – Reach 3



Size percent less than (mm)					Percent by substrate type						
D16	D35	D50	D84	D95	Silt/clay	sand	gravel	cobble	boulder	bedrock	
#N/A	#N/A	0.1	1	1	47%	49%	5%	0%	0%	0%	

**Lloyd Stream and Wetland Restoration Site
Year 1 (2007) Annual Monitoring Report
Photo Point Photographs Taken March 2007**



Photo Point LP1



Photo Point LP2



Photo Point LP3



Photo Point LP4



Photo Point LP5



Photo Point LP6



Photo Point LP7



Photo Point LP8



Photo Point LP9



Photo Point LP10



Photo Point LP11



Photo Point LP12



Photo Point LP13



Photo Point LP14



Photo Point LP15

**Lloyd Stream and Wetland Restoration Site
Year 1 (2007) Annual Monitoring Report
Photo Point Photographs Taken September 2007**



Photo Point LP1



Photo Point LP2



Photo Point LP3



Photo Point LP4



Photo Point LP5



Photo Point LP6



Photo Point LP7



Photo Point LP8



Photo Point LP9



Photo Point LP10



Photo Point LP11



Photo Point LP12



Photo Point LP13



Photo Point LP14

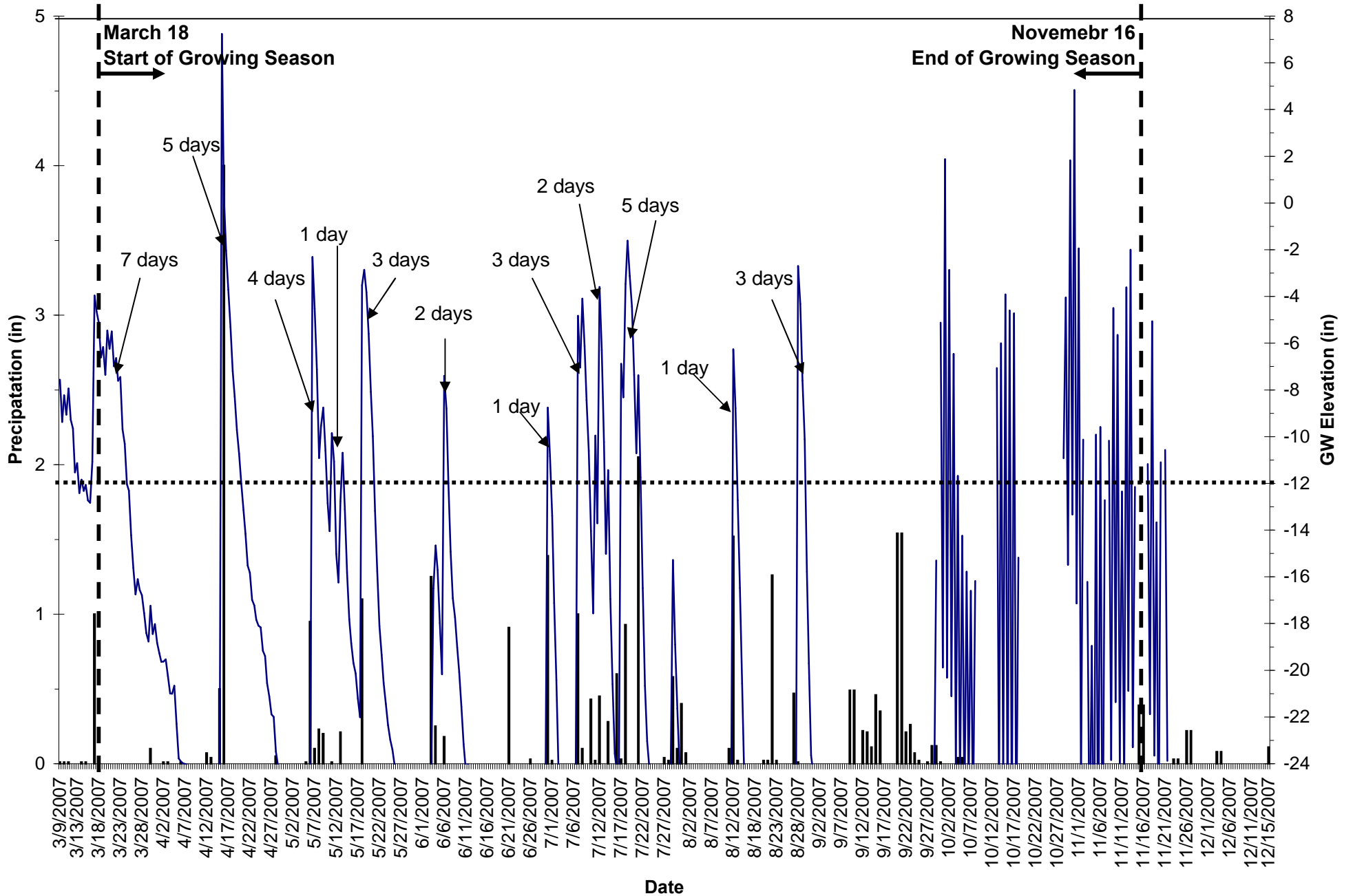


Photo Point LP15

Appendix C

Wetland Data

Lloyd Gauge 1 N45D9721



Legend: Precipitation (black bars), GW Elevation (blue line)

Lloyd 1

Data Acquired : November 18, 2007

Serial Number: N45D9721

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD
09-Mar-07	00:00:00	-7.56			04-Apr-07	00:00:00	-21		18	30-Apr-07	00:00:00	-24.31		44
09-Mar-07	12:00:00	-9.37			04-Apr-07	12:00:00	-20.66		18	30-Apr-07	12:00:00	-24.33		44
10-Mar-07	00:00:00	-8.23			05-Apr-07	00:00:00	-22.28		19	01-May-07	00:00:00	-24.37		45
10-Mar-07	12:00:00	-9.06			05-Apr-07	12:00:00	-23.77		19	01-May-07	12:00:00	-24.4		45
11-Mar-07	00:00:00	-7.94			06-Apr-07	00:00:00	-23.91		20	02-May-07	00:00:00	-24.42		46
11-Mar-07	12:00:00	-9.28			06-Apr-07	12:00:00	-23.98		20	02-May-07	12:00:00	-24.42		46
12-Mar-07	00:00:00	-9.65			07-Apr-07	00:00:00	-24.01		21	03-May-07	00:00:00	-24.44		47
12-Mar-07	12:00:00	-11.53			07-Apr-07	12:00:00	-24.06		21	03-May-07	12:00:00	-24.46		47
13-Mar-07	00:00:00	-11.13			08-Apr-07	00:00:00	-24.1		22	04-May-07	00:00:00	-24.48		48
13-Mar-07	12:00:00	-12.42			08-Apr-07	12:00:00	-24.15		22	04-May-07	12:00:00	-24.49		48
14-Mar-07	00:00:00	-11.84			09-Apr-07	00:00:00	-24.18		23	05-May-07	00:00:00	-24.49		49
14-Mar-07	12:00:00	-12.32			09-Apr-07	12:00:00	-24.19		23	05-May-07	12:00:00	-24.5		49
15-Mar-07	00:00:00	-12.07			10-Apr-07	00:00:00	-24.19		24	06-May-07	00:00:00	-24.51		50
15-Mar-07	12:00:00	-12.73			10-Apr-07	12:00:00	-24.23		24	06-May-07	12:00:00	-2.31	1	50
16-Mar-07	00:00:00	-12.83			11-Apr-07	00:00:00	-24.26		25	07-May-07	00:00:00	-4.52	1	51
16-Mar-07	12:00:00	-11.07			11-Apr-07	12:00:00	-24.26		25	07-May-07	12:00:00	-7.12	2	51
17-Mar-07	00:00:00	-3.96			12-Apr-07	00:00:00	-24.28		26	08-May-07	00:00:00	-10.92	2	52
17-Mar-07	12:00:00	-4.63			12-Apr-07	12:00:00	-24.28		26	08-May-07	12:00:00	-9.53	3	52
18-Mar-07	00:00:00	-5.11	1	1	13-Apr-07	00:00:00	-24.31		27	09-May-07	00:00:00	-8.76	3	53
18-Mar-07	12:00:00	-6.61	1	1	13-Apr-07	12:00:00	-24.33		27	09-May-07	12:00:00	-10.6	4	53
19-Mar-07	00:00:00	-6.17	2	2	14-Apr-07	00:00:00	-24.34		28	10-May-07	00:00:00	-12.85		54
19-Mar-07	12:00:00	-7.35	2	2	14-Apr-07	12:00:00	-24.31		28	10-May-07	12:00:00	-14.05		54
20-Mar-07	00:00:00	-5.46	3	3	15-Apr-07	00:00:00	-24.32		29	11-May-07	00:00:00	-9.85	1	55
20-Mar-07	12:00:00	-6.24	3	3	15-Apr-07	12:00:00	7.24	1	29	11-May-07	12:00:00	-11.07	1	55
21-Mar-07	00:00:00	-5.5	4	4	16-Apr-07	00:00:00	0.28	1	30	12-May-07	00:00:00	-15.03		56
21-Mar-07	12:00:00	-6.99	4	4	16-Apr-07	12:00:00	-2.04	2	30	12-May-07	12:00:00	-16.24		56
22-Mar-07	00:00:00	-6.64	5	5	17-Apr-07	00:00:00	-3.71	2	31	13-May-07	00:00:00	-12.76		57
22-Mar-07	12:00:00	-7.61	5	5	17-Apr-07	12:00:00	-5.31	3	31	13-May-07	12:00:00	-10.69	1	57
23-Mar-07	00:00:00	-7.45	6	6	18-Apr-07	00:00:00	-7.19	3	32	14-May-07	00:00:00	-13.11		58
23-Mar-07	12:00:00	-9.68	6	6	18-Apr-07	12:00:00	-8.28	4	32	14-May-07	12:00:00	-15.82		58
24-Mar-07	00:00:00	-10.3	7	7	19-Apr-07	00:00:00	-9.71	4	33	15-May-07	00:00:00	-17.82		59
24-Mar-07	12:00:00	-12.04		7	19-Apr-07	12:00:00	-10.73	5	33	15-May-07	12:00:00	-18.84		59
25-Mar-07	00:00:00	-12.31		8	20-Apr-07	00:00:00	-12.01		34	16-May-07	00:00:00	-19.69		60
25-Mar-07	12:00:00	-14.22		8	20-Apr-07	12:00:00	-13.14		34	16-May-07	12:00:00	-20.14		60
26-Mar-07	00:00:00	-15.62		9	21-Apr-07	00:00:00	-14.16		35	17-May-07	00:00:00	-21.21		61
26-Mar-07	12:00:00	-16.75		9	21-Apr-07	12:00:00	-15.52		35	17-May-07	12:00:00	-22.01		61
27-Mar-07	00:00:00	-16.1		10	22-Apr-07	00:00:00	-15.83		36	18-May-07	00:00:00	-3.52	1	62
27-Mar-07	12:00:00	-16.56		10	22-Apr-07	12:00:00	-16.99		36	18-May-07	12:00:00	-2.86	1	62
28-Mar-07	00:00:00	-16.79		11	23-Apr-07	00:00:00	-17.22		37	19-May-07	00:00:00	-3.82	2	63
28-Mar-07	12:00:00	-17.55		11	23-Apr-07	12:00:00	-17.84		37	19-May-07	12:00:00	-5.59	2	63
29-Mar-07	00:00:00	-18.41		12	24-Apr-07	00:00:00	-18.09		38	20-May-07	00:00:00	-8.08	3	64
29-Mar-07	12:00:00	-18.77		12	24-Apr-07	12:00:00	-18.17		38	20-May-07	12:00:00	-9.98	3	64
30-Mar-07	00:00:00	-17.24		13	25-Apr-07	00:00:00	-19.16		39	21-May-07	00:00:00	-13.18		65
30-Mar-07	12:00:00	-18.45		13	25-Apr-07	12:00:00	-19.39		39	21-May-07	12:00:00	-15.76		65
31-Mar-07	00:00:00	-18.02		14	26-Apr-07	00:00:00	-20.55		40	22-May-07	00:00:00	-18.11		66
31-Mar-07	12:00:00	-18.83		14	26-Apr-07	12:00:00	-21.12		40	22-May-07	12:00:00	-19.34		66
01-Apr-07	00:00:00	-19.27		15	27-Apr-07	00:00:00	-21.89		41	23-May-07	00:00:00	-20.54		67
01-Apr-07	12:00:00	-19.64		15	27-Apr-07	12:00:00	-21.99		41	23-May-07	12:00:00	-21.44		67
02-Apr-07	00:00:00	-19.63		16	28-Apr-07	00:00:00	-23.48		42	24-May-07	00:00:00	-22.35		68
02-Apr-07	12:00:00	-19.53		16	28-Apr-07	12:00:00	-24.05		42	24-May-07	12:00:00	-22.97		68
03-Apr-07	00:00:00	-20.25		17	29-Apr-07	00:00:00	-24.2		43	25-May-07	00:00:00	-23.4		69
03-Apr-07	12:00:00	-20.99		17	29-Apr-07	12:00:00	-24.26		43	25-May-07	12:00:00	-24.01		69

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Data Acquired : November 18, 2007

Serial Number: N45D9721

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

26-May-07	00:00:00	-24.18		70	24-Jun-07	00:00:00	-24.55		99	24-Jul-07	00:00:00	-24.07		129
26-May-07	12:00:00	-24.26		70	25-Jun-07	12:00:00	-24.57		100	24-Jul-07	12:00:00	-24.1		129
27-May-07	00:00:00	-24.29		71	25-Jun-07	00:00:00	-24.58		100	25-Jul-07	00:00:00	-24.12		130
27-May-07	12:00:00	-24.34		71	26-Jun-07	12:00:00	-24.6		101	25-Jul-07	12:00:00	-24.15		130
28-May-07	00:00:00	-24.38		72	26-Jun-07	00:00:00	-24.55		101	26-Jul-07	00:00:00	-24.15		131
28-May-07	12:00:00	-24.34		72	27-Jun-07	12:00:00	-24.54		102	26-Jul-07	12:00:00	-24.17		131
29-May-07	00:00:00	-24.39		73	27-Jun-07	00:00:00	-24.57		102	27-Jul-07	00:00:00	-24.19		132
29-May-07	12:00:00	-24.42		73	28-Jun-07	12:00:00	-24.59		103	27-Jul-07	12:00:00	-24.2		132
30-May-07	00:00:00	-24.44		74	28-Jun-07	00:00:00	-24.53		103	28-Jul-07	00:00:00	-24.19		133
30-May-07	12:00:00	-24.42		74	29-Jun-07	12:00:00	-24.55		104	28-Jul-07	12:00:00	-24.2		133
31-May-07	00:00:00	-24.43		75	29-Jun-07	00:00:00	-24.54		104	29-Jul-07	00:00:00	-15.28		134
31-May-07	12:00:00	-24.43		75	30-Jun-07	12:00:00	-8.76	1	105	29-Jul-07	12:00:00	-18.9		134
01-Jun-07	00:00:00	-24.41		76	30-Jun-07	00:00:00	-10.84	1	105	30-Jul-07	00:00:00	-21.64		135
01-Jun-07	12:00:00	-24.42		76	01-Jul-07	12:00:00	-13.39		106	30-Jul-07	12:00:00	-24.14		135
02-Jun-07	00:00:00	-24.45		77	01-Jul-07	00:00:00	-17.13		106	31-Jul-07	00:00:00	-24.2		136
02-Jun-07	12:00:00	-24.45		77	02-Jul-07	12:00:00	-20.42		107	31-Jul-07	12:00:00	-24.22		136
03-Jun-07	00:00:00	-24.35		78	02-Jul-07	00:00:00	-24.39		107	01-Aug-07	00:00:00	-24.23		137
03-Jun-07	12:00:00	-16.5		78	03-Jul-07	12:00:00	-24.29		108	01-Aug-07	12:00:00	-24.27		137
04-Jun-07	00:00:00	-14.66		79	03-Jul-07	00:00:00	-24.25		108	02-Aug-07	00:00:00	-24.3		138
04-Jun-07	12:00:00	-15.71		79	04-Jul-07	12:00:00	-24.25		109	02-Aug-07	12:00:00	-24.32		138
05-Jun-07	00:00:00	-17.98		80	04-Jul-07	00:00:00	-24.26		109	03-Aug-07	00:00:00	-24.34		139
05-Jun-07	12:00:00	-20.17		80	05-Jul-07	12:00:00	-24.25		110	03-Aug-07	12:00:00	-24.37		139
06-Jun-07	00:00:00	-7.4	1	81	05-Jul-07	00:00:00	-24.24		110	04-Aug-07	00:00:00	-24.38		140
06-Jun-07	12:00:00	-8.8	1	81	06-Jul-07	12:00:00	-24.23		111	04-Aug-07	12:00:00	-24.39		140
07-Jun-07	00:00:00	-11.99	2	82	06-Jul-07	00:00:00	-24.23		111	05-Aug-07	00:00:00	-24.39		141
07-Jun-07	12:00:00	-14.92		82	07-Jul-07	12:00:00	-4.83	1	112	05-Aug-07	12:00:00	-24.4		141
08-Jun-07	00:00:00	-16.92		83	07-Jul-07	00:00:00	-7.04	2	112	06-Aug-07	00:00:00	-24.38		142
08-Jun-07	12:00:00	-17.73		83	08-Jul-07	12:00:00	-4.09	2	113	06-Aug-07	12:00:00	-24.41		142
09-Jun-07	00:00:00	-19.02		84	08-Jul-07	00:00:00	-6.12	3	113	07-Aug-07	00:00:00	-24.39		143
09-Jun-07	12:00:00	-20.08		84	09-Jul-07	12:00:00	-8.44	3	114	07-Aug-07	12:00:00	-24.4		143
10-Jun-07	00:00:00	-21.56		85	09-Jul-07	00:00:00	-10.61	4	114	08-Aug-07	00:00:00	-24.38		144
10-Jun-07	12:00:00	-23.16		85	10-Jul-07	12:00:00	-14.04		115	08-Aug-07	12:00:00	-24.37		144
11-Jun-07	00:00:00	-24.27		86	10-Jul-07	00:00:00	-17.56		115	09-Aug-07	00:00:00	-24.36		145
11-Jun-07	12:00:00	-24.04		86	11-Jul-07	12:00:00	-9.96	1	116	09-Aug-07	12:00:00	-24.37		145
12-Jun-07	00:00:00	-24.12		87	11-Jul-07	00:00:00	-13.71	2	116	10-Aug-07	00:00:00	-24.36		146
12-Jun-07	12:00:00	-24.27		87	12-Jul-07	12:00:00	-3.59	2	117	10-Aug-07	12:00:00	-24.33		146
13-Jun-07	00:00:00	-24.28		88	12-Jul-07	00:00:00	-6.3	3	117	11-Aug-07	00:00:00	-24.32		147
13-Jun-07	12:00:00	-24.3		88	13-Jul-07	12:00:00	-10.23	3	118	11-Aug-07	12:00:00	-24.33		147
14-Jun-07	00:00:00	-24.3		89	13-Jul-07	00:00:00	-15.02	4	118	12-Aug-07	00:00:00	-6.26	1	148
14-Jun-07	12:00:00	-24.32		89	14-Jul-07	12:00:00	-11.44	4	119	12-Aug-07	12:00:00	-8.79	1	148
15-Jun-07	00:00:00	-24.34		90	14-Jul-07	00:00:00	-16.95		119	13-Aug-07	00:00:00	-12.73		149
15-Jun-07	12:00:00	-24.36		90	15-Jul-07	12:00:00	-20.6		120	13-Aug-07	12:00:00	-16.48		149
16-Jun-07	00:00:00	-24.37		91	15-Jul-07	00:00:00	-23.57		120	14-Aug-07	00:00:00	-20.57		150
16-Jun-07	12:00:00	-24.37		91	16-Jul-07	12:00:00	-24.28		121	14-Aug-07	12:00:00	-24.33		150
17-Jun-07	00:00:00	-24.37		92	16-Jul-07	00:00:00	-24.33		121	15-Aug-07	00:00:00	-24.19		151
17-Jun-07	12:00:00	-24.38		92	17-Jul-07	12:00:00	-6.88	1	122	15-Aug-07	12:00:00	-24.21		151
18-Jun-07	00:00:00	-24.39		93	17-Jul-07	00:00:00	-8.32	2	122	16-Aug-07	00:00:00	-24.22		152
18-Jun-07	12:00:00	-24.39		93	18-Jul-07	12:00:00	-3.46	2	123	16-Aug-07	12:00:00	-24.24		152
19-Jun-07	00:00:00	-24.32		94	18-Jul-07	00:00:00	-1.61	3	123	17-Aug-07	00:00:00	-24.24		153
19-Jun-07	12:00:00	-24.34		94	19-Jul-07	12:00:00	-3.12	3	124	17-Aug-07	12:00:00	-24.24		153
20-Jun-07	00:00:00	-24.35		95	19-Jul-07	00:00:00	-4.44	4	124	18-Aug-07	00:00:00	-24.24		154
20-Jun-07	12:00:00	-24.35		95	20-Jul-07	12:00:00	-7.35	4	125	18-Aug-07	12:00:00	-24.25		154
21-Jun-07	00:00:00	-24.37		96	20-Jul-07	00:00:00	-10.71	5	125	19-Aug-07	00:00:00	-24.27		155
21-Jun-07	12:00:00	-24.41		96	21-Jul-07	12:00:00	-7.37	5	126	19-Aug-07	12:00:00	-24.28		155
22-Jun-07	00:00:00	-24.46		97	21-Jul-07	00:00:00	-11.75	6	126	20-Aug-07	00:00:00	-24.28		156
22-Jun-07	12:00:00	-24.5		97	22-Jul-07	12:00:00	-16.49		127	20-Aug-07	12:00:00	-24.28		156
23-Jun-07	00:00:00	-24.49		98	22-Jul-07	00:00:00	-20.66		127	21-Aug-07	00:00:00	-24.28		157
23-Jun-07	12:00:00	-24.51		98	23-Jul-07	12:00:00	-23.04		128	21-Aug-07	12:00:00	-24.29		157
24-Jun-07	00:00:00	-24.53		99	23-Jul-07	00:00:00	-24.07		128	22-Aug-07	00:00:00	-24.28		158

