



2728 Capital Blvd, Suite 1H 103
Raleigh NC 27604

Anderson Swamp Wetland Restoration Site Annual Wetland Monitoring Report

Year 1 of 5 (2007)

Edgecombe County, North Carolina

Contract # D06048-A

Submission Date: November 2007

**Anderson Swamp Wetland
Restoration Site**

Year 1 Monitoring Report

Prepared for:
North Carolina Ecosystem
Enhancement Program

Prepared by:
ARCADIS G&M of North
Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh
North Carolina 27607
Tel 919.854.1282
Fax 919.854.5448

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Executive Summary

Restoration Systems, L.L.C. (Restoration Systems) has completed the restoration of nonriverine wetlands at the Anderson Swamp 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 6 miles north of Tarboro, in northern Edgecombe County (Figure 1). The Site encompasses approximately 25 acres of land that was used for agricultural row crop production and land application of hog lagoon effluent. The project provides 21.3 acres of restored or enhanced non-riverine forested wetlands and 3.7 acres of non-riverine upland flats, with benefits to water quality and wildlife in a watershed that is highly dissected for agriculture and timber production.

The Site is located within sub-basin 03-03-04 of the Tar-Pamlico River Basin. This area is part of United States Geological Survey (USGS) Hydrologic Unit (HU) 03020102 of the South Atlantic/Gulf Region (14-digit HU 03020102060010). Two main drainage features, Maple Swamp and an unnamed tributary to Fishing Creek, surround the Site. Maple Swamp, Fishing Creek, and their tributaries have been assigned a Best Usage Classification of **WS-IV NSW** and are Fully Supporting their intended uses.

A Detailed Wetland Restoration Plan was completed for the Site in November 2006. The plan outlined methods designed to restore agricultural fields that had been ditched, drained, and cleared for row crop production. Prior to implementation, the entire 25-acre Site contained 21.3 acres of hydric soil that had been cleared and drained to support site land uses. The Detailed Wetland Restoration Plan outlined restoration procedures, including (1) ditch cleaning prior to backfill, (2) ditch rerouting, (3) depression construction, (4) impervious ditch plug construction, (5) ditch backfilling, (6) wetland soil surface scarification, and (7) plant community restoration.

The following objectives are proposed to provide mitigation credit requested under the EEP Request for Proposal (RFP) #16-D06048 dated October 26, 2005:

- Providing a minimum of 15.5 nonriverine Wetland Mitigation Units, as calculated in accordance with the requirements stipulated in RFP #16-D06048.
 - Restoring approximately 13.0 acres of wetland through filling agricultural ditches, removal of spoil castings, eliminating row crop production activities, and/or planting with native forest vegetation.

- Enhancing approximately 8.0 acres of wetland through eliminating row crop production activities and planting with native forest vegetation.
- Protecting the Site in perpetuity with a conservation easement.

As constructed, the 25-acre Site provides 12.9 acres of non-riverine wetland restoration, 8.4 acres of non-riverine wetland enhancement, and 3.7 acres of forested upland buffer for a total of 17.1 wetland mitigation units (Figure 2).

In summary, the Site achieved the defined (or targeted) success criteria:

1. Two of the five groundwater gauges (Gauges 1 and 3) achieved the defined (or targeted) regulatory success criteria for hydrology, saturation (free water) within 1 foot of the soil surface for a minimum of 5 percent (12 consecutive days) of the growing season, 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 gauges. All but one of the groundwater gauges (Gauge 2) at the Site maintained saturation within 1 foot of the soil surface for at least 85 percent of the hydroperiod exhibited by the reference wetland. Based on this comparison, it is anticipated that if normal rainfall had occurred, the restoration area and reference wetland would have met the regulatory success criteria.
2. Vegetation plots across the Site were well above the required 320 stems per acre with an average of 565 tree stems per acre in the First Monitoring Year (Year 2007).

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1. Project Background

Restoration Systems established the Anderson Swamp Wetland Restoration Site (Site) in the Tar-Pamlico River Basin (14-digit HU 03020102060010) in northern Edgecombe County (Figure 1). The Site encompasses approximately 25 acres of land that was used for agricultural row crop production and land application of hog lagoon effluent. The project provides 21.3 acres of restored or enhanced non-riverine forested wetlands for a total of 17.1 wetland mitigation units (WMU's). The project also provides 3.7 acres of non-riverine upland flats. These restoration efforts benefit water quality and wildlife in a watershed that is highly dissected for agriculture and timber production (Figure 2).

1.1 Project Goals and Objectives

The primary goals of this non-riverine wetland restoration project focus on improving water quality, enhancing flood attenuation, and restoring wildlife habitat and will be accomplished by:

1. Removing nonpoint sources of pollution associated with agricultural row crop production, including (a) cessation of broadcasting fertilizer, pesticides, and other agricultural chemicals into and adjacent to Site drainage ditches, (b) cessation of land application of area hog lagoon effluent, and (c) preemption and treatment of agricultural runoff by providing a vegetative buffer adjacent to headwater streams and wetlands.
2. Restoring wetland hydroperiods that satisfy wetland jurisdictional requirements and approximate the Site's natural range of variation.
3. Promoting floodwater attenuation through removal of interfield ditches and enhancing groundwater storage capacity.
4. Restoring and reestablishing natural community structure, habitat diversity, and functional continuity.
5. Enhancing and protecting of the Site's full potential of wetland functions and values in perpetuity.

The following objectives are proposed to provide mitigation credit requested under the EEP Request for Proposal (RFP) #16-D06048 dated October 26, 2005:

- Providing a minimum of 15.5 nonriverine Wetland Mitigation Units, as calculated in accordance with the requirements stipulated in RFP #16-D06048.

- Restoring approximately 13.0 acres of wetland through filling agricultural ditches, removal of spoil castings, eliminating row crop production activities, and/or planting with native forest vegetation.
- Enhancing approximately 8.0 acres of wetland through eliminating row crop production activities and planting with native forest vegetation.
- Protecting the Site in perpetuity with a conservation easement.

As constructed, the 25-acre Site provides 12.9 acres of non-riverine wetland restoration, 8.4 acres of non-riverine wetland enhancement, and 3.7 acres of forested upland buffer for a total of 17.1 WMU's (Table 1).

1.2 Project Structure, Restoration Type, and Approach

1.2.1 Historic Conditions

Prior to restoration, the Site was used for agricultural row crop production and land application of hog lagoon effluent. The Site was cleared of native forest vegetation, ditched for agricultural purposes, and planted in agricultural row crops. Based on detailed soil mapping conducted by licensed soil scientists, approximately 21.3 acres of nonriverine hydric soil had been cleared and drained in support of Site land uses.

The Site is situated within a terrace on the western rim of the Fishing Creek floodplain between a headwater tributary to Maple Swamp and an Unnamed Tributary (UT) to Fishing Creek. The UT to Fishing Creek serves as the primary hydrologic feature within the Site due to biannual dredging and maintenance of the channel. The channel is approximately 10 feet in width and 5 feet in depth. The landowner regularly dredges the channel in preparation for agricultural practices. Due to its position in the landscape, the Site provides important headwater storage benefits to Maple Swamp and Fishing Creek.

1.2.2 Restoration Approach

A Detailed Wetland Restoration Plan was completed for the Site in November 2006. The plan outlined methods designed to restore agricultural fields that had been ditched, drained, and cleared for row crop production. Prior to implementation, the entire 25-acre Site contained 21.3 acres of hydric soil that had been cleared and drained to support site land uses. The Detailed Wetland Restoration Plan outlined restoration procedures, including (1) ditch cleaning prior to backfill, (2) ditch rerouting, (3) depression construction, (4) impervious ditch plug construction, (5)

ditch backfilling, (6) wetland soil surface scarification, and (7) plant community restoration.

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. Based on Schafale and Weakley (1990) community descriptions, the Site was historically characterized by Nonriverine Wet Hardwood Forest. These areas occur on flat or rolling Coastal Plain sediments with a significant seasonal high water table.

Planted species for this project are characteristic of the Nonriverine Wet Hardwood Forest vegetative community as described in *Classification of the Natural Communities of North Carolina* (Schafale and Weakley 1990). The Planting Plan is provided as Table 2.

Monitoring of Site restoration efforts will be performed until success criteria are fulfilled. Monitoring will be conducted for wetland components of hydrology and vegetation. The Site Monitoring Plan is depicted in Figure 3.

1.3 Location and Setting

The Site is located approximately 6 miles north of Tarboro, in northern Edgecombe County (Figure 1). The Site is located within the Tar-Pamlico River Basin in 14-digit USGS Cataloging Unit 03020102060010 of the South Atlantic/Gulf Region and North Carolina Division of Water Quality subbasin number 03-03-04. The Site watershed is characterized by agricultural land, pasture, forest land, and low-density residential development. The Site is surrounded by active agricultural fields, and forest stands. Agricultural fields are currently being planted in corn.

Directions to the Site:

Follow US 64 east to Tarboro; go North on NC 33 to Leggett (5 miles); turn right onto Draughn Road (4 miles); turn right onto Bethlehem Church Road, and the Site will be on the right in approximately 1 mile.

1.4 History and Background

Upon completion of the detailed restoration plan, construction schematics were developed and construction was initiated in February 2007. Anderson Farms completed earthwork and grading at the Site in March 2007. Carolina Silvics completed planting of the Site in March 2007. Axiom Environmental, Inc. completed the as-built mitigation plan and as-built construction drawings in April 2007.

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

2. Project Condition and Monitoring Results

2.1 Vegetation Assessment

2.1.1 Vegetation Monitoring Procedure

Restoration monitoring procedures for vegetation are designed in accordance with *A Flexible, Multipurpose Method for Recording Vegetation Composition and Structure* (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 subsequent year, until the vegetation success criteria are achieved.

During quantitative vegetation sampling in the first year, nine sample plots (10 meters by 10 meters) were randomly placed within the Site. Sample-plot locations are depicted in Figure 2. 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. Photographs of each vegetation plot are presented in Appendix A.

2.1.2 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. A list of “Characteristic Tree Species” is presented in Table 6.

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 Character 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.

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.

2.1.3 Vegetation Sampling Results and Comparison to Success Criteria

Quantitative sampling of vegetation occurred in September 2007. Results and photographs of each plot are provided in Appendix A. Vegetation success criteria for Year 1 (320 tree stems per acre) was exceeded for the 2007 annual monitoring year with an average of 565 tree stems per acre across the Site. In addition, each individual vegetation plot met success criteria with a range of 320 to 880 tree stems per acre, except for plots 4 and 8, which each contained 240 tree stems per acre. Plot 4 exhibited signs of heavy grazing by deer, and Plot 8 was overgrown by *Polygonum* sp. With the addition of naturally recruited character tree species, it is expected that these plots will achieve vegetation success criteria in future monitoring years.

2.1.4 Vegetation Problem Areas

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

2.2 Wetland Assessment

2.2.1 Wetland Monitoring Procedure

Five groundwater monitoring gauges were installed at the Site during the first monitoring year and two additional groundwater monitoring gauges were 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).

2.2.2 Wetland Success Criteria

Target hydrological goals have been developed using regulatory wetland hydrology criteria and reference wetland sites.

Regulatory Wetland Hydrology Criteria

The regulatory wetland hydrology criterion requires saturation (free water) within 1 foot of the soil surface for 5 percent of the growing season under normal climatic conditions. In some instances, the regulatory wetland hydroperiod may extend between 5 and 12.5 percent of the growing season.

Reference Groundwater Modeling

The reference groundwater model forecasted the wetland hydroperiod in restoration areas will range between approximately 5 and 30 percent of the growing season in early successional phases. Because wetland hydroperiods during old field stages of wetland development are projected to extend for less than 12.5 percent of the growing season, wetland monitoring plans that extend for a 5-year period after restoration will utilize a minimum 5 percent wetland hydrology criterion to substantiate restoration success.

Reference Wetland Sites

Two monitoring gauges were installed in reference wetlands located in the southern periphery of the Site. Wetland hydroperiods measured by groundwater gauges located within the reference areas will be compared to hydroperiods exhibited by groundwater gauges in the restoration area to further evaluate restoration success. Success criteria outlined by the groundwater model indicates that the wetland restoration area should maintain saturation within 1 foot of the soil surface for at least 74 percent of the hydroperiod exhibited by the reference wetland (14 percent [old field hydroperiod]/19 percent [forest hydroperiod]) in any given year.

Under normal climatic conditions, the hydrologic success criterion requires saturation (free water) within 1 foot of the soil surface for a minimum of 5 percent of the growing season. This hydroperiod translates to saturation for a minimum, 12-day (5 percent) consecutive period during the growing season, which extends from March 21 to November 10 (USDA 1977).

In atypical dry years, the hydroperiod must exceed 75 percent of the hydroperiod exhibited by the reference gauges. Reference gauge data will be used to compare wetland hydroperiods between the restoration areas and relatively undisturbed reference wetlands. These data will supplement regulatory evaluation of success criteria and also provide information that will allow interpretation of mitigation success in years not supporting "normal" rainfall conditions.

2.2.3 Wetland Monitoring Results and Comparison to Success Criteria

Hydrographs for each monitoring location are provided in Appendix B along with daily rainfall totals for 2007 from a rain gauge (Station 318500 - Tarboro 1 S) located in Tarboro, Edgecombe County (SCONC 2007). Groundwater data presented in Appendix B were collected through September 20, 2007, for reference and restoration area gauges, which corresponds to 184 days of the 234-day annual growing season. Data will continue to be downloaded monthly until the end of the 2007 growing season (November 10, 2007) and will be available upon request.

Two of the five groundwater gauges (Gauges 1 and 3) achieved the defined (or targeted) regulatory success criteria for hydrology, saturation (free water) within 1 foot of the soil surface for a minimum of 5 percent (12 consecutive days) of the growing season, in the First Monitoring Year (Year 2007). The two reference gauges did not achieve the defined regulatory success criteria (Table 7). This year (2007) is

one of the driest years on record in North Carolina. Due to the drought conditions, success for the first year monitoring will be based on comparison of the restoration area hydroperiod to the reference wetland hydroperiod. All but one groundwater gauge (Gauge 2) at the site maintained saturation within 1 foot of the soil surface for at least 85 percent of the hydroperiod exhibited by the reference wetland. Gauge 2 was accidentally installed just outside of the eastern Site property boundary. In June of 2007, Gauge 2 was moved approximately 50 feet west so that it would be within the Site boundaries. By moving the gauge 50 feet west it also moved it 50 feet further away from the main ditch (UT to Fishing Creek). This change in location may reduce the effect that the ditch has on the groundwater table at Gauge 2, resulting in a higher water table at Gauge 2 at the start of the 2008 growing season. Two of the Site groundwater gauges (Gauges 1 and 3) actually doubled the hydroperiod exhibited by the reference wetland. Based on this comparison, it is anticipated that if normal rainfall had occurred, the restoration area and reference wetland would have met the regulatory success criteria.

2.2.4 Wetland Problem Areas

There were no wetland problem areas identified during the 2007 monitoring year.

3. References

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. United States Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

North Carolina Wetlands Restoration Program (NCWRP). 1993. Installing Monitoring Wells/Piezometers in Wetlands (WRP Technical Note HY-IA-3.1). North Carolina Department of Environment, Health, and Natural Resources, Raleigh, North Carolina.

Peet, R.K., T.R. Wentworth and P.S. White. 1998. A flexible, multipurpose method for recording vegetation composition and structure. *Castanea* 63:262-274

State Climate Office of North Carolina (SCONC). 2007. North Carolina Climate Retrieval and Observations Network of the Southeast Database. (online). Available: <http://www.nc-climate.ncsu.edu/cronos/index.php?station=318500&temporal=D> [September 20, 2007]. State Climate Office of North Carolina, Raleigh, North Carolina.

**Anderson Swamp
Wetland Restoration Site**

Year 1 Monitoring Report

United States Department of Agriculture (USDA). 1977. Soil Survey of Martin County, North Carolina. United States Department of Agriculture, Natural Resources Conservation Service.

Tables

Table 1. Project Restoration Components
Anderson Swamp Wetland Restoration Site – Contract #D06048-A

Project Segment or Reach ID	Existing (Acres)	Type	Approach	Acreage	Mitigation Ratio	Mitigation Units	Comment
Non-Riverine Wetland Restoration	12.9	R	V, H, CE	12.9	1:1	12.9	
Non-Riverine Wetland Enhancement	8.4	E	V, CE	8.4	2:1	4.2	
Mitigation Unit Summations							
Non-riverine Wetland (Ac)			Total Wetland (Ac)		Buffer (Ac)	Comment	
21.3			21.3				

R = Restoration

E = Enhancement

P = Preservation

V = Restored Vegetation

H = Restored Hydrology

CE = Conservation Easement

Table 2. Planting Plan
Anderson Swamp Wetland Restoration Site – Contract #D06048-A

Vegetation Association (Planting Area)	Nonriverine Wet Hardwood Forest	
Area (acres)	25	
SPECIES	Total Number Planted¹	Percentage of Total²
American Holly (<i>Ilex opaca</i>)	3600	14.29
Ironwood (<i>Carpinus caroliniana</i>)	3600	14.29
Swamp Chestnut Oak (<i>Quercus michauxii</i>)	3600	14.29
Laurel Oak (<i>Quercus laurifolia</i>)	3600	14.29
Sweet Bay (<i>Magnolia virginiana</i>)	3600	14.29
Water Oak (<i>Quercus nigra</i>)	3600	14.29
Willow Oak (<i>Quercus phellos</i>)	3600	14.29
TOTAL	25,200	100

1: Planting densities comprise 1000 trees per acre.

Table 3. Project Activity and Reporting History
Anderson Swamp Wetland Restoration Site – Contract # D06048-A

Activity or Report	Actual Completion or Delivery
Restoration Plan	November 2006
Final Design	February 2007
Construction	March 2007
Planting	March 2007
Mitigation Plan / As-Built	April 2007
Year 1 monitoring	November 2007

Table 4. Project Contacts Table
Anderson Swamp Wetland Restoration Site – Contract #D06048-A

Designer Axiom Environmental, Inc.	2126 Rowland Pond Drive Willow Spring, NC 27592 W. Grant Lewis (919) 215-1693
Construction Contractor Anderson Farms	179 NC 97 East Tarboro, NC 27886 Gary Wilkerson and Richard Anderson (252) 823-4730
Planting Contractor Carolina Silvics	908 Indian Trail Road Edenton, NC 27932 Dwight McKinney (919) 523-4375
Monitoring Performers ARACDIS G&M of North Carolina, Inc.	801 Corporate Center Drive, Suite 300 Raleigh, NC 27607 Ben Furr and Keven Duerr (919) 854-1282

Table 5. Project Background Table
Anderson Swamp Wetland Restoration Site – Contract # D06048-A

Project County	Edgecombe
Physiographic Region	Coastal Plain
Ecoregion	Southeastern Plains
Cowardin Classification	PFO1B
Dominant Soil Types	Roanoke loam and Wickham sandy loam
USGS HUC for Project and Reference	03020102
NCDWQ Sub-basin for Project and Reference	03-03-04
NCDWQ classification for adjacent tributaries	WS-IV NSW
Any portion of any project segment 303(d) listed?	No
Any portion of any segment upstream of a 303(d) listed segment?	No
% of project easement fenced	0 % (Not fenced,;adjacent fields planted in corn)

Table 6. Characteristic Tree Species
Anderson Swamp Wetland Restoration Site – Contract #D06048-A

PLANTED SPECIES	REFERENCE SITE SPECIES
American Holly (<i>Ilex opaca</i>)	Loblolly Pine (<i>Pinus taeda</i>)
Ironwood (<i>Carpinus caroliniana</i>)	Red Maple (<i>Acer rubrum</i>)
Swamp Chestnut Oak (<i>Quercus michauxii</i>)	River Birch (<i>Betula nigra</i>)
Laurel Oak (<i>Quercus laevis</i>)	Swamp Blackgum (<i>Nyssa biflora</i>)
Sweetbay (<i>Magnolia virginiana</i>)	Swamp Chestnut Oak (<i>Quercus michauxii</i>)
Water Oak (<i>Quercus nigra</i>)	Tulip Tree (<i>Liriodendron tulipifera</i>)
Willow Oak (<i>Quercus phellos</i>)	Sweetgum (<i>Liquidambar styraciflua</i>)
	Water Oak (<i>Quercus nigra</i>)
	Willow Oak (<i>Quercus phellos</i>)
	White Oak (<i>Quercus alba</i>)
	Ironwood (<i>Carpinus caroliniana</i>)
	Giant Cane (<i>Arundinaria gigantea</i>)
	Horse Sugar (<i>Symplocos tinctoria</i>)
	American Holly (<i>Ilex opaca</i>)
	Dogwood (<i>Cornus sp.</i>)
	Black Cherry (<i>Prunus serotina</i>)
	Blueberry (<i>Vaccinium corymbosum</i>)
	Elderberry (<i>Sambucus canadensis</i>)
	Spicebush (<i>Lindera benzoin</i>)
	Swamp Pepperbush (<i>Clethra alnifolia</i>)
	Sweetbay (<i>Magnolia virginiana</i>)

Table 7. Wetland Criteria Attainment
Anderson Swamp Wetland Restoration Project – Contract # D06048-A

Well ID	Max Consecutive Days Saturated During Growing Season (Percentage)*	Well Hydrology Threshold Met?		Tract Mean	Vegetation Plot ID	Vegetation Survival Threshold Met?	Tract Mean	
		Regulatory Criteria	Reference Criteria					
1	15 days (6 %)	Yes	Yes	80%	ASV1	Yes	78%	
2	1 days (<1 %)	No	No		ASV2	Yes		
3	15 days (6 %)	Yes	Yes		ASV3	Yes		
4	6 days (3 %)	No	Yes		ASV4	No		
5	7 days (3 %)	No	Yes		ASV5	Yes		
Ref 1	7 days (3 %)	No	N/A		ASV6	Yes		
Ref 2	7 days (3 %)	No	N/A		ASV7	Yes		
					ASV8	No		
					ASV9	Yes		

* Gauge data presented in the table were collected through September 20, 2007, for the Anderson Swamp reference and restoration area gauges. Data will continue to be downloaded monthly for the remainder of the 2007 growing season (until November 10, 2007) and will be available upon request.

