

APPENDIX P

Hydrogeologic Summary and Background Monitoring Report

Duval County, Florida

June 2013



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Appendix P

Hydrogeologic Summary and Background Monitoring Report

1.0 Introduction and Background

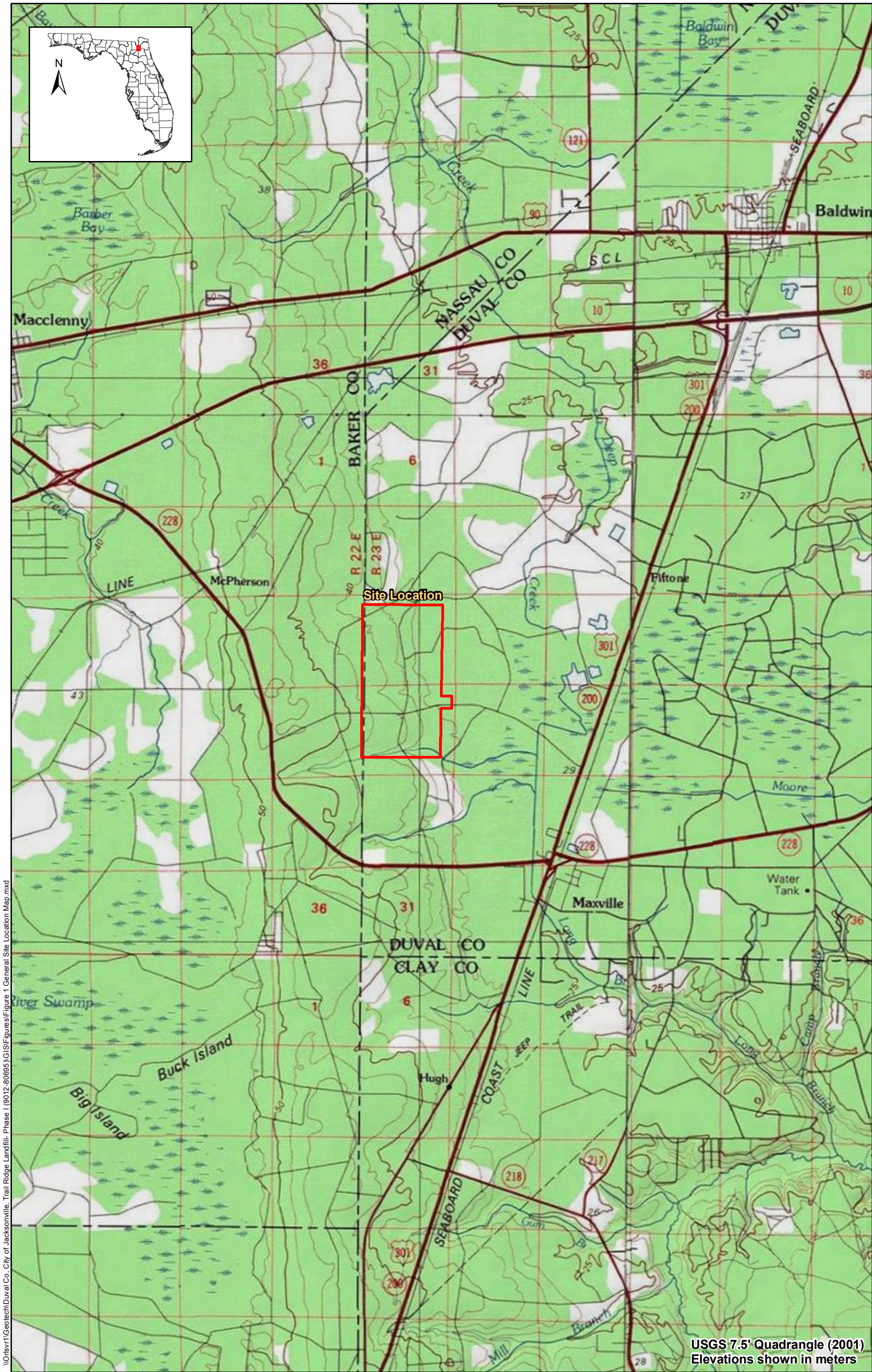
Trail Ridge Landfill is a Class I landfill that is owned by the City of Jacksonville, Florida (City) and operated by Trail Ridge Landfill, Inc. (a Waste Management Company). The types of waste accepted at Trail Ridge Landfill typically consist of residential/household, office, commercial, agricultural, and industrial wastes. The site serves the City of Jacksonville, Duval County, and Northeast Florida. Based on facility waste records, the annual tonnage for 2010 was approximately 713,040 tons.

As shown on **Figure 1**, the landfill property is located along the central-western border of Duval County, in Sections 18 through 21, Township 3 South, Range 23 East. The total land area is approximately 978 acres, of which approximately 148 acres are used as part of the existing cell area. The existing cell area has been developed via five stages of cell construction over 20 years and is within 5 to 7 years of completion. As part of the Trail Ridge Landfill Master Site Plan Report, CDM Smith evaluated various build-out options of the site to increase the capacity of the landfill. **Figure 2** shows the proposed extents of each expansion (Phases 6 through 8) located to the North of the existing landfill.

To support design and permitting of future expansion phases, CDM Smith developed a background hydrologic and water quality monitoring plan in accordance with hydrogeologic regulatory requirements for solid waste management facilities described in Sections 62-701.410 and 62-701.510, Florida Administrative Code (FAC). The following items are included in this Hydrogeologic Summary and Background Monitoring Report:

- A description of the on-site geology and hydrogeology along with a comparison to regional characteristics including;
 - Details of the background hydrologic and water quality monitoring plan for groundwater and surface water;
 - Results of the background hydrologic and water quality monitoring for Quarter 1 (April through June 2011), Quarter 2 (July through September 2011), Quarter 3 (January 2012), and Quarter 4 (March 2013) of the monitoring program;
 - Direction and rate of ground water and surface water flow, including seasonal variations;
 - Any on site hydraulic connections between aquifers;
 - For all confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill, the porosity or effective porosity, horizontal and vertical permeabilities, and the depth to and lithology of the layers and aquifers; and

- Topography, soil types and characteristics, and surface water drainage systems of the site and surrounding the site.
- An inventory of all the public and private water wells within a one-mile radius of the proposed landfill site. The inventory shall include, where available:
 - The approximate elevation of the top of the well casing and the depth of each well;
 - The name of the owner and the age and usage of each well; and
 - The stratigraphic unit screened for each well.
- Identify and locate any existing contaminated areas on the landfill site.
- A map showing the locations of all potable wells within 500 feet of the waste storage and disposal areas to demonstrate compliance with paragraph 62-701.300(2)(b), FAC



\\Orisvr1\Geotech\Duval Co. City of Jacksonville, Trail Ridge Landfill- Phase 1\GIS\Figures\Figure 1 General Site Location Map.mxd

USGS 7.5' Quadrangle (2001)
Elevations shown in meters

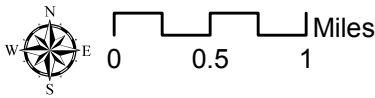
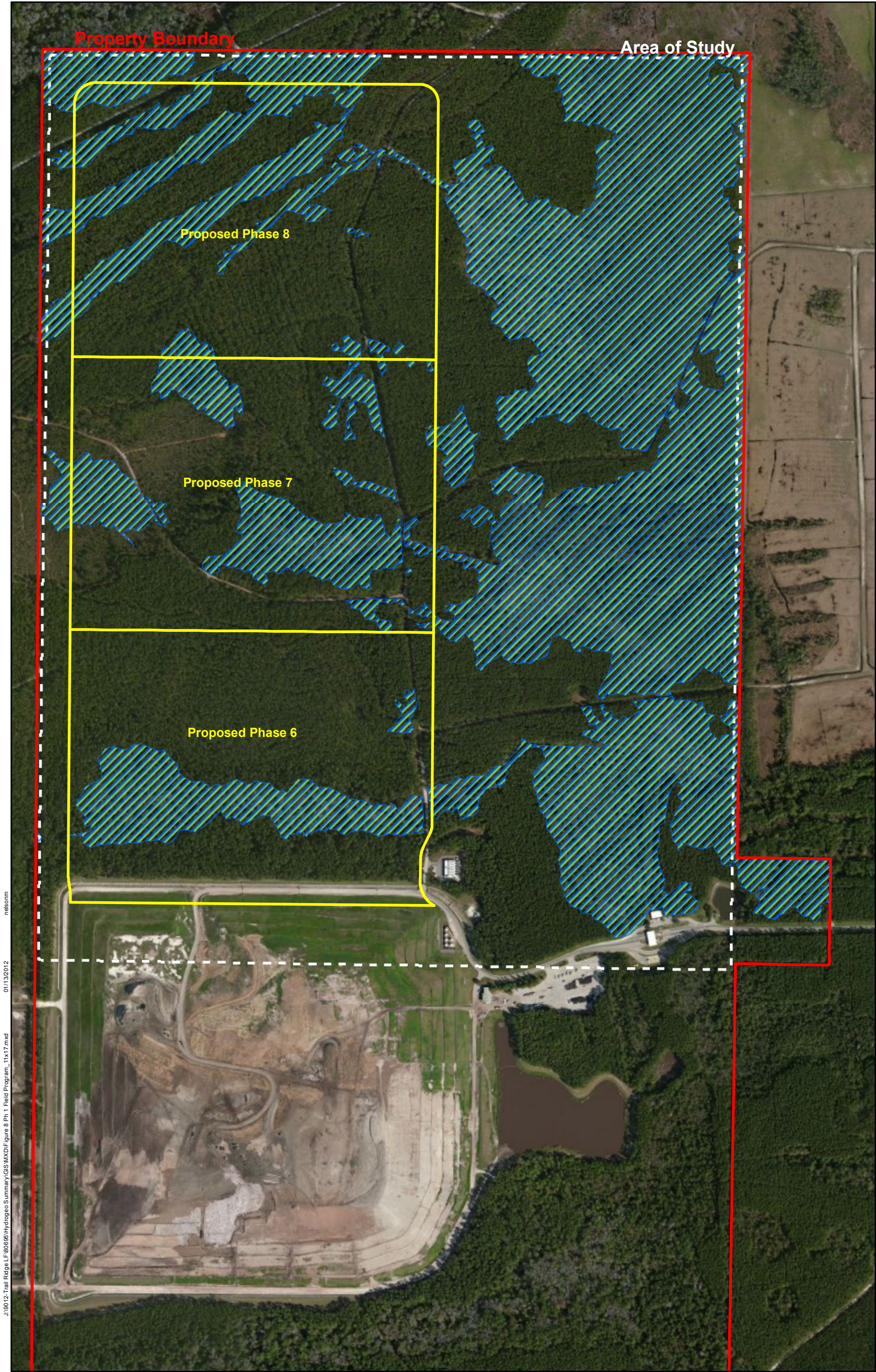


Figure 1
General Location Map
Trail Ridge Landfill Expansion
Duval County, Florida



2.0 Regional and Site Geology

The geology of Duval County consists of six geologic units (Miller, 1986; Krause and Randolph, 1989; Phelps, 1993; Leve, 1966; Fairchild, 1972) as listed below in descending order:

- Undifferentiated clastic deposits of Holocene, Pleistocene, and Pliocene age;
- Hawthorn Group of Miocene age;
- Ocala Limestone late Eocene age;
- Avon Park of middle Eocene age;
- Oldsmar middle to early Eocene age; and
- Cedar Keys Formation of early Eocene and late Paleocene age.

An east to west geologic section through Duval County is presented on **Figure 3**. Each of these geologic units is briefly described in the following subsections.

2.1 Undifferentiated Clastic Deposits

The undifferentiated clastic deposits of Holocene, Pleistocene, and Pliocene age are composed of unconsolidated soils, predominantly sand, clayey sands, and sandy clay, which were deposited during former high sea levels. Where present, these deposits make up the surficial aquifer. These sediments, which comprise the surficial aquifer system, are located across the county and range in thickness from 10 ft to 100 ft (Phelps, 1993).

2.2 Hawthorn Group

The Hawthorn Group underlies the surficial deposits and is composed of different formations and members (Scott, 1988). The Hawthorn Group Formation occurs across the county. The Hawthorn Group consists of a complex, highly variable package of interbedded and intermixed siliciclastic, carbonate, and phosphatic sediments. The Hawthorn Group comprises the regional upper confining unit overlying the Floridan Aquifer. It consists of deposits of the Miocene, mostly of clay, silt, and sand beds containing phosphate. It is considered a low-permeability unit due to the fines. However, within this unit, there are permeable lenses of sands, limestone, and dolomite that are part of the intermediate aquifer system, where present. The thickness of the Hawthorn Group ranges from 350 ft to 500 ft in Duval County (Phelps, 1993; Scott, 1988). **Figure 4** shows the extent and thickness of the upper (Miocene) confining deposits in Duval County.

2.3 Ocala Limestone

The Ocala Limestone of Late Eocene age overlies the Avon Park Formation. The Ocala limestone is a white, generally soft, friable, porous limestone. The Ocala is one of the most permeable rock units in the Floridan Aquifer System (FAS) (Miller, 1986). The approximate thickness of the Ocala Limestone ranges from 100 ft to 350 ft in Duval County (Leve, 1966; Miller, 1986).

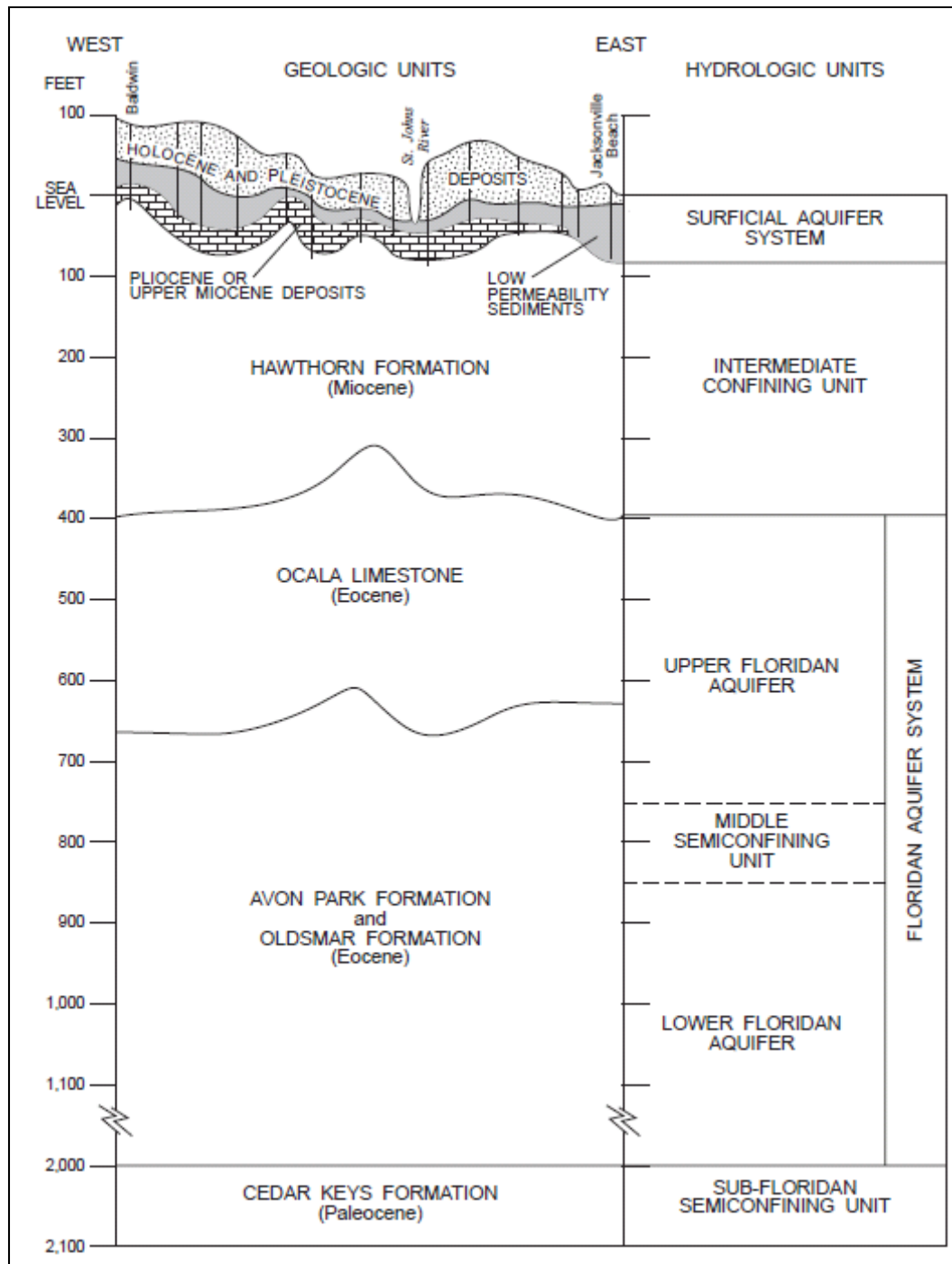


Figure 3.
East-West Hydrogeologic/Geologic Cross-Section through Duval County, FL
(Adapted from Phelps, 1993).

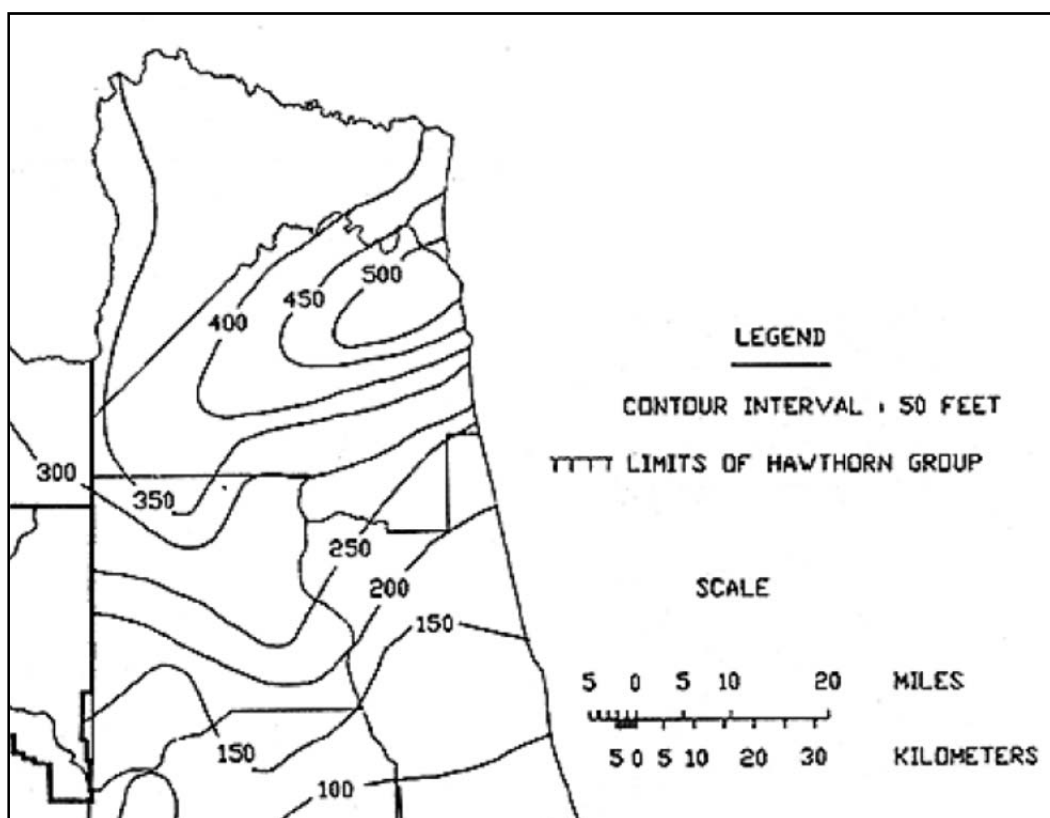


Figure 4.
Thickness of the Hawthorn Group in Northeast Florida
(Adapted from Scott and Lloyd, 1991; Scott, 1988).

2.4 Avon Park Formation

The Avon Park Formation of Eocene age consists of a thick sequence of fossiliferous limestone, dolomitic limestone, and dolostone. The lower portion of this unit has the lower permeable carbonates that comprise the middle semi-confining unit within the FAS. The Ocala Limestone and the upper part of the Avon Park Formation comprise the Upper Floridan Aquifer (Miller, 1986). The approximate thickness of the Avon Park Formation ranges from 700 ft to 1,100 ft in Duval County (Leve, 1966; Miller, 1986).

2.5 Oldsmar Formation

The Oldsmar Formation of Eocene age consists of off-white to light gray micritic limestone and vuggy dolostone. Evaporites are common in the lower parts of this formation. The Oldsmar Formation underlies the entire Florida peninsula. The approximate thickness of the Oldsmar Formation ranges from 300 ft to 500 ft in Duval County (Leve, 1966; Miller, 1986).

2.6 Cedar Keys Formation

The Cedar Keys Formation and equivalents of Paleocene age consists of dolostone, dolomitic limestone, and anhydrite. The Oldsmar and Cedar Keys Formations comprise the lower Floridan Aquifer. The Cedar Keys Formation is approximately 500 ft thick in Duval County (Leve, 1966; Miller, 1986).

3.0 Physiography

As shown on **Figure 5**, Duval County contains four major physiographic subdivisions: the Duval Upland in the west; the St. Marys Meander Plain in the north; the Eastern Valley in the south-central part of the county; and the Center Park Ridge in the southeast. These subdivisions are regional features, extending into adjacent parts of northeastern Florida.

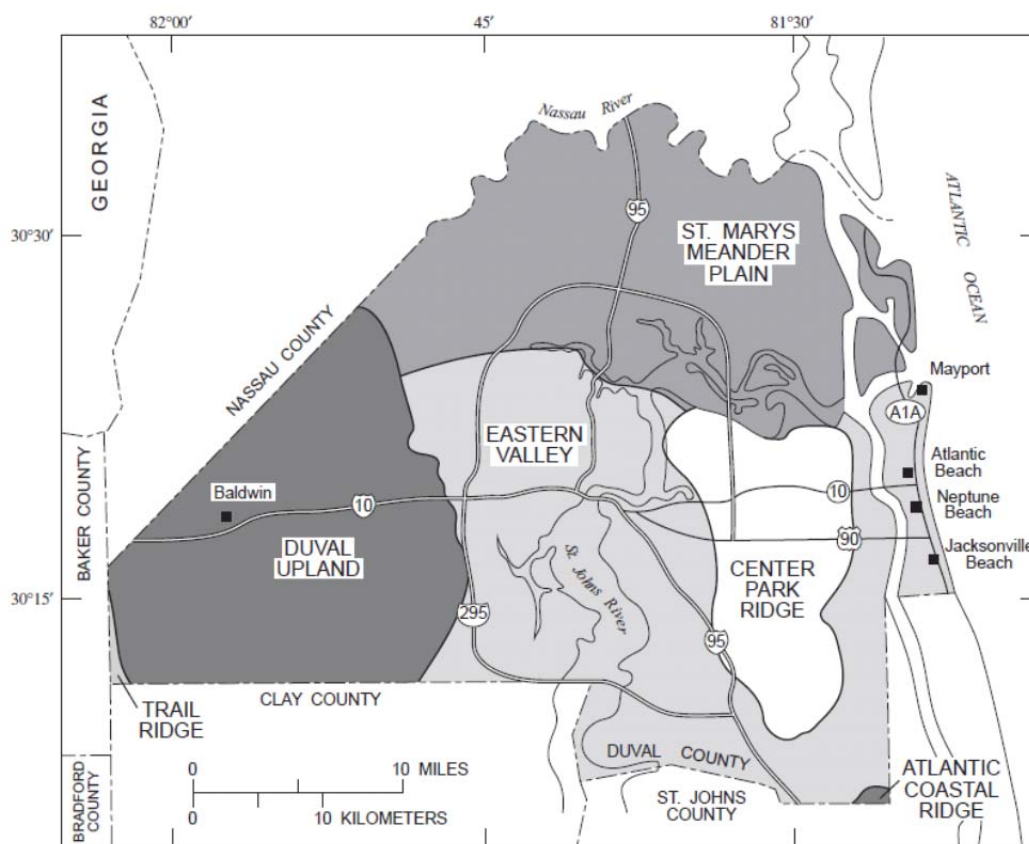


Figure 5.
Physiographic Subdivisions in Duval County
(Adapted from Phelps, 1993; White, 1970).

The Eastern Valley could have been an ancient lagoon or beach ridge plain. North of Palatka, located about 60 miles south of Duval County, the St. Johns River flows through the Eastern Valley. White (1970) believes that the influence through time of large amounts of riverborne sediments from the north onto the St. Marys Meander Plain is responsible for the abrupt eastward turn of the St. Johns River toward the Atlantic Ocean. The Duval Upland is predominantly flatwoods with elevations ranging 70 to 100 ft above sea level; the Center Park Ridge is typically flatwoods and river swamps with elevations ranging from 20 ft to 30 ft above sea level.

There are two other smaller physiographic subdivisions in Duval County: the Atlantic Coastal Ridge and Trail Ridge. The Atlantic Coastal Ridge in southeastern Duval County is an active feature of the present-day sea level. Because the ridges are relatively high in altitude and are very permeable, they are frequently devoid of surface drainage. The Atlantic Coastal Ridge appears to be a product of the Pamlico time when the sea level was about 30 ft higher than current levels. Topographic elevations on the ridge generally range from 10 ft to 25 ft NGVD.

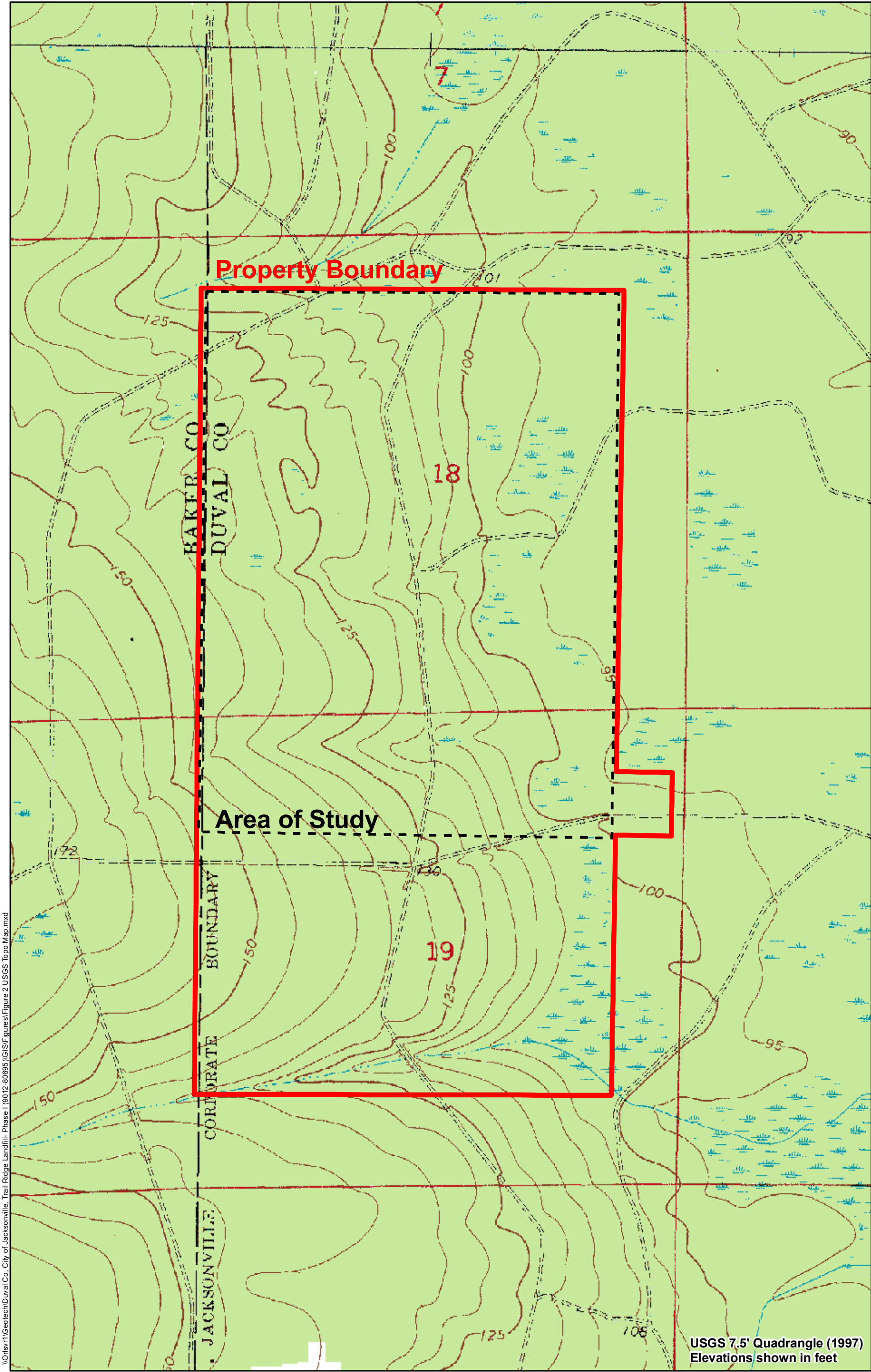
The Trail Ridge physiographic subdivision occurs in western Duval County along the border with Baker County. Trail Ridge is one of several long, low north-trending broad sand ridges that extend from northern Carlton County in southeastern Georgia to the southern parts of Clay and Bradford counties in north-central peninsular Florida. It is a distinctive landform in this area of low topographic relief. The ridges are complexes of sand dunes formed during the Pleistocene, when sea level was some 150 ft higher than it is today. Heavy minerals are concentrated in the sandy sediments, which were eroded from rocks of the Appalachian highland to the north. These sediments were alluvial deposits that have been re-worked by beach shoreline and Aeolian effects. Trail Ridge has historically been mined for the industrial minerals ilmenite, leucoxene, and rutile. These titanium minerals and zircon are the principal minerals of the deposit. DuPont has been mining Trail Ridge since the late 1940s and is currently actively mining adjacent and upgradient to the Trail Ridge Landfill site (Pirkle, 1984). The Trail Ridge Landfill, as the name implies, is located in this physiographic province.

3.1 Topography

A United States Geological Survey (USGS) quadrangle survey map showing 5-foot interval contours of the site is presented on **Figure 6**. There is approximately a 60 ft elevation difference across the site with topographic elevations ranging from 155 feet National Geodetic Vertical Datum (NGVD) along the southwestern border of the landfill boundary to 95 feet NGVD along the northeastern extents.

3.2 Land Use

Land use coverage was developed from the St. Johns River Water Management District (SJRWMD) database. Generalized land uses in the project area are shown on **Figure 7**. As illustrated on Figure 7, the majority of the phased expansion area consists of forests (84%) and wetlands (16%).



\\Orisvr1\Geotech\Duval Co, City of Jacksonville, Trail Ridge Landfill- Phase 1 (9012-90695)\GIS\Figures\Figure 2 USGS Topo Map.mxd

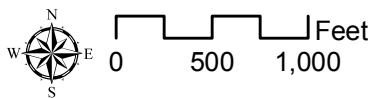


Figure 6
USGS Quadrangle Map
Trail Ridge Landfill Expansion
Duval County, Florida



Aerial Source: Bing, 2012

Legend

- Phases
- Land Use Type**
 - Forest, Open & Park
 - Watercourses & Waterbodies
 - Wetlands

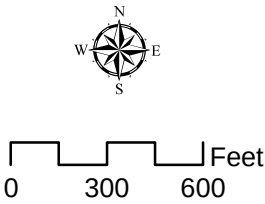


Figure 7
Existing Land Use
Trail Ridge Landfill
Duval County, Florida



4.0 Regional Hydrogeology

In order of occurrence from the land surface, there are three distinct hydrogeologic units of interest: the surficial aquifer, the intermediate confining unit (ICU), and the Floridan Aquifer (Phelps, 1993; Leve, 1966; Fairchild, 1972). Figure 3 shows the hydrogeologic units and corresponding geologic units in an east-west direction through Duval County taken from literature (Phelps, 1993). The surficial aquifer system exists throughout Duval County and consists of two water bearing units: the upper water table unit and the lower limestone unit. The surficial deposits, which include the surficial aquifer system, extend from land surface to the top of the upper confining bed of the ICU. The ICU is generally composed of mostly clay and sandy, phosphatic limestone and ranges in thickness from 300 ft to 600 ft. The FAS consists of thick sequence of limestone and dolomite and is the principal source of drinking water in Duval County. The thickness of the FAS ranges from 1,600 ft in southwest Duval County to 2,200 ft in the northeast portion of the county.

4.1 Surficial Aquifer System

The surficial aquifer system exists throughout Duval County and consists of two water bearing units: the upper water table unit and the lower limestone unit. The average thickness of the surficial aquifer system ranges from 10 ft near the St. Johns River Valley to 100 ft thick in western Duval County. The thickness at the Trail Ridge Landfill varies from approximately 90 ft to 100 ft. Groundwater flow in the surficial aquifer system generally follows the land surface as shown on **Figure 8**. From groundwater elevation mapping from 1969, the direction of groundwater flow west of the St. Johns River is from west to east toward the river. East of the St. Johns River, there is a high in the water surface and groundwater flow radially away from the high toward the river and the coast. Also shown on Figure 8, is an east-west profile showing the groundwater elevation of the surficial aquifer system relative to the land surface elevation and the potentiometric surface of the Floridan Aquifer.

4.1.1 Water Table Unit

The water-table unit is the upper part of the surficial aquifer system and consists of sediments ranging from 25 ft to 50 ft that were deposited during the formation of the marine terraces and beach ridges. The surficial sediments consist mostly of fine to medium-grained quartz sand, but could contain thin beds of sandy clay. In places, shell beds are present in the surficial sediments, especially near the coast. In some areas, the sand or shell is stained reddish brown or orange by iron oxide (a compound of iron and oxygen). Discontinuous (unevenly distributed) layers of sand cemented by iron oxide, known as hardpan, underlie parts of the county and range in thickness from about 0.5 ft to 20 ft.

4.1.2 Limestone Unit

The limestone unit is the lower part of the surficial aquifer system and contains deposits ranging in thickness from less than 10 ft in the southwestern part of Duval County to as much as 130 ft in the west-central part of the county (Fairchild, 1972). The varying thickness is due to irregularities in the surface of the underlying Hawthorn Formation. The limestone unit deposits consist of interbedded lenses of fine-to-medium sand, shell, green calcareous silty clay, and limestone. The limestone is a soft, cavernous, sandy limestone that is dolomitic in places. Along the coast and in the southern part of the county, the limestone becomes discontinuous and grades into medium-to-coarse sand and shell deposits.

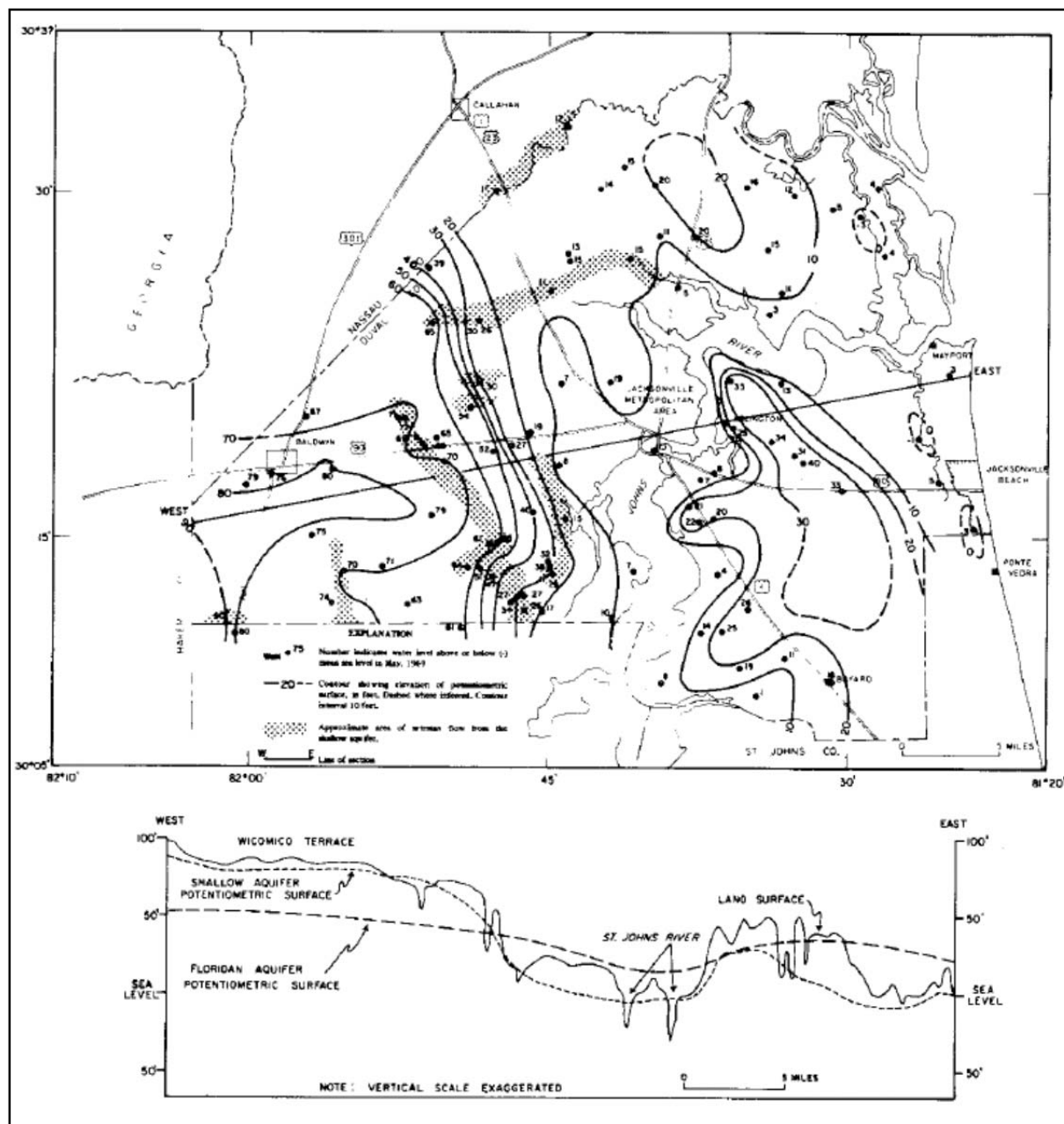


Figure 8.
Groundwater Elevation Contour Map for the Surficial Aquifer System, May 1969
(Adapted from Fairchild, 1972).

4.1.3 Groundwater Level Fluctuations and Well Yields

Water levels in wells that tap the water table and limestone units of the surficial aquifer system fluctuate seasonally in response to rainfall. The water-table unit receives most of its recharge directly from rainfall. The rainy season usually lasts from June through September, when more than half of the annual rainfall occurs. The water table can fluctuate as much as 5 ft between the wet and dry seasons.

Most wells that penetrate the water table unit are small diameter (< 2 inches) and installed to depths of 30 ft to 50 ft (Phelps, 1993). The yield of water-table wells is usually about 10-15 gal/min, but the yield can vary greatly depending upon the permeability of the tapped sediments. For example, wells that tap shell beds yield as much as 40 gal/min. Water from the water-table unit is used mostly for lawn and garden irrigation and for residential heat pumps.

Water levels in wells completed in the limestone unit, like those in the water-table zone, fluctuate seasonally. Generally, the seasonal water-level fluctuation in the limestone unit is about 1 ft to 5 ft. Wells are commonly completed in the limestone unit by inserting a casing through the overlying sediments, then drilling into the consolidated limestone; the hole in the limestone generally remains open. Sometimes a well screen is needed in the open hole to block the intrusion of sand that sometimes is associated with limestone. Most of the limestone unit wells are 2 inches in diameter. Minimum well yields are 5 to 20 gal/min, but most wells yield about 30 to 100 gal/min. The maximum reported yield from a 2-inch well in the limestone unit is 200 gal/min (Causey and Phelps, 1978).

4.2 Intermediate Confining Unit

Underlying the surficial aquifer is the ICU. The ICU in Duval County is relatively thick (250 to 500 ft) and consists primarily of clay that contains some sand, limestone, phosphatic clay, marl, calcareous sandstone, and limestone residuum (Phelps, 1993). The leakance of the ICU ranges from approximately 10^{-5} to 10^{-7} ft/day/ft in Duval County (Boniol *et al.*, 1993).

4.3 Floridan Aquifer System

Underlying the ICU are the permeable limestone sediments of the Upper Floridan aquifer including the Ocala Limestone, the Avon Park Formation, and the Oldsmar Formation (Phelps, 1993). The transmissivity of this aquifer is quite high and it is the primary source of water supply in Duval County. From aquifer performance tests conducted in the county, transmissivity ranges from 22,000 to 202,000 ft²/day (Phelps, 1993; Krause and Randolph, 1989). Smaller diameter wells typically yield between 50 to 350 gal/min and larger diameter wells typically yield as much as 1,500 to 2,000 gal/min.

The potentiometric surface of the FAS in September 1989 is shown on **Figure 9** (Phelps, 1993). Figure 9 shows a high potentiometric surface (the closed 80 ft contour) in the Keystone Heights area of southern Bradford and Clay Counties. Flow lines projected north from this high potential enter Duval County, indicating that the Keystone Heights area contributes part of the groundwater inflow to Duval County. The predominant flow direction in Duval County is from the western border toward the coast. The closed 20 ft and 25 ft depression contours near Green Cove Springs are the result of natural discharge from the aquifer through springs.

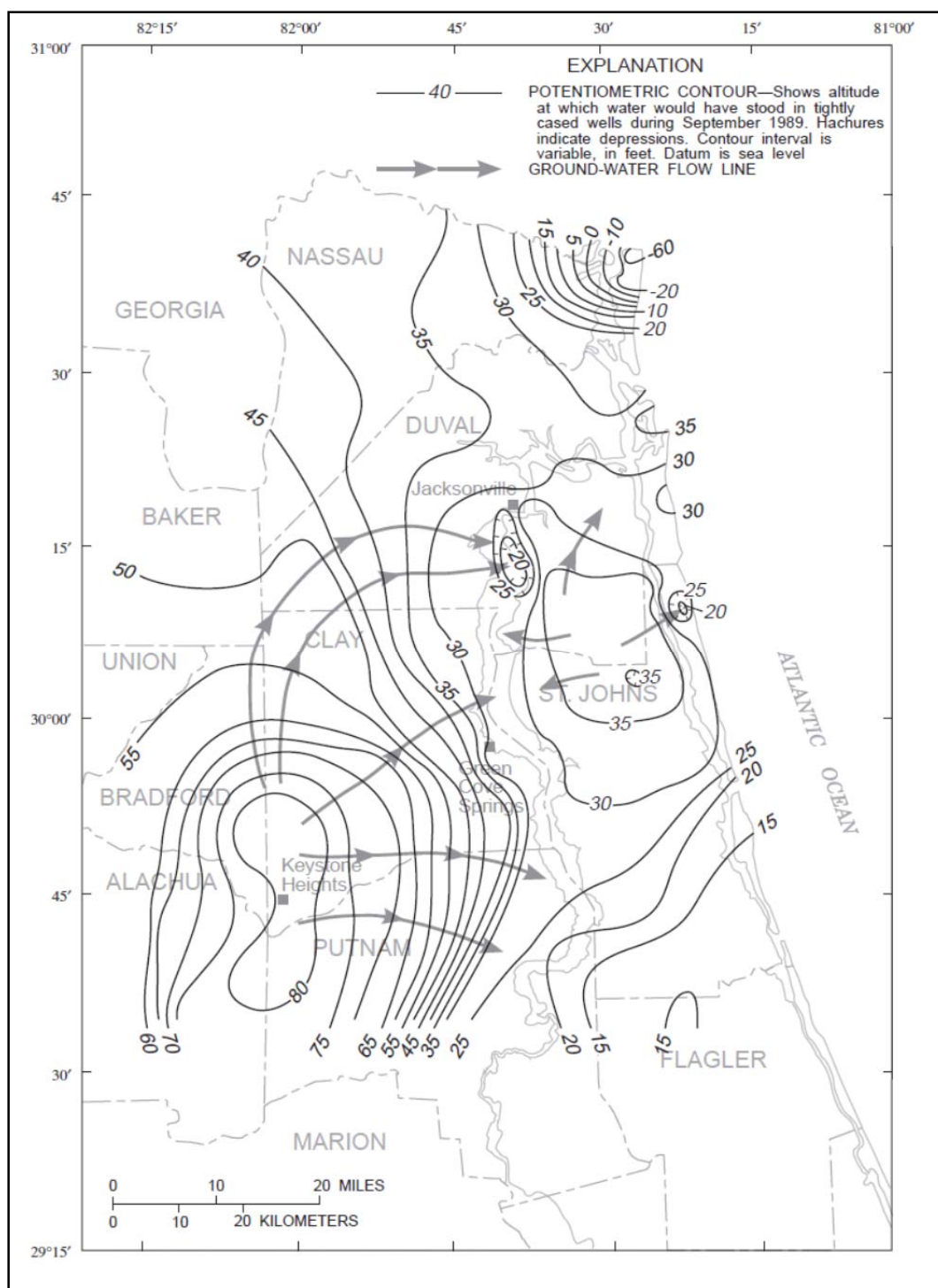


Figure 9.
Potentiometric Surface of the Upper Floridan Aquifer, September 1989
 (Adapted from Phelps, 1993 and Burtell, 1990).

4.4 Fernandina Permeable Zone

The Fernandina permeable zone is a high-permeability unit that lies at the base of the FAS. In the Jacksonville area, the unit includes the lower Oldsmar and upper Cedar Keys Formations (Krause and Randolph, 1989). Little is known about the extent or thickness of the Fernandina permeable zone because of the scarcity of data. Only four wells in Duval County and one test well each in Fernandina Beach and Ponte Vedra are known to penetrate the Fernandina permeable zone. In the Jacksonville area, the zone is estimated to be about 100 ft thick. No aquifer test data are available to calculate the transmissivity of the Fernandina permeable zone.

4.5 Sub-Floridan Confining Unit

Beneath the FAS is a confining unit known as the Sub-Floridan Confining Unit. The Sub-Floridan Confining Unit generally corresponds to the Cedar Keys Formation.

5.0 Site-Specific Hydrogeology

5.1 Surficial Aquifer System

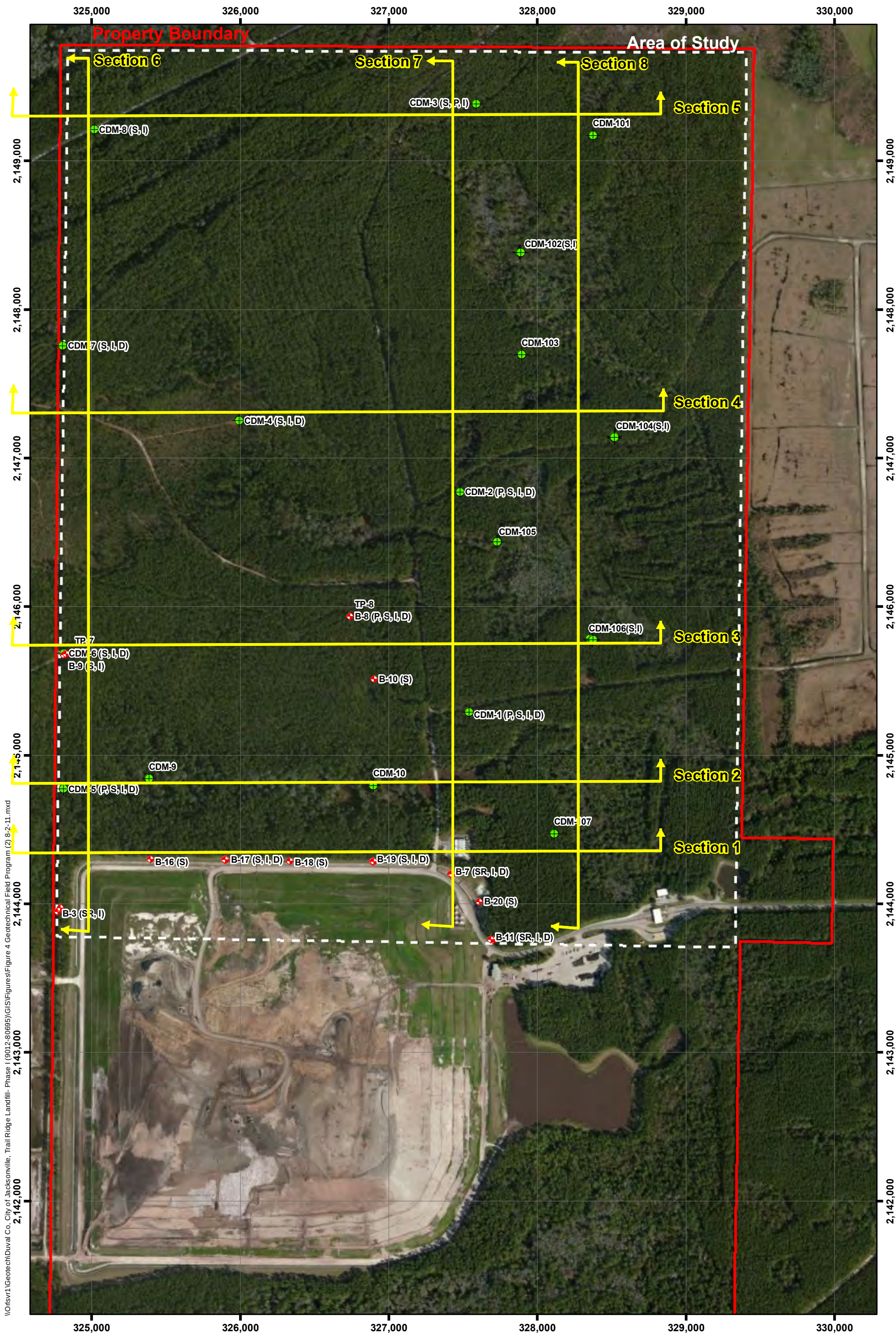
The soil profiles presented in Appendix H of the Geotechnical Data report (CDM Smith, February 2012) were converted to hydrogeologic cross sections through the landfill expansion property.

Figure 10 shows the locations for eight cross sections through the site. All eight cross sections are presented in **Attachment A**. One representative east-west (section 3) and one representative north-south (section 6) hydrogeologic cross section are presented on **Figure 11** and **Figure 12**, respectively.

As shown on the cross-sections, there are two units that comprise the surficial aquifer system in the proposed landfill expansion area. In order of increasing depth, these include: the water table unit (40 to 130 feet thick), which consists of sand and slightly silty sand and the limestone unit (0 to 25 feet thick). The limestone unit is not continuous across the site. Between these two aquifer units, there is a semi-confining zone of low permeability sediments comprised of clay, clayey sand and silty sand, which is not continuous across the site. Where present, the semi-confining unit ranges in thickness from 6 to 45 feet. These hydrogeologic units are consistent with the regional hydrogeology of the surficial aquifer system described in Section 4.1 above. The lithologic and hydrogeologic data were generally used to establish the layers in the groundwater flow model developed for the Trail Ridge Landfill area. Additional information on the modeling of the surficial aquifer system at the site is included in the *Trail Ridge Landfill Expansion Groundwater Modeling Report* (CDM Smith, 2013).

The background groundwater monitoring well network described in Section 7.0 consists of monitor wells installed to three different depths generally described as shallow, intermediate and deep. The shallow monitor wells are installed to depths ranging from 10 to 30 feet bls representative of the uppermost portion of the water table unit of the surficial aquifer system. The intermediate (depth) monitor wells are installed to depths ranging from 40 to 65 feet bls representative of the middle to lower portion of the water table unit of the surficial aquifer system. The deep monitor wells are installed to depths ranging from 100 to 110 feet bls representative of the limestone unit of the surficial aquifer system.