Lloyd 1

Data Acquired : November 18, 2007

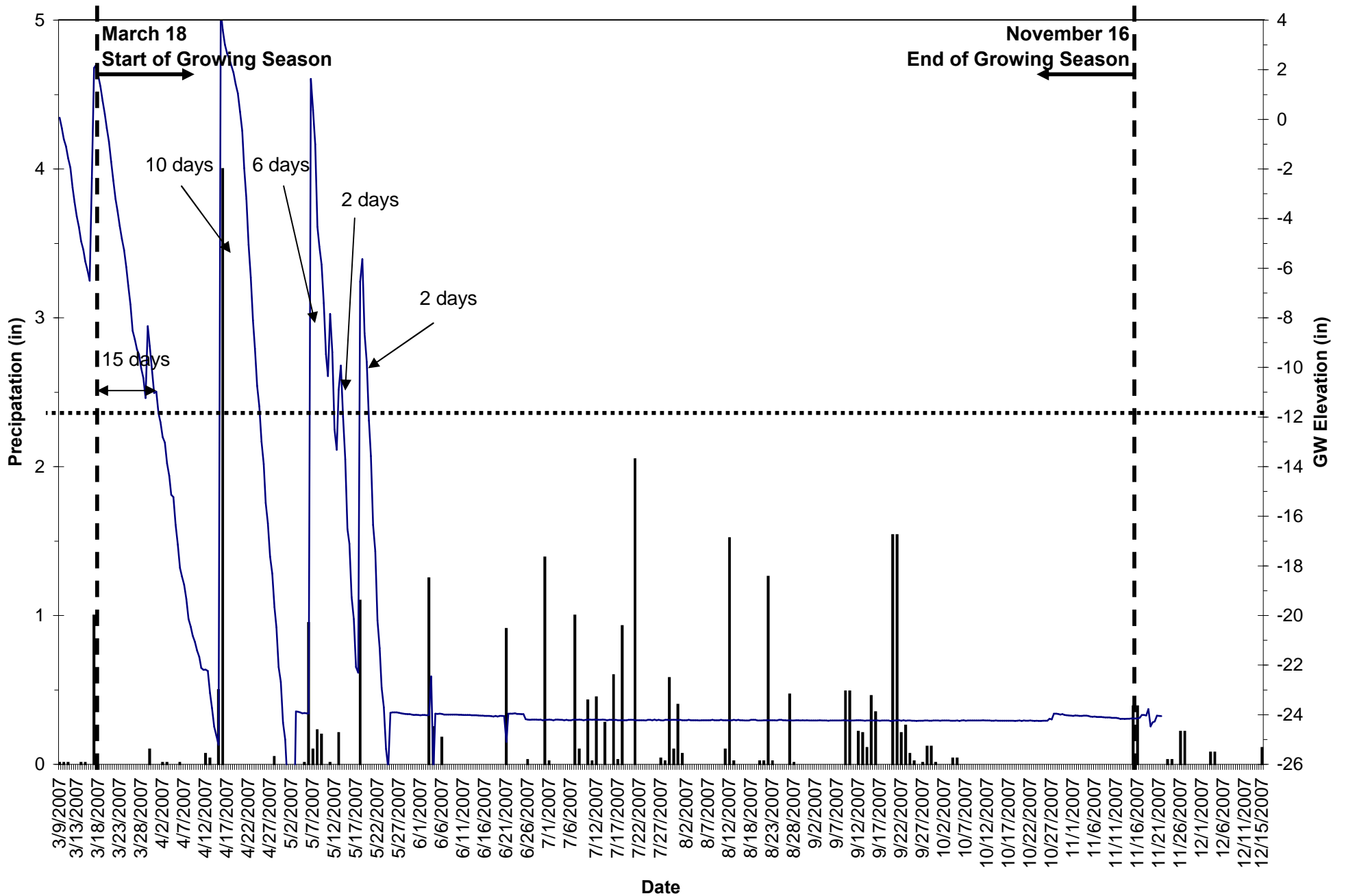
Serial Number: N45D9721

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

22-Aug-07	12:00:00	-24.27		158	21-Sep-07	12:00:00	-24.47		187.7	20-Oct-07	12:00:00	N/A		217
23-Aug-07	00:00:00	-24.27		159	21-Sep-07	00:00:00	-24.47		188	21-Oct-07	00:00:00	-13.4		218
23-Aug-07	12:00:00	-24.27		159	22-Sep-07	12:00:00	-24.46		189	21-Oct-07	12:00:00	N/A		218
24-Aug-07	00:00:00	-24.28		160	22-Sep-07	00:00:00	-24.45		189	22-Oct-07	00:00:00	-15.03		219
24-Aug-07	12:00:00	-24.3		160	23-Sep-07	12:00:00	-24.44		189.7	22-Oct-07	12:00:00	N/A		219
25-Aug-07	00:00:00	-24.3		161	23-Sep-07	00:00:00	-24.45		190.2	23-Oct-07	00:00:00	-19.08		220
25-Aug-07	12:00:00	-24.32		161	24-Sep-07	12:00:00	-24.45		190.7	23-Oct-07	12:00:00	N/A		220
26-Aug-07	00:00:00	-24.31		162	24-Sep-07	00:00:00	-24.47		191.2	24-Oct-07	00:00:00	N/A		221
26-Aug-07	12:00:00	-24.32		162	25-Sep-07	12:00:00	-24.46		191.7	24-Oct-07	12:00:00	N/A		221
27-Aug-07	00:00:00	-2.7	1	163	25-Sep-07	00:00:00	-24.49		192.2	25-Oct-07	00:00:00	N/A		222
27-Aug-07	12:00:00	-4.32	1	163	26-Sep-07	12:00:00	-24.5		192.7	25-Oct-07	12:00:00	N/A		222
28-Aug-07	00:00:00	-7.6	2	164	26-Sep-07	00:00:00	-24.51		193.2	26-Oct-07	00:00:00	-30.52		223
28-Aug-07	12:00:00	-10.11	2	164	27-Sep-07	12:00:00	-24.54		193.7	26-Oct-07	12:00:00	N/A		223
29-Aug-07	00:00:00	-15.78		165	27-Sep-07	00:00:00	-25.02		194.2	27-Oct-07	00:00:00	N/A		224
29-Aug-07	12:00:00	-19.71		165	28-Sep-07	12:00:00	-15.3		194.7	27-Oct-07	12:00:00	-10.93		224
30-Aug-07	00:00:00	-23.64		166	28-Sep-07	00:00:00	N/A		195.2	28-Oct-07	00:00:00	-4.05	1	225
30-Aug-07	12:00:00	-24.42		166	29-Sep-07	12:00:00	-5.12	1	195.7	28-Oct-07	12:00:00	-15.49		225
31-Aug-07	00:00:00	-24.19		167	29-Sep-07	00:00:00	-19.88		196.2	29-Oct-07	00:00:00	1.83	1	226
31-Aug-07	12:00:00	-24.22		167	30-Sep-07	12:00:00	1.87	1	196.7	29-Oct-07	12:00:00	-13.33		226
01-Sep-07	00:00:00	-24.26		168	30-Sep-07	00:00:00	-20.31		197.2	30-Oct-07	00:00:00	4.83	1	227
01-Sep-07	12:00:00	-24.31		168	01-Oct-07	12:00:00	-2.87		198	30-Oct-07	12:00:00	-17.14		227
02-Sep-07	00:00:00	-24.32		169	01-Oct-07	00:00:00	-21.11		198	31-Oct-07	00:00:00	-1.94	1	228
02-Sep-07	12:00:00	-24.37		169	02-Oct-07	12:00:00	-6.46	1	199	31-Oct-07	12:00:00	-25.14		228
03-Sep-07	00:00:00	-24.39		170	02-Oct-07	00:00:00	-24.41		199	01-Nov-07	00:00:00	-10.13	1	229
03-Sep-07	12:00:00	-24.41		170	03-Oct-07	12:00:00	-11.68		200	01-Nov-07	12:00:00	N/A		229
04-Sep-07	00:00:00	-24.4		171	03-Oct-07	00:00:00	-25.17		200	02-Nov-07	00:00:00	-16.21		230
04-Sep-07	12:00:00	-24.42		171	04-Oct-07	12:00:00	-14.24		201	02-Nov-07	12:00:00	-27.94		230
05-Sep-07	00:00:00	-24.43		171.7	04-Oct-07	00:00:00	-26.1		201	03-Nov-07	00:00:00	-18.96		231
05-Sep-07	12:00:00	-24.44		172.2	05-Oct-07	12:00:00	-15.78		202	03-Nov-07	12:00:00	-30.05		231
06-Sep-07	00:00:00	-24.44		172.7	05-Oct-07	00:00:00	-25.2		202	04-Nov-07	00:00:00	-9.92	1	232
06-Sep-07	12:00:00	-24.45		173.2	06-Oct-07	12:00:00	-16.6		203	04-Nov-07	12:00:00	-30		232
07-Sep-07	00:00:00	-24.46		173.7	06-Oct-07	00:00:00	-26.64		203	05-Nov-07	00:00:00	-9.59	1	233
07-Sep-07	12:00:00	-24.45		174.2	07-Oct-07	12:00:00	-16.18		204	05-Nov-07	12:00:00	-29.9		233
08-Sep-07	00:00:00	-24.46		174.7	07-Oct-07	00:00:00	N/A		204	06-Nov-07	00:00:00	-12.72		234
08-Sep-07	12:00:00	-24.47		175.2	08-Oct-07	12:00:00	-16.51		205	06-Nov-07	12:00:00	N/A		234
09-Sep-07	00:00:00	-24.45		175.7	08-Oct-07	00:00:00	N/A		205	07-Nov-07	00:00:00	-10.17	1	235
09-Sep-07	12:00:00	-24.44		176.2	09-Oct-07	12:00:00	-19.43		206	07-Nov-07	12:00:00	-23.84		235
10-Sep-07	00:00:00	-24.44		176.7	09-Oct-07	00:00:00	N/A		206	08-Nov-07	00:00:00	-4.5	1	236
10-Sep-07	12:00:00	-24.45		177.2	10-Oct-07	12:00:00	-24.42		207	08-Nov-07	12:00:00	-21.36		236
11-Sep-07	00:00:00	-24.43		177.7	10-Oct-07	00:00:00	N/A		207	09-Nov-07	00:00:00	-5.65	1	237
11-Sep-07	12:00:00	-24.41		178.2	11-Oct-07	12:00:00	-23.65		208	09-Nov-07	12:00:00	-23.98		237
12-Sep-07	00:00:00	-24.42		178.7	11-Oct-07	00:00:00	N/A		208	10-Nov-07	00:00:00	-12.35		238
12-Sep-07	12:00:00	-24.41		179.2	12-Oct-07	12:00:00	-7.06	1	209	10-Nov-07	12:00:00	-25.35		238
13-Sep-07	00:00:00	-24.42		179.7	12-Oct-07	00:00:00	-26.18		209	11-Nov-07	00:00:00	-3.61	1	239
13-Sep-07	12:00:00	-24.43		180.2	13-Oct-07	12:00:00	-6.01	1	210	11-Nov-07	12:00:00	-20.88		239
14-Sep-07	00:00:00	-24.42		180.7	13-Oct-07	00:00:00	-24.91		210	12-Nov-07	00:00:00	-2	1	240
14-Sep-07	12:00:00	-24.43		181.2	14-Oct-07	12:00:00	-3.91	1	211	12-Nov-07	12:00:00	-23.29		240
15-Sep-07	00:00:00	-24.41		181.7	14-Oct-07	00:00:00	-27.71		211	13-Nov-07	00:00:00	-12.15		241
15-Sep-07	12:00:00	-24.41		182.2	15-Oct-07	12:00:00	-4.6	1	212	13-Nov-07	12:00:00	N/A		241
16-Sep-07	00:00:00	-24.39		182.7	15-Oct-07	00:00:00	-27.26		212	14-Nov-07	00:00:00	-18.64		242
16-Sep-07	12:00:00	-24.39		183.2	16-Oct-07	12:00:00	-4.72	1	213	14-Nov-07	12:00:00	N/A		242
17-Sep-07	00:00:00	-24.39		183.7	16-Oct-07	00:00:00	-28.02		213	15-Nov-07	00:00:00	-24.15		245
17-Sep-07	12:00:00	-24.42		184.2	17-Oct-07	12:00:00	-15.18		214	15-Nov-07	12:00:00	N/A		245
18-Sep-07	00:00:00	-24.44		184.7	17-Oct-07	00:00:00	N/A		214	16-Nov-07	00:00:00	-11.17	1	246
18-Sep-07	12:00:00	-24.48		185.2	18-Oct-07	12:00:00	-17.15		215	16-Nov-07	12:00:00	-21.88		246
19-Sep-07	00:00:00	-24.48		185.7	18-Oct-07	00:00:00	N/A		215	17-Nov-07	00:00:00	-5.06		
19-Sep-07	12:00:00	-24.47		186.2	19-Oct-07	12:00:00	-26.15		216	17-Nov-07	12:00:00	-23.65		
20-Sep-07	00:00:00	-24.47		186.7	19-Oct-07	00:00:00	N/A		216	18-Nov-07	00:00:00	-13.67		
20-Sep-07	12:00:00	-24.48		187.2	20-Oct-07	12:00:00	N/A		217	18-Nov-07	12:00:00	-28.59		

Lloyd Gauge 2 N45DADBE



■ Precipitation — GW Elevation

Lloyd 2

Data Acquired : November 18, 2007

Serial Number: N45DADBE

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD
09-Mar-07	00:00:00	0.07			04-Apr-07	00:00:00	-15.13		18	30-Apr-07	00:00:00	-24.31		44
09-Mar-07	12:00:00	-0.36			04-Apr-07	12:00:00	-15.23		18	30-Apr-07	12:00:00	-25		44
10-Mar-07	00:00:00	-0.8			05-Apr-07	00:00:00	-16.34		19	01-May-07	00:00:00	-26.55		45
10-Mar-07	12:00:00	-1.09			05-Apr-07	12:00:00	-17.14		19	01-May-07	12:00:00	-27.18		45
11-Mar-07	00:00:00	-1.58			06-Apr-07	00:00:00	-18.08		20	02-May-07	00:00:00	-28.85		46
11-Mar-07	12:00:00	-1.95			06-Apr-07	12:00:00	-18.43		20	02-May-07	12:00:00	-29.46		46
12-Mar-07	00:00:00	-2.75			07-Apr-07	00:00:00	-18.76		21	03-May-07	00:00:00	-23.87		47
12-Mar-07	12:00:00	-3.33			07-Apr-07	12:00:00	-19.34		21	03-May-07	12:00:00	-23.88		47
13-Mar-07	00:00:00	-3.91			08-Apr-07	00:00:00	-20.14		22	04-May-07	00:00:00	-23.91		48
13-Mar-07	12:00:00	-4.34			08-Apr-07	12:00:00	-20.45		22	04-May-07	12:00:00	-23.94		48
14-Mar-07	00:00:00	-4.92			09-Apr-07	00:00:00	-20.81		23	05-May-07	00:00:00	-23.93		49
14-Mar-07	12:00:00	-5.25			09-Apr-07	12:00:00	-21.06		23	05-May-07	12:00:00	-23.94		49
15-Mar-07	00:00:00	-5.73			10-Apr-07	00:00:00	-21.41		24	06-May-07	00:00:00	-23.95		50
15-Mar-07	12:00:00	-6.08			10-Apr-07	12:00:00	-21.67		24	06-May-07	12:00:00	1.63	1	50
16-Mar-07	00:00:00	-6.51			11-Apr-07	00:00:00	-22.11		25	07-May-07	00:00:00	0.38	1	51
16-Mar-07	12:00:00	-2.37			11-Apr-07	12:00:00	-22.19		25	07-May-07	12:00:00	-1.01	2	51
17-Mar-07	00:00:00	2.07			12-Apr-07	00:00:00	-22.18		26	08-May-07	00:00:00	-4.33	2	52
17-Mar-07	12:00:00	2.19			12-Apr-07	12:00:00	-22.24		26	08-May-07	12:00:00	-5.13	3	52
18-Mar-07	00:00:00	1.76	1	1	13-Apr-07	00:00:00	-23.13		27	09-May-07	00:00:00	-5.85	3	53
18-Mar-07	12:00:00	1.33	1	1	13-Apr-07	12:00:00	-23.73		27	09-May-07	12:00:00	-7.41	4	53
19-Mar-07	00:00:00	0.75	2	2	14-Apr-07	00:00:00	-24.48		28	10-May-07	00:00:00	-9.47	4	54
19-Mar-07	12:00:00	0.22	2	2	14-Apr-07	12:00:00	-24.84		28	10-May-07	12:00:00	-10.35	5	54
20-Mar-07	00:00:00	-0.35	3	3	15-Apr-07	00:00:00	-25.21		29	11-May-07	00:00:00	-7.84	5	55
20-Mar-07	12:00:00	-0.9	3	3	15-Apr-07	12:00:00	4.36	1	29	11-May-07	12:00:00	-9.39	6	55
21-Mar-07	00:00:00	-1.71	4	4	16-Apr-07	00:00:00	3.61	1	30	12-May-07	00:00:00	-12.5		56
21-Mar-07	12:00:00	-2.48	4	4	16-Apr-07	12:00:00	3.01	2	30	12-May-07	12:00:00	-13.32		56
22-Mar-07	00:00:00	-3.21	5	5	17-Apr-07	00:00:00	2.66	2	31	13-May-07	00:00:00	-10.9	1	57
22-Mar-07	12:00:00	-3.69	5	5	17-Apr-07	12:00:00	2.44	3	31	13-May-07	12:00:00	-9.93	1	57
23-Mar-07	00:00:00	-4.29	6	6	18-Apr-07	00:00:00	2.14	3	32	14-May-07	00:00:00	-11.99	2	58
23-Mar-07	12:00:00	-4.82	6	6	18-Apr-07	12:00:00	1.89	4	32	14-May-07	12:00:00	-13.71		58
24-Mar-07	00:00:00	-5.27	7	7	19-Apr-07	00:00:00	1.42	4	33	15-May-07	00:00:00	-16.52		59
24-Mar-07	12:00:00	-5.96	7	7	19-Apr-07	12:00:00	1.05	5	33	15-May-07	12:00:00	-17.11		59
25-Mar-07	00:00:00	-6.7	8	8	20-Apr-07	00:00:00	0.31	5	34	16-May-07	00:00:00	-19.26		60
25-Mar-07	12:00:00	-7.46	8	8	20-Apr-07	12:00:00	-0.46	6	34	16-May-07	12:00:00	-20.14		60
26-Mar-07	00:00:00	-8.52	9	9	21-Apr-07	00:00:00	-1.97	6	35	17-May-07	00:00:00	-22.08		61
26-Mar-07	12:00:00	-8.87	9	9	21-Apr-07	12:00:00	-3.21	7	35	17-May-07	12:00:00	-22.31		61
27-Mar-07	00:00:00	-9.28	10	10	22-Apr-07	00:00:00	-5.06	7	36	18-May-07	00:00:00	-6.54	1	62
27-Mar-07	12:00:00	-9.48	10	10	22-Apr-07	12:00:00	-6.37	8	36	18-May-07	12:00:00	-5.63	1	62
28-Mar-07	00:00:00	-10.03	11	11	23-Apr-07	00:00:00	-8.11	8	37	19-May-07	00:00:00	-8.62	2	63
28-Mar-07	12:00:00	-10.43	11	11	23-Apr-07	12:00:00	-9.25	9	37	19-May-07	12:00:00	-9.78	2	63
29-Mar-07	00:00:00	-11.23	12	12	24-Apr-07	00:00:00	-10.75	9	38	20-May-07	00:00:00	-12.14		64
29-Mar-07	12:00:00	-8.34	12	12	24-Apr-07	12:00:00	-11.58	10	38	20-May-07	12:00:00	-13.58		64
30-Mar-07	00:00:00	-9.13	13	13	25-Apr-07	00:00:00	-12.99		39	21-May-07	00:00:00	-16.35		65
30-Mar-07	12:00:00	-10.08	13	13	25-Apr-07	12:00:00	-13.89		39	21-May-07	12:00:00	-17.41		65
31-Mar-07	00:00:00	-11.03	14	14	26-Apr-07	00:00:00	-15.46		40	22-May-07	00:00:00	-20.2		66
31-Mar-07	12:00:00	-10.98	14	14	26-Apr-07	12:00:00	-16.29		40	22-May-07	12:00:00	-21.32		66
01-Apr-07	00:00:00	-11.85	15	15	27-Apr-07	00:00:00	-17.62		41	23-May-07	00:00:00	-22.92		67
01-Apr-07	12:00:00	-12.21		15	27-Apr-07	12:00:00	-18.31		41	23-May-07	12:00:00	-23.7		67
02-Apr-07	00:00:00	-12.81		16	28-Apr-07	00:00:00	-19.66		42	24-May-07	00:00:00	-25.38		68
02-Apr-07	12:00:00	-13.03		16	28-Apr-07	12:00:00	-20.48		42	24-May-07	12:00:00	-26.15		68
03-Apr-07	00:00:00	-13.87		17	29-Apr-07	00:00:00	-22.08		43	25-May-07	00:00:00	-23.92		69
03-Apr-07	12:00:00	-14.37		17	29-Apr-07	12:00:00	-22.68		43	25-May-07	12:00:00	-23.91		69

Lloyd 2

Data Acquired : November 18, 2007

Serial Number: N45DADBE

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

26-May-07	00:00:00	-23.91		70	24-Jun-07	00:00:00	-23.98		99	24-Jul-07	00:00:00	-24.21		129
26-May-07	12:00:00	-23.91		70	25-Jun-07	12:00:00	-23.98		100	24-Jul-07	12:00:00	-24.21		129
27-May-07	00:00:00	-23.92		71	25-Jun-07	00:00:00	-24.18		100	25-Jul-07	00:00:00	-24.22		130
27-May-07	12:00:00	-23.94		71	26-Jun-07	12:00:00	-24.2		101	25-Jul-07	12:00:00	-24.2		130
28-May-07	00:00:00	-23.96		72	26-Jun-07	00:00:00	-24.21		101	26-Jul-07	00:00:00	-24.22		131
28-May-07	12:00:00	-23.97		72	27-Jun-07	12:00:00	-24.2		102	26-Jul-07	12:00:00	-24.21		131
29-May-07	00:00:00	-23.98		73	27-Jun-07	00:00:00	-24.2		102	27-Jul-07	00:00:00	-24.22		132
29-May-07	12:00:00	-23.98		73	28-Jun-07	12:00:00	-24.2		103	27-Jul-07	12:00:00	-24.23		132
30-May-07	00:00:00	-23.99		74	28-Jun-07	00:00:00	-24.21		103	28-Jul-07	00:00:00	-24.21		133
30-May-07	12:00:00	-24.01		74	29-Jun-07	12:00:00	-24.2		104	28-Jul-07	12:00:00	-24.21		133
31-May-07	00:00:00	-24		75	29-Jun-07	00:00:00	-24.22		104	29-Jul-07	00:00:00	-24.22		134
31-May-07	12:00:00	-24.01		75	30-Jun-07	12:00:00	-24.21		105	29-Jul-07	12:00:00	-24.21		134
01-Jun-07	00:00:00	-24.02		76	30-Jun-07	00:00:00	-24.21		105	30-Jul-07	00:00:00	-24.21		135
01-Jun-07	12:00:00	-24.01		76	01-Jul-07	12:00:00	-24.2		106	30-Jul-07	12:00:00	-24.21		135
02-Jun-07	00:00:00	-24.01		77	01-Jul-07	00:00:00	-24.21		106	31-Jul-07	00:00:00	-24.22		136
02-Jun-07	12:00:00	-24.02		77	02-Jul-07	12:00:00	-24.22		107	31-Jul-07	12:00:00	-24.21		136
03-Jun-07	00:00:00	-24.01		78	02-Jul-07	00:00:00	-24.2		107	01-Aug-07	00:00:00	-24.22		137
03-Jun-07	12:00:00	-22.46		78	03-Jul-07	12:00:00	-24.2		108	01-Aug-07	12:00:00	-24.22		137
04-Jun-07	00:00:00	-26.37		79	03-Jul-07	00:00:00	-24.21		108	02-Aug-07	00:00:00	-24.22		138
04-Jun-07	12:00:00	-23.96		79	04-Jul-07	12:00:00	-24.21		109	02-Aug-07	12:00:00	-24.21		138
05-Jun-07	00:00:00	-23.97		80	04-Jul-07	00:00:00	-24.22		109	03-Aug-07	00:00:00	-24.22		139
05-Jun-07	12:00:00	-23.96		80	05-Jul-07	12:00:00	-24.21		110	03-Aug-07	12:00:00	-24.22		139
06-Jun-07	00:00:00	-23.97		81	05-Jul-07	00:00:00	-24.22		110	04-Aug-07	00:00:00	-24.22		140
06-Jun-07	12:00:00	-23.99		81	06-Jul-07	12:00:00	-24.22		111	04-Aug-07	12:00:00	-24.22		140
07-Jun-07	00:00:00	-23.99		82	06-Jul-07	00:00:00	-24.21		111	05-Aug-07	00:00:00	-24.23		141
07-Jun-07	12:00:00	-23.99		82	07-Jul-07	12:00:00	-24.2		112	05-Aug-07	12:00:00	-24.22		141
08-Jun-07	00:00:00	-23.99		83	07-Jul-07	00:00:00	-24.21		112	06-Aug-07	00:00:00	-24.22		142
08-Jun-07	12:00:00	-23.99		83	08-Jul-07	12:00:00	-24.2		113	06-Aug-07	12:00:00	-24.22		142
09-Jun-07	00:00:00	-23.99		84	08-Jul-07	00:00:00	-24.21		113	07-Aug-07	00:00:00	-24.22		143
09-Jun-07	12:00:00	-23.99		84	09-Jul-07	12:00:00	-24.22		114	07-Aug-07	12:00:00	-24.22		143
10-Jun-07	00:00:00	-24		85	09-Jul-07	00:00:00	-24.21		114	08-Aug-07	00:00:00	-24.21		144
10-Jun-07	12:00:00	-24		85	10-Jul-07	12:00:00	-24.21		115	08-Aug-07	12:00:00	-24.22		144
11-Jun-07	00:00:00	-24.01		86	10-Jul-07	00:00:00	-24.2		115	09-Aug-07	00:00:00	-24.22		145
11-Jun-07	12:00:00	-24.01		86	11-Jul-07	12:00:00	-24.21		116	09-Aug-07	12:00:00	-24.22		145
12-Jun-07	00:00:00	-24.01		87	11-Jul-07	00:00:00	-24.2		116	10-Aug-07	00:00:00	-24.21		146
12-Jun-07	12:00:00	-24.01		87	12-Jul-07	12:00:00	-24.21		117	10-Aug-07	12:00:00	-24.22		146
13-Jun-07	00:00:00	-24.02		88	12-Jul-07	00:00:00	-24.21		117	11-Aug-07	00:00:00	-24.22		147
13-Jun-07	12:00:00	-24.02		88	13-Jul-07	12:00:00	-24.21		118	11-Aug-07	12:00:00	-24.22		147
14-Jun-07	00:00:00	-24.02		89	13-Jul-07	00:00:00	-24.2		118	12-Aug-07	00:00:00	-24.23		148
14-Jun-07	12:00:00	-24.03		89	14-Jul-07	12:00:00	-24.21		119	12-Aug-07	12:00:00	-24.22		148
15-Jun-07	00:00:00	-24.04		90	14-Jul-07	00:00:00	-24.22		119	13-Aug-07	00:00:00	-24.21		149
15-Jun-07	12:00:00	-24.04		90	15-Jul-07	12:00:00	-24.21		120	13-Aug-07	12:00:00	-24.22		149
16-Jun-07	00:00:00	-24.05		91	15-Jul-07	00:00:00	-24.21		120	14-Aug-07	00:00:00	-24.21		150
16-Jun-07	12:00:00	-24.05		91	16-Jul-07	12:00:00	-24.22		121	14-Aug-07	12:00:00	-24.22		150
17-Jun-07	00:00:00	-24.05		92	16-Jul-07	00:00:00	-24.21		121	15-Aug-07	00:00:00	-24.22		151
17-Jun-07	12:00:00	-24.06		92	17-Jul-07	12:00:00	-24.22		122	15-Aug-07	12:00:00	-24.23		151
18-Jun-07	00:00:00	-24.07		93	17-Jul-07	00:00:00	-24.22		122	16-Aug-07	00:00:00	-24.23		152
18-Jun-07	12:00:00	-24.05		93	18-Jul-07	12:00:00	-24.22		123	16-Aug-07	12:00:00	-24.23		152
19-Jun-07	00:00:00	-24.07		94	18-Jul-07	00:00:00	-24.22		123	17-Aug-07	00:00:00	-24.21		153
19-Jun-07	12:00:00	-24.05		94	19-Jul-07	12:00:00	-24.22		124	17-Aug-07	12:00:00	-24.21		153
20-Jun-07	00:00:00	-24.05		95	19-Jul-07	00:00:00	-24.21		124	18-Aug-07	00:00:00	-24.21		154
20-Jun-07	12:00:00	-24.06		95	20-Jul-07	12:00:00	-24.21		125	18-Aug-07	12:00:00	-24.23		154
21-Jun-07	00:00:00	-25.1		96	20-Jul-07	00:00:00	-24.21		125	19-Aug-07	00:00:00	-24.23		155
21-Jun-07	12:00:00	-23.96		96	21-Jul-07	12:00:00	-24.22		126	19-Aug-07	12:00:00	-24.23		155
22-Jun-07	00:00:00	-23.96		97	21-Jul-07	00:00:00	-24.22		126	20-Aug-07	00:00:00	-24.22		156
22-Jun-07	12:00:00	-23.96		97	22-Jul-07	12:00:00	-24.22		127	20-Aug-07	12:00:00	-24.22		156
23-Jun-07	00:00:00	-23.94		98	22-Jul-07	00:00:00	-24.22		127	21-Aug-07	00:00:00	-24.22		157
23-Jun-07	12:00:00	-23.97		98	23-Jul-07	12:00:00	-24.22		128	21-Aug-07	12:00:00	-24.22		157
24-Jun-07	00:00:00	-23.97		99	23-Jul-07	00:00:00	-24.23		128	22-Aug-07	00:00:00	-24.22		158