Figures



Directions to the Site

From Tarboro

North on NC Route 33 - 5 miles

at Leggett - Right on Draughn Road - 4 miles

Right on Bethlehem Church Road - 1 mile

Site is on Right

Site Location

Reference Site

0
1 mi.
4 mi.

1:158,400

Source: 2003 North Carolina Atlas and Gazetteer, pp. 42 & 43.

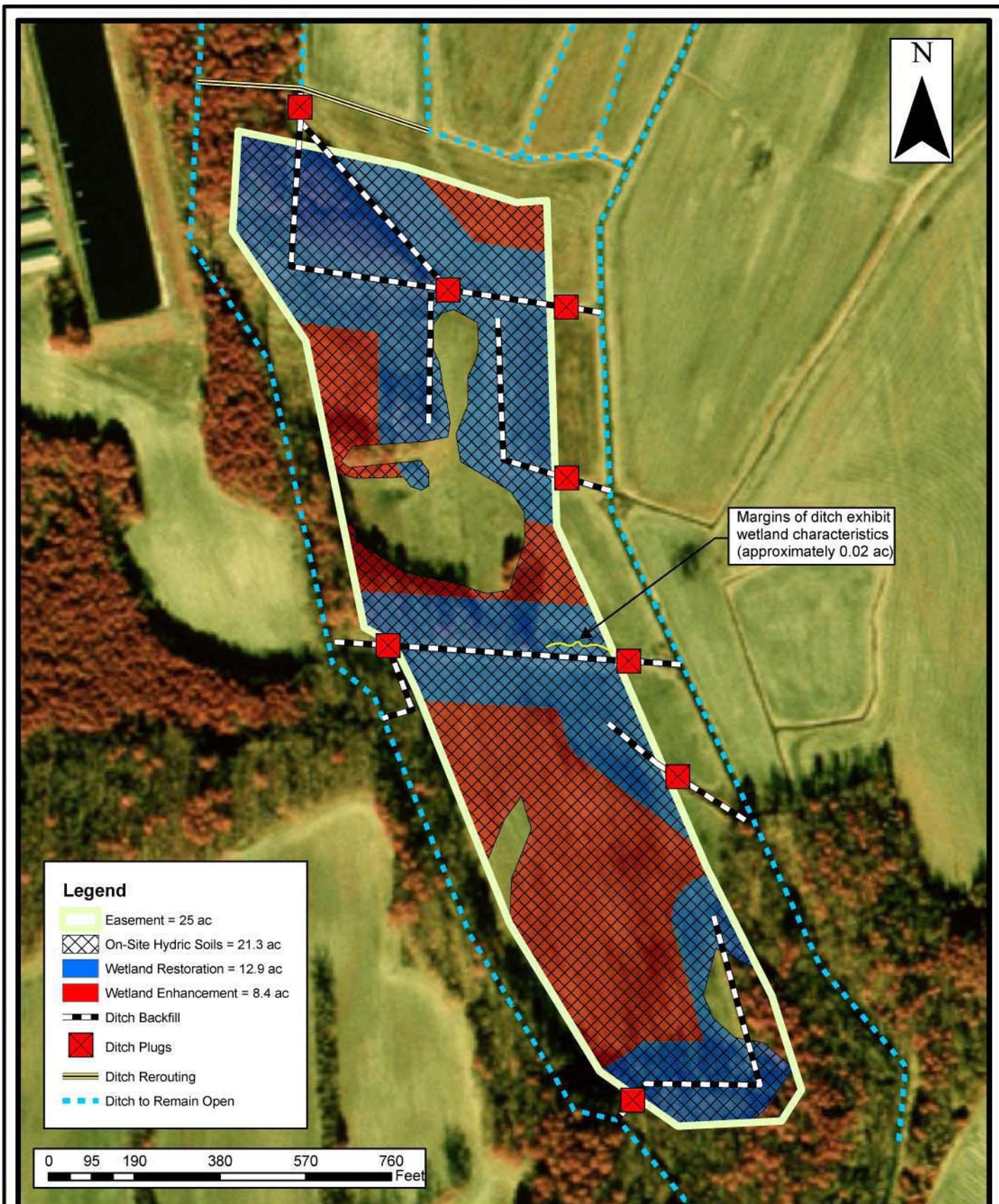


801 Corporate Center Dr
Suite 300
Raleigh, NC 27607
Tel. 919.854.1282
Fax. 919.854.5448

SITE LOCATION
ANDERSON SWAMP RESTORATION SITE
Edgecombe County, North Carolina



FIGURE
1

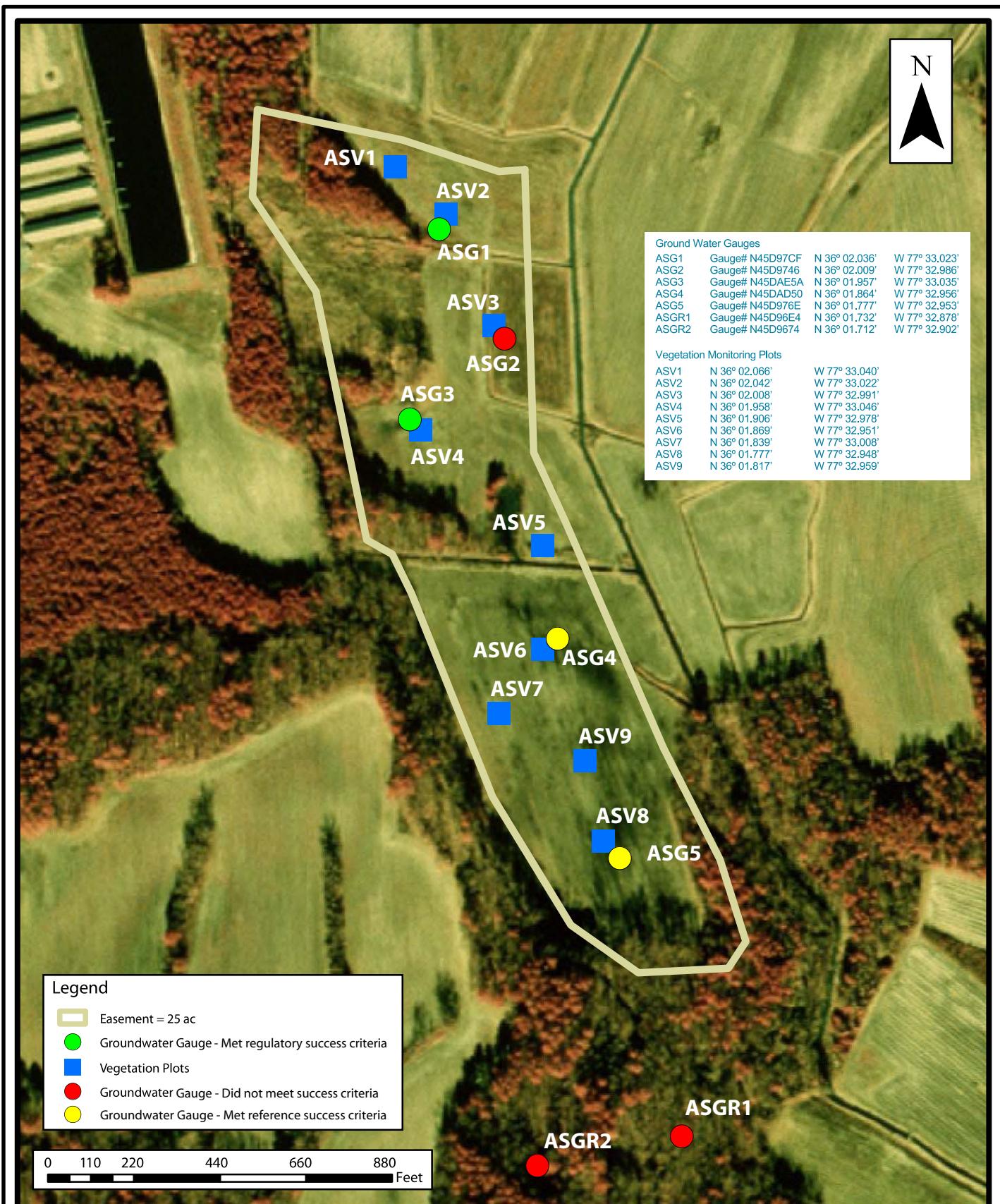


801 Corporate Center Dr
Suite 300
Raleigh, NC 27607
Tel. 919.854.1282
Fax. 919.854.5448

WETLAND RESTORATION PLAN ANDERSON SWAMP RESTORATION SITE Edgecombe County, North Carolina



FIGURE
2



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

MONITORING PLAN ANDERSON SWAMP RESTORATION SITE Edgecombe County, North Carolina



FIGURE
3

Appendix A

Vegetation Data

2007 VEGETATION MONITORING DATA AND RESULTS

Note: Each plot totals 0.025 acre in size.

Community	Non-Riverine Wet Hardwood Forest										Total Stems/ Acre Counting Criteria**
	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Total Stems for Plots 1-9	
Species*											
Character Tree Species (count toward success)											
<i>Acer rubrum</i> (red maple)							4	14	23	41	185
<i>Liquidambar styraciflua</i> (sweetgum)			24			199	5	41	269	1211	32
<i>Pinus taeda</i> (loblolly pine)						7	2		9	41	32
<i>Magnolia virginiana</i> (sweetbay magnolia)				2	3		1		6	27	27
<i>Quercus falcata</i> (southern red oak)	2			1	3	1			7	32	32
<i>Quercus michauxii</i> (swamp chestnut oak)		16	9	1		2			28	126	126
<i>Quercus pagoda</i> (cherrybark oak)	2			3		1	1		7	32	32
<i>Quercus phellos</i> (willow oak)	10	6	6	3	3	8	5	1	5	47	212
<i>Quercus rubra</i> (northern red oak)	2		1	10	2	2		5	4	26	117
<i>Ulmus americana</i> (American elm)									2	2	9
Species that Don't Count Toward Success											
<i>Albizia julibrissin</i> (mimosa)									1	1	5
<i>Lyonia mariana</i> (stagger-bush)								1	1	2	9
<i>Robinia pseudoacacia</i> (black locust)							22		22	99	0
<i>Salix nigra</i> (black willow)							3		3	14	0
TOTAL STEMS/PLOT	16	22	16	40	9	17	219	54	77	470	2115
TOTAL STEMS/PLOT COUNTING TOWARDS SUCCESS CRITERIA	13	22	16	6	8	14	12	6	9		
TOTAL STEMS/ACRE COUNTING TOWARDS SUCCESS CRITERIA	520	880	640	240	320	560	480	240	360		

* Planted species are in bold.

Report Prepared By
Date Prepared

Ben Furr
11/2/2007 10:11

database name
database location
computer name

CVS_EEP_EntryTool_v220.mdb
C:
NCIL-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	Anderson
project Name	Anderson Swamp
Description	Wetland Restoration Site in Edgecombe County
River Basin	Tar-Pamlico
length(ft)	
stream-to-edge width (ft)	
area (sq m)	86,197.00
Required Plots (calculated)	
Sampled Plots	9

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
Anderson	Anderson Swamp	Tar-Pamlico	544.08

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

Project Code	Project Name	River Basin	Year 2007
Anderson	Anderson Swamp	Tar-Pamlico	1321.9731

Overall Site Vigor

vigor	Count	Percent
0	8	6.2
1	3	2.3
2	23	17.8
3	55	42.6
4	40	31

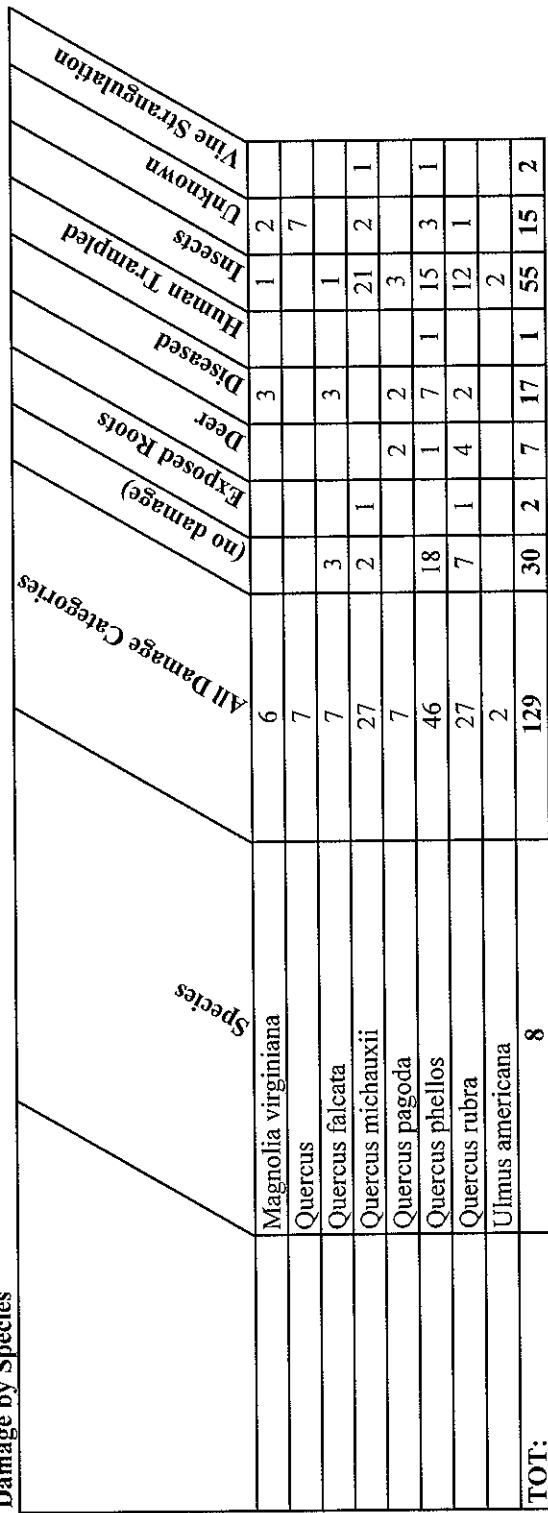
Vigor by species

	Species	4	3	2	1	0	Missing
	Quercus falcata	4	3				
	Quercus michauxii	6	10	11			
	Quercus pagoda	1	4	2			
	Quercus phellos	21	16	8	1		
	Quercus				1	6	
	Quercus rubra	8	16	2	1		
	Magnolia virginiana		4			2	
	Ulmus americana		2				
TOT:		8	40	55	23	3	8

Overall Site Damage

Damage	Count	Percent Of Stems
Insects	55	42.6
(no damage)	30	23.3
Diseased	17	13.2
Unknown	15	11.6
Deer	7	5.4
Vine Strangulation	2	1.6
[Enter other damage]	2	1.6
Human Trampled	1	0.8

Damage by Species



Damage by Plot

	All Damage Categories	Exposed Roots	Deer	Diseased	Human Trampled	Insects	Unkown	Vine Strangulation
Anderson-KD-ASV1-year:2007	18	5				8	4	1
Anderson-KD-ASV2-year:2007	23	1				19	2	1
Anderson-KD-ASV3-year:2007	18	4				8	6	
Anderson-KD-ASV4-year:2007	16	3	1	7		5		
Anderson-KD-ASV5-year:2007	10	5				2	3	
Anderson-KD-ASV6-year:2007	17	1			15		1	
Anderson-KD-ASV7-year:2007	9	4	1		2		2	
Anderson-KD-ASV8-year:2007	8	1					7	
Anderson-KD-ASV9-year:2007	10	6				1	3	
TOT:	9	129	30	2	7	17	1	55

Planted Stems by Plot and Species

Species	Total Planted Stems	# plots	avg# stems	plot Anderson-KD-ASV1-year:200	plot Anderson-KD-ASV2-year:200	plot Anderson-KD-ASV3-year:200	plot Anderson-KD-ASV4-year:200	plot Anderson-KD-ASV5-year:200	plot Anderson-KD-ASV6-year:200	plot Anderson-KD-ASV7-year:200	plot Anderson-KD-ASV8-year:200	plot Anderson-KD-ASV9-year:200
Magnolia virginiana	4	2	2					3		1		
Quercus	1	1	1		1							
Quercus falcata	7	4	1.75	2				1	3	1		
Quercus michauxii	27	4	6.75		16	8		1		2		
Quercus pagoda	7	4	1.75	2			3		1	1		
Quercus phellos	46	9	5.11	9	6	6	3	4	8	5	1	4
Quercus rubra	27	7	3.86	2		1	10	2	2		6	4
Ulmus americana	2	1	2									2
TOT:	8	121	8	15	23	15	16	8	17	9	8	10

All Stems by Plot and Species

Species	Total Stems	# plots	avg# stems	Anderson-KD-ASV1-year:2001	Anderson-KD-ASV2-year:2001	Anderson-KD-ASV3-year:2001	Anderson-KD-ASV4-year:2001	Anderson-KD-ASV5-year:2001	Anderson-KD-ASV6-year:2001	Anderson-KD-ASV7-year:2001	Anderson-KD-ASV8-year:2001	Anderson-KD-ASV9-year:2001	
<i>Albizia julibrissin</i>	1	1	1									1	
<i>Liquidambar styraciflua</i>	94	4	23.5					24		24	5	41	
<i>Lyonia mariana</i>	1	1	1									1	
<i>Pinus taeda</i>	9	2	4.5							7	2		
<i>Quercus falcata</i>	7	4	1.75	2				1	3	1			
<i>Quercus michauxii</i>	28	4	7		16	9		1		2			
<i>Quercus pagoda</i>	7	4	1.75	2			3		1	1			
<i>Quercus phellos</i>	47	9	5.22	10	6	6	3	4	8	5	1	4	
<i>Robinia pseudoacacia</i>	22	1	22									22	
<i>Salix nigra</i>	3	1	3									3	
<i>Quercus</i>	7	3	2.33	3	1	3							
<i>Quercus rubra</i>	27	7	3.86	2		1	10	2	2		6	4	
<i>Magnolia virginiana</i>	6	3	2					2	3			1	
<i>Acer rubrum</i>	41	3	13.67							4	14	23	
<i>Ulmus americana</i>	2	1	2									2	
TOT:	15	302	15		19	23	19	40	10	17	44	55	75

**Anderson Swamp Wetland Restoration Site
Year 1 (2007) Annual Monitoring Report
Vegetation Photographs Taken September 2007**