The semi-confining unit of the surficial aquifer system that separates the water table and limestone units is thinner or absent in the western portions of the site and thickens from west to east. The head differentials (groundwater elevation differences) between the shallow, intermediate and deep monitor wells clearly show the effects of the semi-confining unit, where present. As shown on the time series of onsite groundwater levels presented in **Attachment D**, groundwater levels in the deep monitor wells are higher than groundwater levels in the shallow monitor wells in the eastern portion of the site. Groundwater levels in the deep monitor wells are slightly lower than or coincident with groundwater levels in the shallow monitor wells in the western portions of the site. This indicates that there is a high recharge area for the surficial aquifer system that is most likely occurring to the west of the landfill property (Trail Ridge). The recharge surcharges groundwater levels in the limestone unit in the ridge. When the limestone unit comes into contact with the semi-confining beds along the eastern margin of the ridge and the site, an artesian condition (and sometimes free flowing condition) develops. The pressure head in the limestone unit is slowly dissipated with upward flow through the semi-confining unit and with continued flow through the water table unit. In the eastern portions of the site, the groundwater levels in the intermediate depth monitor wells are higher than groundwater levels in the shallow monitor wells.



- New Boring/Monitor Well or Piezometer Cluster (by CDM Smith)
- Previous Boring/Monitor Well Cluster (by others)

Cluster Data: Shallow (S), Intermediate (I), Deep (D), Piezometer (P)



0 300 600 Feet

CDM
Smith

Figure 10
Cross Sections and Soil Profiles
Trail Ridge Landfill Expansion
Duval County, Florida

FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF - PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM_CORP.GDT 02/08/12

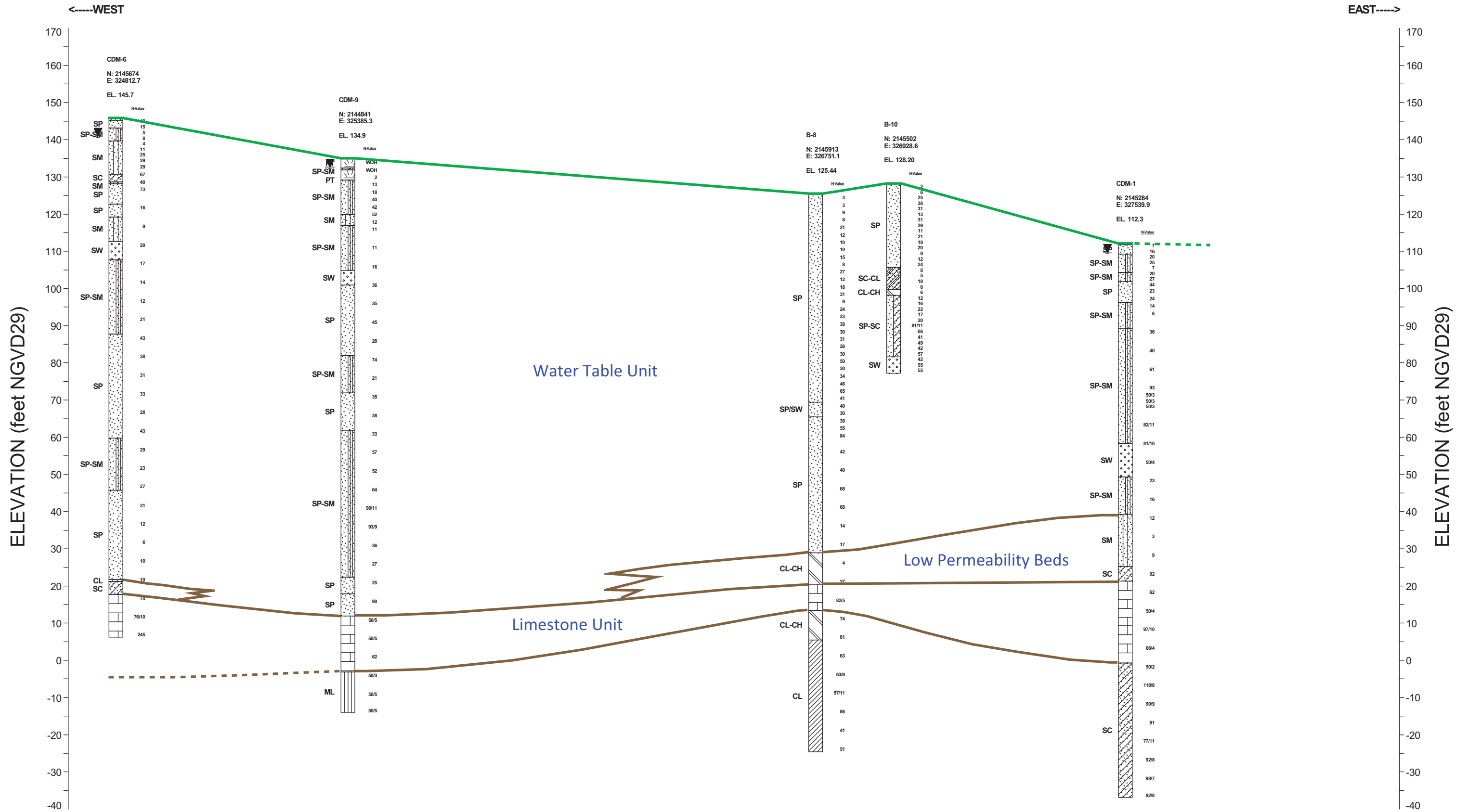
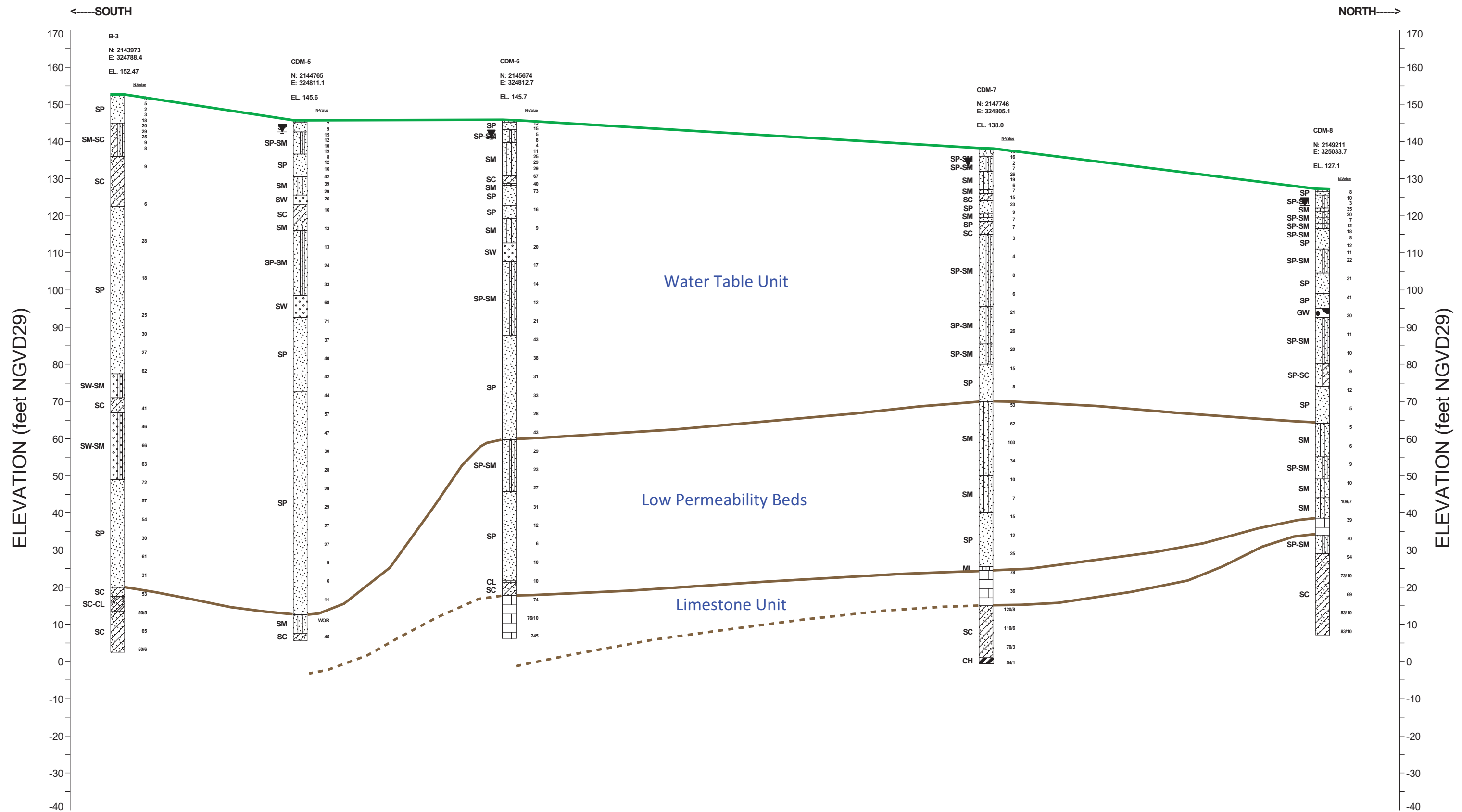


Figure 11
Section 3
West-East
North Side of Cell 6



LEGEND



City of Jacksonville

Trail Ridge Landfill Expansion

The direction of groundwater flow within the water table unit and limestone unit is from the southwest to the northeast across the site. A more detailed discussion of the groundwater flow patterns in the surficial aquifer system at the site is presented in Section 8.0.

5.2 Surficial Aquifer Hydraulics

5.2.1 Slug Tests

Slug tests for fully saturated screens were conducted by CDM Smith (April 2011) in 25 existing monitoring wells and piezometers located throughout the Trail Ridge Landfill and expansion area. The field data obtained from the slug tests were used to determine the in-situ horizontal hydraulic conductivity (K_h) for the surficial aquifer at the site. The slug tests were conducted in general accordance with ASTM D 4044-96 “Standard Test Method (Field Procedure) for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers.” Additional information on the methodology used for completing the slug tests is presented in Appendix D of the *Trail Ridge Landfill Expansion Geotechnical Report* (CDM Smith, 2012). The slug test data were evaluated using the AQTESOLV Pro software. The calculated hydraulic conductivities (horizontal and vertical) are provided in **Table 1**.

As indicated in Table 1, the most common lithology tested in the monitor well screen intervals was sand. Horizontal hydraulic conductivity for sand ranges from 4 to 57 feet per day, with an average value of 25 ft per day. Horizontal hydraulic conductivity of the limestone ranges from 16 to 96 feet per day with an average value of 48 feet per day. Analysis of slug test data performed in monitor wells CDM-5S, CDM-5D and CDM-7S yielded results that were inconsistent with the lithology and are considered anomalous. Calculated horizontal hydraulic conductivity for these three monitor wells ranged from 95 to 254 feet per day for sand. These are excessively high values for sand and these results were not used for any of the seepage calculations in this document or in development of the groundwater flow model.

5.2.2 Soil Porosities

The majority of the soils in the landfill expansion areas consist of fine sand, silt, and clay. From Walton, (1990), representative porosity ranges for each soil type are as follows: 25-55% (fine sand); 35-60% (silt); and 35-55% (clay). Effective porosities range from 0.01 to 0.10 for clayey sands and clays and from 0.10 to 0.30 for sand to silty sand (Walton, 1990).

5.2.3 Vertical Seepage Velocities

The head differences between the shallow and deep zones of the surficial aquifer were evaluated at three general locations of the expansion area: the western boundary of the expansion area, the center of the expansion area, and the eastern boundary of the expansion area. The following well clusters were utilized in the evaluation:

- Western Boundary – CDM-5, CDM-6, and CDM-7;
- Central Area – CDM-4, B-8, and B-17; and
- Eastern Boundary – CDM-1, CDM-2, and B-7.

Table 1. Summary of Slug Test Results

Well ID	Test Date	Screen Interval Below Ground Surface	Lithology in Interval	Method ¹	kh		kh average		kv average	
					(cm/sec)	(ft/day)	(cm/sec)	(ft/day)	(cm/sec)	(ft/day)
CDM-1 (S)	4/20/2011	11 to 16	Poorly Graded Sand	Falling Head	6.8E-03	19.4	6.2E-03	17.50	6.2E-04	1.75
				Rising Head	5.5E-03	15.6				
CDM-1 (I)	4/20/2011	55 to 60	Well Graded Sand	Falling Head	1.2E-02	34.4	1.4E-02	39.90	1.4E-03	3.99
				Rising Head	1.6E-02	45.4				
CDM-1 (D)	4/20/2011	95 to 100	Limestone	Falling Head	6.9E-03	19.7	5.8E-03	16.45	5.8E-04	1.65
				Rising Head	4.7E-03	13.2				
CDM-2 (S)	4/20/2011	9 to 14	Poorly Graded Sand	Falling Head	2.0E-03	5.8	2.6E-03	7.25	2.6E-04	0.73
				Rising Head	3.1E-03	8.7				
CDM-2 (I)	4/20/2011	52 to 57	Poorly Graded Sand	Falling Head	4.2E-03	11.9	4.2E-03	12.00	4.2E-04	1.20
				Rising Head	4.3E-03	12.1				
CDM-2 (D)	4/20/2011	95 to 100	Limestone	Falling Head	1.1E-02	31.1	1.1E-02	31.55	1.1E-03	3.16
				Rising Head	1.1E-02	32.0				
CDM-3 (S)	4/20/2011	11 to 16	Sand and Clay	Falling Head	5.0E-03	14.1	5.7E-03	16.05	5.7E-04	1.61
				Rising Head	6.3E-03	18.0				
CDM-3 (P)	4/20/2011	28 to 33	Poorly Graded Sand	Falling Head	1.4E-02	38.5	1.4E-02	40.25	1.4E-03	4.03
				Rising Head	1.5E-02	42.0				
CDM-3 (I)	4/20/2011	54 to 59	Poorly Graded Sand	Falling Head	5.4E-03	15.2	5.6E-03	15.90	5.6E-04	1.59
				Rising Head	5.9E-03	16.6				
CDM-4 (S)	4/21/2011	11 to 16	Sand with Silt	Falling Head	1.5E-02	43.5	1.8E-02	51.75	1.8E-03	5.18
				Rising Head	2.1E-02	60.0				
CDM-4 (I)	4/21/2011	50 to 55	Well Graded Sand	Falling Head	1.8E-02	51.5	1.9E-02	53.25	1.9E-03	5.33
				Rising Head	1.9E-02	55.0				
CDM-4 (D)	4/21/2011	105 to 110	Limestone	Falling Head	1.9E-02	52.8	3.4E-02	95.65	3.4E-03	9.57
				Rising Head	4.9E-02	138.5				
CDM-5 (S)	4/21/2011	10 to 15	Poorly Graded Sand	Falling Head	4.3E-02	121.6	3.4E-02	95.46	3.4E-03	9.55
				Rising Head	2.4E-02	69.3				
CDM-5 (I)	4/21/2011	50 to 60	Poorly Graded Sand	Falling Head	2.3E-02	66.1	2.0E-02	57.15	2.0E-03	5.72
				Rising Head	1.7E-02	48.2				
CDM-5 (D)	4/21/2011	101 to 111	Poorly Graded Sand	Falling Head	1.0E-01	284.5	9.0E-02	254.30	9.0E-03	25.43
				Rising Head	7.9E-02	224.1				
CDM-6 (S)	4/21/2011	19 to 29	Poorly Graded Sand	Falling Head	1.3E-02	36.1	1.4E-02	39.00	1.4E-03	3.90
				Rising Head	1.5E-02	41.9				
CDM-6 (I)	4/21/2011	56 to 66	Poorly Graded Sand	Falling Head	1.1E-02	30.8	1.1E-02	30.70	1.1E-03	3.07
				Rising Head	1.1E-02	30.6				
CDM-6 (D)	4/21/2011	100 to 110	Poorly Graded Sand	Falling Head	1.9E-03	5.5	2.0E-03	5.70	2.0E-04	0.57
				Rising Head	2.1E-03	5.9				
CDM-7 (S)	4/21/2011	14 to 19	Poorly Graded Sand	Falling Head	4.7E-02	132.0	4.3E-02	123.10	4.3E-03	12.31
				Rising Head	4.0E-02	114.2				
CDM-7 (I)	4/21/2011	55 to 65	Poorly Graded Sand	Falling Head	3.2E-03	9.0	3.1E-03	8.90	3.1E-04	0.89
				Rising Head	3.1E-03	8.8				
CDM-7 (D)	4/21/2011	100 to 110	Poorly Graded Sand	Falling Head	1.4E-03	4.1	1.5E-03	4.36	1.5E-04	0.44
				Rising Head	1.6E-03	4.6				
CDM-8 (S)	4/21/2011	11 to 16	Poorly Graded Sand	Falling Head	8.0E-03	22.8	9.8E-03	27.85	9.8E-04	2.79
				Rising Head	1.2E-02	32.9				
CDM-8 (I)	4/21/2011	50 to 60	Poorly Graded Sand	Falling Head	2.2E-03	6.3	1.9E-03	5.30	1.9E-04	0.53
				Rising Head	1.5E-03	4.3				

Notes:

¹ Performed and analyzed in accordance with ASTM D 4044-96-"Test Method (Field Procedure) for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers".

* Piezometer construction data not available. Screen interval was assumed.

kv - vertical permeability

kh - horizontal permeability

An anisotropic ratio kh/kv = 10 was used for all calculations.

Anomalous high values that are inconsistent with lithology

The seepage velocity through the intermediate zone of the surficial aquifer was estimated by applying Darcy's Equation in the vertical direction. The following equation was used, and the assumptions are included in **Table 2**:

$$V_s = \frac{K_v / b}{n_e} \Delta h \quad \text{Equation 1}$$

where: V_s = Vertical seepage velocity (feet/day)

K_v = Vertical hydraulic conductivity (feet/day)

b = Thickness of intermediate zone (feet)

n_e = Effective porosity

Δh = Average head difference between the shallow and deep zones of the surficial aquifer

A summary of the vertical flow velocity for the April 2011, October 2011, January 2012, and March 2013 monitoring events is provided in Table 2.

Table 2. Vertical Seepage Velocity Estimates

Period	Location ¹	Average Vertical Hydraulic Conductivity ² (feet/day)	Aquifer Thickness (feet)	Average Head Difference ³ (feet)	Effective Porosity -	Seepage Velocity	
						(feet/day)	(feet/year)
April 2011	Western	3.23	25	0.37	0.05	0.96	349
	Central	5.33	25	1.64	0.05	6.98	2,547
	Eastern	2.60	25	-7.36	0.05	-15.29	-5,579
October 2011	Western	3.23	25	0.23	0.05	0.60	220
	Central	5.33	25	1.38	0.05	5.88	2,148
	Eastern	2.60	25	-7.39	0.05	-15.34	-5,600
January 2012	Western	3.23	25	0.33	0.05	0.86	314
	Central	5.33	25	1.43	0.05	6.08	2,220
	Eastern	2.60	25	-6.47	0.05	-13.44	-4,905
March 2013	Western	3.23	25	0.10	0.05	0.25	91
	Central	5.33	25	-0.35	0.05	-1.48	-540
	Eastern	2.60	25	-7.16	0.05	-14.86	-5,523

Notes:

¹ Western well clusters: CDM-5, CDM-6, and CDM-7; Central well clusters: CDM-4, B-8, and B-17; Eastern well clusters: CDM-1, CDM-2, and B-7.

² Based on CDM Smith Slug Testing results.

³ Values based on groundwater elevation difference between Shallow and Deep wells for a given well cluster.

5.2.4 Horizontal Seepage Velocities

The horizontal seepage velocities within the surficial aquifer at the expansion area were estimated using Equation 2 and the assumptions included in **Table 3**.

$$V_s = \frac{K_H i}{n_e} \quad \text{Equation 2}$$

where: V_S = Horizontal seepage velocity (feet/day)

K_H = Horizontal hydraulic conductivity (feet/day)

i = Hydraulic gradient (feet)

n_e = Effective porosity

The estimated horizontal seepage velocity for the three zones of the surficial aquifer (shallow, intermediate, and deep) were calculated using the gradient from water level data collected from wells located on the western and eastern boundaries of the expansion area. The well clusters CDM-5, CDM-6, and CDM-7 served as upgradient wells and well clusters CDM-1, CDM-2, and CDM-3 served as downgradient wells. A summary of the horizontal flow velocity for the April 2011, October 2011, January 2012, and March 2013 monitoring events is provided in Table 3.

Table 3. Horizontal Seepage Velocity Estimates

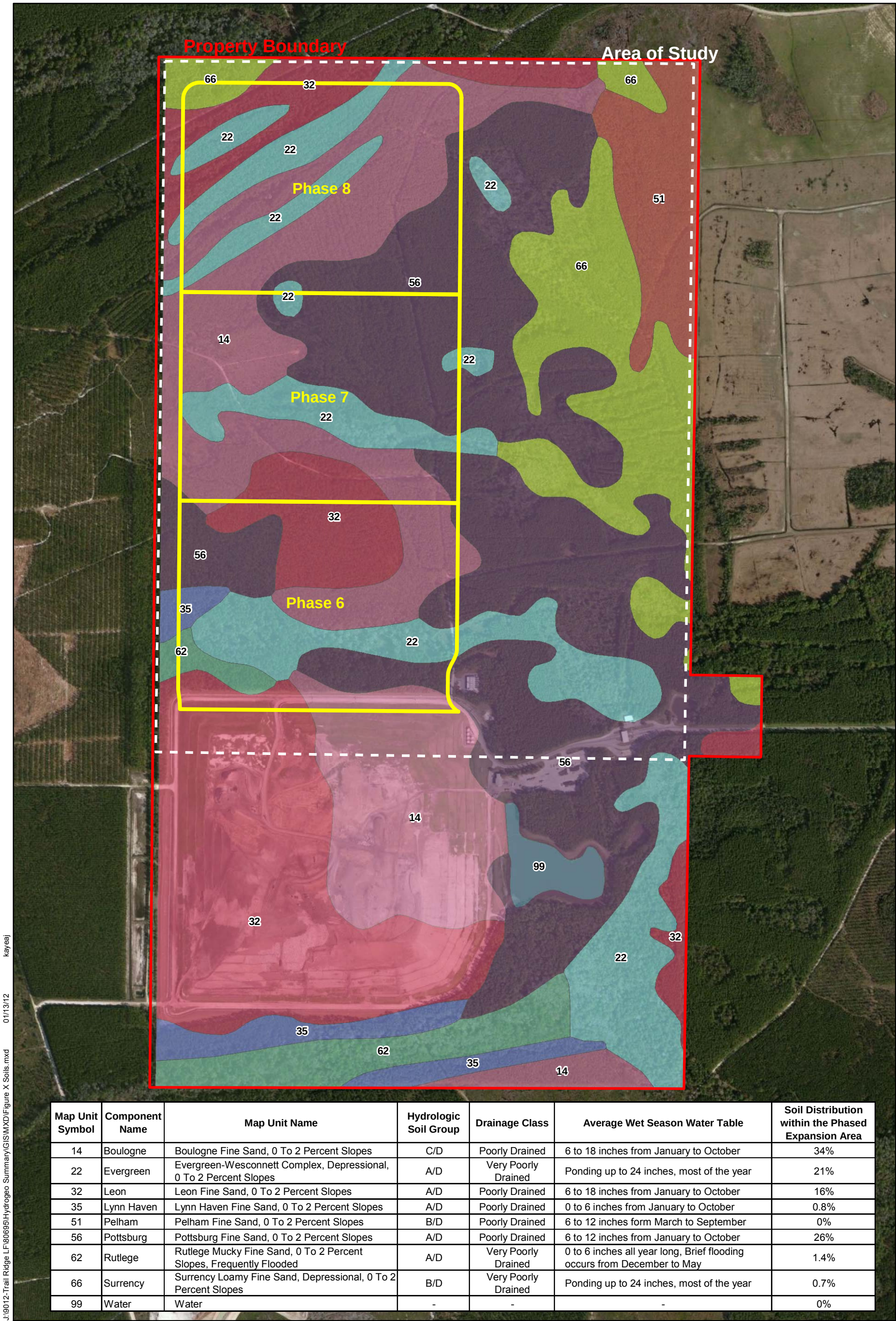
Period	Aquifer Zone	Average Horizontal Hydraulic Conductivity ¹ (feet/day)	Average Hydraulic Gradient (feet/feet)	Effective Porosity -	Seepage Velocity	
					(feet/day)	(feet/year)
April 2011	Shallow	26.57	0.0111	0.2	1.47	536
	Intermediate	27.89	0.0096	0.2	1.34	487
	Deep	30.74	0.0085	0.2	1.30	475
October 2011	Shallow	26.57	0.0108	0.2	1.44	526
	Intermediate	27.89	0.0094	0.2	1.31	478
	Deep	30.74	0.0084	0.2	1.29	471
January 2012	Shallow	26.57	0.0108	0.2	1.44	525
	Intermediate	27.89	0.0093	0.2	1.30	475
	Deep	30.74	0.0083	0.2	1.28	468
March 2013	Shallow	26.57	0.0111	0.2	1.48	539
	Intermediate	27.89	0.0097	0.2	1.35	493
	Deep	30.74	0.0088	0.2	1.35	494

Notes:

¹ Based on CDM Smith Slug Testing results.

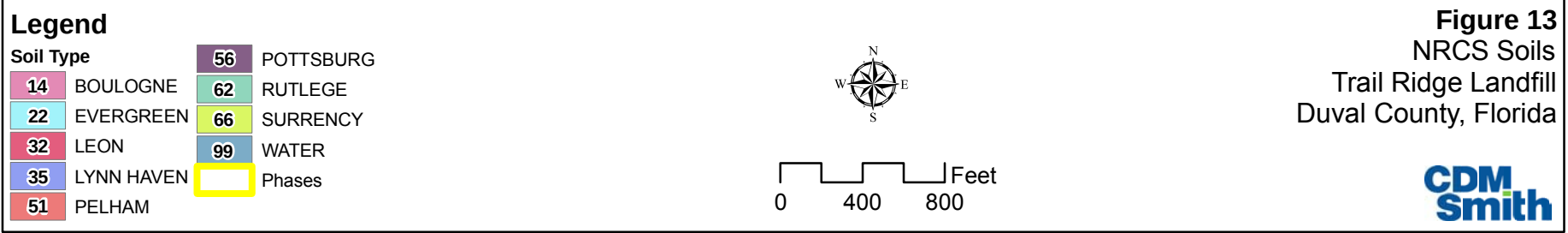
5.3 Surface Soils Characteristics

Surficial soils data were obtained from the Soil Survey Geographic Database (SSURGO) maintained by the Natural Resources Conservation Service (NRCS). Site soils are illustrated on **Figure 13**. The majority of the phased expansion area lies within dual-hydraulic soil groups “A/D” soils (63%) and “C/D” soils (34%). The “A/D” soils can be expected to have high infiltration rates and soil storage capacity when the area is well drained, but have very low infiltration rates and soil storage capacity in an undrained condition. The “C/D” soils can be expected to have slow infiltration rates and soil storage capacity when the area is well drained, and have very low infiltration rates and soil storage capacity in an undrained condition.



J:\9012-Trail Ridge LF\80695\Hydrogeo Summary\GIS\MXD\Figure X Soils.mxd 01/13/12 kayrej

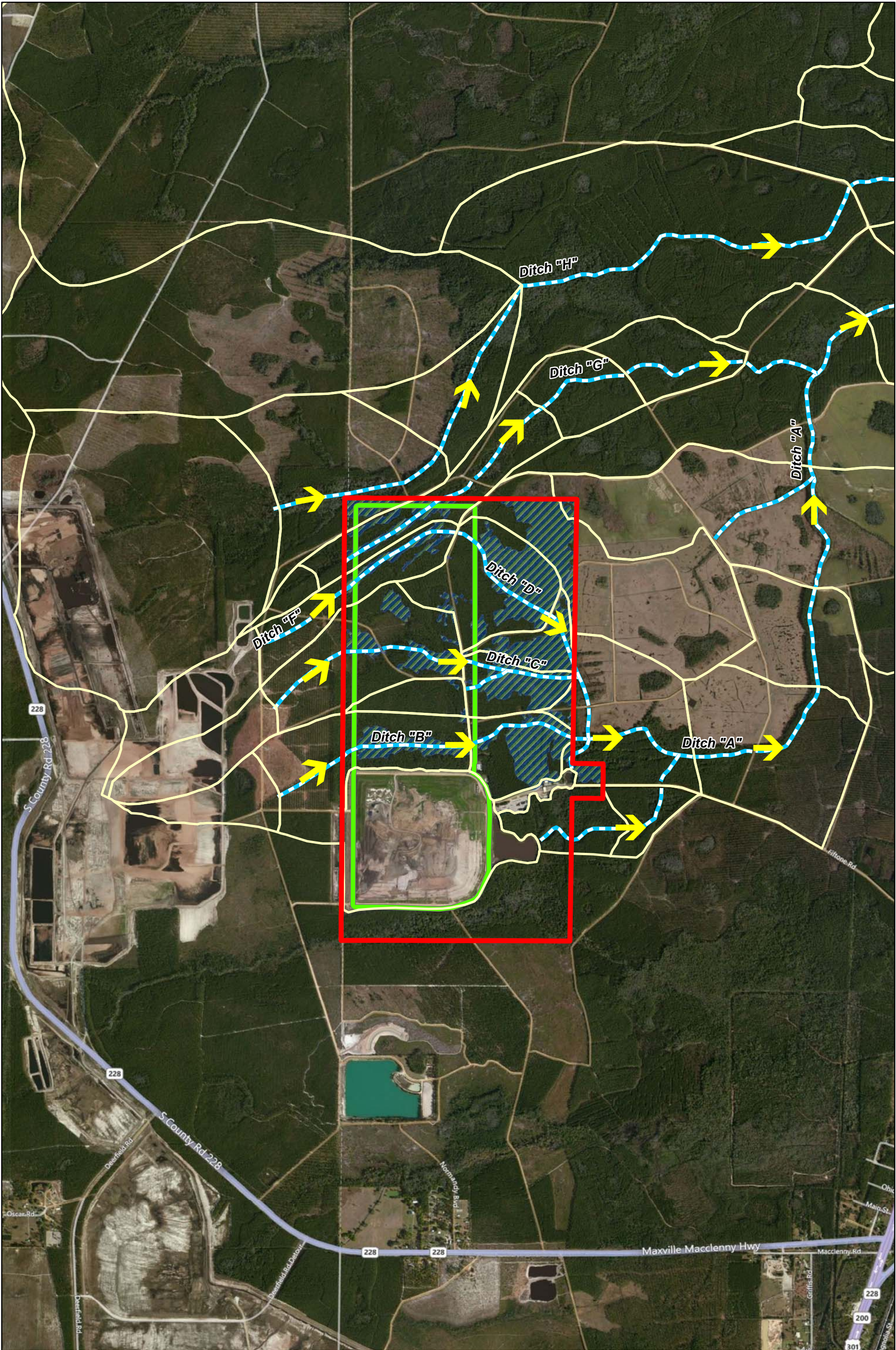
Source: U.S. Department of Agriculture, Natural Resource Conservation Service, 2010
Aerial Source: Bing, 2012



As indicated in the NRCS Soil Survey of City of Jacksonville, Duval County, Florida (Watts, 1998), four primary soil series occur within the phased expansion area: Boulogne Fine Sand, Evergreen-Wesconnett complex, Leon Fine Sand, and Pottsburg Fine Sand. The Boulogne Fine Sand, Leon Fine Sand, and Pottsburg Fine Sand are poorly drained and occur in the flatwood areas of the site. The Evergreen-Wesconnett complex is the predominant soil occurring in the lower lying depressional portion of the site where ditches are located. The surface layer of this soil type is characterized by black muck in the upper part, black loamy fine sand in the next part, and very dark gray fine sand in the lower part.

5.4 Surface Water Flow

As shown on **Figure 14**, there are four drainage ditches (Ditches “B-D” and Ditch “G”) within the extents of the proposed landfill expansions. The general direction of surface water flow is west to east across the property. Additional information is presented in the *Trail Ridge Existing Conditions Regional Surface Water Model Report* (CDM Smith, 2012) submitted in support of the SJRWMD Environmental Resource Permit (ERP) application. As discussed in Section 7.2, nine permanent staff gauges were installed by CDM Smith in March and April, 2011 to monitor water levels throughout the expansion area. Two additional permanent staff gauges were installed by CDM Smith in October 2011. Results of the water level readings from Quarters 1-4 sampling events are provided in Sections 9.3, 10.3, 11.2, and 12.2, respectively.



6.0 Additional Requirements of FDEP Rule

6.1 Well Inventory

Records from the St. Johns River Water Management District, the City of Jacksonville Environmental Quality Division (EQD), Duval County Health Department, and Baker County Health Department were reviewed to locate information on any existing public or private water wells located near the proposed expansion areas. One potable water well (for the existing Trail Ridge landfill) was identified within a 1-mile radius of the proposed expansion area by the City of Jacksonville EQD and Duval County Health Department. In addition, an irrigation well associated with the Trail Ridge Landfill was identified in the City of Jacksonville EQD database search; however, information on the location of the well was not available. Also, the existence of the irrigation well could not be confirmed with Waste Management, Inc. Available well details are summarized in **Table 4** and the location of the potable well, near the Administration building, is shown on **Figure 15**. As shown on **Figure 16**, to demonstrate compliance with paragraph 62-701.300(2)(b), FAC, there are no potable wells within 500 feet of the waste storage and disposal areas.

Table 4. Well Inventory Results

Well Map ID	Owner	Use	Diameter	Depth
			(inches)	(feet bls)
1	Trail Ridge Landfill	Potable	4	650
NA	Trail Ridge Landfill	Irrigation	unknown	610

Notes:

bls = below land surface

6.2 Contamination Screening

A contamination screening evaluation was performed using information from Environmental Data Resources Inc. (EDR). EDR performed a database search of available government records on the existing landfill area and proposed expansion areas. No mapped sites were found in EDR's search of the proposed expansion area or within a 1-mile radius of the existing landfill and proposed expansion area. The EDR DataMAP™ Area Study report is included in **Attachment B**.



\\Orisvr1\gmdwtr\9012-Trail Ridge LF\80695\Hydrogeo Summary\GIS\MXD\Figure 15 Well Inventory.mxd 06/13/13 kayej

Aerial Source: Bing, 2013

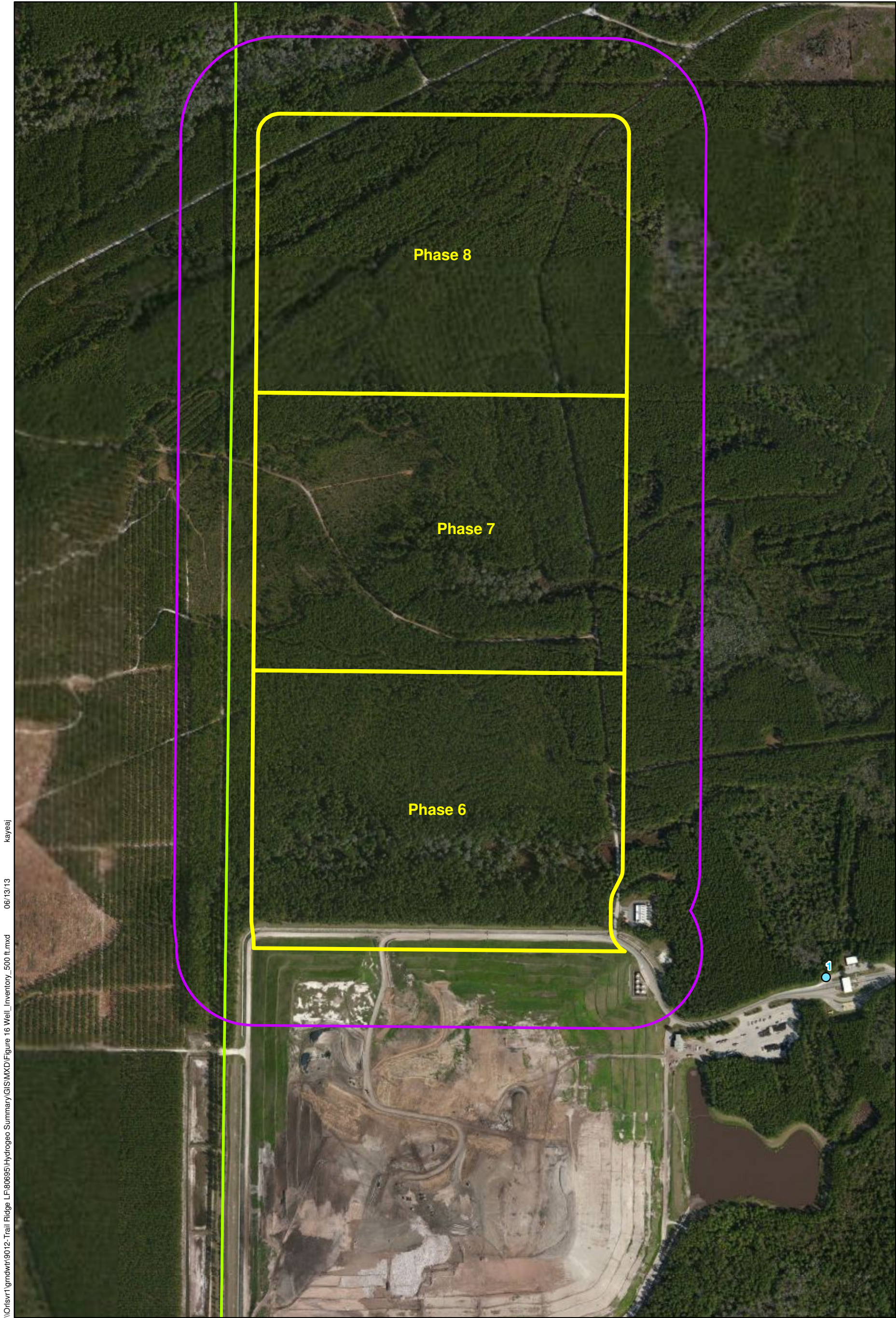
Legend

- Potable Water Well
- 500 ft Radius
- County Boundary
- 1 Mile Radius
- Phases



0 1,000 2,000 Feet

Figure 15
Inventory of Public and Private Wells
Trail Ridge Landfill
Duval County, Florida



\\Orisvr1\gmd\wr\9012-Trail Ridge LF\80695\Hydrogeo Summary\GIS\MXD\Figure 16 Well Inventory_500 ft.mxd 06/13/13 kayej

Aerial Source: Bing, 2013

Legend

- Potable Water Well
- 500 ft Radius
- County Boundary
- Phases

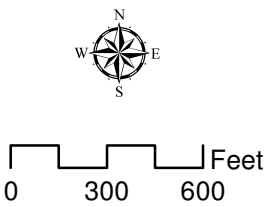


Figure 16
Well Location Inventory within 500 feet
Trail Ridge Landfill
Duval County, Florida

7.0 Monitoring Locations and Details

7.1 Groundwater Monitor Wells

Eight monitor well clusters (CDM-1 through CDM-8) were installed within the surficial aquifer by CDM Smith from March to April, 2011 in the Trail Ridge Landfill expansion area. An additional three monitor well clusters (CDM-102, CDM-104, and CDM-106) were installed further to the east in November 2011. These monitor well clusters are shown on **Figure 17** and a typical monitoring well cluster (CDM-3) is depicted on **Figure 18**. The construction data for the piezometers and monitor wells are summarized in **Table 5** and illustrated on **Figures 19** and **20**, respectively. As shown in Table 5, a total of 4 piezometers and 28 groundwater monitor wells were installed as follows:

- Four piezometers (1 to 2-inch diameter) in the shallow zone of the surficial aquifer (total installation depths range from 5 to 33 ft bls): CDM-1P through CDM-3P, and CDM-5P.
- Eleven monitor wells (2-inch diameter) in the shallow zone of the surficial aquifer (total installation depths range from 9 to 29 ft bls): CDM-1S through CDM-8S, CDM-102S, CDM-104S, and CDM-106S. Continuous water level recorders were installed at CDM-1S, CDM-2S, CDM-3S, CDM-6S, CDM-102S, CDM-104S, and CDM-106S.

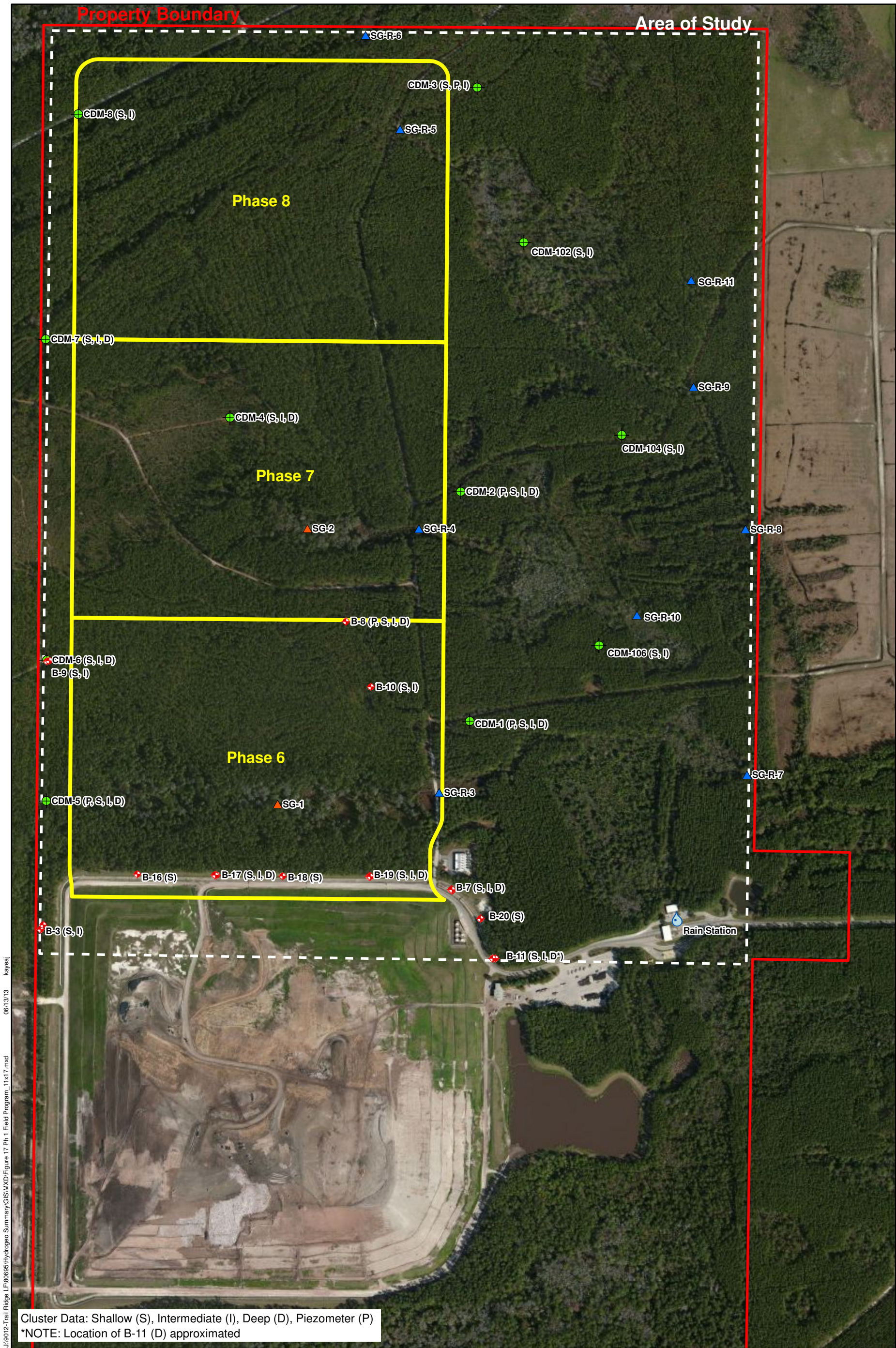


Figure 18.
Typical Monitor Well Cluster with Shallow, Intermediate, and Deep Wells (CDM-3)

- Eleven monitor wells (2-inch diameter) in the intermediate zone of the surficial aquifer (total installation depths range from 40 to 65 ft bls): CDM-1I through CDM-8I, CDM-102I, CDM-104I, and CDM-106I. Continuous water level recorders were installed at CDM-1I, CDM-2I, CDM-3I, CDM-6I, CDM-7I, CDM-102I, CDM-104I, and CDM-106I.
- Six monitor wells (2-inch diameter) in the deep zone of the surficial aquifer (total installation depths range from 95 to 111 ft bls): CDM-1D, CDM-2D, and CDM-4D through CDM-7D. Continuous water level recorders were installed at CDM-1D, CDM-2D, and CDM-6D.

A total of 23 existing surficial aquifer monitor wells, previously installed by Waste Management, Inc., were used to further monitor the background hydrology and groundwater quality of the proposed landfill expansion area. This well network consists of the following:

- Eleven monitor wells in the shallow zone of the surficial aquifer (total depths range from 16 to 18 ft bls): B-3S, B-7S through B-11S, and B-16S through B-20S.



