



***Mill View
Port St. Joe, Gulf County, Florida
Limited Contamination Assessment Report***

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Executive Summary

On May 3, 2001, a request for assistance was received by the Florida Department of Environmental Protection's (FDEP) Site Investigation Section (SIS) from the FDEP Northwest District Office in Pensacola, Florida. The District Office requested that SIS determine if industrial waste from a paper mill, located in Port St. Joe, Florida, was landfilled at both a nearby Apalachicola Northern Railroad (ANRR) maintenance yard and an adjoining tract of land that is now the location of the Mill View Addition Unit #2, a single family home neighborhood. The District further requested SIS to characterize the waste, if present, and ascertain if it contains contaminants potentially injurious to human health, specifically arsenic from discarded fly ash.

In April 2002, in response to a petition from local residents, the District requested SIS to expand its scope of assessment to include the Mill View Addition Unit #3 residential neighborhood where the landfilling of paper mill waste was also reported to have occurred. The request further entreated SIS to analyze soil samples from both neighborhoods for the presence of organic compounds, particularly dioxins and furans that may have resulted from the plant's bleaching of paper with chlorine. The mill initiated this process in 1966.

In order to comply with the District's initial request to identify and characterize wastes that may have been landfilled within the Mill View #2 neighborhood, SIS acquired right-of-way access from the city of Port St. Joe. The Mill View #2 layout of streets and service alleys enabled SIS to establish an unbiased sampling grid facilitating the collection of soil samples from both within and outside the area where landfilling activities supposedly occurred (the sock). Since most of the ANRR property is an empty tract that has minimal public contact, SIS concentrated its assessment efforts within the inhabited neighborhood. At several sample locations, primarily within the sock, wood and pine bark chips in various stages of decomposition were encountered by SIS.

Additionally, lime grits and what appeared to be ash and slag (boiler residue) were identified in some of the collected core samples

Environmental samples were gathered from the soil sample grid at two discrete intervals and analyzed for specific metals. In addition, subsurface soil conductivity values were measured at several locations to ascertain the extent of backfilling activities within the subdivision. Shallow monitor wells were then installed to evaluate potential impacts made to ground water by the spreading and burying of mill waste. During the purging and sampling of the SIS installed monitor wells, SIS noted atypical ground water parameters, including elevated specific conductivity and pH values. Consequently, SIS expanded the suite of analytes sampled for in the wells to include organic and inorganic compounds associated with pulp and paper mill processes.

Following the receipt of the District's augmented request, SIS collected biased samples in areas identified by testimony from residents and historical photographs where mill wastes may have been spread during and after 1966 when the plant began bleaching paper including locations within the Mill View #3 neighborhood. Soil samples were collected and analyzed for organic compounds.

Results from the SIS environmental assessment indicate that the landfilling of waste from the St. Joe Paper Company mill did occur within the Mill View #2 and #3 neighborhoods in Port St. Joe, Florida. The bulk of the fill identified present consists primarily of wood chips in various stages of decomposition. In addition, lime grits, which are a byproduct of the lignin removal process, were recognized in several SIS collected soil samples. Lesser amounts of ash and slag were also identified in samples collected from within Mill View #2. At most sample locations evaluated by SIS, the materials encountered and their associated depths were diverse, testifying to the heterogeneity of the fill material. Other than the presence of lime grits used as road base, most waste was first encountered several inches below land surface. The horizontal extent of landfilling identified by SIS conductivity profiling is consistent with St. Joe

employee reports. Depths of backfill within Mill View #2 exceed 15 feet near a ditch location that once traversed the area. In Mill View #3, the extent of fill material extends east from an area adjacent to Bay Street to a parallel service road. A wetland that previously existed in this area was backfilled with wood chips and lime grits. Some houses located on Bay Street exhibit signs of structural damage. Many residents believe these problems are the results of fill material settling after home construction; homes located in the sock in Mill View #2 display similar plights.

Impacts to soils in the vadose zone from the paper mill waste were identified in samples collected primarily within the sock bisecting the Mill View #2 neighborhood. The pollution discovered is widespread but generally found in low amounts, although several sample locations exhibit concentrations that exceed FDEP risk based residential soil guidance levels (SGLs). Residential SGLs for the organic polycyclic aromatic hydrocarbon (PAH) compounds benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene were exceeded. In addition, PCB (polychlorinated biphenyl) 1260 was also reported present at a concentration above its respective residential SGL.

The landfilled mill waste has detrimentally impacted ground water quality. Sodium was reported in concentrations exceeding its Florida primary drinking water standard in three SIS monitor wells positioned within the sock. Sodium hydroxide is utilized in the chemical pulping process. In addition, concentrations of iron and manganese were found in excess of applicable secondary drinking water standards in samples collected primarily from monitor wells positioned in areas that were landfilled. Buffered pH values, likely from buried lime grits, and high specific conductivity values were also observed in wells positioned within the sock. Lead was reported present in an irrigation well at a concentration exceeding the primary standard for that metal, however, levels were far reduced elsewhere suggesting this result to be atypical.

No volatile or semivolatile organic compounds were reported present in ground and surface water samples collected. Extremely low concentrations of dioxins and furans were identified in all SIS water samples. The calculated toxic equivalence factor (TEQ) values for these compounds are well below the concern threshold of 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin).

Ground water flow within the Mill View #2 neighborhood is primarily towards the west with a slight vector to the south. The ground water surface becomes complex within and immediately adjacent to the former ditch area location, which represents the topographic low of the immediate study site. As a consequence, ground water within the surficial aquifer just west of the ditch location area, flows east towards the former ditch. The aquifer likely flows towards the west again when it escapes the influence of the former ditch area. In that direction, located less than one mile away, is the St. Joseph Bay coastline.

It is the recommendation of SIS and the FDEP Northwest District that additional assessment be performed by the Potential Responsible Parties (PRPs) in areas where the primary standard for sodium in ground water was exceeded to understand the extent of that metal's contamination. The impacted aquifer does supply several irrigation wells within the Mill View #2 neighborhood. Furthermore, a risk assessment should be performed by the PRPs due to the presence of residential SGL exceedances. This assessment would consider data from additional assessment recommended to be performed by the PRPs in areas where elevated concentrations of SGLs have been identified. Ground water samples should also be collected and evaluated for PCBs in areas where elevated PCB concentrations in soils were identified. This risk assessment should also include areas where material was placed on ANRR property during and before 1970.