Plot 1



Plot 2



Plot 3



Plot 4



Plot 5



Plot 6



Plot 7



Plot 8

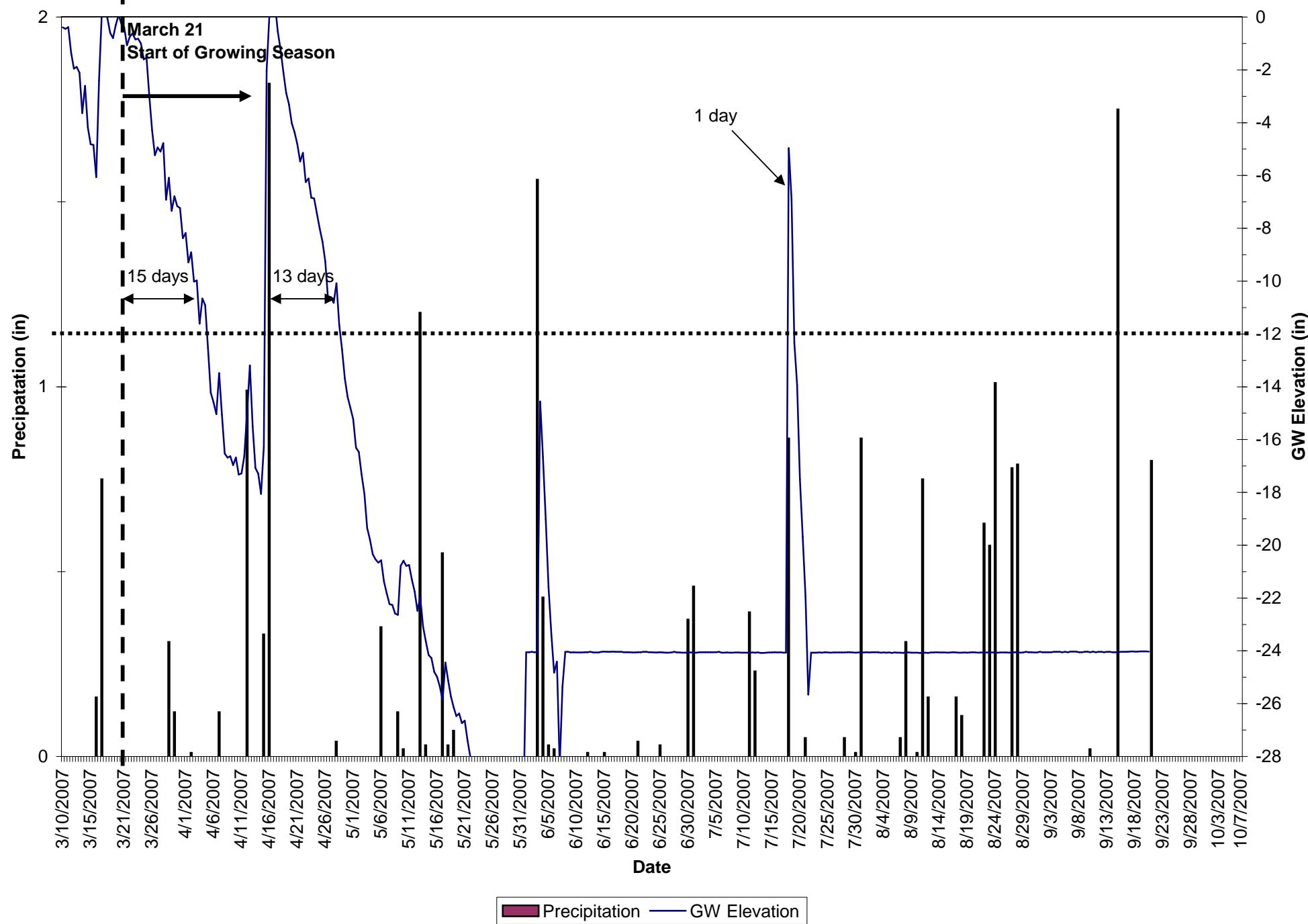


Plot 9

Appendix B

Gauge Data

Anderson Gauge 1



Gauge Anderson 1

Data Acquired : September 20, 2007

Serial Number: N45D97CF

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
10-Mar-2007	00:00:00	-0.39			03-Apr-2007	00:00:00	-9.98	14	14	27-Apr-2007	00:00:00	-10.6	12	38
10-Mar-2007	12:00:00	-0.45			03-Apr-2007	12:00:00	-11.61	14	14	27-Apr-2007	12:00:00	-10.82	13	38
11-Mar-2007	00:00:00	-0.38			04-Apr-2007	00:00:00	-10.66	15	15	28-Apr-2007	00:00:00	-10.08	13	39
11-Mar-2007	12:00:00	-1.34			04-Apr-2007	12:00:00	-10.91	15	15	28-Apr-2007	12:00:00	-11.66	14	39
12-Mar-2007	00:00:00	-1.95			05-Apr-2007	00:00:00	-12.52		16	29-Apr-2007	00:00:00	-12.59		40
12-Mar-2007	12:00:00	-1.89			05-Apr-2007	12:00:00	-14.22		16	29-Apr-2007	12:00:00	-13.69		40
13-Mar-2007	00:00:00	-2.11			06-Apr-2007	00:00:00	-14.59		17	30-Apr-2007	00:00:00	-14.39		41
13-Mar-2007	12:00:00	-3.64			06-Apr-2007	12:00:00	-15.04		17	30-Apr-2007	12:00:00	-14.8		41
14-Mar-2007	00:00:00	-2.6			07-Apr-2007	00:00:00	-13.48		18	01-May-2007	00:00:00	-15.23		42
14-Mar-2007	12:00:00	-4.18			07-Apr-2007	12:00:00	-15.06		18	01-May-2007	12:00:00	-16.31		42
15-Mar-2007	00:00:00	-4.82			08-Apr-2007	00:00:00	-16.53		19	02-May-2007	00:00:00	-16.47		43
15-Mar-2007	12:00:00	-4.84			08-Apr-2007	12:00:00	-16.68		19	02-May-2007	12:00:00	-17.32		43
16-Mar-2007	00:00:00	-6.06			09-Apr-2007	00:00:00	-16.63		20	03-May-2007	00:00:00	-18.05		44
16-Mar-2007	12:00:00	-2.4			09-Apr-2007	12:00:00	-16.97		20	03-May-2007	12:00:00	-19.35		44
17-Mar-2007	00:00:00	0.16			10-Apr-2007	00:00:00	-16.68		21	04-May-2007	00:00:00	-19.79		45
17-Mar-2007	12:00:00	0.42			10-Apr-2007	12:00:00	-17.32		21	04-May-2007	12:00:00	-20.34		45
18-Mar-2007	00:00:00	-0.04			11-Apr-2007	00:00:00	-17.28		22	05-May-2007	00:00:00	-20.54		46
18-Mar-2007	12:00:00	-0.6			11-Apr-2007	12:00:00	-16.63		22	05-May-2007	12:00:00	-20.66		46
19-Mar-2007	00:00:00	-0.8			12-Apr-2007	00:00:00	-14.97		23	06-May-2007	00:00:00	-20.57		47
19-Mar-2007	12:00:00	-0.3			12-Apr-2007	12:00:00	-13.19		23	06-May-2007	12:00:00	-21.37		47
20-Mar-2007	00:00:00	0.08			13-Apr-2007	00:00:00	-15.49		24	07-May-2007	00:00:00	-21.82		48
20-Mar-2007	12:00:00	-0.25			13-Apr-2007	12:00:00	-17.08		24	07-May-2007	12:00:00	-22.23		48
21-Mar-2007	00:00:00	-0.38	1	1	14-Apr-2007	00:00:00	-17.29		25	08-May-2007	00:00:00	-22.26		49
21-Mar-2007	12:00:00	-1.07	1	1	14-Apr-2007	12:00:00	-18.06		25	08-May-2007	12:00:00	-22.59		49
22-Mar-2007	00:00:00	-0.75	2	2	15-Apr-2007	00:00:00	-16.28		26	09-May-2007	00:00:00	-22.64		50
22-Mar-2007	12:00:00	-0.62	2	2	15-Apr-2007	12:00:00	-2.03	1	26	09-May-2007	12:00:00	-20.78		50
23-Mar-2007	00:00:00	-0.85	3	3	16-Apr-2007	00:00:00	0.08	1	27	10-May-2007	00:00:00	-20.59		51
23-Mar-2007	12:00:00	-0.82	3	3	16-Apr-2007	12:00:00	0.6	2	27	10-May-2007	12:00:00	-20.78		51
24-Mar-2007	00:00:00	-1	4	4	17-Apr-2007	00:00:00	0.5	2	28	11-May-2007	00:00:00	-20.75		52
24-Mar-2007	12:00:00	-1.6	4	4	17-Apr-2007	12:00:00	-0.55	3	28	11-May-2007	12:00:00	-21.3		52
25-Mar-2007	00:00:00	-1.54	5	5	18-Apr-2007	00:00:00	-1.24	3	29	12-May-2007	00:00:00	-21.76		53
25-Mar-2007	12:00:00	-2.99	5	5	18-Apr-2007	12:00:00	-2.09	4	29	12-May-2007	12:00:00	-22.48		53
26-Mar-2007	00:00:00	-4.29	6	6	19-Apr-2007	00:00:00	-2.87	4	30	13-May-2007	00:00:00	-21.96		54
26-Mar-2007	12:00:00	-5.23	6	6	19-Apr-2007	12:00:00	-3.3	5	30	13-May-2007	12:00:00	-23.08		54
27-Mar-2007	00:00:00	-4.94	7	7	20-Apr-2007	00:00:00	-4.02	5	31	14-May-2007	00:00:00	-23.65		55
27-Mar-2007	12:00:00	-5.09	7	7	20-Apr-2007	12:00:00	-4.36	6	31	14-May-2007	12:00:00	-24.16		55
28-Mar-2007	00:00:00	-4.78	8	8	21-Apr-2007	00:00:00	-4.82	6	32	15-May-2007	00:00:00	-24.27		56
28-Mar-2007	12:00:00	-6.92	8	8	21-Apr-2007	12:00:00	-5.47	7	32	15-May-2007	12:00:00	-24.79		56
29-Mar-2007	00:00:00	-6.09	9	9	22-Apr-2007	00:00:00	-5.14	7	33	16-May-2007	00:00:00	-24.98		57
29-Mar-2007	12:00:00	-7.34	9	9	22-Apr-2007	12:00:00	-6.25	8	33	16-May-2007	12:00:00	-25.35		57
30-Mar-2007	00:00:00	-6.79	10	10	23-Apr-2007	00:00:00	-6.11	8	34	17-May-2007	00:00:00	-25.86		58
30-Mar-2007	12:00:00	-7.16	10	10	23-Apr-2007	12:00:00	-6.84	9	34	17-May-2007	12:00:00	-24.44		58
31-Mar-2007	00:00:00	-7.23	11	11	24-Apr-2007	00:00:00	-6.87	9	35	18-May-2007	00:00:00	-25.13		59
31-Mar-2007	12:00:00	-8.37	11	11	24-Apr-2007	12:00:00	-7.44	10	35	18-May-2007	12:00:00	-25.74		59
01-Apr-2007	00:00:00	-8.18	12	12	25-Apr-2007	00:00:00	-8.01	10	36	19-May-2007	00:00:00	-26.15		60
01-Apr-2007	12:00:00	-9.29	12	12	25-Apr-2007	12:00:00	-8.5	11	36	19-May-2007	12:00:00	-26.47		60
02-Apr-2007	00:00:00	-8.91	13	13	26-Apr-2007	00:00:00	-9.25	11	37	20-May-2007	00:00:00	-26.37		61
02-Apr-2007	12:00:00	-10.02	13	13	26-Apr-2007	12:00:00	-10.71	12	37	20-May-2007	12:00:00	-26.74		61

Gauge Anderson 1

Data Acquired : September 20, 2007

Serial Number: N45D97CF

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00	-26.64		62	14-Jun-2007	12:00:00	-24.04		86	09-Jul-2007	00:00:00	-24.06		111
21-May-2007	12:00:00	-27.39		62	15-Jun-2007	00:00:00	-24.03		87	09-Jul-2007	12:00:00	-24.07		111
22-May-2007	00:00:00	-28.02		63	15-Jun-2007	12:00:00	-24.04		87	10-Jul-2007	00:00:00	-24.07		112
22-May-2007	12:00:00	-28.73		63	16-Jun-2007	00:00:00	-24.04		88	10-Jul-2007	12:00:00	-24.07		112
23-May-2007	00:00:00	-29.26		64	16-Jun-2007	12:00:00	-24.03		88	11-Jul-2007	00:00:00	-24.08		113
23-May-2007	12:00:00	-30		64	17-Jun-2007	00:00:00	-24.04		89	11-Jul-2007	12:00:00	-24.06		113
24-May-2007	00:00:00	-30.39		65	17-Jun-2007	12:00:00	-24.04		89	12-Jul-2007	00:00:00	-24.07		114
24-May-2007	12:00:00	-30.75		65	18-Jun-2007	00:00:00	-24.04		90	12-Jul-2007	12:00:00	-24.06		114
25-May-2007	00:00:00	-30.04		66	18-Jun-2007	12:00:00	-24.05		90	13-Jul-2007	00:00:00	-24.08		115
25-May-2007	12:00:00	-30.03		66	19-Jun-2007	00:00:00	-24.05		91	13-Jul-2007	12:00:00	-24.08		115
26-May-2007	00:00:00	-30.4		67	19-Jun-2007	12:00:00	-24.05		91	14-Jul-2007	00:00:00	-24.07		116
26-May-2007	12:00:00	-30.27		67	20-Jun-2007	00:00:00	-24.06		92	14-Jul-2007	12:00:00	-24.06		116
27-May-2007	00:00:00	-30.95		68	20-Jun-2007	12:00:00	-24.06		92	15-Jul-2007	00:00:00	-24.06		117
27-May-2007	12:00:00	-31.02		68	21-Jun-2007	00:00:00	-24.05		93	15-Jul-2007	12:00:00	-24.05		117
28-May-2007	00:00:00	-31.37		69	21-Jun-2007	12:00:00	-24.05		93	16-Jul-2007	00:00:00	-24.06		118
28-May-2007	12:00:00	-30.68		69	22-Jun-2007	00:00:00	-24.04		94	16-Jul-2007	12:00:00	-24.05		118
29-May-2007	00:00:00	-30.7		70	22-Jun-2007	12:00:00	-24.04		94	17-Jul-2007	00:00:00	-24.07		119
29-May-2007	12:00:00	-31.02		70	23-Jun-2007	00:00:00	-24.05		95	17-Jul-2007	12:00:00	-24.07		119
30-May-2007	00:00:00	-31.21		71	23-Jun-2007	12:00:00	-24.05		95	18-Jul-2007	00:00:00	-4.96		120
30-May-2007	12:00:00	-30.55		71	24-Jun-2007	00:00:00	-24.06		96	18-Jul-2007	12:00:00	-6.89		120
31-May-2007	00:00:00	-30.43		72	24-Jun-2007	12:00:00	-24.06		96	19-Jul-2007	00:00:00	-12.33		121
31-May-2007	12:00:00	-30.14		72	25-Jun-2007	00:00:00	-24.05		97	19-Jul-2007	12:00:00	-13.94		121
01-Jun-2007	00:00:00	-24.05		73	25-Jun-2007	12:00:00	-24.06		97	20-Jul-2007	00:00:00	-17.51		122
01-Jun-2007	12:00:00	-24.05		73	26-Jun-2007	00:00:00	-24.07		98	20-Jul-2007	12:00:00	-19.68		122
02-Jun-2007	00:00:00	-24.04		74	26-Jun-2007	12:00:00	-24.07		98	21-Jul-2007	00:00:00	-21.94		123
02-Jun-2007	12:00:00	-24.05		74	27-Jun-2007	00:00:00	-24.06		99	21-Jul-2007	12:00:00	-25.66		123
03-Jun-2007	00:00:00	-24.05		75	27-Jun-2007	12:00:00	-24.04		99	22-Jul-2007	00:00:00	-24.07		124
03-Jun-2007	12:00:00	-14.56		75	28-Jun-2007	00:00:00	-24.06		100	22-Jul-2007	12:00:00	-24.07		124
04-Jun-2007	00:00:00	-16.66		76	28-Jun-2007	12:00:00	-24.06		100	23-Jul-2007	00:00:00	-24.07		125
04-Jun-2007	12:00:00	-19.02		76	29-Jun-2007	00:00:00	-24.07		101	23-Jul-2007	12:00:00	-24.06		125
05-Jun-2007	00:00:00	-21.59		77	29-Jun-2007	12:00:00	-24.07		101	24-Jul-2007	00:00:00	-24.07		126
05-Jun-2007	12:00:00	-23.35		77	30-Jun-2007	00:00:00	-24.06		102	24-Jul-2007	12:00:00	-24.05		126
06-Jun-2007	00:00:00	-24.83		78	30-Jun-2007	12:00:00	-24.06		102	25-Jul-2007	00:00:00	-24.06		127
06-Jun-2007	12:00:00	-24.41		78	01-Jul-2007	00:00:00	-24.07		103	25-Jul-2007	12:00:00	-24.07		127
07-Jun-2007	00:00:00	-28.34		79	01-Jul-2007	12:00:00	-24.07		103	26-Jul-2007	00:00:00	-24.06		128
07-Jun-2007	12:00:00	-25.35		79	02-Jul-2007	00:00:00	-24.05		104	26-Jul-2007	12:00:00	-24.06		128
08-Jun-2007	00:00:00	-24.04		80	02-Jul-2007	12:00:00	-24.05		104	27-Jul-2007	00:00:00	-24.06		129
08-Jun-2007	12:00:00	-24.04		80	03-Jul-2007	00:00:00	-24.05		105	27-Jul-2007	12:00:00	-24.06		129
09-Jun-2007	00:00:00	-24.06		81	03-Jul-2007	12:00:00	-24.05		105	28-Jul-2007	00:00:00	-24.06		130
09-Jun-2007	12:00:00	-24.05		81	04-Jul-2007	00:00:00	-24.05		106	28-Jul-2007	12:00:00	-24.05		130
10-Jun-2007	00:00:00	-24.06		82	04-Jul-2007	12:00:00	-24.05		106	29-Jul-2007	00:00:00	-24.05		131
10-Jun-2007	12:00:00	-24.06		82	05-Jul-2007	00:00:00	-24.05		107	29-Jul-2007	12:00:00	-24.06		131
11-Jun-2007	00:00:00	-24.06		83	05-Jul-2007	12:00:00	-24.04		107	30-Jul-2007	00:00:00	-24.07		132
11-Jun-2007	12:00:00	-24.05		83	06-Jul-2007	00:00:00	-24.07		108	30-Jul-2007	12:00:00	-24.06		132
12-Jun-2007	00:00:00	-24.05		84	06-Jul-2007	12:00:00	-24.07		108	31-Jul-2007	00:00:00	-24.06		133
12-Jun-2007	12:00:00	-24.04		84	07-Jul-2007	00:00:00	-24.06		109	31-Jul-2007	12:00:00	-24.06		133
13-Jun-2007	00:00:00	-24.06		85	07-Jul-2007	12:00:00	-24.07		109	01-Aug-2007	00:00:00	-24.05		134
13-Jun-2007	12:00:00	-24.06		85	08-Jul-2007	00:00:00	-24.07		110	01-Aug-2007	12:00:00	-24.06		134
14-Jun-2007	00:00:00	-24.06		86	08-Jul-2007	12:00:00	-24.06		110	02-Aug-2007	00:00:00	-24.05		135