Lloyd 2

Data Acquired : November 18, 2007

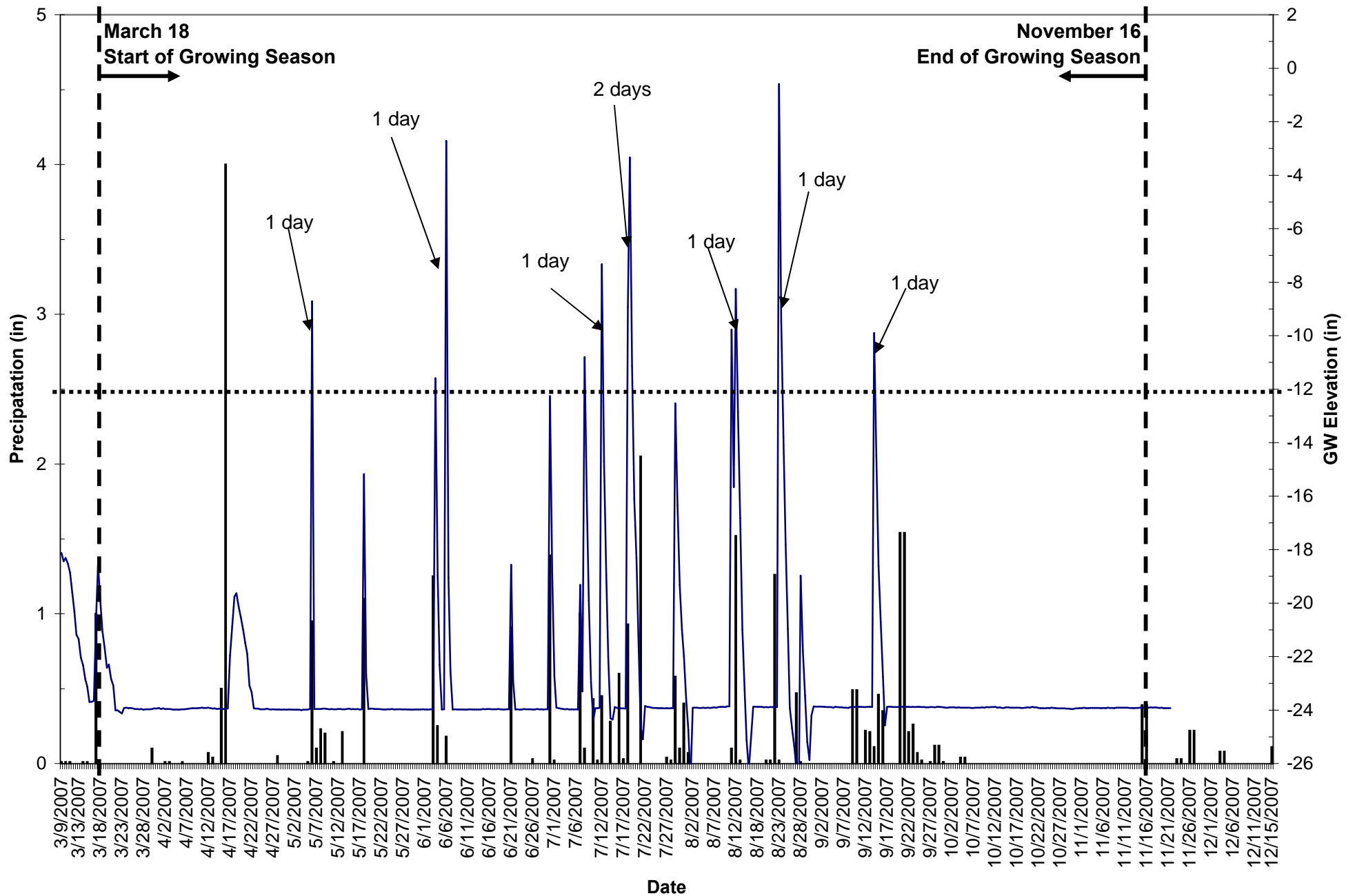
Serial Number: N45DADBE

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

22-Aug-07	12:00:00	-24.22		158	21-Sep-07	12:00:00	-24.24		187.7	20-Oct-07	12:00:00	-24.24		217
23-Aug-07	00:00:00	-24.23		159	21-Sep-07	00:00:00	-24.22		188	21-Oct-07	00:00:00	-24.23		218
23-Aug-07	12:00:00	-24.21		159	22-Sep-07	12:00:00	-24.24		189	21-Oct-07	12:00:00	-24.24		218
24-Aug-07	00:00:00	-24.21		160	22-Sep-07	00:00:00	-24.23		189	22-Oct-07	00:00:00	-24.25		219
24-Aug-07	12:00:00	-24.22		160	23-Sep-07	12:00:00	-24.23		189.7	22-Oct-07	12:00:00	-24.24		219
25-Aug-07	00:00:00	-24.22		161	23-Sep-07	00:00:00	-24.24		190.2	23-Oct-07	00:00:00	-24.25		220
25-Aug-07	12:00:00	-24.23		161	24-Sep-07	12:00:00	-24.24		190.7	23-Oct-07	12:00:00	-24.25		220
26-Aug-07	00:00:00	-24.22		162	24-Sep-07	00:00:00	-24.25		191.2	24-Oct-07	00:00:00	-24.24		221
26-Aug-07	12:00:00	-24.23		162	25-Sep-07	12:00:00	-24.24		191.7	24-Oct-07	12:00:00	-24.24		221
27-Aug-07	00:00:00	-24.23		163	25-Sep-07	00:00:00	-24.24		192.2	25-Oct-07	00:00:00	-24.24		222
27-Aug-07	12:00:00	-24.22		163	26-Sep-07	12:00:00	-24.24		192.7	25-Oct-07	12:00:00	-24.16		222
28-Aug-07	00:00:00	-24.22		164	26-Sep-07	00:00:00	-24.23		193.2	26-Oct-07	00:00:00	-24.19		223
28-Aug-07	12:00:00	-24.23		164	27-Sep-07	12:00:00	-24.23		193.7	26-Oct-07	12:00:00	-23.96		223
29-Aug-07	00:00:00	-24.22		165	27-Sep-07	00:00:00	-24.24		194.2	27-Oct-07	00:00:00	-23.96		224
29-Aug-07	12:00:00	-24.23		165	28-Sep-07	12:00:00	-24.24		194.7	27-Oct-07	12:00:00	-23.97		224
30-Aug-07	00:00:00	-24.22		166	28-Sep-07	00:00:00	-24.23		195.2	28-Oct-07	00:00:00	-23.99		225
30-Aug-07	12:00:00	-24.23		166	29-Sep-07	12:00:00	-24.23		195.7	28-Oct-07	12:00:00	-23.98		225
31-Aug-07	00:00:00	-24.23		167	29-Sep-07	00:00:00	-24.23		196.2	29-Oct-07	00:00:00	-24.01		226
31-Aug-07	12:00:00	-24.23		167	30-Sep-07	12:00:00	-24.24		196.7	29-Oct-07	12:00:00	-24.02		226
01-Sep-07	00:00:00	-24.23		168	30-Sep-07	00:00:00	-24.23		197.2	30-Oct-07	00:00:00	-24.03		227
01-Sep-07	12:00:00	-24.23		168	01-Oct-07	12:00:00	-24.23		198	30-Oct-07	12:00:00	-24.04		227
02-Sep-07	00:00:00	-24.22		169	01-Oct-07	00:00:00	-24.23		198	31-Oct-07	00:00:00	-24.05		228
02-Sep-07	12:00:00	-24.23		169	02-Oct-07	12:00:00	-24.23		199	31-Oct-07	12:00:00	-24.03		228
03-Sep-07	00:00:00	-24.23		170	02-Oct-07	00:00:00	-24.24		199	01-Nov-07	00:00:00	-24.04		229
03-Sep-07	12:00:00	-24.23		170	03-Oct-07	12:00:00	-24.24		200	01-Nov-07	12:00:00	-24.05		229
04-Sep-07	00:00:00	-24.24		171	03-Oct-07	00:00:00	-24.24		200	02-Nov-07	00:00:00	-24.05		230
04-Sep-07	12:00:00	-24.23		171	04-Oct-07	12:00:00	-24.23		201	02-Nov-07	12:00:00	-24.04		230
05-Sep-07	00:00:00	-24.23		171.7	04-Oct-07	00:00:00	-24.25		201	03-Nov-07	00:00:00	-24.04		231
05-Sep-07	12:00:00	-24.23		172.2	05-Oct-07	12:00:00	-24.23		202	03-Nov-07	12:00:00	-24.05		231
06-Sep-07	00:00:00	-24.23		172.7	05-Oct-07	00:00:00	-24.22		202	04-Nov-07	00:00:00	-24.07		232
06-Sep-07	12:00:00	-24.23		173.2	06-Oct-07	12:00:00	-24.24		203	04-Nov-07	12:00:00	-24.08		232
07-Sep-07	00:00:00	-24.23		173.7	06-Oct-07	00:00:00	-24.23		203	05-Nov-07	00:00:00	-24.07		233
07-Sep-07	12:00:00	-24.22		174.2	07-Oct-07	12:00:00	-24.23		204	05-Nov-07	12:00:00	-24.09		233
08-Sep-07	00:00:00	-24.23		174.7	07-Oct-07	00:00:00	-24.23		204	06-Nov-07	00:00:00	-24.09		234
08-Sep-07	12:00:00	-24.23		175.2	08-Oct-07	12:00:00	-24.23		205	06-Nov-07	12:00:00	-24.09		234
09-Sep-07	00:00:00	-24.24		175.7	08-Oct-07	00:00:00	-24.23		205	07-Nov-07	00:00:00	-24.1		235
09-Sep-07	12:00:00	-24.23		176.2	09-Oct-07	12:00:00	-24.23		206	07-Nov-07	12:00:00	-24.11		235
10-Sep-07	00:00:00	-24.23		176.7	09-Oct-07	00:00:00	-24.23		206	08-Nov-07	00:00:00	-24.11		236
10-Sep-07	12:00:00	-24.22		177.2	10-Oct-07	12:00:00	-24.22		207	08-Nov-07	12:00:00	-24.11		236
11-Sep-07	00:00:00	-24.22		177.7	10-Oct-07	00:00:00	-24.23		207	09-Nov-07	00:00:00	-24.13		237
11-Sep-07	12:00:00	-24.22		178.2	11-Oct-07	12:00:00	-24.23		208	09-Nov-07	12:00:00	-24.13		237
12-Sep-07	00:00:00	-24.23		178.7	11-Oct-07	00:00:00	-24.23		208	10-Nov-07	00:00:00	-24.13		238
12-Sep-07	12:00:00	-24.24		179.2	12-Oct-07	12:00:00	-24.24		209	10-Nov-07	12:00:00	-24.14		238
13-Sep-07	00:00:00	-24.23		179.7	12-Oct-07	00:00:00	-24.24		209	11-Nov-07	00:00:00	-24.17		239
13-Sep-07	12:00:00	-24.23		180.2	13-Oct-07	12:00:00	-24.23		210	11-Nov-07	12:00:00	-24.16		239
14-Sep-07	00:00:00	-24.23		180.7	13-Oct-07	00:00:00	-24.24		210	12-Nov-07	00:00:00	-24.17		240
14-Sep-07	12:00:00	-24.23		181.2	14-Oct-07	12:00:00	-24.24		211	12-Nov-07	12:00:00	-24.16		240
15-Sep-07	00:00:00	-24.23		181.7	14-Oct-07	00:00:00	-24.24		211	13-Nov-07	00:00:00	-24.16		241
15-Sep-07	12:00:00	-24.23		182.2	15-Oct-07	12:00:00	-24.24		212	13-Nov-07	12:00:00	-24.15		241
16-Sep-07	00:00:00	-24.24		182.7	15-Oct-07	00:00:00	-24.24		212	14-Nov-07	00:00:00	-24.15		242
16-Sep-07	12:00:00	-24.23		183.2	16-Oct-07	12:00:00	-24.24		213	14-Nov-07	12:00:00	-24.15		242
17-Sep-07	00:00:00	-24.23		183.7	16-Oct-07	00:00:00	-24.24		213	15-Nov-07	00:00:00	-24.15		245
17-Sep-07	12:00:00	-24.23		184.2	17-Oct-07	12:00:00	-24.24		214	15-Nov-07	12:00:00	-24.12		245
18-Sep-07	00:00:00	-24.23		184.7	17-Oct-07	00:00:00	-24.25		214	16-Nov-07	00:00:00	-24.01		246
18-Sep-07	12:00:00	-24.25		185.2	18-Oct-07	12:00:00	-24.24		215	16-Nov-07	12:00:00	-24.01		246
19-Sep-07	00:00:00	-24.24		185.7	18-Oct-07	00:00:00	-24.23		215	17-Nov-07	00:00:00	-24.03		
19-Sep-07	12:00:00	-24.23		186.2	19-Oct-07	12:00:00	-24.25		216	17-Nov-07	12:00:00	-23.77		
20-Sep-07	00:00:00	-24.23		186.7	19-Oct-07	00:00:00	-24.23		216	18-Nov-07	00:00:00	-24.47		
20-Sep-07	12:00:00	-24.22		187.2	20-Oct-07	12:00:00	-24.24		217	18-Nov-07	12:00:00	-24.31		

Lloyd Gauge 3 N45DAC6E



■ Precipitation — GW Elevation

Lloyd 3

Data Acquired : November 18, 2007

Serial Number: N45DAC6E

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD
09-Mar-07	00:00:00	-18.12			04-Apr-07	00:00:00	-23.99		18	30-Apr-07	00:00:00	-23.99		44
09-Mar-07	12:00:00	-18.44			04-Apr-07	12:00:00	-23.98		18	30-Apr-07	12:00:00	-23.98		44
10-Mar-07	00:00:00	-18.31			05-Apr-07	00:00:00	-23.99		19	01-May-07	00:00:00	-23.98		45
10-Mar-07	12:00:00	-18.52			05-Apr-07	12:00:00	-23.98		19	01-May-07	12:00:00	-23.99		45
11-Mar-07	00:00:00	-18.86			06-Apr-07	00:00:00	-23.97		20	02-May-07	00:00:00	-23.99		46
11-Mar-07	12:00:00	-19.6			06-Apr-07	12:00:00	-23.97		20	02-May-07	12:00:00	-23.99		46
12-Mar-07	00:00:00	-20.34			07-Apr-07	00:00:00	-23.96		21	03-May-07	00:00:00	-23.99		47
12-Mar-07	12:00:00	-21.18			07-Apr-07	12:00:00	-23.95		21	03-May-07	12:00:00	-24		47
13-Mar-07	00:00:00	-21.35			08-Apr-07	00:00:00	-23.94		22	04-May-07	00:00:00	-23.99		48
13-Mar-07	12:00:00	-22.04			08-Apr-07	12:00:00	-23.93		22	04-May-07	12:00:00	-23.99		48
14-Mar-07	00:00:00	-22.32			09-Apr-07	00:00:00	-23.94		23	05-May-07	00:00:00	-23.98		49
14-Mar-07	12:00:00	-22.84			09-Apr-07	12:00:00	-23.93		23	05-May-07	12:00:00	-23.96		49
15-Mar-07	00:00:00	-23.12			10-Apr-07	00:00:00	-23.92		24	06-May-07	00:00:00	-8.71	1	50
15-Mar-07	12:00:00	-23.7			10-Apr-07	12:00:00	-23.91		24	06-May-07	12:00:00	-23.96		50
16-Mar-07	00:00:00	-23.69			11-Apr-07	00:00:00	-23.92		25	07-May-07	00:00:00	-23.96		51
16-Mar-07	12:00:00	-23.66			11-Apr-07	12:00:00	-23.92		25	07-May-07	12:00:00	-23.96		51
17-Mar-07	00:00:00	-20.56			12-Apr-07	00:00:00	-23.91		26	08-May-07	00:00:00	-23.96		52
17-Mar-07	12:00:00	-18.57			12-Apr-07	12:00:00	-23.93		26	08-May-07	12:00:00	-23.95		52
18-Mar-07	00:00:00	-19.9		1	13-Apr-07	00:00:00	-23.95		27	09-May-07	00:00:00	-23.95		53
18-Mar-07	12:00:00	-21.07		1	13-Apr-07	12:00:00	-23.94		27	09-May-07	12:00:00	-23.96		53
19-Mar-07	00:00:00	-21.68		2	14-Apr-07	00:00:00	-23.96		28	10-May-07	00:00:00	-23.97		54
19-Mar-07	12:00:00	-22.42		2	14-Apr-07	12:00:00	-23.95		28	10-May-07	12:00:00	-23.96		54
20-Mar-07	00:00:00	-22.3		3	15-Apr-07	00:00:00	-23.95		29	11-May-07	00:00:00	-23.97		55
20-Mar-07	12:00:00	-22.83		3	15-Apr-07	12:00:00	-23.96		29	11-May-07	12:00:00	-23.97		55
21-Mar-07	00:00:00	-23.08		4	16-Apr-07	00:00:00	-23.97		30	12-May-07	00:00:00	-23.96		56
21-Mar-07	12:00:00	-24.01		4	16-Apr-07	12:00:00	-23.94		30	12-May-07	12:00:00	-23.96		56
22-Mar-07	00:00:00	-24.01		5	17-Apr-07	00:00:00	-21.97		31	13-May-07	00:00:00	-23.97		57
22-Mar-07	12:00:00	-24.07		5	17-Apr-07	12:00:00	-20.87		31	13-May-07	12:00:00	-23.97		57
23-Mar-07	00:00:00	-24.13		6	18-Apr-07	00:00:00	-19.76		32	14-May-07	00:00:00	-23.96		58
23-Mar-07	12:00:00	-23.92		6	18-Apr-07	12:00:00	-19.63		32	14-May-07	12:00:00	-23.95		58
24-Mar-07	00:00:00	-23.91		7	19-Apr-07	00:00:00	-20.13		33	15-May-07	00:00:00	-23.97		59
24-Mar-07	12:00:00	-23.93		7	19-Apr-07	12:00:00	-20.53		33	15-May-07	12:00:00	-23.96		59
25-Mar-07	00:00:00	-23.92		8	20-Apr-07	00:00:00	-20.98		34	16-May-07	00:00:00	-23.97		60
25-Mar-07	12:00:00	-23.94		8	20-Apr-07	12:00:00	-21.49		34	16-May-07	12:00:00	-23.96		60
26-Mar-07	00:00:00	-23.96		9	21-Apr-07	00:00:00	-21.9		35	17-May-07	00:00:00	-23.98		61
26-Mar-07	12:00:00	-23.96		9	21-Apr-07	12:00:00	-23.08		35	17-May-07	12:00:00	-23.97		61
27-Mar-07	00:00:00	-23.97		10	22-Apr-07	00:00:00	-23.34		36	18-May-07	00:00:00	-15.18		62
27-Mar-07	12:00:00	-23.96		10	22-Apr-07	12:00:00	-23.94		36	18-May-07	12:00:00	-22.67		62
28-Mar-07	00:00:00	-23.99		11	23-Apr-07	00:00:00	-23.95		37	19-May-07	00:00:00	-23.96		63
28-Mar-07	12:00:00	-23.97		11	23-Apr-07	12:00:00	-23.95		37	19-May-07	12:00:00	-23.95		63
29-Mar-07	00:00:00	-23.97		12	24-Apr-07	00:00:00	-23.97		38	20-May-07	00:00:00	-23.95		64
29-Mar-07	12:00:00	-23.97		12	24-Apr-07	12:00:00	-23.97		38	20-May-07	12:00:00	-23.96		64
30-Mar-07	00:00:00	-23.96		13	25-Apr-07	00:00:00	-23.97		39	21-May-07	00:00:00	-23.96		65
30-Mar-07	12:00:00	-23.94		13	25-Apr-07	12:00:00	-23.95		39	21-May-07	12:00:00	-23.96		65
31-Mar-07	00:00:00	-23.95		14	26-Apr-07	00:00:00	-23.97		40	22-May-07	00:00:00	-23.97		66
31-Mar-07	12:00:00	-23.92		14	26-Apr-07	12:00:00	-23.98		40	22-May-07	12:00:00	-23.98		66
01-Apr-07	00:00:00	-23.96		15	27-Apr-07	00:00:00	-23.97		41	23-May-07	00:00:00	-23.98		67
01-Apr-07	12:00:00	-23.94		15	27-Apr-07	12:00:00	-23.98		41	23-May-07	12:00:00	-23.97		67
02-Apr-07	00:00:00	-23.96		16	28-Apr-07	00:00:00	-23.98		42	24-May-07	00:00:00	-23.97		68
02-Apr-07	12:00:00	-23.96		16	28-Apr-07	12:00:00	-23.98		42	24-May-07	12:00:00	-23.96		68
03-Apr-07	00:00:00	-23.96		17	29-Apr-07	00:00:00	-23.99		43	25-May-07	00:00:00	-23.98		69
03-Apr-07	12:00:00	-23.97		17	29-Apr-07	12:00:00	-23.98		43	25-May-07	12:00:00	-23.97		69