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1.0 Introduction

On May 3, 2001, a request for assistance was received by the Florida Department of Environmental Protection's (FDEP) Site Investigation Section (SIS) from the FDEP Northwest District Office in Pensacola, Florida ([Appendix A](#)). The District Office requested that SIS determine if industrial waste from a paper mill, located in Port St. Joe, Florida, was landfilled at both a nearby railroad maintenance yard and an adjoining tract of land that is now the location of the Mill View Addition Unit #2, a single family home neighborhood. The District further requested SIS to characterize the waste, if present, and ascertain if it contains contaminants potentially injurious to human health, specifically arsenic from discarded fly ash.

In April 2002, in response to a petition from local residents, the District requested SIS to expand its scope of assessment to include the Mill View Addition Unit #3 residential neighborhood where the landfilling of paper mill waste was also reported to have occurred. The request further entreated SIS to analyze soil samples from both neighborhoods for the presence of organic compounds, particularly dioxins and furans that may have resulted from the plant's bleaching of paper with chlorine. This process was initiated by the mill in 1966. The results of the SIS Mill View neighborhood environmental investigations are provided herein.

2.0 Background

2.1 Site Description

The SIS study area is located primarily within Mill View Addition Units #2 (Mill View #2) and #3 (Mill View #3), which are single family home neighborhoods located in the northern extent of Port St. Joe, Gulf County, Florida ([Figure 1](#)). The original Mill View neighborhood is situated on the western side of Mill View #2 ([Figure 2](#)). The

vicinity that encompasses Park, Robbins, Garrison, and Kenney Streets, was established before Mill View #2 (Figure #3) and will be regarded as part of the original Mill View neighborhood in this report. The study site is situated in Section 1, Township 8 South, Range 11 West. More specifically, the SIS study area is outlined by Avenue A to the south, Harbor Street to the east, Avenue G and Clifford Sims Drive to the north, and U.S. Highway 98 to the west. Immediately south of Avenue A is the Apalachicola Northern Railroad (ANRR) maintenance yard (Photograph 1). ANRR is a subsidiary of the St. Joe Company. Within the study area are ANRR railroad spurs that provide service to local industry. Positioned due west of the neighborhood and across U.S. Highway 98 is the former St. Joe paper mill (Photograph 2).

2.2 Site History

From 1938 to 1996, the St. Joe Company operated the paper mill at the Port St. Joe location before selling the holding to Stone Container Corporation. Operations at the mill were suspended in August 1998 due to economic downturns in the paper industry. In January 2000, a decision was made to close the mill permanently (McCarthy, 2001).

Industrial waste generated by the plant from the 1940s through the early 1980s was apparently dumped within both the ANRR maintenance yard property and areas north of Avenue A (Ritchie, 2001). These wastes reportedly included boiler ash, tree bark, and lime grits. Lime grits are unreacted materials that result when green liquor and lime are mixed to reformulate white liquor, which is used to remove lignin from wood pulp (EPA, 1995). It was a common practice for pulp and paper companies from mill start-up until the 1970s to dump wastes and waste streams directly onto nearby land or into nearby bodies of water (Gable, 2001). The lime grits were used as roadbed material throughout the Port St. Joe area (Photograph 3).

An existing ditch and an associated low area that once bisected Mill View #2 received much of the waste (Figure 3). Long-term residents recall fishing on this

watercourse before it was filled. After the low area was brought close to the adjoining grade during the mid 1950s, the St. Joe Company subdivided and sold the land as lots for single-family homes (Moye, 2001). Portions of the unfilled ditch are still present immediately north of Avenue F and south of Avenue A within the ANRR rail yard property. The ditch location next to Avenue F receives water from the Mill View #2 neighborhood's storm water collection system (Photograph 4).

In the mid 1990s, residents of Mill View filed suit against a remediation company that was thermally treating contaminated media at an ANRR rail yard located next to their neighborhood. There were concerns regarding fugitive dust advecting off the ANRR property and impacting local residents (Hultstrand, 2003). During the discovery phase of the lawsuit, legal representation for the Mill View citizens discovered a letter by a St. Joe Company executive dated 1989 stating that boiler ash was dumped within the neighborhood and rail yard. Boiler ash from wood or bark that is burned with oil can contain arsenic and other toxic compounds (Teaf, 2001). A map portraying the extent of the landfilling activities, according to St. Joe employees, was also revealed (Figure 3). This landfilled area is generally shaped in the form of a sock. The term "sock" became synonymous with the fill area prior to SIS involvement and will be utilized in this report for uniformity.

This information had not been provided to the Florida Department of Environmental Regulation (predecessor to FDEP) in 1990 when FDER rejected an ANRR contamination report for not explaining the source of elevated concentrations of arsenic in ground water subjacent to the ANRR property. When the new information was reported to the Department in May 2001, the FDEP Northwest District Office issued a Request for Assistance to SIS to substantiate the presence of these industrial wastes, particularly boiler ash, and to determine whether they could also be a source of arsenic and/or other contaminants.

In April 2002, in response to a petition from local residents, the District requested SIS to expand its original scope of work to analyze soil samples from the Mill View #2 and #3 neighborhoods for the presence of organic compounds, particularly dioxins and furans. These compounds, which are deleterious to human health, are byproducts of chlorine used in the paper bleaching process; the St. Joe Paper mill began using chlorine in 1966. Statements from residents and St. Joe employees indicate that mill waste was landfilled within the north-central extent of Mill View #2 through the middle and late 1960s and the disposal of mill waste occurred in Mill View #3 into the early and mid 1980s (Figure 4).

3.0 Field Investigation

3.1 Scope of Field Work

In order to comply with the District's initial request to identify and characterize wastes that may have been landfilled within the Mill View #2 neighborhood, SIS acquired right-of-way access from the city of Port St. Joe. The Mill View #2 layout of streets and service alleys (Photograph 5) enabled SIS to establish an unbiased sampling grid facilitating the collection of soil samples from both within and outside the area where landfilling activities supposedly occurred (the sock). Since most of the ANRR property is an empty tract that has minimal public contact, SIS concentrated its assessment efforts within the inhabited neighborhood. Environmental samples were generally collected from the soil sample grid at two discrete intervals and analyzed for specific metals. In addition, subsurface soil conductivity values were measured at several locations to ascertain the extent of backfilling activities within the subdivision. Shallow monitor wells were then installed to evaluate potential impacts made to ground water by the spreading and burying of the mill waste. During the purging and sampling of the SIS installed monitor wells, atypical ground water field parameters, including elevated

specific conductivity and pH values, were noted by SIS. Consequently, SIS expanded the suite of analytes sampled for in the wells to include organic and inorganic compounds associated with pulp and paper mill processes.