Gauge Anderson 1

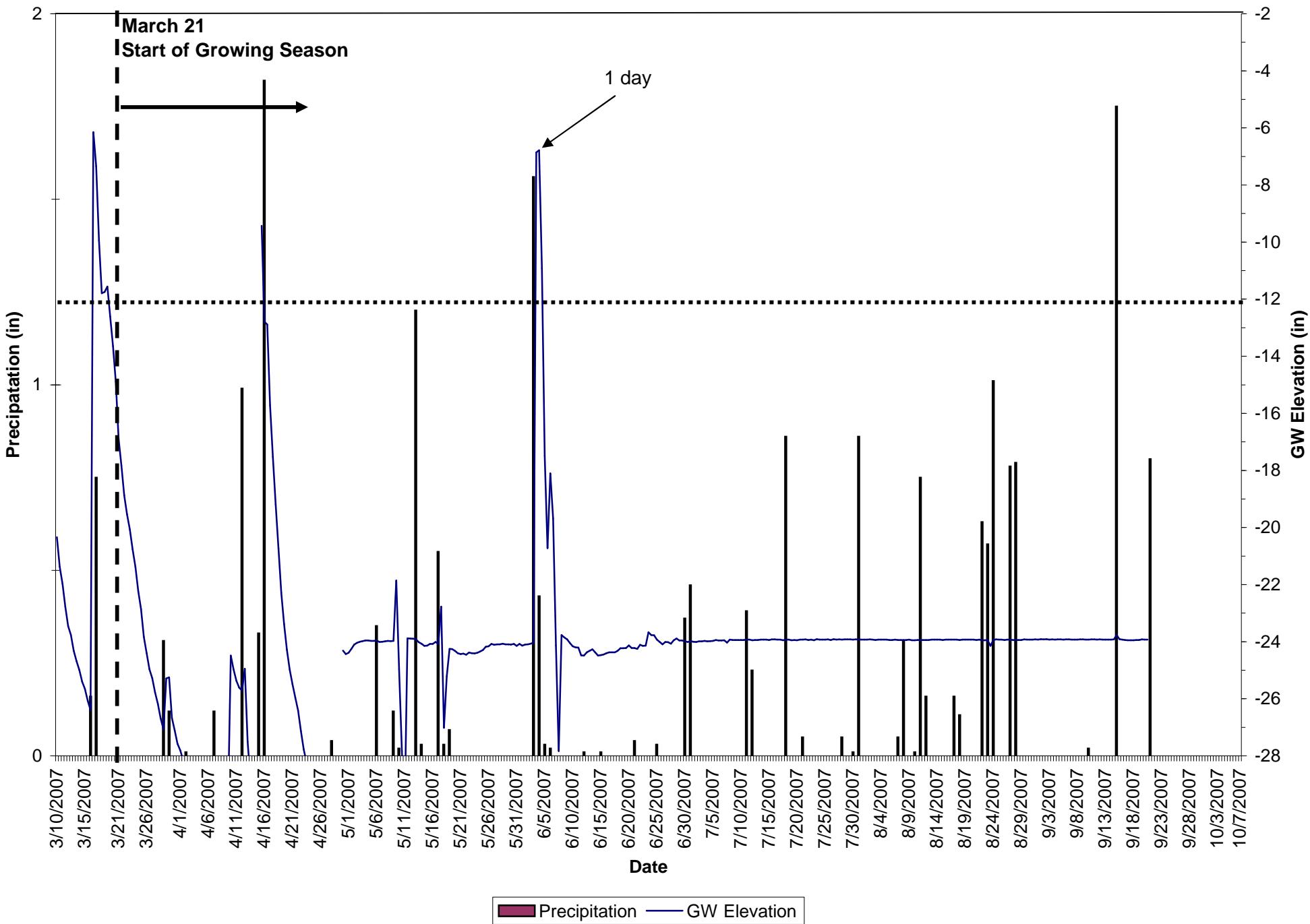
Data Acquired : September 20, 2007

Serial Number: N45D97CF

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

JD: Julian Days During Growing Season

Anderson Gauge 2



Gauge Anderson 2

Data Acquired : September 20, 2007

Serial Number: N45D9746

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
10-Mar-2007	00:00:00	-20.34			03-Apr-2007	00:00:00	-28.86		14	27-Apr-2007	00:00:00	-29.43	12	38
10-Mar-2007	12:00:00	-21.37			03-Apr-2007	12:00:00	-29.31		14	27-Apr-2007	12:00:00	-29.55	13	38
11-Mar-2007	00:00:00	-21.97			04-Apr-2007	00:00:00	-29.25		15	28-Apr-2007	00:00:00	-29.79	13	39
11-Mar-2007	12:00:00	-22.78			04-Apr-2007	12:00:00	-29.33		15	28-Apr-2007	12:00:00	-29.97	14	39
12-Mar-2007	00:00:00	-23.45			05-Apr-2007	00:00:00	-28.86		16	29-Apr-2007	00:00:00			40
12-Mar-2007	12:00:00	-23.77			05-Apr-2007	12:00:00	-29.36		16	29-Apr-2007	12:00:00			40
13-Mar-2007	00:00:00	-24.32			06-Apr-2007	00:00:00	-29.64		17	30-Apr-2007	00:00:00	-24.31		41
13-Mar-2007	12:00:00	-24.68			06-Apr-2007	12:00:00	-29.81		17	30-Apr-2007	12:00:00	-24.43		41
14-Mar-2007	00:00:00	-24.99			07-Apr-2007	00:00:00	-29.9		18	01-May-2007	00:00:00	-24.39		42
14-Mar-2007	12:00:00	-25.4			07-Apr-2007	12:00:00	-30.06		18	01-May-2007	12:00:00	-24.25		42
15-Mar-2007	00:00:00	-25.66			08-Apr-2007	00:00:00			19	02-May-2007	00:00:00	-24.1		43
15-Mar-2007	12:00:00	-26.07			08-Apr-2007	12:00:00			19	02-May-2007	12:00:00	-24.04		43
16-Mar-2007	00:00:00	-26.4			09-Apr-2007	00:00:00			20	03-May-2007	00:00:00	-24		44
16-Mar-2007	12:00:00	-6.15			09-Apr-2007	12:00:00	-29.73		20	03-May-2007	12:00:00	-23.98		44
17-Mar-2007	00:00:00	-7.34			10-Apr-2007	00:00:00	-24.49		21	04-May-2007	00:00:00	-23.96		45
17-Mar-2007	12:00:00	-9.94			10-Apr-2007	12:00:00	-24.98		21	04-May-2007	12:00:00	-23.96		45
18-Mar-2007	00:00:00	-11.79			11-Apr-2007	00:00:00	-25.37		22	05-May-2007	00:00:00	-23.97		46
18-Mar-2007	12:00:00	-11.75			11-Apr-2007	12:00:00	-25.61		22	05-May-2007	12:00:00	-23.97		46
19-Mar-2007	00:00:00	-11.56			12-Apr-2007	00:00:00	-25.71		23	06-May-2007	00:00:00	-23.96		47
19-Mar-2007	12:00:00	-12.61			12-Apr-2007	12:00:00	-24.95		23	06-May-2007	12:00:00	-24.01		47
20-Mar-2007	00:00:00	-13.64			13-Apr-2007	00:00:00	-27.5		24	07-May-2007	00:00:00	-24		48
20-Mar-2007	12:00:00	-14.9			13-Apr-2007	12:00:00	-28.82		24	07-May-2007	12:00:00	-23.99		48
21-Mar-2007	00:00:00	-16.89	1		14-Apr-2007	00:00:00	-29.29		25	08-May-2007	00:00:00	-23.97		49
21-Mar-2007	12:00:00	-17.83	1		14-Apr-2007	12:00:00	-29.7		25	08-May-2007	12:00:00	-23.98		49
22-Mar-2007	00:00:00	-18.87	2		15-Apr-2007	00:00:00			26	09-May-2007	00:00:00	-23.97		50
22-Mar-2007	12:00:00	-19.54	2		15-Apr-2007	12:00:00	-9.43	1	26	09-May-2007	12:00:00	-21.86		50
23-Mar-2007	00:00:00	-20.07	3		16-Apr-2007	00:00:00	-12.79		27	10-May-2007	00:00:00	-24.96		51
23-Mar-2007	12:00:00	-20.77	3		16-Apr-2007	12:00:00	-12.89		27	10-May-2007	12:00:00	-27.83		51
24-Mar-2007	00:00:00	-21.38	4		17-Apr-2007	00:00:00	-15.72		28	11-May-2007	00:00:00	-29.91		52
24-Mar-2007	12:00:00	-22.23	4		17-Apr-2007	12:00:00	-17.53		28	11-May-2007	12:00:00	-23.88		52
25-Mar-2007	00:00:00	-22.86	5		18-Apr-2007	00:00:00	-19.19		29	12-May-2007	00:00:00	-23.89		53
25-Mar-2007	12:00:00	-23.84	5		18-Apr-2007	12:00:00	-20.73		29	12-May-2007	12:00:00	-23.9		53
26-Mar-2007	00:00:00	-24.4	6		19-Apr-2007	00:00:00	-22.29		30	13-May-2007	00:00:00	-23.91		54
26-Mar-2007	12:00:00	-24.97	6		19-Apr-2007	12:00:00	-23.38		30	13-May-2007	12:00:00	-24.02		54
27-Mar-2007	00:00:00	-25.28	7		20-Apr-2007	00:00:00	-24.28		31	14-May-2007	00:00:00	-24.07		55
27-Mar-2007	12:00:00	-25.78	7		20-Apr-2007	12:00:00	-24.98		31	14-May-2007	12:00:00	-24.15		55
28-Mar-2007	00:00:00	-26.18	8		21-Apr-2007	00:00:00	-25.49		32	15-May-2007	00:00:00	-24.14		56
28-Mar-2007	12:00:00	-26.69	8		21-Apr-2007	12:00:00	-25.96		32	15-May-2007	12:00:00	-24.08		56
29-Mar-2007	00:00:00	-27.07	9		22-Apr-2007	00:00:00	-26.41		33	16-May-2007	00:00:00	-24.08		57
29-Mar-2007	12:00:00	-25.29	9		22-Apr-2007	12:00:00	-27.13		33	16-May-2007	12:00:00	-24.01		57
30-Mar-2007	00:00:00	-25.25	10		23-Apr-2007	00:00:00	-27.77		34	17-May-2007	00:00:00	-24.08		58
30-Mar-2007	12:00:00	-26.67	10		23-Apr-2007	12:00:00	-28.23		34	17-May-2007	12:00:00	-22.77		58
31-Mar-2007	00:00:00	-27.11	11		24-Apr-2007	00:00:00	-28.48		35	18-May-2007	00:00:00	-27.02		59
31-Mar-2007	12:00:00	-27.58	11		24-Apr-2007	12:00:00	-28.61		35	18-May-2007	12:00:00	-25.21		59
01-Apr-2007	00:00:00	-27.81	12		25-Apr-2007	00:00:00	-28.64		36	19-May-2007	00:00:00	-24.25		60
01-Apr-2007	12:00:00	-28.15	12		25-Apr-2007	12:00:00	-28.78		36	19-May-2007	12:00:00	-24.26		60
02-Apr-2007	00:00:00	-28.34	13		26-Apr-2007	00:00:00	-29.06		37	20-May-2007	00:00:00	-24.32		61
02-Apr-2007	12:00:00	-28.62	13		26-Apr-2007	12:00:00	-29.21		37	20-May-2007	12:00:00	-24.4		61

Gauge Anderson 2

Data Acquired : September 20, 2007

Serial Number: N45D9746

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00	-24.43		62	14-Jun-2007	12:00:00	-24.49		86	09-Jul-2007	00:00:00	-23.94		111
21-May-2007	12:00:00	-24.42		62	15-Jun-2007	00:00:00	-24.47		87	09-Jul-2007	12:00:00	-23.94		111
22-May-2007	00:00:00	-24.46		63	15-Jun-2007	12:00:00	-24.45		87	10-Jul-2007	00:00:00	-23.94		112
22-May-2007	12:00:00	-24.38		63	16-Jun-2007	00:00:00	-24.4		88	10-Jul-2007	12:00:00	-23.94		112
23-May-2007	00:00:00	-24.4		64	16-Jun-2007	12:00:00	-24.37		88	11-Jul-2007	00:00:00	-23.93		113
23-May-2007	12:00:00	-24.41		64	17-Jun-2007	00:00:00	-24.37		89	11-Jul-2007	12:00:00	-23.93		113
24-May-2007	00:00:00	-24.39		65	17-Jun-2007	12:00:00	-24.37		89	12-Jul-2007	00:00:00	-23.95		114
24-May-2007	12:00:00	-24.34		65	18-Jun-2007	00:00:00	-24.32		90	12-Jul-2007	12:00:00	-23.94		114
25-May-2007	00:00:00	-24.29		66	18-Jun-2007	12:00:00	-24.23		90	13-Jul-2007	00:00:00	-23.94		115
25-May-2007	12:00:00	-24.18		66	19-Jun-2007	00:00:00	-24.23		91	13-Jul-2007	12:00:00	-23.93		115
26-May-2007	00:00:00	-24.16		67	19-Jun-2007	12:00:00	-24.22		91	14-Jul-2007	00:00:00	-23.93		116
26-May-2007	12:00:00	-24.08		67	20-Jun-2007	00:00:00	-24.13		92	14-Jul-2007	12:00:00	-23.93		116
27-May-2007	00:00:00	-24.11		68	20-Jun-2007	12:00:00	-24.22		92	15-Jul-2007	00:00:00	-23.94		117
27-May-2007	12:00:00	-24.09		68	21-Jun-2007	00:00:00	-24.22		93	15-Jul-2007	12:00:00	-23.92		117
28-May-2007	00:00:00	-24.09		69	21-Jun-2007	12:00:00	-24.25		93	16-Jul-2007	00:00:00	-23.92		118
28-May-2007	12:00:00	-24.07		69	22-Jun-2007	00:00:00	-24.11		94	16-Jul-2007	12:00:00	-23.93		118
29-May-2007	00:00:00	-24.09		70	22-Jun-2007	12:00:00	-24.15		94	17-Jul-2007	00:00:00	-23.93		119
29-May-2007	12:00:00	-24.09		70	23-Jun-2007	00:00:00	-24.14		95	17-Jul-2007	12:00:00	-23.95		119
30-May-2007	00:00:00	-24.1		71	23-Jun-2007	12:00:00	-23.67		95	18-Jul-2007	00:00:00	-23.93		120
30-May-2007	12:00:00	-24.08		71	24-Jun-2007	00:00:00	-23.77		96	18-Jul-2007	12:00:00	-23.93		120
31-May-2007	00:00:00	-24.15		72	24-Jun-2007	12:00:00	-23.78		96	19-Jul-2007	00:00:00	-23.95		121
31-May-2007	12:00:00	-24.08		72	25-Jun-2007	00:00:00	-23.93		97	19-Jul-2007	12:00:00	-23.94		121
01-Jun-2007	00:00:00	-24.14		73	25-Jun-2007	12:00:00	-24.01		97	20-Jul-2007	00:00:00	-23.95		122
01-Jun-2007	12:00:00	-24.1		73	26-Jun-2007	00:00:00	-24.09		98	20-Jul-2007	12:00:00	-23.93		122
02-Jun-2007	00:00:00	-24.09		74	26-Jun-2007	12:00:00	-24.01		98	21-Jul-2007	00:00:00	-23.93		123
02-Jun-2007	12:00:00	-24.07		74	27-Jun-2007	00:00:00	-24.02		99	21-Jul-2007	12:00:00	-23.92		123
03-Jun-2007	00:00:00	-24.03		75	27-Jun-2007	12:00:00	-24.07		99	22-Jul-2007	00:00:00	-23.94		124
03-Jun-2007	12:00:00	-6.86	1	75	28-Jun-2007	00:00:00	-23.95		100	22-Jul-2007	12:00:00	-23.93		124
04-Jun-2007	00:00:00	-6.78	2	76	28-Jun-2007	12:00:00	-23.89		100	23-Jul-2007	00:00:00	-23.95		125
04-Jun-2007	12:00:00	-10.92	2	76	29-Jun-2007	00:00:00	-23.96		101	23-Jul-2007	12:00:00	-23.91		125
05-Jun-2007	00:00:00	-17.49		77	29-Jun-2007	12:00:00	-23.96		101	24-Jul-2007	00:00:00	-23.93		126
05-Jun-2007	12:00:00	-20.72		77	30-Jun-2007	00:00:00	-23.99		102	24-Jul-2007	12:00:00	-23.93		126
06-Jun-2007	00:00:00	-18.1		78	30-Jun-2007	12:00:00	-24.01		102	25-Jul-2007	00:00:00	-23.93		127
06-Jun-2007	12:00:00	-19.69		78	01-Jul-2007	00:00:00	-23.98		103	25-Jul-2007	12:00:00	-23.92		127
07-Jun-2007	00:00:00	-24.13		79	01-Jul-2007	12:00:00	-24		103	26-Jul-2007	00:00:00	-23.94		128
07-Jun-2007	12:00:00	-27.83		79	02-Jul-2007	00:00:00	-24.01		104	26-Jul-2007	12:00:00	-23.91		128
08-Jun-2007	00:00:00	-23.77		80	02-Jul-2007	12:00:00	-23.99		104	27-Jul-2007	00:00:00	-23.93		129
08-Jun-2007	12:00:00	-23.85		80	03-Jul-2007	00:00:00	-23.99		105	27-Jul-2007	12:00:00	-23.92		129
09-Jun-2007	00:00:00	-23.92		81	03-Jul-2007	12:00:00	-23.97		105	28-Jul-2007	00:00:00	-23.93		130
09-Jun-2007	12:00:00	-24.05		81	04-Jul-2007	00:00:00	-23.99		106	28-Jul-2007	12:00:00	-23.92		130
10-Jun-2007	00:00:00	-24.16		82	04-Jul-2007	12:00:00	-23.98		106	29-Jul-2007	00:00:00	-23.92		131
10-Jun-2007	12:00:00	-24.2		82	05-Jul-2007	00:00:00	-23.97		107	29-Jul-2007	12:00:00	-23.92		131
11-Jun-2007	00:00:00	-24.21		83	05-Jul-2007	12:00:00	-23.94		107	30-Jul-2007	00:00:00	-23.93		132
11-Jun-2007	12:00:00	-24.48		83	06-Jul-2007	00:00:00	-23.96		108	30-Jul-2007	12:00:00	-23.92		132
12-Jun-2007	00:00:00	-24.49		84	06-Jul-2007	12:00:00	-23.96		108	31-Jul-2007	00:00:00	-23.92		133
12-Jun-2007	12:00:00	-24.37		84	07-Jul-2007	00:00:00	-23.95		109	31-Jul-2007	12:00:00	-23.93		133
13-Jun-2007	00:00:00	-24.32		85	07-Jul-2007	12:00:00	-24.03		109	01-Aug-2007	00:00:00	-23.93		134
13-Jun-2007	12:00:00	-24.27		85	08-Jul-2007	00:00:00	-23.93		110	01-Aug-2007	12:00:00	-23.93		134
14-Jun-2007	00:00:00	-24.37		86	08-Jul-2007	12:00:00	-23.94		110	02-Aug-2007	00:00:00	-23.92		135