Legend

- ▲ New Staff Gauge Only
- ▲ New Staff Gauge with Data Logger Recorder in Stilling Well
- New Monitoring Well Cluster
- ◆ Waste Management Monitoring Well Cluster
- 💧 Rain Station
- Expansion Phases
- Property Boundary

Figure 17
Background Hydrologic and Water Quality Monitoring Network
Trail Ridge Landfill
Duval County, Florida



0 300 600 Feet

**CDM
Smith**

Table 5. Well Construction Summary

Monitor Well ID	Date Completed	State Plane Coordinates (ft) ¹		Top of Casing Elevation (ft NGVD)	Land Surface Elevation (ft NGVD)	Well Diameter (in)	Sand Pack Material	Screen Length (ft)	Well Depth (ft bls)	Screen Interval (ft bls)	Screen Interval Elevation (ft NGVD)
		Northing	Easting								
CDM-1P	4/11/2011	2,145,293	327,543	115.1	112.0	1	20/30	5	5	0 to 5	112.5 to 107.5
CDM-1S	3/24/2011	2,145,290	327,543	115.0	112.0	2	6/20	5	16	11 to 16	101.0 to 96.0
CDM-1I	3/24/2011	2,145,286	327,545	118.2	112.1	2	6/20	5	60	55 to 60	57.3 to 52.3
CDM-1D	3/23/2011	2,145,280	327,546	120.2	112.1	2	6/20	5	100	95 to 100	17.3 to 12.3
CDM-2P	4/11/2011	2,146,776	327,479	110.0	106.6	1	20/30	5	5	0 to 5	107.1 to 102.1
CDM-2S	3/26/2011	2,146,773	327,482	110.6	106.6	2	20/30	5	14	9 to 14	97.7 to 92.7
CDM-2I	3/26/2011	2,146,769	327,485	114.5	106.6	2	6/20	5	57	52 to 57	54.6 to 49.6
CDM-2D	3/25/2011	2,146,765	327,488	115.8	106.4	2	20/30	5	100	95 to 100	11.6 to 6.6
CDM-3S	3/27/2011	2,149,375	327,594	107.8	104.9	2	20/30	5	16	11 to 16	93.8 to 88.8
CDM-3P	3/27/2011	2,149,373	327,590	107.9	104.9	2	20/30	5	33	28 to 33	77.0 to 72.0
CDM-3I	3/27/2011	2,149,373	327,590	107.7	104.7	2	6/20	5	59	54 to 59	50.5 to 45.5
CDM-4S	4/4/2011	2,147,252	325,997	129.5	126.4	2	20/30	5	16	11 to 16	115.4 to 110.4
CDM-4I	4/4/2011	2,147,247	325,998	129.6	126.5	2	6/20	5	55	50 to 55	76.2 to 71.2
CDM-4D	4/5/2011	2,147,242	325,998	129.3	126.4	2	20/30	5	110	105 to 110	21.0 to 16.0
CDM-5P	4/11/2011	2,144,775	324,814	149.0	145.5	1	20/30	5	8	3 to 8	142.0 to 137.0
CDM-5S	3/29/2011	2,144,770	324,815	148.6	145.5	2	20/30	5	15	10 to 15	135.9 to 130.9
CDM-5I	3/29/2011	2,144,765	324,816	148.4	145.4	2	20/30	10	60	50 to 60	95.4 to 85.4
CDM-5D	3/28/2011	2,144,760	324,816	148.2	145.3	2	6/20	10	111	101 to 111	44.7 to 34.7
CDM-6S	4/6/2011	2,145,669	324,818	149.1	145.9	2	20/30	10	29	19 to 29	126.8 to 116.8
CDM-6I	4/6/2011	2,145,674	324,817	149.2	146.0	2	30/45	10	66	56 to 66	90.4 to 80.4
CDM-6D	4/7/2011	2,145,679	324,816	149.0	145.9	2	30/45	10	110	100 to 110	45.4 to 35.4
CDM-7S	4/7/2011	2,147,741	324,800	141.0	138.0	2	20/30	5	19	14 to 19	123.9 to 118.9
CDM-7I	4/6/2011	2,147,747	324,800	141.0	138.0	2	6/20	10	65	55 to 65	82.8 to 72.8
CDM-7D	4/6/2011	2,147,752	324,801	141.1	138.0	2	30/45	10	110	100 to 110	38.3 to 28.3
CDM-8S	4/9/2011	2,149,206	325,024	130.2	127.1	2	20/30	5	16	11 to 16	116.0 to 111.0
CDM-8I	4/9/2011	2,149,208	325,028	130.1	127.2	2	20/30	10	60	50 to 60	76.9 to 66.9
CDM-102S	11/3/2011	2,148,383	327,883	102.6	98.6	2	30/45	5	10	5 to 10	93.6 to 88.6
CDM-102I	11/3/2011	2,148,383	327,888	102.7	98.8	2	30/45	5	50	45 to 50	53.8 to 48.8
CDM-104S	11/3/2011	2,147,135	328,520	100.8	97.1	2	30/45	5	15	10 to 15	87.1 to 82.1
CDM-104I	11/3/2011	2,147,140	328,519	102.0	97.0	2	20/30	5	40	35 to 40	62.0 to 57.0
CDM-106S	11/2/2011	2,145,777	328,368	104.0	100.0	2	20/30	5	10	5 to 10	95.0 to 90.0
CDM-106I	11/2/2011	2,145,779	328,373	103.8	100.1	2	20/30	5	50	45 to 50	55.1 to 50.1

Notes:

¹ Florida State Plane Coordinate System East Zone (HARN 83)

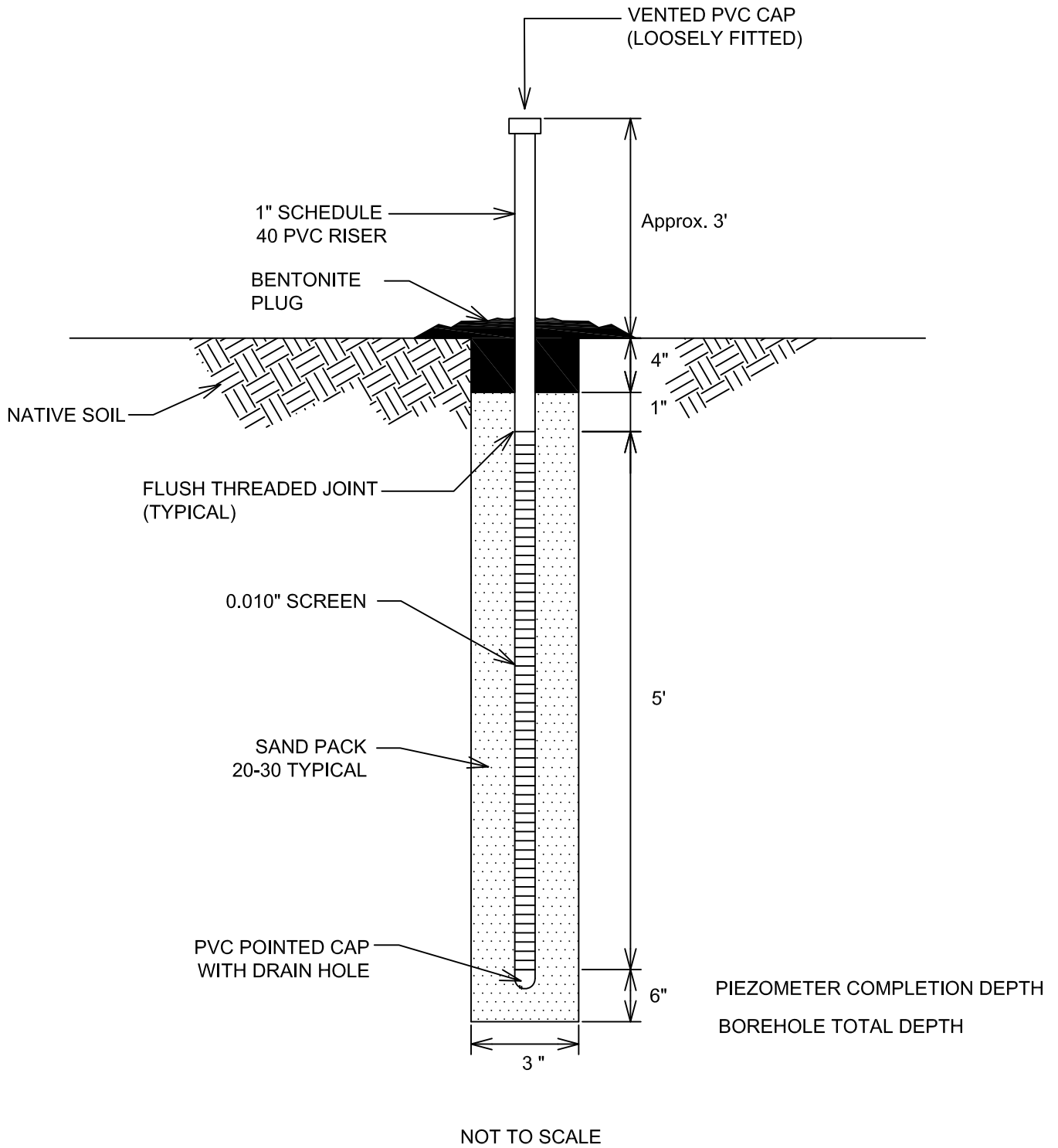
(P) - Piezometer

(S) - Shallow Monitor Well

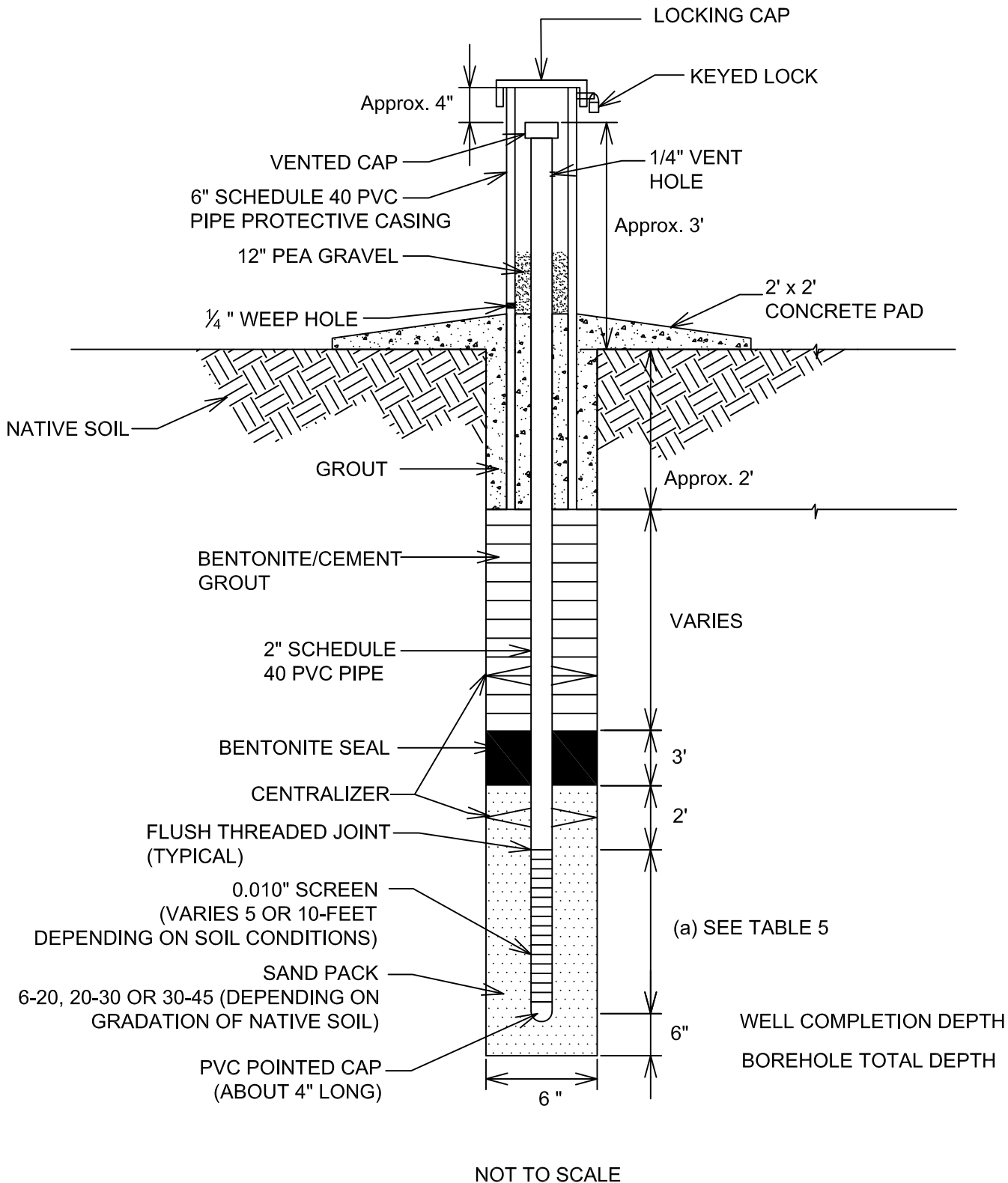
(I) - Intermediate Monitor Well

(D) - Deep Monitor Well

\\Orisvr1\gmdwrt\9012-Trail Ridge LF\80695\Hydrogeo Summary\Figures\AutoCad\Fig 19 Typical 1-in PZ Construction Detail.dwg



\\Odsrvr1\gmdwtr\9012-Trail Ridge LF\80695\Hydrogeo Summary\Figures\AutoCad\Fig 20 Typical 2-in MW Construction Detail.dwg



- Seven monitor wells in the intermediate zone of the surficial aquifer (total depths range from 52 to 63 ft bls): B-3I, B-7I through B-9I, B-11I, B-17I, and B-19I.
- Five monitor wells in the deep zone of the surficial aquifer (total depths range from 109 to 125 ft bls): B-7D, B-8D, B-11D, B-17D, and B-19D.

As shown on Figure 17, these existing detection monitor wells are located along the northern perimeter of the existing Trail Ridge Landfill cell. These wells were field inspected by CDM Smith and found to have met the minimum well construction standards presented in Chapter 40C-3, FAC (*Water Wells*) and Chapter 62-532, FAC (*Water Well Permitting and Construction Requirements*).

7.2 Surface Water Staff Gauges

As shown on Figure 17, nine permanent staff gauges (SG-1, SG-2, and SG-R-3 through SG-R-9) were installed by CDM Smith in March and April, 2011 at the Trail Ridge Landfill expansion area to monitor water levels in select wetlands located throughout the site. Two additional permanent staff gauges (SG-R-10 and SG-R-11) were installed in October 2011. For 9 of the 11 staff gauges (SG-R-3 through SG-R-11), a stilling well with a continuous water level recorder was installed adjacent to the staff gauge. SG-R-4 is shown on **Figure 21**.

An example installation for a stand-alone staff gauge is shown on **Figure 22**, while **Figure 23** shows an example installation for a staff gauge with stilling well.

7.3 Rainfall

On-site rainfall is measured daily from a rain gauge operated by Waste Management, Inc. and located near the Administration building, as shown on Figure 17. The annual rainfall totals as well as monthly average rainfall total for the period of 1991 through 2012 are presented in Attachment D. Excluding 2003, when there were several months of missing data, the average annual rainfall total from 1991 through 2012 was 56.27 inches. The historical data for a nearby rainfall station located in Maxville, FL (SJRWMD Station No. 02691483) are also presented in Attachment D. The average annual rainfall total from 1996 through 2012 was 49.09 inches. For comparison, the average annual rainfall total from 1996 through 2012 at the Trail Ridge Landfill rain gauge was 53.73 inches.

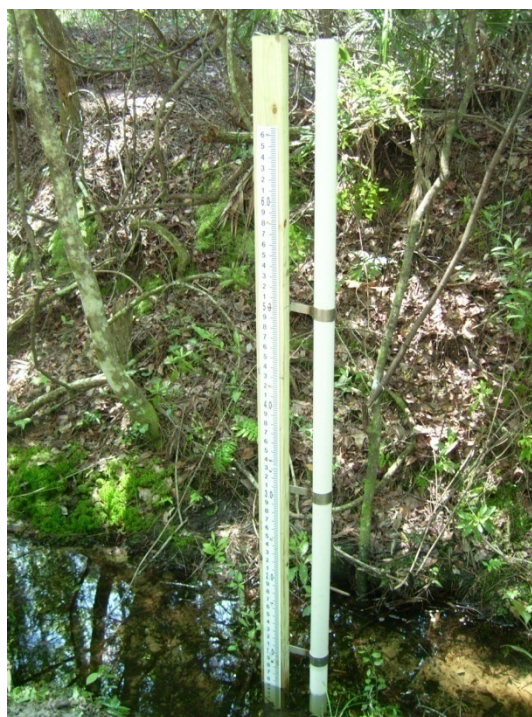
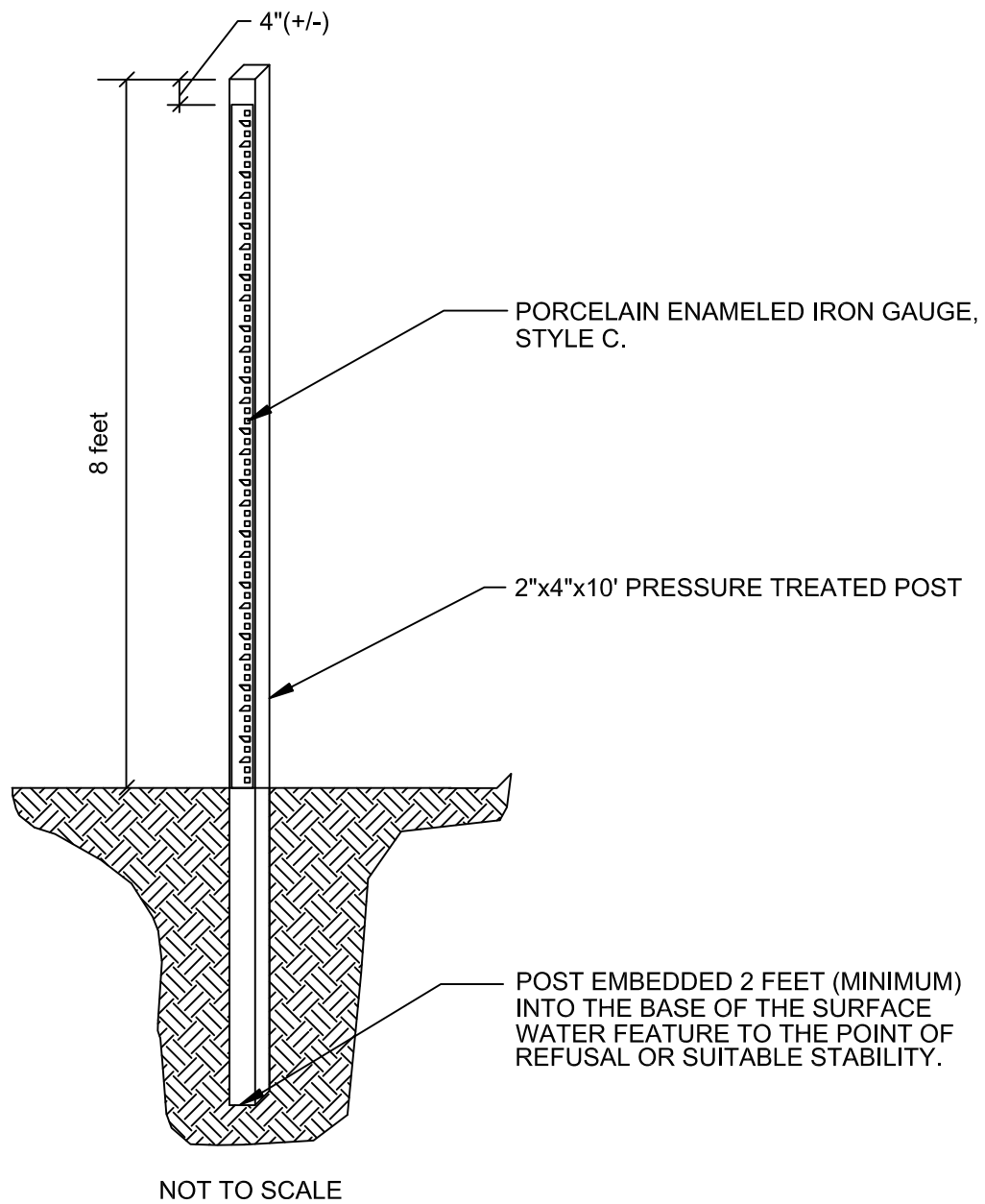
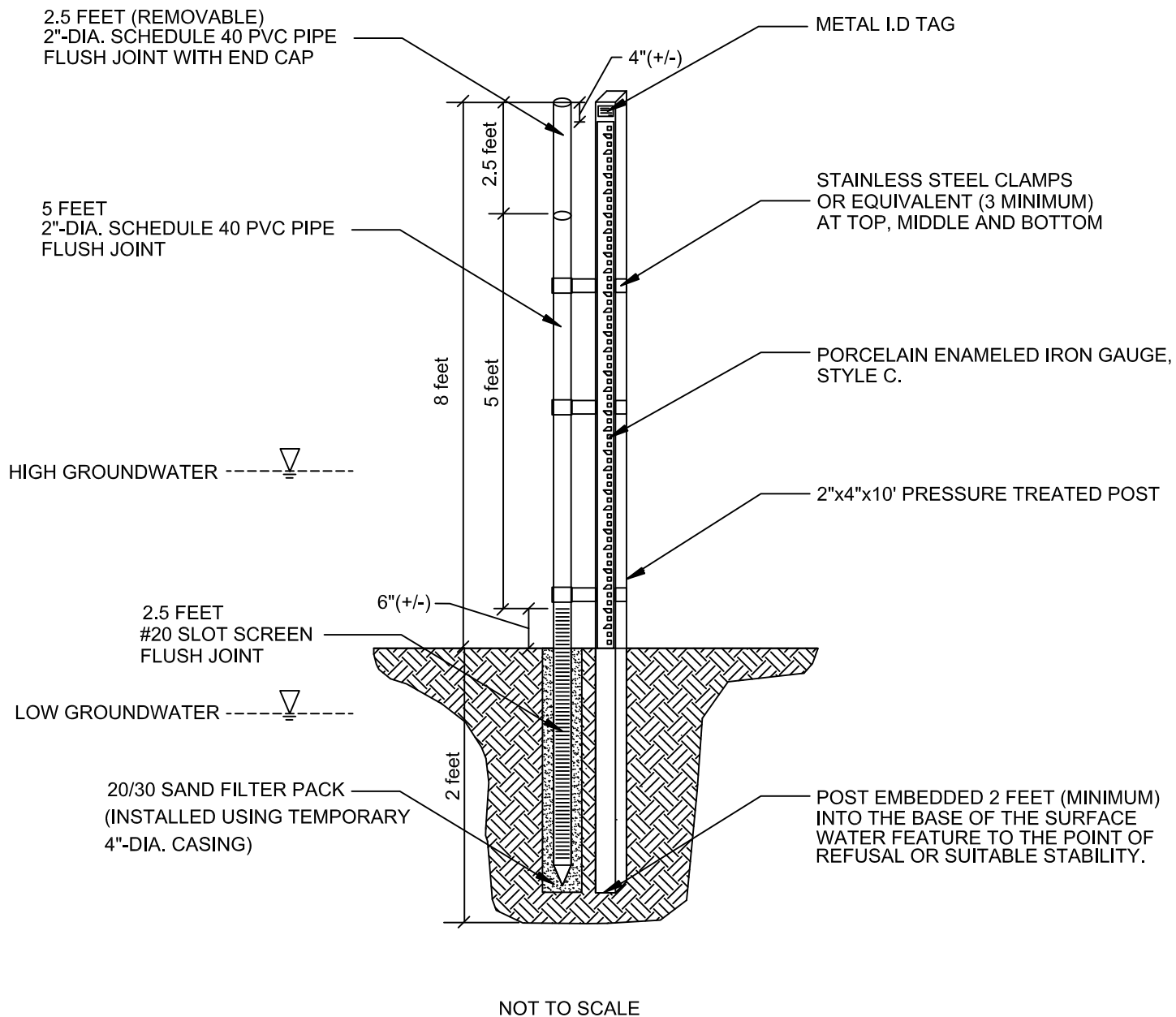


Figure 21.
Typical Staff Gauge with Stilling Well
(SG-R-4)





8.0 Baseline Data Collection and Monitoring Frequency

According to Section 62-701.510, FAC titled “*Water Quality Monitoring Requirements*,” a groundwater monitoring plan must consist of a sufficient number of water quality monitoring stations to evaluate any impact that the Solid Waste Management Facility may have on downstream surface water and groundwater quality. The collection of baseline hydrologic and water quality monitoring data in accordance with Section 62-701.510, FAC is described in the following subsections.

8.1 Hydrologic Monitoring

Surface water level data can be used to establish the hydroperiods for wetlands, while depth to groundwater data from monitor wells (including piezometers) will be used to establish seasonal fluctuations in levels as well as the direction and rate of groundwater flow in the surficial aquifer. The hydrologic monitoring plan was intended to measure surface water and groundwater elevation information for four consecutive quarters. However, due to project, contract, and schedule limitations, the final quarter measurements were collected one year after they were initially scheduled. Quarter 1 monitoring occurred from April to June 2011, Quarter 2 monitoring occurred in October 2011, Quarter 3 monitoring occurred in January 2012, and Quarter 4 monitoring occurred in March 2013.

During Quarter 1, surface water levels were collected at two stand-alone staff gauges (SG-1 and SG-2) and seven continuous water level recorders (SG-R-3 through SG-R-9) on a monthly basis. The recording frequency of water level measurements at these sampling locations was thereafter increased from monthly to quarterly for the remaining quarters (Quarter 2 through Quarter 4) in order to complete one year of water level measurements. Two additional continuous water level recorders (SG-R-10 and SG-R-11) were installed following Quarter 2 and were only included in Quarter 3 and Quarter 4 measurements.

8.2 Water Quality Monitoring

A total of 22 recently-installed CDM Smith monitor wells and 7 surface water monitoring stations were sampled for water quality parameters semiannually for one year. The first water quality sampling event was conducted in April 2011 (Quarter 1), while the second event was conducted in October 2011 to represent Quarter 2 conditions. The remaining six monitoring wells and two surface water monitoring stations, which were installed in October 2011, were not sampled for water quality. To establish background groundwater quality, all groundwater samples were collected and analyzed in accordance with the list of parameters presented in Section 62-701.510(5)(b)2, as summarized in **Table 6**. The results of the groundwater quality analysis were compared with Florida Department of Environmental Protection (FDEP) Primary and Secondary Drinking Water Standards (Chapter 62-550, FAC) since groundwater in the surficial aquifer is classified as a potential potable water source of supply.

Table 6. Groundwater Monitoring Requirements for Solid Waste Management Facilities

Field Parameters	Laboratory Parameters
Static water level in wells before purging	Total Ammonia as N
Specific conductance	Chlorides
pH	Iron
Dissolved Oxygen	Mercury
Turbidity	Nitrate
Temperature	Sodium
Colors and sheens (by observation)	Total Dissolved Solids (TDS)
	Parameters Listed in 40 CFR Part 258 Appendix I (see Table 11)

To establish background surface water quality, all surface water quality samples were collected and analyzed in accordance with the list of parameters presented in Section 62-701.510(5)(b)3, as summarized in **Table 7**. The results of the surface water quality analyses were compared with FDEP Class III surface water quality standards (Chapter 62-302, FAC) since the surface waters at this site are classified as freshwater, which could be used for fish consumption, recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife.

Table 7. Surface Water Monitoring Requirements for Solid Waste Management Facilities

Field Parameters	Laboratory Parameters
Static water level in stilling wells	Unionized Ammonia
Specific conductance	Total Hardness (as mg/L CaCO ₃)
pH	Five-day Biochemical Oxygen Demand (BOD ₅)
Dissolved Oxygen	Iron
Turbidity	Mercury
Temperature	Nitrate
Colors and sheens (by observation)	Sodium
	TDS
	Total Organic Carbon (TOC)
	Fecal Coliform
	Total Phosphorus (as mg/L P)
	Chlorophyll-a
	Total Nitrogen
	Chemical Oxygen Demand (COD)
	Total Suspended Solids (TSS)
	Parameters Listed in 40 CFR Part 258 Appendix I (see Table 14)

9.0 April-June 2011 (Quarter 1) Sampling Results and Evaluation

9.1 Groundwater Elevations

As summarized in **Table 8** and **Table 9**, groundwater level measurements were collected on a monthly basis from April through June 2011 at 49 monitor wells (26 recently-installed CDM Smith monitor wells and piezometers, and 23 existing Waste Management wells) located throughout the existing Trail Ridge landfill cell and proposed expansion area. Groundwater elevation contours were developed from groundwater level data collected during the April 2011 sampling event and are shown graphically for each surficial aquifer unit (shallow, intermediate, and deep) on **Figures C-1** through **C-3**, respectively in **Attachment C**. **Figures C-4** through **C-6**, respectively, show the groundwater elevation contours resulting from the May 26, 2011 sampling event for each surficial aquifer unit. **Figures C-7** through **C-9**, respectively, present the groundwater elevation contours resulting from the June 23, 2011 sampling event for each surficial aquifer unit. From the monthly groundwater level monitoring data, the direction of groundwater flow in all three surficial units was toward the northeast, from a groundwater high located at the southwest corner of the proposed expansion area.

Groundwater elevations at monitor well cluster locations are shown on **Figures D-1** through **D-8** in **Attachment D**. The groundwater elevations are very similar throughout the shallow, intermediate, and deep aquifer units along the western property boundary (Figure D-4), which is indicative of a high level of connectivity between these three zones. The opposite is true in the wetland areas east of the landfill expansion area as indicated on Figures D-1 through D-3.

9.2 Groundwater Quality

Groundwater samples were collected from April 25-26, 2011 at all 22 recently-installed CDM Smith monitor wells as part of the first semi-annual water quality sampling event. To establish background groundwater quality, all groundwater samples were collected and analyzed in accordance with the list of parameters presented in Section 62-701.510(6)(b)2, as summarized in **Table 10** and **Table 11**. The results of the groundwater quality were compared with FDEP Primary and Secondary Drinking Water Standards (Chapter 62-550, FAC). Iron was the only parameter found to be in exceedance of applicable drinking water standards at the site, with concentrations exceeding the Maximum Contaminant Level (MCL) of 300 ug/L in all 22 monitor wells.

9.3 Surface Water Elevations

Surface water levels were collected on a monthly basis from April through June 2011 at nine staff gauges located throughout the expansion area, as summarized in **Table 12**. During the April sampling event, only three staff gauges (SG-R-3 through SG-R-5) had standing water and were able to be recorded. During the May and June sampling events, only two staff gauges (SG-R-3 and SG-R-4) were able to be recorded. Surface water elevation data recorded during these three sampling events were used in development of the groundwater elevation contours for the shallow surficial aquifer, as shown on Figures C-1, C-4, and C-7. Time series of water levels at the staff gauge locations are shown on **Figures D-9** through **D-15** in Attachment D.

9.4 Surface Water Quality

As part of the first semi-annual water quality sampling event, surface water samples were collected on April 27, 2011 at three staff gauge locations (SG-R-3 through SG-R-5), which were the only staff gauges

with standing water. To establish background surface water quality, all surface water quality samples were collected and analyzed in accordance with the list of parameters presented in Section 62-701.510(5)(b)3, as summarized in **Table 13** and **Table 14**. The results of the surface water quality analyses were compared with FDEP Class III surface water quality standards (Chapter 62-302, FAC) for compliance with these standards. A dissolved oxygen concentration at SG-R-5 resulted in 1.94 mg/L, which is below the minimum 5.0 mg/L standard for this parameter. At SG-R-3, fecal coliform was measured at 420 cfu/100 mL, which exceeds the MCL for this parameter (200 cfu/100 ML). At SG-R-3, beryllium was detected at 0.158 mg/L, which is in exceedance of the MCL for this parameter (0.13 ug/L).

Table 8. Groundwater Elevation Data

Monitor Well ID	State Plane Coordinates (feet) ¹		Well Depth	TOC Elevation	Date of Measurement															
					April 12, 2011		April 20-21, 2011		April 25, 2011		May 26, 2011		June 23, 2011		October 3, 2011		January 19, 2012		March 7, 2013	
					Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
	Northing	Easting	(ft bls)	(ft BTOC)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)
CDM-1 (P)	2,145,293	327,543	5	115.14	5.70	109.44	6.46	108.68	6.75	108.39	7.40	107.74	dry	-	4.35	110.79	6.74	108.40	5.80	109.34
CDM-1 (S)	2,145,290	327,543	16	115.04	5.70	109.34	6.41	108.63	6.60	108.44	7.40	107.64	9.14	105.90	7.43	107.61	6.91	108.13	5.75	109.29
CDM-1 (I)	2,145,286	327,545	60	118.18	3.00	115.18	3.33	114.85	3.51	114.67	4.21	113.97	5.16	113.02	4.42	113.76	3.99	114.19	2.65	115.53
CDM-1 (D)	2,145,280	327,546	100	120.24	4.50	115.74	4.02	116.22	4.18	116.06	4.86	115.38	5.79	114.45	5.17	115.07	4.82	115.42	3.55	116.69
CDM-2 (P)	2,146,776	327,479	5	110.01	-	-	6.50	103.51	6.93	103.08	7.79	102.22	dry	-	7.58	102.43	7.28	102.73	5.62	104.39
CDM-2 (S)	2,146,773	327,482	14	110.61	-	-	7.34	103.27	7.63	102.98	8.75	101.86	10.03	100.58	8.78	101.83	8.07	102.54	6.40	104.21
CDM-2 (I)	2,146,769	327,485	57	114.46	-	-	4.27	110.19	4.46	110.00	5.28	109.18	6.52	107.94	5.48	108.98	5.11	109.35	3.69	110.77
CDM-2 (D)	2,146,765	327,488	100	115.75	-	-	3.62	112.13	3.80	111.95	4.71	111.04	5.93	109.82	5.31	110.44	5.03	110.72	3.12	112.63
CDM-3 (P)	2,149,373	327,590	33	107.95	6.44	101.51	7.04	100.91	7.23	100.72	8.20	99.75	9.60	98.35	7.96	99.99	7.98	99.97	6.94	101.01
CDM-3 (S)	2,149,375	327,594	16	107.79	6.25	101.54	6.80	100.99	6.99	100.80	7.92	99.87	9.36	98.43	7.75	100.04	7.87	99.92	5.78	102.01
CDM-3 (I)	2,149,373	327,590	59	107.75	7.66	100.09	8.33	99.42	8.58	99.17	9.54	98.21	10.97	96.78	9.08	98.67	8.84	98.91	7.25	100.50
CDM-4 (S)	2,147,252	325,997	16	129.48	5.06	124.42	5.62	123.86	5.89	123.59	6.65	122.83	8.32	121.16	6.83	122.65	6.20	123.28	7.83	121.65
CDM-4 (I)	2,147,247	325,998	55	129.60	5.03	124.57	5.54	124.06	5.80	123.80	6.73	122.87	3.14	126.46	7.04	122.56	6.45	123.15	4.49	125.11
CDM-4 (D)	2,147,242	325,998	110	129.32	8.43	120.89	8.60	120.72	8.75	120.57	9.60	119.72	10.85	118.47	10.08	119.24	9.68	119.64	4.48	124.84
CDM-5 (P)	2,144,775	324,814	8	148.98	9.50	139.48	9.95	139.03	10.19	138.79	11.15	137.83	dry	-	11.81	137.17	11.45	137.53	8.40	140.58
CDM-5 (S)	2,144,770	324,815	15	148.59	9.08	139.51	9.55	139.04	9.79	138.80	10.80	137.79	11.86	136.73	11.50	137.09	11.10	137.49	8.95	139.64
CDM-5 (I)	2,144,765	324,816	60	148.39	9.53	138.86	9.93	138.46	10.13	138.26	10.97	137.42	11.99	136.40	11.52	136.87	11.35	137.04	9.04	139.35
CDM-5 (D)	2,144,760	324,816	111	148.20	9.45	138.75	9.83	138.37	10.02	138.18	10.85	137.35	11.81	136.39	11.41	136.79	11.24	136.96	8.12	140.08
CDM-6 (S)	2,145,669	324,818	29	149.09	10.26	138.83	10.66	138.43	10.88	138.21	11.81	137.28	12.93	136.16	12.52	136.57	12.30	136.79	9.45	139.64
CDM-6 (I)	2,145,674	324,817	66	149.17	10.46	138.71	10.87	138.30	11.10	138.07	12.00	137.17	13.08	136.09	12.65	136.52	12.50	136.67	9.85	139.32
CDM-6 (D)	2,145,679	324,816	110	148.97	10.41	138.56	10.76	138.21	11.05	137.92	11.97	137.00	13.08	135.89	12.61	136.36	12.45	136.52	9.81	139.16
CDM-7 (S)	2,147,741	324,800	19	140.97	7.07	133.90	7.40	133.57	7.59	133.38	8.43	132.54	9.86	131.11	8.81	132.16	8.44	132.53	6.01	134.96
CDM-7 (I)	2,147,747	324,800	65	141.02	6.98	134.04	7.50	133.52	7.73	133.29	8.55	132.47	10.02	131.00	8.97	132.05	8.60	132.42	6.21	134.81
CDM-7 (D)	2,147,752	324,801	110	141.07	6.77	134.30	7.64	133.43	7.89	133.18	8.72	132.35	10.18	130.89	9.10	131.97	8.74	132.33	6.36	134.71
CDM-8 (S)	2,149,206	325,024	16	130.16	7.05	123.11	7.89	122.27	8.10	122.06	8.83	121.33	10.26	119.90	8.56	121.60	8.00	122.16	6.48	123.68
CDM-8 (I)	2,149,208	325,028	60	130.09	7.70	122.39	8.35	121.74	8.55	121.54	9.28	120.81	10.72	119.37	9.00	121.09	8.35	121.74	7.04	123.05
CDM-102 (S)	2,148,383	327,883	10	102.55	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	7.39	95.16	5.25	97.30
CDM-102 (I)	2,148,383	327,888	50	102.69	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	4.07	98.62	2.70	99.99
CDM-104 (S)	2,147,135	328,520	15	100.79	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	6.81	93.98	5.03	95.76
CDM-104 (I)	2,147,140	328,519	40	101.99	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	4.48	97.51	3.45	98.54
CDM-106 (S)	2,145,777	328,368	10	103.97	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	7.13	96.84	5.48	98.49
CDM-106 (I)	2,145,779	328,373	51	103.83	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	2.99	100.98	2.20	101.77

Notes:
¹ Florida State Plane Coordinate System East Zone (HARN 83)
(P) - Piezometer
(S) - Shallow Monitor Well
(I) - Intermediate Monitor Well
(D)- Deep Monitor Well
NE means the piezometer did not exist at that time

Table 9. Groundwater Elevation Data for Select Monitor Wells

Monitor Well ID	State Plane Coordinates (feet) ⁴		Land Surface Elevation	TOC Elevation	Riser Height ³	Well Depth	Well Depth	Screen Length	Date of Measurement											
									April 26, 2011		May 26, 2011		June 23, 2011		October 3, 2011		January 19, 2012		March 7, 2013	
	Northing	Easting	(ft NGVD)	(ft NGVD)	(ft)	(ft bls)	(ft BTOC)	(ft)	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
			(ft NGVD)	(ft NGVD)	(ft)	(ft bls)	(ft BTOC)	(ft)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)	(ft BTOC)	(ft NGVD)
B-3S	2,143,945	324,772	151.39	154.19	1.99	18.0	19.99	15	10.75	143.44	11.62	142.57	12.61	141.58	12.68	141.51	12.42	141.77	8.95	145.24
B-3I	2,143,973	324,788	150.51	152.87	1.50	60.0	61.50	5	14.32	138.55	15.03	137.84	15.95	136.92	15.58	137.29	15.45	137.42	13.48	139.39
B-7S	2,144,201	327,418	120.37	123.49	2.69	16.5	19.19	15	8.88	114.61	9.47	114.02	10.25	113.24	10.29	113.20	10.10	113.39	8.35	115.14
B-7I	2,144,196	327,425	120.28	121.98	1.83	63.3	65.13	5	4.28	117.70	4.79	117.19	5.56	116.42	4.94	117.04	2.35	119.63	3.48	118.50
B-7D	2,144,201	327,424	120.68	122.00	1.95	114.7	116.65	5	1.89	120.11	2.45	119.55	3.27	118.73	2.70	119.30	4.66	117.34	1.21	120.79
B-8S ¹	2,145,917	326,752	123.61	125.74	2.13	-	-	-	6.56	119.18	7.89	117.85	9.15	116.59	8.48	117.26	7.96	117.78	5.51	120.23
B-8I ¹	2,145,913	326,751	123.22	125.75	2.22	-	-	-	8.30	117.45	9.11	116.64	10.22	115.53	9.30	116.45	8.70	117.05	7.41	118.34
B-8D ¹	2,145,920	326,753	122.94	125.29	2.22	-	-	-	7.42	117.87	8.20	117.09	9.28	116.01	8.41	116.88	7.40	117.89	6.41	118.88
B-9S	2,145,687	324,786	146.18	148.68	2.37	-	-	-	8.66	140.02	9.84	138.84	10.95	137.73	10.74	137.94	10.67	138.01	7.23	141.45
B-9I	2,145,692	324,784	146.19	148.24	2.02	-	-	-	9.68	138.56	10.56	137.68	11.60	136.64	11.22	137.02	11.08	137.16	8.48	139.76
B-10S	2,145,502	326,929	126.08	128.57	2.04	-	-	-	6.72	121.85	7.61	120.96	8.67	119.90	7.83	120.74	7.25	121.32	5.68	122.89
B-11S ¹	2,143,755	327,704	118.50	120.81	2.31	18.0	20.31	15	11.64	109.17	12.13	108.68	12.97	107.84	12.72	108.09	12.97	107.84	12.40	108.41
B-11I ¹	2,143,758	327,687	118.40	120.43	2.50	52.5	55.00	5	3.48	116.95	3.95	116.48	4.66	115.77	4.10	116.33	3.88	116.55	2.71	117.72
B-11D ²	2,143,758	327,677	-	121.00	2.45	-	-	-	11.84	109.16	12.28	108.72	12.88	108.12	12.50	108.50	12.54	108.46	11.16	109.84
B-16S	2,144,299	325,395	141.76	144.55	2.31	17.5	19.81	15	7.20	137.35	7.79	136.76	8.60	135.95	8.35	136.20	7.98	136.57	6.28	138.27
B-17S	2,144,295	325,906	136.29	138.75	2.21	16.1	18.31	15	7.21	131.54	7.90	130.85	8.61	130.14	8.51	130.24	7.75	131.00	6.28	132.47
B-17I	2,144,295	325,893	136.19	138.90	2.23	57.9	60.13	5	4.10	134.80	4.73	134.17	5.61	133.29	5.20	133.70	4.94	133.96	3.39	135.51
B-17D	2,144,295	325,899	136.00	138.91	2.52	124.8	127.32	5	7.95	130.96	8.61	130.30	9.50	129.41	9.02	129.89	8.66	130.25	7.24	131.67
B-18S ¹	2,144,289	326,333	131.79	134.93	2.99	16.5	19.49	15	7.55	127.38	8.48	126.45	9.27	125.66	9.15	125.78	8.41	126.52	6.43	128.50
B-19S	2,144,284	326,888	125.77	128.32	1.68	18.0	19.68	15	7.89	120.43	8.58	119.74	9.27	119.05	9.17	119.15	8.66	119.66	7.02	121.30
B-19I	2,144,284	326,893	125.85	128.21	2.44	56.5	58.94	5	7.91	120.30	8.44	119.77	9.20	119.01	8.67	119.54	8.26	119.95	7.13	121.08
B-19D	2,144,283	326,898	125.76	128.55	2.73	109.0	111.73	5	7.70	120.85	8.30	120.25	9.12	119.43	8.55	120.00	8.16	120.39	7.03	121.52
B-20S ³	2,144,012	327,608	118.90	121.01	2.11	18.0	20.11	15	8.38	112.63	8.91	112.10	9.62	111.39	9.64	111.37	9.43	111.58	7.80	113.21

Notes:

¹ TOC Elevation not surveyed, TOC Elevation recorded from onsite signage.

² TOC Elevation not surveyed, no onsite sign

³ Data taken from Table 1 -Well_Const.xls from Golder Associates, 2nd Permit Renewal_Appendix I 2002

⁴ Florida State Plane Coordinate System East Zone (HARN 83)

Table 10. Results of Groundwater Quality Analysis (April 25-26, 2011)

Parameter ¹	Units	Maximum Contaminant Level ²	CDM-1S	CDM-1I	CDM-1D	CDM-2S	CDM-2I	CDM-2D	CDM-3S	CDM-3I	CDM-4S	CDM-4I	CDM-4D	CDM-5S	CDM-5I	CDM-5D	CDM-6S	CDM-6I	CDM-6D	CDM-7S	CDM-7I	CDM-7D	CDM-8S	CDM-8I	
Semi-Annually (Field)																									
Static Water Level in Wells Before Purging	ft btoc	-	6.6	3.51	4.18	7.67	4.43	3.75	7.05	8.63	5.98	5.89	8.78	9.84	10.2	10.04	10.96	11.12	11.06	7.66	7.81	8.55	7.98	8.49	
Specific Conductivity	mS/cm	-	221	61	381	73	43	446	62	360	45	59	387	46	55	60	51	45	87	34	110	142	41	335	
pH	SU	6.5-8.5	6.41	5.53	7.23	5.17	4.9	7.32	4.19	6.95	5.27	5.6	7.49	4.22	5	4.87	4.54	5.12	5.55	4.52	5.63	5.69	5.83	6.75	
Dissolved Oxygen (DO)	mg/L	-	0.15	0.41	0.95	0.12	0.25	0.25	0.39	0.19	0.15	0.11	0.1	1.1	0.24	0.23	0.44	0.24	0.28	0.24	0.16	0.16	0.19	0.15	
Turbidity	NTU	-	623	143	2.24	>1000	19.5	1.78	1.52	2.83	4.35	63	4.24	2.05	20	8.81	0.92	5.96	10.2	1.51	17.6	9.78	2.2	6.15	
Temperature	°C	-	26.47	24.72	23.74	21.05	23.05	23.61	23.25	21.83	26.3	23.8	21.4	20.42	21.39	21.43	20.99	23.47	23.4	22.22	23.5	22.12	21.9	21.8	
Colors and Sheens	-	15	brown	clear	clear	brown	clear	clear	clear	clear	clear	slightly tannic	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	
ORP	mVolts	-	-174.8	-99.9	-134	-115.3	-66.1	-119.6	-3.1	-157.2	-	-	-	9.7	-97.2	-102.9	-11.8	-105.1	-106.7	-71.8	-126.9	-99	-	-	
Semi-Annually (Laboratory)																									
Total Ammonia Nitrogen	mg/L	-	<0.0073	<0.0073	0.099	<0.0073	<0.0073	0.089	0.025	0.057	0.011	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	<0.0073	
Chloride	mg/L	250	13	5.9	5.0	8.2	6.2	6.0	8.2	5.9	6.4	5.5	6.6	4.3	4.1	6.6	5.8	5.2	7.3	5.9	5.8	7.8	6.6	13	
Iron	µg/L	300	2,170	461	481	1,560	771	509	861	356	440	631	398	175	651	963	626	806	610	577	2,440	512	1,880	2,340	
Mercury	µg/L	2.0	<0.07	<0.07	<0.0720	<0.07	<0.0720	<0.0720	<0.0110	<0.0110	0.0136	<0.024	<0.0110	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	<0.0720	
Nitrate	mg/L	10	<0.052	0.13	<0.052	0.13	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	
Sodium	mg/L	160	26.1	5.84	6.50	7.46	4.19	7.19	4.82	6.00	3.52	5.77	8.33	1.88	6.20	3.90	3.82	5.28	6.18	3.08	6.13	16.0	4.27	58.3	
Total Dissolved Solids (TDS)	mg/L	500	490	200	210	360	56	250	38	210	34	100	210	46	60	56	24	40	66	32	96	96	22	240	
Parameters Listed in 40 CFR Part 258, Appendix I		See Table 11	-																						

Notes:

Shaded cells indicate an exceedance of applicable Maximum Contaminant Level

¹ Taken from Chapter 62-701.510(8)(a), FAC- January 2010

² According to Chapter 62-550, FAC-Drinking Water Standards, Monitoring and Reporting - October 2010

Table 11. Results of Groundwater Quality Analysis (April 25-26, 2011) Parameters listed in 40 CFR Part 258, Appendix I

Parameter	Units	Groundwater Guidance Concentration ¹ (µg/L)	CDM-1S	CDM-1I	CDM-1D	CDM-2S	CDM-2I	CDM-2D	CDM-3S	CDM-3I	CDM-4S	CDM-4I	CDM-4D	CDM-5S	CDM-5I	CDM-5D	CDM-6S	CDM-6I	CDM-6D	CDM-7S	CDM-7I	CDM-7D	CDM-8S	CDM-8I	
Inorganics																									
Antimony	µg/L	6.0 ²	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	
Arsenic	µg/L	10 ³	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	<6.70	
Barium	µg/L	2,000 ²	137	52.4	93.5	144	65.5	117	30.0	57.0	27.2	61.3	72.5	9.92	17.9	48.3	6.75	33.1	57.9	14.2	45.1	52.9	34.4	50.7	
Beryllium	µg/L	4.0 ⁴	0.235	<0.100	<0.100	0.930	0.220	<0.100	<0.100	0.150	<0.100	<0.100	<0.100	0.144	<0.100	<0.100	0.106	<0.100	0.122	<0.100	<0.100	0.198	<0.100	<0.100	
Cadmium	µg/L	5.0 ²	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	
Chromium	µg/L	100 ²	9.17	2.04	<1.30	7.18	5.40	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	1.32	
Cobalt	µg/L	-	1.04	<0.760	<0.760	1.13	<0.760	<0.760	<0.760	<0.760	<0.760	0.871	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	<0.760	
Copper	µg/L	1,000 ³	2.83	<1.50	<1.50	<1.50	2.44	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	
Lead	µg/L	15 ²	<2.90	<2.90	<2.90	3.20	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	<2.90	
Nickel	µg/L	100 ²	1.48	<1.10	<1.10	<1.10	1.61	<1.10	<1.10	<1.10	<1.10	2.52	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	1.52	
Selenium	µg/L	50 ²	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	<8.90	
Silver	µg/L	100 ²	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	
Thallium	µg/L	2.0 ²	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	
Vanadium	µg/L	49	7.21	<1.30	<1.30	11.1	8.05	<1.30	<1.30	<1.30	<1.30	4.66	<1.30	2.23	<1.30	<1.30	<1.30	<1.30	2.62	<1.30	<1.30	1.42	<1.30	<1.30	
Zinc	µg/L	5,000 ²	7.06	5.88	<3.50	<3.50	<3.50	<3.50	<3.50	<3.50	<3.50	4.00	<3.50	<3.50	<3.50	4.35	<3.50	<3.50	4.37	<3.50	<3.50	<3.50	<3.50	<3.50	
Organics																									
Acetone	µg/L	700	6.0	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
Acrylonitrile	µg/L	8.0	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	
Benzene	µg/L	1.0 ²	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
Bromochloromethane	µg/L	-	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	
Bromodichloromethane	µg/L	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Bromomethane	µg/L	10	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	
Bromoform	µg/L	4.0	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	
Carbon disulfide	µg/L	700	1.2	0.43	0.68	0.81	0.42	0.73	0.24	0.44	0.28	0.44	1.4	0.26	0.67	0.34	0.30	0.28	0.82	0.24	0.59	0.69	0.26	0.55	
Carbon tetrachloride	µg/L	3.0 ²	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Chlorobenzene	µg/L	100	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	
Chloroethane	µg/L	140	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	
Chloroform	µg/L	6.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	1.5	<0.21	<0.21	<0.21	<0.21	<0.21	0.24	<0.21	0.27	0.36	<0.21	1.1	
Chloromethane	µg/L	2.7	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	
Dibromochloromethane	µg/L	1.0	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.2	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
1,2-Dibromoethane	µg/L	0.02 ²	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
Dibromomethane	µg/L	0.2	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
1,2-Dichlorobenzene	µg/L	600	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	
1,4-Dichlorobenzene	µg/L	75.0	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	
trans-1,4-Dichloro-2-butene	µg/L	1,400	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	
1,1-Dichloroethane	µg/L	700	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
1,2-Dichloroethane	µg/L	3.0 ²	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	
1,1-Dichloroethene	µg/L	7.0 ²	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	
cis-1,2-Dichloroethene	µg/L	70 ²	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	
trans-1,2-Dichloroethene	µg/L	100 ²	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
1,2-Dichloropropane	µg/L	5.0 ²	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
cis-1,3-Dichloropropene	µg/L	1.0	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	
trans-1,3-Dichloropropene	µg/L	1.0	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	
Ethylbenzene	µg/L	700 ²	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	
Methyl butyl ketone (2-hexanone)	µg/L	-	<0.50	<0																					

Notes:

¹ According to the State of Florida Ground Water Guidance Concentrations (FDEP, June 1994)

² Maximum Contaminant Level according to Chapter 62-550, FAC-Drinking Water Standards, Monitoring and Reporting - October 2010

Table 12. Staff Gauge Readings

Surface Water Station ID	State Plane Coordinates (feet) ¹		Land Surface Elevation ²	Reference Point Elevation ³	Date of Measurement											
					April 25, 2011		May 25, 2011		June 23, 2011		October 3, 2011		January 19, 2012		March 7, 2013	
	Northing	Easting	(ft NGVD)	(ft NGVD)	Staff Gauge Reading (feet)	Surface Water Elevation (ft NGVD)	Staff Gauge Reading (feet)	Surface Water Elevation (ft NGVD)	Staff Gauge Reading (feet)	Surface Water Elevation (ft NGVD)	Staff Gauge Reading (feet)	Surface Water Elevation (ft NGVD)	Staff Gauge Reading (feet)	Surface Water Elevation (ft NGVD)	Staff Gauge Reading (feet)	Surface Water Elevation (ft NGVD)
SG-1	2,144,761	326,305	123.62	123.47	dry	-	dry	-	dry	-	dry	-	dry	-	0.11	106.45
SG-2	2,146,536	326,485	118.21	118.37	dry	-	dry	-	dry	-	dry	-	dry	-	dry	-
SG-R-3	2,144,837	327,384	106.32	106.34	0.57	106.91	0.53	106.87	0.49	106.83	0.58	106.92	0.61	106.95	0.86	107.20
SG-R-4	2,146,505	327,267	104.50	104.53	0.48	105.01	0.48	105.01	0.44	104.97	0.53	105.06	0.6	105.13	0.64	105.17
SG-R-5	2,149,061	327,175	100.78	100.89	0.68	101.57	dry	-	dry	-	0.35	101.24	0.7	101.59	0.85	101.74
SG-R-6	2,149,667	326,876	106.91	107.02	dry	-	dry	-	dry	-	dry	-	dry	-	0.76	107.78
SG-R-7	2,144,989	329,355	93.04	93.28	dry	-	dry	-	dry	-	dry	-	0.41	93.69	0.49	93.77
SG-R-8	2,146,498	329,317	93.93	93.23	dry	-	dry	-	dry	-	dry	-	0.5	93.73	1.08	94.31
SG-R-9	2,147,384	329,015	92.42	92.91	dry	-	dry	-	dry	-	dry	-	0.14	93.05	1.38	94.29
SG-R-10	2,145,974	328,617	96.51	96.80	NE	NE	NE	NE	NE	NE	NE	NE	0.01	96.81	0.12	96.92
SG-R-11	2,148,138	328,966	94.28	94.40	NE	NE	NE	NE	NE	NE	NE	NE	dry	-	dry	-

Notes:

¹ Florida State Plane Coordinate System East Zone (HARN 83)² Land surface elevation immediately adjacent to staff gauge³ Reference point elevation corresponds to 0.00 ft reading on staff gauge

NE means that the piezometer did not exist at that time

Table 13. Results of Surface Water Quality Analysis (April 27, 2011)

Parameter ¹	Units	Maximum Contaminant Level ² (mg/L)	SG-R-3	SG-R-4	SG-R-5
Semi-Annually (Field)					
Specific Conductivity	mS/cm	1,275	49	36	74
pH	SU	6.0-8.5	6.34	5.63	4.3
Dissolved Oxygen (DO)	mg/L	5.0	10.16	7.95	1.94
Turbidity	NTU	< 29 Above Background	2.5	1.98	0.98
Temperature	°C	-	19.6	20.1	20.1
Colors and Sheens	-	-	clear	clear	tannic
ORP	mVolts	-	88.4	177.6	272
Semi-Annually (Laboratory)					
Unionized Ammonia (NH ₃) Nitrogen	mg/L	0.02	<0.0073	<0.0073	<0.0073
Total Hardness	mg/L CaCO ₃	-	8.0	4.0	8.0
Biochemical Oxygen Demand (BOD ₅)	mg/L	-	<2.0	<2.0	<2.0
Copper	µg/L	20.6/11.4 ³	<1.50	<1.50	<1.50
Iron	µg/L	1	261	246	716
Mercury	µg/L	0.000012	0.0012	0.0014	0.0024
Nitrate Nitrogen	mg/L	-	<0.052	<0.052	<0.052
Zinc	µg/L	11.1/6.2 ⁴	<3.50	<3.50	40.1
Total Dissolved Solids (TDS)	mg/L	-	50	40	70
Total Organic Carbon (TOC)	mg/L	-	4.3	3.2	7.4
Fecal Coliform ⁵	cfu/100 mL	200	420	2	1
Total Phosphorus	mg/L P	-	0.014	<0.013	<0.013
Chlorophyll-a	mg/m ³	-	<0.50	1.2	1.1
Total Nitrogen	mg/L	-	0.20	0.12	0.24
Chemical Oxygen Demand (COD)	mg/L	-	<8.4	<8.4	<8.4
Total Suspended Solids (TSS)	mg/L	-	<2.0	<2.0	<2.0
Parameters Listed in 40 CFR Part 258, Appendix I	-	See Table 14	-	-	-

Notes:

Shaded cells indicate an exceedance of applicable Maximum Contaminant Level

¹ Taken from Chapter 62-701.510(8)(b), FAC - January 2010

² According to Chapter 62-302, FAC-Surface Water Quality Standards for Class III Surface Water Bodies - August 2010

³ 20.6 µg/L for SG-R-3 and SG-R-5 and 11.4 µg/L for SG-R-4

⁴ 11.1 µg/L for SG-R-3 and SG-R-5 and 6.2 µg/L for SG-R-4

Table 14. Results of Surface Water Quality Analysis (April 27, 2011) Parameters Listed in 40 CFR Part 258, Appendix I

Parameter	Units	Maximum Contaminant Level ¹ (µg/L)	SG-R-3	SG-R-4	SG-R-5
Inorganics					
Antimony	µg/L	4,300	<0.095	<0.095	<0.095
Arsenic	µg/L	50	<6.70	<6.70	<6.70
Barium	µg/L	-	67.3	44.7	18.1
Beryllium	µg/L	0.13	0.158	<0.100	<0.100
Cadmium	µg/L	0.33/0.19/0.33 ²	<0.370	<0.370	0.504
Chromium	µg/L	19.7/11.2/19.7 ³	<1.30	<1.30	<1.30
Cobalt	µg/L	-	<0.760	<0.760	<0.760
Copper	µg/L	20.6/11.4/20.6 ⁴	<1.50	<1.50	<1.50
Lead	µg/L	0.035/0.015/0.035 ⁵	<2.90	<2.90	<2.90
Nickel	µg/L	15.6/8.7/15.6 ⁶	<1.10	<1.10	<1.10
Selenium	µg/L	5.0	<8.90	<8.90	<8.90
Silver	µg/L	0.07	<1.50	<1.50	<1.50
Thallium	µg/L	6.3	<0.041	<0.041	<0.041
Vanadium	µg/L	-	<1.30	1.30	<1.30
Zinc	µg/L	11.1/6.2/11.1 ⁷	<3.50	<3.50	40.1
Organics					
Acetone	µg/L	-	<1.1	<1.1	<1.1
Acrylonitrile	µg/L	-	<1.9	<1.9	<1.9
Benzene	µg/L	71.28	<0.27	<0.27	<0.27
Bromochloromethane	µg/L	-	<0.28	<0.28	<0.28
Bromodichloromethane	µg/L	22.0	<0.20	<0.20	<0.20
Bromomethane	µg/L	-	<0.64	<0.64	<0.64
Bromoform	µg/L	360	<0.33	<0.33	<0.33
Carbon disulfide	µg/L	-	0.31	0.27	0.26
Carbon tetrachloride	µg/L	4.42	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	-	<0.24	<0.24	<0.24
Chloroethane	µg/L	-	<0.31	<0.31	<0.31
Chloroform	µg/L	470.8	<0.21	<0.21	<0.21
Chloromethane	µg/L	470.8	<0.31	<0.31	<0.31
Dibromochloromethene	µg/L	-	<0.27	<0.27	<0.27
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	-	<0.012	<0.012	<0.012
1,2-Dibromoethane	µg/L	-	<0.27	<0.27	<0.27
Dibromomethane	µg/L	-	<0.27	<0.27	<0.27
1,2-Dichlorobenzene	µg/L	-	<0.24	<0.24	<0.24
1,4-Dichlorobenzene	µg/L	-	<0.23	<0.23	<0.23
trans-1,4-Dichloro-2-butene	µg/L	-	<0.69	<0.69	<0.69
1,1-Dichloroethane	µg/L	-	<0.30	<0.30	<0.30
1,2-Dichloroethane	µg/L	-	<0.28	<0.28	<0.28
1,1-Dichloroethene	µg/L	3.2	<0.21	<0.21	<0.21
cis-1,2-Dichloroethene	µg/L	-	<0.22	<0.22	<0.22
trans-1,2-Dichloroethene	µg/L	-	<0.30	<0.30	<0.30
1,2-Dichloropropane	µg/L	-	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene	µg/L	-	<0.35	<0.35	<0.35
trans-1,3-Dichloropropene	µg/L	-	<0.33	<0.33	<0.33
Ethylbenzene	µg/L	-	<0.26	<0.26	<0.26
Methyl butyl ketone (2-hexanone)	µg/L	-	<0.50	<0.50	<0.50
Methylene chloride	µg/L	1,580	<0.62	<0.62	<0.62
Methyl ethyl ketone (2-butanone)	µg/L	-	<0.38	<0.38	<0.38
Methyl iodide (iodomethane)	µg/L	-	<0.29	<0.29	<0.29
4-Methyl-2-pentanone	µg/L	-	<1.0	<1.0	<1.0
Styrene	µg/L	-	<0.32	<0.32	<0.32
1,1,1,2-Tetrachloroethane	µg/L	-	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane	µg/L	10.8	<0.32	<0.32	<0.32
Tetrachloroethene	µg/L	8.85	<0.21	<0.21	<0.21
Toluene	µg/L	-	<0.30	<0.30	<0.30
1,1,1-Trichloroethane	µg/L	270	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	µg/L	16	<0.40	<0.40	<0.40
Trichloroethene	µg/L	80.7	<0.24	<0.24	<0.24
Trichlorofluoromethane	µg/L	-	<0.20	<0.20	<0.20
1,2,3-Trichloropropane	µg/L	-	<0.30	<0.30	<0.30
Vinyl acetate	µg/L	-	<1.7	<1.7	<1.7
Vinyl chloride	µg/L	-	<0.33	<0.33	<0.33
Xylenes	µg/L	-	<0.50	<0.50	<0.50

Notes:

Shaded cells indicate an exceedance of applicable Maximum Contaminant Level.