Following the receipt of the District's augmented request, SIS collected biased samples in areas identified by testimony from residents and historical photographs where mill wastes may have been spread after 1966 when the plant began bleaching paper including locations within the Mill View #3 neighborhood. Soil samples were collected and analyzed for organic compounds. A time line of SIS activities is presented in [Appendix B](#).

3.2 Soil Sampling

On June 4, 2001, SIS initiated field activities at the Mill View #2 site. To determine whether boiler ash and metals associated with ash were landfilled, an unbiased grid consisting of 32 sample locations was distributed across the neighborhood ([Figure 5](#)). Grid nodes were set approximately 200 to 300 feet apart and were designated MV1 through MV32. Nineteen sample points were located within the area reportedly landfilled with mill waste; thirteen points were located outside the sock. The samples were collected from a four-foot long core barrel that was driven into the substrate by the SIS direct push rig. The core itself was collected within a PVC liner positioned within the core barrel. Once the core was brought to the surface, the liner was removed from the barrel and then sliced open to reveal the sample matrix. At each location, two discrete samples were collected for analysis. Sample intervals included the one-foot interval immediately below land surface (BLS) and the one-foot interval above the contact where subsurface soils were observed to become saturated with ground water ([Table 1](#)). This depth ranged from 2.5 to 5.5 feet BLS. A second core was collected from the four to eight foot BLS interval if the zone of saturation was encountered below the extent of the first core. Prior to placing the shallow interval sample into a collection jar, organic

material (grass, etc.) from the top one inch of the core, was removed. The shallow interval samples were collected to assess the potential of exposure to contaminants by the unsuspecting public. The purpose of the second interval sample collected just above the water table was to evaluate the potential vertical extent of metals contamination.

Samples were also collected at three locations below the water table surface where elevated conductivity values were recorded (discussed in the next section). These locations included MV3, MV12, and MV25; sample intervals ranged from 7 to 8.5 feet BLS.

Shallow soils sampled within the site are predominantly gray to tan, fine grain quartz sands with silty organic material present. Much of this matrix, especially on residential lots, is possibly fill material. Several long-term residents mentioned that prior to their home's construction, they brought in fill to cover wood chips and to raise the grade of their property.

At several sample locations, primarily within the sock, wood and pine bark chips in various stages of decomposition were encountered by SIS ([Photograph 6](#)). Additionally, lime grits and what appeared to be ash and slag (boiler residue) ([Photograph 7](#)) were identified in some of the collected core samples ([Table 1](#)).

Soil samples collected from cores were stored on ice and delivered under chain of-custody to the FDEP Central Laboratory for EPA Method 7471 Modified (mercury) and EPA Method 6010B (arsenic, cadmium, lead, nickel) analyses. EPA Method 245.1 (mercury) and EPA Method 200.8/6020 (arsenic, cadmium, lead, nickel) were utilized for equipment rinse blank sample analyses.

On August 14, 2001, SIS collected soil samples from four additional locations at the Mill View #2 site. The sampling process and parameters sampled for mimicked the earlier June 4, 2001 event. These points were designated MV33 through MV36 ([Figure 5](#)). Sample locations MV33, MV34, and MV35 were located further away from the sock so that a truer depiction of metal background levels in soils within the study site could be

obtained. Soil sample MV36 was collected from a location, where during the installation of an SIS ground water monitoring well (to be discussed later), a blue-green, sour smelling matrix incorporated with lime grits was discovered ([Photograph 8](#)). Sample location MV18, which contained only fine grain sand and bark chips, is located less than 20 feet from MV36. This testifies to the heterogeneous nature of the landfilled waste within the neighborhood.

During the week of April 29, 2002, additional soil samples were collected in Mill View #2, predominantly within an area down the length of north Battles Street in between Avenues C and F, and along properties fronting Bay Street in Mill View #3. These two areas were identified by residents and former St. Joe Paper employees as locations where landfilling activities occurred from the mid 1960s to the 1980s. There exists a concern that waste placed in these areas may have included materials from the bleaching process utilized by the plant starting in 1966. As a result of these concerns, samples were collected and analyzed for volatile organic compounds (EPA Method 8260), semivolatile organic compounds including polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) (EPA Methods 8270 and 8080 modified), and metals that were previously analyzed for (EPA Methods 7471 modified and 6010B). EPA analytical methods 8270 (semivolatile organic compounds), 245.1 (mercury), 200.7/6010B (ICP metals), and 624/8260 (volatile organic compounds) were utilized by the Central Laboratory to evaluate SIS equipment blanks. In addition, three samples were collected from each Mill View unit and submitted for dioxin and furan analysis (EPA Method 8290). Sampling activities mimicked those previously performed. Cores from land surface to four feet BLS were collected with the SIS direct push unit and soils within the cores that appeared unusual (lime grits and calcareous clay for example) were collected for analysis. Sample locations within the Mill View #2 were designated MV37 through MV46 ([Table 1 and Figure 5](#)). Locations MV45 and MV46 were sited away from the north Battles Street corridor. MV45 was positioned near south Battles Street

where a railroad spur once existed to ascertain whether railroad activities impacted the environment with organic compound contamination. MV46 was located in the center of the sock between Avenues B and C within a resident's backyard where trees reportedly would not grow.

Samples collected within Mill View #3 were designated MV47 through MV54 (Table 1 and Figure 6). These sample points were positioned in residents' front yards and along the extreme edges of Bay Street and Clifford Sims Drive. The presence of lime grits at these latter locations indicates that parts of these roads were likely built on top of the mill waste. All of the samples collected within Mill View #3 contained lime grits. In addition, evaluations of subsurface material immediately adjacent to and in between houses fronting Bay Street (bucket auger samples) revealed the presence of wood chips integrated with sand (Figure 6). Many of these homes have structural defects including cracked masonry, uneven rooflines, and porches separating from the house. It is conjectured by the impacted residents that wood chips landfilled at this location have settled causing the foundations of some homes to subside.

On June 27, 2002, SIS personnel again collected soil samples throughout the Mill View #2 neighborhood. This sampling event was performed in response to analytical results received from the April 29, 2002 sampling. The FDEP Central Laboratory reported the presence of elevated concentrations of PCBs and PAHs in some of the samples. It was thought prudent to expand the scope of assessment to evaluate the extent of these organic compounds. The locations resampled for PCB and PAH contamination include MV-3, 6, 9, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 29, and 33. Samples were collected generally 2 to 3 feet BLS in a manner identical to the procedures earlier outlined. In addition, surface scrape samples were collected at locations MV18 and MV42. Samples earlier collected at these locations were reported to contain the highest concentrations of PCBs or PAHs.