Gauge Anderson 2

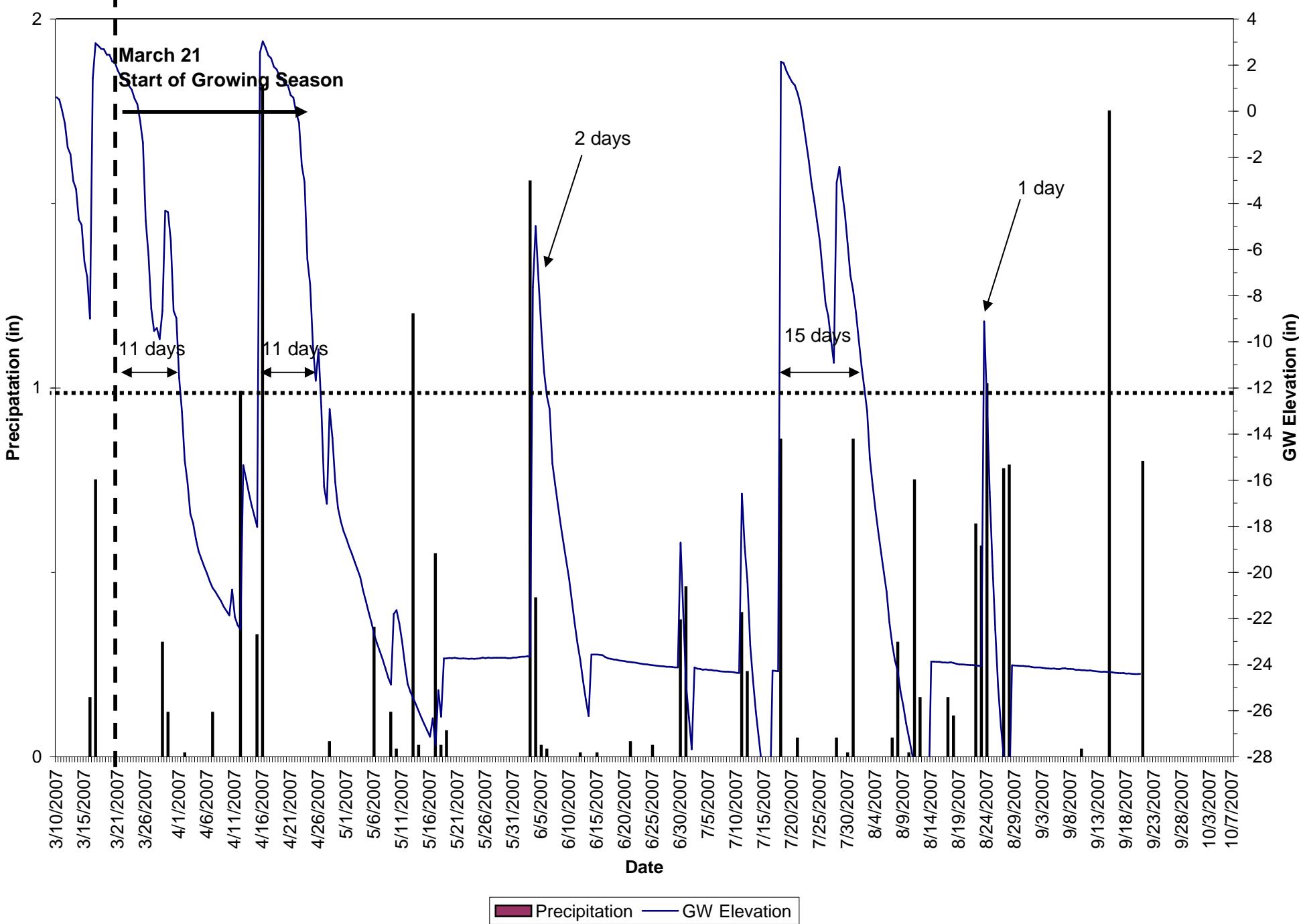
Data Acquired : September 20, 2007

Serial Number: N45D9746

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

JD: Julian Days During Growing Season

Anderson Gauge 3



Gauge Anderson 3

Data Acquired : September 20, 2007

Serial Number: N45DAE5A

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
10-Mar-2007	00:00:00	0.61			03-Apr-2007	00:00:00	-17.45		14	27-Apr-2007	00:00:00	-16.28		38
10-Mar-2007	12:00:00	0.5			03-Apr-2007	12:00:00	-17.86		14	27-Apr-2007	12:00:00	-17.03		38
11-Mar-2007	00:00:00	0.03			04-Apr-2007	00:00:00	-18.54		15	28-Apr-2007	00:00:00	-12.92		39
11-Mar-2007	12:00:00	-0.53			04-Apr-2007	12:00:00	-19.09		15	28-Apr-2007	12:00:00	-14.17		39
12-Mar-2007	00:00:00	-1.57			05-Apr-2007	00:00:00	-19.43		16	29-Apr-2007	00:00:00	-16.09		40
12-Mar-2007	12:00:00	-1.87			05-Apr-2007	12:00:00	-19.75		16	29-Apr-2007	12:00:00	-17.21		40
13-Mar-2007	00:00:00	-3.02			06-Apr-2007	00:00:00	-20.05		17	30-Apr-2007	00:00:00	-17.79		41
13-Mar-2007	12:00:00	-3.37			06-Apr-2007	12:00:00	-20.39		17	30-Apr-2007	12:00:00	-18.22		41
14-Mar-2007	00:00:00	-4.7			07-Apr-2007	00:00:00	-20.67		18	01-May-2007	00:00:00	-18.53		42
14-Mar-2007	12:00:00	-4.93			07-Apr-2007	12:00:00	-20.84		18	01-May-2007	12:00:00	-18.9		42
15-Mar-2007	00:00:00	-6.52			08-Apr-2007	00:00:00	-21.04		19	02-May-2007	00:00:00	-19.2		43
15-Mar-2007	12:00:00	-7.2			08-Apr-2007	12:00:00	-21.24		19	02-May-2007	12:00:00	-19.55		43
16-Mar-2007	00:00:00	-8.99			09-Apr-2007	00:00:00	-21.49		20	03-May-2007	00:00:00	-19.88		44
16-Mar-2007	12:00:00	1.42			09-Apr-2007	12:00:00	-21.68		20	03-May-2007	12:00:00	-20.22		44
17-Mar-2007	00:00:00	2.95			10-Apr-2007	00:00:00	-21.86		21	04-May-2007	00:00:00	-20.79		45
17-Mar-2007	12:00:00	2.84			10-Apr-2007	12:00:00	-20.75		21	04-May-2007	12:00:00	-21.25		45
18-Mar-2007	00:00:00	2.71			11-Apr-2007	00:00:00	-21.94		22	05-May-2007	00:00:00	-21.73		46
18-Mar-2007	12:00:00	2.69			11-Apr-2007	12:00:00	-22.29		22	05-May-2007	12:00:00	-22.18		46
19-Mar-2007	00:00:00	2.46			12-Apr-2007	00:00:00	-22.48		23	06-May-2007	00:00:00	-22.71		47
19-Mar-2007	12:00:00	2.45			12-Apr-2007	12:00:00	-15.35		23	06-May-2007	12:00:00	-23.08		47
20-Mar-2007	00:00:00	2.16			13-Apr-2007	00:00:00	-15.94		24	07-May-2007	00:00:00	-23.42		48
20-Mar-2007	12:00:00	2.09			13-Apr-2007	12:00:00	-16.54		24	07-May-2007	12:00:00	-23.77		48
21-Mar-2007	00:00:00	1.76	1	1	14-Apr-2007	00:00:00	-17.09		25	08-May-2007	00:00:00	-24.16		49
21-Mar-2007	12:00:00	1.54	1	1	14-Apr-2007	12:00:00	-17.56		25	08-May-2007	12:00:00	-24.56		49
22-Mar-2007	00:00:00	1.46	2	2	15-Apr-2007	00:00:00	-18.03		26	09-May-2007	00:00:00	-24.87		50
22-Mar-2007	12:00:00	1.35	2	2	15-Apr-2007	12:00:00	2.55	1	26	09-May-2007	12:00:00	-21.81		50
23-Mar-2007	00:00:00	1.11	3	3	16-Apr-2007	00:00:00	3.03	1	27	10-May-2007	00:00:00	-21.64		51
23-Mar-2007	12:00:00	0.93	3	3	16-Apr-2007	12:00:00	2.76	2	27	10-May-2007	12:00:00	-22.22		51
24-Mar-2007	00:00:00	0.55	4	4	17-Apr-2007	00:00:00	2.42	2	28	11-May-2007	00:00:00	-23.01		52
24-Mar-2007	12:00:00	0.31	4	4	17-Apr-2007	12:00:00	2.3	3	28	11-May-2007	12:00:00	-23.98		52
25-Mar-2007	00:00:00	-0.43	5	5	18-Apr-2007	00:00:00	1.93	3	29	12-May-2007	00:00:00	-24.84		53
25-Mar-2007	12:00:00	-1.37	5	5	18-Apr-2007	12:00:00	1.81	4	29	12-May-2007	12:00:00	-25.19		53
26-Mar-2007	00:00:00	-4.74	6	6	19-Apr-2007	00:00:00	1.51	4	30	13-May-2007	00:00:00	-25.46		54
26-Mar-2007	12:00:00	-6.24	6	6	19-Apr-2007	12:00:00	1.44	5	30	13-May-2007	12:00:00	-25.74		54
27-Mar-2007	00:00:00	-8.56	7	7	20-Apr-2007	00:00:00	1.14	5	31	14-May-2007	00:00:00	-26.04		55
27-Mar-2007	12:00:00	-9.53	7	7	20-Apr-2007	12:00:00	1.13	6	31	14-May-2007	12:00:00	-26.33		55
28-Mar-2007	00:00:00	-9.4	8	8	21-Apr-2007	00:00:00	0.7	6	32	15-May-2007	00:00:00	-26.6		56
28-Mar-2007	12:00:00	-9.88	8	8	21-Apr-2007	12:00:00	0.59	7	32	15-May-2007	12:00:00	-26.86		56
29-Mar-2007	00:00:00	-8.65	9	9	22-Apr-2007	00:00:00	-0.07	7	33	16-May-2007	00:00:00	-27.13		57
29-Mar-2007	12:00:00	-4.31	9	9	22-Apr-2007	12:00:00	-0.49	8	33	16-May-2007	12:00:00	-26.33		57
30-Mar-2007	00:00:00	-4.38	10	10	23-Apr-2007	00:00:00	-2.35	8	34	17-May-2007	00:00:00	-27.49		58
30-Mar-2007	12:00:00	-5.62	10	10	23-Apr-2007	12:00:00	-3.08	9	34	17-May-2007	12:00:00	-25.11		58
31-Mar-2007	00:00:00	-8.66	11	11	24-Apr-2007	00:00:00	-6.42	9	35	18-May-2007	00:00:00	-26.26		59
31-Mar-2007	12:00:00	-8.97	11	11	24-Apr-2007	12:00:00	-7.51	10	35	18-May-2007	12:00:00	-23.73		59
01-Apr-2007	00:00:00	-11.57	12	12	25-Apr-2007	00:00:00	-10.16	10	36	19-May-2007	00:00:00	-23.73		60
01-Apr-2007	12:00:00	-13.03	12		25-Apr-2007	12:00:00	-11.69	11	36	19-May-2007	12:00:00	-23.71		60
02-Apr-2007	00:00:00	-15.15	13		26-Apr-2007	00:00:00	-10.33	11	37	20-May-2007	00:00:00	-23.72		61
02-Apr-2007	12:00:00	-16.1	13		26-Apr-2007	12:00:00	-12.82		37	20-May-2007	12:00:00	-23.7		61

Gauge Anderson 3

Data Acquired : September 20, 2007

Serial Number: N45DAE5A

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00	-23.73		62	14-Jun-2007	12:00:00	-23.56		86	09-Jul-2007	00:00:00	-24.32		111
21-May-2007	12:00:00	-23.74		62	15-Jun-2007	00:00:00	-23.56		87	09-Jul-2007	12:00:00	-24.33		111
22-May-2007	00:00:00	-23.73		63	15-Jun-2007	12:00:00	-23.57		87	10-Jul-2007	00:00:00	-24.35		112
22-May-2007	12:00:00	-23.74		63	16-Jun-2007	00:00:00	-23.59		88	10-Jul-2007	12:00:00	-24.36		112
23-May-2007	00:00:00	-23.75		64	16-Jun-2007	12:00:00	-23.68		88	11-Jul-2007	00:00:00	-16.59		113
23-May-2007	12:00:00	-23.74		64	17-Jun-2007	00:00:00	-23.73		89	11-Jul-2007	12:00:00	-18.9		113
24-May-2007	00:00:00	-23.75		65	17-Jun-2007	12:00:00	-23.75		89	12-Jul-2007	00:00:00	-20.41		114
24-May-2007	12:00:00	-23.74		65	18-Jun-2007	00:00:00	-23.78		90	12-Jul-2007	12:00:00	-23.18		114
25-May-2007	00:00:00	-23.73		66	18-Jun-2007	12:00:00	-23.79		90	13-Jul-2007	00:00:00	-24.7		115
25-May-2007	12:00:00	-23.69		66	19-Jun-2007	00:00:00	-23.82		91	13-Jul-2007	12:00:00	-26.04		115
26-May-2007	00:00:00	-23.72		67	19-Jun-2007	12:00:00	-23.83		91	14-Jul-2007	00:00:00	-27.13		116
26-May-2007	12:00:00	-23.69		67	20-Jun-2007	00:00:00	-23.85		92	14-Jul-2007	12:00:00	-28.21		116
27-May-2007	00:00:00	-23.71		68	20-Jun-2007	12:00:00	-23.88		92	15-Jul-2007	00:00:00	-29.23		117
27-May-2007	12:00:00	-23.7		68	21-Jun-2007	00:00:00	-23.89		93	15-Jul-2007	12:00:00	-30.04		117
28-May-2007	00:00:00	-23.7		69	21-Jun-2007	12:00:00	-23.91		93	16-Jul-2007	00:00:00	-30.44		118
28-May-2007	12:00:00	-23.7		69	22-Jun-2007	00:00:00	-23.92		94	16-Jul-2007	12:00:00	-24.26		118
29-May-2007	00:00:00	-23.7		70	22-Jun-2007	12:00:00	-23.95		94	17-Jul-2007	00:00:00	-24.27		119
29-May-2007	12:00:00	-23.7		70	23-Jun-2007	00:00:00	-23.96		95	17-Jul-2007	12:00:00	-24.29		119
30-May-2007	00:00:00	-23.72		71	23-Jun-2007	12:00:00	-23.98		95	18-Jul-2007	00:00:00	2.15	1	120
30-May-2007	12:00:00	-23.72		71	24-Jun-2007	00:00:00	-23.99		96	18-Jul-2007	12:00:00	2.08	1	120
31-May-2007	00:00:00	-23.69		72	24-Jun-2007	12:00:00	-24.01		96	19-Jul-2007	00:00:00	1.74	2	121
31-May-2007	12:00:00	-23.69		72	25-Jun-2007	00:00:00	-24.03		97	19-Jul-2007	12:00:00	1.49	2	121
01-Jun-2007	00:00:00	-23.68		73	25-Jun-2007	12:00:00	-24.04		97	20-Jul-2007	00:00:00	1.27	3	122
01-Jun-2007	12:00:00	-23.66		73	26-Jun-2007	00:00:00	-24.06		98	20-Jul-2007	12:00:00	1.13	3	122
02-Jun-2007	00:00:00	-23.66		74	26-Jun-2007	12:00:00	-24.07		98	21-Jul-2007	00:00:00	0.77	4	123
02-Jun-2007	12:00:00	-23.64		74	27-Jun-2007	00:00:00	-24.08		99	21-Jul-2007	12:00:00	0.31	4	123
03-Jun-2007	00:00:00	-23.65		75	27-Jun-2007	12:00:00	-24.09		99	22-Jul-2007	00:00:00	-0.46	5	124
03-Jun-2007	12:00:00	-7.62	1	75	28-Jun-2007	00:00:00	-24.09		100	22-Jul-2007	12:00:00	-1.3	5	124
04-Jun-2007	00:00:00	-4.98	1	76	28-Jun-2007	12:00:00	-24.1		100	23-Jul-2007	00:00:00	-2.15	6	125
04-Jun-2007	12:00:00	-7.28	2	76	29-Jun-2007	00:00:00	-24.12		101	23-Jul-2007	12:00:00	-3.14	6	125
05-Jun-2007	00:00:00	-9.4	2	77	29-Jun-2007	12:00:00	-24.12		101	24-Jul-2007	00:00:00	-3.91	7	126
05-Jun-2007	12:00:00	-11.29	3	77	30-Jun-2007	00:00:00	-18.71		102	24-Jul-2007	12:00:00	-4.79	7	126
06-Jun-2007	00:00:00	-12.34		78	30-Jun-2007	12:00:00	-21.89		102	25-Jul-2007	00:00:00	-5.67	8	127
06-Jun-2007	12:00:00	-12.92		78	01-Jul-2007	00:00:00	-24.93		103	25-Jul-2007	12:00:00	-7	8	127
07-Jun-2007	00:00:00	-15.28		79	01-Jul-2007	12:00:00	-26.31		103	26-Jul-2007	00:00:00	-8.32	9	128
07-Jun-2007	12:00:00	-16.2		79	02-Jul-2007	00:00:00	-27.67		104	26-Jul-2007	12:00:00	-8.9	9	128
08-Jun-2007	00:00:00	-17.09		80	02-Jul-2007	12:00:00	-24.12		104	27-Jul-2007	00:00:00	-9.94	10	129
08-Jun-2007	12:00:00	-17.96		80	03-Jul-2007	00:00:00	-24.18		105	27-Jul-2007	12:00:00	-10.91	10	129
09-Jun-2007	00:00:00	-18.75		81	03-Jul-2007	12:00:00	-24.19		105	28-Jul-2007	00:00:00	-3.1	11	130
09-Jun-2007	12:00:00	-19.52		81	04-Jul-2007	00:00:00	-24.22		106	28-Jul-2007	12:00:00	-2.42	11	130
10-Jun-2007	00:00:00	-20.28		82	04-Jul-2007	12:00:00	-24.21		106	29-Jul-2007	00:00:00	-3.46	12	131
10-Jun-2007	12:00:00	-21.25		82	05-Jul-2007	00:00:00	-24.23		107	29-Jul-2007	12:00:00	-4.4	12	131
11-Jun-2007	00:00:00	-22.21		83	05-Jul-2007	12:00:00	-24.23		107	30-Jul-2007	00:00:00	-5.73	13	132
11-Jun-2007	12:00:00	-23.08		83	06-Jul-2007	00:00:00	-24.26		108	30-Jul-2007	12:00:00	-7.11	13	132
12-Jun-2007	00:00:00	-23.8		84	06-Jul-2007	12:00:00	-24.26		108	31-Jul-2007	00:00:00	-7.78	14	133
12-Jun-2007	12:00:00	-24.71		84	07-Jul-2007	00:00:00	-24.29		109	31-Jul-2007	12:00:00	-8.72	14	133
13-Jun-2007	00:00:00	-25.52		85	07-Jul-2007	12:00:00	-24.3		109	01-Aug-2007	00:00:00	-9.9	15	134
13-Jun-2007	12:00:00	-26.23		85	08-Jul-2007	00:00:00	-24.31		110	01-Aug-2007	12:00:00	-11.05	15	134
14-Jun-2007	00:00:00	-23.56		86	08-Jul-2007	12:00:00	-24.31		110	02-Aug-2007	00:00:00	-12		135

Gauge Anderson 3

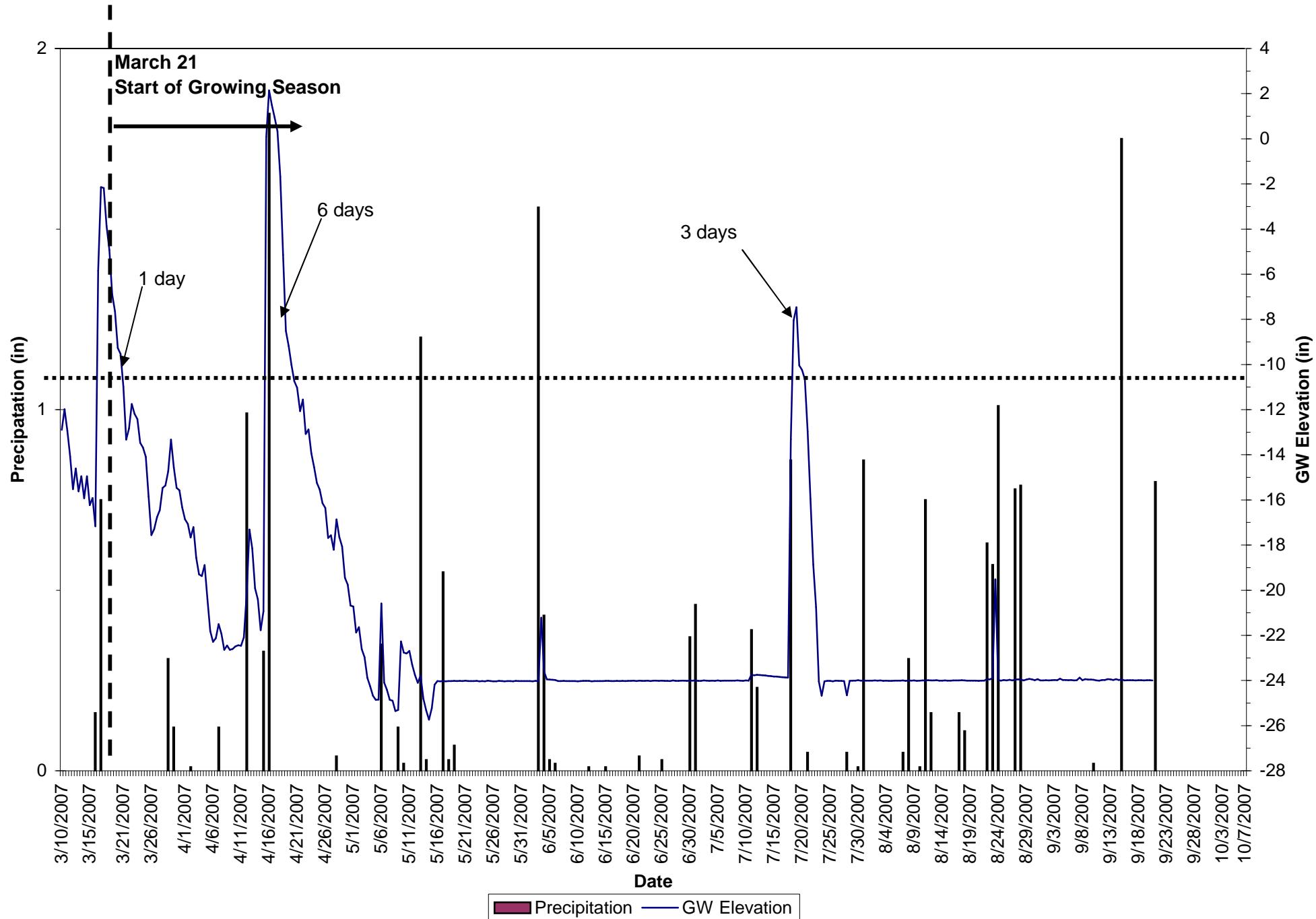
Data Acquired : September 20, 2007

Serial Number: N45DAE5A

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

JD: Julian Days During Growing Season

Anderson Gauge 4



Gauge Anderson 4

Data Acquired : September 20, 2007

Serial Number: N45DAD50

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
10-Mar-2007	00:00:00	-12.9			03-Apr-2007	00:00:00	-18.56		14	27-Apr-2007	00:00:00	-17.57		38
10-Mar-2007	12:00:00	-11.98			03-Apr-2007	12:00:00	-19.3		14	27-Apr-2007	12:00:00	-18.21		38
11-Mar-2007	00:00:00	-12.94			04-Apr-2007	00:00:00	-19.37		15	28-Apr-2007	00:00:00	-16.86		39
11-Mar-2007	12:00:00	-14.07			04-Apr-2007	12:00:00	-18.89		15	28-Apr-2007	12:00:00	-17.65		39
12-Mar-2007	00:00:00	-15.52			05-Apr-2007	00:00:00	-20.4		16	29-Apr-2007	00:00:00	-18.07		40
12-Mar-2007	12:00:00	-14.61			05-Apr-2007	12:00:00	-21.81		16	29-Apr-2007	12:00:00	-19.45		40
13-Mar-2007	00:00:00	-15.62			06-Apr-2007	00:00:00	-22.29		17	30-Apr-2007	00:00:00	-19.76		41
13-Mar-2007	12:00:00	-14.95			06-Apr-2007	12:00:00	-22.13		17	30-Apr-2007	12:00:00	-20.68		41
14-Mar-2007	00:00:00	-15.93			07-Apr-2007	00:00:00	-21.5		18	01-May-2007	00:00:00	-20.72		42
14-Mar-2007	12:00:00	-14.95			07-Apr-2007	12:00:00	-21.93		18	01-May-2007	12:00:00	-21.88		42
15-Mar-2007	00:00:00	-16.23			08-Apr-2007	00:00:00	-22.64		19	02-May-2007	00:00:00	-21.64		43
15-Mar-2007	12:00:00	-15.92			08-Apr-2007	12:00:00	-22.45		19	02-May-2007	12:00:00	-22.61		43
16-Mar-2007	00:00:00	-17.17			09-Apr-2007	00:00:00	-22.64		20	03-May-2007	00:00:00	-22.97		44
16-Mar-2007	12:00:00	-5.85			09-Apr-2007	12:00:00	-22.6		20	03-May-2007	12:00:00	-23.88		44
17-Mar-2007	00:00:00	-2.14			10-Apr-2007	00:00:00	-22.49		21	04-May-2007	00:00:00	-24.26		45
17-Mar-2007	12:00:00	-2.18			10-Apr-2007	12:00:00	-22.44		21	04-May-2007	12:00:00	-24.68		45
18-Mar-2007	00:00:00	-3.87			11-Apr-2007	00:00:00	-22.46		22	05-May-2007	00:00:00	-24.86		46
18-Mar-2007	12:00:00	-4.92			11-Apr-2007	12:00:00	-22.09		22	05-May-2007	12:00:00	-24.85		46
19-Mar-2007	00:00:00	-6.89			12-Apr-2007	00:00:00	-20.17		23	06-May-2007	00:00:00	-20.59		47
19-Mar-2007	12:00:00	-7.64			12-Apr-2007	12:00:00	-17.31		23	06-May-2007	12:00:00	-24.09		47
20-Mar-2007	00:00:00	-9.27			13-Apr-2007	00:00:00	-18.15		24	07-May-2007	00:00:00	-24.42		48
20-Mar-2007	12:00:00	-9.54			13-Apr-2007	12:00:00	-19.92		24	07-May-2007	12:00:00	-24.86		48
21-Mar-2007	00:00:00	-10.99	1	1	14-Apr-2007	00:00:00	-20.41		25	08-May-2007	00:00:00	-24.9		49
21-Mar-2007	12:00:00	-13.33	1		14-Apr-2007	12:00:00	-21.77		25	08-May-2007	12:00:00	-25.35		49
22-Mar-2007	00:00:00	-12.84	2		15-Apr-2007	00:00:00	-20.93		26	09-May-2007	00:00:00	-25.31		50
22-Mar-2007	12:00:00	-11.75	2		15-Apr-2007	12:00:00	0.09	1	26	09-May-2007	12:00:00	-22.27		50
23-Mar-2007	00:00:00	-12.19	3		16-Apr-2007	00:00:00	2.15	1	27	10-May-2007	00:00:00	-22.77		51
23-Mar-2007	12:00:00	-12.42	3		16-Apr-2007	12:00:00	1.49	2	27	10-May-2007	12:00:00	-22.8		51
24-Mar-2007	00:00:00	-13.47	4		17-Apr-2007	00:00:00	0.93	2	28	11-May-2007	00:00:00	-22.69		52
24-Mar-2007	12:00:00	-13.68	4		17-Apr-2007	12:00:00	0.33	3	28	11-May-2007	12:00:00	-23.3		52
25-Mar-2007	00:00:00	-14.09	5		18-Apr-2007	00:00:00	-1.67	3	29	12-May-2007	00:00:00	-23.76		53
25-Mar-2007	12:00:00	-15.85	5		18-Apr-2007	12:00:00	-5.14	4	29	12-May-2007	12:00:00	-24.1		53
26-Mar-2007	00:00:00	-17.56	6		19-Apr-2007	00:00:00	-8.51	4	30	13-May-2007	00:00:00	-23.79		54
26-Mar-2007	12:00:00	-17.29	6		19-Apr-2007	12:00:00	-9.18	5	30	13-May-2007	12:00:00	-24.81		54
27-Mar-2007	00:00:00	-16.77	7		20-Apr-2007	00:00:00	-10.02	5	31	14-May-2007	00:00:00	-25.33		55
27-Mar-2007	12:00:00	-16.45	7		20-Apr-2007	12:00:00	-10.74	6	31	14-May-2007	12:00:00	-25.74		55
28-Mar-2007	00:00:00	-15.47	8		21-Apr-2007	00:00:00	-11.03	6	32	15-May-2007	00:00:00	-25.23		56
28-Mar-2007	12:00:00	-15.36	8		21-Apr-2007	12:00:00	-12.07		32	15-May-2007	12:00:00	-24.19		56
29-Mar-2007	00:00:00	-14.73	9		22-Apr-2007	00:00:00	-11.55	1	33	16-May-2007	00:00:00	-24.03		57
29-Mar-2007	12:00:00	-13.33	9		22-Apr-2007	12:00:00	-13.08		33	16-May-2007	12:00:00	-24.04		57
30-Mar-2007	00:00:00	-14.56	10		23-Apr-2007	00:00:00	-12.88		34	17-May-2007	00:00:00	-24.03		58
30-Mar-2007	12:00:00	-15.47	10		23-Apr-2007	12:00:00	-13.93		34	17-May-2007	12:00:00	-24.04		58
31-Mar-2007	00:00:00	-15.57	11		24-Apr-2007	00:00:00	-14.55		35	18-May-2007	00:00:00	-24.03		59
31-Mar-2007	12:00:00	-16.34	11		24-Apr-2007	12:00:00	-15.25		35	18-May-2007	12:00:00	-24.03		59
01-Apr-2007	00:00:00	-16.86	12		25-Apr-2007	00:00:00	-15.54		36	19-May-2007	00:00:00	-24.02		60
01-Apr-2007	12:00:00	-17.06	12		25-Apr-2007	12:00:00	-16.15		36	19-May-2007	12:00:00	-24.03		60
02-Apr-2007	00:00:00	-17.66	13		26-Apr-2007	00:00:00	-16.36		37	20-May-2007	00:00:00	-24.02		61
02-Apr-2007	12:00:00	-17.21	13		26-Apr-2007	12:00:00	-17.68		37	20-May-2007	12:00:00	-24.03		61