Lloyd 3

Data Acquired : November 18, 2007

Serial Number: N45DAC6E

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

26-May-07	00:00:00	-23.97		70	24-Jun-07	00:00:00	-23.97		99	24-Jul-07	00:00:00	-23.92		129
26-May-07	12:00:00	-23.97		70	25-Jun-07	12:00:00	-23.97		100	24-Jul-07	12:00:00	-23.92		129
27-May-07	00:00:00	-23.98		71	25-Jun-07	00:00:00	-23.97		100	25-Jul-07	00:00:00	-23.93		130
27-May-07	12:00:00	-23.97		71	26-Jun-07	12:00:00	-23.98		101	25-Jul-07	12:00:00	-23.93		130
28-May-07	00:00:00	-23.98		72	26-Jun-07	00:00:00	-23.98		101	26-Jul-07	00:00:00	-23.93		131
28-May-07	12:00:00	-23.98		72	27-Jun-07	12:00:00	-23.96		102	26-Jul-07	12:00:00	-23.94		131
29-May-07	00:00:00	-23.99		73	27-Jun-07	00:00:00	-23.97		102	27-Jul-07	00:00:00	-23.93		132
29-May-07	12:00:00	-23.98		73	28-Jun-07	12:00:00	-23.97		103	27-Jul-07	12:00:00	-23.94		132
30-May-07	00:00:00	-23.98		74	28-Jun-07	00:00:00	-23.98		103	28-Jul-07	00:00:00	-23.93		133
30-May-07	12:00:00	-23.98		74	29-Jun-07	12:00:00	-23.97		104	28-Jul-07	12:00:00	-23.93		133
31-May-07	00:00:00	-23.98		75	29-Jun-07	00:00:00	-23.97		104	29-Jul-07	00:00:00	-12.53		134
31-May-07	12:00:00	-23.97		75	30-Jun-07	12:00:00	-12.26		105	29-Jul-07	12:00:00	-16.34		134
01-Jun-07	00:00:00	-23.98		76	30-Jun-07	00:00:00	-18.85		105	30-Jul-07	00:00:00	-19.33		135
01-Jun-07	12:00:00	-23.98		76	01-Jul-07	12:00:00	-22.75		106	30-Jul-07	12:00:00	-20.98		135
02-Jun-07	00:00:00	-23.98		77	01-Jul-07	00:00:00	-23.91		106	31-Jul-07	00:00:00	-21.99		136
02-Jun-07	12:00:00	-23.97		77	02-Jul-07	12:00:00	-23.93		107	31-Jul-07	12:00:00	-23.56		136
03-Jun-07	00:00:00	-23.98		78	02-Jul-07	00:00:00	-23.95		107	01-Aug-07	00:00:00	-24.75		137
03-Jun-07	12:00:00	-11.59	1	78	03-Jul-07	12:00:00	-23.96		108	01-Aug-07	12:00:00	-26.67		137
04-Jun-07	00:00:00	-18.94		79	03-Jul-07	00:00:00	-23.97		108	02-Aug-07	00:00:00	-23.91		138
04-Jun-07	12:00:00	-22.32		79	04-Jul-07	12:00:00	-23.96		109	02-Aug-07	12:00:00	-23.91		138
05-Jun-07	00:00:00	-23.98		80	04-Jul-07	00:00:00	-23.98		109	03-Aug-07	00:00:00	-23.91		139
05-Jun-07	12:00:00	-23.97		80	05-Jul-07	12:00:00	-23.97		110	03-Aug-07	12:00:00	-23.92		139
06-Jun-07	00:00:00	-2.72	1	81	05-Jul-07	00:00:00	-23.98		110	04-Aug-07	00:00:00	-23.92		140
06-Jun-07	12:00:00	-19.06		81	06-Jul-07	12:00:00	-23.97		111	04-Aug-07	12:00:00	-23.91		140
07-Jun-07	00:00:00	-22.55		82	06-Jul-07	00:00:00	-23.98		111	05-Aug-07	00:00:00	-23.92		141
07-Jun-07	12:00:00	-23.98		82	07-Jul-07	12:00:00	-19.32		112	05-Aug-07	12:00:00	-23.91		141
08-Jun-07	00:00:00	-23.97		83	07-Jul-07	00:00:00	-23.3		112	06-Aug-07	00:00:00	-23.92		142
08-Jun-07	12:00:00	-23.98		83	08-Jul-07	12:00:00	-10.8	1	113	06-Aug-07	12:00:00	-23.91		142
09-Jun-07	00:00:00	-23.98		84	08-Jul-07	00:00:00	-16.18		113	07-Aug-07	00:00:00	-23.9		143
09-Jun-07	12:00:00	-23.98		84	09-Jul-07	12:00:00	-19.91		114	07-Aug-07	12:00:00	-23.91		143
10-Jun-07	00:00:00	-23.98		85	09-Jul-07	00:00:00	-22.97		114	08-Aug-07	00:00:00	-23.89		144
10-Jun-07	12:00:00	-23.99		85	10-Jul-07	12:00:00	-24.37		115	08-Aug-07	12:00:00	-23.88		144
11-Jun-07	00:00:00	-23.98		86	10-Jul-07	00:00:00	-23.93		115	09-Aug-07	00:00:00	-23.88		145
11-Jun-07	12:00:00	-23.97		86	11-Jul-07	12:00:00	-23.93		116	09-Aug-07	12:00:00	-23.89		145
12-Jun-07	00:00:00	-23.98		87	11-Jul-07	00:00:00	-23.92		116	10-Aug-07	00:00:00	-23.86		146
12-Jun-07	12:00:00	-23.98		87	12-Jul-07	12:00:00	-7.33	1	117	10-Aug-07	12:00:00	-23.86		146
13-Jun-07	00:00:00	-23.98		88	12-Jul-07	00:00:00	-14.7		117	11-Aug-07	00:00:00	-9.77	1	147
13-Jun-07	12:00:00	-23.98		88	13-Jul-07	12:00:00	-18.93		118	11-Aug-07	12:00:00	-15.67		147
14-Jun-07	00:00:00	-23.98		89	13-Jul-07	00:00:00	-22		118	12-Aug-07	00:00:00	-8.25	1	148
14-Jun-07	12:00:00	-23.96		89	14-Jul-07	12:00:00	-24.31		119	12-Aug-07	12:00:00	-12.86		148
15-Jun-07	00:00:00	-23.97		90	14-Jul-07	00:00:00	-24.36		119	13-Aug-07	00:00:00	-16.83		149
15-Jun-07	12:00:00	-23.96		90	15-Jul-07	12:00:00	-23.89		120	13-Aug-07	12:00:00	-20.99		149
16-Jun-07	00:00:00	-23.96		91	15-Jul-07	00:00:00	-23.92		120	14-Aug-07	00:00:00	-23.23		150
16-Jun-07	12:00:00	-23.97		91	16-Jul-07	12:00:00	-23.93		121	14-Aug-07	12:00:00	-25.12		150
17-Jun-07	00:00:00	-23.97		92	16-Jul-07	00:00:00	-23.94		121	15-Aug-07	00:00:00	-26.23		151
17-Jun-07	12:00:00	-23.97		92	17-Jul-07	12:00:00	-23.94		122	15-Aug-07	12:00:00	-25.07		151
18-Jun-07	00:00:00	-23.96		93	17-Jul-07	00:00:00	-23.95		122	16-Aug-07	00:00:00	-23.88		152
18-Jun-07	12:00:00	-23.97		93	18-Jul-07	12:00:00	-8.93	1	123	16-Aug-07	12:00:00	-23.87		152
19-Jun-07	00:00:00	-23.98		94	18-Jul-07	00:00:00	-3.34	1	123	17-Aug-07	00:00:00	-23.88		153
19-Jun-07	12:00:00	-23.98		94	19-Jul-07	12:00:00	-11.15	2	124	17-Aug-07	12:00:00	-23.88		153
20-Jun-07	00:00:00	-23.97		95	19-Jul-07	00:00:00	-16.12		124	18-Aug-07	00:00:00	-23.88		154
20-Jun-07	12:00:00	-23.97		95	20-Jul-07	12:00:00	-18.31		125	18-Aug-07	12:00:00	-23.9		154
21-Jun-07	00:00:00	-18.57		96	20-Jul-07	00:00:00	-21.7		125	19-Aug-07	00:00:00	-23.89		155
21-Jun-07	12:00:00	-22.91		96	21-Jul-07	12:00:00	-24.57		126	19-Aug-07	12:00:00	-23.9		155
22-Jun-07	00:00:00	-23.98		97	21-Jul-07	00:00:00	-25.09		126	20-Aug-07	00:00:00	-23.89		156
22-Jun-07	12:00:00	-23.97		97	22-Jul-07	12:00:00	-23.85		127	20-Aug-07	12:00:00	-23.89		156
23-Jun-07	00:00:00	-23.99		98	22-Jul-07	00:00:00	-23.88		127	21-Aug-07	00:00:00	-23.9		157
23-Jun-07	12:00:00	-23.98		98	23-Jul-07	12:00:00	-23.89		128	21-Aug-07	12:00:00	-23.89		157
24-Jun-07	00:00:00	-23.96		99	23-Jul-07	00:00:00	-23.91		128	22-Aug-07	00:00:00	-0.59	1	158

Lloyd 3

Data Acquired : November 18, 2007

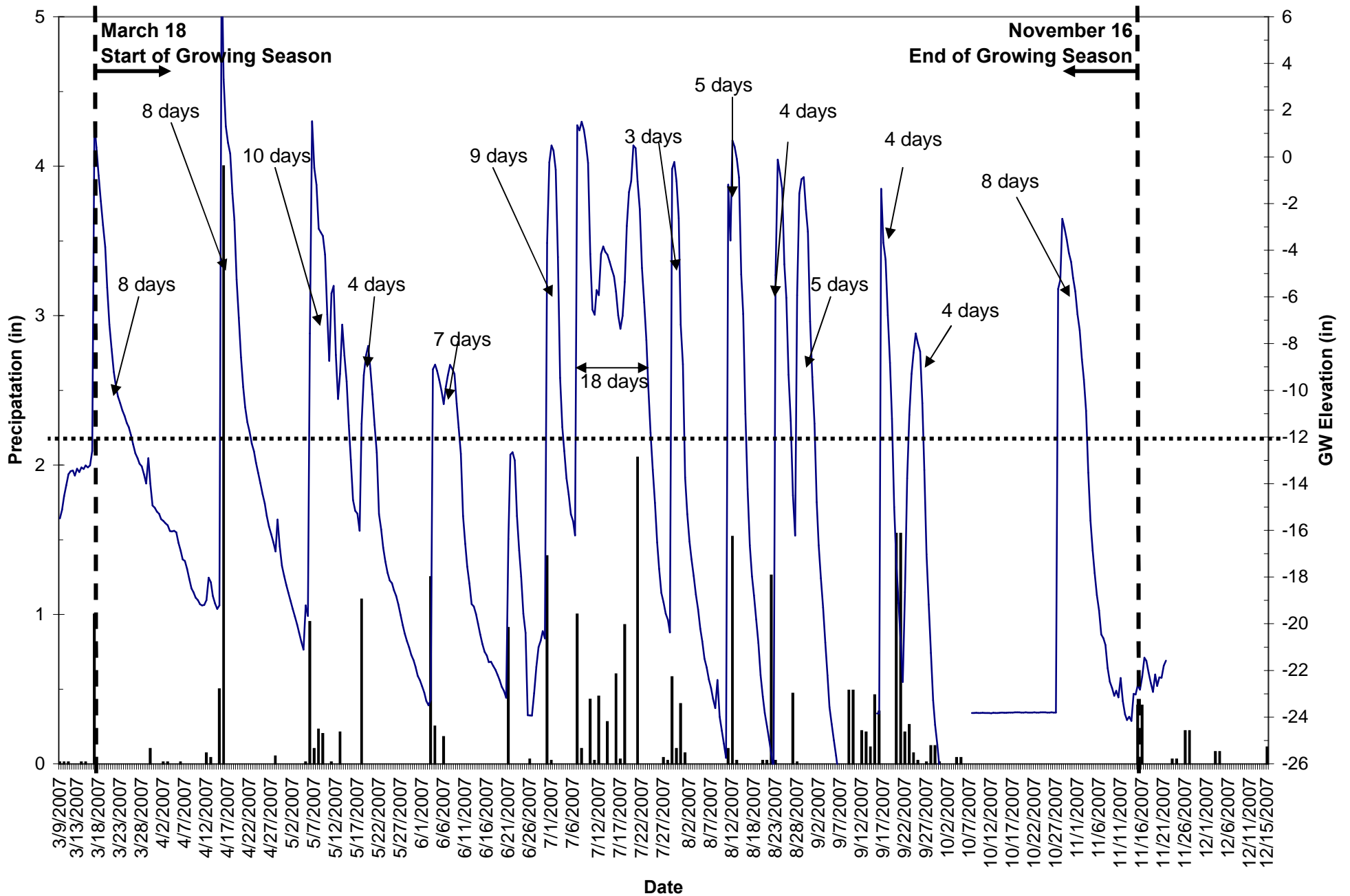
Serial Number: N45DAC6E

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

22-Aug-07	12:00:00	-9.47	1	158	21-Sep-07	12:00:00	-23.88	187.7	20-Oct-07	12:00:00	-23.9	217
23-Aug-07	00:00:00	-13.79		159	21-Sep-07	00:00:00	-23.89	188	21-Oct-07	00:00:00	-23.92	218
23-Aug-07	12:00:00	-17.82		159	22-Sep-07	12:00:00	-23.88	189	21-Oct-07	12:00:00	-23.93	218
24-Aug-07	00:00:00	-20.96		160	22-Sep-07	00:00:00	-23.89	189	22-Oct-07	00:00:00	-23.93	219
24-Aug-07	12:00:00	-23.93		160	23-Sep-07	12:00:00	-23.88	189.7	22-Oct-07	12:00:00	-23.94	219
25-Aug-07	00:00:00	-24.68		161	23-Sep-07	00:00:00	-23.88	190.2	23-Oct-07	00:00:00	-23.92	220
25-Aug-07	12:00:00	-25.36		161	24-Sep-07	12:00:00	-23.89	190.7	23-Oct-07	12:00:00	-23.93	220
26-Aug-07	00:00:00	-26.19		162	24-Sep-07	00:00:00	-23.89	191.2	24-Oct-07	00:00:00	-23.91	221
26-Aug-07	12:00:00	-27.86		162	25-Sep-07	12:00:00	-23.9	191.7	24-Oct-07	12:00:00	-23.92	221
27-Aug-07	00:00:00	-18.97		163	25-Sep-07	00:00:00	-23.9	192.2	25-Oct-07	00:00:00	-23.93	222
27-Aug-07	12:00:00	-21.76		163	26-Sep-07	12:00:00	-23.89	192.7	25-Oct-07	12:00:00	-23.94	222
28-Aug-07	00:00:00	-23.46		164	26-Sep-07	00:00:00	-23.89	193.2	26-Oct-07	00:00:00	-23.94	223
28-Aug-07	12:00:00	-25.2		164	27-Sep-07	12:00:00	-23.9	193.7	26-Oct-07	12:00:00	-23.94	223
29-Aug-07	00:00:00	-25.87		165	27-Sep-07	00:00:00	-23.88	194.2	27-Oct-07	00:00:00	-23.94	224
29-Aug-07	12:00:00	-24.2		165	28-Sep-07	12:00:00	-23.88	194.7	27-Oct-07	12:00:00	-23.95	224
30-Aug-07	00:00:00	-23.86		166	28-Sep-07	00:00:00	-23.89	195.2	28-Oct-07	00:00:00	-23.95	225
30-Aug-07	12:00:00	-23.87		166	29-Sep-07	12:00:00	-23.9	195.7	28-Oct-07	12:00:00	-23.96	225
31-Aug-07	00:00:00	-23.87		167	29-Sep-07	00:00:00	-23.91	196.2	29-Oct-07	00:00:00	-23.96	226
31-Aug-07	12:00:00	-23.87		167	30-Sep-07	12:00:00	-23.91	196.7	29-Oct-07	12:00:00	-23.94	226
01-Sep-07	00:00:00	-23.87		168	30-Sep-07	00:00:00	-23.9	197.2	30-Oct-07	00:00:00	-23.94	227
01-Sep-07	12:00:00	-23.88		168	01-Oct-07	12:00:00	-23.9	198	30-Oct-07	12:00:00	-23.93	227
02-Sep-07	00:00:00	-23.89		169	01-Oct-07	00:00:00	-23.9	198	31-Oct-07	00:00:00	-23.93	228
02-Sep-07	12:00:00	-23.89		169	02-Oct-07	12:00:00	-23.91	199	31-Oct-07	12:00:00	-23.91	228
03-Sep-07	00:00:00	-23.89		170	02-Oct-07	00:00:00	-23.9	199	01-Nov-07	00:00:00	-23.93	229
03-Sep-07	12:00:00	-23.91		170	03-Oct-07	12:00:00	-23.91	200	01-Nov-07	12:00:00	-23.93	229
04-Sep-07	00:00:00	-23.88		171	03-Oct-07	00:00:00	-23.91	200	02-Nov-07	00:00:00	-23.92	230
04-Sep-07	12:00:00	-23.89		171	04-Oct-07	12:00:00	-23.91	201	02-Nov-07	12:00:00	-23.92	230
05-Sep-07	00:00:00	-23.9		171.7	04-Oct-07	00:00:00	-23.91	201	03-Nov-07	00:00:00	-23.92	231
05-Sep-07	12:00:00	-23.9		172.2	05-Oct-07	12:00:00	-23.91	202	03-Nov-07	12:00:00	-23.92	231
06-Sep-07	00:00:00	-23.91		172.7	05-Oct-07	00:00:00	-23.92	202	04-Nov-07	00:00:00	-23.92	232
06-Sep-07	12:00:00	-23.91		173.2	06-Oct-07	12:00:00	-23.92	203	04-Nov-07	12:00:00	-23.93	232
07-Sep-07	00:00:00	-23.92		173.7	06-Oct-07	00:00:00	-23.91	203	05-Nov-07	00:00:00	-23.92	233
07-Sep-07	12:00:00	-23.89		174.2	07-Oct-07	12:00:00	-23.91	204	05-Nov-07	12:00:00	-23.93	233
08-Sep-07	00:00:00	-23.88		174.7	07-Oct-07	00:00:00	-23.91	204	06-Nov-07	00:00:00	-23.91	234
08-Sep-07	12:00:00	-23.89		175.2	08-Oct-07	12:00:00	-23.9	205	06-Nov-07	12:00:00	-23.92	234
09-Sep-07	00:00:00	-23.88		175.7	08-Oct-07	00:00:00	-23.91	205	07-Nov-07	00:00:00	-23.92	235
09-Sep-07	12:00:00	-23.88		176.2	09-Oct-07	12:00:00	-23.89	206	07-Nov-07	12:00:00	-23.93	235
10-Sep-07	00:00:00	-23.88		176.7	09-Oct-07	00:00:00	-23.9	206	08-Nov-07	00:00:00	-23.91	236
10-Sep-07	12:00:00	-23.89		177.2	10-Oct-07	12:00:00	-23.89	207	08-Nov-07	12:00:00	-23.91	236
11-Sep-07	00:00:00	-23.89		177.7	10-Oct-07	00:00:00	-23.89	207	09-Nov-07	00:00:00	-23.91	237
11-Sep-07	12:00:00	-23.88		178.2	11-Oct-07	12:00:00	-23.88	208	09-Nov-07	12:00:00	-23.91	237
12-Sep-07	00:00:00	-23.88		178.7	11-Oct-07	00:00:00	-23.91	208	10-Nov-07	00:00:00	-23.91	238
12-Sep-07	12:00:00	-23.89		179.2	12-Oct-07	12:00:00	-23.9	209	10-Nov-07	12:00:00	-23.91	238
13-Sep-07	00:00:00	-9.9	1	179.7	12-Oct-07	00:00:00	-23.92	209	11-Nov-07	00:00:00	-23.92	239
13-Sep-07	12:00:00	-14.49		180.2	13-Oct-07	12:00:00	-23.92	210	11-Nov-07	12:00:00	-23.92	239
14-Sep-07	00:00:00	-18.61		180.7	13-Oct-07	00:00:00	-23.9	210	12-Nov-07	00:00:00	-23.93	240
14-Sep-07	12:00:00	-20.72		181.2	14-Oct-07	12:00:00	-23.9	211	12-Nov-07	12:00:00	-23.92	240
15-Sep-07	00:00:00	-22.74		181.7	14-Oct-07	00:00:00	-23.91	211	13-Nov-07	00:00:00	-23.92	241
15-Sep-07	12:00:00	-24.57		182.2	15-Oct-07	12:00:00	-23.91	212	13-Nov-07	12:00:00	-23.91	241
16-Sep-07	00:00:00	-23.88		182.7	15-Oct-07	00:00:00	-23.91	212	14-Nov-07	00:00:00	-23.92	242
16-Sep-07	12:00:00	-23.87		183.2	16-Oct-07	12:00:00	-23.91	213	14-Nov-07	12:00:00	-23.91	242
17-Sep-07	00:00:00	-23.88		183.7	16-Oct-07	00:00:00	-23.91	213	15-Nov-07	00:00:00	-23.91	245
17-Sep-07	12:00:00	-23.89		184.2	17-Oct-07	12:00:00	-23.92	214	15-Nov-07	12:00:00	-23.91	245
18-Sep-07	00:00:00	-23.89		184.7	17-Oct-07	00:00:00	-23.92	214	16-Nov-07	00:00:00	-23.9	246
18-Sep-07	12:00:00	-23.89		185.2	18-Oct-07	12:00:00	-23.91	215	16-Nov-07	12:00:00	-23.91	246
19-Sep-07	00:00:00	-23.88		185.7	18-Oct-07	00:00:00	-23.9	215	17-Nov-07	00:00:00	-23.9	
19-Sep-07	12:00:00	-23.88		186.2	19-Oct-07	12:00:00	-23.91	216	17-Nov-07	12:00:00	-23.91	
20-Sep-07	00:00:00	-23.88		186.7	19-Oct-07	00:00:00	-23.88	216	18-Nov-07	00:00:00	-23.92	
20-Sep-07	12:00:00	-23.88		187.2	20-Oct-07	12:00:00	-23.9	217	18-Nov-07	12:00:00	-23.91	