All of the SIS soil samples were collected in accordance to the 2001 SIS Comprehensive Quality Assurance Plan and the 2002 FDEP Standard Operating Procedures Manual. Laboratory results are presented in Section 5.0 of this report.

3.3 Direct Push Conductivity Profiling

To characterize the study site's unconsolidated lithologies, a Geoprobe Systems® SC400 conductivity probe was utilized during the initial and later field phases of this assessment. In Mill View #2, an electronic conductivity log or ECL was recorded at soil sample locations MV1 through MV32, MV36, and MV44 (Figure 5). Information from this survey provided insight to the extent of landfilling activities performed at this location. In Mill View #3, ECLs were collected from sample location MV48, MV50, and MV52. Additional ECLs were collected throughout the neighborhood to define the shallow lithology. These conductivity points are designated MVA through MVN (Figure 6).

The ECLs were generated by driving a probe rod equipped with a conductivity tool into the subsurface. As the tool was advanced, it simultaneously measured the conductivity of the adjacent soils in milliSiemens per meter. In general, the higher the percentage of fines present in the lithology matrix, the more conductive the material and consequently, the greater the response on the ECL. The system presents real time data as the probe is advanced. It also measures the rate-of-penetration (ROP) of the probe. The ECL was terminated at each location when it became apparent that native soil was being encountered. Probe ROP rates of approximately 10 feet per minute and less were observed in undisturbed soils (dense sands) well outside the sock. Probe ROP rates exceeded 30 feet per minute in fill soils. After the ECL profiling was completed at a sample location, the probe rods were withdrawn, and the borehole abandoned. Appendix C presents all of the SIS acquired ECL logs. The findings are discussed in Section 4.0 of this report.

3.4 SIS Installed Shallow Aquifer Monitor Wells

To characterize ground water quality within the upper portion of the shallow aquifer system subjacent to the Mill View #2 site, SIS installed a network of eleven monitor wells. These wells were designated DEP1 through DEP11 (Figure 7) and were installed during the week of August 13, 2001. The monitor wells were positioned based on soil sample analytical results, elevated specific conductivity results, and where the presence of ash and slag were observed (Table 2). Wells were also situated in locations where background water quality information could be garnered. In addition, an attempt was made to make uniform the spatial orientation of the monitor well network to allow for a more accurate determination of the shallow aquifer system's ground water surface. No monitor wells were installed in Mill View #3 because of soil sample analytical results that will be presented later in this report.

The microwells were installed by advancing 2-inch inside diameter probe rods attached to an expendable point into the substrate with the direct push rig to a depth of approximately 12 feet BLS. This depth was selected because much of the backfill identified present within the site is spanned by this interval. A 5-foot section of prepacked 0.010 inch slotted screen coupled with ¾ inch inside diameter PVC schedule 40 casing was then inserted through the probe rods and fastened to an expendable point. The sand pack sieve size was 80/120. This sieve was selected due to the presence of organic silts observed in soil samples and elevated conductivity values presented by the ECLs. After a well screen was secured to the expendable point, glass beads were then poured into the annular space to complete the well screen's sand pack and to provide a seal above the screened interval. The annular space was then grouted from above the seal to land surface as the remaining probe rods were withdrawn from the probe hole. All wells are protected from damage by flush-to-grade steel vault boxes in two-foot by two-foot concrete pads and locking well caps. Microwell screened intervals were from

approximately 6.5 to 11.5 feet BLS. Final SIS well construction details are presented in [Table 3](#).

3.5 Ground Water Level Measurements and Top-of-Casing Survey

During the course of this investigation two sets of water level measurements were collected ([Table 4](#)). The ground water levels in the monitor wells were measured using an electronic water level indicator from a mark established by a top-of-casing elevation survey. This survey linked the elevations of all the SIS installed monitor wells. An arbitrary elevation of 5.00' National Geodetic Vertical Datum (NGVD, 1929) was assigned to monitor well DEP11. The top-of-casing elevation survey was performed using a level and stadia rod employing standard surveying techniques. The measured water levels were then subtracted from the top-of-casing elevations to obtain ground water elevations in reference to NGVD. After the network of monitor wells was linked together, graphical depictions of the ground water surface were generated. A more detailed discussion regarding the water table surface is presented in Section 4.0 of this report.

3.6 Water Sampling

During the week of August 14, 2001, ground water samples were collected from the SIS network of monitor wells and six private irrigation wells ([Photograph 9](#)) located within the Mill View neighborhood ([Table 5 and Figure 8](#)). Irrigation well construction details were nonexistent; no information was located in Northwest Florida Water Management records. The owner of the 502 Peters Street well thought his source of irrigation water was approximately 30 feet deep.

Ground water analytes sampled for included the metals mercury, lead, arsenic, cadmium, and zinc. In addition, samples were collected for volatile organic compound (VOC) analysis. This was done because of a concern that artifacts from the pulp

bleaching process may have also been landfilled. Since the VOC compound chloroform is persistent and to a certain extent nonbiodegradable (EPA, 1995), its presence in ground water may indicate that pollutants from the bleaching process are present.

All ground water samples were collected according to the 2001 SIS Comprehensive Quality Assurance Plan or EPA protocol. Quiescent sampling procedures were utilized to minimize turbidity. Despite this methodology, during the first ground water sampling event, turbidity values remained above the 20 Nephelometric Turbidity Units (NTUs) threshold in purge water from several wells. Several samples were consequently filtered with a 1-micron filter, prior to collection for comparison purposes. The water samples were collected, preserved on location, chilled with ice, and then delivered under chain-of-custody to the FDEP Central Laboratory for analyses. The following methodologies were utilized by the laboratory to qualify and quantify for a variety of analytes: EPA Method 200.8/6020 (lead), EPA Method 200.7/6010B (arsenic, cadmium, and nickel), EPA Method 245.1 (mercury), and EPA Method 624/8260 (volatile organic compounds). Ground water parameters including temperature, specific conductivity, pH, dissolved oxygen, and turbidity were also collected with field calibrated water quality meters.