Gauge Anderson 4

Data Acquired : September 20, 2007

Serial Number: N45DAD50

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00	-24.01	62	14-Jun-2007	12:00:00	-24.03	86	09-Jul-2007	00:00:00	-24.01		111
21-May-2007	12:00:00	-24.03	62	15-Jun-2007	00:00:00	-24.02	87	09-Jul-2007	12:00:00	-24.02		111
22-May-2007	00:00:00	-24.03	63	15-Jun-2007	12:00:00	-24.02	87	10-Jul-2007	00:00:00	-24		112
22-May-2007	12:00:00	-24.03	63	16-Jun-2007	00:00:00	-24.03	88	10-Jul-2007	12:00:00	-24.01		112
23-May-2007	00:00:00	-24.02	64	16-Jun-2007	12:00:00	-24.03	88	11-Jul-2007	00:00:00	-23.75		113
23-May-2007	12:00:00	-24.04	64	17-Jun-2007	00:00:00	-24.02	89	11-Jul-2007	12:00:00	-23.77		113
24-May-2007	00:00:00	-24.03	65	17-Jun-2007	12:00:00	-24.03	89	12-Jul-2007	00:00:00	-23.75		114
24-May-2007	12:00:00	-24.04	65	18-Jun-2007	00:00:00	-24.02	90	12-Jul-2007	12:00:00	-23.76		114
25-May-2007	00:00:00	-24.01	66	18-Jun-2007	12:00:00	-24.03	90	13-Jul-2007	00:00:00	-23.77		115
25-May-2007	12:00:00	-24.03	66	19-Jun-2007	00:00:00	-24.02	91	13-Jul-2007	12:00:00	-23.78		115
26-May-2007	00:00:00	-24.04	67	19-Jun-2007	12:00:00	-24.02	91	14-Jul-2007	00:00:00	-23.8		116
26-May-2007	12:00:00	-24.04	67	20-Jun-2007	00:00:00	-24.01	92	14-Jul-2007	12:00:00	-23.81		116
27-May-2007	00:00:00	-24.02	68	20-Jun-2007	12:00:00	-24.03	92	15-Jul-2007	00:00:00	-23.83		117
27-May-2007	12:00:00	-24.03	68	21-Jun-2007	00:00:00	-24.01	93	15-Jul-2007	12:00:00	-23.83		117
28-May-2007	00:00:00	-24.04	69	21-Jun-2007	12:00:00	-24.02	93	16-Jul-2007	00:00:00	-23.84		118
28-May-2007	12:00:00	-24.03	69	22-Jun-2007	00:00:00	-24.02	94	16-Jul-2007	12:00:00	-23.85		118
29-May-2007	00:00:00	-24.03	70	22-Jun-2007	12:00:00	-24.01	94	17-Jul-2007	00:00:00	-23.86		119
29-May-2007	12:00:00	-24.04	70	23-Jun-2007	00:00:00	-24.03	95	17-Jul-2007	12:00:00	-23.87		119
30-May-2007	00:00:00	-24.02	71	23-Jun-2007	12:00:00	-24.01	95	18-Jul-2007	00:00:00	-13.32		120
30-May-2007	12:00:00	-24.03	71	24-Jun-2007	00:00:00	-24.01	96	18-Jul-2007	12:00:00	-8.05	1	120
31-May-2007	00:00:00	-24.03	72	24-Jun-2007	12:00:00	-24.02	96	19-Jul-2007	00:00:00	-7.46	1	121
31-May-2007	12:00:00	-24.03	72	25-Jun-2007	00:00:00	-24.01	97	19-Jul-2007	12:00:00	-10.04	2	121
01-Jun-2007	00:00:00	-24.03	73	25-Jun-2007	12:00:00	-24.02	97	20-Jul-2007	00:00:00	-10.24	2	122
01-Jun-2007	12:00:00	-24.03	73	26-Jun-2007	00:00:00	-24.02	98	20-Jul-2007	12:00:00	-10.65	3	122
02-Jun-2007	00:00:00	-24.04	74	26-Jun-2007	12:00:00	-24.03	98	21-Jul-2007	00:00:00	-12.96		123
02-Jun-2007	12:00:00	-24.02	74	27-Jun-2007	00:00:00	-24	99	21-Jul-2007	12:00:00	-15.95		123
03-Jun-2007	00:00:00	-24.04	75	27-Jun-2007	12:00:00	-24.02	99	22-Jul-2007	00:00:00	-18.86		124
03-Jun-2007	12:00:00	-21.22	75	28-Jun-2007	00:00:00	-24.02	100	22-Jul-2007	12:00:00	-20.75		124
04-Jun-2007	00:00:00	-23.61	76	28-Jun-2007	12:00:00	-24.01	100	23-Jul-2007	00:00:00	-24.05		125
04-Jun-2007	12:00:00	-23.95	76	29-Jun-2007	00:00:00	-24.01	101	23-Jul-2007	12:00:00	-24.68		125
05-Jun-2007	00:00:00	-23.96	77	29-Jun-2007	12:00:00	-24.02	101	24-Jul-2007	00:00:00	-24.04		126
05-Jun-2007	12:00:00	-23.97	77	30-Jun-2007	00:00:00	-24.01	102	24-Jul-2007	12:00:00	-24.02		126
06-Jun-2007	00:00:00	-23.98	78	30-Jun-2007	12:00:00	-24.01	102	25-Jul-2007	00:00:00	-24.02		127
06-Jun-2007	12:00:00	-24.03	78	01-Jul-2007	00:00:00	-24	103	25-Jul-2007	12:00:00	-24.04		127
07-Jun-2007	00:00:00	-24.03	79	01-Jul-2007	12:00:00	-24.02	103	26-Jul-2007	00:00:00	-24.01		128
07-Jun-2007	12:00:00	-24.02	79	02-Jul-2007	00:00:00	-24.02	104	26-Jul-2007	12:00:00	-24.02		128
08-Jun-2007	00:00:00	-24.03	80	02-Jul-2007	12:00:00	-24	104	27-Jul-2007	00:00:00	-24.02		129
08-Jun-2007	12:00:00	-24.03	80	03-Jul-2007	00:00:00	-24.01	105	27-Jul-2007	12:00:00	-24.03		129
09-Jun-2007	00:00:00	-24.03	81	03-Jul-2007	12:00:00	-24.02	105	28-Jul-2007	00:00:00	-24.66		130
09-Jun-2007	12:00:00	-24.03	81	04-Jul-2007	00:00:00	-24.01	106	28-Jul-2007	12:00:00	-24.02		130
10-Jun-2007	00:00:00	-24.04	82	04-Jul-2007	12:00:00	-24.02	106	29-Jul-2007	00:00:00	-24.01		131
10-Jun-2007	12:00:00	-24.03	82	05-Jul-2007	00:00:00	-24	107	29-Jul-2007	12:00:00	-24.01		131
11-Jun-2007	00:00:00	-24.02	83	05-Jul-2007	12:00:00	-24.02	107	30-Jul-2007	00:00:00	-23.99		132
11-Jun-2007	12:00:00	-24.02	83	06-Jul-2007	00:00:00	-24.01	108	30-Jul-2007	12:00:00	-24.01		132
12-Jun-2007	00:00:00	-24.02	84	06-Jul-2007	12:00:00	-24.01	108	31-Jul-2007	00:00:00	-24.01		133
12-Jun-2007	12:00:00	-24.04	84	07-Jul-2007	00:00:00	-24.01	109	31-Jul-2007	12:00:00	-24.01		133
13-Jun-2007	00:00:00	-24.03	85	07-Jul-2007	12:00:00	-24.01	109	01-Aug-2007	00:00:00	-24.01		134
13-Jun-2007	12:00:00	-24.03	85	08-Jul-2007	00:00:00	-24.01	110	01-Aug-2007	12:00:00	-24.01		134
14-Jun-2007	00:00:00	-24.03	86	08-Jul-2007	12:00:00	-24	110	02-Aug-2007	00:00:00	-24		135

Gauge Anderson 4

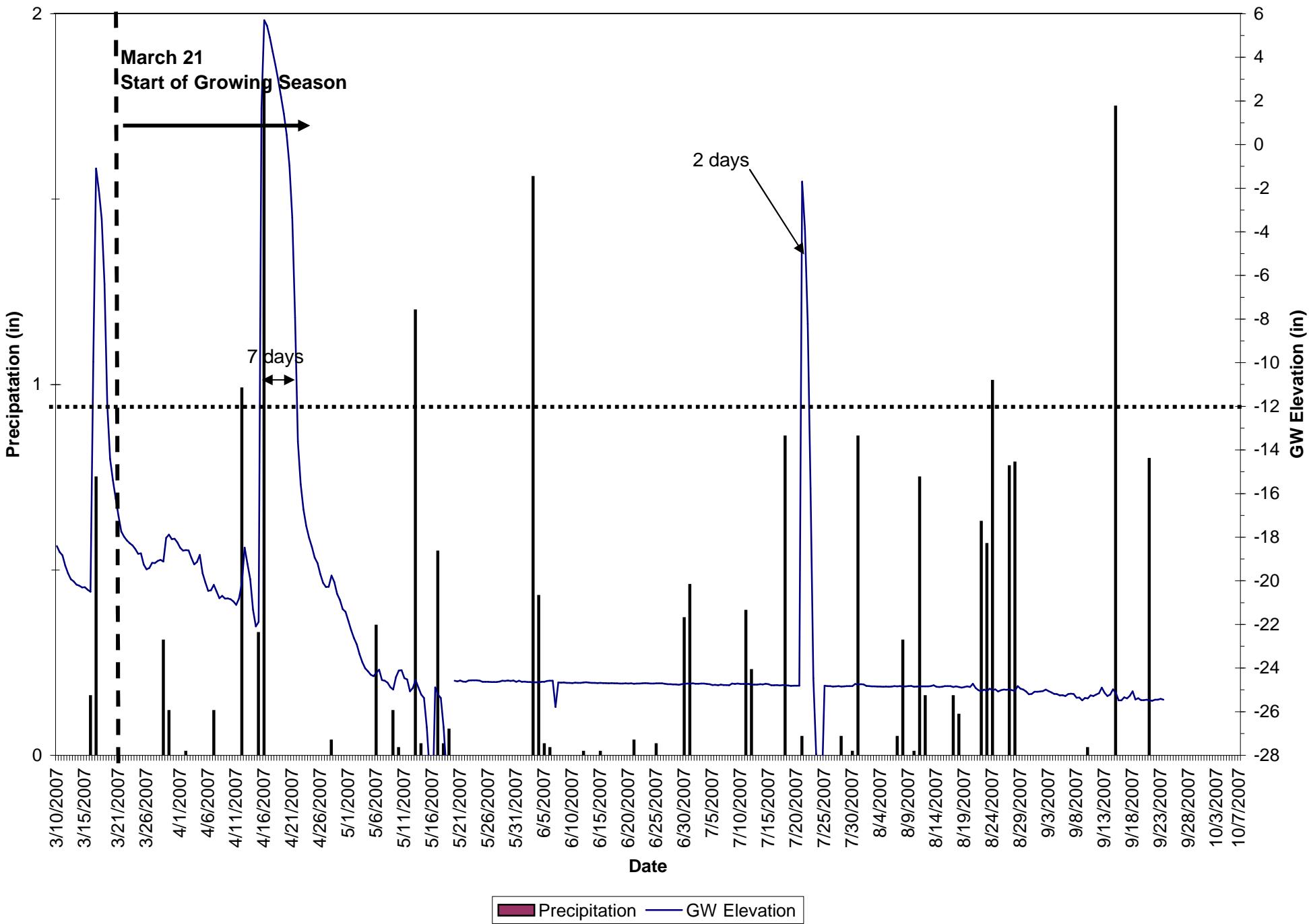
Data Acquired : September 20, 2007

Serial Number: N45DAD50

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

JD: Julian Days During Growing Season

Anderson Gauge 5



Gauge Anderson 5

Data Acquired : September 20, 2007

Serial Number: N45D976E

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
10-Mar-2007	00:00:00	-18.41			03-Apr-2007	00:00:00	-18.95		14	27-Apr-2007	00:00:00	-20.28		38
10-Mar-2007	12:00:00	-18.68			03-Apr-2007	12:00:00	-19.25		14	27-Apr-2007	12:00:00	-20.27		38
11-Mar-2007	00:00:00	-18.83			04-Apr-2007	00:00:00	-19.14		15	28-Apr-2007	00:00:00	-19.76		39
11-Mar-2007	12:00:00	-19.3			04-Apr-2007	12:00:00	-18.81		15	28-Apr-2007	12:00:00	-20.06		39
12-Mar-2007	00:00:00	-19.66			05-Apr-2007	00:00:00	-19.65		16	29-Apr-2007	00:00:00	-20.6		40
12-Mar-2007	12:00:00	-19.93			05-Apr-2007	12:00:00	-20.08		16	29-Apr-2007	12:00:00	-20.88		40
13-Mar-2007	00:00:00	-20.03			06-Apr-2007	00:00:00	-20.46		17	30-Apr-2007	00:00:00	-21.3		41
13-Mar-2007	12:00:00	-20.17			06-Apr-2007	12:00:00	-20.43		17	30-Apr-2007	12:00:00	-21.42		41
14-Mar-2007	00:00:00	-20.22			07-Apr-2007	00:00:00	-20.18		18	01-May-2007	00:00:00	-21.83		42
14-Mar-2007	12:00:00	-20.3			07-Apr-2007	12:00:00	-20.49		18	01-May-2007	12:00:00	-22.26		42
15-Mar-2007	00:00:00	-20.29			08-Apr-2007	00:00:00	-20.8		19	02-May-2007	00:00:00	-22.62		43
15-Mar-2007	12:00:00	-20.41			08-Apr-2007	12:00:00	-20.69		19	02-May-2007	12:00:00	-22.91		43
16-Mar-2007	00:00:00	-20.5			09-Apr-2007	00:00:00	-20.82		20	03-May-2007	00:00:00	-23.37		44
16-Mar-2007	12:00:00	-9.96			09-Apr-2007	12:00:00	-20.81		20	03-May-2007	12:00:00	-23.73		44
17-Mar-2007	00:00:00	-1.09			10-Apr-2007	00:00:00	-20.85		21	04-May-2007	00:00:00	-24.01		45
17-Mar-2007	12:00:00	-2.11			10-Apr-2007	12:00:00	-20.95		21	04-May-2007	12:00:00	-24.15		45
18-Mar-2007	00:00:00	-3.41			11-Apr-2007	00:00:00	-21.1		22	05-May-2007	00:00:00	-24.3		46
18-Mar-2007	12:00:00	-6.39			11-Apr-2007	12:00:00	-20.81		22	05-May-2007	12:00:00	-24.37		46
19-Mar-2007	00:00:00	-11.96			12-Apr-2007	00:00:00	-20.12		23	06-May-2007	00:00:00	-24.21		47
19-Mar-2007	12:00:00	-14.41			12-Apr-2007	12:00:00	-18.47		23	06-May-2007	12:00:00	-24.08		47
20-Mar-2007	00:00:00	-15.39			13-Apr-2007	00:00:00	-19.22		24	07-May-2007	00:00:00	-24.55		48
20-Mar-2007	12:00:00	-16.23			13-Apr-2007	12:00:00	-19.93		24	07-May-2007	12:00:00	-24.58		48
21-Mar-2007	00:00:00	-17.03	1		14-Apr-2007	00:00:00	-21.33		25	08-May-2007	00:00:00	-24.67		49
21-Mar-2007	12:00:00	-17.74	1		14-Apr-2007	12:00:00	-22.09		25	08-May-2007	12:00:00	-24.88		49
22-Mar-2007	00:00:00	-17.98	2		15-Apr-2007	00:00:00	-21.88		26	09-May-2007	00:00:00	-24.99		50
22-Mar-2007	12:00:00	-18.15	2		15-Apr-2007	12:00:00	1.65	1	26	09-May-2007	12:00:00	-24.41		50
23-Mar-2007	00:00:00	-18.28	3		16-Apr-2007	00:00:00	5.7	1	27	10-May-2007	00:00:00	-24.12		51
23-Mar-2007	12:00:00	-18.38	3		16-Apr-2007	12:00:00	5.45	2	27	10-May-2007	12:00:00	-24.1		51
24-Mar-2007	00:00:00	-18.54	4		17-Apr-2007	00:00:00	4.91	2	28	11-May-2007	00:00:00	-24.46		52
24-Mar-2007	12:00:00	-18.76	4		17-Apr-2007	12:00:00	4.26	3	28	11-May-2007	12:00:00	-24.52		52
25-Mar-2007	00:00:00	-18.74	5		18-Apr-2007	00:00:00	3.64	3	29	12-May-2007	00:00:00	-25.07		53
25-Mar-2007	12:00:00	-19.26	5		18-Apr-2007	12:00:00	2.95	4	29	12-May-2007	12:00:00	-24.92		53
26-Mar-2007	00:00:00	-19.47	6		19-Apr-2007	00:00:00	2.19	4	30	13-May-2007	00:00:00	-24.55		54
26-Mar-2007	12:00:00	-19.41	6		19-Apr-2007	12:00:00	1.42	5	30	13-May-2007	12:00:00	-24.89		54
27-Mar-2007	00:00:00	-19.18	7		20-Apr-2007	00:00:00	0.45	5	31	14-May-2007	00:00:00	-25.21		55
27-Mar-2007	12:00:00	-19.19	7		20-Apr-2007	12:00:00	-0.98	6	31	14-May-2007	12:00:00	-25.37		55
28-Mar-2007	00:00:00	-19.09	8		21-Apr-2007	00:00:00	-3.36	6	32	15-May-2007	00:00:00	-26.72		56
28-Mar-2007	12:00:00	-19.04	8		21-Apr-2007	12:00:00	-7.93	7	32	15-May-2007	12:00:00	-28.73		56
29-Mar-2007	00:00:00	-19.12	9		22-Apr-2007	00:00:00	-13.61		33	16-May-2007	00:00:00	-30.55		57
29-Mar-2007	12:00:00	-18.03	9		22-Apr-2007	12:00:00	-15.57		33	16-May-2007	12:00:00	-24.89		57
30-Mar-2007	00:00:00	-17.88	10		23-Apr-2007	00:00:00	-16.74		34	17-May-2007	00:00:00	-25.21		58
30-Mar-2007	12:00:00	-18.09	10		23-Apr-2007	12:00:00	-17.5		34	17-May-2007	12:00:00	-25.37		58
31-Mar-2007	00:00:00	-18.07	11		24-Apr-2007	00:00:00	-18.03		35	18-May-2007	00:00:00	-26.72		59
31-Mar-2007	12:00:00	-18.24	11		24-Apr-2007	12:00:00	-18.45		35	18-May-2007	12:00:00	-28.73		59
01-Apr-2007	00:00:00	-18.48	12		25-Apr-2007	00:00:00	-18.94		36	19-May-2007	00:00:00	-30.55		60
01-Apr-2007	12:00:00	-18.61	12		25-Apr-2007	12:00:00	-19.19		36	19-May-2007	12:00:00			60
02-Apr-2007	00:00:00	-18.59	13		26-Apr-2007	00:00:00	-19.69		37	20-May-2007	00:00:00	-24.58		61
02-Apr-2007	12:00:00	-18.6	13		26-Apr-2007	12:00:00	-20.1		37	20-May-2007	12:00:00	-24.61		61