¹ According to Chapter 62-302, FAC-Surface Water Quality Standards for Class III Surface Water Bodies - August 2010

² 0.33 µg/L for SG-R-3, 0.19 µg/L for SG-R-4, and 0.33 µg/L for SG-R-5

³ 19.7 µg/L for SG-R-3, 11.2 µg/L for SG-R-4, and 19.7 µg/L for SG-R-5

⁴ 20.6 µg/L for SG-R-3, 11.4 µg/L for SG-R-4, and 20.6 µg/L for SG-R-5

⁵ 0.035 µg/L for SG-R-3, 0.015 µg/L for SG-R-4, and 0.035 µg/L for SG-R-5

⁶ 15.6 µg/L for SG-R-3, 8.7 µg/L for SG-R-4, and 15.6 µg/L for SG-R-5

⁷ 11.1 µg/L for SG-R-3, 6.2 µg/L for SG-R-4, and 11.1 µg/L for SG-R-5

10.0 July-September 2011 (Quarter 2) Sampling Results and Evaluation

10.1 Groundwater Elevations

As summarized in Table 8 and Table 9, groundwater level measurements were collected to represent Quarter 2 conditions on October 3, 2011 at 49 monitor wells (26 recently-installed CDM Smith monitor wells and piezometers, and 23 existing Waste Management wells) located throughout the existing Trail Ridge landfill cell and proposed expansion area. Groundwater elevation contours were developed from groundwater level data collected during the October 2011 sampling event and are shown graphically for each surficial aquifer unit (shallow, intermediate, and deep) on **Figures C-10 through C-12**, respectively in Attachment C. From the groundwater level monitoring data, the direction of groundwater flow in all three surficial units was toward the northeast, from a groundwater high located at the southwest corner of the proposed expansion area.

Groundwater elevations at monitor well cluster locations are shown on Figures D-1 through D-8 in Attachment D. The groundwater elevations are very similar throughout the shallow, intermediate, and deep aquifer units along the western property boundary (Figure D-4), which is indicative of a high level of connectivity between these three zones. The opposite is true in the wetland areas east of the landfill expansion area as indicated on Figures D-1 through D-3.

10.2 Groundwater Quality

Groundwater samples were collected from October 3-4, 2011 at all 22 recently-installed CDM Smith monitor wells as part of the second semi-annual water quality sampling event. To establish background groundwater quality, all groundwater samples were collected and analyzed in accordance with the list of parameters presented in Section 62-701.510(6)(b)2, as summarized in **Table 15** and **Table 16**. The results of the groundwater quality were compared with FDEP Primary and Secondary Drinking Water Standards (Chapter 62-550, FAC). Iron was the only parameter found to be in exceedance of applicable drinking water standards at the site, with concentrations exceeding the Maximum Contaminant Level (MCL) of 0.3 mg/L in all monitor wells except for CDM-5S.

10.3 Surface Water Elevations

Surface water levels were collected on October 3, 2011 at nine staff gauges located throughout the expansion area, as summarized in Table 12. During this sampling event, only three staff gauges (SG-R-3 through SG-R-5) had standing water and were able to be recorded. Surface water elevation data recorded during this sampling event were used in development of the groundwater elevation contours for the shallow surficial aquifer, as shown on Figure C-10. Time series of water levels at the staff gauge locations are shown on Figures D-9 through D-15 in Attachment D.

10.4 Surface Water Quality

As part of the second semi-annual water quality sampling event, surface water samples were collected on October 4, 2011 at three staff gauge locations (SG-R-3 through SG-R-5), which were the only staff gauges with standing water. To establish background surface water quality, all surface water quality samples were collected and analyzed in accordance with the list of parameters presented in Section 62-701.510(5)(b)3, as summarized in **Table 17** and **Table 18**. The results of the surface water quality analyses were compared with FDEP Class III surface water quality standards (Chapter 62-302, FAC) for compliance with these standards. The pH at SG-R-5 was measured at 5.33, which is below the

MCL range of 6.0-8.5. Dissolved oxygen concentrations at SG-R-4 and SG-R-5 resulted in 4.51 mg/L and 1.74 mg/L, respectively, which are below the minimum 5.0 mg/L standard for this parameter. At SG-R-3, fecal coliform was measured at 430 cfu/100 mL, which exceeds the MCL for this parameter (200 cfu/100 ML). The concentration of zinc at SG-R-5 resulted in 128 µg/L, which exceeds the MCL for this parameter (calculated at 1.08 µg/L). At SG-R-5, beryllium was detected at 0.257 µg/L, which is in exceedance of the MCL for this parameter (0.13 µg/L).

Table 15. Results of Groundwater Quality Analysis (October 3-4, 2011)

Parameter ¹	Units	Maximum Contaminant Level ²	CDM-1S	CDM-1I	CDM-1D	CDM-2S	CDM-2I	CDM-2D	CDM-3S	CDM-3I	CDM-4S	CDM-4I	CDM-4D	CDM-5S	CDM-5I	CDM-5D	CDM-6S	CDM-6I	CDM-6D	CDM-7S	CDM-7I	CDM-7D	CDM-8S	CDM-8I	
Semi-Annually (Field)																									
Static Water Level in Wells Before Purging	ft btoc	-	7.43	4.42	5.17	8.78	5.48	5.31	7.75	9.08	6.83	7.04	10.08	11.5	11.52	11.41	12.52	12.65	12.61	8.81	8.97	9.10	8.56	9.00	
Specific Conductivity	mS/cm	-	101	50	348	57	50	406	51	329	36	41	324	52	43	53	53	40	74	44	56	135	34	133	
pH	SU	6.5-8.5	5.47	5.31	7.1	4.6	4.59	7.21	5.18	7.31	4.87	5.43	7.59	4.18	4.21	4.64	4.25	4.36	5.09	4.49	5.14	5.69	4.8	5.6	
Dissolved Oxygen (DO)	mg/L	-	0.28	0.28	0.12	1.35	0.65	0.43	0.18	0.38	0.22	0.22	0.52	1.42	0.49	0.57	0.66	0.68	0.39	0.54	0.67	0.94	0.29	0.11	
Turbidity	NTU	-	58.5	23.1	15.9	169	4.52	0.29	0.4	0.27	8.84	105	0.47	0.35	1.62	14.1	0.13	0.98	2.5	0.74	56.8	1.73	2.06	20.0	
Temperature	°C	-	24.53	23.01	22.71	25.82	23.33	23	25.1	23.8	26.1	23.6	22.2	22.75	21.74	22.12	27.74	25.38	23.64	26.36	24.86	22.3	23.7	22.2	
Colors and Sheens	-	15	clear	clear	clear	murky	clear	clear	clear	clear	tannic	cloudy	clear	clear	clear	clear	clear	clear	clear	clear	cloudy	clear	clear	clear	
ORP	mVolts	-	56.1	13.8	-135	114.6	105.3	-100.5	-	-	-	-	-	180.3	132.5	85.2	185.9	115.1	86.2	95	56.7	1.1	-	-	
Semi-Annually (Laboratory)																									
Total Ammonia Nitrogen	mg/L	-	0.051	0.013	0.17	0.023	0.0090	0.13	0.046	0.090	0.02	<0.0073	0.033	0.026	0.083	0.012	<0.0073	<0.0073	0.011	0.020	0.016	0.076	0.015	0.028	
Chloride	mg/L	250	11	6.1	5.2	7.6	6.3	6.2	8.1	5.9	6	5.2	6.3	4.4	4.0	6.7	5.8	5	7.1	6.1	5.6	7.2	6.4	8.6	
Iron	mg/L	0.3	1.35	0.397	1.04	1.03	0.54	0.91	0.94	0.41	0.48	0.43	0.30	0.14	0.39	0.74	0.44	0.39	1.65	0.53	1.13	1.46	1.62	1.14	
Mercury	µg/L	2.0	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	<0.170	
Nitrate	mg/L	10	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	<0.052	
Sodium	mg/L	160	15.6	4.31	6.60	4.09	3.75	8.19	4.61	7.72	4.48	5.81	4.53	2.67	2.87	4.13	2.79	3.43	4.48	3.81	3.52	7.96	4.17	27.0	
Total Dissolved Solids (TDS)	mg/L	500	110	68	230	110	74	250	54	220	74	110	210	78	62	78	48	18	72	32	100	100	54	140	
Parameters Listed in 40 CFR Part 258, Appendix I	-	See Table 16	-																						

Notes:

Shaded cells indicate an exceedance of applicable Maximum Contaminant Level

¹ Taken from Chapter 62-701.510(8)(a), FAC- January 2010

² According to Chapter 62-550, FAC-Drinking Water Standards, Monitoring and Reporting - October 2010

Table 16. Results of Groundwater Quality Analysis (October 3-4, 2011) Parameters listed in 40 CFR Part 258, Appendix I

Parameter	Units	Groundwater Guidance Concentration ¹ (µg/L)	CDM-1S	CDM-1I	CDM-1D	CDM-2S	CDM-2I	CDM-2D	CDM-3S	CDM-3I	CDM-4S	CDM-4I	CDM-4D	CDM-5S	CDM-5I	CDM-5D	CDM-6S	CDM-6I	CDM-6D	CDM-7S	CDM-7I	CDM-7D	CDM-8S	CDM-8I	
Inorganics																									
Antimony	µg/L	6.0 ²	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	
Arsenic	µg/L	50 ²	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	<4.20	
Barium	µg/L	2,000 ³	91.8	50.7	88.1	67.7	61.9	106	35.6	76.5	27.3	45.1	52.5	9.78	14.5	74.3	9.84	28.0	72.1	16.2	51.4	61.3	31.2	37.5	
Beryllium	µg/L	4.0 ²	<0.100	0.180	<0.100	0.464	0.196	<0.100	<0.100	<0.100	<0.100	0.194	<0.100	0.173	<0.100	0.188	0.126	0.122	0.117	0.140	0.197	0.190	0.143	0.114	
Cadmium	µg/L	5.0 ²	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	<0.320	
Chromium	µg/L	100 ²	0.417	1.12	0.392	<0.250	0.981	<0.250	<0.250	0.740	1.50	1.57	0.509	0.548	<0.250	0.943	<0.250	<0.250	0.639	<0.250	2.88	0.702	0.278	1.10	
Cobalt	µg/L	-	0.499	<0.290	0.297	1.59	<0.290	<0.290	0.356	<0.290	<0.290	0.883	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	<0.290	
Copper	µg/L	1,000 ²	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	<1.30	
Lead	µg/L	15 ²	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	<1.20	3.14	<1.20	<1.20	<1.20	
Nickel	µg/L	100 ²	<0.370	<0.370	<0.370	0.505	<0.370	<0.370	<0.370	<0.370	<0.370	0.650	<0.370	<0.370	<0.370	<0.370	<0.370	<0.370	0.646	0.481	1.05	<0.370	0.571	0.379	
Selenium	µg/L	50 ²	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	
Silver	µg/L	100 ²	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	<0.950	
Thallium	µg/L	2.0 ²	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	<0.580	
Vanadium	µg/L	49	0.659	1.76	<0.520	<0.520	2.05	<0.520	0.584	<0.520	1.43	2.74	0.663	<0.520	0.601	1.05	<0.520	<0.520	1.68	<0.520	3.14	0.940	<0.520	1.85	
Zinc	µg/L	5,000 ²	<3.10	<3.10	<3.10	8.53	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	<3.10	3.73	<3.10	<3.10	<3.10	<3.10	<3.10	
Organics																									
Acetone	µg/L	700	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	2.7	3.3	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	
Acrylonitrile	µg/L	8.0	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	
Benzene	µg/L	1.0 ²	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
Bromochloromethane	µg/L	-	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	
Bromodichloromethane	µg/L	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Bromomethane	µg/L	10	<0.64	<0.64	<0.64	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	
Bromoform	µg/L	4.0	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	
Carbon disulfide	µg/L	700	0.39	0.62	0.73	1.1	0.57	0.57	0.54	0.62	0.65	0.57	0.61	0.73	0.72	0.54	0.60	0.61	0.68	0.40	0.68	0.59	0.94	0.92	
Carbon tetrachloride	µg/L	3.0 ²	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Chlorobenzene	µg/L	100	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	
Chloroethane	µg/L	140	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	
Chloroform	µg/L	6.0	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	
Chloromethane	µg/L	2.7	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31	
Dibromochloromethane	µg/L	1.0	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.2	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
1,2-Dibromoethane	µg/L	0.02 ²	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
Dibromomethane	µg/L	0.2	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.2			

Table 17. Results of Surface Water Quality Analysis (October 4, 2011)

Parameter ¹	Units	Maximum Contaminant Level ² (mg/L)	SG-R-3	SG-R-4	SG-R-5
Semi-Annually (Field)					
Specific Conductivity	mS/cm	1,275	41	35	62
pH	SU	6.0-8.5	6.9	6.45	5.33
Dissolved Oxygen (DO)	mg/L	5.0	7.41	4.51	1.74
Turbidity	NTU	< 29 Above Background	1.66	2.1	0.56
Temperature	°C	-	15.1	15.56	15.6
Colors and Sheens	-	-	clear	tannic	tannic
ORP	mVolts	-		168.4	
Semi-Annually (Laboratory)					
Unionized Ammonia (NH ₃) Nitrogen	mg/L	0.02	<0.0073	<0.0073	<0.0073
Total Hardness	mg/L CaCO ₃	-	4.1	6.05	0.511
Biochemical Oxygen Demand (BOD ₅)	mg/L	-	<2.0	<2.0	<2.0
Copper	µg/L	11.7/16.3/1.97 ³	<1.50	<1.50	<1.50
Iron	mg/L	1	0.232	0.262	0.279
Mercury	µg/L	0.000012	0.00088	0.0010	0.00070
Nitrate Nitrogen	mg/L	-	0.12	<0.052	<0.052
Zinc	µg/L	6.3/8.8/1.08 ⁴	<3.10	3.34	128
Total Dissolved Solids (TDS)	mg/L	-	74	52	72
Total Organic Carbon (TOC)	mg/L	-	2.8	2.6	5.7
Fecal Coliform	cfu/100 mL	200	430	100	<1
Total Phosphorus	mg/L P	-	0.008	<0.008	<0.008
Chlorophyll-a	mg/m ³	-	<0.50	0.79	0.76
Total Nitrogen	mg/L	-	0.25	0.11	0.22
Chemical Oxygen Demand (COD)	mg/L	-	16	14	23
Total Suspended Solids (TSS)	mg/L	-	2.00	<2.00	<2.00
Parameters Listed in 40 CFR Part 258, Appendix I	-	See Table 18	-	-	-

Notes:

Shaded cells indicate an exceedance of applicable Maximum Contaminant Level

¹ Taken from Chapter 62-701.510(8)(b), FAC - August 2010. Units in mg/L unless noted otherwise.

² According to Chapter 62-302, FAC-Surface Water Quality Standards for Class III Surface Water Bodies - August 2010

³ 11.7 µg/L for SG-R-3, 16.3 µg/L for SG-R-4 and 1.97 µg/L for SG-R-5

⁴ 6.3 µg/L for SG-R-3, 8.8 µg/L for SG-R-4, and 1.08 µg/L for SG-R-5

Table 18. Results of Surface Water Quality Analysis (October 4, 2011) Parameters Listed in 40 CFR Part 258, Appendix I

Parameter	Units	Maximum Contaminant Level ¹ (µg/L)	SG-R-3	SG-R-4	SG-R-5
Inorganics					
Antimony	µg/L	4,300	<0.110	<0.110	<0.110
Arsenic	µg/L	50	<4.20	<4.20	<4.20
Barium	µg/L	-	56.6	45.3	37.6
Beryllium	µg/L	0.13	<0.100	0.125	0.257
Cadmium	µg/L	0.20/0.27/0.04 ²	<0.320	<0.320	<0.320
Chromium	µg/L	11.4/15.7/2.07 ³	0.267	0.396	0.570
Cobalt	µg/L	-	<0.290	<0.290	1.06
Copper	µg/L	11.7/16.3/1.97 ⁴	<1.30	<1.30	<1.30
Lead	µg/L	0.015/0.025/0.001 ⁵	<1.20	<1.20	1.23
Nickel	µg/L	8.9/12.3/15 ⁶	<0.370	<0.370	1.46
Selenium	µg/L	5.0	<4.60	<4.60	<4.60
Silver	µg/L	0.07	<0.950	<0.950	<0.950
Thallium	µg/L	6.3	<0.058	<0.058	<0.058
Vanadium	µg/L	-	0.769	0.559	1.40
Zinc	µg/L	6.3/8.8/1.1 ⁷	<3.10	3.34	128
Organics					
Acetone	µg/L	-	<1.1	<1.1	<1.1
Acrylonitrile	µg/L	-	<1.9	<1.9	<1.9
Benzene	µg/L	71.28	<0.27	<0.27	<0.27
Bromochloromethane	µg/L	-	<0.28	<0.28	<0.28
Bromodichloromethane	µg/L	22.0	<0.20	<0.20	<0.20
Bromomethane	µg/L	-	<0.64	<0.64	<0.64
Bromoform	µg/L	360	<0.33	<0.33	<0.33
Carbon disulfide	µg/L	-	0.31	0.27	0.27
Carbon tetrachloride	µg/L	4.42	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	-	<0.24	<0.24	<0.24
Chloroethane	µg/L	-	<0.31	<0.31	<0.31
Chloroform	µg/L	470.8	<0.21	<0.21	<0.21
Chloromethane	µg/L	470.8	<0.31	<0.31	<0.31
Dibromochloromethene	µg/L	-	<0.27	<0.27	<0.27
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	-	<0.012	<0.012	<0.012
1,2-Dibromoethane	µg/L	-	<0.012	<0.012	<0.012
Dibromomethane	µg/L	-	<0.27	<0.27	<0.27
1,2-Dichlorobenzene	µg/L	-	<0.24	<0.24	<0.24
1,4-Dichlorobenzene	µg/L	-	<0.23	<0.23	<0.23
trans-1,4-Dichloro-2-butene	µg/L	-	<0.69	<0.69	<0.69
1,1-Dichloroethane	µg/L	-	<0.30	<0.30	<0.30
1,2-Dichloroethane	µg/L	-	<0.28	<0.28	<0.28
1,1-Dichloroethene	µg/L	3.2	<0.21	<0.21	<0.21
cis-1,2-Dichloroethene	µg/L	-	<0.22	<0.22	<0.22
trans-1,2-Dichloroethene	µg/L	-	<0.30	<0.30	<0.30
1,2-Dichloropropane	µg/L	-	<0.30	<0.30	<0.30
cis-1,3-Dichloropropene	µg/L	-	<0.35	<0.35	<0.35
trans-1,3-Dichloropropene	µg/L	-	<0.33	<0.33	<0.33
Ethylbenzene	µg/L	-	<0.26	<0.26	<0.26
Methyl butyl ketone (2-hexanone)	µg/L	-	<0.50	<0.50	<0.50
Methylene chloride	µg/L	1,580	<0.62	<0.62	<0.62
Methyl ethyl ketone (2-butanone)	µg/L	-	<0.38	<0.38	<0.38
Methyl iodide (iodomethane)	µg/L	-	<0.29	<0.29	<0.29
4-Methyl-2-pentanone	µg/L	-	<1.0	<1.0	<1.0
Styrene	µg/L	-	<0.32	<0.32	<0.32
1,1,1,2-Tetrachloroethane	µg/L	-	<0.20	<0.20	<0.20
1,1,2,2-Tetrachloroethane	µg/L	10.8	<0.32	<0.32	<0.32
Tetrachloroethene	µg/L	8.85	<0.21	<0.21	<0.21
Toluene	µg/L	-	<0.30	<0.30	<0.30
1,1,1-Trichloroethane	µg/L	270	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	µg/L	16	<0.40	<0.40	<0.40
Trichloroethene	µg/L	80.7	<0.24	<0.24	<0.24
Trichlorofluoromethane	µg/L	-	<0.20	<0.20	<0.20
1,2,3-Trichloropropane	µg/L	-	<0.30	<0.30	<0.30
Vinyl acetate	µg/L	-	<1.7	<1.7	<1.7
Vinyl chloride	µg/L	-	<0.33	<0.33	<0.33
Xylenes	µg/L	-	<0.50	<0.50	<0.50

Notes:

¹ According to Chapter 62-302, FAC-Surface Water Quality Standards for Class III Surface Water Bodies - August 2010

11.0 January 2012 (Quarter 3) Sampling Results and Evaluation

11.1 Groundwater Elevations

As summarized in Table 8 and Table 9, groundwater level measurements were collected to represent Quarter 3 conditions on January 19, 2012 at 55 monitor wells (32 recently-installed CDM Smith monitor wells and piezometers, and 23 existing Waste Management wells) located throughout the existing Trail Ridge landfill cell and proposed expansion area. Groundwater elevation contours were developed from groundwater level data collected during the January 2012 sampling event and are shown graphically for each surficial aquifer unit (shallow, intermediate, and deep) on **Figures C-13 through C-15**, respectively in Attachment C. From the groundwater level monitoring data, the direction of groundwater flow in all three surficial units was toward the northeast, from a groundwater high located at the southwest corner of the proposed expansion area.

Groundwater elevations at monitor well cluster locations are shown on Figures D-1 through D-8 in Attachment D. The groundwater elevations are very similar throughout the shallow, intermediate, and deep aquifer units along the western property boundary (Figure D-4), which is indicative of a high level of connectivity between these three zones. The opposite is true in the wetland areas east of the landfill expansion area as indicated on Figures D-1 through D-3.

11.2 Surface Water Elevations

Surface water levels were collected on January 19, 2012 at 11 staff gauges located throughout the expansion area, as summarized in Table 12. During this sampling event, seven staff gauges (SG-R-3 through SG-R-5 and SG-R-7 through SG-R-10) had standing water and were able to be recorded. Surface water elevation data recorded during this sampling event were used in development of the groundwater elevation contours for the shallow surficial aquifer, as shown on Figure C-13. Time series of water levels at the staff gauge locations are shown on Figures D-9 through D-15 in Attachment D.

12.0 March 2013 (Quarter 4) Sampling Results and Evaluation

12.1 Groundwater Elevations

As summarized in Table 8 and Table 9, groundwater level measurements were collected to represent Quarter 4 conditions on March 7, 2013 at 55 monitor wells (32 recently-installed CDM Smith monitor wells and piezometers, and 23 existing Waste Management wells) located throughout the existing Trail Ridge landfill cell and proposed expansion area. Groundwater elevation contours were developed from groundwater level data collected during the January 2012 sampling event and are shown graphically for each surficial aquifer unit (shallow, intermediate, and deep) on **Figures C-16 through C-18**, respectively in Attachment C. From the groundwater level monitoring data, the direction of groundwater flow in all three surficial units was toward the northeast, from a groundwater high located at the southwest corner of the proposed expansion area.

Groundwater elevations at monitor well cluster locations are shown on Figures D-1 through D-8 in Attachment D. The groundwater elevations are very similar throughout the shallow, intermediate, and deep aquifer units along the western property boundary (Figure D-4), which is indicative of a high level of connectivity between these three zones. The opposite is true in the wetland areas east of the landfill expansion area as indicated on Figures D-1 through D-3.

12.2 Surface Water Elevations

Surface water levels were collected on March 7, 2013 at 11 staff gauges located throughout the expansion area, as summarized in Table 12. During this sampling event, nine staff gauges (SG-R-1 and SG-R-3 through SG-R-11) had standing water and were able to be recorded. Surface water elevation data recorded during this sampling event were used in development of the groundwater elevation contours for the shallow surficial aquifer, as shown on Figure C-13. Time series of water levels at the staff gauge locations are shown on Figures D-9 through D-15 in Attachment D.

13.0 Summary and Conclusions

This hydrogeologic investigation and site report addresses the requirements of Section 62-701.410, FAC and Section 62-701.510, FAC. Soil borings were drilled at the expansion property to define the site subsurface conditions between land surface and the intermediate confining unit. Based on the data, monitor wells were installed to different depths within the surficial aquifer system to help define background groundwater hydrology and water quality at the site. Additionally, surface water monitoring stations were installed at the site in wetlands and channels to assist in characterizing the background surface water hydrology and water quality. A staff gauge was installed at each surface water monitoring site to manually measure surface water elevations. The measuring points and coordinates for the monitor wells and staff gauges were surveyed by a professional surveyor and mapper registered in the State of Florida using vertical and horizontal control.

Groundwater and surface water samples were collected during two different quarterly events in 2011 from the monitor wells and surface water monitoring stations. Groundwater and surface water levels were collected manually from the monitor wells and staff gauges for the first three months of monitoring and quarterly thereafter to complete one year of background monitoring. Water level recorders were installed in selected monitor wells and surface water monitoring stations. Groundwater and surface water elevation data were collected from the water level recorders between April 2011 and March 2013.

The site exists along the boundary of the Trail Ridge and the Duval Upland physiographic regions. From the baseline monitoring, the direction of groundwater flow within the water table unit and limestone unit is from the southwest to the northeast across the site. In the higher elevations at the site (west), the direction of groundwater flow is downward from the water table unit to the limestone unit. In the lower elevations of the site (east) the direction of groundwater flow is upward from the limestone unit to the water table unit.

A total of 22 recently-installed CDM Smith monitoring wells were sampled for water quality parameters in April 2011 and October 2011. To establish background groundwater quality, groundwater samples were analyzed for groundwater indicator parameters and parameters listed in 40 CFR Part 258 Appendix I. The results of the groundwater quality analysis were compared with Florida Department of Environmental Protection (FDEP) Primary and Secondary Drinking Water Standards (Chapter 62-550, FAC) since groundwater in the surficial aquifer is classified as a potential potable water source of supply (Class G-II). Iron was the only parameter found to be in exceedance of applicable drinking water standards at the site. Iron concentrations exceeding the Maximum Contaminant Level (MCL) of 300 µg/L were detected in all 22 monitoring wells in April 2011 and in 21 of the monitoring wells in October 2011.

A total of 7 surface water monitoring stations were sampled for water quality parameters in April 2011 and October 2011. To establish background surface water quality, surface water samples were collected in April 2011 and October 2011 and analyzed for the surface water indicator parameters and parameters listed in 40 CFR Part 258 Appendix I. The results of the surface water quality analyses were compared with FDEP Class III surface water quality standards (Chapter 62-302, FAC) since the surface waters at this site are classified as freshwater, which could be used for fish consumption, recreation, propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Only two of the seven surface water monitoring stations had standing water and water samples were collected from both stations in April and October 2011.

In April 2011, the dissolved oxygen concentration at one station was well below (1.94 mg/L) the minimum 5.0 mg/L standard. This is not unusual for a wetland flow way. At the other station, fecal coliform was measured at 420 cfu/100 mL, which exceeded the MCL of 200 cfu/100 mL and beryllium was detected at 0.158 µg/L, which exceeded its MCL of 0.13 µg/L.

In October 2011, at one station the pH was measured below the MCL range of 6.0-8.5 S.U, dissolved oxygen concentrations were below the minimum 5.0 mg/L standard and zinc and beryllium were detected at concentrations in exceedance of their respective MCLs. At the other station, fecal coliform was measured at levels, which exceeded the MCL of 200 cfu/100 mL).

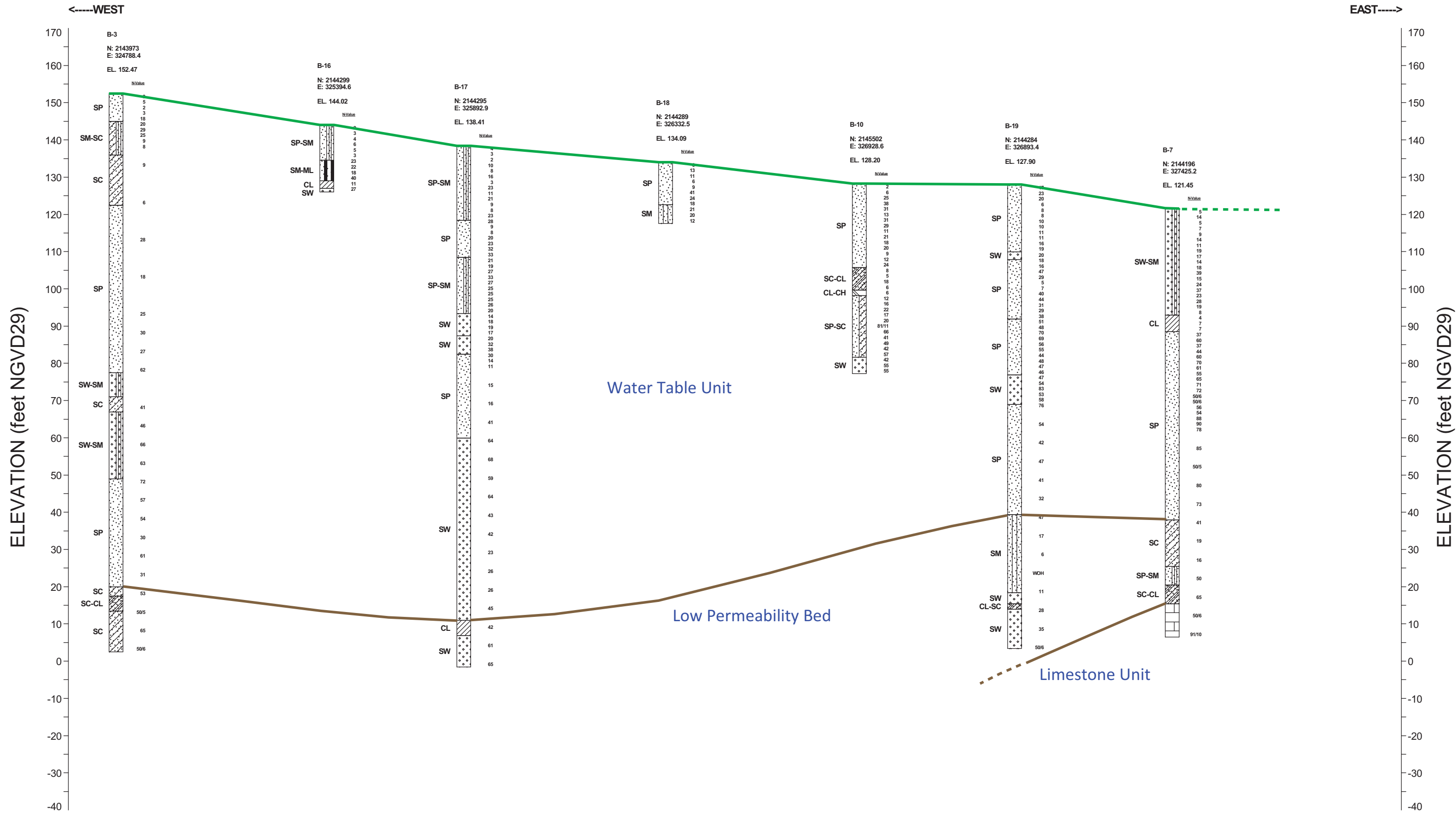
14.0 References

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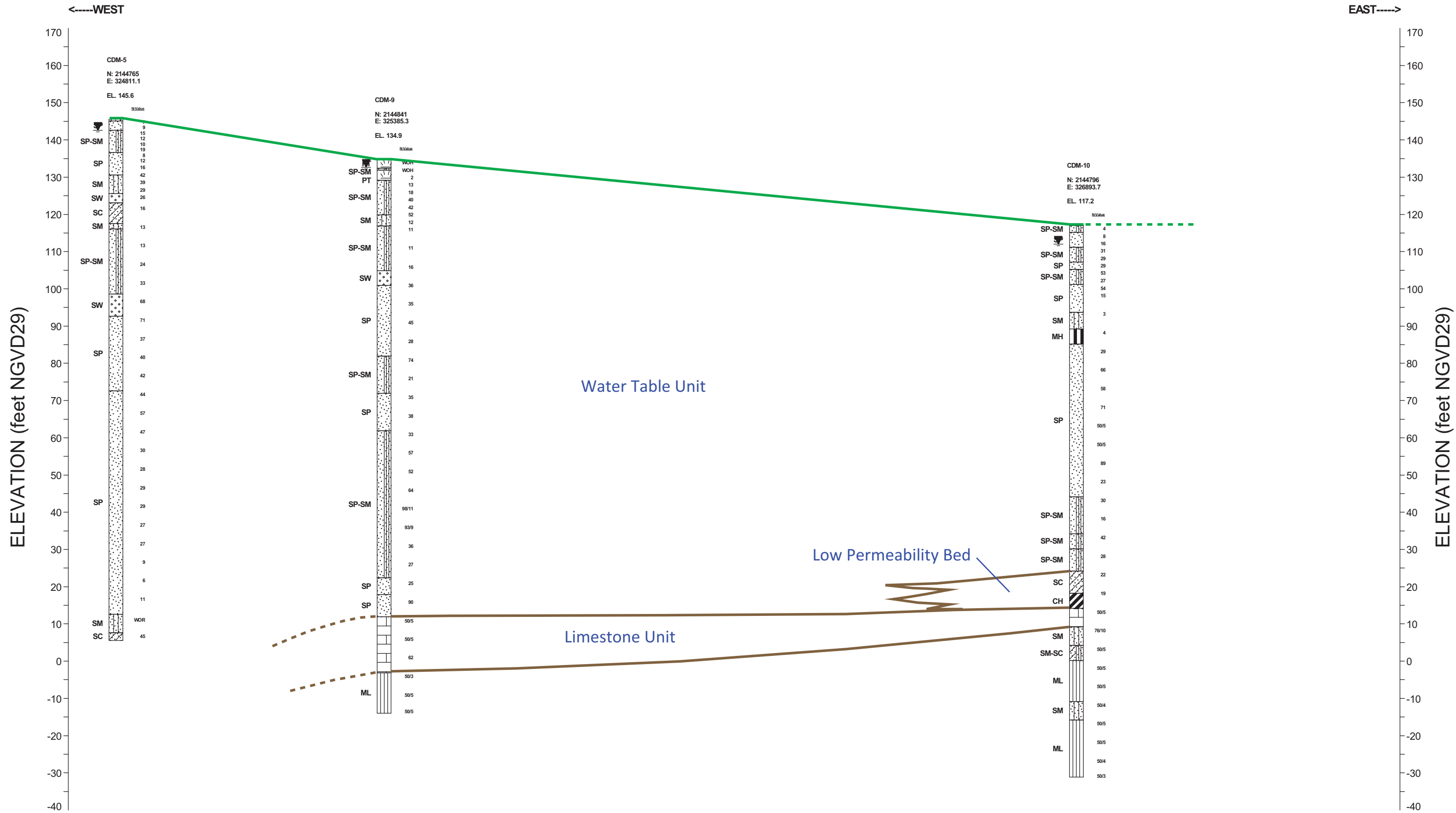
Attachment A

Hydrogeologic Cross Sections through the Landfill Expansion Property

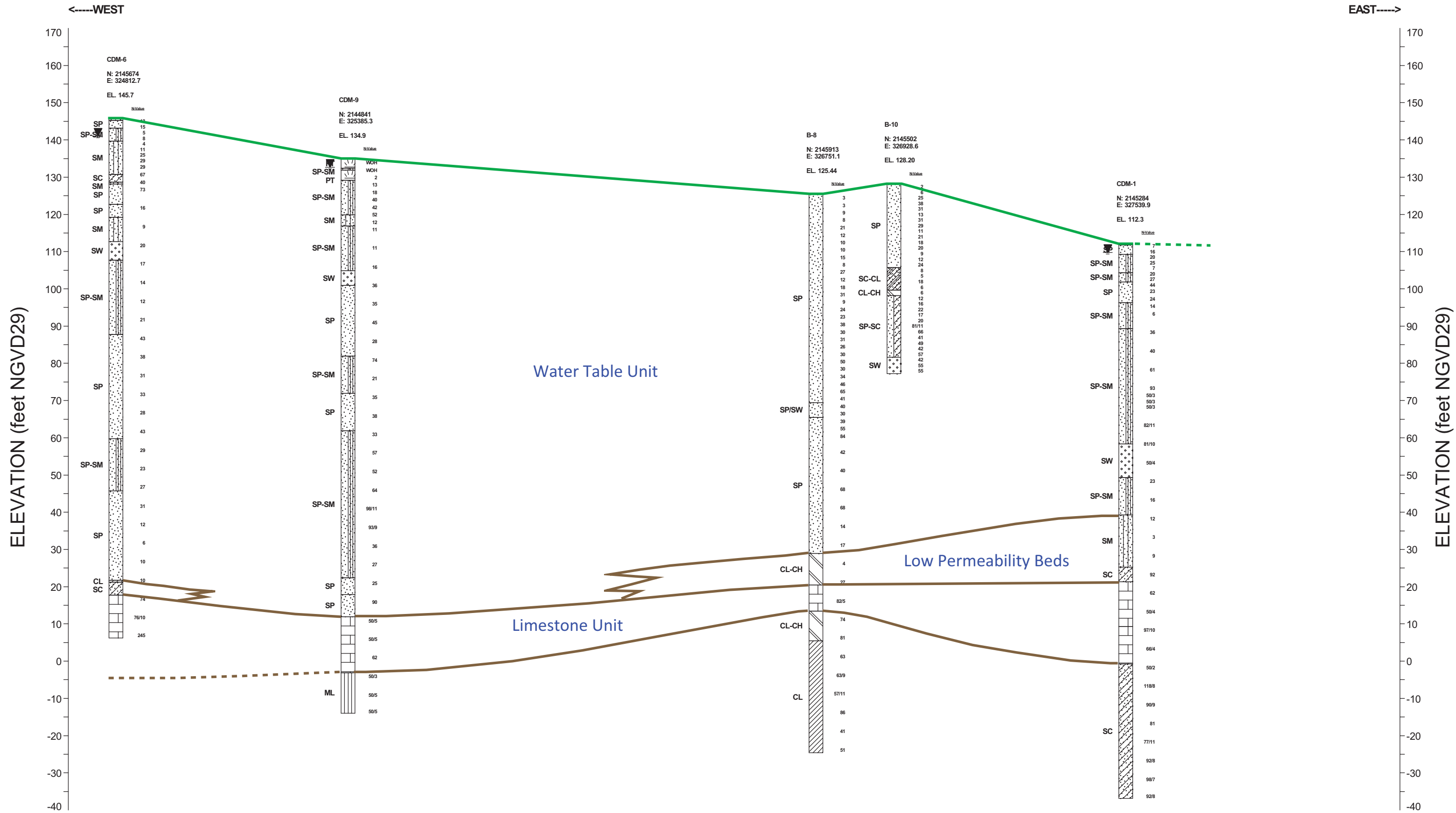
FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF - PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM_CORP.GDT 02/08/12



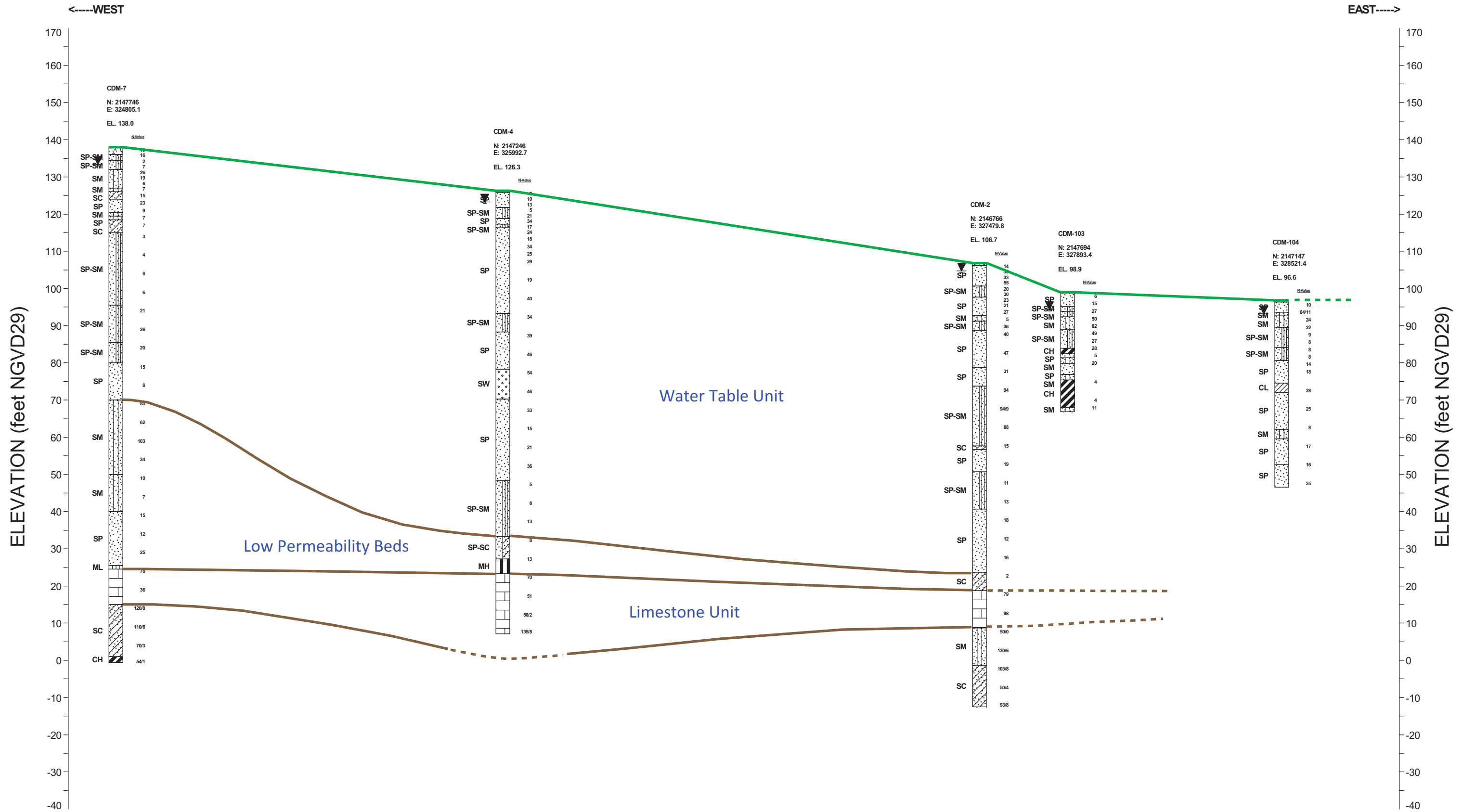
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FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF - PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM_CORP.GDT 02/08/12



FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF - PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM_CORP.GDT 02/08/12



LEGEND

Water Level

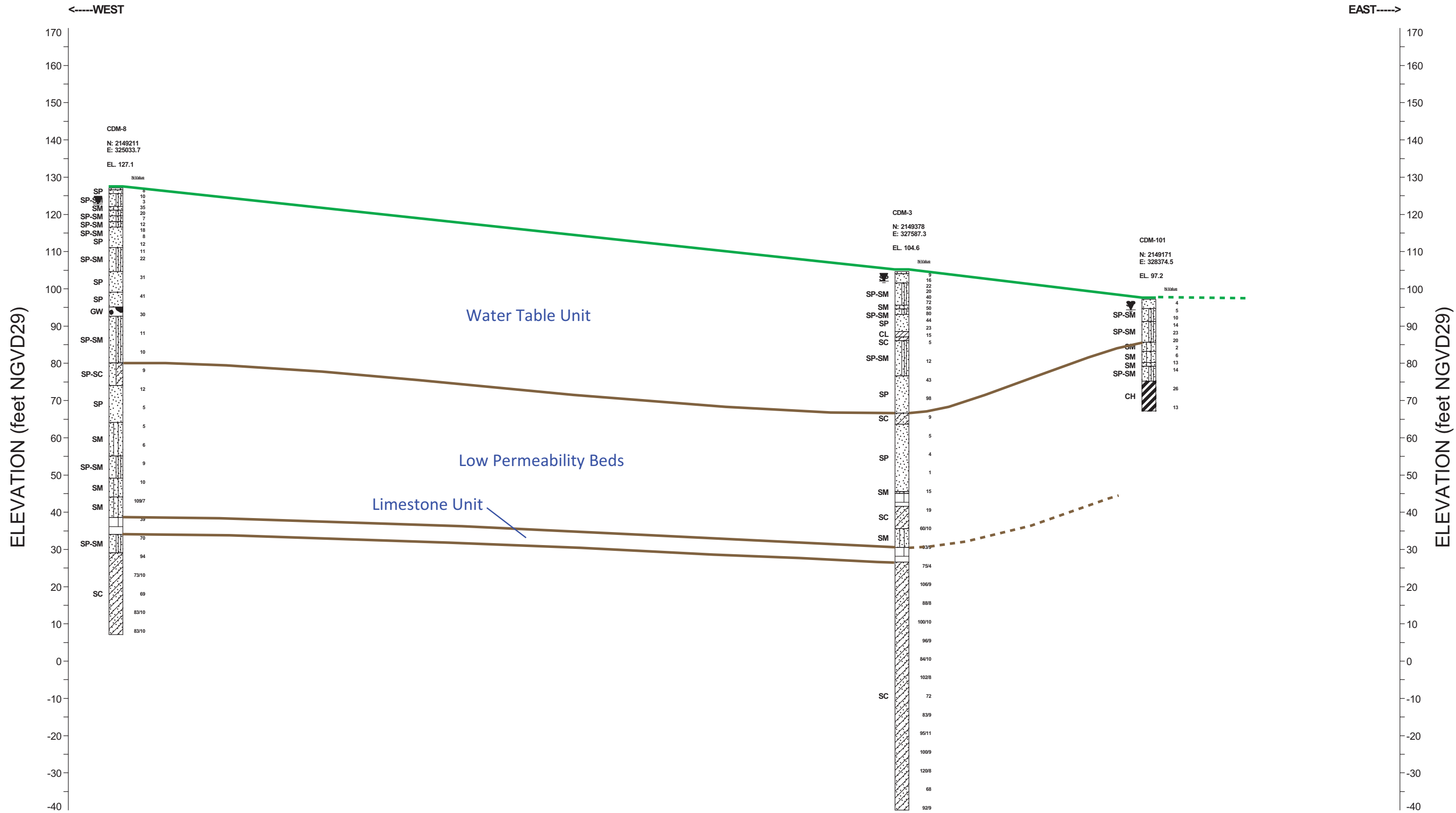
CDM
Smith

0 300
Horizontal Scale (ft.)