During the week of October 15, 2001, a second ground water sampling event was performed. This sampling was in response to elevated conductivity values and elevated pH measurements observed in purge water from several monitor wells during the August 14, 2001 sampling. This will be further discussed in Section 5.0 of this report. Because of these irregularities, it was thought prudent to further define the quality of ground water subjacent to the site by collecting pollution parameters associated with pulp wood manufacturing processes (Watts, 1989). These parameters included alkalinity, chloride, sulfate, sulfide, semivolatile organic compounds, dioxins and furans, and metals including calcium, iron, magnesium, manganese, potassium, and sodium. The methods utilized by the Central Laboratory for analyses include: EPA Method 310.1 (alkalinity),

EPA Method 300.0 (chloride and sulfate), EPA Method 8270 (semivolatile organic pollutants), EPA Method 200.7/6010B (unfiltered and filtered metals), and EPA Method 376.2 (sulfide). The dioxin and furan analyses were performed by Axys Laboratory, located in British Columbia, utilizing EPA Method 1613.

During this sampling event, only the SIS installed monitor wells and one surface water location were sampled. The surface water sample (designated SW1) was collected at the southern end of the ditch located immediately northwest of the corner of Avenue F and Battles Street (Figure 7). The surface of the water was below the bottom of the storm water pipes that empty into the ditch. There was no obvious water flow within the ditch during the sample collection process.

Water sample laboratory results are presented in Section 5.0 of this report.

3.7 GPS Location of Sample Points

Sample collection points were located utilizing a Trimble™ Pro XL Global Positioning System (GPS) unit. All GPS locations were differentially corrected using a radio signal from the United States Coast Guard radio beacon. The latitude and longitude of all SIS sampling points are provided in Table 6.

4.0 Site Conditions

4.1 Regional Geomorphology and Stratigraphy

Gulf County lies within the Gulf Coastal Lowlands geomorphic province. This province is characterized by a generally flat, sandy terrain and extends from the coast inland to middle Calhoun County, with its northern limit at approximately 100 feet above mean sea level. The modern gulf coastline consists of well-developed quartz sand beaches and spits, occasionally interrupted by marshy inlets and coves. Inland, the terrain is comprised of relict marine terrace deposits, sand dunes, ridges, bars, and river

delta deposits populated largely by poorly drained pine flatwoods and swamps (Rupert, 1991).

The known sediments underlying Gulf County range in age from Paleocene to Holocene. Undifferentiated Pleistocene and Holocene marine terrace sands and alluvium are the only deposits exposed at the surface. These sediments are comprised principally of white to light gray to greenish gray to brown to pale orange sands, clayey sands and in southern Gulf County, massive clays. The undifferentiated sediments reach a thickness of over 150 feet in the southern and southwestern portions of the county. The undifferentiated sands and clays forming the surficial sediments in Gulf County are predominantly marine and alluvial in origin (Rupert, 1991).

4.2 Regional Hydrology

Most of Gulf County's ground water is derived from precipitation within the county and from neighboring counties to the north. A portion of the precipitation leaves the area by surface runoff in stream flow or by evapotranspiration. The remainder soaks into the ground and moves downward into the water table. Once in this zone of saturation, the water moves under the influence of gravity towards discharge points such as wells, seeps, springs, or eventually the Gulf of Mexico. Some of the water seeps downward into the deeper aquifer units, providing recharge to them (Rupert, 1991).

In Gulf County, three primary ground water aquifer systems are present. These are, in order of increasing depth, the surficial aquifer system, the intermediate confining unit, and the Floridan aquifer system. Water in the shallow undifferentiated Pleistocene sand and clay sediments is not confined and the water level is free to rise and fall. The surficial aquifer is generally a thin unit, varying proportionally with the thickness of the undifferentiated sands and clays. In general, the thickness ranges from 4 feet in eastern Gulf County to as much as 90 feet in the northwestern part of the county.

The surficial aquifer system is not used extensively for public water supplies in Gulf County (Rupert, 1991).

4.3 Site Topography and Lithology

The topography within the study site is generally flat with a surface elevation between 3 and 10 feet above sea level. The lowest area within Mill View #2 parallels the western side of the former ditch location that cuts through the neighborhood. Storm drains collect rain water that falls in this area and convey it to the ditch located near Avenue F. Local residents complain of occasional flooding during large rainfall events.

Native soils encountered at both Mill View sites are gray to tan, predominantly fine grain, unconsolidated quartz sands. Sands white to light yellow in color were also observed in a few of the collected samples. Silt size organic material was also common in core matrices.

Within the Mill View #2 sock area where backfilling activities occurred, pine bark chips and wood fiber in various stages of decomposition were observed present in most cores. To a much lesser extent, concrete rubble, broken brick, lime grits, and ash and slag were also present. It appears that the areal extent of backfilling defined by the sock is reasonably accurate although the coverage of landfilling does extend beyond the sock at its western extent at sample point MV8, its eastern measure at MV5, and northern scope at MV28. Limes grits and/or pine bark were observed at these locations. However, no mill waste was observed at sample locations MV22, MV24, MV29, and MV31, which were positioned within the sock.

ECLs collected by SIS indicate the extent of backfilling within the Mill View #2 neighborhood. No two ECLs are alike indicating the heterogeneity of the landfilling material. The vertical extent of fill appears to exceed 15 feet BLS near the former ditch location. A three dimensional portrayal of the backfilled area within Mill View #2 is presented in [Appendix C](#). The basal extent of the backfill is defined as where the

conductivity probe's rate-of-penetration (ROP) slowed to less than 10 feet per minute. This ROP was observed while penetrating native dense sands outside or inside the sock area.

The lowest area in Mill View #3 is located near the western side of Bay Street (Photograph 10). According to a United States Geologic Survey map published in 1982 (Figure 9), this low area once included the vicinity that encompasses Bay Street and the adjoining service road that parallels it to the east. This area was later backfilled with paper mill waste to bring it to its present elevation.

In the area along the eastern side of Bay Street and generally extending to the front of the residences, a calcareous clay, most likely lime grit remnants, was routinely found just below land surface. Buried wood chips were also present and were most evident in boreholes alongside and between the homes. The wood chips and calcareous clay were not observed in SIS cores collected adjacent to the service road that parallels Bay Street towards the east. This lane may represent the easternmost extent of filling that occurred within this portion of the neighborhood; conductivity logs collected in Mill View #3 appear to substantiate this aspect (Appendix C).

As a consequence of the incomplete compaction of the backfill in Mill View #2 and #3, settling has occurred within the neighborhoods. Several brick and cinder block homes have cracks that appear to have been caused by land subsidence although a geotechnical analysis should be performed to substantiate this assumption (Photograph 11).