Gauge Anderson 5

Data Acquired : September 20, 2007

Serial Number: N45D976E

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00	-24.57	62	14-Jun-2007	12:00:00	-24.69	86	09-Jul-2007	00:00:00	-24.73		111
21-May-2007	12:00:00	-24.62	62	15-Jun-2007	00:00:00	-24.68	87	09-Jul-2007	12:00:00	-24.71		111
22-May-2007	00:00:00	-24.63	63	15-Jun-2007	12:00:00	-24.69	87	10-Jul-2007	00:00:00	-24.73		112
22-May-2007	12:00:00	-24.57	63	16-Jun-2007	00:00:00	-24.69	88	10-Jul-2007	12:00:00	-24.73		112
23-May-2007	00:00:00	-24.56	64	16-Jun-2007	12:00:00	-24.7	88	11-Jul-2007	00:00:00	-24.73		113
23-May-2007	12:00:00	-24.56	64	17-Jun-2007	00:00:00	-24.69	89	11-Jul-2007	12:00:00	-24.73		113
24-May-2007	00:00:00	-24.56	65	17-Jun-2007	12:00:00	-24.7	89	12-Jul-2007	00:00:00	-24.76		114
24-May-2007	12:00:00	-24.58	65	18-Jun-2007	00:00:00	-24.7	90	12-Jul-2007	12:00:00	-24.76		114
25-May-2007	00:00:00	-24.63	66	18-Jun-2007	12:00:00	-24.71	90	13-Jul-2007	00:00:00	-24.76		115
25-May-2007	12:00:00	-24.63	66	19-Jun-2007	00:00:00	-24.71	91	13-Jul-2007	12:00:00	-24.74		115
26-May-2007	00:00:00	-24.63	67	19-Jun-2007	12:00:00	-24.7	91	14-Jul-2007	00:00:00	-24.75		116
26-May-2007	12:00:00	-24.64	67	20-Jun-2007	00:00:00	-24.71	92	14-Jul-2007	12:00:00	-24.72		116
27-May-2007	00:00:00	-24.64	68	20-Jun-2007	12:00:00	-24.7	92	15-Jul-2007	00:00:00	-24.74		117
27-May-2007	12:00:00	-24.64	68	21-Jun-2007	00:00:00	-24.72	93	15-Jul-2007	12:00:00	-24.79		117
28-May-2007	00:00:00	-24.62	69	21-Jun-2007	12:00:00	-24.71	93	16-Jul-2007	00:00:00	-24.79		118
28-May-2007	12:00:00	-24.58	69	22-Jun-2007	00:00:00	-24.71	94	16-Jul-2007	12:00:00	-24.78		118
29-May-2007	00:00:00	-24.59	70	22-Jun-2007	12:00:00	-24.7	94	17-Jul-2007	00:00:00	-24.8		119
29-May-2007	12:00:00	-24.57	70	23-Jun-2007	00:00:00	-24.69	95	17-Jul-2007	12:00:00	-24.78		119
30-May-2007	00:00:00	-24.59	71	23-Jun-2007	12:00:00	-24.7	95	18-Jul-2007	00:00:00	-24.79		120
30-May-2007	12:00:00	-24.57	71	24-Jun-2007	00:00:00	-24.71	96	18-Jul-2007	12:00:00	-24.8		120
31-May-2007	00:00:00	-24.63	72	24-Jun-2007	12:00:00	-24.71	96	19-Jul-2007	00:00:00	-24.82		121
31-May-2007	12:00:00	-24.58	72	25-Jun-2007	00:00:00	-24.7	97	19-Jul-2007	12:00:00	-24.81		121
01-Jun-2007	00:00:00	-24.63	73	25-Jun-2007	12:00:00	-24.7	97	20-Jul-2007	00:00:00	-24.81		122
01-Jun-2007	12:00:00	-24.62	73	26-Jun-2007	00:00:00	-24.7	98	20-Jul-2007	12:00:00	-24.81		122
02-Jun-2007	00:00:00	-24.64	74	26-Jun-2007	12:00:00	-24.72	98	21-Jul-2007	00:00:00	-1.7	1	123
02-Jun-2007	12:00:00	-24.64	74	27-Jun-2007	00:00:00	-24.74	99	21-Jul-2007	12:00:00	-3.87	1	123
03-Jun-2007	00:00:00	-24.66	75	27-Jun-2007	12:00:00	-24.74	99	22-Jul-2007	00:00:00	-8.21	2	124
03-Jun-2007	12:00:00	-24.65	75	28-Jun-2007	00:00:00	-24.75	100	22-Jul-2007	12:00:00	-15.76		124
04-Jun-2007	00:00:00	-24.66	76	28-Jun-2007	12:00:00	-24.75	100	23-Jul-2007	00:00:00	-24.46		125
04-Jun-2007	12:00:00	-24.63	76	29-Jun-2007	00:00:00	-24.77	101	23-Jul-2007	12:00:00	-27.94		125
05-Jun-2007	00:00:00	-24.63	77	29-Jun-2007	12:00:00	-24.74	101	24-Jul-2007	00:00:00	-28.84		126
05-Jun-2007	12:00:00	-24.59	77	30-Jun-2007	00:00:00	-24.73	102	24-Jul-2007	12:00:00	-29.71		126
06-Jun-2007	00:00:00	-24.58	78	30-Jun-2007	12:00:00	-24.71	102	25-Jul-2007	00:00:00	-24.81		127
06-Jun-2007	12:00:00	-24.58	78	01-Jul-2007	00:00:00	-24.72	103	25-Jul-2007	12:00:00	-24.83		127
07-Jun-2007	00:00:00	-25.79	79	01-Jul-2007	12:00:00	-24.7	103	26-Jul-2007	00:00:00	-24.83		128
07-Jun-2007	12:00:00	-24.66	79	02-Jul-2007	00:00:00	-24.72	104	26-Jul-2007	12:00:00	-24.85		128
08-Jun-2007	00:00:00	-24.67	80	02-Jul-2007	12:00:00	-24.72	104	27-Jul-2007	00:00:00	-24.84		129
08-Jun-2007	12:00:00	-24.66	80	03-Jul-2007	00:00:00	-24.71	105	27-Jul-2007	12:00:00	-24.83		129
09-Jun-2007	00:00:00	-24.68	81	03-Jul-2007	12:00:00	-24.71	105	28-Jul-2007	00:00:00	-24.85		130
09-Jun-2007	12:00:00	-24.68	81	04-Jul-2007	00:00:00	-24.73	106	28-Jul-2007	12:00:00	-24.84		130
10-Jun-2007	00:00:00	-24.69	82	04-Jul-2007	12:00:00	-24.74	106	29-Jul-2007	00:00:00	-24.83		131
10-Jun-2007	12:00:00	-24.67	82	05-Jul-2007	00:00:00	-24.78	107	29-Jul-2007	12:00:00	-24.83		131
11-Jun-2007	00:00:00	-24.68	83	05-Jul-2007	12:00:00	-24.77	107	30-Jul-2007	00:00:00	-24.83		132
11-Jun-2007	12:00:00	-24.68	83	06-Jul-2007	00:00:00	-24.79	108	30-Jul-2007	12:00:00	-24.73		132
12-Jun-2007	00:00:00	-24.66	84	06-Jul-2007	12:00:00	-24.76	108	31-Jul-2007	00:00:00	-24.76		133
12-Jun-2007	12:00:00	-24.65	84	07-Jul-2007	00:00:00	-24.78	109	31-Jul-2007	12:00:00	-24.74		133
13-Jun-2007	00:00:00	-24.67	85	07-Jul-2007	12:00:00	-24.78	109	01-Aug-2007	00:00:00	-24.75		134
13-Jun-2007	12:00:00	-24.68	85	08-Jul-2007	00:00:00	-24.79	110	01-Aug-2007	12:00:00	-24.82		134
14-Jun-2007	00:00:00	-24.68	86	08-Jul-2007	12:00:00	-24.71	110	02-Aug-2007	00:00:00	-24.83		135

Gauge Anderson 5

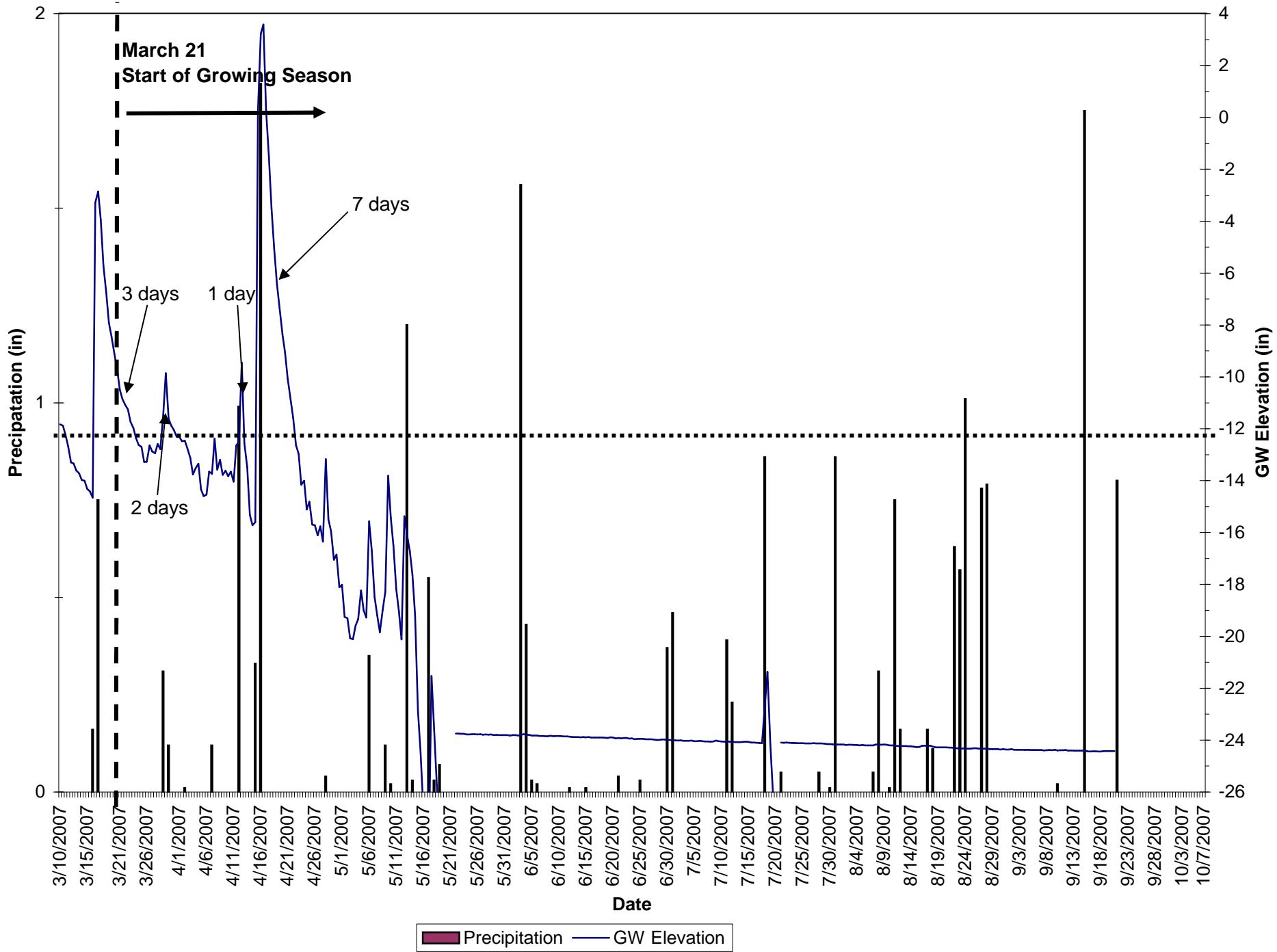
Data Acquired : September 20, 2007

Serial Number: N45D976E

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

JD: Julian Days During Growing Season

Anderson Reference 1



Gauge Anderson Ref 1

Data Acquired : September 20, 2007

Serial Number: N45D96E4

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
10-Mar-2007	00:00:00	-11.83			03-Apr-2007	00:00:00	-13.12		14	27-Apr-2007	00:00:00	-15.76		38
10-Mar-2007	12:00:00	-11.88			03-Apr-2007	12:00:00	-13.76		14	27-Apr-2007	12:00:00	-16.35		38
11-Mar-2007	00:00:00	-12.24			04-Apr-2007	00:00:00	-13.53		15	28-Apr-2007	00:00:00	-13.17		39
11-Mar-2007	12:00:00	-12.68			04-Apr-2007	12:00:00	-13.35		15	28-Apr-2007	12:00:00	-15.5		39
12-Mar-2007	00:00:00	-13.3			05-Apr-2007	00:00:00	-14.34		16	29-Apr-2007	00:00:00	-15.95		40
12-Mar-2007	12:00:00	-13.34			05-Apr-2007	12:00:00	-14.6		16	29-Apr-2007	12:00:00	-17.05		40
13-Mar-2007	00:00:00	-13.61			06-Apr-2007	00:00:00	-14.54		17	30-Apr-2007	00:00:00	-16.85		41
13-Mar-2007	12:00:00	-13.72			06-Apr-2007	12:00:00	-13.65		17	30-Apr-2007	12:00:00	-18.11		41
14-Mar-2007	00:00:00	-13.97			07-Apr-2007	00:00:00	-13.74		18	01-May-2007	00:00:00	-18.01		42
14-Mar-2007	12:00:00	-14.01			07-Apr-2007	12:00:00	-12.38		18	01-May-2007	12:00:00	-19.25		42
15-Mar-2007	00:00:00	-14.32			08-Apr-2007	00:00:00	-13.58		19	02-May-2007	00:00:00	-19.3		43
15-Mar-2007	12:00:00	-14.41			08-Apr-2007	12:00:00	-13.2		19	02-May-2007	12:00:00	-20.07		43
16-Mar-2007	00:00:00	-14.66			09-Apr-2007	00:00:00	-13.78		20	03-May-2007	00:00:00	-20.11		44
16-Mar-2007	12:00:00	-3.28			09-Apr-2007	12:00:00	-13.62		20	03-May-2007	12:00:00	-19.59		44
17-Mar-2007	00:00:00	-2.86			10-Apr-2007	00:00:00	-13.83		21	04-May-2007	00:00:00	-19.34		45
17-Mar-2007	12:00:00	-3.96			10-Apr-2007	12:00:00	-13.65		21	04-May-2007	12:00:00	-18.23		45
18-Mar-2007	00:00:00	-5.71			11-Apr-2007	00:00:00	-14.04		22	05-May-2007	00:00:00	-19		46
18-Mar-2007	12:00:00	-6.76			11-Apr-2007	12:00:00	-12.65		22	05-May-2007	12:00:00	-19.28		46
19-Mar-2007	00:00:00	-7.92			12-Apr-2007	00:00:00	-12.49		23	06-May-2007	00:00:00	-15.57		47
19-Mar-2007	12:00:00	-8.45			12-Apr-2007	12:00:00	-9.45	1	23	06-May-2007	12:00:00	-16.69		47
20-Mar-2007	00:00:00	-9.11			13-Apr-2007	00:00:00	-12.56		24	07-May-2007	00:00:00	-18.49		48
20-Mar-2007	12:00:00	-9.67			13-Apr-2007	12:00:00	-13.48		24	07-May-2007	12:00:00	-19.19		48
21-Mar-2007	00:00:00	-10.5	1	1	14-Apr-2007	00:00:00	-15.31		25	08-May-2007	00:00:00	-19.84		49
21-Mar-2007	12:00:00	-10.86	1	1	14-Apr-2007	12:00:00	-15.72		25	08-May-2007	12:00:00	-18.98		49
22-Mar-2007	00:00:00	-11.07	2	2	15-Apr-2007	00:00:00	-15.6		26	09-May-2007	00:00:00	-18.28		50
22-Mar-2007	12:00:00	-11.26	2	2	15-Apr-2007	12:00:00	0.24	1	26	09-May-2007	12:00:00	-13.81		50
23-Mar-2007	00:00:00	-11.74	3	3	16-Apr-2007	00:00:00	3.22	1	27	10-May-2007	00:00:00	-15.43		51
23-Mar-2007	12:00:00	-11.97	3	3	16-Apr-2007	12:00:00	3.58	2	27	10-May-2007	12:00:00	-16.5		51
24-Mar-2007	00:00:00	-12.36		4	17-Apr-2007	00:00:00	0.31	2	28	11-May-2007	00:00:00	-18.19		52
24-Mar-2007	12:00:00	-12.62		4	17-Apr-2007	12:00:00	-1.52	3	28	11-May-2007	12:00:00	-19.03		52
25-Mar-2007	00:00:00	-12.7		5	18-Apr-2007	00:00:00	-3.5	3	29	12-May-2007	00:00:00	-20.12		53
25-Mar-2007	12:00:00	-13.28		5	18-Apr-2007	12:00:00	-5.04	4	29	12-May-2007	12:00:00	-15.37		53
26-Mar-2007	00:00:00	-13.27		6	19-Apr-2007	00:00:00	-6.44	4	30	13-May-2007	00:00:00	-16.08		54
26-Mar-2007	12:00:00	-12.64		6	19-Apr-2007	12:00:00	-7.36	5	30	13-May-2007	12:00:00	-16.71		54
27-Mar-2007	00:00:00	-12.88		7	20-Apr-2007	00:00:00	-8.36	5	31	14-May-2007	00:00:00	-17.64		55
27-Mar-2007	12:00:00	-12.94		7	20-Apr-2007	12:00:00	-9.07	6	31	14-May-2007	12:00:00	-19.19		55
28-Mar-2007	00:00:00	-12.59		8	21-Apr-2007	00:00:00	-10.08	6	32	15-May-2007	00:00:00	-22.86		56
28-Mar-2007	12:00:00	-12.78		8	21-Apr-2007	12:00:00	-10.86	7	32	15-May-2007	12:00:00	-24.47		56
29-Mar-2007	00:00:00	-11.5	1	9	22-Apr-2007	00:00:00	-11.59	7	33	16-May-2007	00:00:00	-26.72		57
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31-Mar-2007	00:00:00	-12.05		11	24-Apr-2007	00:00:00	-14.01		35	18-May-2007	00:00:00	-23.58		59
31-Mar-2007	12:00:00	-12.31		11	24-Apr-2007	12:00:00	-15.11		35	18-May-2007	12:00:00	-25.71		59
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02-Apr-2007	00:00:00	-12.46		13	26-Apr-2007	00:00:00	-15.72		37	20-May-2007	00:00:00			61
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Gauge Anderson Ref 1

Data Acquired : September 20, 2007

Serial Number: N45D96E4

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00		62	14-Jun-2007	12:00:00	-23.88	86	09-Jul-2007	00:00:00	-24.02		111
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22-May-2007	00:00:00	-23.75	63	15-Jun-2007	12:00:00	-23.88	87	10-Jul-2007	00:00:00	-24.05		112
22-May-2007	12:00:00	-23.75	63	16-Jun-2007	00:00:00	-23.9	88	10-Jul-2007	12:00:00	-24.06		112
23-May-2007	00:00:00	-23.76	64	16-Jun-2007	12:00:00	-23.9	88	11-Jul-2007	00:00:00	-24.05		113
23-May-2007	12:00:00	-23.76	64	17-Jun-2007	00:00:00	-23.9	89	11-Jul-2007	12:00:00	-24.06		113
24-May-2007	00:00:00	-23.78	65	17-Jun-2007	12:00:00	-23.9	89	12-Jul-2007	00:00:00	-24.06		114
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26-May-2007	12:00:00	-23.77	67	20-Jun-2007	00:00:00	-23.9	92	14-Jul-2007	12:00:00	-24.06		116
27-May-2007	00:00:00	-23.79	68	20-Jun-2007	12:00:00	-23.93	92	15-Jul-2007	00:00:00	-24.07		117
27-May-2007	12:00:00	-23.78	68	21-Jun-2007	00:00:00	-23.92	93	15-Jul-2007	12:00:00	-24.09		117
28-May-2007	00:00:00	-23.79	69	21-Jun-2007	12:00:00	-23.93	93	16-Jul-2007	00:00:00	-24.09		118
28-May-2007	12:00:00	-23.78	69	22-Jun-2007	00:00:00	-23.92	94	16-Jul-2007	12:00:00	-24.1		118
29-May-2007	00:00:00	-23.81	70	22-Jun-2007	12:00:00	-23.92	94	17-Jul-2007	00:00:00	-24.11		119
29-May-2007	12:00:00	-23.8	70	23-Jun-2007	00:00:00	-23.94	95	17-Jul-2007	12:00:00	-24.12		119
30-May-2007	00:00:00	-23.81	71	23-Jun-2007	12:00:00	-23.93	95	18-Jul-2007	00:00:00	-22.65		120
30-May-2007	12:00:00	-23.81	71	24-Jun-2007	00:00:00	-23.97	96	18-Jul-2007	12:00:00	-21.37		120
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02-Jun-2007	12:00:00	-23.82	74	27-Jun-2007	00:00:00	-23.97	99	21-Jul-2007	12:00:00	-24.1		123
03-Jun-2007	00:00:00	-23.8	75	27-Jun-2007	12:00:00	-23.98	99	22-Jul-2007	00:00:00	-24.09		124
03-Jun-2007	12:00:00	-23.77	75	28-Jun-2007	00:00:00	-23.99	100	22-Jul-2007	12:00:00	-24.1		124
04-Jun-2007	00:00:00	-23.79	76	28-Jun-2007	12:00:00	-23.99	100	23-Jul-2007	00:00:00	-24.11		125
04-Jun-2007	12:00:00	-23.8	76	29-Jun-2007	00:00:00	-23.98	101	23-Jul-2007	12:00:00	-24.11		125
05-Jun-2007	00:00:00	-23.82	77	29-Jun-2007	12:00:00	-23.98	101	24-Jul-2007	00:00:00	-24.12		126
05-Jun-2007	12:00:00	-23.82	77	30-Jun-2007	00:00:00	-23.99	102	24-Jul-2007	12:00:00	-24.12		126
06-Jun-2007	00:00:00	-23.82	78	30-Jun-2007	12:00:00	-23.99	102	25-Jul-2007	00:00:00	-24.12		127
06-Jun-2007	12:00:00	-23.84	78	01-Jul-2007	00:00:00	-24.01	103	25-Jul-2007	12:00:00	-24.13		127
07-Jun-2007	00:00:00	-23.84	79	01-Jul-2007	12:00:00	-24.01	103	26-Jul-2007	00:00:00	-24.13		128
07-Jun-2007	12:00:00	-23.85	79	02-Jul-2007	00:00:00	-24.02	104	26-Jul-2007	12:00:00	-24.13		128
08-Jun-2007	00:00:00	-23.85	80	02-Jul-2007	12:00:00	-24.01	104	27-Jul-2007	00:00:00	-24.12		129
08-Jun-2007	12:00:00	-23.83	80	03-Jul-2007	00:00:00	-24.03	105	27-Jul-2007	12:00:00	-24.13		129
09-Jun-2007	00:00:00	-23.85	81	03-Jul-2007	12:00:00	-24.03	105	28-Jul-2007	00:00:00	-24.13		130
09-Jun-2007	12:00:00	-23.84	81	04-Jul-2007	00:00:00	-24.03	106	28-Jul-2007	12:00:00	-24.13		130
10-Jun-2007	00:00:00	-23.84	82	04-Jul-2007	12:00:00	-24.02	106	29-Jul-2007	00:00:00	-24.14		131
10-Jun-2007	12:00:00	-23.85	82	05-Jul-2007	00:00:00	-24.04	107	29-Jul-2007	12:00:00	-24.15		131
11-Jun-2007	00:00:00	-23.86	83	05-Jul-2007	12:00:00	-24.04	107	30-Jul-2007	00:00:00	-24.15		132
11-Jun-2007	12:00:00	-23.86	83	06-Jul-2007	00:00:00	-24.03	108	30-Jul-2007	12:00:00	-24.16		132
12-Jun-2007	00:00:00	-23.87	84	06-Jul-2007	12:00:00	-24.04	108	31-Jul-2007	00:00:00	-24.17		133
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13-Jun-2007	12:00:00	-23.88	85	08-Jul-2007	00:00:00	-24.06	110	01-Aug-2007	12:00:00	-24.17		134
14-Jun-2007	00:00:00	-23.89	86	08-Jul-2007	12:00:00	-24.05	110	02-Aug-2007	00:00:00	-24.19		135