Lloyd Gauge 4 N45DAC22



Precipitation
 GW Elevation

Lloyd 4

Data Acquired : November 18, 2007

Serial Number: N45DAC22

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD
09-Mar-07	00:00:00	-15.49			04-Apr-07	00:00:00	-16.05		18	30-Apr-07	00:00:00	-17.95		44
09-Mar-07	12:00:00	-15.11			04-Apr-07	12:00:00	-16.02		18	30-Apr-07	12:00:00	-18.35		44
10-Mar-07	00:00:00	-14.54			05-Apr-07	00:00:00	-16.08		19	01-May-07	00:00:00	-18.67		45
10-Mar-07	12:00:00	-14.07			05-Apr-07	12:00:00	-16.54		19	01-May-07	12:00:00	-19.02		45
11-Mar-07	00:00:00	-13.6			06-Apr-07	00:00:00	-16.88		20	02-May-07	00:00:00	-19.36		46
11-Mar-07	12:00:00	-13.46			06-Apr-07	12:00:00	-17.24		20	02-May-07	12:00:00	-19.69		46
12-Mar-07	00:00:00	-13.44			07-Apr-07	00:00:00	-17.31		21	03-May-07	00:00:00	-20.03		47
12-Mar-07	12:00:00	-13.65			07-Apr-07	12:00:00	-17.65		21	03-May-07	12:00:00	-20.38		47
13-Mar-07	00:00:00	-13.36			08-Apr-07	00:00:00	-18.08		22	04-May-07	00:00:00	-20.77		48
13-Mar-07	12:00:00	-13.5			08-Apr-07	12:00:00	-18.49		22	04-May-07	12:00:00	-21.11		48
14-Mar-07	00:00:00	-13.3			09-Apr-07	00:00:00	-18.65		23	05-May-07	00:00:00	-19.21		49
14-Mar-07	12:00:00	-13.37			09-Apr-07	12:00:00	-18.88		23	05-May-07	12:00:00	-19.67		49
15-Mar-07	00:00:00	-13.22			10-Apr-07	00:00:00	-18.99		24	06-May-07	00:00:00	-7.56	1	50
15-Mar-07	12:00:00	-13.3			10-Apr-07	12:00:00	-19.17		24	06-May-07	12:00:00	1.52	1	50
16-Mar-07	00:00:00	-13.22			11-Apr-07	00:00:00	-19.21		25	07-May-07	00:00:00	-0.48	2	51
16-Mar-07	12:00:00	-12.6			11-Apr-07	12:00:00	-19.19		25	07-May-07	12:00:00	-1.2	2	51
17-Mar-07	00:00:00	1.42			12-Apr-07	00:00:00	-18.99		26	08-May-07	00:00:00	-3.08	3	52
17-Mar-07	12:00:00	0.41			12-Apr-07	12:00:00	-18.03		26	08-May-07	12:00:00	-3.23	3	52
18-Mar-07	00:00:00	-0.8	1	1	13-Apr-07	00:00:00	-18.22		27	09-May-07	00:00:00	-3.39	4	53
18-Mar-07	12:00:00	-1.9	1	1	13-Apr-07	12:00:00	-18.81		27	09-May-07	12:00:00	-4.19	4	53
19-Mar-07	00:00:00	-2.93	2	2	14-Apr-07	00:00:00	-19.13		28	10-May-07	00:00:00	-6.75	5	54
19-Mar-07	12:00:00	-3.86	2	2	14-Apr-07	12:00:00	-19.36		28	10-May-07	12:00:00	-8.74	5	54
20-Mar-07	00:00:00	-5.6	3	3	15-Apr-07	00:00:00	-19.21		29	11-May-07	00:00:00	-5.85	6	55
20-Mar-07	12:00:00	-7.19	3	3	15-Apr-07	12:00:00	8.6	1	29	11-May-07	12:00:00	-5.53	6	55
21-Mar-07	00:00:00	-8.23	4	4	16-Apr-07	00:00:00	3.32	2	30	12-May-07	00:00:00	-8.49	7	56
21-Mar-07	12:00:00	-9.21	4	4	16-Apr-07	12:00:00	1.31	2	30	12-May-07	12:00:00	-10.37	7	56
22-Mar-07	00:00:00	-9.84	5	5	17-Apr-07	00:00:00	0.6	3	31	13-May-07	00:00:00	-9.3	8	57
22-Mar-07	12:00:00	-10.27	5	5	17-Apr-07	12:00:00	0.14	3	31	13-May-07	12:00:00	-7.19	8	57
23-Mar-07	00:00:00	-10.55	6	6	18-Apr-07	00:00:00	-1.58	4	32	14-May-07	00:00:00	-8.52	9	58
23-Mar-07	12:00:00	-10.86	6	6	18-Apr-07	12:00:00	-2.71	4	32	14-May-07	12:00:00	-9.62	9	58
24-Mar-07	00:00:00	-11.1	7	7	19-Apr-07	00:00:00	-5.25	5	33	15-May-07	00:00:00	-11.5	10	59
24-Mar-07	12:00:00	-11.4	7	7	19-Apr-07	12:00:00	-6.89	5	33	15-May-07	12:00:00	-12.98		59
25-Mar-07	00:00:00	-11.58	8	8	20-Apr-07	00:00:00	-8.59	6	34	16-May-07	00:00:00	-14.7		60
25-Mar-07	12:00:00	-11.92	8	8	20-Apr-07	12:00:00	-9.86	6	34	16-May-07	12:00:00	-15.16		60
26-Mar-07	00:00:00	-12.32		9	21-Apr-07	00:00:00	-10.73	7	35	17-May-07	00:00:00	-15.28		61
26-Mar-07	12:00:00	-12.7		9	21-Apr-07	12:00:00	-11.37	7	35	17-May-07	12:00:00	-16.02		61
27-Mar-07	00:00:00	-12.91		10	22-Apr-07	00:00:00	-11.78	8	36	18-May-07	00:00:00	-11.44	1	62
27-Mar-07	12:00:00	-13.14		10	22-Apr-07	12:00:00	-12.29		36	18-May-07	12:00:00	-9.35	1	62
28-Mar-07	00:00:00	-13.26		11	23-Apr-07	00:00:00	-12.62		37	19-May-07	00:00:00	-8.51	2	63
28-Mar-07	12:00:00	-13.6		11	23-Apr-07	12:00:00	-13.1		37	19-May-07	12:00:00	-8.1	2	63
29-Mar-07	00:00:00	-13.99		12	24-Apr-07	00:00:00	-13.54		38	20-May-07	00:00:00	-9.09	3	64
29-Mar-07	12:00:00	-12.91		12	24-Apr-07	12:00:00	-13.98		38	20-May-07	12:00:00	-10.17	3	64
30-Mar-07	00:00:00	-14		13	25-Apr-07	00:00:00	-14.44		39	21-May-07	00:00:00	-11.48	4	65
30-Mar-07	12:00:00	-14.93		13	25-Apr-07	12:00:00	-14.85		39	21-May-07	12:00:00	-12.67		65
31-Mar-07	00:00:00	-15.03		14	26-Apr-07	00:00:00	-15.38		40	22-May-07	00:00:00	-15.3		66
31-Mar-07	12:00:00	-15.2		14	26-Apr-07	12:00:00	-15.83		40	22-May-07	12:00:00	-15.96		66
01-Apr-07	00:00:00	-15.29		15	27-Apr-07	00:00:00	-16.16		41	23-May-07	00:00:00	-16.73		67
01-Apr-07	12:00:00	-15.52		15	27-Apr-07	12:00:00	-16.51		41	23-May-07	12:00:00	-17.34		67
02-Apr-07	00:00:00	-15.59		16	28-Apr-07	00:00:00	-16.9		42	24-May-07	00:00:00	-17.82		68
02-Apr-07	12:00:00	-15.7		16	28-Apr-07	12:00:00	-15.54		42	24-May-07	12:00:00	-18.15		68
03-Apr-07	00:00:00	-15.78		17	29-Apr-07	00:00:00	-16.69		43	25-May-07	00:00:00	-18.26		69
03-Apr-07	12:00:00	-16.03		17	29-Apr-07	12:00:00	-17.52		43	25-May-07	12:00:00	-18.56		69

Lloyd 4

Data Acquired : November 18, 2007

Serial Number: N45DAC22

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

26-May-07	00:00:00	-18.81		70	24-Jun-07	00:00:00	-19.57		99	24-Jul-07	00:00:00	-8.05	18	129
26-May-07	12:00:00	-19.18		70	25-Jun-07	12:00:00	-20.39		100	24-Jul-07	12:00:00	-9.87	18	129
27-May-07	00:00:00	-19.62		71	25-Jun-07	00:00:00	-23.92		100	25-Jul-07	00:00:00	-10.94	19	130
27-May-07	12:00:00	-20.06		71	26-Jun-07	12:00:00	-23.93		101	25-Jul-07	12:00:00	-11.99	19	130
28-May-07	00:00:00	-20.42		72	26-Jun-07	00:00:00	-23.94		101	26-Jul-07	00:00:00	-12.5		131
28-May-07	12:00:00	-20.74		72	27-Jun-07	12:00:00	-22.97		102	26-Jul-07	12:00:00	-13.26		131
29-May-07	00:00:00	-21.01		73	27-Jun-07	00:00:00	-21.85		102	27-Jul-07	00:00:00	-13.83		132
29-May-07	12:00:00	-21.34		73	28-Jun-07	12:00:00	-21		103	27-Jul-07	12:00:00	-14.81		132
30-May-07	00:00:00	-21.56		74	28-Jun-07	00:00:00	-20.72		103	28-Jul-07	00:00:00	-15.13		133
30-May-07	12:00:00	-21.84		74	29-Jun-07	12:00:00	-20.32		104	28-Jul-07	12:00:00	-15.8		133
31-May-07	00:00:00	-22.23		75	29-Jun-07	00:00:00	-20.63		104	29-Jul-07	00:00:00	1.09	1	134
31-May-07	12:00:00	-22.42		75	30-Jun-07	12:00:00	-3.69		105	29-Jul-07	12:00:00	0.58	1	134
01-Jun-07	00:00:00	-22.68		76	30-Jun-07	00:00:00	-0.24		105	30-Jul-07	00:00:00	-0.26	2	135
01-Jun-07	12:00:00	-22.96		76	01-Jul-07	12:00:00	0.49		106	30-Jul-07	12:00:00	-1.5	2	135
02-Jun-07	00:00:00	-23.3		77	01-Jul-07	00:00:00	0.27		106	31-Jul-07	00:00:00	-4.1	3	136
02-Jun-07	12:00:00	-23.49		77	02-Jul-07	12:00:00	-0.55		107	31-Jul-07	12:00:00	-6.36	3	136
03-Jun-07	00:00:00	-23.26		78	02-Jul-07	00:00:00	-4.29		107	01-Aug-07	00:00:00	-8.38	4	137
03-Jun-07	12:00:00	-9.1	1	78	03-Jul-07	12:00:00	-9.47		108	01-Aug-07	12:00:00	-10.02	4	137
04-Jun-07	00:00:00	-8.9	1	79	03-Jul-07	00:00:00	-11.58		108	02-Aug-07	00:00:00	-11.33	5	138
04-Jun-07	12:00:00	-9.17	2	79	04-Jul-07	12:00:00	-12.61		109	02-Aug-07	12:00:00	-12.53		138
05-Jun-07	00:00:00	-9.56	2	80	04-Jul-07	00:00:00	-13.77		109	03-Aug-07	00:00:00	-13.49		139
05-Jun-07	12:00:00	-10.01	3	80	05-Jul-07	12:00:00	-14.46		110	03-Aug-07	12:00:00	-15.42		139
06-Jun-07	00:00:00	-10.59	3	81	05-Jul-07	00:00:00	-15.31		110	04-Aug-07	00:00:00	-15.82		140
06-Jun-07	12:00:00	-9.84	4	81	06-Jul-07	12:00:00	-15.6		111	04-Aug-07	12:00:00	-16.68		140
07-Jun-07	00:00:00	-9.35	4	82	06-Jul-07	00:00:00	-16.22		111	05-Aug-07	00:00:00	-17.19		141
07-Jun-07	12:00:00	-8.91	5	82	07-Jul-07	12:00:00	1.35	1	112	05-Aug-07	12:00:00	-18.02		141
08-Jun-07	00:00:00	-9.08	5	83	07-Jul-07	00:00:00	1.14	1	112	06-Aug-07	00:00:00	-18.68		142
08-Jun-07	12:00:00	-9.3	6	83	08-Jul-07	12:00:00	1.5	2	113	06-Aug-07	12:00:00	-19.53		142
09-Jun-07	00:00:00	-10.57	6	84	08-Jul-07	00:00:00	1.16	2	113	07-Aug-07	00:00:00	-20.36		143
09-Jun-07	12:00:00	-11.59	7	84	09-Jul-07	12:00:00	0.6	3	114	07-Aug-07	12:00:00	-21.23		143
10-Jun-07	00:00:00	-12.72		85	09-Jul-07	00:00:00	-0.26	3	114	08-Aug-07	00:00:00	-22.38		144
10-Jun-07	12:00:00	-15.39		85	10-Jul-07	12:00:00	-4.16	4	115	08-Aug-07	12:00:00	-24.25		144
11-Jun-07	00:00:00	-16.58		86	10-Jul-07	00:00:00	-6.55	4	115	09-Aug-07	00:00:00	-25.15		145
11-Jun-07	12:00:00	-17.55		86	11-Jul-07	12:00:00	-6.76	5	116	09-Aug-07	12:00:00	-24		145
12-Jun-07	00:00:00	-18.28		87	11-Jul-07	00:00:00	-5.71	5	116	10-Aug-07	00:00:00	-23.92		146
12-Jun-07	12:00:00	-19.16		87	12-Jul-07	12:00:00	-5.92	6	117	10-Aug-07	12:00:00	-23.98		146
13-Jun-07	00:00:00	-19.26		88	12-Jul-07	00:00:00	-4.16	6	117	11-Aug-07	00:00:00	1.67	1	147
13-Jun-07	12:00:00	-19.59		88	13-Jul-07	12:00:00	-3.84	7	118	11-Aug-07	12:00:00	0.5	1	147
14-Jun-07	00:00:00	-20		89	13-Jul-07	00:00:00	-4.07	7	118	12-Aug-07	00:00:00	1.65	2	148
14-Jun-07	12:00:00	-20.46		89	14-Jul-07	12:00:00	-4.19	8	119	12-Aug-07	12:00:00	1.22	2	148
15-Jun-07	00:00:00	-20.87		90	14-Jul-07	00:00:00	-4.49	8	119	13-Aug-07	00:00:00	0.69	3	149
15-Jun-07	12:00:00	-21.2		90	15-Jul-07	12:00:00	-4.82	9	120	13-Aug-07	12:00:00	-0.01	3	149
16-Jun-07	00:00:00	-21.36		91	15-Jul-07	00:00:00	-5.12	9	120	14-Aug-07	00:00:00	-2.28	4	150
16-Jun-07	12:00:00	-21.65		91	16-Jul-07	12:00:00	-5.77	10	121	14-Aug-07	12:00:00	-4.77	4	150
17-Jun-07	00:00:00	-21.63		92	16-Jul-07	00:00:00	-6.79	10	121	15-Aug-07	00:00:00	-7.21	5	151
17-Jun-07	12:00:00	-21.81		92	17-Jul-07	12:00:00	-7.37	11	122	15-Aug-07	12:00:00	-8.92	5	151
18-Jun-07	00:00:00	-21.97		93	17-Jul-07	00:00:00	-6.81	11	122	16-Aug-07	00:00:00	-10.22	6	152
18-Jun-07	12:00:00	-22.19		93	18-Jul-07	12:00:00	-5.36	12	123	16-Aug-07	12:00:00	-11.27	6	152
19-Jun-07	00:00:00	-22.41		94	18-Jul-07	00:00:00	-2.96	12	123	17-Aug-07	00:00:00	-11.99	7	153
19-Jun-07	12:00:00	-22.7		94	19-Jul-07	12:00:00	-1.51	13	124	17-Aug-07	12:00:00	-12.85		153
20-Jun-07	00:00:00	-22.88		95	19-Jul-07	00:00:00	-1.04	13	124	18-Aug-07	00:00:00	-13.72		154
20-Jun-07	12:00:00	-23.17		95	20-Jul-07	12:00:00	-0.73	14	125	18-Aug-07	12:00:00	-16.32		154
21-Jun-07	00:00:00	-16.37		96	20-Jul-07	00:00:00	-1.01	14	125	19-Aug-07	00:00:00	-17.32		155
21-Jun-07	12:00:00	-12.76		96	21-Jul-07	12:00:00	-1.17	15	126	19-Aug-07	12:00:00	-18.44		155
22-Jun-07	00:00:00	-12.65		97	21-Jul-07	00:00:00	-1.12	15	126	20-Aug-07	00:00:00	-19.03		156
22-Jun-07	12:00:00	-13		97	22-Jul-07	12:00:00	-1.41	16	127	20-Aug-07	12:00:00	-19.78		156
23-Jun-07	00:00:00	-15.39		98	22-Jul-07	00:00:00	-1.91	16	127	21-Aug-07	00:00:00	-20.49		157
23-Jun-07	12:00:00	-16.87		98	23-Jul-07	12:00:00	-3.78	17	128	21-Aug-07	12:00:00	-20.94		157
24-Jun-07	00:00:00	-17.98		99	23-Jul-07	00:00:00	-5.97	17	128	22-Aug-07	00:00:00	-9.93	1	158

Lloyd 4

Data Acquired : November 18, 2007

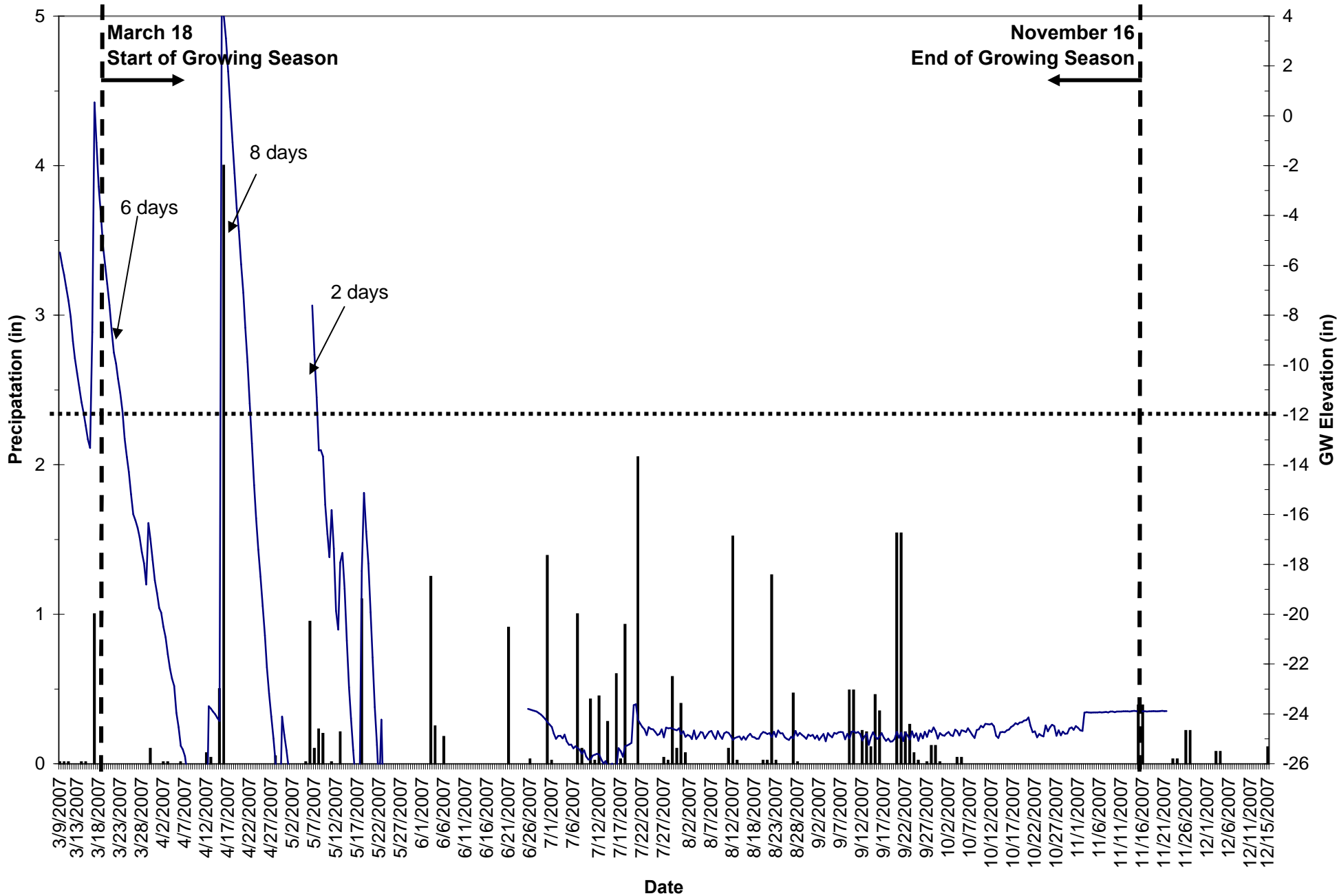
Serial Number: N45DAC22

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

22-Aug-07	12:00:00	-3.12	1	158	21-Sep-07	12:00:00	-19.3		187.7	20-Oct-07	12:00:00	-24.19		217
23-Aug-07	00:00:00	-3.4	2	159	21-Sep-07	00:00:00	-18.85		188	21-Oct-07	00:00:00	-24.2		218
23-Aug-07	12:00:00	-3.7	2	159	22-Sep-07	12:00:00	-18.02		189	21-Oct-07	12:00:00	-24.21		218
24-Aug-07	00:00:00	-5.58	3	160	22-Sep-07	00:00:00	-18.2		189	22-Oct-07	00:00:00	-24.22		219
24-Aug-07	12:00:00	-7.75	3	160	23-Sep-07	12:00:00	-19.04		189.7	22-Oct-07	12:00:00	-24.21		219
25-Aug-07	00:00:00	-10.56	4	161	23-Sep-07	00:00:00	-20.33		190.2	23-Oct-07	00:00:00	-24.23		220
25-Aug-07	12:00:00	-10.51	4	161	24-Sep-07	12:00:00	-21.07		190.7	23-Oct-07	12:00:00	-24.22		220
26-Aug-07	00:00:00	-11.9	5	162	24-Sep-07	00:00:00	-21.99		191.2	24-Oct-07	00:00:00	-24.21		221
26-Aug-07	12:00:00	-14.53		162	25-Sep-07	12:00:00	-22.6		191.7	24-Oct-07	12:00:00	-24.23		221
27-Aug-07	00:00:00	-8	1	163	25-Sep-07	00:00:00	-23.73		192.2	25-Oct-07	00:00:00	-24.24		222
27-Aug-07	12:00:00	-7.14	1	163	26-Sep-07	12:00:00	-23.68		192.7	25-Oct-07	12:00:00	-24.25		222
28-Aug-07	00:00:00	-6.95	2	164	26-Sep-07	00:00:00	-24.2		193.2	26-Oct-07	00:00:00	-24.27		223
28-Aug-07	12:00:00	-7.36	2	164	27-Sep-07	12:00:00	-24.27		193.7	26-Oct-07	12:00:00	-11.24	1	223
29-Aug-07	00:00:00	-7.9	3	165	27-Sep-07	00:00:00	-24.43		194.2	27-Oct-07	00:00:00	-4.97	1	224
29-Aug-07	12:00:00	-9.04	3	165	28-Sep-07	12:00:00	-24.56		194.7	27-Oct-07	12:00:00	-0.9	2	224
30-Aug-07	00:00:00	-9.85	4	166	28-Sep-07	00:00:00	-25.79		195.2	28-Oct-07	00:00:00	-2.75	2	225
30-Aug-07	12:00:00	-10.25	4	166	29-Sep-07	12:00:00	-27.14		195.7	28-Oct-07	12:00:00	-4.4	3	225
31-Aug-07	00:00:00	-11.02	5	167	29-Sep-07	00:00:00	-28.41		196.2	29-Oct-07	00:00:00	-5.43	3	226
31-Aug-07	12:00:00	-11.9		167	30-Sep-07	12:00:00	-28.98		196.7	29-Oct-07	12:00:00	-6.26	4	226
01-Sep-07	00:00:00	-13.41		168	30-Sep-07	00:00:00	-29.55		197.2	30-Oct-07	00:00:00	-6.69	4	227
01-Sep-07	12:00:00	-15.29		168	01-Oct-07	12:00:00	-29.55		198	30-Oct-07	12:00:00	-7.45	5	227
02-Sep-07	00:00:00	-16.63		169	01-Oct-07	00:00:00	-29.88		198	31-Oct-07	00:00:00	-7.95	5	228
02-Sep-07	12:00:00	-17.52		169	02-Oct-07	12:00:00	-29.66		199	31-Oct-07	12:00:00	-8.39	6	228
03-Sep-07	00:00:00	-17.74		170	02-Oct-07	00:00:00	N/A		199	01-Nov-07	00:00:00	-8.51	6	229
03-Sep-07	12:00:00	-17.9		170	03-Oct-07	12:00:00	N/A		200	01-Nov-07	12:00:00	-8.81	7	229
04-Sep-07	00:00:00	-18.35		171	03-Oct-07	00:00:00	-24.02		200	02-Nov-07	00:00:00	-9.06	7	230
04-Sep-07	12:00:00	-19.31		171	04-Oct-07	12:00:00	-23.9		201	02-Nov-07	12:00:00	-9.54	8	230
05-Sep-07	00:00:00	-20.18		171.7	04-Oct-07	00:00:00	-23.91		201	03-Nov-07	00:00:00	-9.99	8	231
05-Sep-07	12:00:00	-21.85		172.2	05-Oct-07	12:00:00	-23.89		202	03-Nov-07	12:00:00	-10.56	9	231
06-Sep-07	00:00:00	-23		172.7	05-Oct-07	00:00:00	-23.92		202	04-Nov-07	00:00:00	-11.03	9	232
06-Sep-07	12:00:00	-24.49		173.2	06-Oct-07	12:00:00	-23.92		203	04-Nov-07	12:00:00	-11.72	10	232
07-Sep-07	00:00:00	-24.75		173.7	06-Oct-07	00:00:00	-23.95		203	05-Nov-07	00:00:00	-12.07		233
07-Sep-07	12:00:00	-25.2		174.2	07-Oct-07	12:00:00	-23.97		204	05-Nov-07	12:00:00	-12.56		233
08-Sep-07	00:00:00	-25.29		174.7	07-Oct-07	00:00:00	-23.96		204	06-Nov-07	00:00:00	-12.88		234
08-Sep-07	12:00:00	-25.81		175.2	08-Oct-07	12:00:00	-23.98		205	06-Nov-07	12:00:00	-13.2		234
09-Sep-07	00:00:00	-25.82		175.7	08-Oct-07	00:00:00	-23.98		205	07-Nov-07	00:00:00	-13.65		235
09-Sep-07	12:00:00	-27.18		176.2	09-Oct-07	12:00:00	-23.99		206	07-Nov-07	12:00:00	-14.71		235
10-Sep-07	00:00:00	-23.88		176.7	09-Oct-07	00:00:00	-24		206	08-Nov-07	00:00:00	-15.68		236
10-Sep-07	12:00:00	-23.86		177.2	10-Oct-07	12:00:00	-24.01		207	08-Nov-07	12:00:00	-15.61		236
11-Sep-07	00:00:00	-23.86		177.7	10-Oct-07	00:00:00	-24		207	09-Nov-07	00:00:00	-15.7		237
11-Sep-07	12:00:00	-23.82		178.2	11-Oct-07	12:00:00	-24.01		208	09-Nov-07	12:00:00	-15.91		237
12-Sep-07	00:00:00	-23.84		178.7	11-Oct-07	00:00:00	-24.01		208	10-Nov-07	00:00:00	-15.84		238
12-Sep-07	12:00:00	-23.88		179.2	12-Oct-07	12:00:00	-24.03		209	10-Nov-07	12:00:00	-16.11		238
13-Sep-07	00:00:00	-12.5		179.7	12-Oct-07	00:00:00	-24.04		209	11-Nov-07	00:00:00	-16.91		239
13-Sep-07	12:00:00	-17.77		180.2	13-Oct-07	12:00:00	-24.04		210	11-Nov-07	12:00:00	-16.98		239
14-Sep-07	00:00:00	-19.04		180.7	13-Oct-07	00:00:00	-24.07		210	12-Nov-07	00:00:00	-16.68		240
14-Sep-07	12:00:00	-21.83		181.2	14-Oct-07	12:00:00	-24.08		211	12-Nov-07	12:00:00	-16.7		240
15-Sep-07	00:00:00	-23.06		181.7	14-Oct-07	00:00:00	-24.07		211	13-Nov-07	00:00:00	-16.22		241
15-Sep-07	12:00:00	-12.33		182.2	15-Oct-07	12:00:00	-24.1		212	13-Nov-07	12:00:00	-16.08		241
16-Sep-07	00:00:00	-12.21		182.7	15-Oct-07	00:00:00	-24.1		212	14-Nov-07	00:00:00	-16		242
16-Sep-07	12:00:00	-12.76		183.2	16-Oct-07	12:00:00	-24.11		213	14-Nov-07	12:00:00	-15.88		242
17-Sep-07	00:00:00	-14.17		183.7	16-Oct-07	00:00:00	-24.12		213	15-Nov-07	00:00:00	-15.78		245
17-Sep-07	12:00:00	-15.6		184.2	17-Oct-07	12:00:00	-24.12		214	15-Nov-07	12:00:00	-15.59		245
18-Sep-07	00:00:00	-16.34		184.7	17-Oct-07	00:00:00	-24.14		214	16-Nov-07	00:00:00	-7	1	246
18-Sep-07	12:00:00	-17.44		185.2	18-Oct-07	12:00:00	-24.16		215	16-Nov-07	12:00:00	-7.66	1	246
19-Sep-07	00:00:00	-17.83		185.7	18-Oct-07	00:00:00	-24.16		215	17-Nov-07	00:00:00	-8.21	2	
19-Sep-07	12:00:00	-18.95		186.2	19-Oct-07	12:00:00	-24.16		216	17-Nov-07	12:00:00	-8.74	2	
20-Sep-07	00:00:00	-19.62		186.7	19-Oct-07	00:00:00	-24.16		216	18-Nov-07	00:00:00	-9.15	3	
20-Sep-07	12:00:00	-20.38		187.2	20-Oct-07	12:00:00	-24.17		217	18-Nov-07	12:00:00	-9.62	3	