4.4 Site Hydrogeology

The surficial aquifer at the Mill View #2 study site is encountered approximately 1.5 to 4.5 feet below land surface (Table 4). Using water level data gathered from the SIS installed monitor well network, ground water surface maps of the surficial aquifer were developed (Figures 10 and 11). Ground water flow within this neighborhood is

primarily towards the west with a slight vector to the south. The ground water surface becomes complex within and immediately adjacent to the former ditch area location, which represents the topographic low of the immediate study site. As a consequence, ground water within the surficial aquifer just west of the ditch location area flows east, towards the former ditch. The aquifer likely flows towards the west again when it escapes the influence of the former ditch area. In that direction, located less than one mile away, is the St. Joseph Bay coastline.

5.0 Analytical Results

5.1 Soil Sample Analytical Results

Several organic and inorganic compounds were reported present in soil samples at concentrations exceeding FDEP's risk based Soil Guidance Levels (SGLs). The "residential" SGL is applicable to soils in the vadose zone and are used for site screening purposes. The SGL assumes long-term direct exposure to adults and children in an unrestricted residential setting. SGL exceedances will be presented in this section of the report.

5.1.1 Metals in Soil Analytical Results

The initial soil assessment phase of this study was designed to ascertain whether metals that may be associated with boiler ash, are present in soils within the Mill View neighborhood. The metals analyzed for by the FDEP Central Laboratory included mercury, arsenic, cadmium, lead and nickel. Later during the assessment when the augmented request was received from the District office, an expanded suite of metals were analyzed for in additional samples collected from both Mill View neighborhoods. A summary of the analyses performed on each soil sample collected is presented in [Table 7](#). The supplementary metals were barium, calcium, iron, magnesium, manganese,

potassium, and sodium. Two locations, MV19(2-3') and MV36(2 -3'), were sampled during both events. Results from the second sampling are designated with an "A".

In shallow interval soil samples collected from 0 to 1 foot BLS, the eight locations reported to contain the highest levels of mercury were all located within or immediately adjacent to the sock area (Table 8 and Figure 12). However, several locations within the sock were also reported to contain some of the lower concentrations of mercury present. Soil sample MV19(0-1') contained the highest reported level of mercury at a concentration of 0.83 milligrams per Kilogram (mg/Kg); the next highest level of mercury in a shallow sample was 0.2 mg/Kg in MV21(0-1'). For comparison, of the three samples deliberately collected away from the sock, sample MV33(0-1') contained the highest concentration of mercury at a level of 0.023 mg/Kg. In deeper interval soil samples, generally collected from 2 to 4 feet BLS, the three locations reported to contain the highest levels of mercury are either located on or very near the location of the former ditch (Table 9 and Figure 13). Concentrations range from 0.37 to 1.2 mg/Kg. The highest concentration was reported in sample point MV36A; the first time this location was sampled, analysis reported a mercury concentration of 0.056 mg/Kg. The next two highest concentrations of mercury were in MV40(3-4'): 0.47 mg/Kg and MV38(1.5-2.5'): 0.37 mg/Kg. The fourth highest concentration was in sample MV19A(2-3'): 0.20 mg/Kg; the MV19(2 -3') result was comparable: 0.14 mg/Kg. As previously reported, the shallow sample from this position contained the highest concentration of mercury in the shallow sample collection. In comparison, the background deep sample with the highest level of mercury was sample MV34(3 1/2' to 4 1/2') with a concentration of 0.013 mg/Kg. The residential SGL for mercury is 3.4 mg/Kg. Concentrations of mercury reported in the saturated samples ranged from 0.011 mg/Kg in sample MV3(7-8') to 0.30 mg/Kg in sample MV10(7 -8') (Table 10 and Figure 14).

The highest concentration of arsenic reported present in a shallow interval sample was in MV19(0-1') at a concentration of 10.6 mg/Kg (Table 11). This is the same shallow sample with the highest reported concentration of mercury. The next three highest arsenic concentrations reported were in samples collected from within the sock including MV18(0-1')(3.0 mg/Kg), MV13(0 -1')(1.4 mg/Kg), and MV16(0-1')(1.4 mg/Kg). Presently, the residential SGL for arsenic is 0.8 mg/Kg. Thirtytwo of the forty-four shallow sample locations were reported to be laboratory nondetect for arsenic including the three background locations and several locations within the backfilled area in Mill View #2 (Figure 15). Twenty-three of the deep sample locations had reportable quantities of arsenic. The highest concentration of arsenic in the deeper interval was at the MV46 sample location. MV46(1-2') was reported to have arsenic at a concentration of 7.36 mg/Kg (Table 12 and Figure 16). The MV19(2-3') sample contained the second highest concentration of arsenic at a level of 6.2 mg/Kg. Interestingly, the MV19(34') sample was reported laboratory nondetect for arsenic as were the three deep background samples. The shallow MV3 soil sample was reported to contain no arsenic above the laboratory detection limit of 0.60 mg/Kg. The matrix for this particular sample consisted primarily of ash and slag. The concentrations of arsenic in the four saturated samples ranged from 6.3 mg/Kg and 5.9 mg/Kg in MV12(7 1/2-8 1/2) and MV10(7-8') to below detection limit in MV3(7-8') (Table 13 and Figure 17).

Cadmium was reported present in thirty-two of the collected shallow soil cores (Table 10 and Figure 18). The highest concentration of cadmium reported was once again in sample MV19(0-1') at a concentration of 3.45 mg/Kg. The residential SGL for cadmium is 75 mg/Kg. The second highest level of cadmium was reported in sample MV48(0-1')(0.94 mg/Kg), collected along the eastern side of Bay Street in the Mill View #3 neighborhood. However, the third and fourth highest concentrations of cadmium were reported present in background samples at levels ranging from 0.73 mg/Kg in sample MV33(0-1') to 0.68 mg/Kg in sample MV35(0-1'). In the twenty -six deep soil samples

with reportable levels of cadmium, the highest concentrations were collected within or immediately adjacent to the sock including MV36(23')(2.52 mg/Kg), and MV38(1.5 - 2.5')(1.8 mg/Kg). MV46(1 -2'), the location reported with elevated levels of arsenic in the Mill View #2 neighborhood, contained cadmium at a concentration of 1.9 mg/Kg (Table 11 and Figure 19). Deep interval background samples were laboratory nondetect for cadmium. Concentrations of cadmium in the saturated soils ranged from 1.81 mg/Kg in MV10(7-8') to 0.96 mg/Kg in MV12(7 1/2-8 1/2) to below detection limit in MV25(7-8') and MV3(7 -8') (Table 12 and Figure 20).