City of Jacksonville
Trail Ridge Landfill Expansion

SECTION 4
WEST-EAST
Approximately 2400 feet South of
North Side of Landfill Expansion

FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF - PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM CORP.GDT 02/08/12



LEGEND

USCS Poorly-graded Sand

USCS Poorly-graded Sand with Silt

USCS Silty Sand

USCS High Plasticity Clay

Topsoil

USCS Low Plasticity Clay

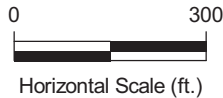
USCS Clayey Sand

USCS Poorly-graded Sand with Clay

Limestone

USCS Well-graded Gravel

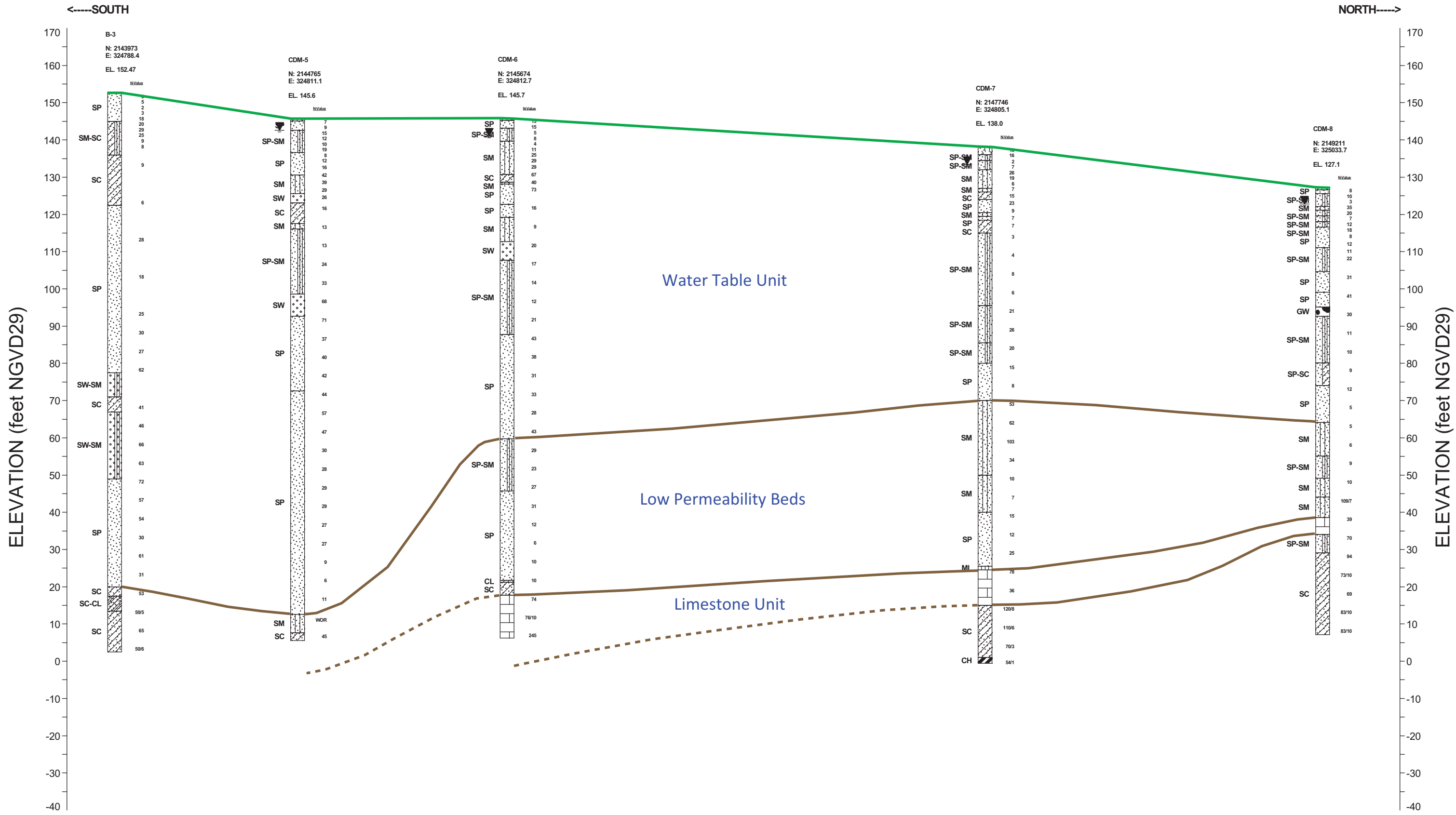
Water Level



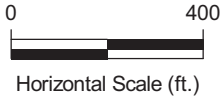
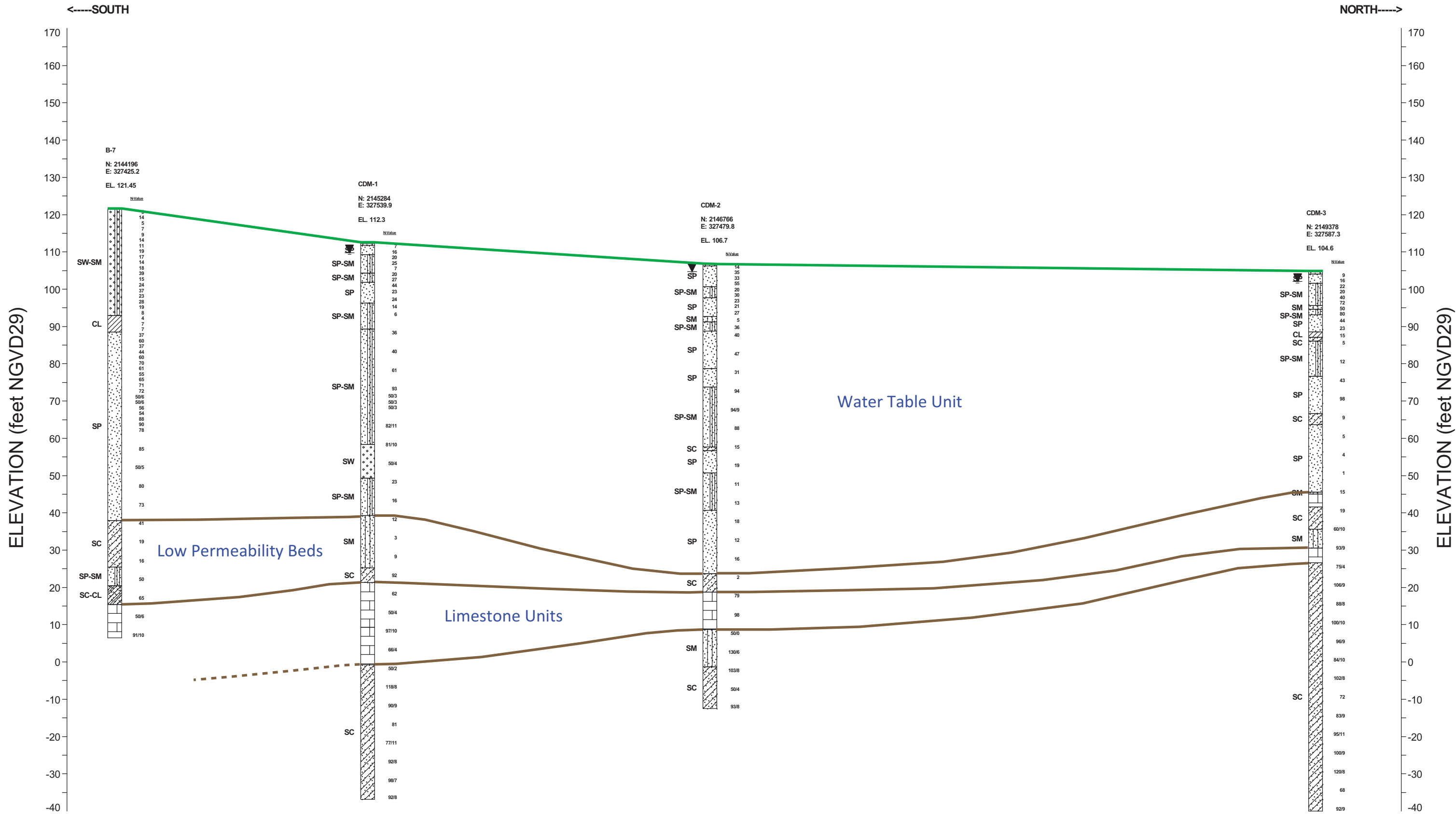
City of Jacksonville
Trail Ridge Landfill Expansion

SECTION 5
WEST-EAST
North Side of Landfill Expansion

FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF - PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM_CORP.GDT 02/08/12



FENCE - TRLF - 11X17 REDUCED SIZE 2012 TRLF-PHASE I AND II BORINGS CONSOLIDATED 1-3-2012.GPJ CDM_CORP.GDT 02/08/12



City of Jacksonville
Trail Ridge Landfill Expansion

SECTION 7
SOUTH-NORTH
East Side of Landfill Expansion

Attachment B

Contamination Screening Results

Trail Ridge Landfill

Jacksonville, FL 32234

Inquiry Number: 3577835.1s

April 19, 2013

EDR DataMap™ Area Study

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

JACKSONVILLE, FL 32234
JACKSONVILLE, FL 32234

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Treatment, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-SQG	RCRA - Small Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA NonGen / NLR	RCRA - Non Generators
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems

EXECUTIVE SUMMARY

ICIS.....	Integrated Compliance Information System
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
RADINFO.....	Radiation Information Database
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System
RMP.....	Risk Management Plans
COAL ASH EPA.....	Coal Combustion Residues Surface Impoundments List
SCRD DRYCLEANERS.....	State Coalition for Remediation of Drycleaners Listing
US HIST CDL.....	National Clandestine Laboratory Register
PCB TRANSFORMER.....	PCB Transformer Registration Database
FEDERAL FACILITY.....	Federal Facility Site Information listing
US FIN ASSUR.....	Financial Assurance Information
EPA WATCH LIST.....	EPA WATCH LIST
PRP.....	Potentially Responsible Parties
2020 COR ACTION.....	2020 Corrective Action Program List
COAL ASH DOE.....	Steam-Electric Plant Operation Data
FEMA UST.....	Underground Storage Tank Listing
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem

STATE AND LOCAL RECORDS

SHWS.....	Florida's State-Funded Action Sites
SWF/LF.....	Solid Waste Facility Database
UIC.....	Underground Injection Wells Database Listing
SWRCY.....	Recycling Centers
LUST.....	Petroleum Contamination Detail Report
UST.....	Storage Tank Facility Information
LAST.....	Leaking Aboveground Storage Tank Listing
AST.....	Storage Tank Facility Information
FI Sites.....	Sites List
SPILLS.....	Oil and Hazardous Materials Incidents
ENG CONTROLS.....	Institutional Controls Registry
INST CONTROL.....	Institutional Controls Registry
VCP.....	Voluntary Cleanup Sites
PRIORITYCLEANERS.....	Priority Ranking List
DRYCLEANERS.....	Drycleaning Facilities
DEDB.....	Ethylene Dibromide Database Results
BROWNFIELDS.....	Brownfield Areas
NPDES.....	Wastewater Facility Regulation Database
AIRS.....	Permitted Facilities Listing
TIER 2.....	Tier 2 Facility Listing
FL Cattle Dip. Vats.....	Cattle Dipping Vats
FF TANKS.....	Federal Facilities Listing

TRIBAL RECORDS

INDIAN RESERV.....	Indian Reservations
INDIAN ODI.....	Report on the Status of Open Dumps on Indian Lands
INDIAN LUST.....	Leaking Underground Storage Tanks on Indian Land
INDIAN UST.....	Underground Storage Tanks on Indian Land
INDIAN VCP.....	Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
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EXECUTIVE SUMMARY

EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners..... EDR Exclusive Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Total Plotted</u>
<u>FEDERAL RECORDS</u>	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	0
RCRA-CESQG	0
RCRA NonGen / NLR	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	0
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
DEBRIS REGION 9	0
ODI	0
US MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	0
RAATS	0
RMP	0
COAL ASH EPA	0
SCRD DRYCLEANERS	0
US HIST CDL	0
PCB TRANSFORMER	0
FEDERAL FACILITY	0
US FIN ASSUR	0
EPA WATCH LIST	0

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Total Plotted</u>
PRP	0
2020 COR ACTION	0
COAL ASH DOE	0
FEMA UST	0
US AIRS	0
 <u>STATE AND LOCAL RECORDS</u>	
SHWS	0
SWF/LF	0
UIC	0
SWRCY	0
LUST	0
UST	0
LAST	0
AST	0
FI Sites	0
SPILLS	0
ENG CONTROLS	0
INST CONTROL	0
VCP	0
PRIORITYCLEANERS	0
DRYCLEANERS	0
DEDB	0
BROWNFIELDS	0
NPDES	0
AIRS	0
TIER 2	0
FL Cattle Dip. Vats	0
FF TANKS	0
 <u>TRIBAL RECORDS</u>	
INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0
 <u>EDR PROPRIETARY RECORDS</u>	
EDR MGP	0
EDR US Hist Auto Stat	0
EDR US Hist Cleaners	0

NOTES:

Sites may be listed in more than one database

MAP FINDINGS

Map ID			EDR ID Number
Direction			
Distance			
Distance (ft.)	Site	Database(s)	EPA ID Number

NO SITES FOUND

Count: 16 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BALDWIN	U004147044	BALDWIN FOOD MART	29 N 301 HWY	32234	UST
BALDWIN	1014470320	WESTINGHOUSE	570 USHY 90	32234	RCRA-CESQG
BALDWIN	1014470483	SPEEDWAY STARVIN MARVIN #95	1050 USHY 301	32234	RCRA-CESQG
BALDWIN	U001349609	ROBINSON D W	USHY 90	32234	UST
BALDWIN	1009221437	EASTERN ELECTRIC CORPORATION	570 USHY 90	32234	MANIFEST
BALDWIN	1009216741	FLORIDA POWER & LIGHT COMPANY - MINING STATION	780 USHY 301	32234	RCRA-CESQG
DUVAL COUNTY	S112206623	JACKSONVILLE SOUTH	7580-1 PHILLIPS HWY		SWRCY
JACKSONVILLE	S112805072	CITY OF JACKSONVILLE TRAIL RIDGE BORROW PIT AREA YARD	RE 0100	32234	SWF/LF
JACKSONVILLE	U003343384	CLAY CNTY SCHOOL BD-CLAY HILL ELEM	RT 15	32234	UST
JACKSONVILLE	S104535210	CROSBY MOTORS INC	39 CLIFFORD LN		SHWS
JACKSONVILLE	S108517191	WINCHESTER RIDGE	NORMANDY BLVD & S OF 103RD ST		NPDES
JACKSONVILLE	A100202443	TAYLOR CONCRETE & SUPPLY INC	PHILLIPS HWY		AST
JACKSONVILLE	1007443951	MORSE AVENUE LANDFILL	118 STREET -MORSE AVENUE		ODI
JACKSONVILLE	U004147181	FL DEPT OF TRANSPORTATION ROW	USHY A1A & ATLANTIC BLVD		UST
MACCLENNY	1000210091	BAKER COUNTY CENTRAL LANDFILL	STEEL BRIDGE RD	32063	CERC-NFRAP
MAXVILLE	1000361269	FLORIDA CROWN PRINTING	RT 15	32234	RCRA NonGen / NLR, FINDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 02/01/2013	Source: EPA
Date Data Arrived at EDR: 03/01/2013	Telephone: N/A
Date Made Active in Reports: 03/13/2013	Last EDR Contact: 04/10/2013
Number of Days to Update: 12	Next Scheduled EDR Contact: 07/22/2013
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 02/01/2013	Source: EPA
Date Data Arrived at EDR: 03/01/2013	Telephone: N/A
Date Made Active in Reports: 03/13/2013	Last EDR Contact: 04/10/2013
Number of Days to Update: 12	Next Scheduled EDR Contact: 07/22/2013
	Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 02/01/2013	Source: EPA
Date Data Arrived at EDR: 03/01/2013	Telephone: N/A
Date Made Active in Reports: 03/13/2013	Last EDR Contact: 04/10/2013
Number of Days to Update: 12	Next Scheduled EDR Contact: 07/22/2013
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/04/2013	Source: EPA
Date Data Arrived at EDR: 03/01/2013	Telephone: 703-412-9810
Date Made Active in Reports: 03/13/2013	Last EDR Contact: 04/05/2013
Number of Days to Update: 12	Next Scheduled EDR Contact: 06/10/2013
	Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/05/2013	Source: EPA
Date Data Arrived at EDR: 03/01/2013	Telephone: 703-412-9810
Date Made Active in Reports: 03/13/2013	Last EDR Contact: 04/05/2013
Number of Days to Update: 12	Next Scheduled EDR Contact: 03/11/2013
	Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/16/2012	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/26/2012	Telephone: 202-564-6023
Date Made Active in Reports: 06/14/2012	Last EDR Contact: 04/10/2013
Number of Days to Update: 80	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 02/12/2013	Source: EPA
Date Data Arrived at EDR: 02/21/2013	Telephone: 800-424-9346
Date Made Active in Reports: 02/27/2013	Last EDR Contact: 04/03/2013
Number of Days to Update: 6	Next Scheduled EDR Contact: 07/15/2013
	Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 04/03/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 04/03/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 04/03/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 04/03/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Varies

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 02/12/2013
Date Data Arrived at EDR: 02/15/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 12

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 04/03/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/19/2012	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/26/2012	Telephone: 703-603-0695
Date Made Active in Reports: 02/27/2013	Last EDR Contact: 03/11/2013
Number of Days to Update: 63	Next Scheduled EDR Contact: 06/24/2013
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/19/2012	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/26/2012	Telephone: 703-603-0695
Date Made Active in Reports: 02/27/2013	Last EDR Contact: 03/11/2013
Number of Days to Update: 63	Next Scheduled EDR Contact: 06/24/2013
	Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2012	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/17/2013	Telephone: 202-267-2180
Date Made Active in Reports: 02/15/2013	Last EDR Contact: 04/02/2013
Number of Days to Update: 29	Next Scheduled EDR Contact: 07/15/2013
	Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2012	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 01/03/2013	Telephone: 202-366-4555
Date Made Active in Reports: 02/27/2013	Last EDR Contact: 04/02/2013
Number of Days to Update: 55	Next Scheduled EDR Contact: 07/15/2013
	Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012	Source: Department of Transportation, Office of Pipeline Safety
Date Data Arrived at EDR: 08/07/2012	Telephone: 202-366-4595
Date Made Active in Reports: 09/18/2012	Last EDR Contact: 02/05/2013
Number of Days to Update: 42	Next Scheduled EDR Contact: 05/20/2013
	Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 11/14/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 66

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/04/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/10/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/26/2013
Next Scheduled EDR Contact: 07/08/2013
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/19/2013
Next Scheduled EDR Contact: 07/29/2013
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 01/15/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/01/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/18/2012	Source: EPA
Date Data Arrived at EDR: 03/13/2013	Telephone: 703-416-0223
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 03/13/2013
Number of Days to Update: 30	Next Scheduled EDR Contact: 06/24/2013
	Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010	Source: Department of Energy
Date Data Arrived at EDR: 10/07/2011	Telephone: 505-845-0011
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 02/25/2013
Number of Days to Update: 146	Next Scheduled EDR Contact: 06/10/2013
	Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009	Source: EPA, Region 9
Date Data Arrived at EDR: 05/07/2009	Telephone: 415-947-4219
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 01/28/2013
Number of Days to Update: 137	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: No Update Planned

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011	Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 09/08/2011	Telephone: 303-231-5959
Date Made Active in Reports: 09/29/2011	Last EDR Contact: 03/06/2013
Number of Days to Update: 21	Next Scheduled EDR Contact: 06/17/2013
	Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009	Source: EPA
Date Data Arrived at EDR: 09/01/2011	Telephone: 202-566-0250
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 02/26/2013
Number of Days to Update: 131	Next Scheduled EDR Contact: 06/10/2013
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006	Source: EPA
Date Data Arrived at EDR: 09/29/2010	Telephone: 202-260-5521
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 03/28/2013
Number of Days to Update: 64	Next Scheduled EDR Contact: 07/08/2013
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 02/25/2013
Number of Days to Update: 25	Next Scheduled EDR Contact: 06/10/2013
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 02/25/2013
Number of Days to Update: 25	Next Scheduled EDR Contact: 06/10/2013
	Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2007
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/01/2007	Telephone: 202-564-2501
Date Made Active in Reports: 04/10/2007	Last EDR Contact: 12/17/2008
Number of Days to Update: 40	Next Scheduled EDR Contact: 03/17/2008
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009	Source: EPA
Date Data Arrived at EDR: 12/10/2010	Telephone: 202-564-4203
Date Made Active in Reports: 02/25/2011	Last EDR Contact: 01/28/2013
Number of Days to Update: 77	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/10/2011	Telephone: 202-564-5088
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 04/15/2013
Number of Days to Update: 61	Next Scheduled EDR Contact: 07/29/2013
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010	Source: EPA
Date Data Arrived at EDR: 11/10/2010	Telephone: 202-566-0500
Date Made Active in Reports: 02/16/2011	Last EDR Contact: 04/19/2013
Number of Days to Update: 98	Next Scheduled EDR Contact: 07/29/2013
	Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 07/15/2011	Telephone: 301-415-7169
Date Made Active in Reports: 09/13/2011	Last EDR Contact: 03/11/2013
Number of Days to Update: 60	Next Scheduled EDR Contact: 06/24/2013
	Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/08/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/09/2013	Telephone: 202-343-9775
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 04/11/2013
Number of Days to Update: 93	Next Scheduled EDR Contact: 07/22/2013
	Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/23/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 79

Source: EPA
Telephone: (404) 562-9900
Last EDR Contact: 03/12/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Biennially

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/15/2013
Next Scheduled EDR Contact: 06/24/2013
Data Release Frequency: Varies

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 10/09/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/10/2013
Next Scheduled EDR Contact: 07/22/2013
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/18/2013
Next Scheduled EDR Contact: 07/29/2013
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/18/2013
Next Scheduled EDR Contact: 07/29/2013
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/01/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 11/20/2012
Date Data Arrived at EDR: 11/30/2012
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 89

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/19/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/12/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Quarterly

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 11/15/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 91

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 04/01/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Annually

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 11/15/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 02/15/2013
Number of Days to Update: 91

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 04/01/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/15/2013
Next Scheduled EDR Contact: 05/27/2013
Data Release Frequency: Varies

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 12/02/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 04/04/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE AND LOCAL RECORDS

SHWS: Florida's State-Funded Action Sites

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: Department of Environmental Protection
Telephone: 850-488-0190
Last EDR Contact: 02/26/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Semi-Annually

SWF/LF: Solid Waste Facility Database

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 01/21/2013
Date Data Arrived at EDR: 01/22/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 50

Source: Department of Environmental Protection
Telephone: 850-922-7121
Last EDR Contact: 01/22/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Semi-Annually

UIC: Underground Injection Wells Database Listing

A listing of Class I wells. Class I wells are used to inject hazardous waste, nonhazardous waste, or municipal waste below the lowermost USDW.

Date of Government Version: 01/30/2013
Date Data Arrived at EDR: 01/31/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 41

Source: Department of Environmental Protection
Telephone: 850-245-8655
Last EDR Contact: 01/28/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Varies

SWRCY: Recycling Centers

A listing of recycling centers located in the state of Florida.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 11/13/2012
Date Made Active in Reports: 12/05/2012
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: 850-245-8718
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Varies

LUST: Petroleum Contamination Detail Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 02/05/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: 850-245-8839
Last EDR Contact: 02/05/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

UST: Storage Tank Facility Information

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 02/05/2013
Date Made Active in Reports: 03/08/2013
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 850-245-8839
Last EDR Contact: 02/05/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

LAST: Leaking Aboveground Storage Tank Listing

A statewide listing of leaking aboveground storage tank site locations.

Date of Government Version: 02/04/2013
Date Data Arrived at EDR: 02/05/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: 850-245-8799
Last EDR Contact: 02/04/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Varies

AST: Storage Tank Facility Information

Registered Aboveground Storage Tanks.

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 02/05/2013
Date Made Active in Reports: 03/08/2013
Number of Days to Update: 31

Source: Department of Environmental Protection
Telephone: 850-245-8839
Last EDR Contact: 02/05/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Quarterly

FL SITES: Sites List

This summary status report was developed from a number of lists including the Eckhardt list, the Moffit list, the EPA Hazardous Waste Sites list, EPA's Emergency & Remedial Response information System list (RCRA Section 3012) & existing department lists such as the obsolete uncontrolled Hazardous Waste Sites list. This list is no longer updated.

Date of Government Version: 12/31/1989
Date Data Arrived at EDR: 05/09/1994
Date Made Active in Reports: 08/04/1994
Number of Days to Update: 87

Source: Department of Environmental Protection
Telephone: 850-245-8705
Last EDR Contact: 03/24/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SPILLS: Oil and Hazardous Materials Incidents

Statewide oil and hazardous materials inland incidents.

Date of Government Version: 01/15/2013
Date Data Arrived at EDR: 01/16/2013
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 9

Source: Department of Environmental Protection
Telephone: 850-245-2010
Last EDR Contact: 04/15/2013
Next Scheduled EDR Contact: 07/29/2013
Data Release Frequency: Semi-Annually

ENG CONTROLS: Institutional Controls Registry

The registry is a database of all contaminated sites in the state of Florida which are subject to engineering controls. Engineering Controls encompass a variety of engineered remedies to contain and/or reduce contamination, and/or physical barriers intended to limit access to property. ECs include fences, signs, guards, landfill caps, provision of potable water, slurry walls, sheet pile (vertical caps), pumping and treatment of groundwater, monitoring wells, and vapor extraction systems.

Date of Government Version: 04/01/2013
Date Data Arrived at EDR: 04/09/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 10

Source: Department of Environmental Protection
Telephone: 850-245-8927
Last EDR Contact: 04/09/2013
Next Scheduled EDR Contact: 07/22/2013
Data Release Frequency: Semi-Annually

Inst Control: Institutional Controls Registry

The registry is a database of all contaminated sites in the state of Florida which are subject to institutional and engineering controls.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2013
Date Data Arrived at EDR: 04/09/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 10

Source: Department of Environmental Protection
Telephone: 850-245-8927
Last EDR Contact: 04/09/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Sites

Listing of closed and active voluntary cleanup sites.

Date of Government Version: 03/11/2013
Date Data Arrived at EDR: 03/12/2013
Date Made Active in Reports: 04/18/2013
Number of Days to Update: 37

Source: Department of Environmental Protection
Telephone: 850-245-8705
Last EDR Contact: 03/11/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Varies

PRIORITYCLEANERS: Priority Ranking List

The Florida Legislature has established a state-funded program to cleanup properties that are contaminated as a result of the operations of a drycleaning facility.

Date of Government Version: 01/03/2013
Date Data Arrived at EDR: 02/19/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: 850-245-8927
Last EDR Contact: 02/19/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Varies

DRYCLEANERS: Drycleaning Facilities

The Drycleaners database, maintained by the Department of Environmental Protection, provides information about permitted dry cleaner facilities.

Date of Government Version: 01/25/2013
Date Data Arrived at EDR: 01/29/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 43

Source: Department of Environmental Protection
Telephone: 850-245-8927
Last EDR Contact: 01/29/2013
Next Scheduled EDR Contact: 05/13/2013
Data Release Frequency: Semi-Annually

DEDB: Ethylene Dibromide Database Results

Ethylene dibromide (EDB), a soil fumigant, that has been detected in drinking water wells. The amount found exceeds the maximum contaminant level as stated in Chapter 62-550 or 520. It is a potential threat to public health when present in drinking water.

Date of Government Version: 01/07/2013
Date Data Arrived at EDR: 01/08/2013
Date Made Active in Reports: 01/25/2013
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: 850-245-8335
Last EDR Contact: 04/08/2013
Next Scheduled EDR Contact: 07/08/2013
Data Release Frequency: Varies

BROWNFIELDS: Brownfield Areas

Brownfields are abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. Florida's Brownfields Redevelopment Act primary goals are to reduce health and environmental hazards on existing commercial and industrial sites that are abandoned or underused due to these hazards and create financial and regulatory incentives to encourage voluntary cleanup and redevelopment of sites.

Date of Government Version: 04/01/2013
Date Data Arrived at EDR: 04/09/2013
Date Made Active in Reports: 04/18/2013
Number of Days to Update: 9

Source: Department of Environmental Protection
Telephone: 850-245-8927
Last EDR Contact: 04/09/2013
Next Scheduled EDR Contact: 07/22/2013
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WASTEWATER: Wastewater Facility Regulation Database Domestic and industrial wastewater facilities.

Date of Government Version: 02/04/2013	Source: Department of Environmental Protection
Date Data Arrived at EDR: 02/12/2013	Telephone: 850-245-8600
Date Made Active in Reports: 03/15/2013	Last EDR Contact: 02/12/2013
Number of Days to Update: 31	Next Scheduled EDR Contact: 05/27/2013
	Data Release Frequency: Quarterly

AIRS: Permitted Facilities Listing A listing of Air Resources Management permits.

Date of Government Version: 02/04/2013	Source: Department of Environmental Protection
Date Data Arrived at EDR: 02/05/2013	Telephone: 850-921-9558
Date Made Active in Reports: 03/13/2013	Last EDR Contact: 02/04/2013
Number of Days to Update: 36	Next Scheduled EDR Contact: 05/20/2013
	Data Release Frequency: Varies

FL Cattle Dip. Vats: Cattle Dipping Vats

From the 1910's through the 1950's, these vats were filled with an arsenic solution for the control and eradication of the cattle fever tick. Other pesticides, such as DDT, were also widely used. By State law, all cattle, horses, mules, goats, and other susceptible animals were required to be dipped every 14 days. Under certain circumstances, the arsenic and other pesticides remaining at the site may present an environmental or public health hazard.

Date of Government Version: 02/04/2005	Source: Department of Environmental Protection
Date Data Arrived at EDR: 06/29/2007	Telephone: 850-488-3601
Date Made Active in Reports: 07/11/2007	Last EDR Contact: 04/15/2013
Number of Days to Update: 12	Next Scheduled EDR Contact: 07/29/2013
	Data Release Frequency: No Update Planned

TIER 2: Tier 2 Facility Listing

A listing of facilities which store or manufacture hazardous materials that submit a chemical inventory report.

Date of Government Version: 12/31/2010	Source: Department of Environmental Protection
Date Data Arrived at EDR: 03/19/2012	Telephone: 850-413-9970
Date Made Active in Reports: 05/23/2012	Last EDR Contact: 04/01/2013
Number of Days to Update: 65	Next Scheduled EDR Contact: 07/01/2013
	Data Release Frequency: Varies

FF TANKS: Federal Facilities Listing

A listing of federal facilities with storage tanks.

Date of Government Version: 04/08/2013	Source: Department of Environmental Protection
Date Data Arrived at EDR: 04/09/2013	Telephone: 850-245-8250
Date Made Active in Reports: 04/18/2013	Last EDR Contact: 04/01/2013
Number of Days to Update: 9	Next Scheduled EDR Contact: 07/15/2013
	Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 12/08/2006	Telephone: 202-208-3710
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 04/19/2013
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/29/2013
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998

Date Data Arrived at EDR: 12/03/2007

Date Made Active in Reports: 01/24/2008

Number of Days to Update: 52

Source: Environmental Protection Agency

Telephone: 703-308-8245

Last EDR Contact: 02/05/2013

Next Scheduled EDR Contact: 05/20/2013

Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012

Date Data Arrived at EDR: 08/28/2012

Date Made Active in Reports: 10/16/2012

Number of Days to Update: 49

Source: EPA Region 8

Telephone: 303-312-6271

Last EDR Contact: 03/21/2013

Next Scheduled EDR Contact: 05/13/2013

Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 12/31/2012

Date Data Arrived at EDR: 02/28/2013

Date Made Active in Reports: 04/12/2013

Number of Days to Update: 43

Source: EPA Region 7

Telephone: 913-551-7003

Last EDR Contact: 01/28/2013

Next Scheduled EDR Contact: 05/13/2013

Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/06/2013

Date Data Arrived at EDR: 02/08/2013

Date Made Active in Reports: 04/12/2013

Number of Days to Update: 63

Source: EPA Region 4

Telephone: 404-562-8677

Last EDR Contact: 01/28/2013

Next Scheduled EDR Contact: 05/13/2013

Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 09/28/2012

Date Data Arrived at EDR: 11/01/2012

Date Made Active in Reports: 04/12/2013

Number of Days to Update: 162

Source: EPA Region 1

Telephone: 617-918-1313

Last EDR Contact: 02/01/2013

Next Scheduled EDR Contact: 05/13/2013

Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013

Date Data Arrived at EDR: 03/01/2013

Date Made Active in Reports: 04/12/2013

Number of Days to Update: 42

Source: Environmental Protection Agency

Telephone: 415-972-3372

Last EDR Contact: 01/28/2013

Next Scheduled EDR Contact: 05/13/2013

Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/05/2013

Date Data Arrived at EDR: 02/06/2013

Date Made Active in Reports: 04/12/2013

Number of Days to Update: 65

Source: EPA Region 10

Telephone: 206-553-2857

Last EDR Contact: 10/30/2012

Next Scheduled EDR Contact: 05/13/2013

Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011	Source: EPA Region 6
Date Data Arrived at EDR: 09/13/2011	Telephone: 214-665-6597
Date Made Active in Reports: 11/11/2011	Last EDR Contact: 03/21/2013
Number of Days to Update: 59	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 09/28/2012	Source: EPA, Region 1
Date Data Arrived at EDR: 11/07/2012	Telephone: 617-918-1313
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 02/01/2013
Number of Days to Update: 156	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/06/2013	Source: EPA Region 4
Date Data Arrived at EDR: 02/08/2013	Telephone: 404-562-9424
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/28/2013
Number of Days to Update: 63	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/02/2012	Source: EPA Region 5
Date Data Arrived at EDR: 08/03/2012	Telephone: 312-886-6136
Date Made Active in Reports: 11/05/2012	Last EDR Contact: 03/19/2013
Number of Days to Update: 94	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011	Source: EPA Region 6
Date Data Arrived at EDR: 05/11/2011	Telephone: 214-665-7591
Date Made Active in Reports: 06/14/2011	Last EDR Contact: 03/21/2013
Number of Days to Update: 34	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 12/31/2012	Source: EPA Region 7
Date Data Arrived at EDR: 02/28/2013	Telephone: 913-551-7003
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/28/2013
Number of Days to Update: 43	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/27/2012	Source: EPA Region 8
Date Data Arrived at EDR: 08/28/2012	Telephone: 303-312-6137
Date Made Active in Reports: 10/16/2012	Last EDR Contact: 01/28/2013
Number of Days to Update: 49	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/21/2013	Source: EPA Region 9
Date Data Arrived at EDR: 02/26/2013	Telephone: 415-972-3368
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/28/2013
Number of Days to Update: 45	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013	Source: EPA Region 10
Date Data Arrived at EDR: 02/06/2013	Telephone: 206-553-2857
Date Made Active in Reports: 04/12/2013	Last EDR Contact: 01/28/2013
Number of Days to Update: 65	Next Scheduled EDR Contact: 05/13/2013
	Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/28/2012	Source: EPA, Region 1
Date Data Arrived at EDR: 10/02/2012	Telephone: 617-918-1102
Date Made Active in Reports: 10/16/2012	Last EDR Contact: 04/05/2013
Number of Days to Update: 14	Next Scheduled EDR Contact: 07/15/2013
	Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALACHUA COUNTY:

Facility List

List of all regulated facilities in Alachua County.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/30/2012
Number of Days to Update: 36

Source: Alachua County Environmental Protection Department
Telephone: 352-264-6800
Last EDR Contact: 04/01/2013
Next Scheduled EDR Contact: 07/15/2013
Data Release Frequency: Annually

BROWARD COUNTY:

Aboveground Storage Tanks

Aboveground storage tank locations in Broward County.

Date of Government Version: 03/14/2012
Date Data Arrived at EDR: 03/15/2012
Date Made Active in Reports: 04/18/2012
Number of Days to Update: 34

Source: Broward County Environmental Protection Department
Telephone: 954-818-7509
Last EDR Contact: 12/07/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: Varies

Underground Storage Tanks

All known regulated storage tanks within Broward County, including those tanks that have been closed

Date of Government Version: 03/14/2012
Date Data Arrived at EDR: 03/15/2012
Date Made Active in Reports: 04/18/2012
Number of Days to Update: 34

Source: Broward County Environmental Protection Department
Telephone: 954-818-7509
Last EDR Contact: 12/07/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: Annually

HILLSBOROUGH COUNTY:

HILLSBOROUGH CO LF

Hillsborough county landfill sites.

Date of Government Version: 06/01/2010
Date Data Arrived at EDR: 01/18/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 34

Source: Hillsborough County Environmental Protection Commission
Telephone: 813-627-2600
Last EDR Contact: 04/15/2013
Next Scheduled EDR Contact: 07/29/2013
Data Release Frequency: Varies

MIAMI-DADE COUNTY:

Air Permit Sites

Facilities that release or have a potential to release pollutants.

Date of Government Version: 03/04/2013
Date Data Arrived at EDR: 03/05/2013
Date Made Active in Reports: 04/18/2013
Number of Days to Update: 44

Source: Department of Environmental Resources Management
Telephone: 305-372-6755
Last EDR Contact: 03/05/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Semi-Annually

Marine Facilities Operating Permit

What is this permit used for? Miami-Dade County Ordinance 89-104 and Section 24-18 of the Code of Miami-Dade County require the following types of marine facilities to obtain annual operating permits from DERM: All recreational boat docking facilities with ten (10) or more boat slips, moorings, davit spaces, and vessel tie-up spaces. All boat storage facilities contiguous to tidal waters in Miami-Dade County with ten (10) or more dry storage spaces including boatyards and boat manufacturing facilities.

Date of Government Version: 03/04/2013
Date Data Arrived at EDR: 03/05/2013
Date Made Active in Reports: 04/18/2013
Number of Days to Update: 44

Source: DERM
Telephone: 305-372-3576
Last EDR Contact: 03/05/2013
Next Scheduled EDR Contact: 06/17/2013
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Maimi River Enforcement

The Miami River Enforcement database files were created for facilities and in some instances vessels that were inspected by a workgroup within the Department that was identified as the Miami River Enforcement Group. The files do not all necessarily reflect enforcement cases and some were created for locations that were permitted by other Sections within the Department.

Date of Government Version: 03/04/2013	Source: DERM
Date Data Arrived at EDR: 03/05/2013	Telephone: 305-372-3576
Date Made Active in Reports: 04/18/2013	Last EDR Contact: 03/05/2013
Number of Days to Update: 44	Next Scheduled EDR Contact: 06/17/2013
	Data Release Frequency: Quarterly

Industrial Waste Permit Sites

Facilities that either generate more than 25,000 of wastewater per day to sanitary sewers or are pre-defined by EPA.

Date of Government Version: 03/04/2013	Source: Department of Environmental Resources Management
Date Data Arrived at EDR: 03/05/2013	Telephone: 305-372-6700
Date Made Active in Reports: 04/18/2013	Last EDR Contact: 03/05/2013
Number of Days to Update: 44	Next Scheduled EDR Contact: 06/17/2013
	Data Release Frequency: Semi-Annually

Enforcement Case Tracking System Sites

Enforcement cases monitored by the Dade County Department of Environmental Resources Management.

Date of Government Version: 03/04/2013	Source: Department of Environmental Resources Management
Date Data Arrived at EDR: 03/05/2013	Telephone: 305-372-6755
Date Made Active in Reports: 04/18/2013	Last EDR Contact: 03/05/2013
Number of Days to Update: 44	Next Scheduled EDR Contact: 06/17/2013
	Data Release Frequency: Semi-Annually

Fuel Spills Cases

DERM documents fuel spills of sites that are not in a state program.

Date of Government Version: 01/08/2009	Source: Department of Environmental Resources Management
Date Data Arrived at EDR: 01/13/2009	Telephone: 305-372-6755
Date Made Active in Reports: 02/05/2009	Last EDR Contact: 03/05/2013
Number of Days to Update: 23	Next Scheduled EDR Contact: 06/17/2013
	Data Release Frequency: Semi-Annually

Storage Tanks

A listing of aboveground and underground storage tank site locations.

Date of Government Version: 03/04/2013	Source: Department of Environmental Resource Management
Date Data Arrived at EDR: 03/05/2013	Telephone: 305-372-6700
Date Made Active in Reports: 04/18/2013	Last EDR Contact: 03/05/2013
Number of Days to Update: 44	Next Scheduled EDR Contact: 06/17/2013
	Data Release Frequency: Semi-Annually

PALM BEACH COUNTY:

PALM BEACH CO. LF

Palm Beach County Inventory of Solid Waste Sites.

Date of Government Version: 09/01/2011	Source: Palm Beach County Solid Waste Authority
Date Data Arrived at EDR: 09/20/2011	Telephone: 561-640-4000
Date Made Active in Reports: 10/10/2011	Last EDR Contact: 03/18/2013
Number of Days to Update: 20	Next Scheduled EDR Contact: 07/01/2013
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/18/2013
Date Data Arrived at EDR: 02/18/2013
Date Made Active in Reports: 03/21/2013
Number of Days to Update: 31

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/18/2013
Next Scheduled EDR Contact: 06/03/2013
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/19/2013
Next Scheduled EDR Contact: 07/29/2013
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 02/07/2013
Date Made Active in Reports: 03/15/2013
Number of Days to Update: 36

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/07/2013
Next Scheduled EDR Contact: 05/20/2013
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/23/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 57

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/21/2013
Next Scheduled EDR Contact: 05/06/2013
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 39

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/25/2013
Next Scheduled EDR Contact: 06/10/2013
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/27/2012
Number of Days to Update: 70

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/18/2013
Next Scheduled EDR Contact: 07/01/2013
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Department of Children & Families

Source: Provider Information

Telephone: 850-488-4900

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

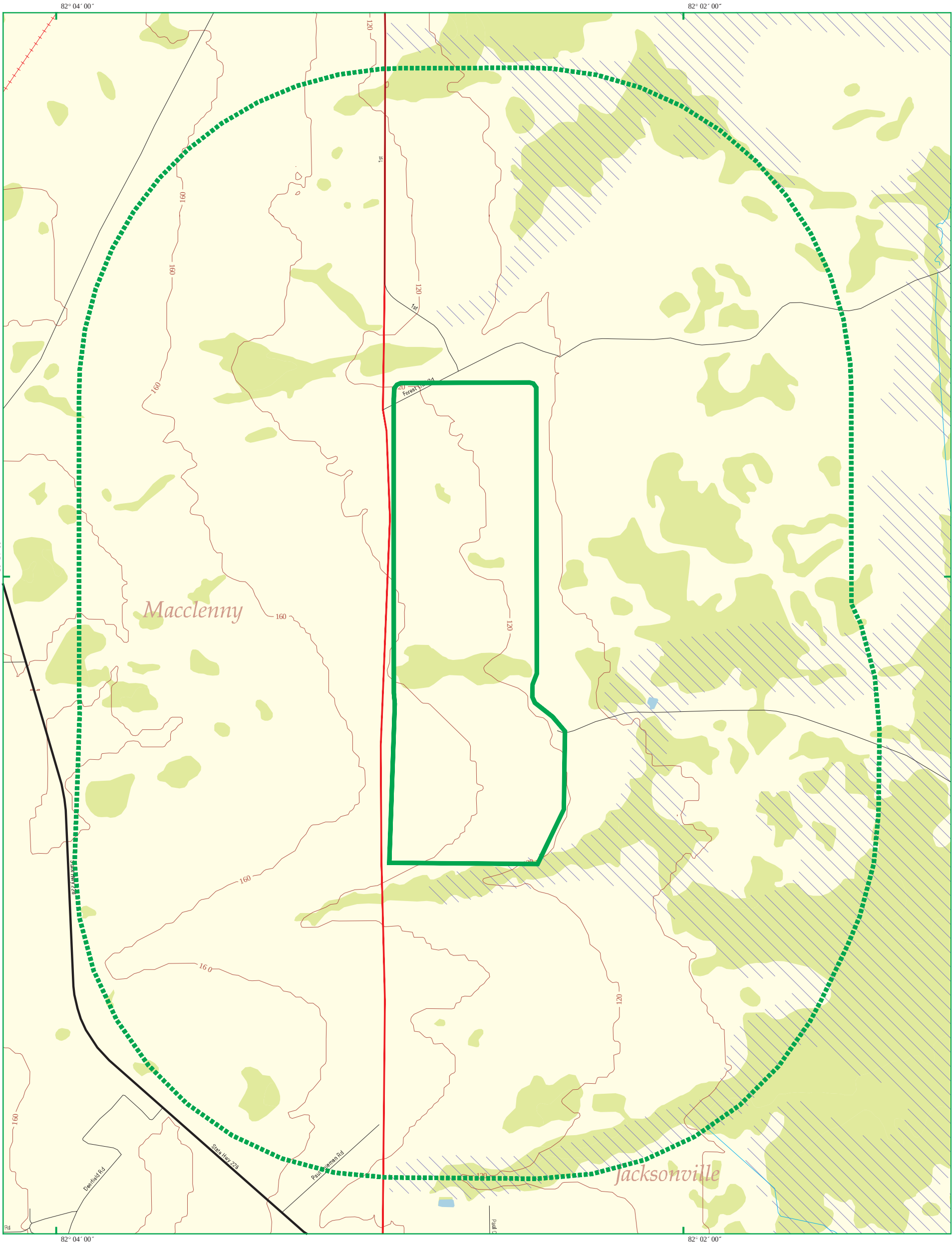
State Wetlands Data: Wetlands Inventory

Source: Department of Environmental Protection

Telephone: 850-245-8238

STREET AND ADDRESS INFORMATION

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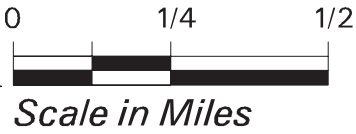
EDR DataMap® - Area Study

Trail Ridge Landfill



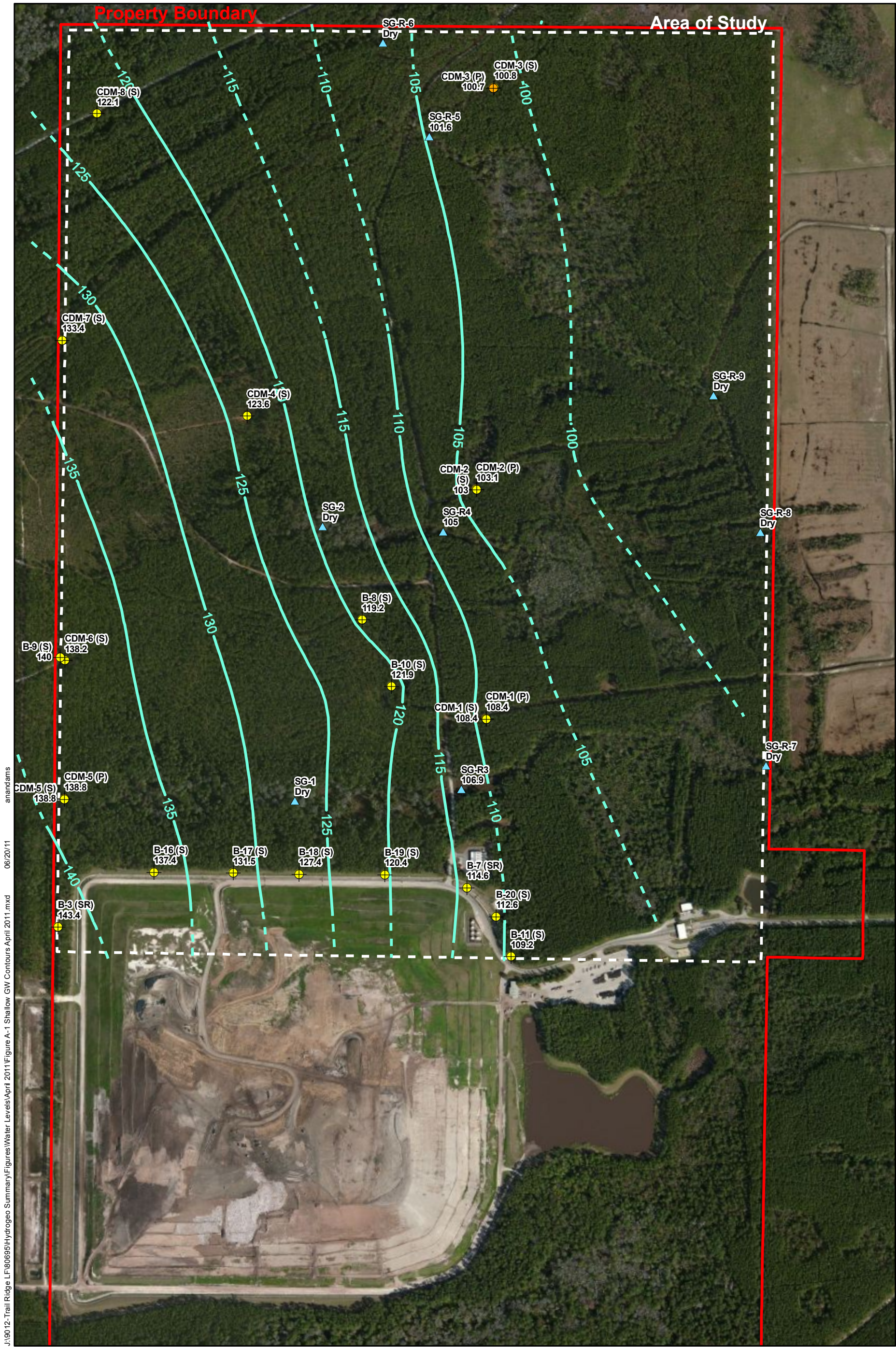
Jacksonville, FL

- | | | | |
|--|-------------|---------------|----------------------------|
| Listed Sites | Roads | Contour Lines | Water |
| Earthquake Epicenters (Richter 5 or greater) | Major Roads | Pipelines | Superfund Sites |
| Sinkholes | Waterways | Powerlines | Federal DOD Sites |
| Search Boundary | Railroads | Fault Lines | Indian Reservations BIA |
| | | | Florida Brownfields |
| | | | 100-Yr Flood Zones |
| | | | National Wetland Inventory |



Attachment C

**Water Level Contours (Shallow, Intermediate, and
Deep Surficial Aquifer Units) for Quarters 1 through 4
(April 2011 – March 2013)**



J:\9012-Trail Ridge LP\80695\Hydrogeo Summary\Figures\Water Levels\April 2011\Figure A-1 Shallow GW Contours April 2011.mxd 06/20/11 anadams

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Shallow Piezometer and Groundwater Elevation
- Shallow Monitoring Well and Groundwater Elevation
- Staff Gauge and Surface Water Elevation

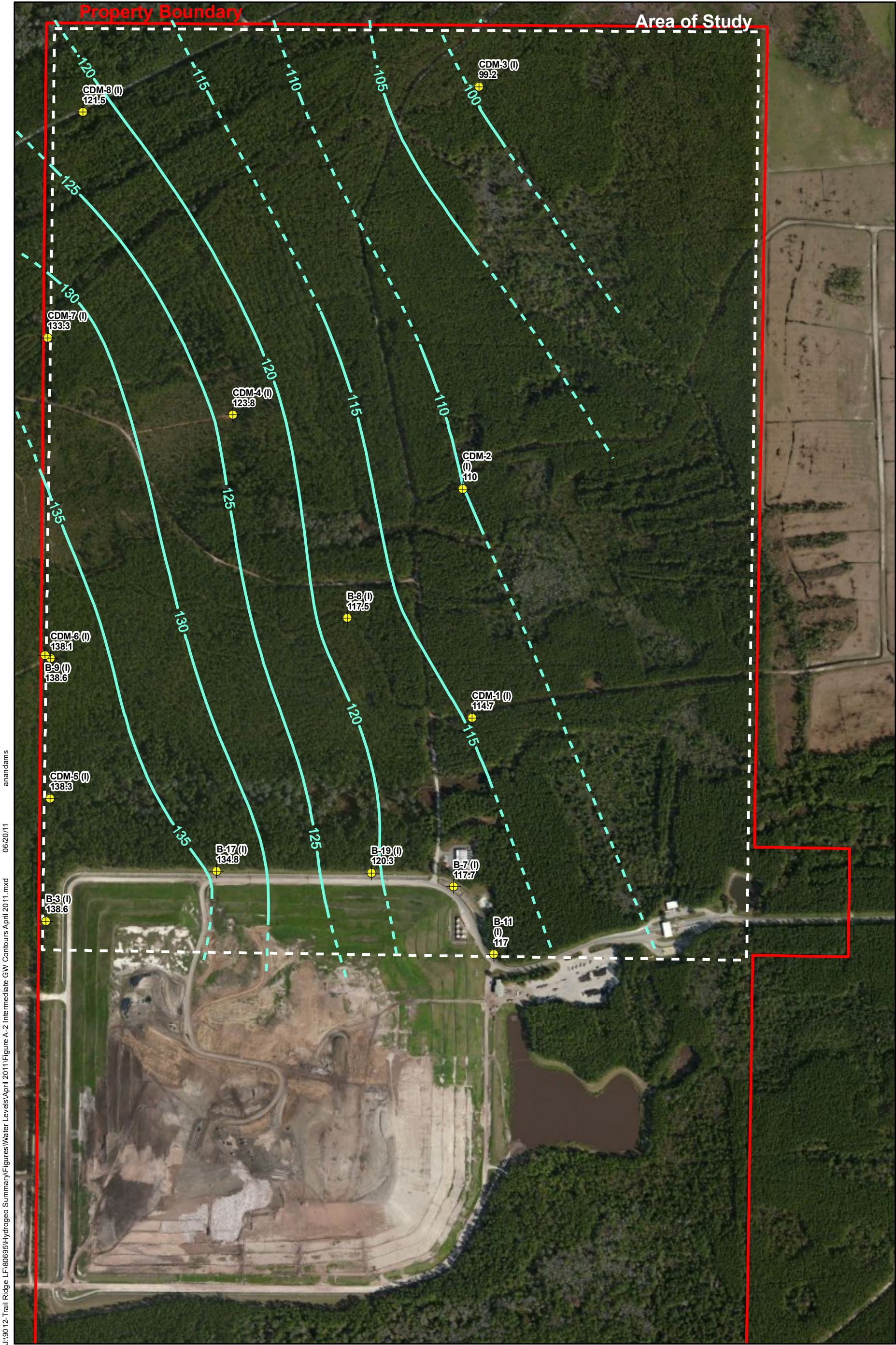
Note: 1. Water level measurements taken on April 25-26, 2011.