Gauge Anderson Ref 1

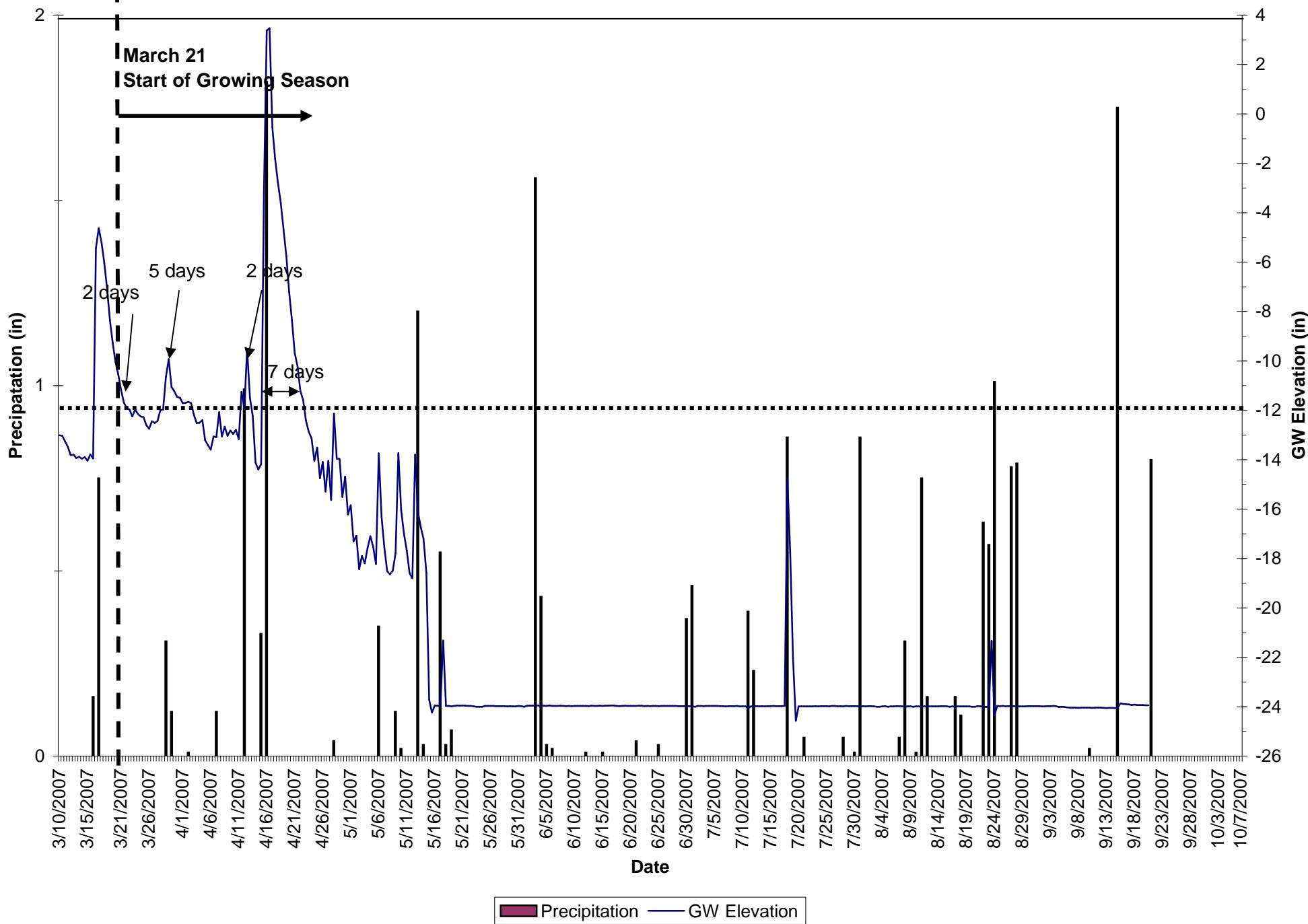
Data Acquired : September 20, 2007

Serial Number: N45D96E4

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

JD: Julian Days During Growing Season

Anderson Reference 2



Gauge Anderson Ref 2

Data Acquired : September 20, 2007

Serial Number: N45D9674

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
10-Mar-2007	00:00:00	-13.01			03-Apr-2007	00:00:00	-12.19		14	27-Apr-2007	00:00:00	-14.05		38
10-Mar-2007	12:00:00	-13.04			03-Apr-2007	12:00:00	-12.52		14	27-Apr-2007	12:00:00	-15.63		38
11-Mar-2007	00:00:00	-13.26			04-Apr-2007	00:00:00	-12.5		15	28-Apr-2007	00:00:00	-12.14		39
11-Mar-2007	12:00:00	-13.49			04-Apr-2007	12:00:00	-12.4		15	28-Apr-2007	12:00:00	-13.96		39
12-Mar-2007	00:00:00	-13.82			05-Apr-2007	00:00:00	-13.21		16	29-Apr-2007	00:00:00	-13.97		40
12-Mar-2007	12:00:00	-13.79			05-Apr-2007	12:00:00	-13.41		16	29-Apr-2007	12:00:00	-15.51		40
13-Mar-2007	00:00:00	-13.93			06-Apr-2007	00:00:00	-13.59		17	30-Apr-2007	00:00:00	-14.68		41
13-Mar-2007	12:00:00	-13.88			06-Apr-2007	12:00:00	-13.06		17	30-Apr-2007	12:00:00	-16.22		41
14-Mar-2007	00:00:00	-13.96			07-Apr-2007	00:00:00	-13.09		18	01-May-2007	00:00:00	-15.84		42
14-Mar-2007	12:00:00	-13.9			07-Apr-2007	12:00:00	-12.08		18	01-May-2007	12:00:00	-17.31		42
15-Mar-2007	00:00:00	-14.04			08-Apr-2007	00:00:00	-13.06		19	02-May-2007	00:00:00	-17.08		43
15-Mar-2007	12:00:00	-13.79			08-Apr-2007	12:00:00	-12.66		19	02-May-2007	12:00:00	-18.43		43
16-Mar-2007	00:00:00	-13.95			09-Apr-2007	00:00:00	-13.04		20	03-May-2007	00:00:00	-17.9		44
16-Mar-2007	12:00:00	-5.44			09-Apr-2007	12:00:00	-12.82		20	03-May-2007	12:00:00	-18.2		44
17-Mar-2007	00:00:00	-4.63			10-Apr-2007	00:00:00	-12.96		21	04-May-2007	00:00:00	-17.58		45
17-Mar-2007	12:00:00	-5.2			10-Apr-2007	12:00:00	-12.79		21	04-May-2007	12:00:00	-17.1		45
18-Mar-2007	00:00:00	-6.04			11-Apr-2007	00:00:00	-13.17		22	05-May-2007	00:00:00	-17.53		46
18-Mar-2007	12:00:00	-7.09			11-Apr-2007	12:00:00	-11.25	1	22	05-May-2007	12:00:00	-18.22		46
19-Mar-2007	00:00:00	-8.35			12-Apr-2007	00:00:00	-11.92	1	23	06-May-2007	00:00:00	-13.74		47
19-Mar-2007	12:00:00	-9.27			12-Apr-2007	12:00:00	-9.53	2	23	06-May-2007	12:00:00	-16.31		47
20-Mar-2007	00:00:00	-10.05			13-Apr-2007	00:00:00	-11.49	2	24	07-May-2007	00:00:00	-17.56		48
20-Mar-2007	12:00:00	-10.55			13-Apr-2007	12:00:00	-12.23		24	07-May-2007	12:00:00	-18.51		48
21-Mar-2007	00:00:00	-11.19	1	1	14-Apr-2007	00:00:00	-14.12		25	08-May-2007	00:00:00	-18.64		49
21-Mar-2007	12:00:00	-11.69	1	1	14-Apr-2007	12:00:00	-14.4		25	08-May-2007	12:00:00	-18.49		49
22-Mar-2007	00:00:00	-11.91	2	2	15-Apr-2007	00:00:00	-14.18		26	09-May-2007	00:00:00	-17.79		50
22-Mar-2007	12:00:00	-11.97	2	2	15-Apr-2007	12:00:00	-3.17	1	26	09-May-2007	12:00:00	-13.73		50
23-Mar-2007	00:00:00	-12.25		3	16-Apr-2007	00:00:00	3.37	1	27	10-May-2007	00:00:00	-16.04		51
23-Mar-2007	12:00:00	-11.97		3	16-Apr-2007	12:00:00	3.47	2	27	10-May-2007	12:00:00	-16.99		51
24-Mar-2007	00:00:00	-12.15		4	17-Apr-2007	00:00:00	-0.54	2	28	11-May-2007	00:00:00	-17.67		52
24-Mar-2007	12:00:00	-12.25		4	17-Apr-2007	12:00:00	-1.82	3	28	11-May-2007	12:00:00	-18.59		52
25-Mar-2007	00:00:00	-12.28		5	18-Apr-2007	00:00:00	-2.79	3	29	12-May-2007	00:00:00	-18.8		53
25-Mar-2007	12:00:00	-12.6		5	18-Apr-2007	12:00:00	-3.59	4	29	12-May-2007	12:00:00	-13.79		53
26-Mar-2007	00:00:00	-12.75		6	19-Apr-2007	00:00:00	-4.68	4	30	13-May-2007	00:00:00	-16.11		54
26-Mar-2007	12:00:00	-12.44		6	19-Apr-2007	12:00:00	-5.76	5	30	13-May-2007	12:00:00	-16.73		54
27-Mar-2007	00:00:00	-12.51		7	20-Apr-2007	00:00:00	-7.21	5	31	14-May-2007	00:00:00	-17.21		55
27-Mar-2007	12:00:00	-12.43		7	20-Apr-2007	12:00:00	-8.35	6	31	14-May-2007	12:00:00	-18.58		55
28-Mar-2007	00:00:00	-12		8	21-Apr-2007	00:00:00	-9.69	6	32	15-May-2007	00:00:00	-23.72		56
28-Mar-2007	12:00:00	-11.97	1	8	21-Apr-2007	12:00:00	-10.22	7	32	15-May-2007	12:00:00	-24.24		56
29-Mar-2007	00:00:00	-10.65	1	9	22-Apr-2007	00:00:00	-11.21	7	33	16-May-2007	00:00:00	-23.95		57
29-Mar-2007	12:00:00	-9.93	2	9	22-Apr-2007	12:00:00	-11.59	8	33	16-May-2007	12:00:00	-23.96		57
30-Mar-2007	00:00:00	-11.06	2	10	23-Apr-2007	00:00:00	-12.42		34	17-May-2007	00:00:00	-23.96		58
30-Mar-2007	12:00:00	-11.23	3	10	23-Apr-2007	12:00:00	-12.87		34	17-May-2007	12:00:00	-21.32		58
31-Mar-2007	00:00:00	-11.46	3	11	24-Apr-2007	00:00:00	-13.13		35	18-May-2007	00:00:00	-23.97		59
31-Mar-2007	12:00:00	-11.49	4	11	24-Apr-2007	12:00:00	-14.05		35	18-May-2007	12:00:00	-23.97		59
01-Apr-2007	00:00:00	-11.71	4	12	25-Apr-2007	00:00:00	-13.51		36	19-May-2007	00:00:00	-23.99		60
01-Apr-2007	12:00:00	-11.7	5	12	25-Apr-2007	12:00:00	-14.75		36	19-May-2007	12:00:00	-23.97		60
02-Apr-2007	00:00:00	-11.66	5	13	26-Apr-2007	00:00:00	-14.09		37	20-May-2007	00:00:00	-23.95		61
02-Apr-2007	12:00:00	-11.71	6	13	26-Apr-2007	12:00:00	-15.29		37	20-May-2007	12:00:00	-23.96		61

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Data Acquired : September 20, 2007

Serial Number: N45D9674

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

JD: Julian Days During Growing Season

21-May-2007	00:00:00	-23.95	62	14-Jun-2007	12:00:00	-23.96	86	09-Jul-2007	00:00:00	-23.97		111
21-May-2007	12:00:00	-23.96	62	15-Jun-2007	00:00:00	-23.97	87	09-Jul-2007	12:00:00	-23.99		111
22-May-2007	00:00:00	-23.97	63	15-Jun-2007	12:00:00	-23.96	87	10-Jul-2007	00:00:00	-23.99		112
22-May-2007	12:00:00	-23.97	63	16-Jun-2007	00:00:00	-23.96	88	10-Jul-2007	12:00:00	-23.99		112
23-May-2007	00:00:00	-23.99	64	16-Jun-2007	12:00:00	-23.95	88	11-Jul-2007	00:00:00	-24.06		113
23-May-2007	12:00:00	-24	64	17-Jun-2007	00:00:00	-23.95	89	11-Jul-2007	12:00:00	-23.99		113
24-May-2007	00:00:00	-24	65	17-Jun-2007	12:00:00	-23.97	89	12-Jul-2007	00:00:00	-23.98		114
24-May-2007	12:00:00	-24	65	18-Jun-2007	00:00:00	-23.98	90	12-Jul-2007	12:00:00	-23.98		114
25-May-2007	00:00:00	-23.97	66	18-Jun-2007	12:00:00	-23.97	90	13-Jul-2007	00:00:00	-23.99		115
25-May-2007	12:00:00	-23.97	66	19-Jun-2007	00:00:00	-23.96	91	13-Jul-2007	12:00:00	-23.98		115
26-May-2007	00:00:00	-23.97	67	19-Jun-2007	12:00:00	-23.97	91	14-Jul-2007	00:00:00	-23.99		116
26-May-2007	12:00:00	-23.97	67	20-Jun-2007	00:00:00	-23.97	92	14-Jul-2007	12:00:00	-23.98		116
27-May-2007	00:00:00	-23.98	68	20-Jun-2007	12:00:00	-23.97	92	15-Jul-2007	00:00:00	-23.98		117
27-May-2007	12:00:00	-23.98	68	21-Jun-2007	00:00:00	-23.97	93	15-Jul-2007	12:00:00	-23.97		117
28-May-2007	00:00:00	-23.98	69	21-Jun-2007	12:00:00	-23.96	93	16-Jul-2007	00:00:00	-23.98		118
28-May-2007	12:00:00	-23.98	69	22-Jun-2007	00:00:00	-23.96	94	16-Jul-2007	12:00:00	-23.98		118
29-May-2007	00:00:00	-23.99	70	22-Jun-2007	12:00:00	-23.98	94	17-Jul-2007	00:00:00	-23.98		119
29-May-2007	12:00:00	-23.98	70	23-Jun-2007	00:00:00	-23.97	95	17-Jul-2007	12:00:00	-23.97		119
30-May-2007	00:00:00	-23.99	71	23-Jun-2007	12:00:00	-23.98	95	18-Jul-2007	00:00:00	-14.79		120
30-May-2007	12:00:00	-23.99	71	24-Jun-2007	00:00:00	-23.97	96	18-Jul-2007	12:00:00	-17.76		120
31-May-2007	00:00:00	-23.97	72	24-Jun-2007	12:00:00	-23.97	96	19-Jul-2007	00:00:00	-22.03		121
31-May-2007	12:00:00	-23.98	72	25-Jun-2007	00:00:00	-23.98	97	19-Jul-2007	12:00:00	-24.57		121
01-Jun-2007	00:00:00	-24	73	25-Jun-2007	12:00:00	-23.97	97	20-Jul-2007	00:00:00	-23.99		122
01-Jun-2007	12:00:00	-23.96	73	26-Jun-2007	00:00:00	-23.97	98	20-Jul-2007	12:00:00	-23.99		122
02-Jun-2007	00:00:00	-23.96	74	26-Jun-2007	12:00:00	-23.97	98	21-Jul-2007	00:00:00	-23.99		123
02-Jun-2007	12:00:00	-23.96	74	27-Jun-2007	00:00:00	-23.97	99	21-Jul-2007	12:00:00	-23.99		123
03-Jun-2007	00:00:00	-23.96	75	27-Jun-2007	12:00:00	-23.97	99	22-Jul-2007	00:00:00	-23.99		124
03-Jun-2007	12:00:00	-23.95	75	28-Jun-2007	00:00:00	-23.97	100	22-Jul-2007	12:00:00	-23.99		124
04-Jun-2007	00:00:00	-23.95	76	28-Jun-2007	12:00:00	-23.98	100	23-Jul-2007	00:00:00	-23.98		125
04-Jun-2007	12:00:00	-23.96	76	29-Jun-2007	00:00:00	-23.98	101	23-Jul-2007	12:00:00	-23.99		125
05-Jun-2007	00:00:00	-23.97	77	29-Jun-2007	12:00:00	-23.98	101	24-Jul-2007	00:00:00	-23.98		126
05-Jun-2007	12:00:00	-23.95	77	30-Jun-2007	00:00:00	-23.98	102	24-Jul-2007	12:00:00	-23.98		126
06-Jun-2007	00:00:00	-23.97	78	30-Jun-2007	12:00:00	-23.98	102	25-Jul-2007	00:00:00	-23.98		127
06-Jun-2007	12:00:00	-23.97	78	01-Jul-2007	00:00:00	-23.98	103	25-Jul-2007	12:00:00	-23.99		127
07-Jun-2007	00:00:00	-23.97	79	01-Jul-2007	12:00:00	-24	103	26-Jul-2007	00:00:00	-23.97		128
07-Jun-2007	12:00:00	-23.96	79	02-Jul-2007	00:00:00	-23.97	104	26-Jul-2007	12:00:00	-23.97		128
08-Jun-2007	00:00:00	-23.97	80	02-Jul-2007	12:00:00	-23.97	104	27-Jul-2007	00:00:00	-23.99		129
08-Jun-2007	12:00:00	-23.98	80	03-Jul-2007	00:00:00	-23.98	105	27-Jul-2007	12:00:00	-23.98		129
09-Jun-2007	00:00:00	-23.97	81	03-Jul-2007	12:00:00	-23.97	105	28-Jul-2007	00:00:00	-23.99		130
09-Jun-2007	12:00:00	-23.98	81	04-Jul-2007	00:00:00	-23.97	106	28-Jul-2007	12:00:00	-23.97		130
10-Jun-2007	00:00:00	-23.97	82	04-Jul-2007	12:00:00	-23.97	106	29-Jul-2007	00:00:00	-23.98		131
10-Jun-2007	12:00:00	-23.97	82	05-Jul-2007	00:00:00	-23.97	107	29-Jul-2007	12:00:00	-23.98		131
11-Jun-2007	00:00:00	-23.97	83	05-Jul-2007	12:00:00	-23.97	107	30-Jul-2007	00:00:00	-23.98		132
11-Jun-2007	12:00:00	-23.97	83	06-Jul-2007	00:00:00	-23.98	108	30-Jul-2007	12:00:00	-23.98		132
12-Jun-2007	00:00:00	-23.97	84	06-Jul-2007	12:00:00	-23.98	108	31-Jul-2007	00:00:00	-23.99		133
12-Jun-2007	12:00:00	-23.98	84	07-Jul-2007	00:00:00	-23.99	109	31-Jul-2007	12:00:00	-23.98		133
13-Jun-2007	00:00:00	-23.96	85	07-Jul-2007	12:00:00	-23.98	109	01-Aug-2007	00:00:00	-23.99		134
13-Jun-2007	12:00:00	-23.97	85	08-Jul-2007	00:00:00	-23.98	110	01-Aug-2007	12:00:00	-23.98		134
14-Jun-2007	00:00:00	-23.97	86	08-Jul-2007	12:00:00	-23.98	110	02-Aug-2007	00:00:00	-23.98		135

Gauge Anderson Ref 2

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Serial Number: N45D9674

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

JD: Julian Days During Growing Season