The highest reported concentration of lead identified in the study site was again in shallow soil sample MV19(0-1') (Table 10 and Figure 21). The level of lead at 261 mg/Kg is more than twice the concentration of the next highest level present which is sample MV16(0-1')(108 mg/Kg). The next five highest reported concentrations of lead in shallow interval samples ranged between 63.2 mg/Kg to 90.9 mg/Kg. There is no obvious pattern to their distribution. The background samples ranged from 4.1 to 28 mg/Kg. In the deeper samples, MV40(3-4) had the highest reported concentration of lead at 95.2 mg/Kg (Table 11 and Figure 22). MV38(1.5-2.5) had the second highest reported concentration of lead at 53.7 mg/Kg followed by MV12(2 1/2-3 1/2) with a level of 52.5 mg/Kg. Eleven locations were laboratory nondetect including seven locations within and next to the sock and two of the three background locations. The one background sample with a reportable concentration of lead was MV35(3 1/2-4 1/2) at a level of 4.2 mg/Kg. The two saturated samples containing the highest concentrations of lead were MV12(7 1/2-8 1/2) with a concentration of 194 mg/Kg and MV10(7-8') with 80 mg/Kg (Table 12 and Figure 23). The residential SGL for lead is 400 mg/Kg.

Nickel was reported laboratory nondetect in twenty-five of the shallow soil sample locations, including several within the backfilled area. The three shallow interval background samples all contained nickel at a concentration ranging from 1.3 to 2.3 mg/Kg. The two locations with the highest reported concentrations of nickel are

MV19(0-1) and MV29(0-1) with levels of 34.0 and 10.6 mg/Kg, respectively (Table 10 and Figure 24). The residential SGL for nickel is 110 mg/Kg. MV19(2-3) had the greatest concentration of nickel reported present in a deep interval sample (1290 mg/Kg), however, the MV19(3-4) was reported to be laboratory nondetect for nickel (minimum detection limit was 2.0 mg/Kg). The next six highest levels of nickel reported present by the Central Laboratory were from sample locations collected within the backfilled area (Table 11 and Figure 25). Those values ranged from 10.8 to 57.4 mg/Kg. In saturated samples, nickel was present above laboratory minimum detection limits in two of the samples. Sample MV10(7-8) contained nickel at a concentration of 49.5 mg/Kg; MV12(7 1/2-8 1/2) was reported to contain nickel at a concentration of 54.6 mg/Kg (Table 12 and Figure 26).

Eight shallow soil samples and twelve deep soil samples (MV19A, 36A, 37 through 54) were collected in total from both neighborhoods during the augmented sampling performed in April 2002 (Figures 27 through 40). Additional metal analytes were sampled for during this event. Sample MV48(0-1), collected in Mill View #3, had the highest reported concentrations of all the augmented metals sampled for in a shallow sample: barium (33.4 mg/Kg), calcium (3.56E5 mg/Kg), iron (1290 mg/Kg), magnesium (1,310 mg/Kg), manganese (75.1 mg/Kg), potassium (37 mg/Kg), and sodium (3,020 mg/Kg). Of these analytes, iron and manganese have SGL values of 23,000 mg/Kg and 1,600 mg/Kg, respectively. Other notable levels include barium, calcium, magnesium, and manganese in MV51(0-1) at concentrations of 30.6 mg/Kg, 2.21E5 mg/Kg, 813 mg/Kg, and 45.8 mg/Kg, iron in MV49(0-1) at a level of 888 mg/Kg, and potassium and sodium in MV52(0-1) at levels of 29 mg/Kg and 2730 mg/Kg. These concentrations represent the second highest values reported in the collected shallow samples (Table 10). In the deeper interval samples, the concentrations of the expanded suite of metals were generally greater but with no obvious pattern. Sample MV40(3-4) had the highest concentration of barium (304 mg/Kg), MV44(1-2) had the highest levels of calcium

(3.07E5 mg/Kg) and sodium (3000 mg/Kg), MV46(1-2) had the highest levels of iron (2.1E4 mg/Kg) and magnesium (5.54E4 mg/Kg), and MV38(1.5-2.5) had the highest reported concentrations of manganese (408 mg/Kg) and potassium (1730 mg/Kg)([Table 11](#)).

During the soil sampling portion of this assessment, ten equipment blanks were collected for analysis. Nickel was reported present in Equipment Blank #3 at a concentration of 0.24 micrograms per Liter (ug/L); lead was reported present at a concentration of 0.32 ug/L in Equipment Blank #5. Equipment Blank #10 contained detectable concentrations of calcium (0.16 milligrams per Liter (mg/L)), and iron (48 ug/L). All other results were laboratory nondetect. This data will be further presented in Section 5.2.

5.1.2 Organic Compounds in Soil Analytical Results

Laboratory results indicate the presence of organic compound contamination in soil samples collected during the April and June 2002 sampling events. The most common compounds reported include several semivolatile organic compounds (SVOCs), primarily PAHs, and the PCB congener 1260. Dioxin and furans were also reported present in SIS samples but at extremely low concentrations.

Only one VOC compound (toluene) was reported present in a SIS soil sample. This analyte was identified in sample MV38(1.5-2.5) at a concentration of 9.6 micrograms per Kilogram (ug/Kg). [Table 14](#) displays the list of volatile organic compounds evaluated for by the FDEP Central Laboratory using the EPA Method 8260 analysis.

No SVOCs were reported present in any of the shallow soil samples collected during the April and June 2002 sampling events([Table 15](#)). Several SVOC compounds, however, were identified in nine deeper interval samples collected within the Mill View #2 neighborhood ([Table 16](#), [Figure 41](#)). All of the compounds reported present are