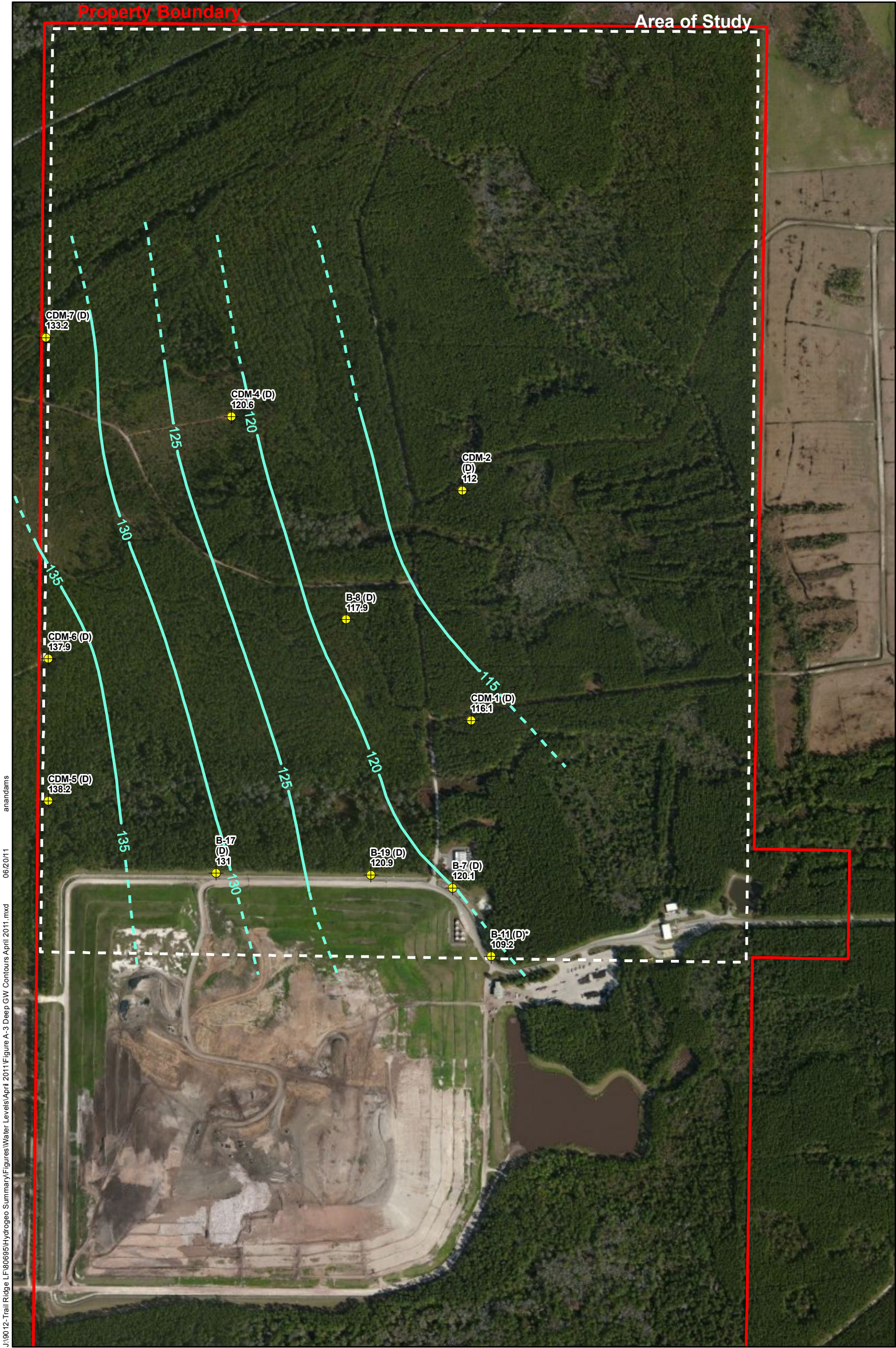
0 300 600 Feet



Figure C1
Shallow Surficial Groundwater Elevation Contours (April 2011)
Trail Ridge Landfill
Duval County, Florida



J:\9012-Trail Ridge LF180895\Hydrogeo Summary\Figures\Water Levels\April 2011\Figure A-2 Intermediate GW Contours April 2011.mxd 06/20/11 anandams



J:\9012-Trail Ridge LF\80695\Hydrogeo Summary\Figures\Water Levels\April 2011\Figure A-3 Deep GW Contours April 2011.mxd 06/20/11 anandams

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Deep Monitoring Well and Groundwater Elevation

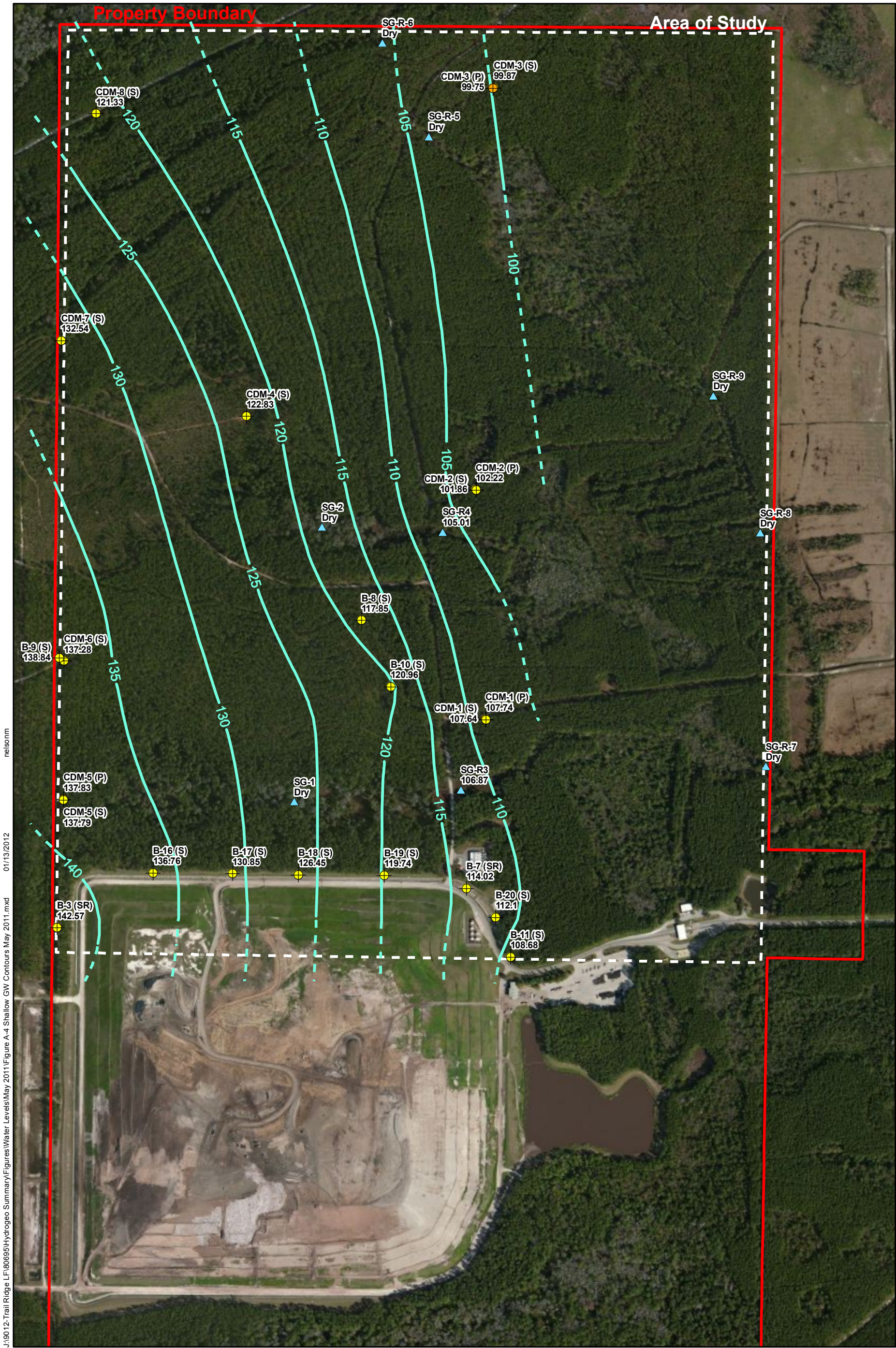
Note:

- Water level measurements taken on April 25-26, 2011.

* Measurement from B-11 (D) was not used for contour generation.

Figure C3

Deep Surficial Groundwater Elevation Contours (April 2011)
Trail Ridge Landfill
Duval County, Florida



J:\19012-Trial Ridge LF180695\Hydrogeo Summary\Figures\Water Levels\May 2011\Figure A-4 Shallow GW Contours May 2011.mxd 01/13/2012 nelsonm

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Shallow Piezometer and Groundwater Elevation
- Shallow Monitoring Well and Groundwater Elevation
- Staff Gauge and Surface Water Elevation

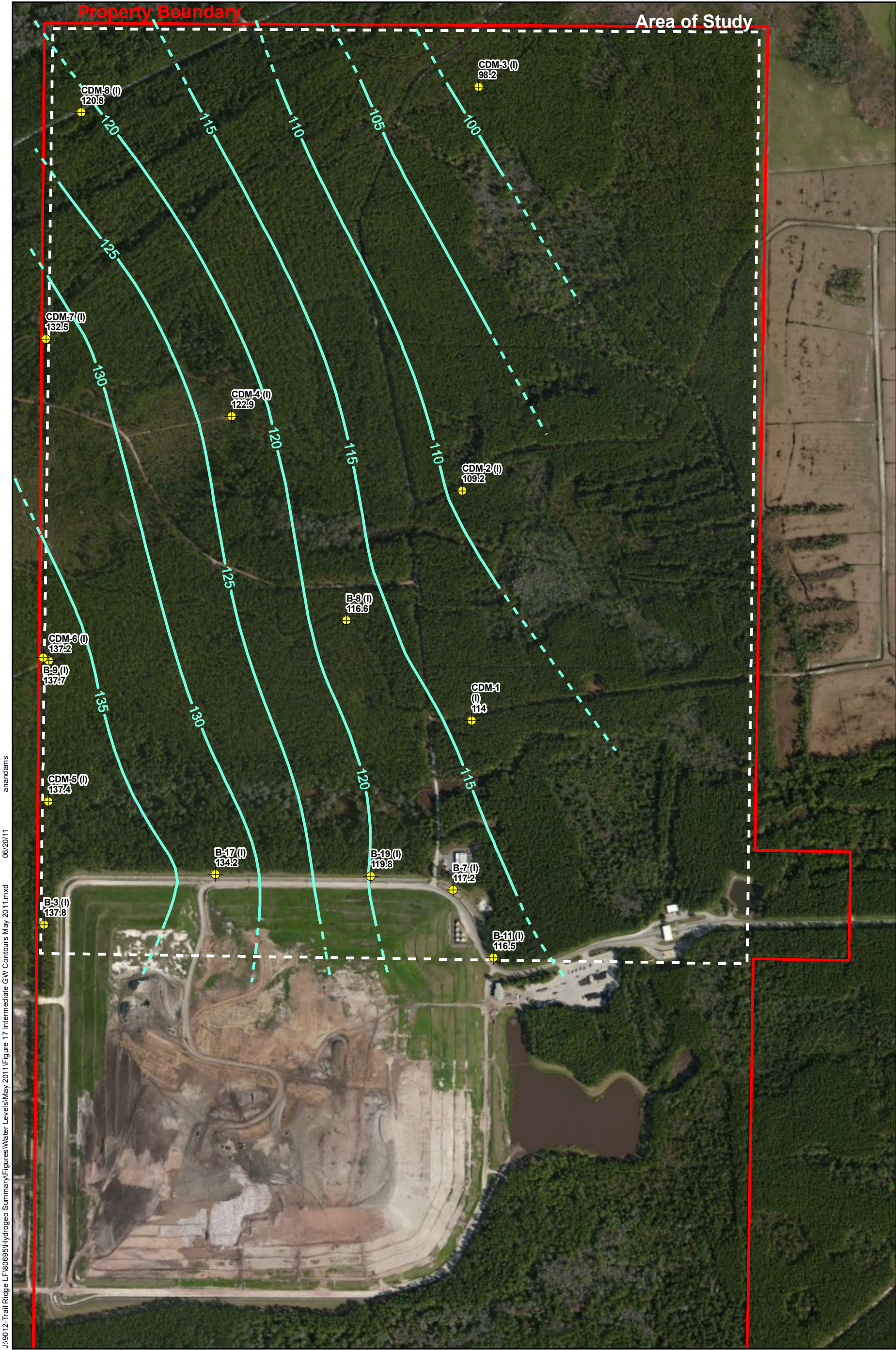
Note:
1. Water level measurements taken on May 26, 2011.



0 300 600 Feet



Figure C4
Shallow Surficial Groundwater Elevation Contours (May 2011)
Trail Ridge Landfill
Duval County, Florida



J:\90-12-Trail Ridge LF\80695\Hydrogeo Summary\Figures\Water Levels\May 2011\Figure 17 Intermediate GW Contours May 2011.mxd anandams 06/20/11

Legend

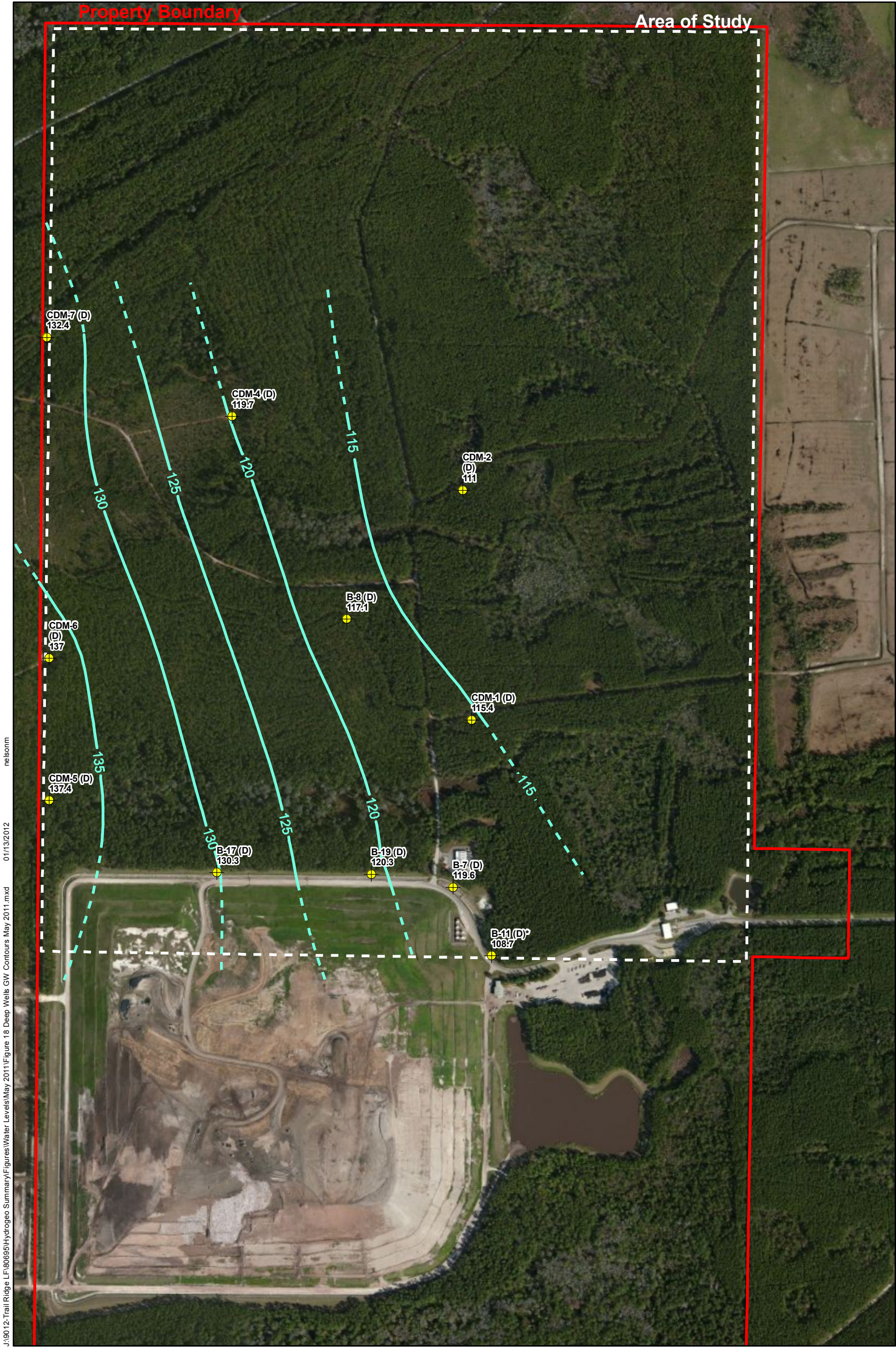
- Groundwater Elevation (ft NGVD)
- Inferred
- Intermediate Monitoring Well and Groundwater Elevation

Note:

- Water level measurements taken on May 26, 2011.

Figure C5

Intermediate Surficial Groundwater Elevation Contours (May 2011)
Trail Ridge Landfill
Duval County, Florida



J:\9012-Trial Ridge LF\80695\Hydrogeo Summary\Figures\Water Levels\May 2011\Figure 18 Deep Wells GW Contours May 2011.mxd 01/13/2012 nelsonm

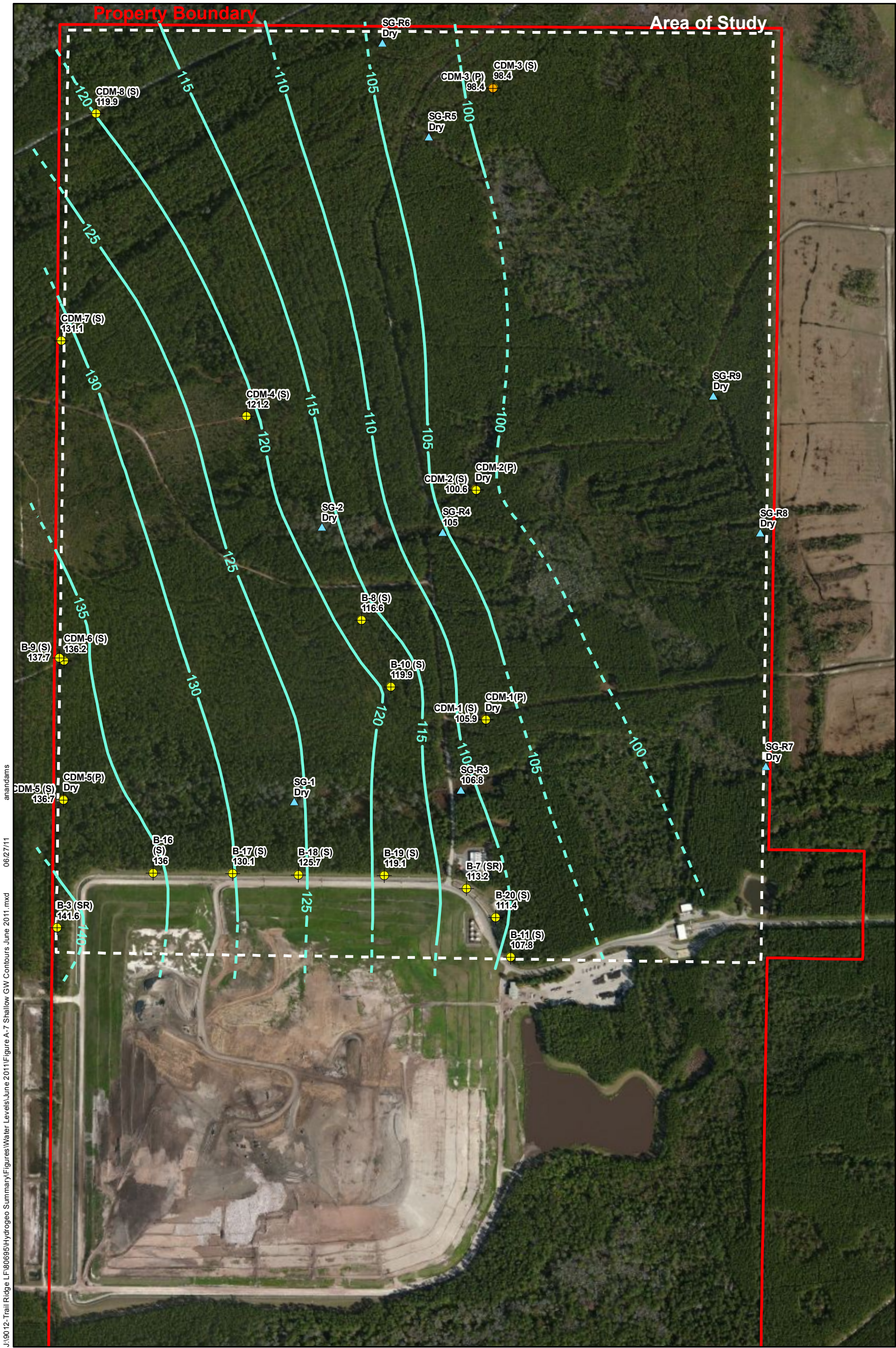
Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Deep Monitoring Well and Groundwater Elevation

Note:

- Water level measurements taken on May 26, 2011.
- Measurement from B-11 (D) was not used for contour generation.

Figure C6
Deep Surficial Groundwater Elevation Contours (May 2011)
Trail Ridge Landfill
Duval County, Florida



J:\9012-Trail Ridge LP\80695\Hydrogeo Summary\Figures\Water Levels\June 2011\Figure A-7 Shallow GW Contours June 2011.mxd 06/27/11 anandams

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Shallow Piezometer and Groundwater Elevation
- Shallow Monitoring Well and Groundwater Elevation
- Staff Gauge and Surface Water Elevation

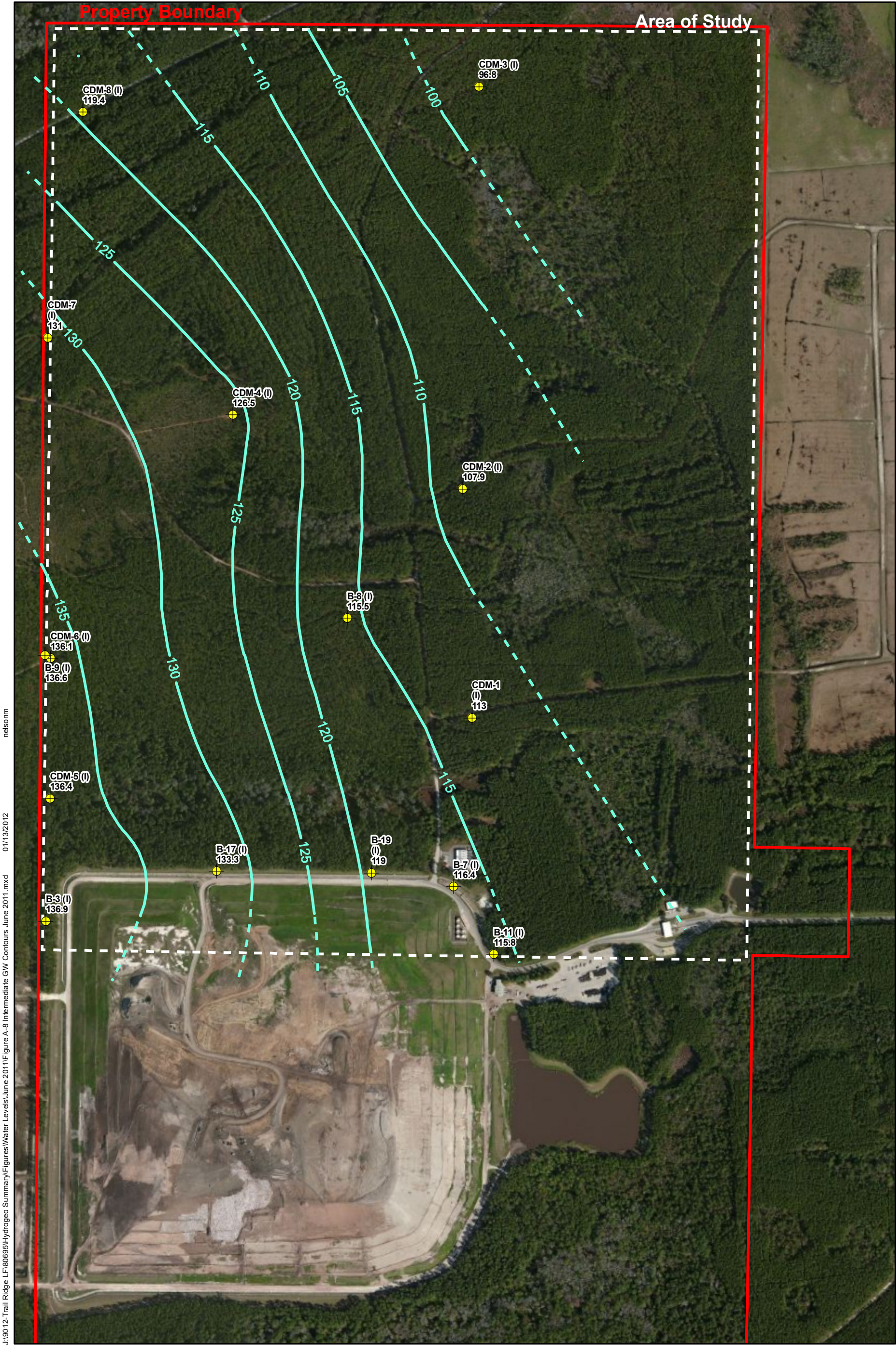
Note:
1. Water level measurements taken on June 23, 2011.



0 300 600 Feet



Figure C7
Shallow Surficial Groundwater Elevation Contours (June 2011)
Trail Ridge Landfill
Duval County, Florida



J:\9012-Trail Ridge LF180895\Hydrogeo Summary\Figures\June 2011\Figure A-8 Intermediate GW Contours June 2011.mxd 01/13/2012 nelsonm

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Intermediate Monitoring Well and Groundwater Elevation

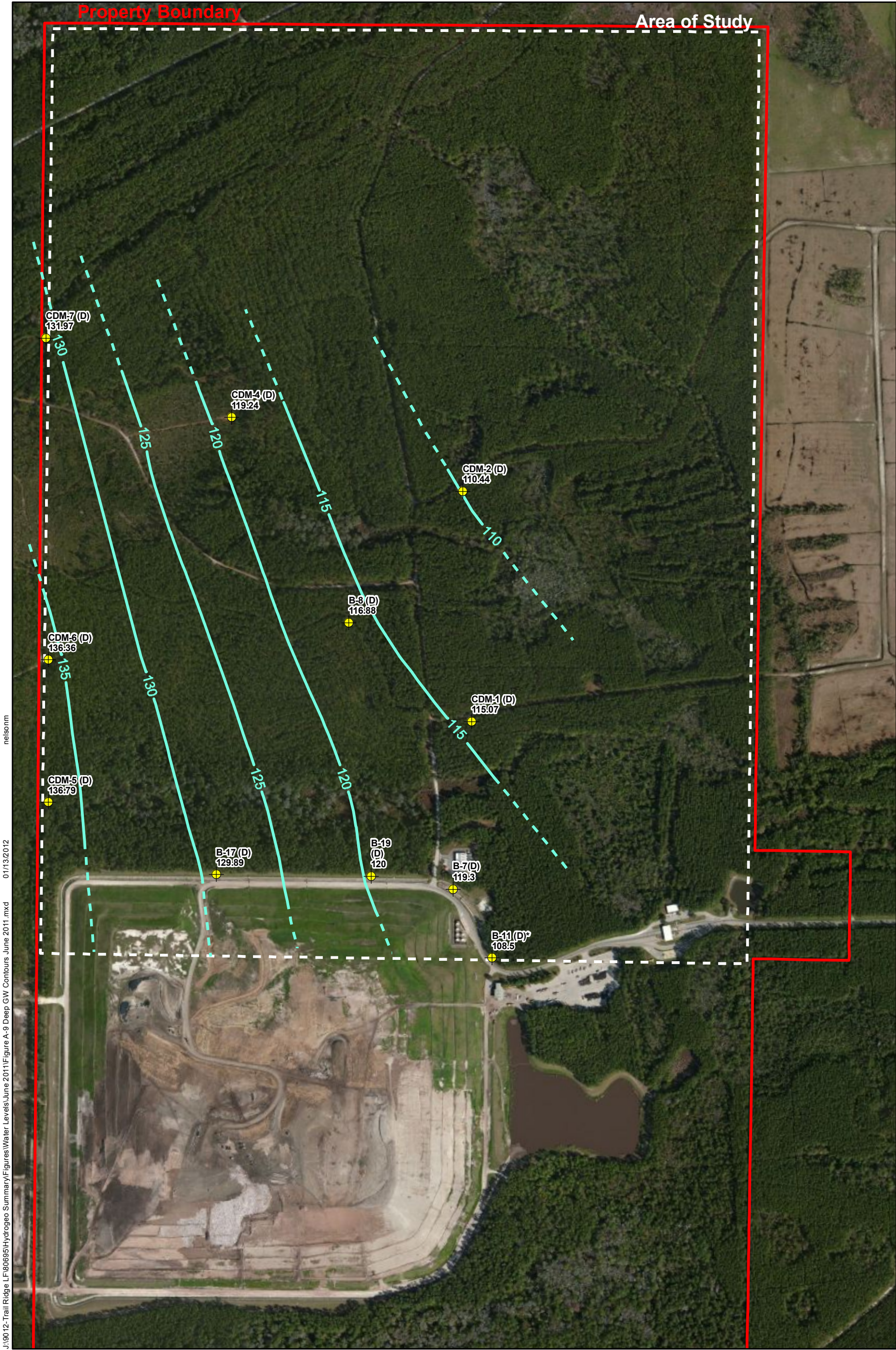
Note:
1. Water level measurements taken on June 23, 2011.

Figure C8
Intermediate Surficial Groundwater Elevation Contours (June 2011)
Trail Ridge Landfill
Duval County, Florida



0 300 600 Feet





J:\9012-Trail Ridge LF\80695\Hydrogeo Summary\Figures\Water Levels\June 2011\Figure A-9 Deep GW Contours June 2011.mxd 01/13/2012 nelsonm

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Deep Monitoring Well and Groundwater Elevation

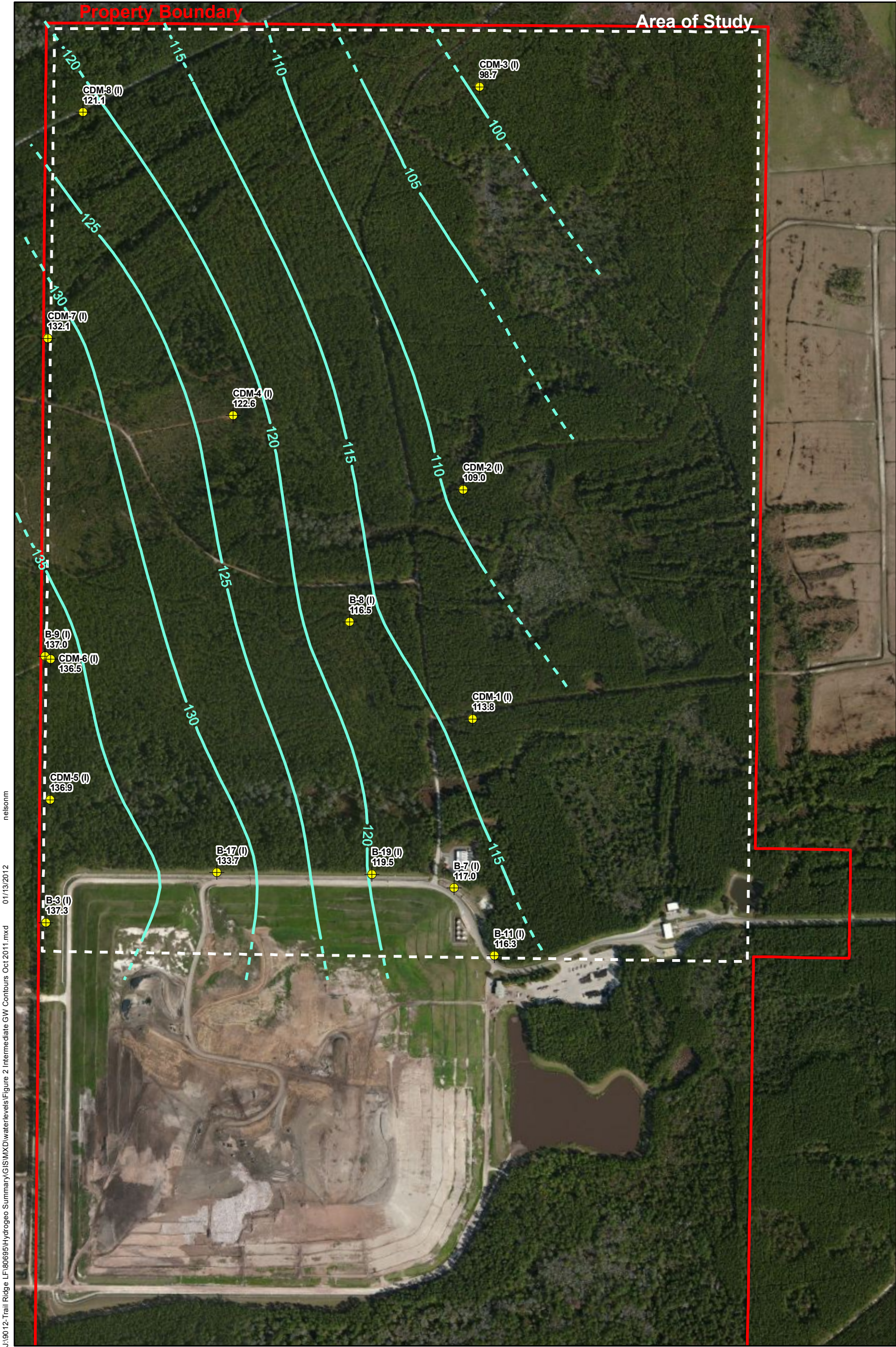
Note:

- 1. Water level measurements taken on June 23, 2011.
- * Measurement from B-11 (D) was not used for contour generation.

Figure C9

Deep Surficial Groundwater Elevation Contours (June 2011)

Trail Ridge Landfill
Duval County, Florida



Legend

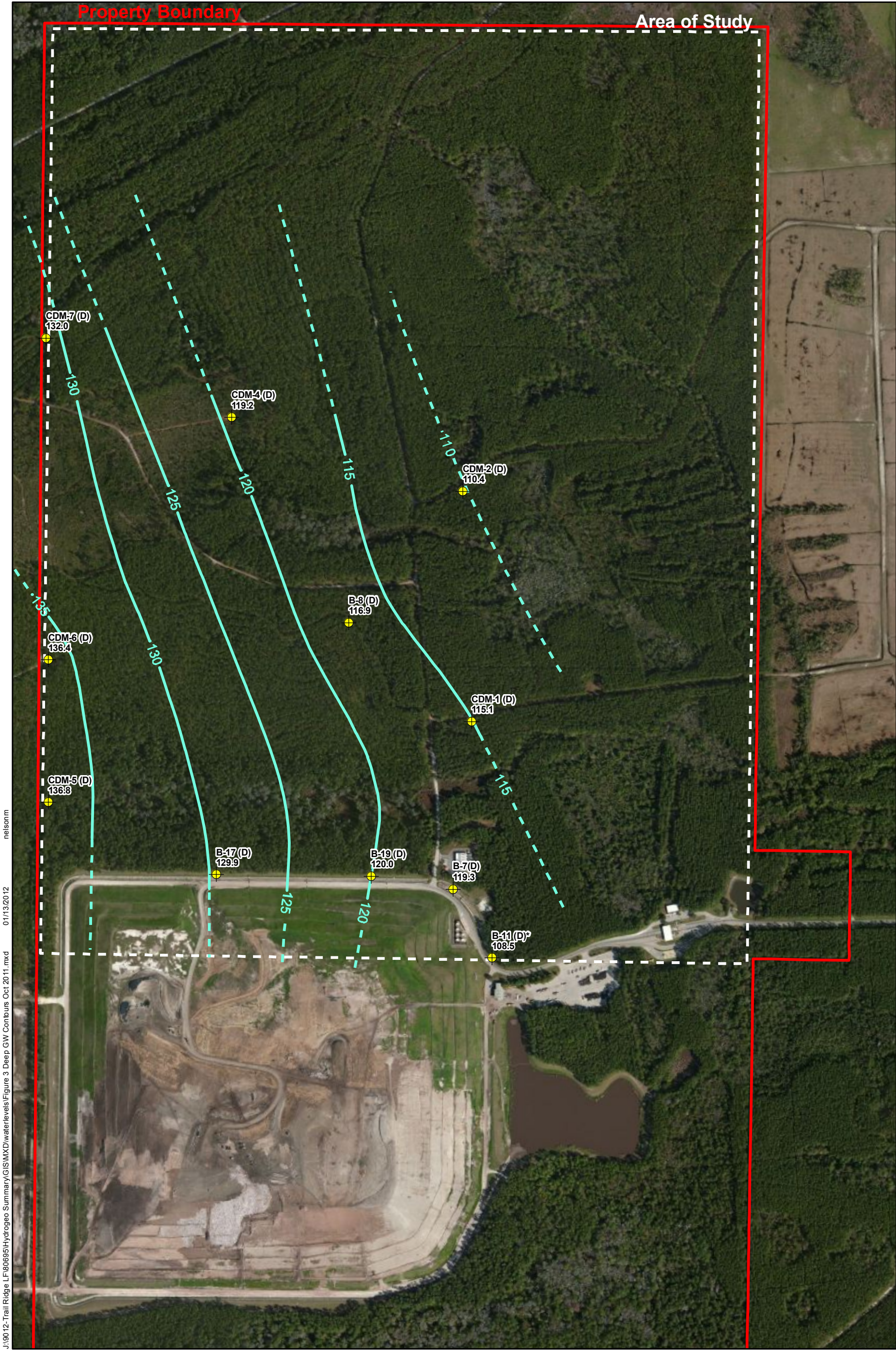
- Groundwater Elevation (ft NGVD)
 - Inferred
 - Intermediate Monitoring Well and Groundwater Elevation
- Note:
- Water level measurements taken on October 3, 2011.

Figure C11
Intermediate Surficial Groundwater Elevation Contours (October 2011)
Trail Ridge Landfill
Duval County, Florida



0 300 600 Feet





Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Deep Monitoring Well and Groundwater Elevation

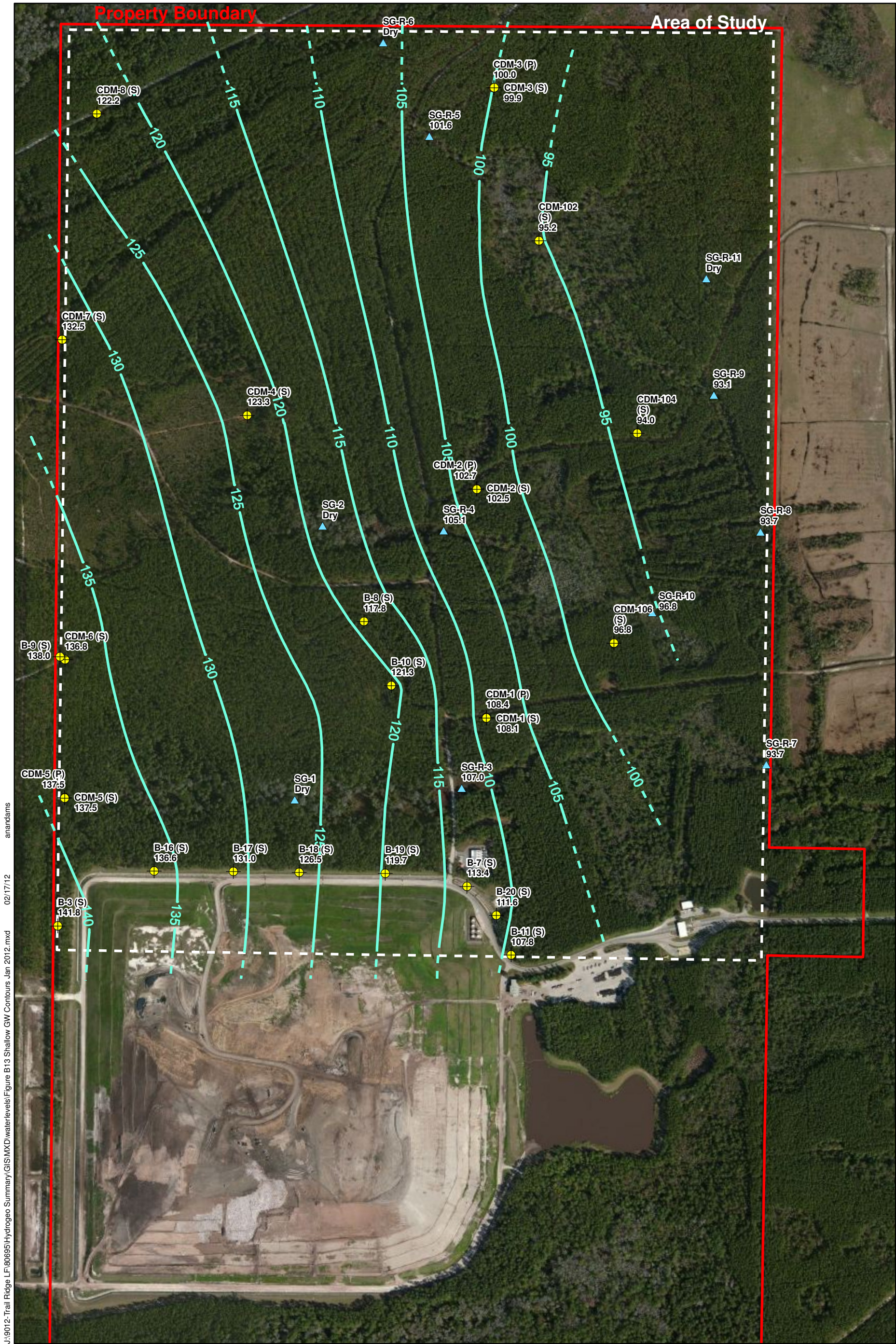
Note:
1. Water level measurements taken on October 3, 2011.
* Measurement from B-11(D) was not used for contour generation.

Figure C12
Deep Surficial Groundwater Elevation Contours (October 2011)
Trail Ridge Landfill
Duval County, Florida



0 300 600 Feet





Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Shallow Piezometer and Groundwater Elevation
- Shallow Monitoring Well and Groundwater Elevation
- Staff Gauge and Surface Water Elevation

Note:

1. Water level measurements of CDM and Waste Management monitor wells were taken on January 19, 2012.

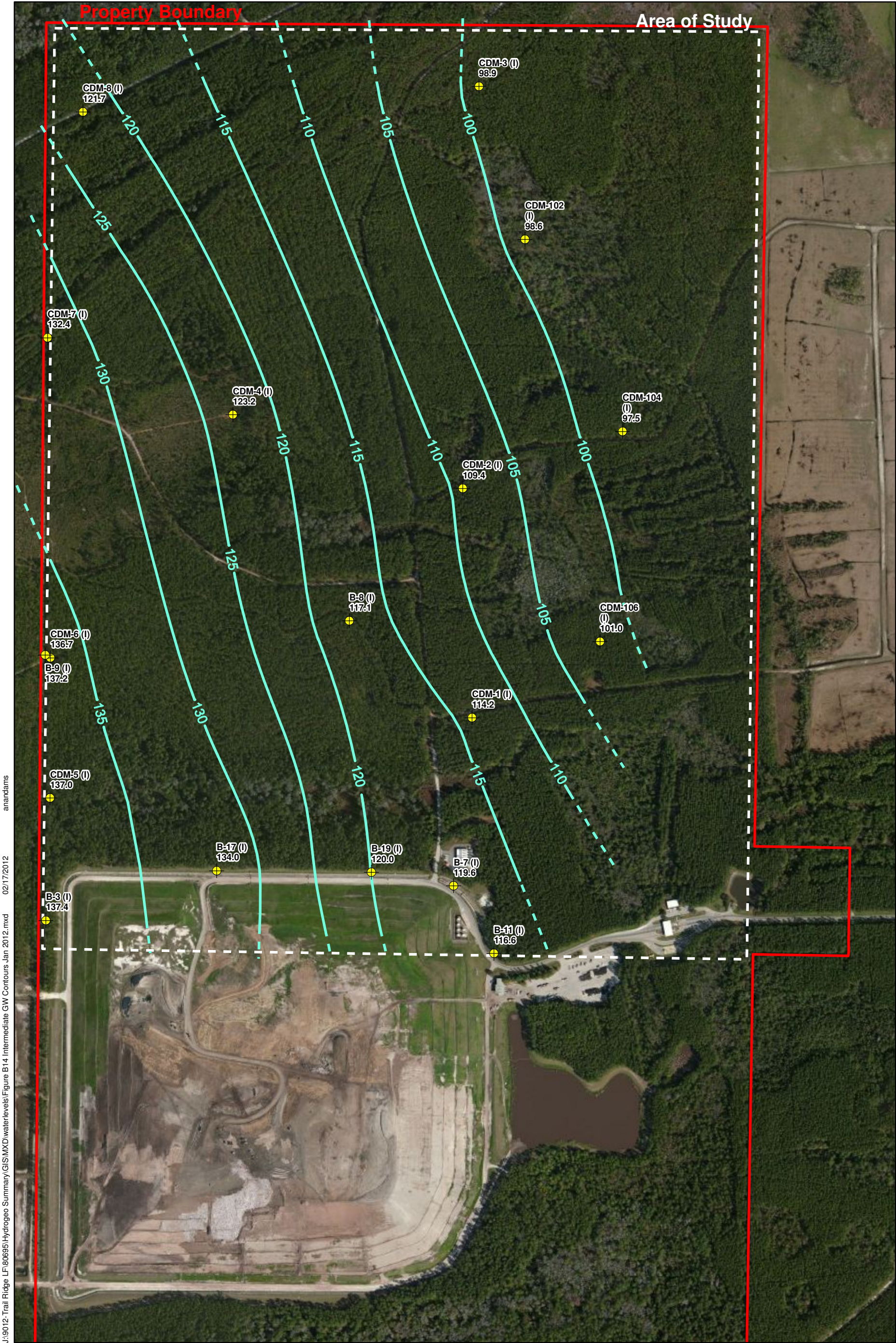


0 300 600 Feet

CDM Smith

Figure C13

Shallow Surficial Groundwater Elevation Contours (January 2012)
Trail Ridge Landfill
Duval County, Florida



Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Intermediate Monitoring Well and Groundwater Elevation

Note:

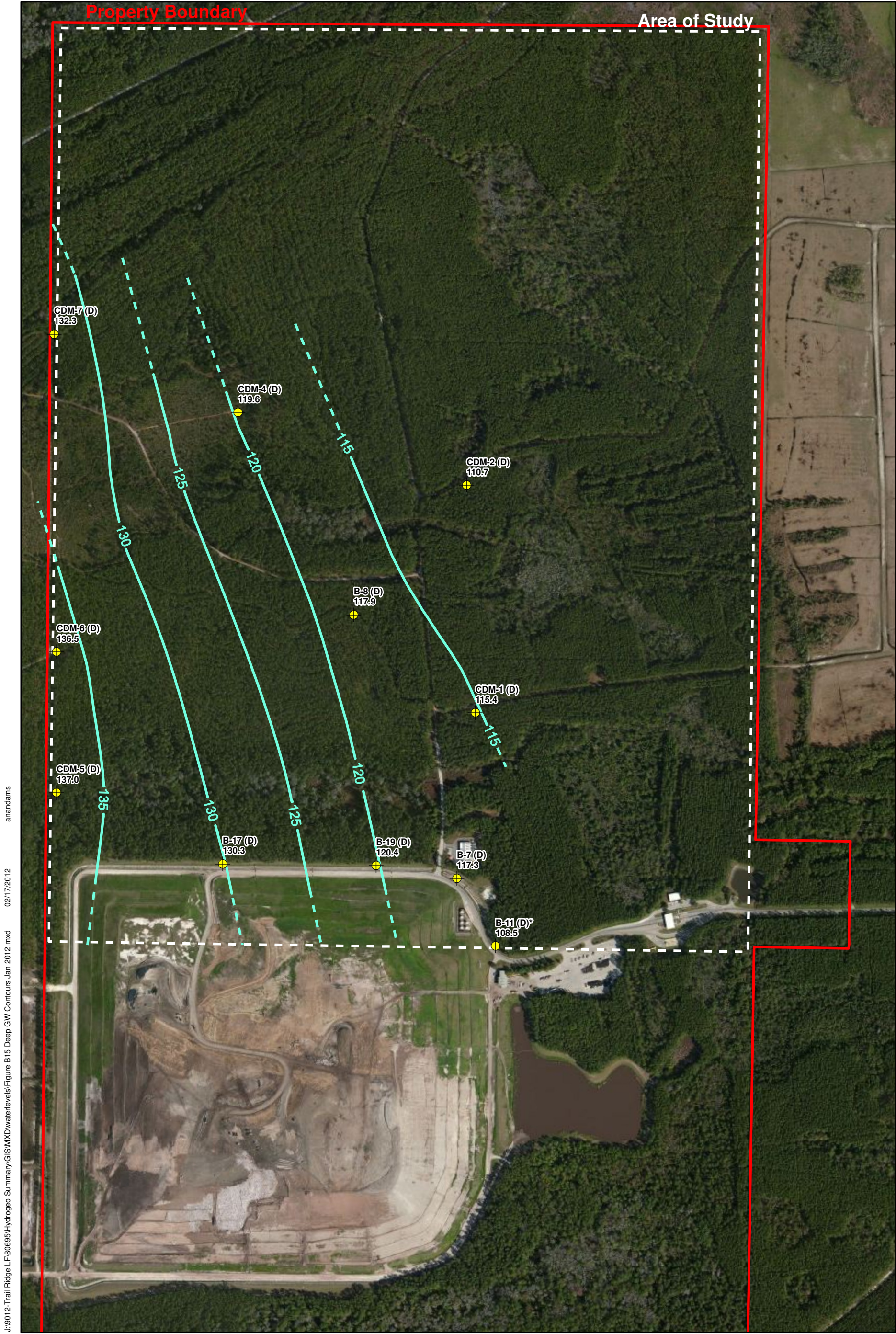
1. Water level measurements taken on January 19, 2012.