Lloyd Reference N45DACC9



■ Precipitation — GW Elevation

Lloyd Reference

Data Acquired : November 18, 2007

Serial Number: N45DACC9

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD	Date	Time	Level (in)	CD	JD
09-Mar-07	00:00:00	-5.48			04-Apr-07	00:00:00	-22.58		18	30-Apr-07	00:00:00	-24.84		44
09-Mar-07	12:00:00	-5.99			04-Apr-07	12:00:00	-22.88		18	30-Apr-07	12:00:00	-25.46		44
10-Mar-07	00:00:00	-6.38			05-Apr-07	00:00:00	-23.96		19	01-May-07	00:00:00	-26.11		45
10-Mar-07	12:00:00	-6.91			05-Apr-07	12:00:00	-24.53		19	01-May-07	12:00:00	-26.79		45
11-Mar-07	00:00:00	-7.43			06-Apr-07	00:00:00	-25.28		20	02-May-07	00:00:00	-27.47		46
11-Mar-07	12:00:00	-8.07			06-Apr-07	12:00:00	-25.43		20	02-May-07	12:00:00	-28.09		46
12-Mar-07	00:00:00	-9.04			07-Apr-07	00:00:00	-25.7		21	03-May-07	00:00:00	-28.75		47
12-Mar-07	12:00:00	-9.73			07-Apr-07	12:00:00	-26.36		21	03-May-07	12:00:00	-29.43		47
13-Mar-07	00:00:00	-10.32			08-Apr-07	00:00:00	-27.09		22	04-May-07	00:00:00	-30.1		48
13-Mar-07	12:00:00	-10.91			08-Apr-07	12:00:00	-27.18		22	04-May-07	12:00:00	-30.71		48
14-Mar-07	00:00:00	-11.49			09-Apr-07	00:00:00	-27.66		23	05-May-07	00:00:00	-31.26		49
14-Mar-07	12:00:00	-11.94			09-Apr-07	12:00:00	-27.86		23	05-May-07	12:00:00	N/A		49
15-Mar-07	00:00:00	-12.43			10-Apr-07	00:00:00	-28.29		24	06-May-07	00:00:00	N/A		50
15-Mar-07	12:00:00	-12.98			10-Apr-07	12:00:00	-28.51		24	06-May-07	12:00:00	-7.61	1	50
16-Mar-07	00:00:00	-13.33			11-Apr-07	00:00:00	-29.03		25	07-May-07	00:00:00	-9.59	2	51
16-Mar-07	12:00:00	-8.68			11-Apr-07	12:00:00	-29.07		25	07-May-07	12:00:00	-11.3	2	51
17-Mar-07	00:00:00	0.54			12-Apr-07	00:00:00	-29.14		26	08-May-07	00:00:00	-13.43		52
17-Mar-07	12:00:00	-1.08			12-Apr-07	12:00:00	-23.69		26	08-May-07	12:00:00	-13.42		52
18-Mar-07	00:00:00	-2.84	1	1	13-Apr-07	00:00:00	-23.79		27	09-May-07	00:00:00	-13.67		53
18-Mar-07	12:00:00	-3.95	1	1	13-Apr-07	12:00:00	-23.91		27	09-May-07	12:00:00	-15.61		53
19-Mar-07	00:00:00	-5.25	2	2	14-Apr-07	00:00:00	-24.01		28	10-May-07	00:00:00	-16.78		54
19-Mar-07	12:00:00	-6.04	2	2	14-Apr-07	12:00:00	-24.16		28	10-May-07	12:00:00	-17.71		54
20-Mar-07	00:00:00	-6.75	3	3	15-Apr-07	00:00:00	-24.29		29	11-May-07	00:00:00	-15.82		55
20-Mar-07	12:00:00	-7.59	3	3	15-Apr-07	12:00:00	4.53	1	29	11-May-07	12:00:00	-17.37		55
21-Mar-07	00:00:00	-8.61	4	4	16-Apr-07	00:00:00	4.04	2	30	12-May-07	00:00:00	-19.87		56
21-Mar-07	12:00:00	-9.5	4	4	16-Apr-07	12:00:00	3.11	2	30	12-May-07	12:00:00	-20.62		56
22-Mar-07	00:00:00	-9.94	5	5	17-Apr-07	00:00:00	1.78	3	31	13-May-07	00:00:00	-17.93		57
22-Mar-07	12:00:00	-10.55	5	5	17-Apr-07	12:00:00	0.35	3	31	13-May-07	12:00:00	-17.54		57
23-Mar-07	00:00:00	-11.12	6	6	18-Apr-07	00:00:00	-1.06	4	32	14-May-07	00:00:00	-18.98		58
23-Mar-07	12:00:00	-11.84	6	6	18-Apr-07	12:00:00	-2.3	4	32	14-May-07	12:00:00	-21.06		58
24-Mar-07	00:00:00	-12.96	7	7	19-Apr-07	00:00:00	-3.71	5	33	15-May-07	00:00:00	-22.93		59
24-Mar-07	12:00:00	-13.69	7	7	19-Apr-07	12:00:00	-4.63	5	33	15-May-07	12:00:00	-24.18		59
25-Mar-07	00:00:00	-14.29	8	8	20-Apr-07	00:00:00	-5.96	6	34	16-May-07	00:00:00	-25.46		60
25-Mar-07	12:00:00	-15.18	8	8	20-Apr-07	12:00:00	-7.11	6	34	16-May-07	12:00:00	-26.61		60
26-Mar-07	00:00:00	-15.99	9	9	21-Apr-07	00:00:00	-8.5	7	35	17-May-07	00:00:00	-28.04		61
26-Mar-07	12:00:00	-16.24	9	9	21-Apr-07	12:00:00	-9.88	7	35	17-May-07	12:00:00	-26.27		61
27-Mar-07	00:00:00	-16.54	10	10	22-Apr-07	00:00:00	-11.54	8	36	18-May-07	00:00:00	-18.27		62
27-Mar-07	12:00:00	-16.91	10	10	22-Apr-07	12:00:00	-13.15	8	36	18-May-07	12:00:00	-15.13		62
28-Mar-07	00:00:00	-17.51	11	11	23-Apr-07	00:00:00	-14.82	9	37	19-May-07	00:00:00	-16.68		63
28-Mar-07	12:00:00	-17.96	11	11	23-Apr-07	12:00:00	-16.15	9	37	19-May-07	12:00:00	-17.97		63
29-Mar-07	00:00:00	-18.81	12	12	24-Apr-07	00:00:00	-17.41	10	38	20-May-07	00:00:00	-19.92		64
29-Mar-07	12:00:00	-16.34	12	12	24-Apr-07	12:00:00	-18.5	10	38	20-May-07	12:00:00	-21.73		64
30-Mar-07	00:00:00	-16.99	13	13	25-Apr-07	00:00:00	-19.67	11	39	21-May-07	00:00:00	-23.73		65
30-Mar-07	12:00:00	-17.82	13	13	25-Apr-07	12:00:00	-20.85	11	39	21-May-07	12:00:00	-25.25		65
31-Mar-07	00:00:00	-18.64	14	14	26-Apr-07	00:00:00	-22.13	12	40	22-May-07	00:00:00	-27.15		66
31-Mar-07	12:00:00	-19.15	14	14	26-Apr-07	12:00:00	-23.19	12	40	22-May-07	12:00:00	-24.23		66
01-Apr-07	00:00:00	-19.75	15	15	27-Apr-07	00:00:00	-24.11	13	41	23-May-07	00:00:00	-27.42		67
01-Apr-07	12:00:00	-19.94	15	15	27-Apr-07	12:00:00	-24.99	13	41	23-May-07	12:00:00	-28.28		67
02-Apr-07	00:00:00	-20.5	16	16	28-Apr-07	00:00:00	-26.02	14	42	24-May-07	00:00:00	-29.18		68
02-Apr-07	12:00:00	-20.93	16	16	28-Apr-07	12:00:00	-26.96	14	42	24-May-07	12:00:00	-29.59		68
03-Apr-07	00:00:00	-21.61	17	17	29-Apr-07	00:00:00	-28.26	15	43	25-May-07	00:00:00	-30.14		69
03-Apr-07	12:00:00	-22.19	17	17	29-Apr-07	12:00:00	-24.11	15	43	25-May-07	12:00:00	-30.34		69

Lloyd Reference

Data Acquired : November 18, 2007

Serial Number: N45DACC9

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

26-May-07	00:00:00	-30.86		70	24-Jun-07	00:00:00	N/A		99	24-Jul-07	00:00:00	-24.6		129
26-May-07	12:00:00	-31.06		70	25-Jun-07	12:00:00	N/A		100	24-Jul-07	12:00:00	-24.62		129
27-May-07	00:00:00	N/A		71	25-Jun-07	00:00:00	-23.8		100	25-Jul-07	00:00:00	-24.73		130
27-May-07	12:00:00	N/A		71	26-Jun-07	12:00:00	-23.83		101	25-Jul-07	12:00:00	-24.85		130
28-May-07	00:00:00	N/A		72	26-Jun-07	00:00:00	-23.85		101	26-Jul-07	00:00:00	-24.81		131
28-May-07	12:00:00	N/A		72	27-Jun-07	12:00:00	-23.88		102	26-Jul-07	12:00:00	-24.62		131
29-May-07	00:00:00	N/A		73	27-Jun-07	00:00:00	-23.91		102	27-Jul-07	00:00:00	-24.94		132
29-May-07	12:00:00	N/A		73	28-Jun-07	12:00:00	-23.97		103	27-Jul-07	12:00:00	-24.55		132
30-May-07	00:00:00	N/A		74	28-Jun-07	00:00:00	-24.03		103	28-Jul-07	00:00:00	-24.58		133
30-May-07	12:00:00	N/A		74	29-Jun-07	12:00:00	-24.11		104	28-Jul-07	12:00:00	-24.57		133
31-May-07	00:00:00	N/A		75	29-Jun-07	00:00:00	-24.21		104	29-Jul-07	00:00:00	-24.59		134
31-May-07	12:00:00	N/A		75	30-Jun-07	12:00:00	-24.33		105	29-Jul-07	12:00:00	-24.63		134
01-Jun-07	00:00:00	N/A		76	30-Jun-07	00:00:00	-24.43		105	30-Jul-07	00:00:00	-24.66		135
01-Jun-07	12:00:00	N/A		76	01-Jul-07	12:00:00	-24.52		106	30-Jul-07	12:00:00	-24.58		135
02-Jun-07	00:00:00	N/A		77	01-Jul-07	00:00:00	-24.79		106	31-Jul-07	00:00:00	-24.82		136
02-Jun-07	12:00:00	N/A		77	02-Jul-07	12:00:00	-25		107	31-Jul-07	12:00:00	-24.7		136
03-Jun-07	00:00:00	N/A		78	02-Jul-07	00:00:00	-24.89		107	01-Aug-07	00:00:00	-24.92		137
03-Jun-07	12:00:00	N/A		78	03-Jul-07	12:00:00	-24.88		108	01-Aug-07	12:00:00	-24.84		137
04-Jun-07	00:00:00	N/A		79	03-Jul-07	00:00:00	-24.98		108	02-Aug-07	00:00:00	-24.89		138
04-Jun-07	12:00:00	N/A		79	04-Jul-07	12:00:00	-24.83		109	02-Aug-07	12:00:00	-25.01		138
05-Jun-07	00:00:00	N/A		80	04-Jul-07	00:00:00	-25.11		109	03-Aug-07	00:00:00	-24.67		139
05-Jun-07	12:00:00	N/A		80	05-Jul-07	12:00:00	-25.24		110	03-Aug-07	12:00:00	-25.01		139
06-Jun-07	00:00:00	N/A		81	05-Jul-07	00:00:00	-25.23		110	04-Aug-07	00:00:00	-24.89		140
06-Jun-07	12:00:00	N/A		81	06-Jul-07	12:00:00	-25.38		111	04-Aug-07	12:00:00	-24.73		140
07-Jun-07	00:00:00	N/A		82	06-Jul-07	00:00:00	-25.3		111	05-Aug-07	00:00:00	-24.75		141
07-Jun-07	12:00:00	N/A		82	07-Jul-07	12:00:00	-25.36		112	05-Aug-07	12:00:00	-24.98		141
08-Jun-07	00:00:00	N/A		83	07-Jul-07	00:00:00	-25.44		112	06-Aug-07	00:00:00	-24.84		142
08-Jun-07	12:00:00	N/A		83	08-Jul-07	12:00:00	-25.6		113	06-Aug-07	12:00:00	-24.72		142
09-Jun-07	00:00:00	N/A		84	08-Jul-07	00:00:00	-25.46		113	07-Aug-07	00:00:00	-24.68		143
09-Jun-07	12:00:00	N/A		84	09-Jul-07	12:00:00	-25.71		114	07-Aug-07	12:00:00	-24.86		143
10-Jun-07	00:00:00	N/A		85	09-Jul-07	00:00:00	-25.83		114	08-Aug-07	00:00:00	-25.01		144
10-Jun-07	12:00:00	N/A		85	10-Jul-07	12:00:00	-25.82		115	08-Aug-07	12:00:00	-24.69		144
11-Jun-07	00:00:00	N/A		86	10-Jul-07	00:00:00	-25.67		115	09-Aug-07	00:00:00	-24.88		145
11-Jun-07	12:00:00	N/A		86	11-Jul-07	12:00:00	-25.64		116	09-Aug-07	12:00:00	-25		145
12-Jun-07	00:00:00	N/A		87	11-Jul-07	00:00:00	-25.6		116	10-Aug-07	00:00:00	-24.78		146
12-Jun-07	12:00:00	N/A		87	12-Jul-07	12:00:00	-25.63		117	10-Aug-07	12:00:00	-24.73		146
13-Jun-07	00:00:00	N/A		88	12-Jul-07	00:00:00	-25.83		117	11-Aug-07	00:00:00	-24.76		147
13-Jun-07	12:00:00	N/A		88	13-Jul-07	12:00:00	-25.99		118	11-Aug-07	12:00:00	-24.89		147
14-Jun-07	00:00:00	N/A		89	13-Jul-07	00:00:00	-25.89		118	12-Aug-07	00:00:00	-25.05		148
14-Jun-07	12:00:00	N/A		89	14-Jul-07	12:00:00	-26.09		119	12-Aug-07	12:00:00	-24.97		148
15-Jun-07	00:00:00	N/A		90	14-Jul-07	00:00:00	-26.07		119	13-Aug-07	00:00:00	-24.93		149
15-Jun-07	12:00:00	N/A		90	15-Jul-07	12:00:00	-26		120	13-Aug-07	12:00:00	-24.9		149
16-Jun-07	00:00:00	N/A		91	15-Jul-07	00:00:00	-26.18		120	14-Aug-07	00:00:00	-25.04		150
16-Jun-07	12:00:00	N/A		91	16-Jul-07	12:00:00	-26.2		121	14-Aug-07	12:00:00	-24.91		150
17-Jun-07	00:00:00	N/A		92	16-Jul-07	00:00:00	-25.37		121	15-Aug-07	00:00:00	-25.04		151
17-Jun-07	12:00:00	N/A		92	17-Jul-07	12:00:00	-25.5		122	15-Aug-07	12:00:00	-24.89		151
18-Jun-07	00:00:00	N/A		93	17-Jul-07	00:00:00	-25.72		122	16-Aug-07	00:00:00	-24.8		152
18-Jun-07	12:00:00	N/A		93	18-Jul-07	12:00:00	-25.29		123	16-Aug-07	12:00:00	-24.92		152
19-Jun-07	00:00:00	N/A		94	18-Jul-07	00:00:00	-25.27		123	17-Aug-07	00:00:00	-24.94		153
19-Jun-07	12:00:00	N/A		94	19-Jul-07	12:00:00	-25.22		124	17-Aug-07	12:00:00	-25		153
20-Jun-07	00:00:00	N/A		95	19-Jul-07	00:00:00	-25.16		124	18-Aug-07	00:00:00	-24.99		154
20-Jun-07	12:00:00	N/A		95	20-Jul-07	12:00:00	-23.65		125	18-Aug-07	12:00:00	-24.82		154
21-Jun-07	00:00:00	N/A		96	20-Jul-07	00:00:00	-23.61		125	19-Aug-07	00:00:00	-24.73		155
21-Jun-07	12:00:00	N/A		96	21-Jul-07	12:00:00	-24.22		126	19-Aug-07	12:00:00	-24.75		155
22-Jun-07	00:00:00	N/A		97	21-Jul-07	00:00:00	-24.38		126	20-Aug-07	00:00:00	-24.81		156
22-Jun-07	12:00:00	N/A		97	22-Jul-07	12:00:00	-24.52		127	20-Aug-07	12:00:00	-24.77		156
23-Jun-07	00:00:00	N/A		98	22-Jul-07	00:00:00	-24.62		127	21-Aug-07	00:00:00	-24.93		157
23-Jun-07	12:00:00	N/A		98	23-Jul-07	12:00:00	-24.85		128	21-Aug-07	12:00:00	-24.72		157
24-Jun-07	00:00:00	N/A		99	23-Jul-07	00:00:00	-24.53		128	22-Aug-07	00:00:00	-24.92		158

Lloyd Reference

Data Acquired : November 18, 2007

Serial Number: N45DACC9

CD: Consecutive Days Saturation (within 12 inches of the soil surface) During the Growing Season

JD: Julian Days During Growing Season

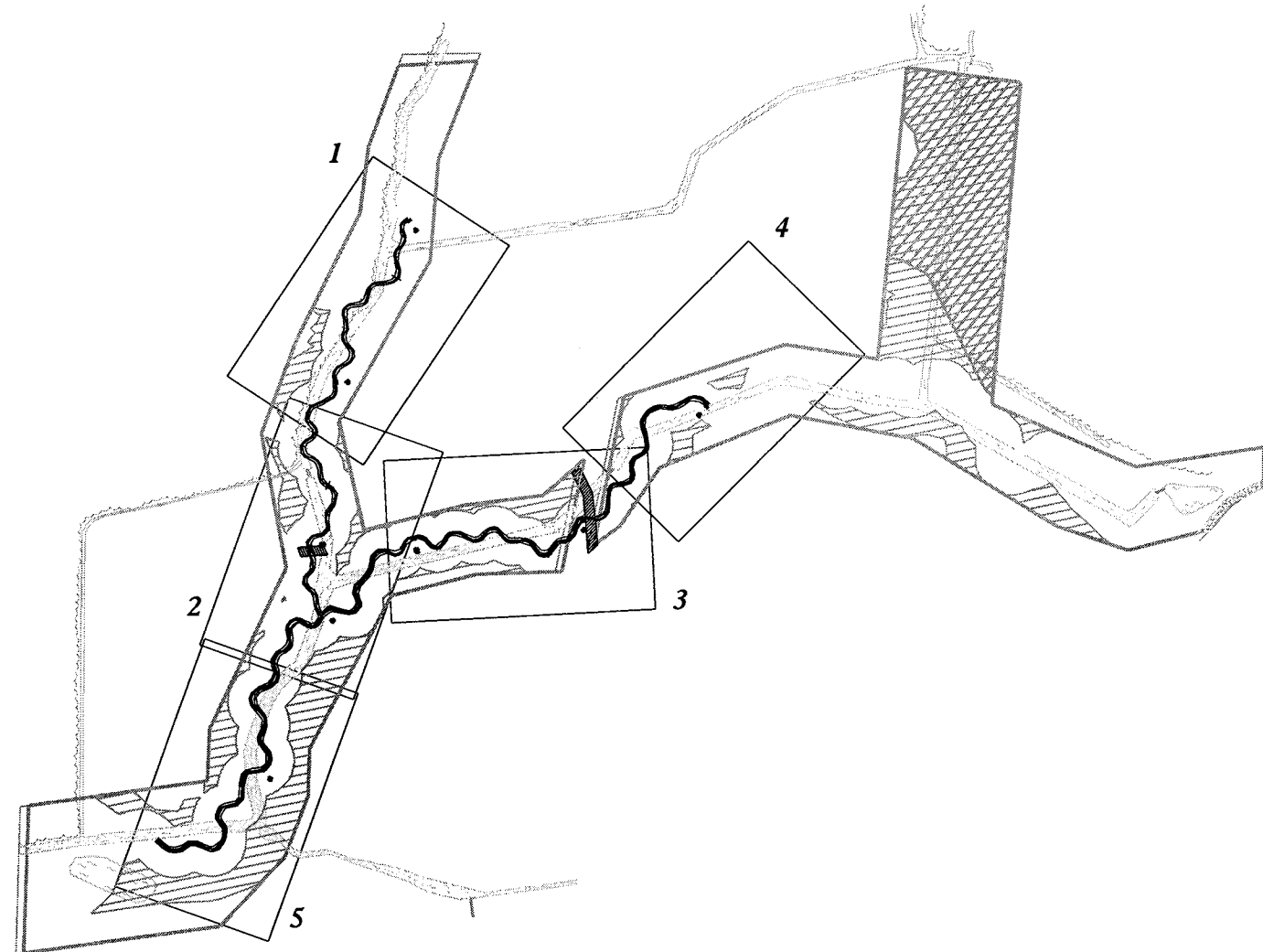
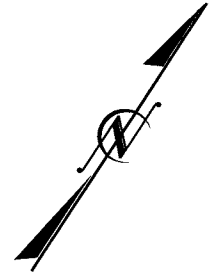
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23-Aug-07	00:00:00	-24.78		159	21-Sep-07	00:00:00	-24.87		188	21-Oct-07	00:00:00	-24.7		218
23-Aug-07	12:00:00	-24.78		159	22-Sep-07	12:00:00	-25.03		189	21-Oct-07	12:00:00	-24.94		218
24-Aug-07	00:00:00	-24.94		160	22-Sep-07	00:00:00	-24.7		189	22-Oct-07	00:00:00	-24.81		219
24-Aug-07	12:00:00	-25		160	23-Sep-07	12:00:00	-24.94		189.7	22-Oct-07	12:00:00	-24.87		219
25-Aug-07	00:00:00	-25.05		161	23-Sep-07	00:00:00	-24.78		190.2	23-Oct-07	00:00:00	-24.9		220
25-Aug-07	12:00:00	-24.92		161	24-Sep-07	12:00:00	-25.08		190.7	23-Oct-07	12:00:00	-24.46		220
26-Aug-07	00:00:00	-24.98		162	24-Sep-07	00:00:00	-24.79		191.2	24-Oct-07	00:00:00	-24.7		221
26-Aug-07	12:00:00	-24.68		162	25-Sep-07	12:00:00	-24.98		191.7	24-Oct-07	12:00:00	-24.53		221
27-Aug-07	00:00:00	-24.88		163	25-Sep-07	00:00:00	-24.72		192.2	25-Oct-07	00:00:00	-24.44		222
27-Aug-07	12:00:00	-24.76		163	26-Sep-07	12:00:00	-24.92		192.7	25-Oct-07	12:00:00	-24.49		222
28-Aug-07	00:00:00	-24.84		164	26-Sep-07	00:00:00	-24.66		193.2	26-Oct-07	00:00:00	-24.88		223
28-Aug-07	12:00:00	-24.91		164	27-Sep-07	12:00:00	-24.73		193.7	26-Oct-07	12:00:00	-24.66		223
29-Aug-07	00:00:00	-25		165	27-Sep-07	00:00:00	-24.54		194.2	27-Oct-07	00:00:00	-24.86		224
29-Aug-07	12:00:00	-24.83		165	28-Sep-07	12:00:00	-24.69		194.7	27-Oct-07	12:00:00	-24.71		224
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31-Aug-07	12:00:00	-24.87		167	30-Sep-07	12:00:00	-24.88		196.7	29-Oct-07	12:00:00	-24.54		226
01-Sep-07	00:00:00	-25.05		168	30-Sep-07	00:00:00	-24.79		197.2	30-Oct-07	00:00:00	-24.64		227
01-Sep-07	12:00:00	-24.92		168	01-Oct-07	12:00:00	-24.73		198	30-Oct-07	12:00:00	-24.49		227
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07-Sep-07	00:00:00	-25.02		173.7	06-Oct-07	00:00:00	-24.85		203	05-Nov-07	00:00:00	-23.93		233
07-Sep-07	12:00:00	-24.81		174.2	07-Oct-07	12:00:00	-24.97		204	05-Nov-07	12:00:00	-23.94		233
08-Sep-07	00:00:00	-24.98		174.7	07-Oct-07	00:00:00	-24.65		204	06-Nov-07	00:00:00	-23.93		234
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09-Sep-07	00:00:00	-24.7		175.7	08-Oct-07	00:00:00	-24.48		205	07-Nov-07	00:00:00	-23.94		235
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14-Sep-07	00:00:00	-24.91		180.7	13-Oct-07	00:00:00	-24.73		210	12-Nov-07	00:00:00	-23.91		240
14-Sep-07	12:00:00	-25		181.2	14-Oct-07	12:00:00	-24.74		211	12-Nov-07	12:00:00	-23.89		240
15-Sep-07	00:00:00	-24.91		181.7	14-Oct-07	00:00:00	-24.66		211	13-Nov-07	00:00:00	-23.88		241
15-Sep-07	12:00:00	-24.77		182.2	15-Oct-07	12:00:00	-24.63		212	13-Nov-07	12:00:00	-23.89		241
16-Sep-07	00:00:00	-24.96		182.7	15-Oct-07	00:00:00	-24.52		212	14-Nov-07	00:00:00	-23.91		242
16-Sep-07	12:00:00	-25.08		183.2	16-Oct-07	12:00:00	-24.47		213	14-Nov-07	12:00:00	-23.9		242
17-Sep-07	00:00:00	-24.99		183.7	16-Oct-07	00:00:00	-24.37		213	15-Nov-07	00:00:00	-23.9		245
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19-Sep-07	00:00:00	-24.72		185.7	18-Oct-07	00:00:00	-24.27		215	17-Nov-07	00:00:00	-23.9		
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20-Sep-07	12:00:00	-25.09		187.2	20-Oct-07	12:00:00	-24.48		217	18-Nov-07	12:00:00	-23.9		