Figure C14
Intermediate Surficial Groundwater Elevation Contours (January 2012)
Trail Ridge Landfill
Duval County, Florida



0 300 600 Feet

CDM Smith

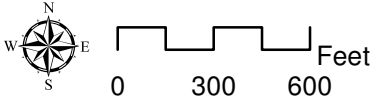


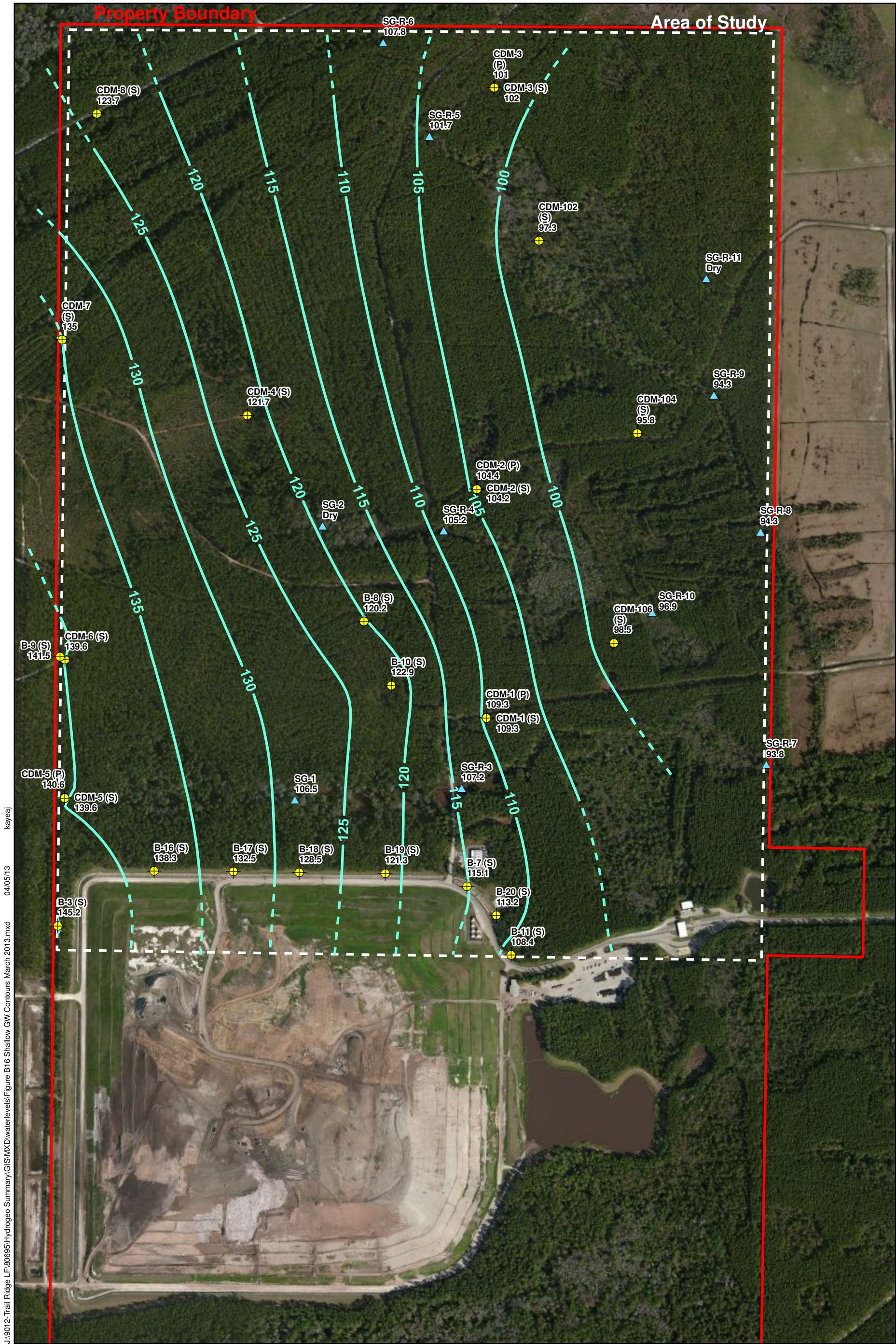
Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- 10.7 Deep Monitoring Well and Groundwater Elevation

Note:
1. Water level measurements taken on January 19, 2012.
* Measurement from B-11(D) was not used for contour generation.

Figure C15
Deep Surficial Groundwater Elevation Contours (January 2012)
Trail Ridge Landfill
Duval County, Florida





Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Shallow Piezometer and Groundwater Elevation
- Shallow Monitoring Well and Groundwater Elevation
- Staff Gauge and Surface Water Elevation

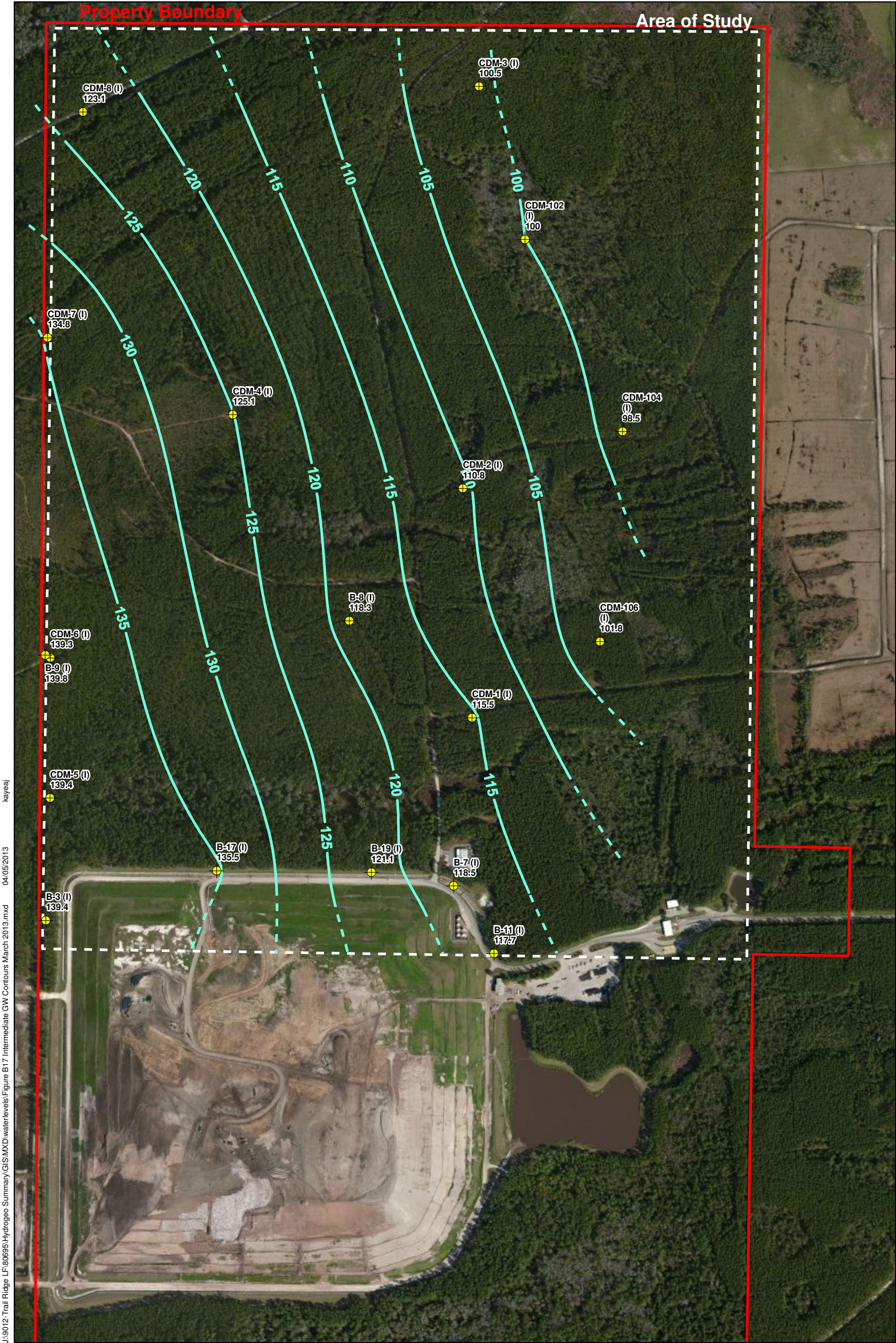
Figure C16
Shallow Surficial Groundwater Elevation Contours (March 2013)
Trail Ridge Landfill
Duval County, Florida

Note:
1. Water level measurements of CDM Smith and Waste Management monitor wells were taken on March 7, 2013.



0 300 600 Feet

CDM Smith



Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Intermediate Monitoring Well and Groundwater Elevation

Note:

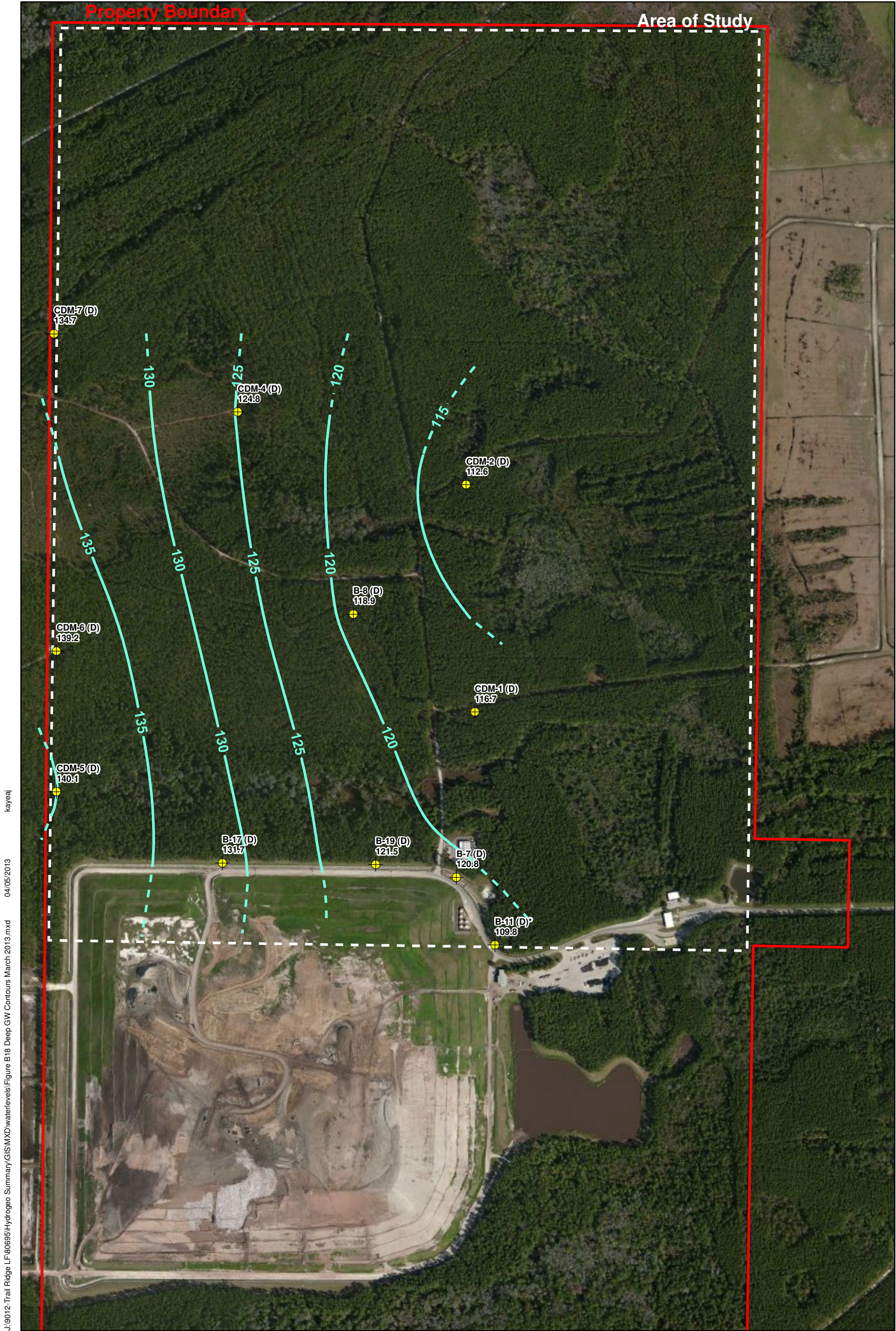
- Water level measurements taken on March 7, 2013.

Figure C17
Intermediate Surficial Groundwater Elevation Contours (March 2013)
Trail Ridge Landfill
Duval County, Florida



0 300 600 Feet

**CDM
Smith**



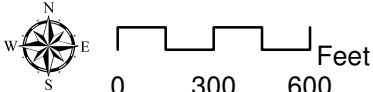
J:\9012-Trail Ridge LF\80695\Hydrogeo Summary\GIS\MXD\waterlevels\Figure B18 Deep GW Contours March 2013.mxd 04/05/2013 kayeaj

Legend

- Groundwater Elevation (ft NGVD)
- Inferred
- Deep Monitoring Well and Groundwater Elevation

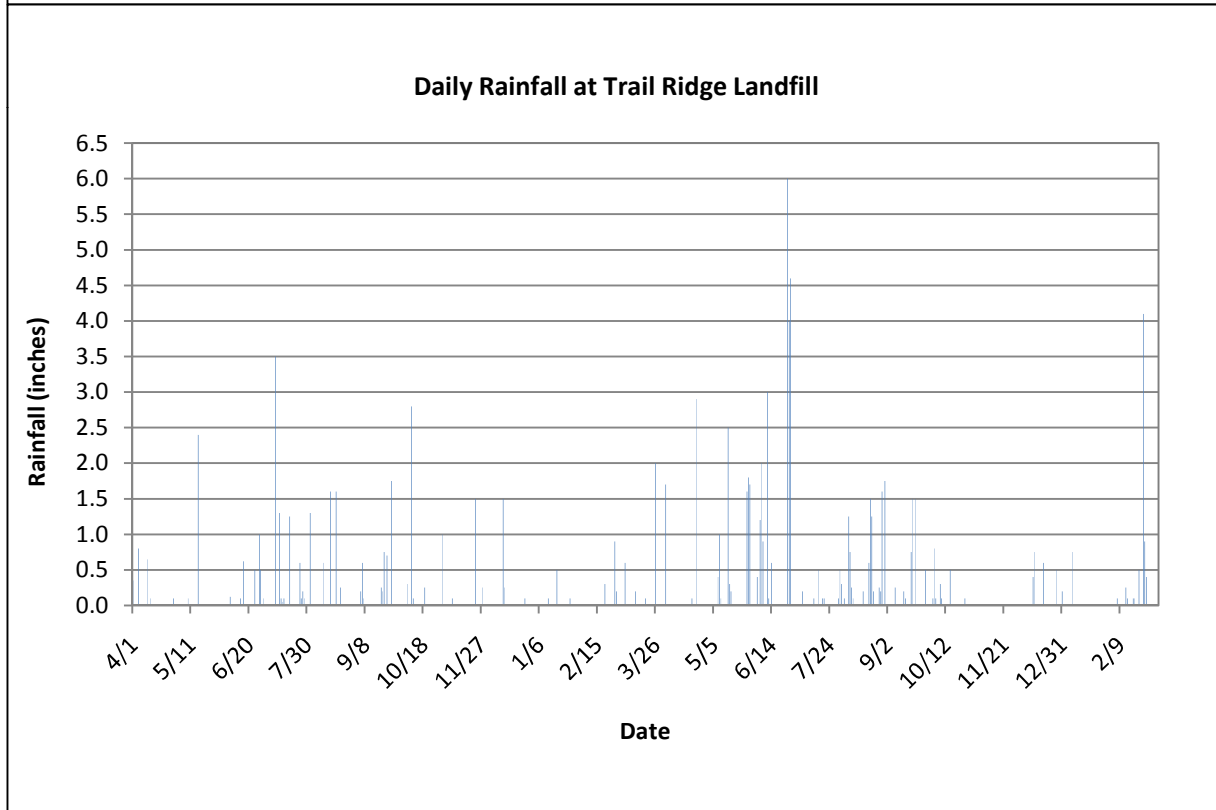
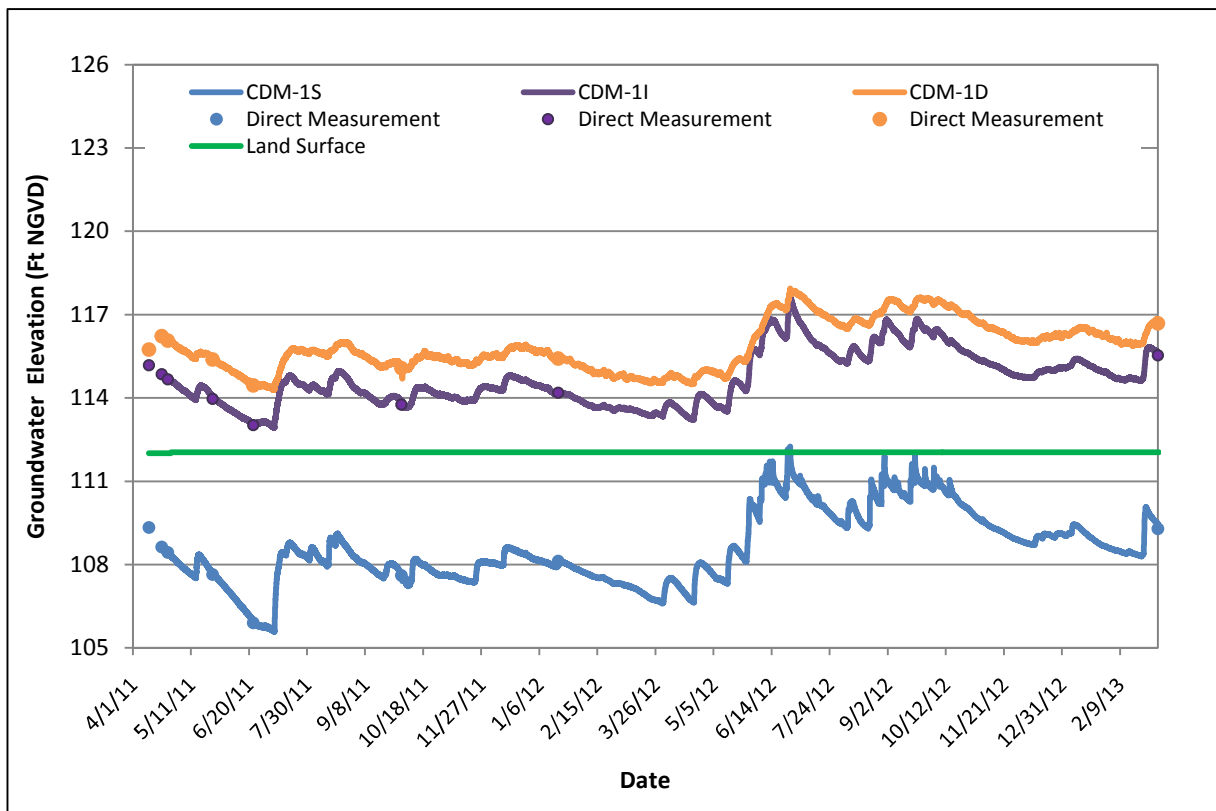
Note:
1. Water level measurements taken on March 7, 2013.
* Measurement from B-11(D) was not used for contour generation.

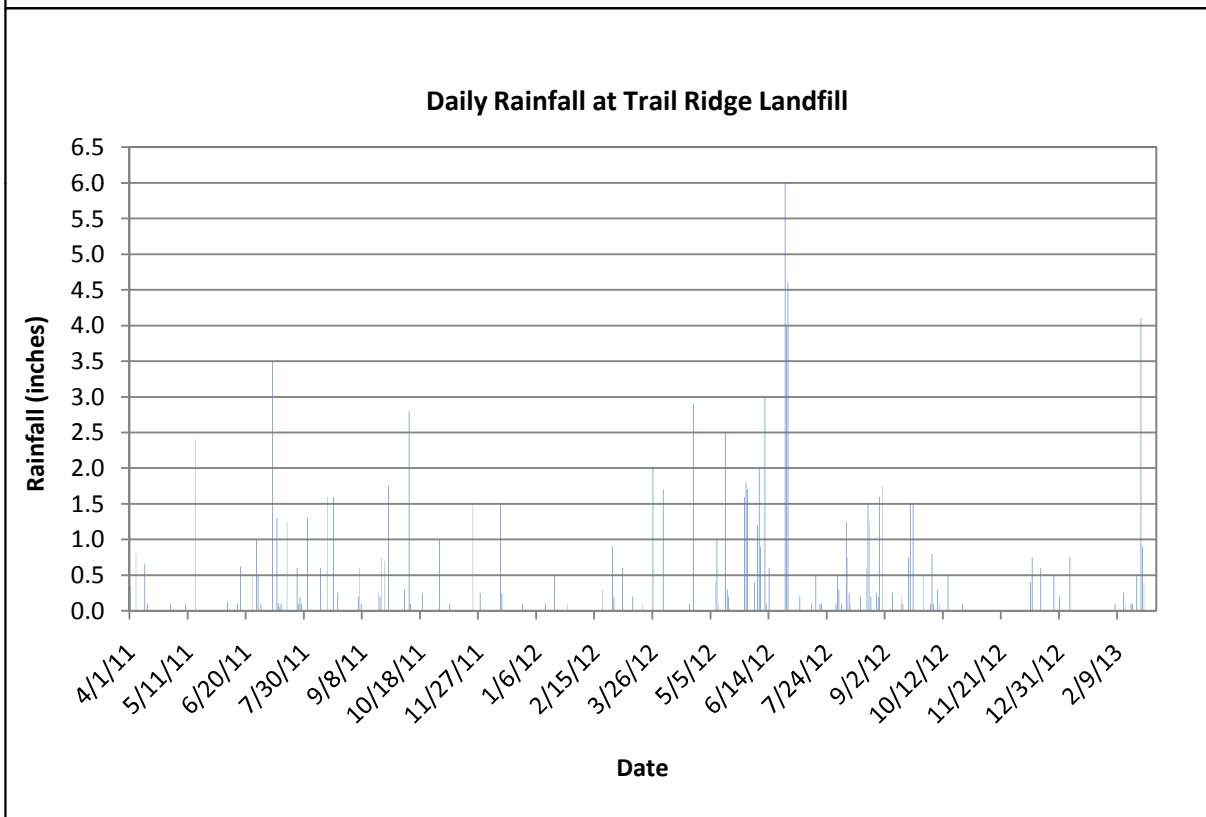
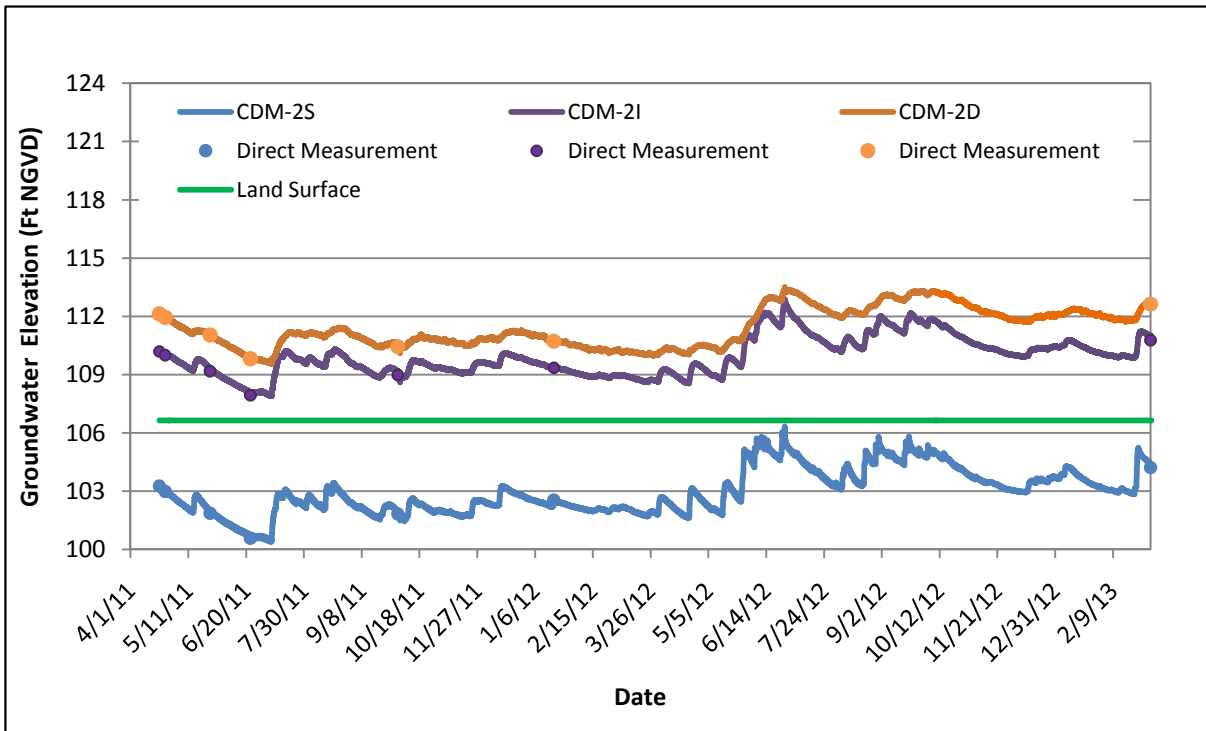
Figure C18
Deep Surficial Groundwater Elevation Contours (March 2013)
Trail Ridge Landfill
Duval County, Florida

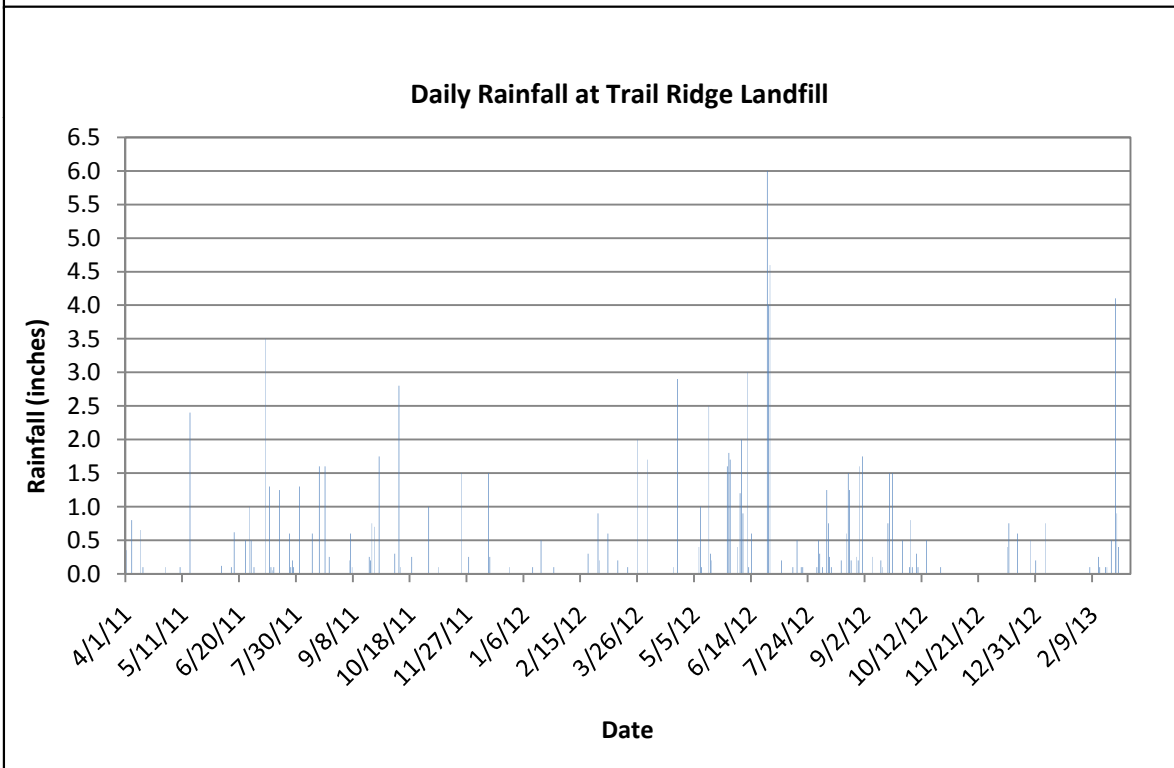
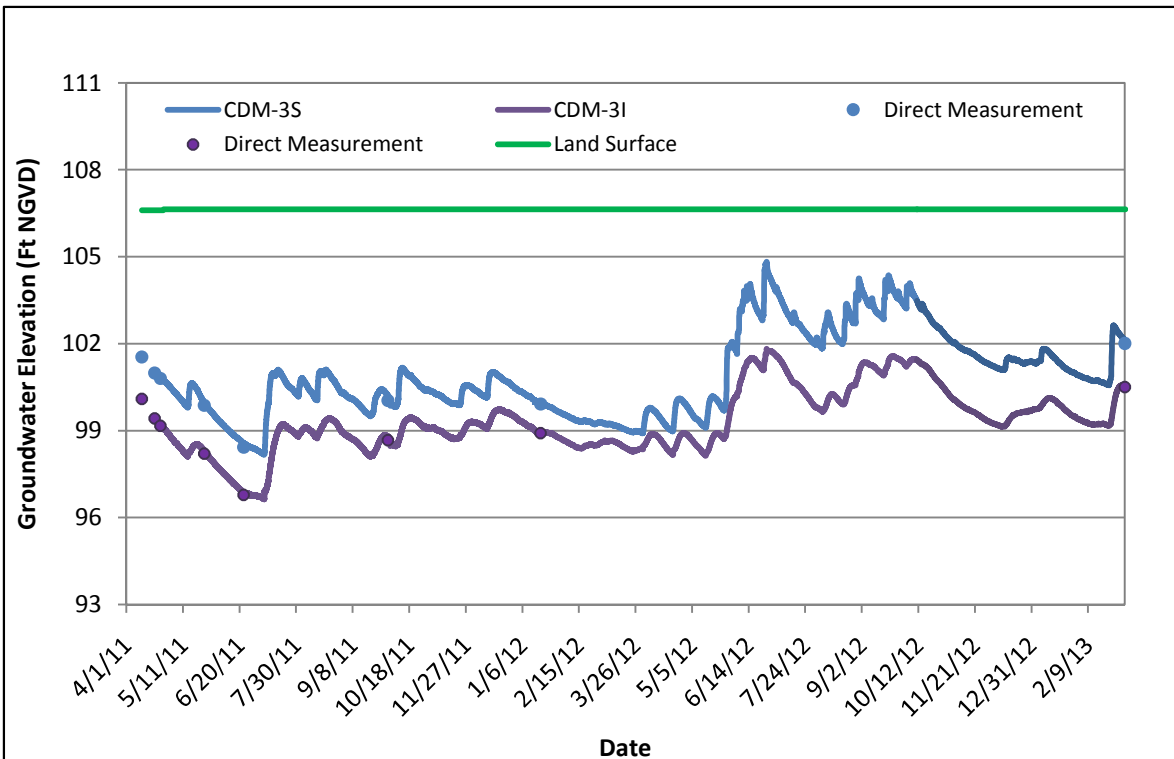


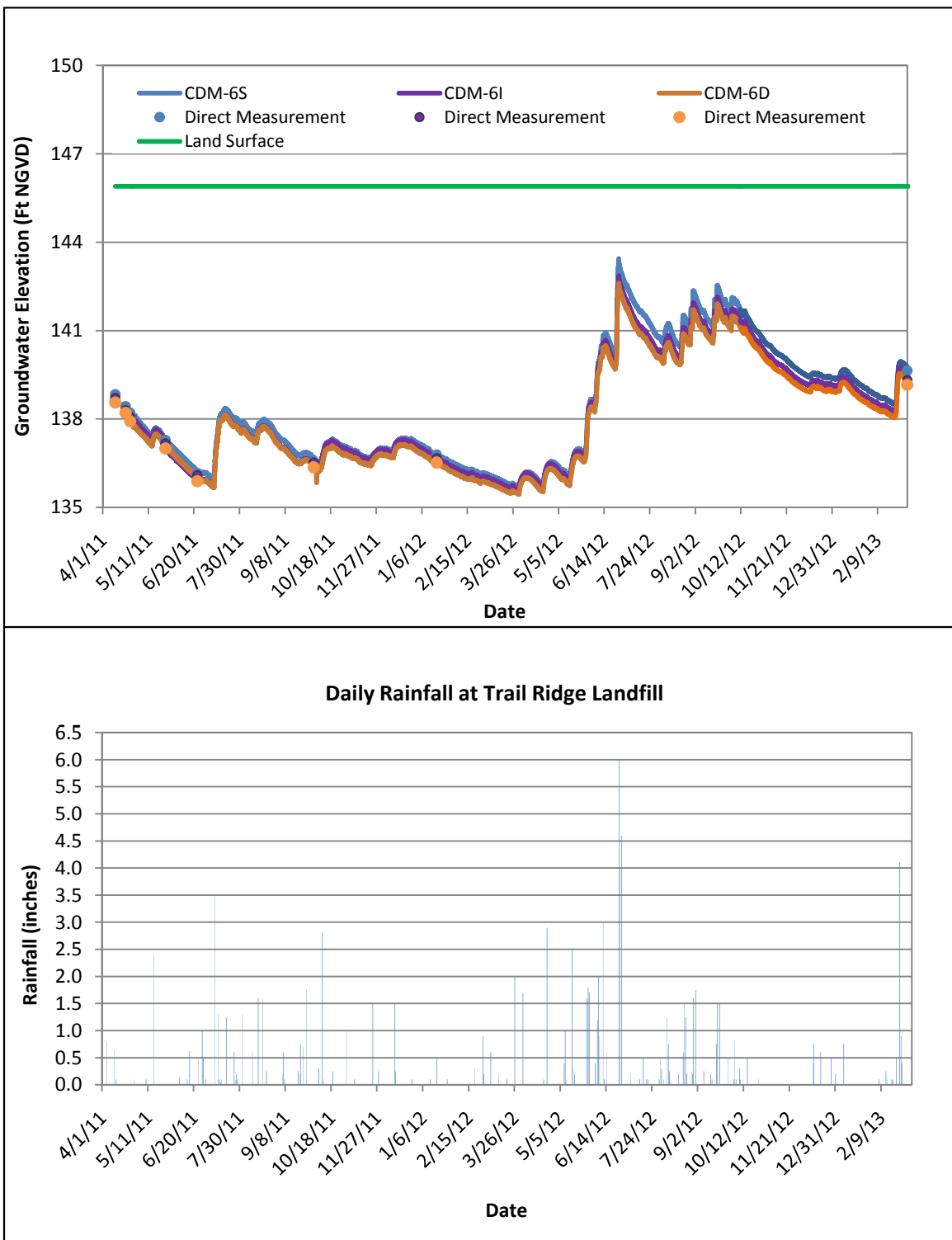
Attachment D

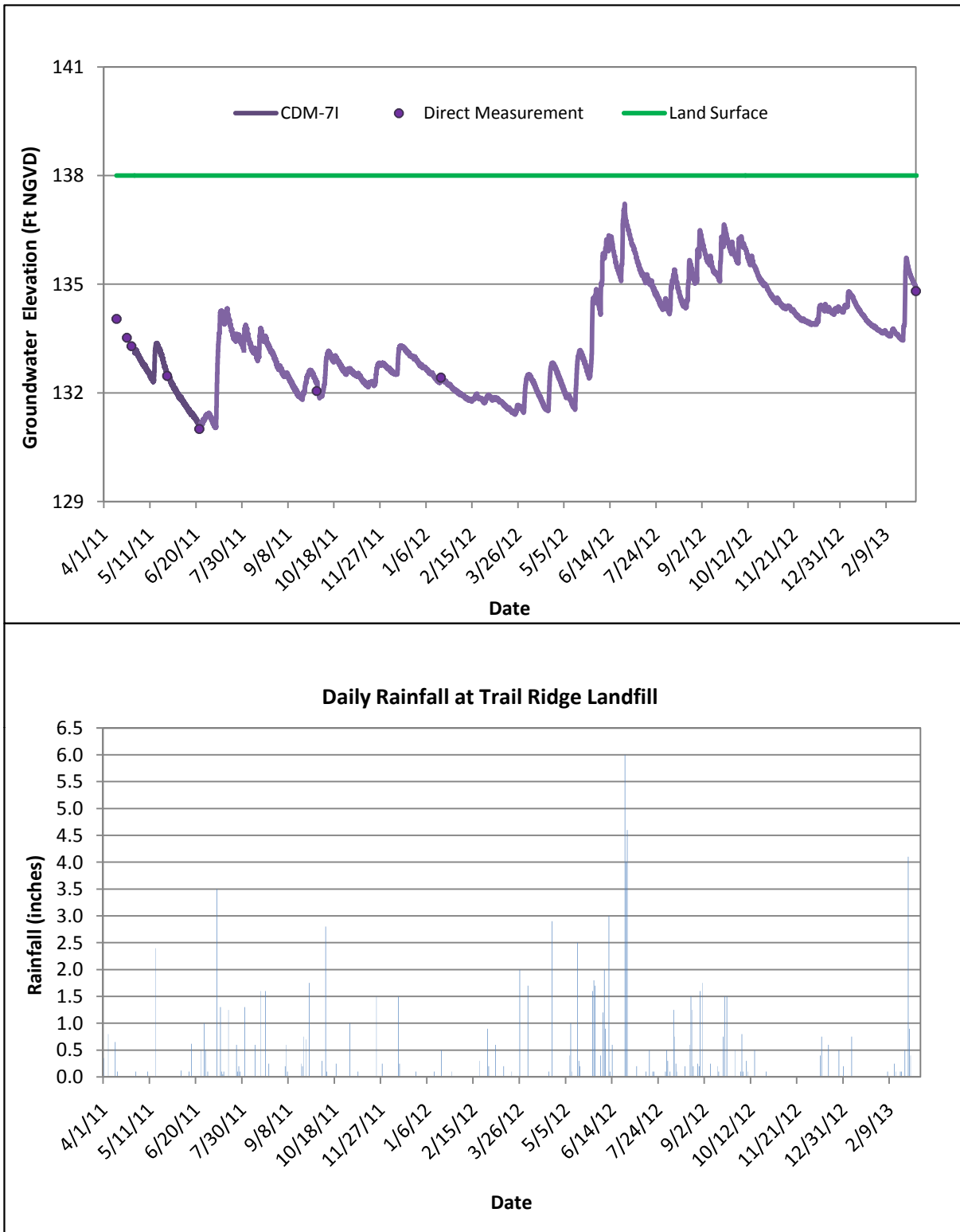
Groundwater and Surface Water Elevation Time Series for Quarters 1 through 4 (April 2011 – March 2013)

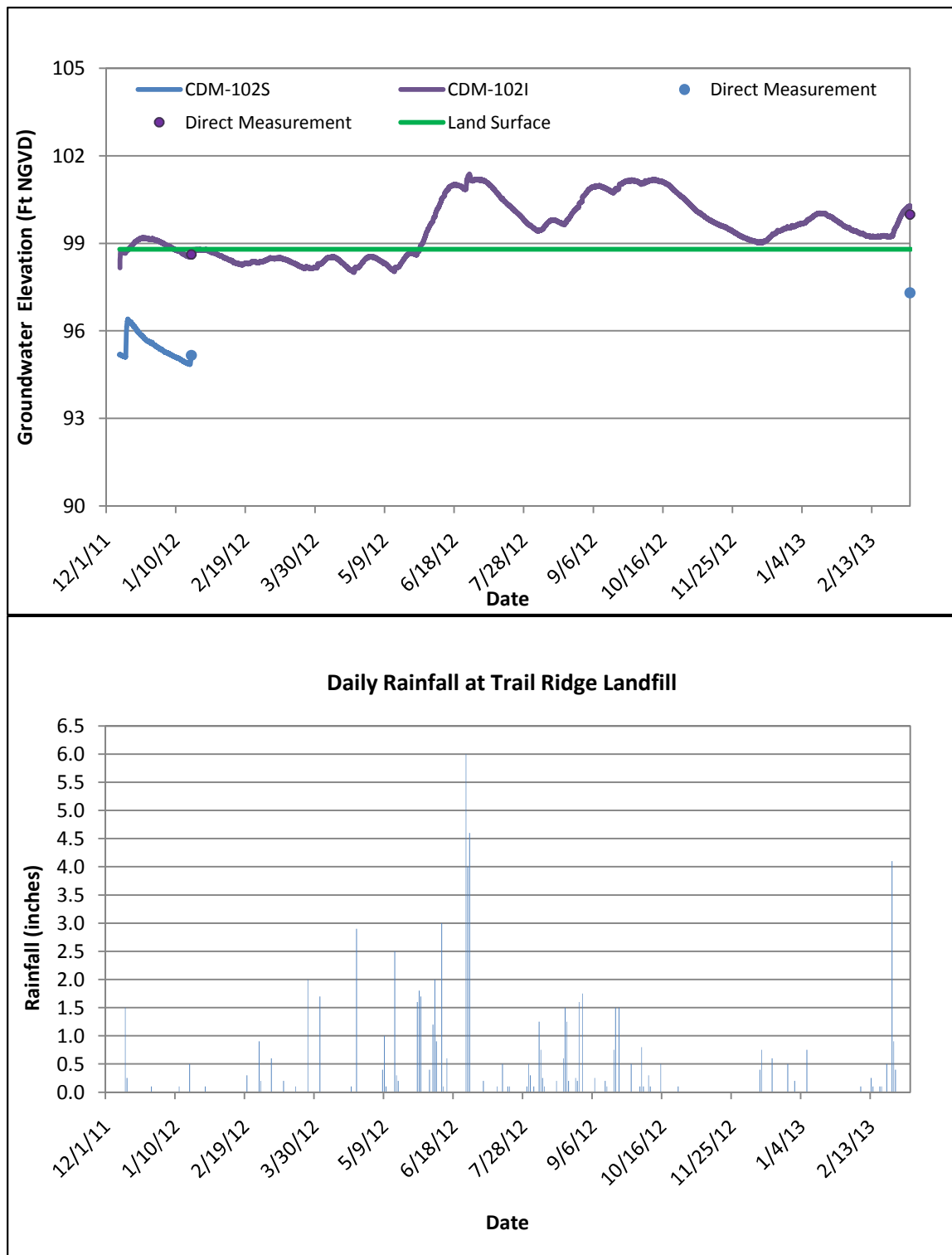


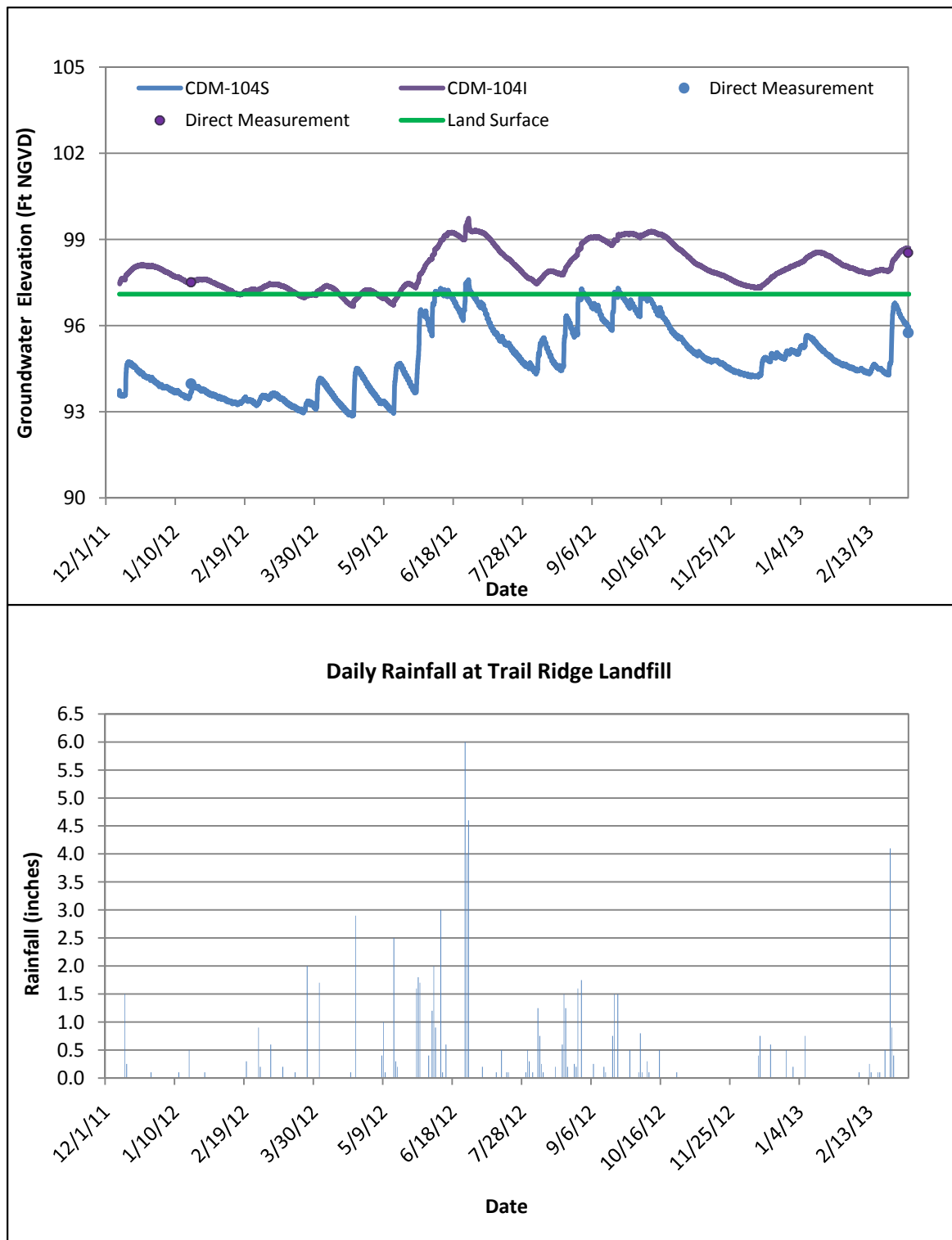


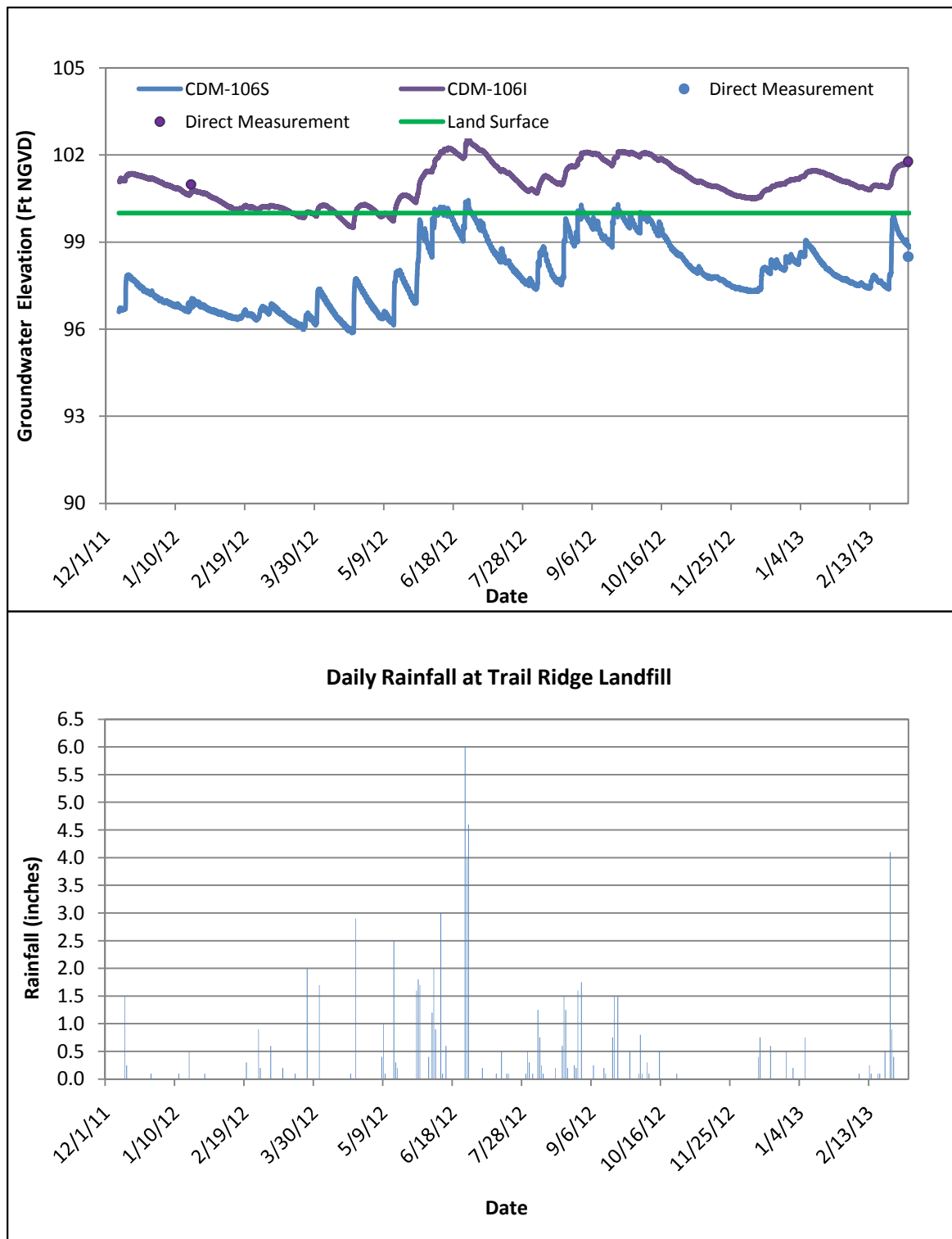


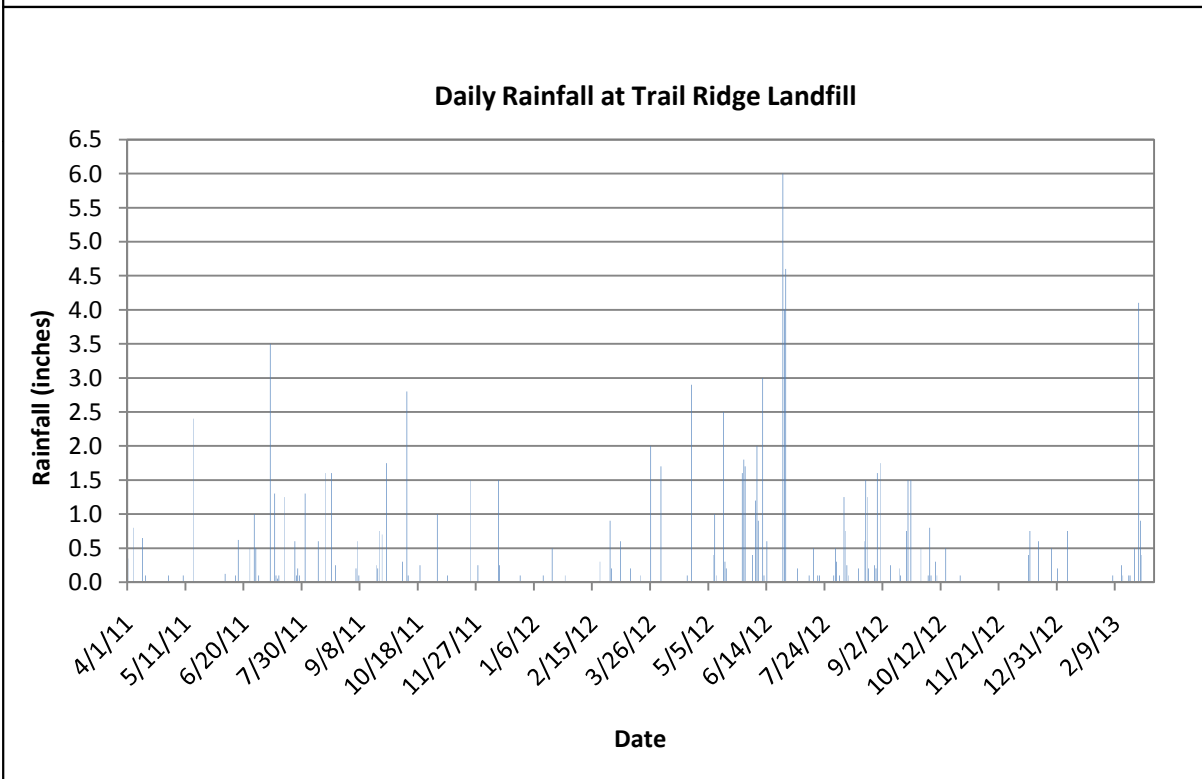
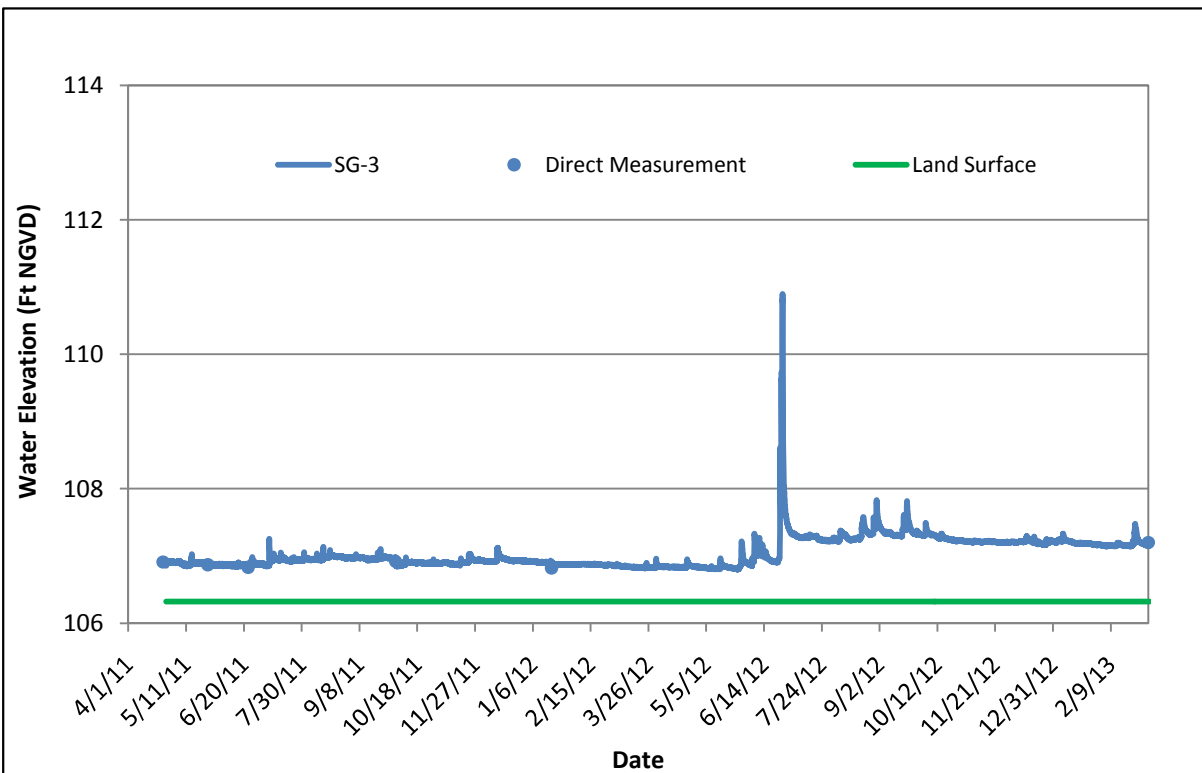