Appendix D

Monitoring Plan View and
Monitoring Devices Map

LLOYD STREAM AND RESTORATION RESTORATION SITE

ONSLOW COUNTY, NORTH CAROLINA
 CONTRACT# 16-DO6003-1



ARCADIS

G & M of North Carolina, Inc.
 WWW.ARCADIS-US.COM

801 Corporate Center Drive, Suite 300
 Raleigh, NC 27607-5073
 Tel: 919/854-1282 Fax: 919/854-5448

BEN FURR
 Project Manager

MONITORING PLANS

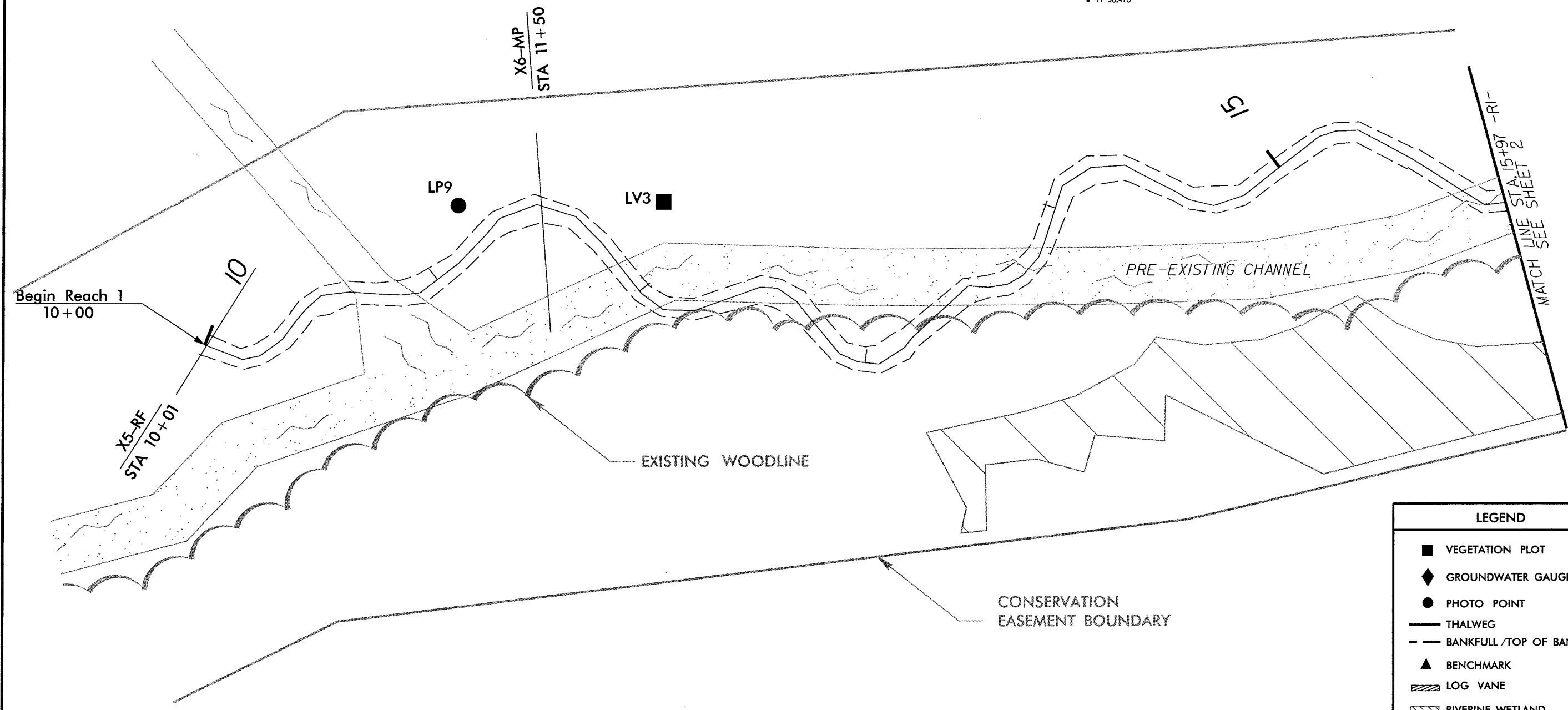
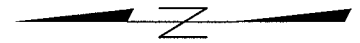
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2			
1	WMD	12/31/07	DATE OF COMPLETION

Restoration Systems, LLC
 1101 Haynes Street, Suite 107
 Raleigh, NC 27604 (919) 755-9490

LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

Plan Map View

Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
LV1 N 34° 51.949' W 77° 30.441' Bearing 14°	LG1 Gauge* N45D9721 N 34° 51.954' W 77° 30.396'	LP1 N 34° 51.983' W 77° 30.326' Bearing 240°	LP5 N 34° 51.878' W 77° 30.565' Bearing 184°	LP10 N 34° 51.773' W 77° 30.647' Bearing 194°	LP14 N 34° 51.653' W 77° 30.658' Bearing 245°	BM1 N 409077.513 E 2447629.135 Elev. 29.68
LV2 N 34° 52.036' W 77° 30.533' Bearing 67°	LG2 Gauge* N45DADBE N 34° 51.992' W 77° 30.454'	LP2 N 34° 51.957' W 77° 30.435' Bearing 31°	LP6 N 34° 51.895' W 77° 30.607' Bearing 232°	LP11 N 34° 51.720' W 77° 30.643' Bearing 150°	LP15(two photos) N 34° 51.635' W 77° 30.689' Bearing 41° and 253° 253° shows terra-mating structure	BM2 N 409068.154 E 2446974.029 Elev. 29.57
LV3 N 34° 51.877' W 77° 30.697' Bearing 30°	LG3 Gauge* N45DAC6E N 34° 52.032' W 77° 30.533'	LP3 N 34° 52.016' W 77° 30.515' Bearing 163°	LP7 N 34° 51.799' W 77° 30.640' Bearing 188°	LP12 N 34° 51.668' W 77° 30.625' Bearing 250°		
LV4 N 34° 51.794' W 77° 38.651' Bearing 194°	LG4 Gauge* N45DAC22 N 34° 51.732' W 77° 30.633'	LP4 N 34° 51.940' W 77° 30.512' Bearing 248°	LP8 N 34° 51.953' W 77° 30.737' Bearing 158°	LP13 N 34° 51.638' W 77° 30.630' Bearing 4°		
LV5 N 34° 51.658' W 77° 30.621' Bearing 320°	LRG1 Gauge* N45DACC9 N 34° 52.037' W 77° 30.470'		LP9 N 34° 51.889' W 77° 30.697' Bearing 210°			



LEGEND	
■	VEGETATION PLOT
◆	GROUNDWATER GAUGE
●	PHOTO POINT
—	THALWEG
- - -	BANKFULL /TOP OF BANK
▲	BENCHMARK
▨	LOG VANE
▩	RIVERINE WETLAND RESTORATION

20' 0 40'
SCALE

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Raleigh, NC 27607-5073
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Project Manager

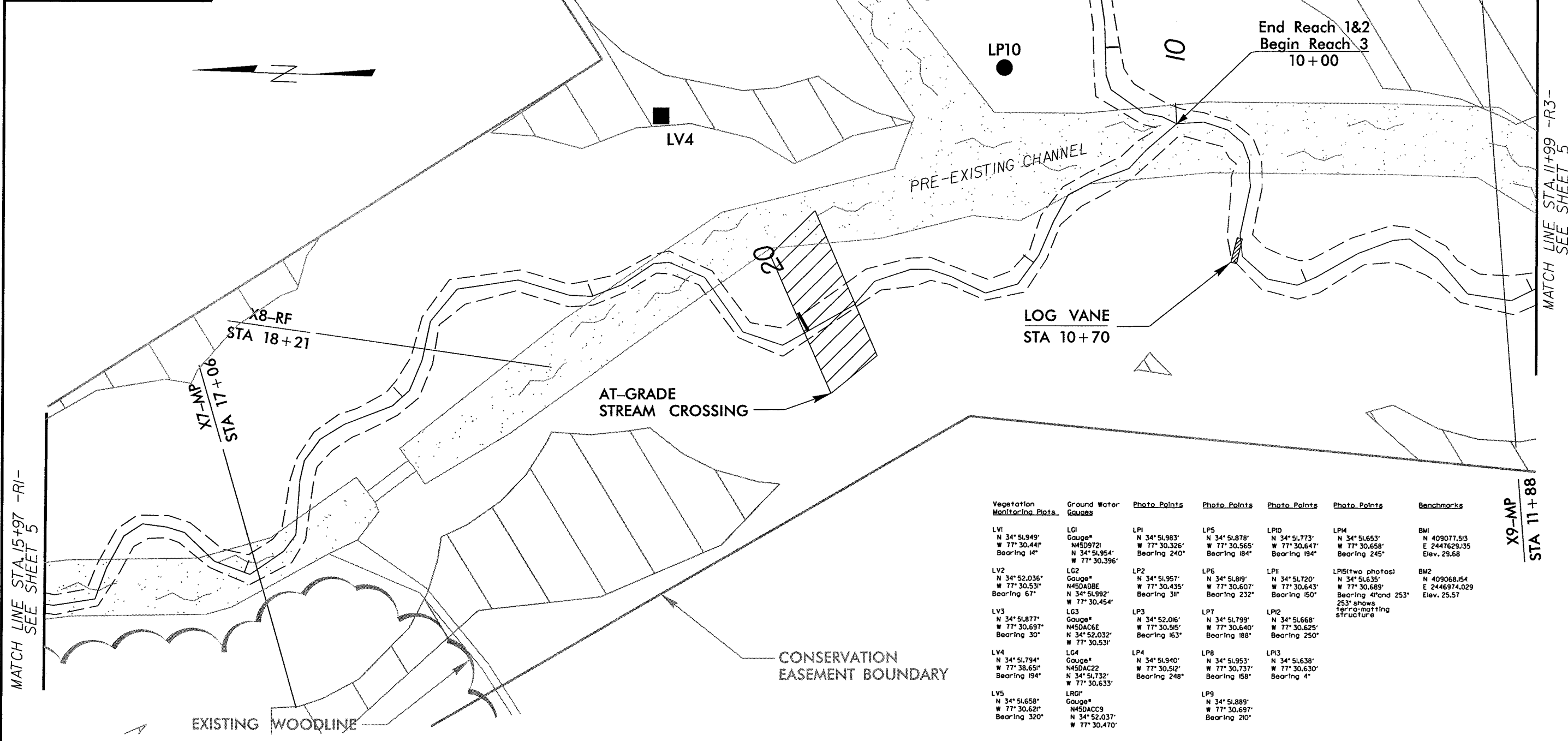
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1	WMO	12/31/07	DATE OF COMPLETION
	BY	DATE	DESCRIPTION OF REVISION

Restoration Systems, LLC
1101 Haynes Street, Suite 107
Raleigh, NC 27604 (919) 755-9490

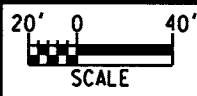
LLOYD STREAM AND WETLAND RESTORATION SITE
ONSLAW COUNTY, NORTH CAROLINA

Monitoring Plan View Sheet 1 of 5

LEGEND	
■	VEGETATION PLOT
◆	GROUNDWATER GAUGE
●	PHOTO POINT
—	THALWEG
- - -	BANKFULL /TOP OF BANK
▲	BENCHMARK
▨	LOG VANE
▩	RIVERINE WETLAND RESTORATION



Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
LV1 N 34° 51.949' W 77° 30.441' Bearing 14°	LGI Gauge* N45D9721 N 34° 51.954' W 77° 30.396'	LP1 N 34° 51.983' W 77° 30.326' Bearing 240°	LP5 N 34° 51.878' W 77° 30.565' Bearing 184°	LP10 N 34° 51.773' W 77° 30.647' Bearing 194°	LP4 N 34° 51.653' W 77° 30.658' Bearing 245°	BM1 N 409077.513 E 2447629.135 Elev. 29.68
LV2 N 34° 52.036' W 77° 30.531' Bearing 67°	LG2 Gauge* N45DABE N 34° 51.992' W 77° 30.454'	LP2 N 34° 51.957' W 77° 30.435' Bearing 311°	LP6 N 34° 51.819' W 77° 30.607' Bearing 232°	LP11 N 34° 51.720' W 77° 30.643' Bearing 150°	LP15(two photos) N 34° 51.635' W 77° 30.689' Bearing 4° and 253° 253° shows terra-matting structure	BM2 N 409068.154 E 2446974.029 Elev. 29.57
LV3 N 34° 51.877' W 77° 30.697' Bearing 30°	LG3 Gauge* N45DAC6E N 34° 52.032' W 77° 30.531'	LP3 N 34° 52.016' W 77° 30.515' Bearing 163°	LP7 N 34° 51.799' W 77° 30.640' Bearing 188°	LP12 N 34° 51.668' W 77° 30.625' Bearing 250°		
LV4 N 34° 51.794' W 77° 38.651' Bearing 194°	LG4 Gauge* N45DAC22 N 34° 51.732' W 77° 30.633'	LP4 N 34° 51.940' W 77° 30.512' Bearing 248°	LP8 N 34° 51.953' W 77° 30.737' Bearing 158°	LP13 N 34° 51.638' W 77° 30.630' Bearing 4°		
LV5 N 34° 51.658' W 77° 30.621' Bearing 320°	LRG1 Gauge* N45DACCC9 N 34° 52.037' W 77° 30.470'		LP9 N 34° 51.889' W 77° 30.697' Bearing 210°			



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BEN FURR
Project Manager

MONITORING PLANS

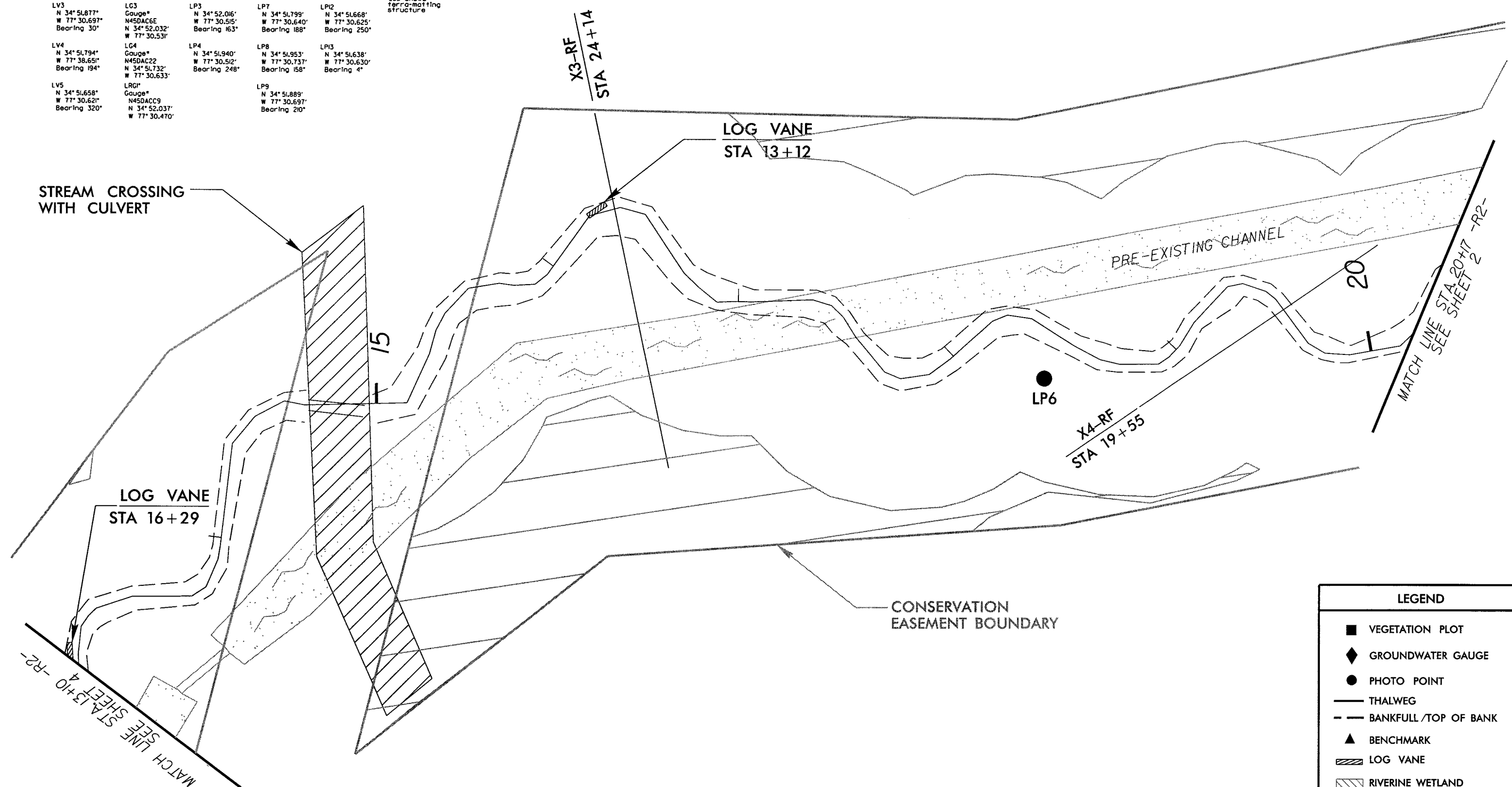
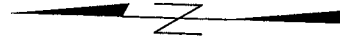
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Restoration Systems, LLC
 1101 Haynes Street, Suite 107
 Raleigh, NC 27604 (919) 755-9490

LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

Monitoring Plan View Sheet 2 of 5

Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
LV1 N 34° 51.949' W 77° 30.441' Bearing 14°	LG1 Gauge* N45D9721 N 34° 51.954' W 77° 30.396'	LP1 N 34° 51.983' W 77° 30.326' Bearing 240°	LP5 N 34° 51.878' W 77° 30.565' Bearing 184°	LP10 N 34° 51.773' W 77° 30.647' Bearing 194°	LP14 N 34° 51.653' W 77° 30.658' Bearing 245°	BM1 N 409077.513 E 2447629.135 Elev. 29.68
LV2 N 34° 52.036' W 77° 30.531' Bearing 67°	LG2 Gauge* N45DADBE N 34° 51.992' W 77° 30.454'	LP2 N 34° 51.957' W 77° 30.435' Bearing 311°	LP6 N 34° 51.819' W 77° 30.607' Bearing 232°	LP11 N 34° 51.720' W 77° 30.643' Bearing 150°	LP15(two photos) N 34° 51.635' W 77° 30.689' Bearing 41° and 253° 253° shows terra-matting structure	BM2 N 409068.154 E 2446974.029 Elev. 25.57
LV3 N 34° 51.877' W 77° 30.697' Bearing 30°	LG3 Gauge* N45DAC6E N 34° 52.032' W 77° 30.531'	LP3 N 34° 52.016' W 77° 30.515' Bearing 163°	LP7 N 34° 51.799' W 77° 30.640' Bearing 188°	LP12 N 34° 51.668' W 77° 30.625' Bearing 250°		
LV4 N 34° 51.794' W 77° 38.651' Bearing 194°	LG4 Gauge* N45DAC22 N 34° 51.732' W 77° 30.633'	LP4 N 34° 51.940' W 77° 30.512' Bearing 248°	LP8 N 34° 51.953' W 77° 30.737' Bearing 158°	LP13 N 34° 51.638' W 77° 30.630' Bearing 4°		
LV5 N 34° 51.658' W 77° 30.621' Bearing 320°	LRG1 Gauge* N45DACC9 N 34° 52.037' W 77° 30.470'		LP9 N 34° 51.889' W 77° 30.697' Bearing 210°			



LEGEND	
■	VEGETATION PLOT
◆	GROUNDWATER GAUGE
●	PHOTO POINT
—	THALWEG
- - -	BANKFULL /TOP OF BANK
▲	BENCHMARK
▨	LOG VANE
▩	RIVERINE WETLAND RESTORATION



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BEN FURR
Project Manager

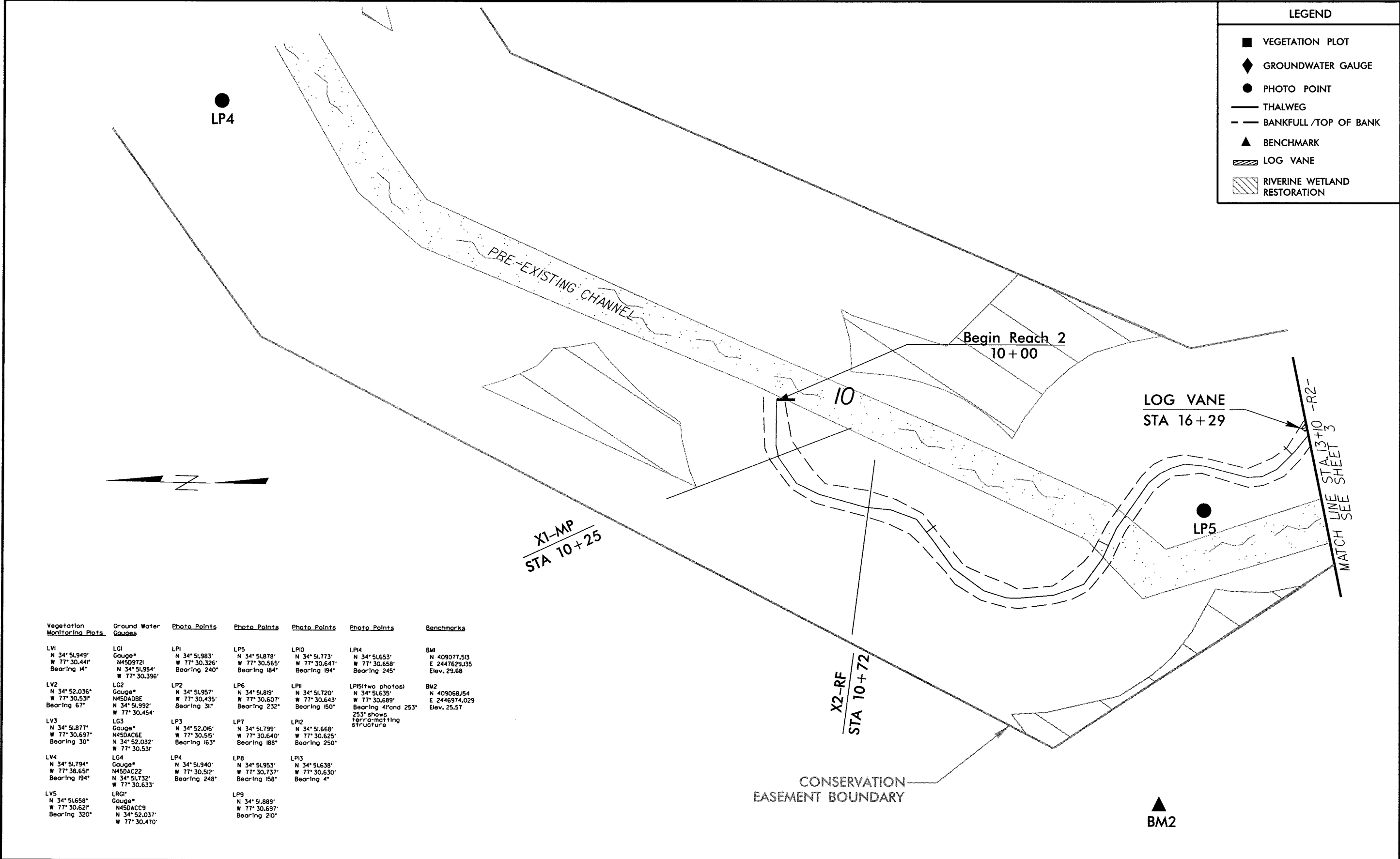
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NO.	BY	DATE	DESCRIPTION OF REVISION
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Restoration Systems, LLC
 1101 Haynes Street, Suite 107
 Raleigh, NC 27604 (919) 755-9490

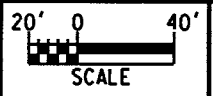
LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

Monitoring Plan View Sheet 3 of 5

LEGEND	
■	VEGETATION PLOT
◆	GROUNDWATER GAUGE
●	PHOTO POINT
—	THALWEG
- - -	BANKFULL /TOP OF BANK
▲	BENCHMARK
▨	LOG VANE
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Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
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LV2 N 34° 52.036' W 77° 30.531' Bearing 67°	LG2 Gauge* N45DAD8E N 34° 51.992' W 77° 30.454'	LP2 N 34° 51.957' W 77° 30.435' Bearing 311°	LP6 N 34° 51.819' W 77° 30.607' Bearing 232°	LPI1 N 34° 51.720' W 77° 30.643' Bearing 150°	LPI5(two photos) N 34° 51.635' W 77° 30.689' Bearing 41° and 253° 253° shows transforming structure	BM2 N 409068.154 E 2446974.029 Elev. 25.57
LV3 N 34° 51.877' W 77° 30.697' Bearing 30°	LG3 Gauge* N45DAC6E N 34° 52.032' W 77° 30.531'	LP3 N 34° 52.016' W 77° 30.515' Bearing 163°	LP7 N 34° 51.799' W 77° 30.640' Bearing 188°	LP2 N 34° 51.668' W 77° 30.625' Bearing 250°		
LV4 N 34° 51.794' W 77° 38.651' Bearing 194°	LG4 Gauge* N45DAC22 N 34° 51.732' W 77° 30.633'	LP4 N 34° 51.940' W 77° 30.512' Bearing 248°	LP8 N 34° 51.953' W 77° 30.737' Bearing 158°	LPI3 N 34° 51.638' W 77° 30.630' Bearing 4°		
LV5 N 34° 51.658' W 77° 30.621' Bearing 320°	LRG1 Gauge* N45DACC9 N 34° 52.037' W 77° 30.470'		LP9 N 34° 51.889' W 77° 30.697' Bearing 210°			



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Project Manager

MONITORING PLANS			
NO.	BY	DATE	DESCRIPTION OF REVISION
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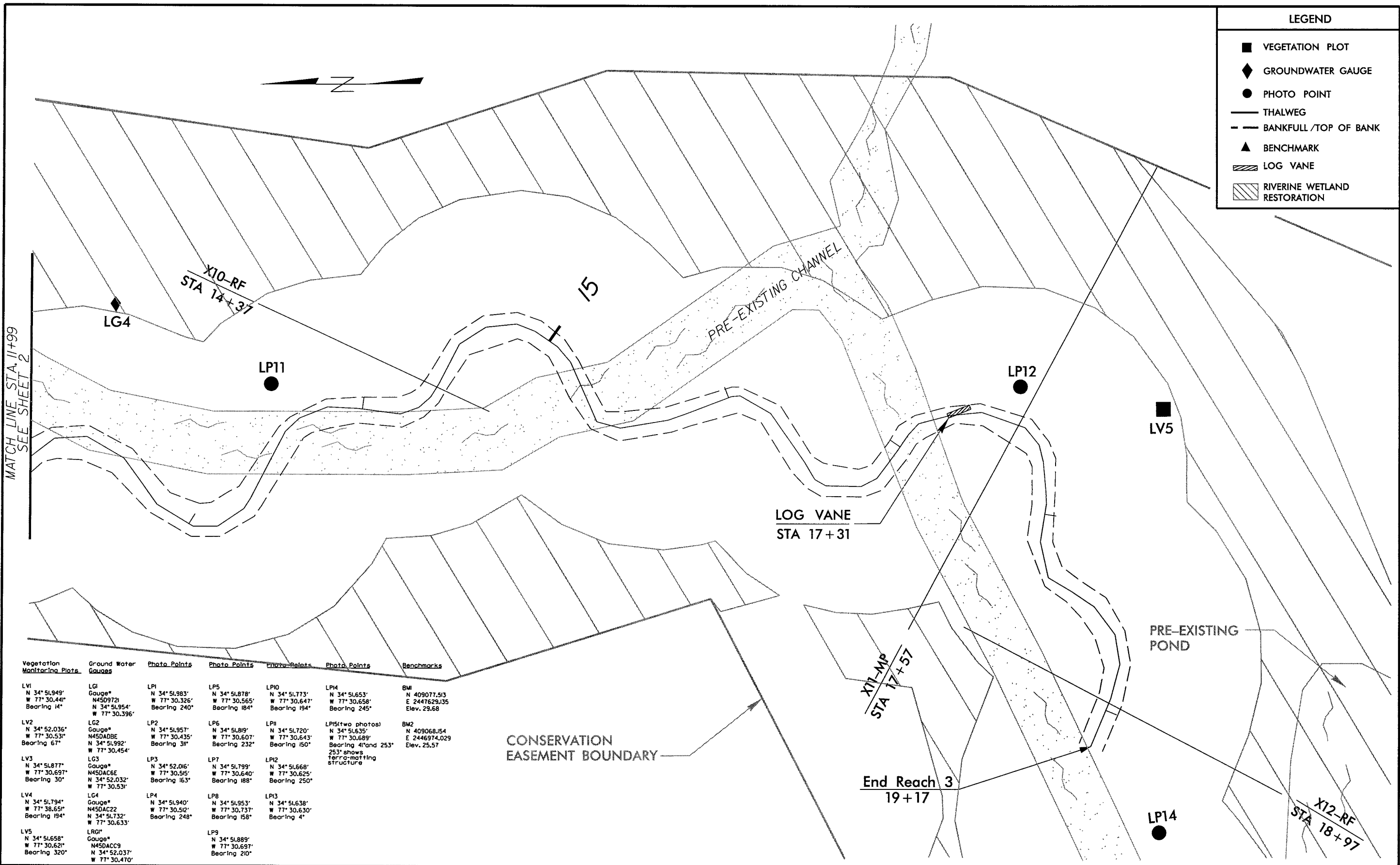
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LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

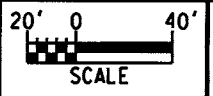
Monitoring Plan View Sheet 4 of 5

LEGEND

- VEGETATION PLOT
- ◆ GROUNDWATER GAUGE
- PHOTO POINT
- THALWEG
- - - BANKFULL /TOP OF BANK
- ▲ BENCHMARK
- ▨ LOG VANE
- ▧ RIVERINE WETLAND RESTORATION



Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
LV1 N 34° 51.949' W 77° 30.441' Bearing 14°	LG1 Gauge* N45D9721 N 34° 51.954' W 77° 30.396'	LP1 N 34° 51.983' W 77° 30.326' Bearing 240°	LP5 N 34° 51.878' W 77° 30.565' Bearing 184°	LP10 N 34° 51.773' W 77° 30.647' Bearing 194°	LP14 N 34° 51.653' W 77° 30.658' Bearing 245°	BM1 N 409077.513 E 2447629.135 Elev. 29.68
LV2 N 34° 52.036' W 77° 30.531' Bearing 67°	LG2 Gauge* N45DABE N 34° 51.992' W 77° 30.454'	LP2 N 34° 51.957' W 77° 30.435' Bearing 38°	LP6 N 34° 51.819' W 77° 30.607' Bearing 232°	LP11 N 34° 51.720' W 77° 30.643' Bearing 150°	LP15(two photos) N 34° 51.635' W 77° 30.689' Bearing 41° and 253° 253° shows terracing structure	BM2 N 409068.154 E 2446974.029 Elev. 25.57
LV3 N 34° 51.877' W 77° 30.697' Bearing 30°	LG3 Gauge* N45DAC6E N 34° 52.032' W 77° 30.531'	LP3 N 34° 52.016' W 77° 30.515' Bearing 163°	LP7 N 34° 51.799' W 77° 30.640' Bearing 188°	LP12 N 34° 51.668' W 77° 30.625' Bearing 250°		
LV4 N 34° 51.794' W 77° 38.651' Bearing 194°	LG4 Gauge* N45DAC22 N 34° 51.732' W 77° 30.633'	LP4 N 34° 51.940' W 77° 30.512' Bearing 248°	LP8 N 34° 51.953' W 77° 30.737' Bearing 158°	LP13 N 34° 51.638' W 77° 30.630' Bearing 4°		
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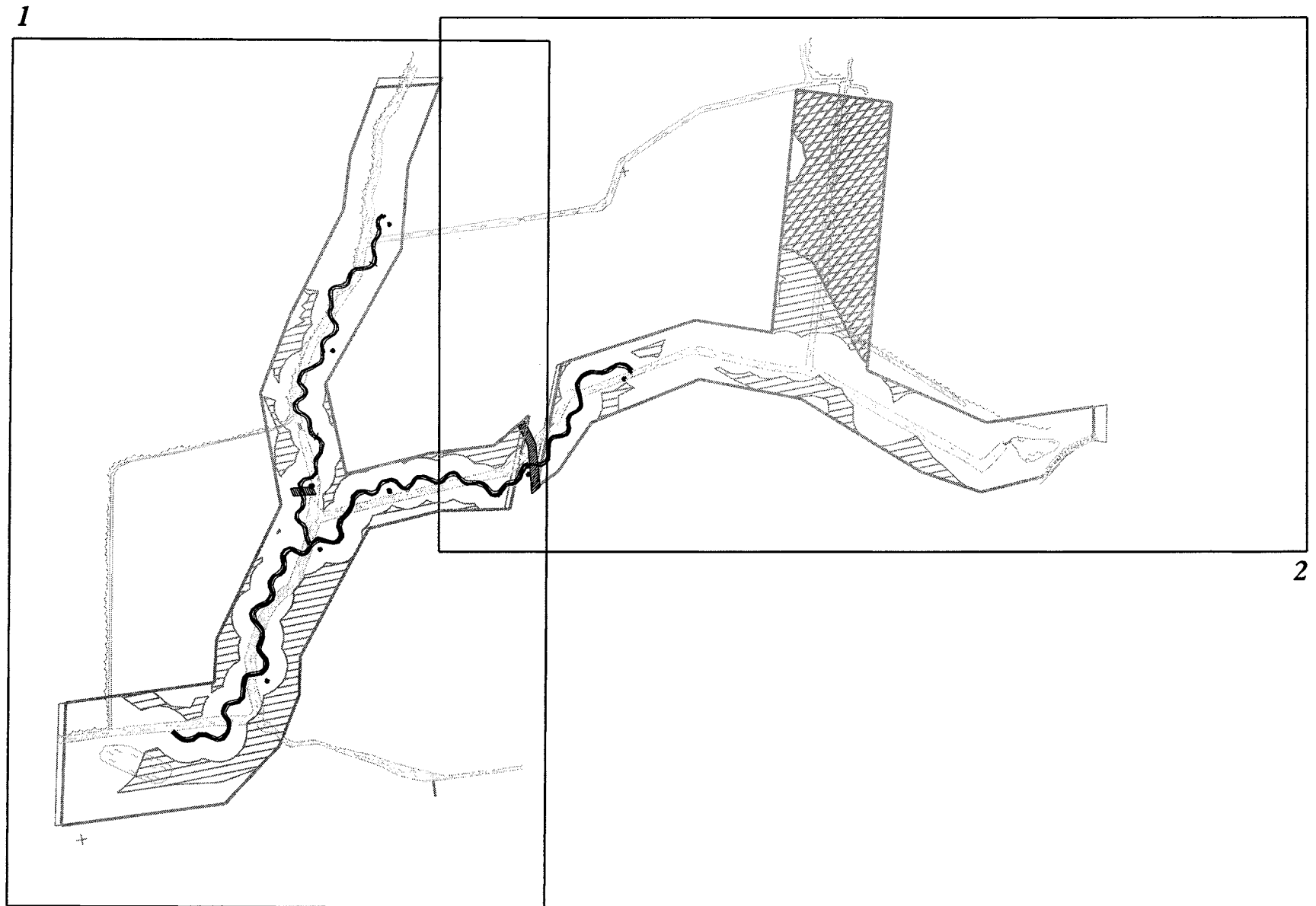
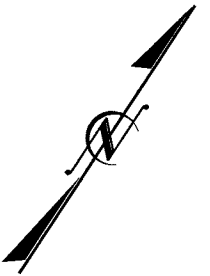
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Monitoring Plan View Sheet 5 of 5

LLOYD STREAM AND RESTORATION RESTORATION SITE

ONslow COUNTY, NORTH CAROLINA
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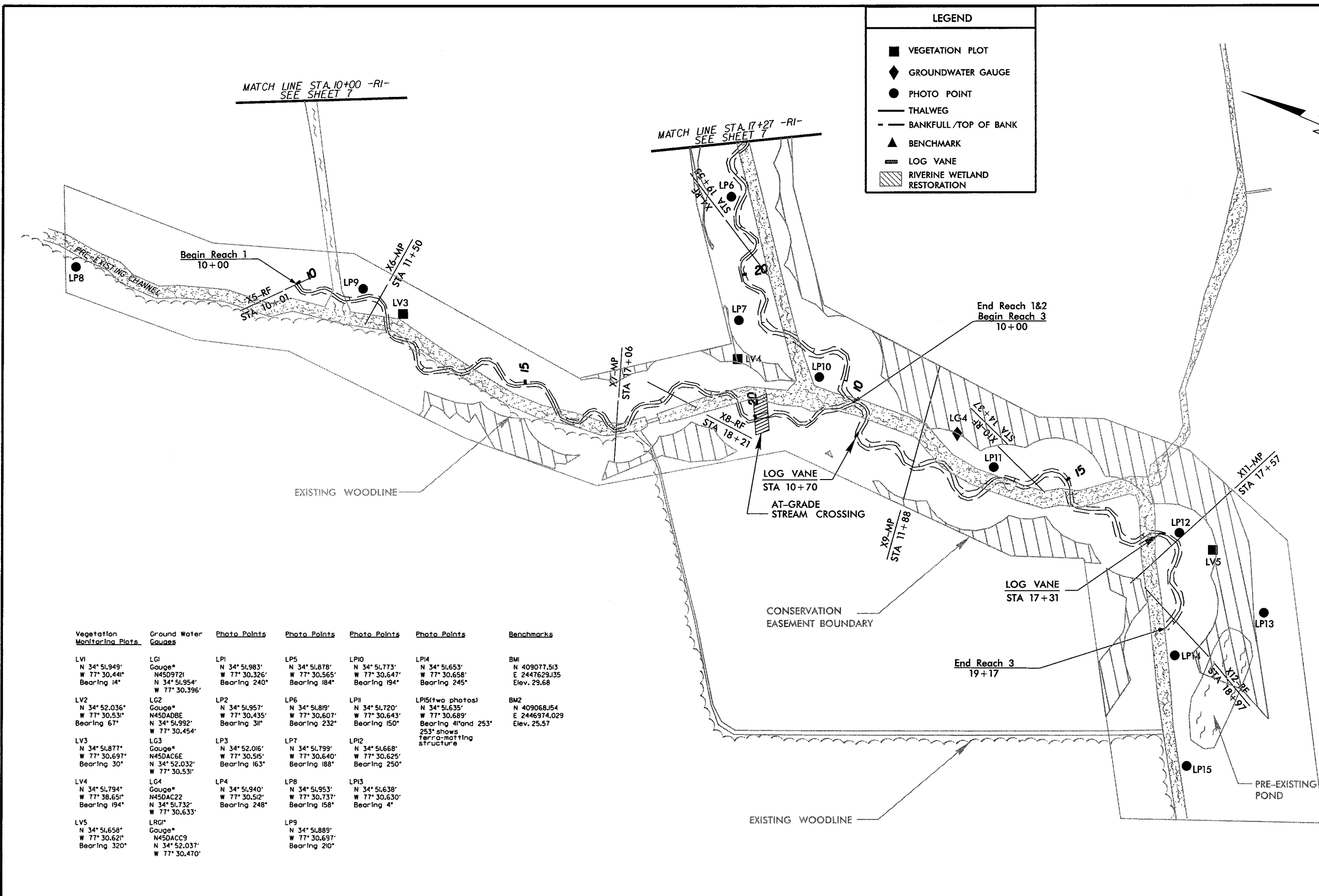
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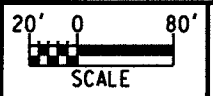
LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

Plan Map View

LEGEND	
■	VEGETATION PLOT
◆	GROUNDWATER GAUGE
●	PHOTO POINT
—	THALWEG
- - -	BANKFULL /TOP OF BANK
▲	BENCHMARK
▨	LOG VANE
▨	RIVERINE WETLAND RESTORATION



Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
LV1 N 34° 51.949' W 77° 30.441' Bearing 14°	LG1 Gauge* N4509721 N 34° 51.954' W 77° 30.396'	LP1 N 34° 51.983' W 77° 30.326' Bearing 240°	LP5 N 34° 51.878' W 77° 30.565' Bearing 184°	LP10 N 34° 51.773' W 77° 30.647' Bearing 194°	LP14 N 34° 51.653' W 77° 30.658' Bearing 245°	BM1 N 409077.513 E 2447629.135 Elev. 29.68
LV2 N 34° 52.036' W 77° 30.531' Bearing 67°	LG2 Gauge* N450ADBE N 34° 51.992' W 77° 30.454'	LP2 N 34° 51.957' W 77° 30.435' Bearing 31°	LP6 N 34° 51.819' W 77° 30.607' Bearing 232°	LP11 N 34° 51.720' W 77° 30.643' Bearing 150°	LP15(two photos) N 34° 51.635' W 77° 30.689' Bearing 41° and 253° 253° shows terra-matting structure	BM2 N 409068.154 E 2446974.029 Elev. 25.57
LV3 N 34° 51.877' W 77° 30.697' Bearing 30°	LG3 Gauge* N45DAC6E N 34° 52.032' W 77° 30.531'	LP3 N 34° 52.016' W 77° 30.515' Bearing 163°	LP7 N 34° 51.799' W 77° 30.640' Bearing 188°	LP12 N 34° 51.668' W 77° 30.625' Bearing 250°		
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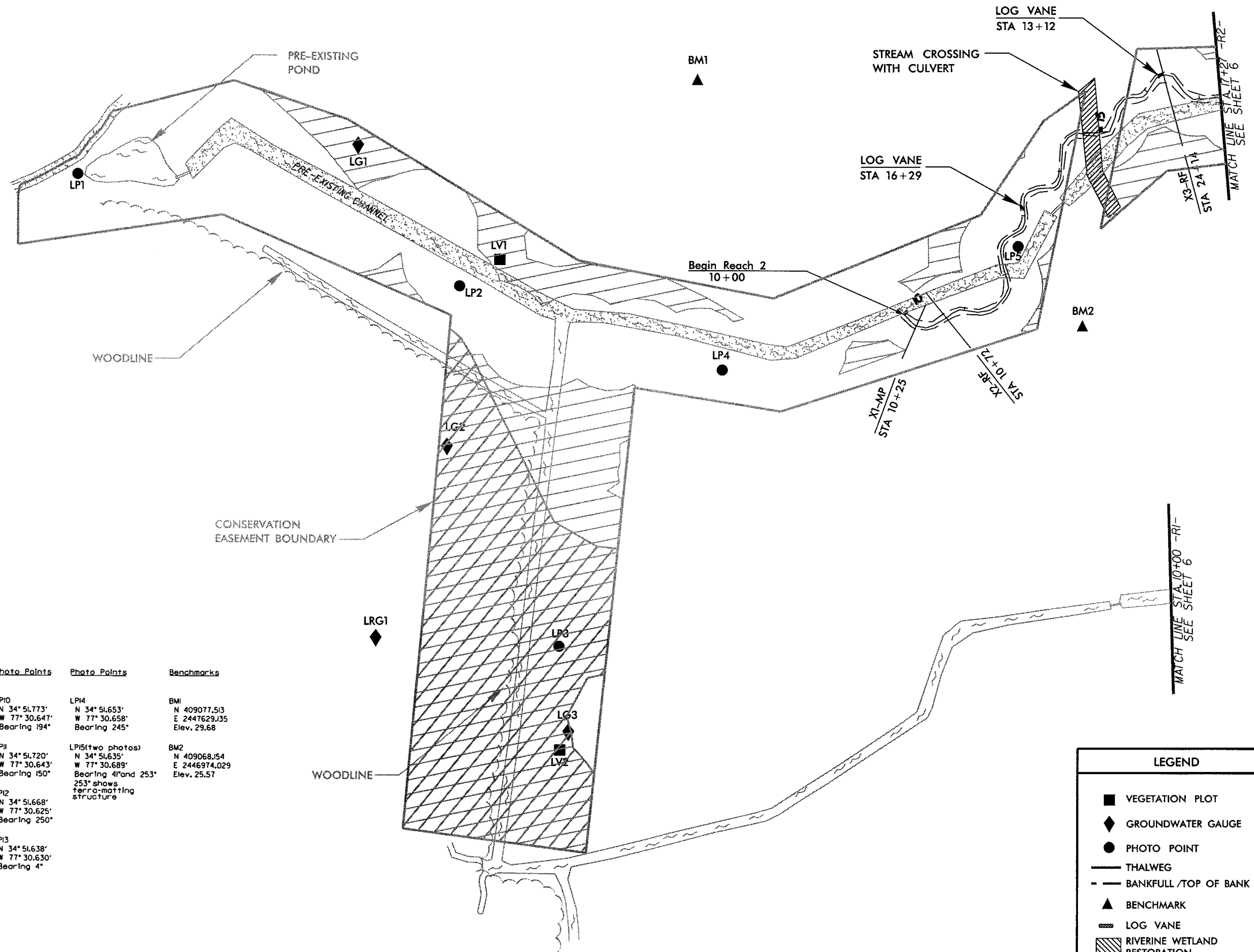
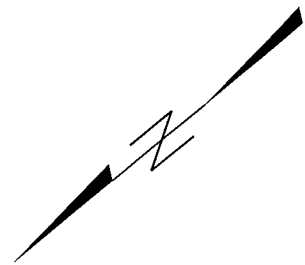
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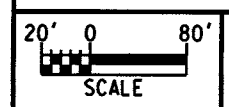
LLOYD STREAM AND WETLAND RESTORATION SITE
 ONSLOW COUNTY, NORTH CAROLINA

Monitoring Devices Sheet 1 of 2



Vegetation Monitoring Plots	Ground Water Gauges	Photo Points	Photo Points	Photo Points	Photo Points	Benchmarks
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LEGEND	
	VEGETATION PLOT
	GROUNDWATER GAUGE
	PHOTO POINT
	THALWEG
	BANKFULL / TOP OF BANK
	BENCHMARK
	LOG VANE
	RIVERINE WETLAND RESTORATION
	NONRIVERINE WETLAND RESTORATION



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LLOYD STREAM AND WETLAND RESTORATION SITE
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Monitoring Devices Sheet 2 of 2

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