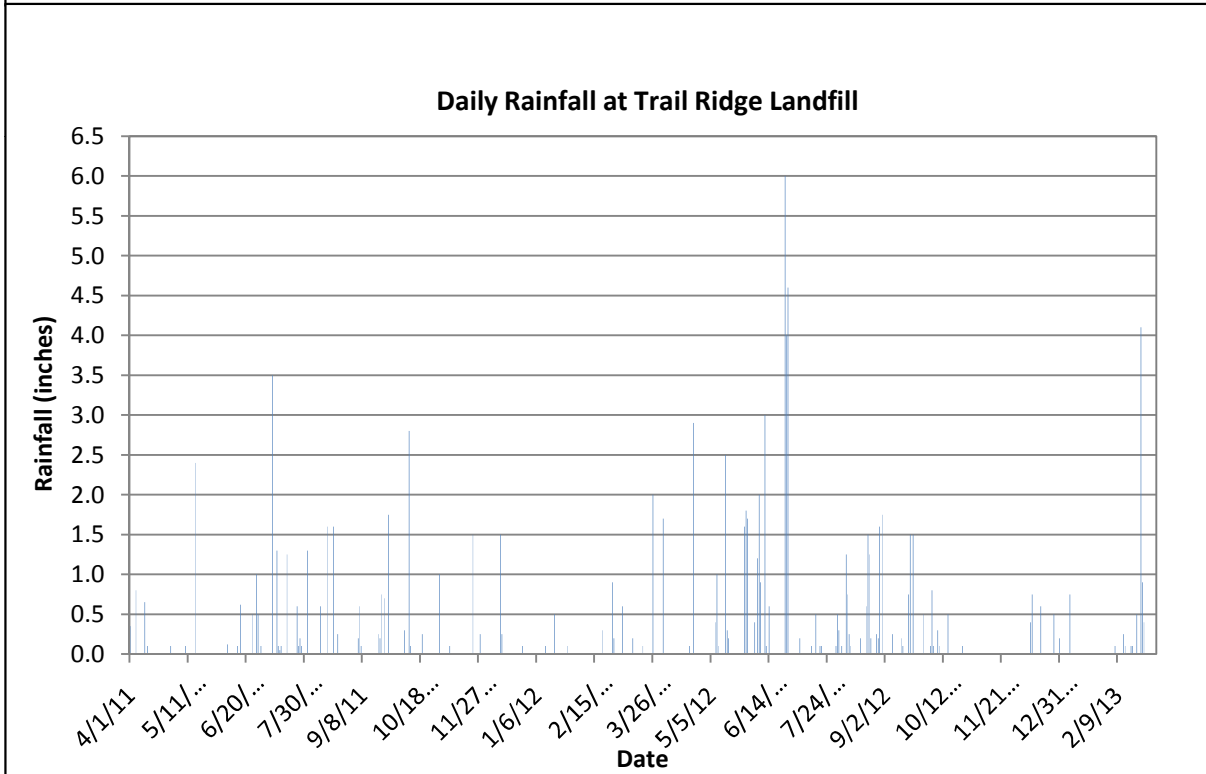
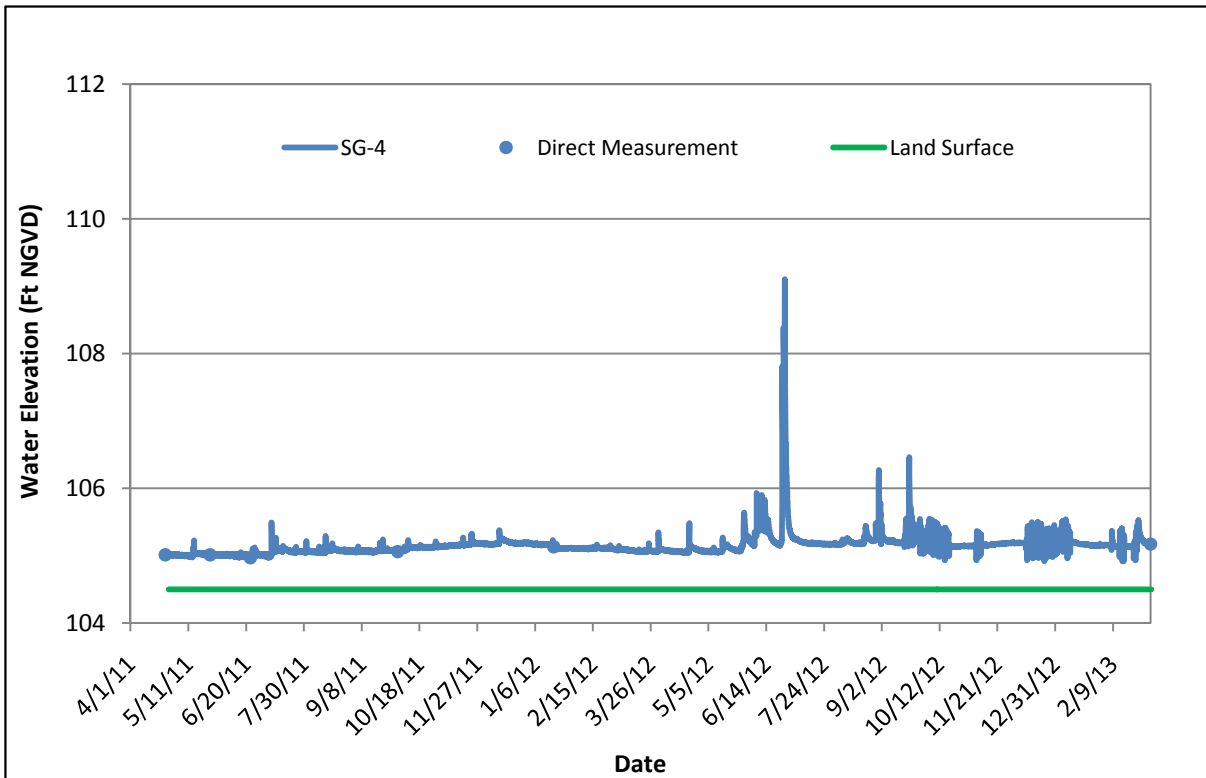


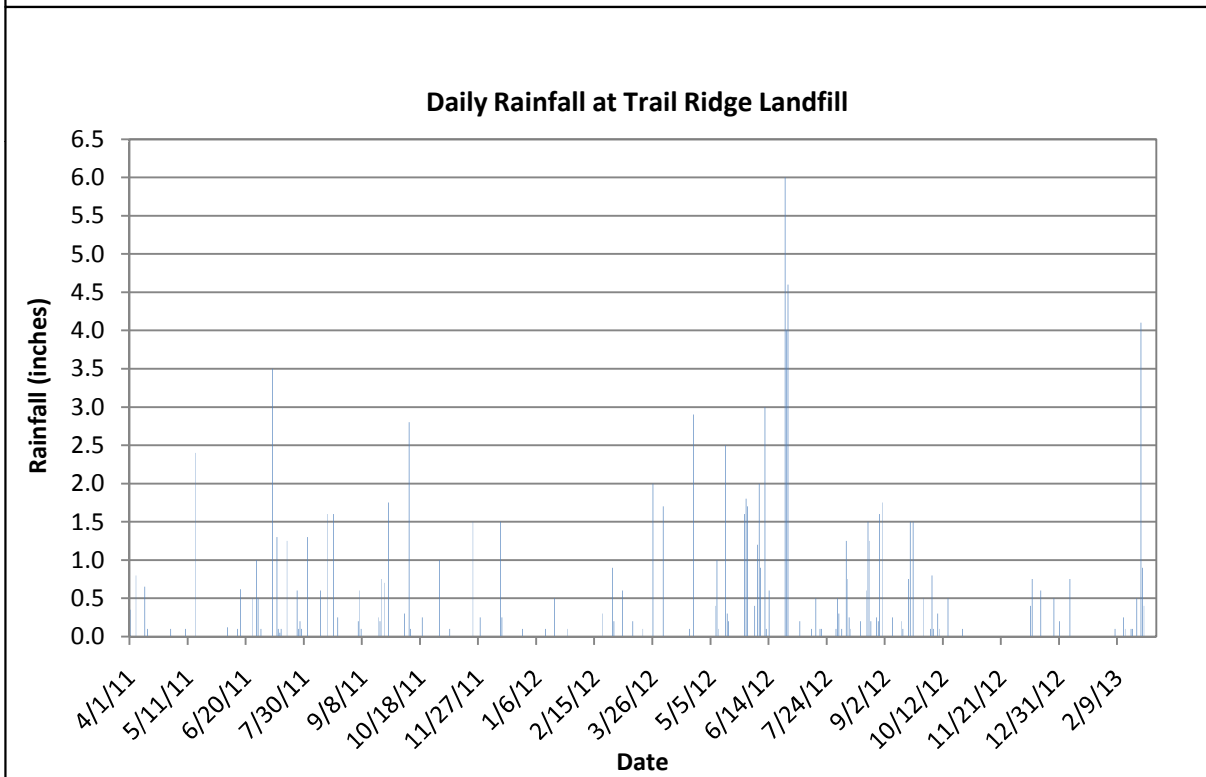
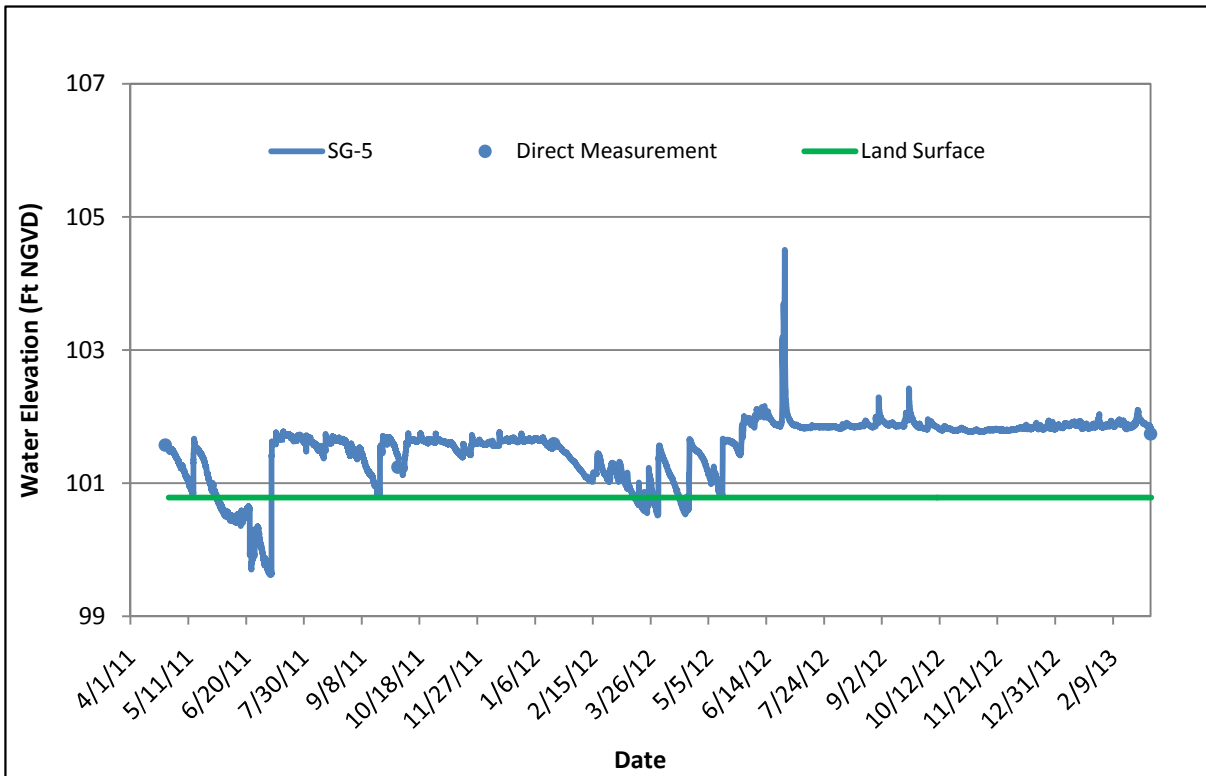


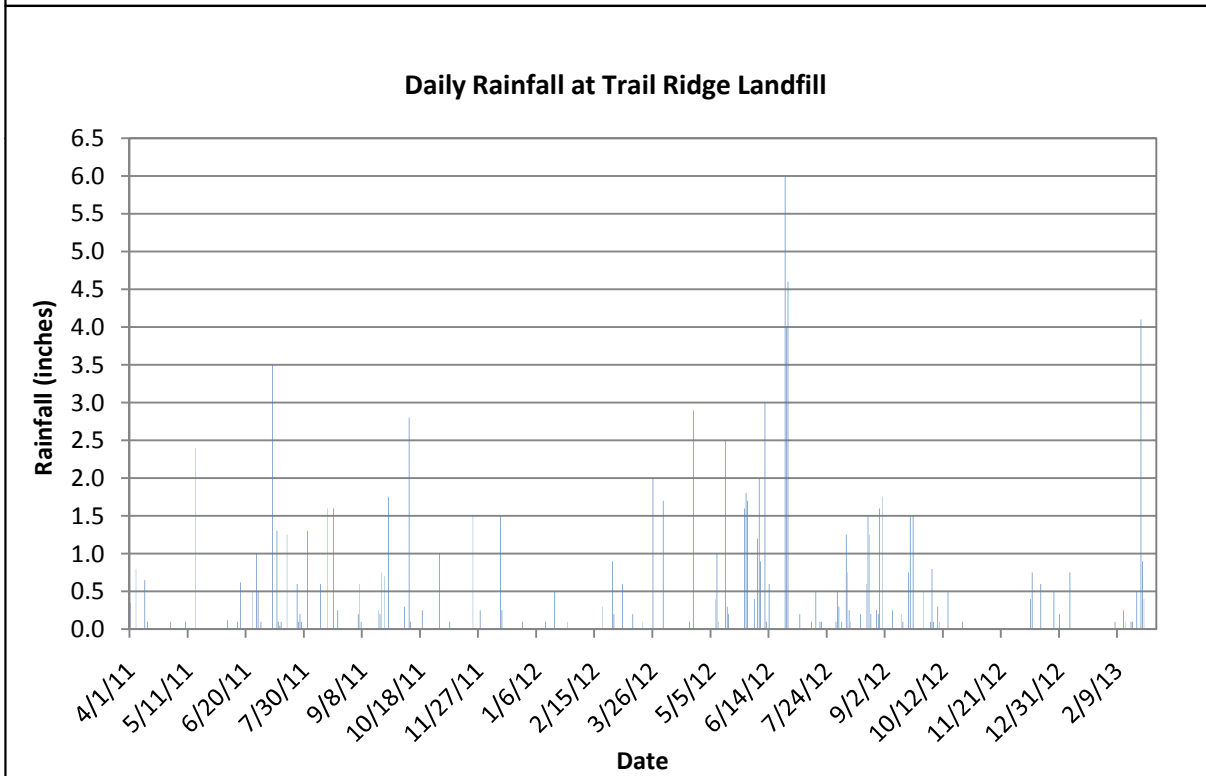
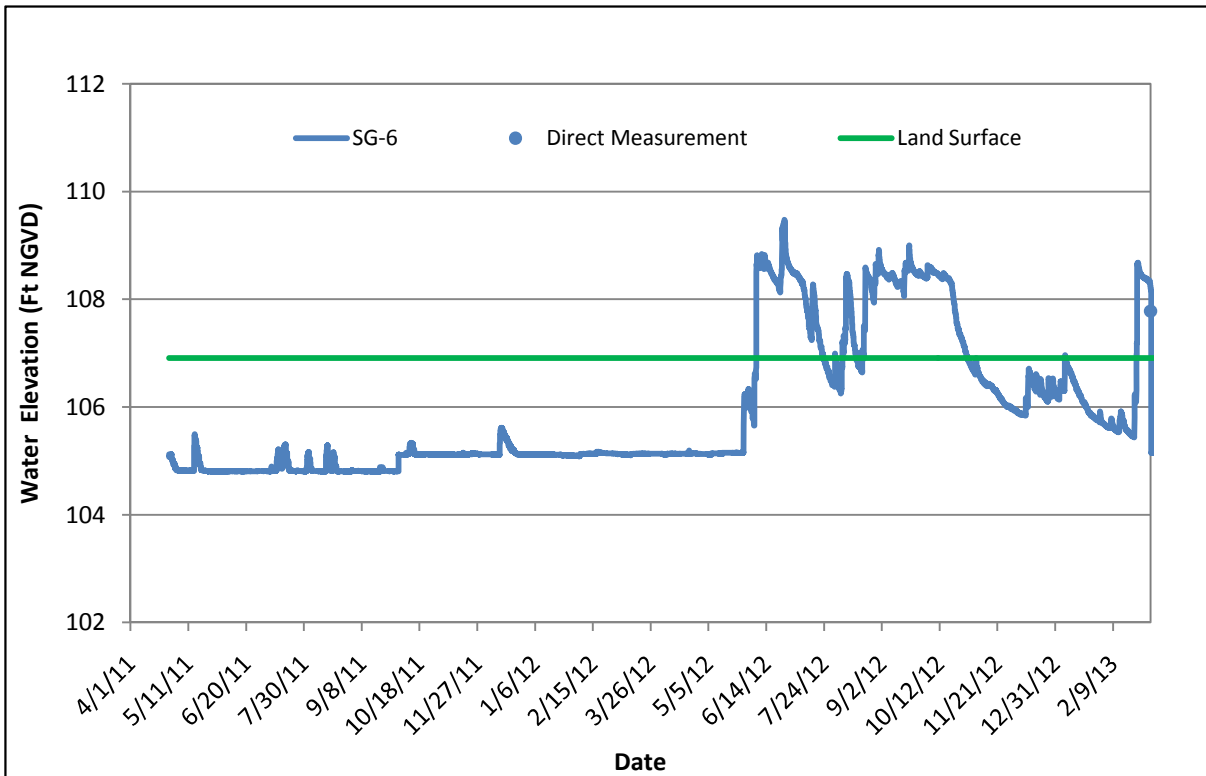












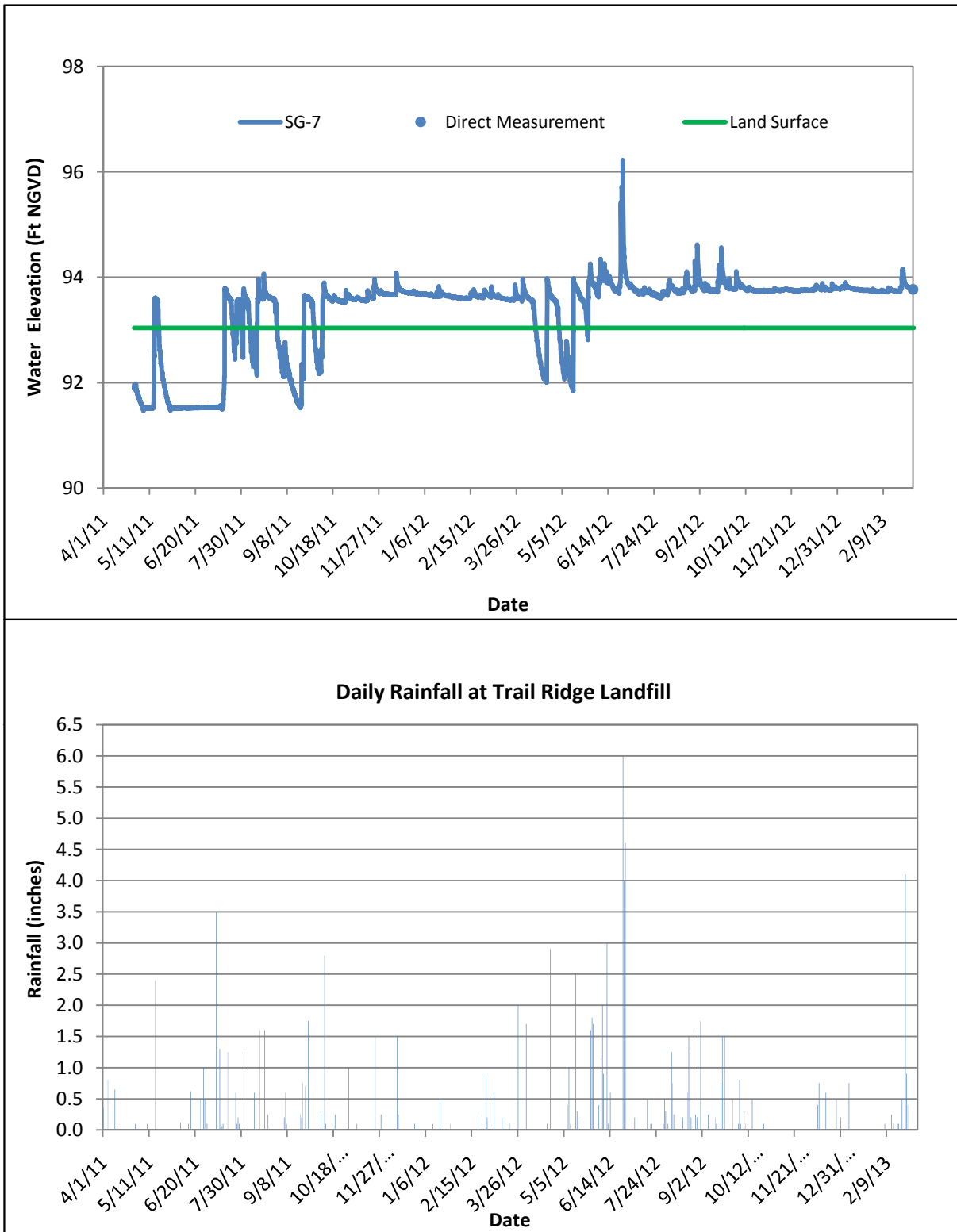
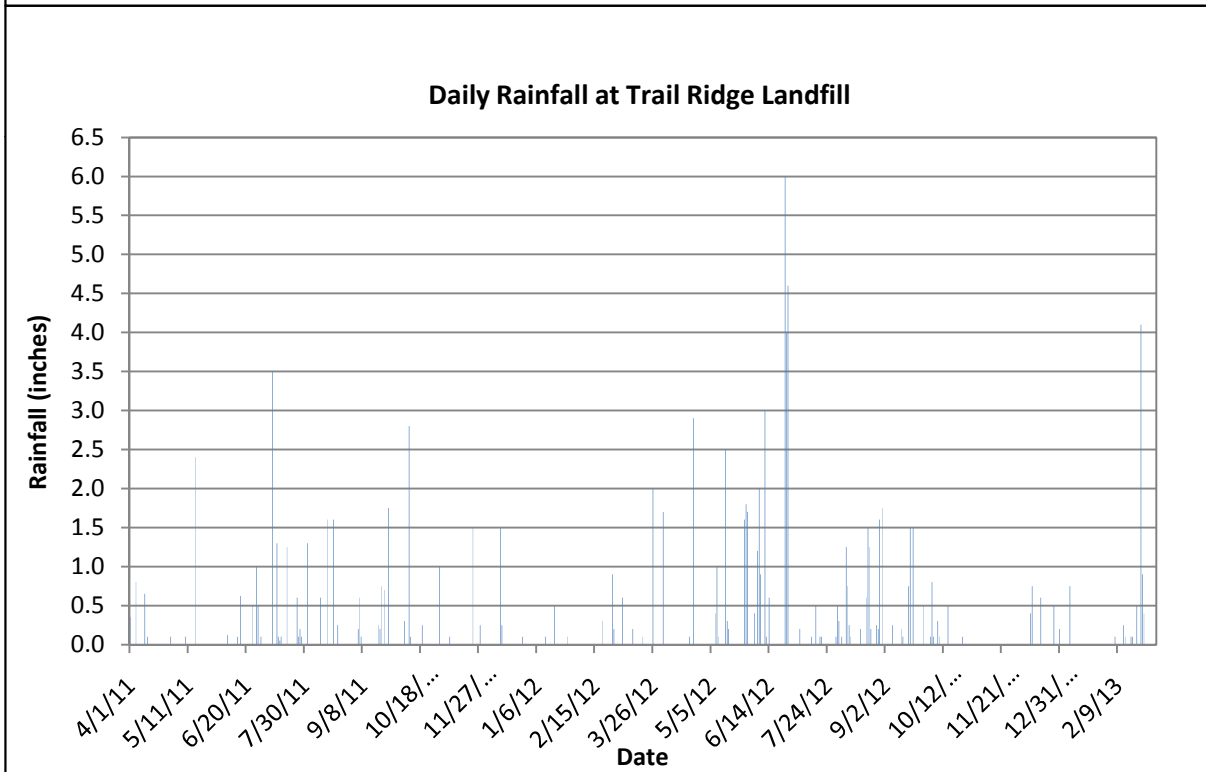
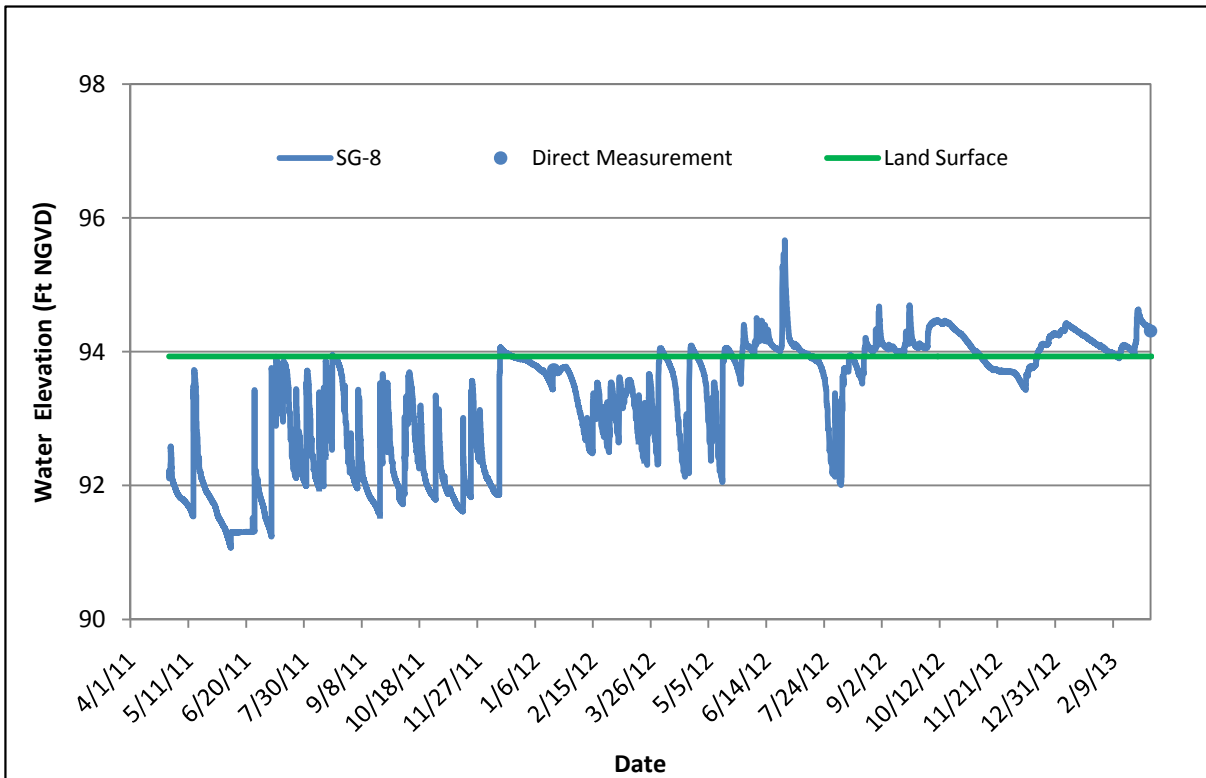
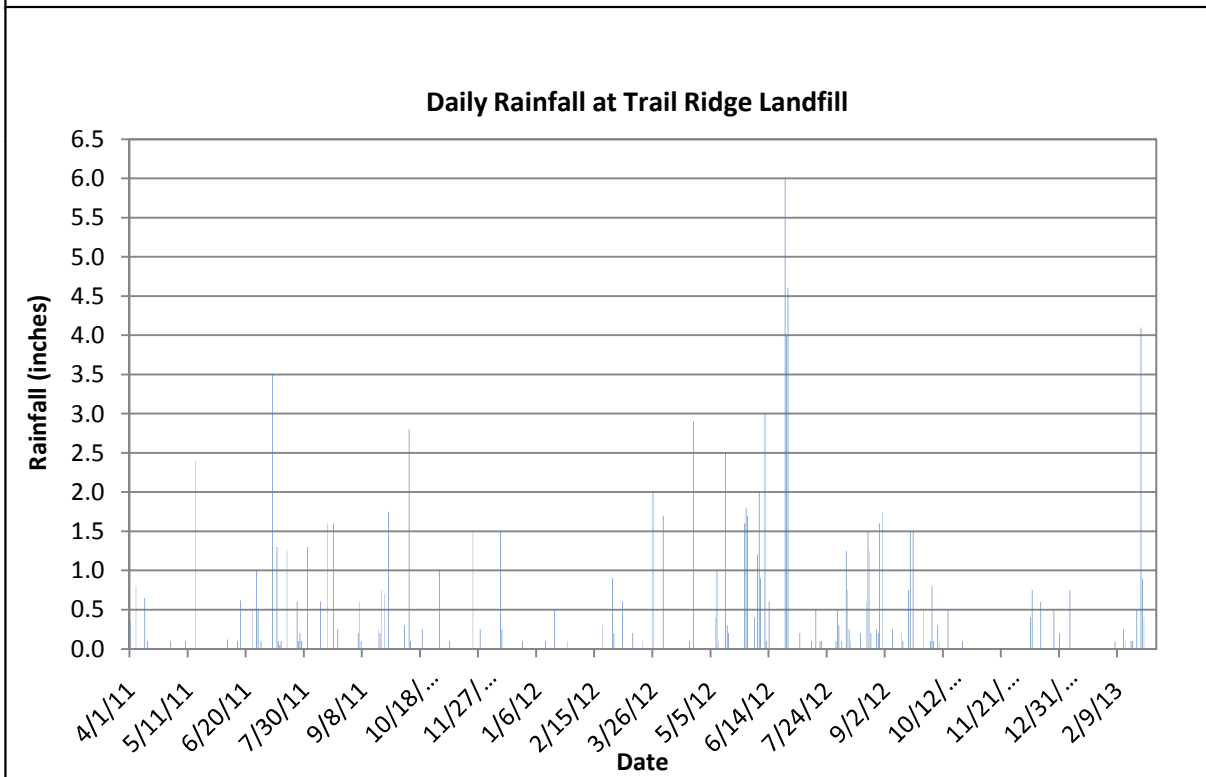
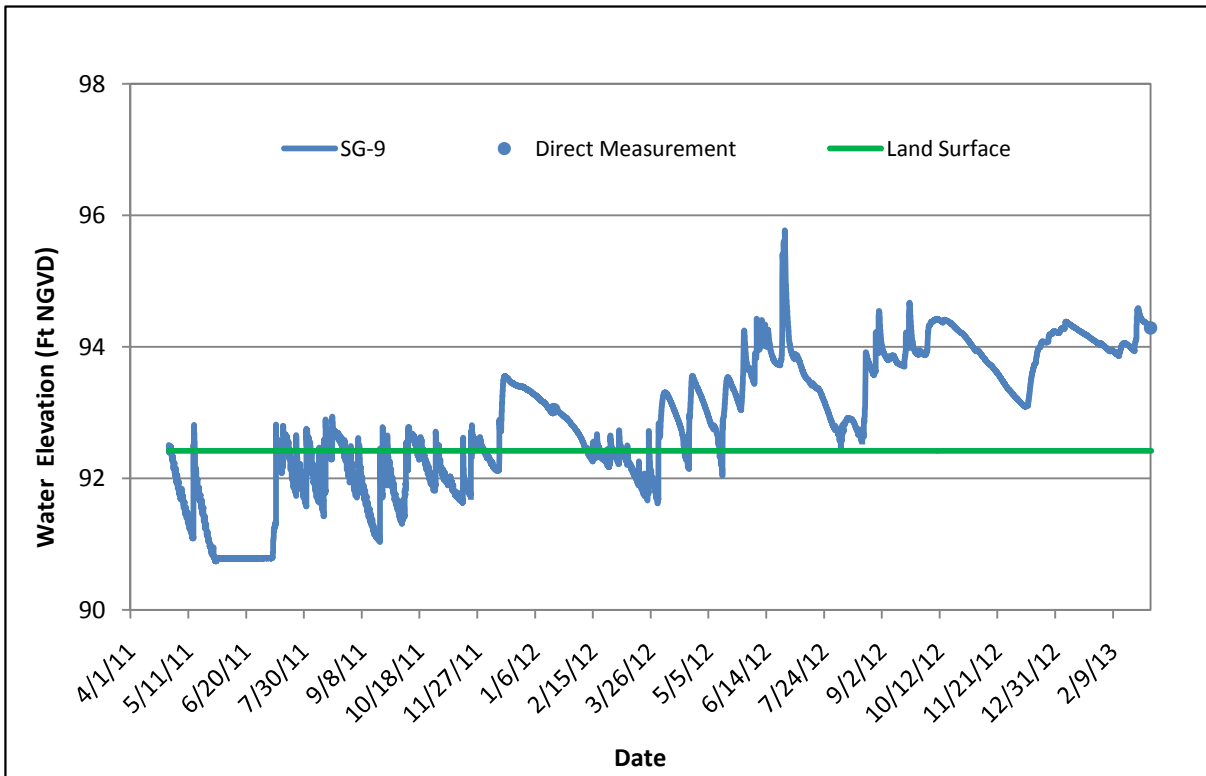


Figure D-13
Water Elevations at Staff Gauge SG-7





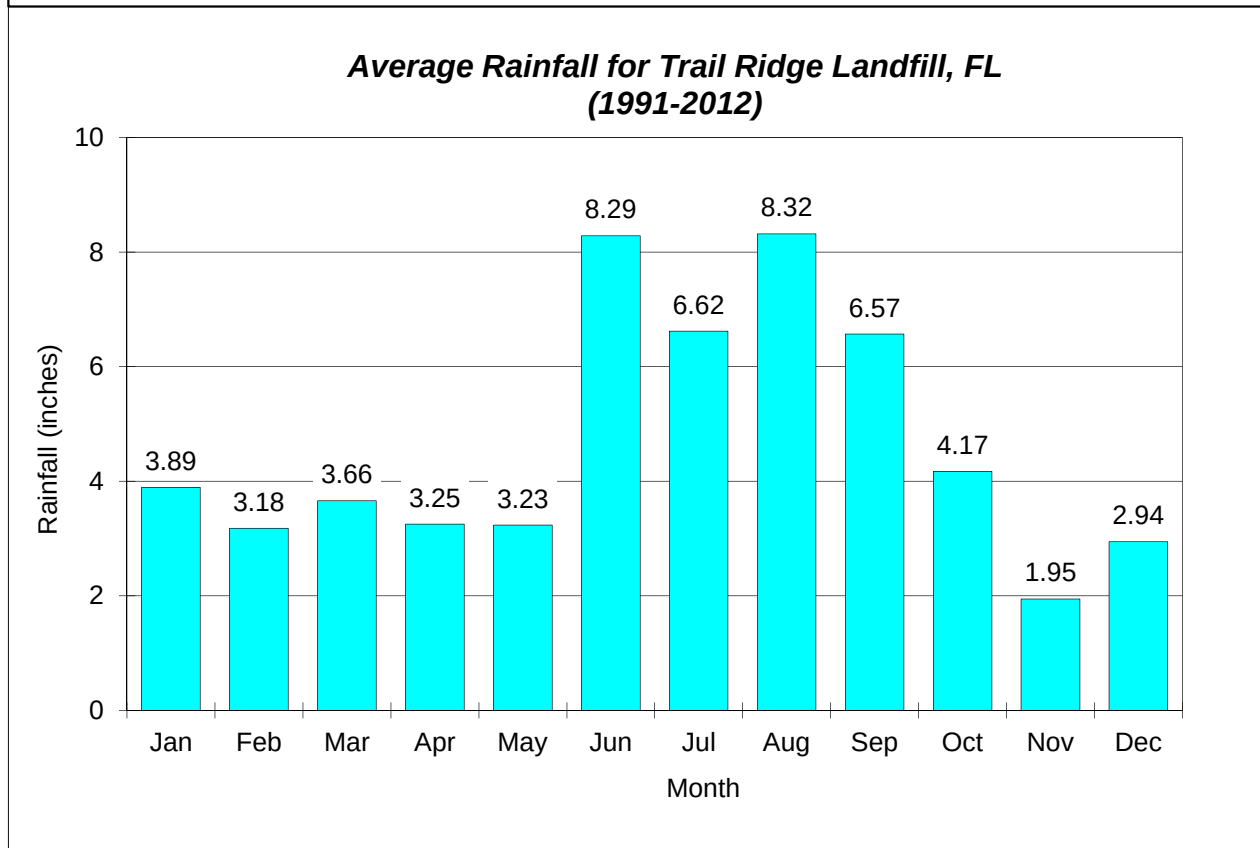
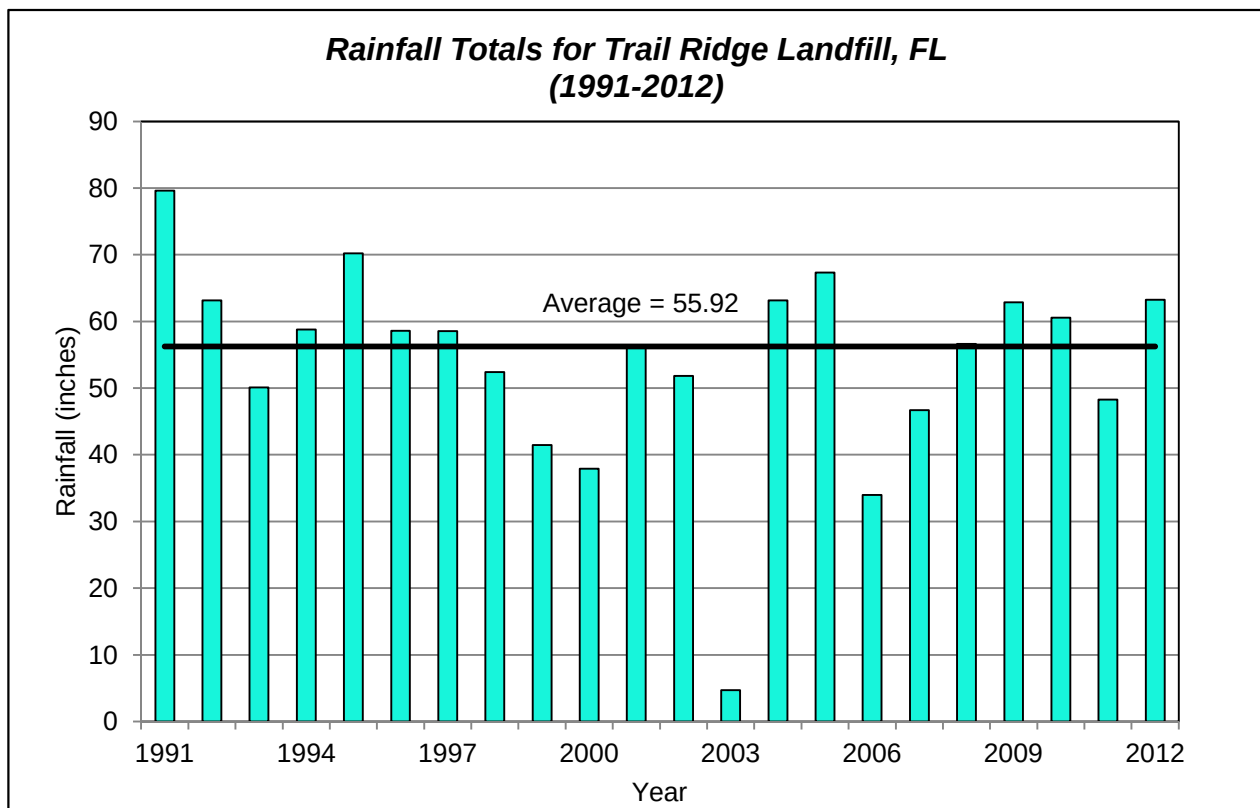


Figure D-16
Rainfall Data for Trail Ridge Landfill, Jacksonville, Florida

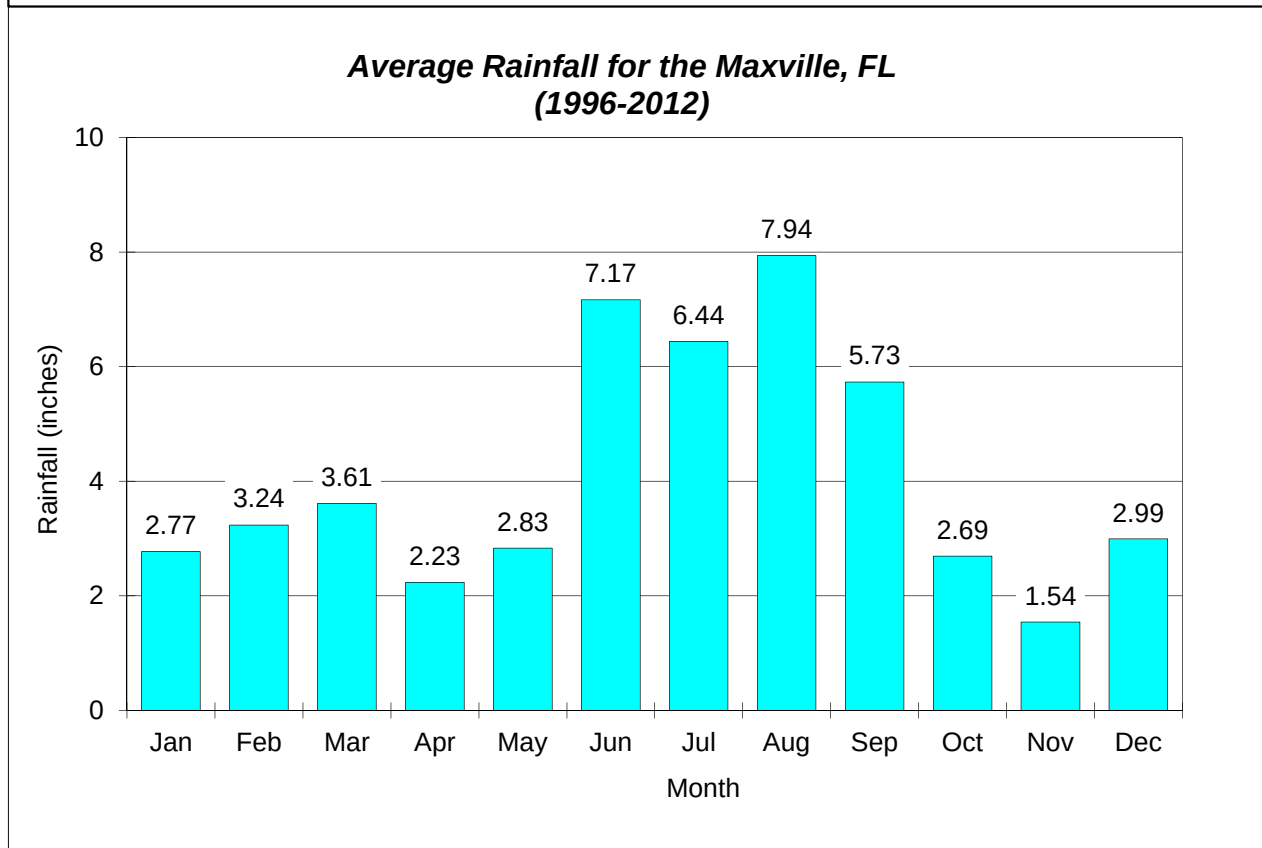
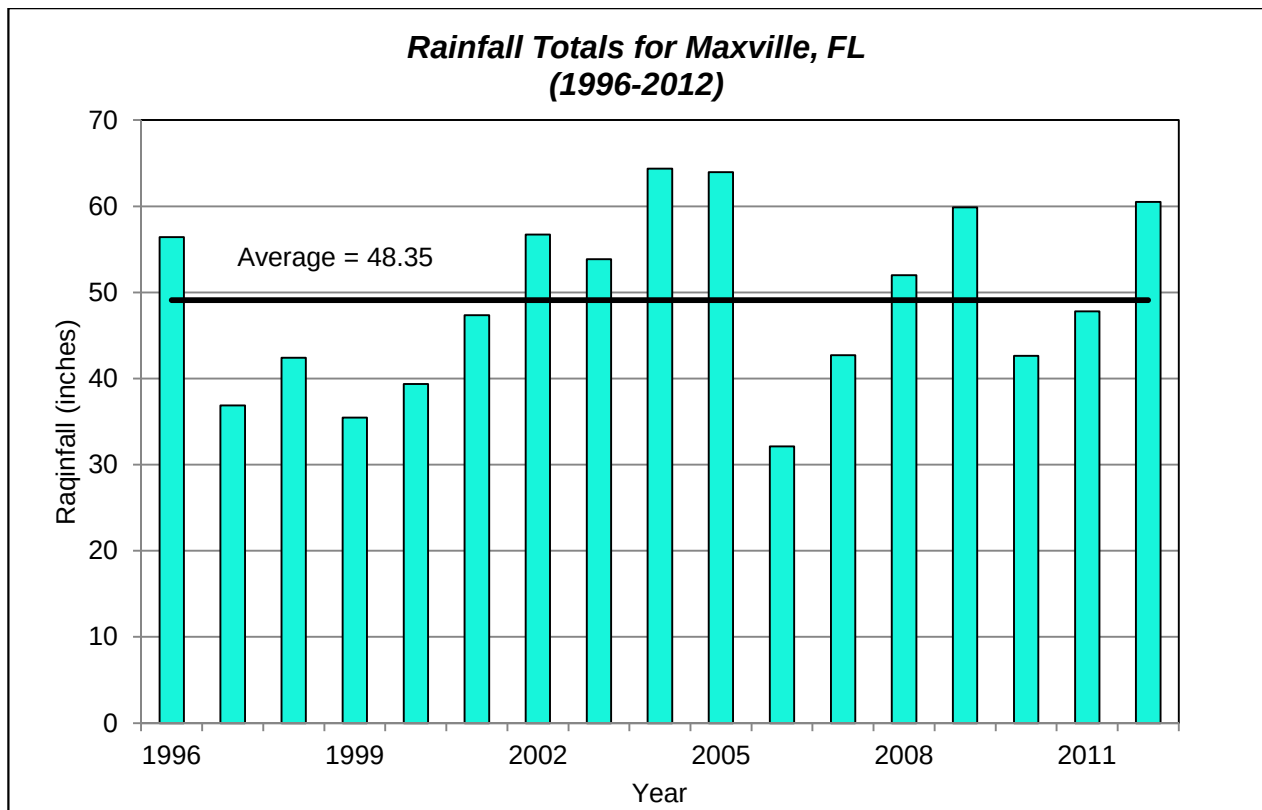


Figure D-17
Rainfall Data for Maxville, Florida (SJRWMD Station No. 02691483)