PAHs, which are a group of chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances (ASTDR, 2002). Residential SGLs for PAHs reported present are benzo(a)anthracene (1.4 mg/Kg or 1,400 micrograms per Kilogram (ug/Kg)), benzo(a)pyrene (100 ug/Kg), benzo(b)fluoranthene (1,400 ug/Kg), and dibenzo(a,h)anthracene (100 ug/Kg). The deep sample with the highest reported concentrations of PAH analytes was MV36A(2-3). Benzo(a)anthracene (2000 ug/Kg), benzo(a)pyrene (1500 ug/Kg), benzo(b)fluoranthene (3200 ug/Kg), benzo(g,h,i)perylene (250 ug/Kg), dibenzo(a,h)anthracene (230 ug/Kg), benzo(k)fluoranthene (2100 ug/Kg), chrysene (4500 ug/Kg), fluoranthene (4000 ug/Kg), fluorene (230 ug/Kg), indeno(1,2,3-cd)pyrene (460 ug/Kg), phenanthrene (2500 ug/Kg), and pyrene (2800 ug/Kg) were identified in the sample. The total PAH concentration in this sample approaches 24 milligrams per Kilogram (mg/Kg). Similar PAH compounds at reduced concentrations were reported present in samples MV37(2-3)(1.1 mg/Kg total PAHs), MV38(2-3)(2.29 mg/Kg total PAHs), MV41(2 -3)(0.82 mg/Kg total PAHs), MV42(2-3)(1.04 mg/Kg), MV6(2.5 -3.5)(2.05 mg/Kg total PAHs), MV12(2.5 -3.5)(0.5 mg/Kg total PAHs), MV25(3.5-4.5)(0.22 mg/Kg total PAHs), and MV26(3.5-4.5)(0.11 mg/Kg total PAHs). The residential SGL for benzo(a)pyrene was exceeded in most of these samples including MV37(2-3)(150 ug/Kg), MV38(2 -3)(240 ug/Kg), MV42(2 -3)(120 ug/Kg), MV6(190 ug/Kg), MV25(3.5 -4.5)(220 ug/Kg), and MV26(110 ug/Kg).

PCBs were reported present in three shallow samples and several deep sample locations. The residential SGL for PCB is 0.5 mg/Kg (500 ug/Kg). The shallow sample location with the highest reported concentration of PCBs was a surface scrape sample collected from the MV42 location with PCB-1260 at a level of 120 ug/Kg. A surface scrape sample collected from the MV18 location contained PCB-1260 with a concentration of 43 ug/Kg; shallow sample MV43(0-1) was impacted with PCB -1260 at a concentration of 22 ug/Kg (Table 17). The deep samples with the highest levels of PCBs include MV6(2.5-3.5) with PCB -1260 at a level of 6900 ug/Kg, and MV42(2-

3)(PCB -1260:1300 ug/Kg; PCB-1016: 44 ug/Kg). The reportable concentrations of PCBs at other deep interval sample locations were below 100 ug/Kg (Table 18, Figure 42).

PCBs are mixtures of up to 209 individual chlorinated compounds (known as congeners). The PCB manufacturers started making the 10 series (PCB-1016, for example) when toxicity problems were associated with the 12 series. The last two numbers allied with the congener identifier reflect the chlorine percentages (Garrett, 2002). There are no known natural sources of PCBs. PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects (ASTDR, 2002). PCBs have never been used in the manufacture of paper. They were, however, used as a coating in developing a type of carbonless copy paper that was manufactured in the 1950s and 1960s. Its use was voluntarily discontinued in 1971, six years before the United States Environmental Protection Agency's ban. Carbonless paper was a popular product used in offices throughout the country. Once discarded, the carbonless paper made its way into the waste stream and was recycled by several paper manufacturers. During the timeframe when carbonless paper was recycled, there was no practical way to identify and separate PCB-contaminated wastepaper from the hundreds of thousands of tons of paper recycled by the mills (Wipapercouncil, 2002)

Dioxins are a family of 75 chemically related compounds commonly known as chlorinated dioxins. The most toxic of these compounds is 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin). Furans are closely related to dioxins and consist of a family of 135 compounds. Dioxins may be formed during the chlorine bleaching process at pulp and paper mills and are also formed during chlorination by waste and drinking water treatment plants. They can occur as contaminants in the manufacture of certain organic chemicals (ASTDR, 2002).

Generally speaking, the current approach to determine the toxicity of dioxins in the environment is to multiply each congener of dioxin and furan identified in a sample by its toxicity equivalence factor (TEF) in relation to 2,3,7,8-TCDD. These factored numbers are then added to calculate the sample's total 2,3,7,8-TCDD toxicity equivalent concentration or TEQ. For purposes of this calculation, congeners that are reported below minimum detection limits (MDLs) are assumed to be present at one-half of their MDL (if at least one congener is present). [Table 19](#) and [Figure 43](#) present laboratory results of dioxins and furans in the six soil samples collected by SIS. Values range from 0.333 picograms of 2,3,7,8-TCDD TEQ per gram (pg TEQ/g) in sample MV47(1-2) to 3.567 pg TEQ/g in sample MV42(2-3). The laboratory blank associated with these samples had a calculated 2,3,7,8-TCDD TEQ of 0.231 pg TEQ/g. A picogram per gram (pg/g) is the equivalent of a part per trillion.

5.2 Water Sampling Analytical Results

5.2.1 Ground Water and Surface Water Parameters

Ground and surface water parameters were collected by SIS during the purging process utilizing calibrated water quality meters. These parameters include pH, specific conductivity, temperature, dissolved oxygen, and turbidity. Final recordings from the two sampling events are presented in [Table 20](#). A summary of the analyses performed on each water sample collected is presented in [Table 21](#).

Elevated turbidity values were a problem at most microwell locations because of the presence of extremely fine, particulate matter. Water from these wells was colored a dark, tannic, reddish brown. During the second ground water sampling event, however, turbidity values from the monitor well network were reduced. This was likely a result of the enhanced development of the well's sand pack as a result of the additional pumping.

Specific conductivity values in ground water ranged from 66 microSeimens per meter (502 Peters Street irrigation well) to 7,319 microSeimens per meter (mS/m) in

purge water from monitor well DEP8. Monitor wells DEP2, DEP5, DEP7, and DEP10 also demonstrated elevated specific conductivity values compared to other values recorded on location (Figures 44 and 45). Elevated pH values, perhaps a result of landfilled limegrits, were also monitored in purge waters generated during the well sampling process (Figures 46 and 47). Water collected from monitor well DEP8 reacted strongly to nitric acid during the sample preservation process. It was because of these atypical parameters that the second ground water sampling event was performed. As previously reported, targeted analytes included those associated with pulp mill waste streams.

5.2.2 Metals in Water Analytical Results

Mercury was reported present in only one sample collected by SIS. The unfiltered sample collected from monitor well DEP8 contained 0.14 ug/L of mercury (Table 22). The filtered sample collected from that location was reported to be laboratory nondetect. The enforceable standard, as defined in Florida Administrative Code (FAC) Chapters 62-520 and 62-550, for mercury is 2 ug/L. The FAC designates primary and secondary drinking water standards as enforceable ground water standards to insure and protect the quality of Florida Class G-I and G-II ground water resources as potential drinking water supplies. Ground water subjacent to the study site can be classified as G II since it contains less than 10,000 parts per million of total dissolved solids. Specific conductance measurements (Table 20) were multiplied by a factor of 0.60 to provide an estimate of total dissolved solids in milligrams per liter (Lichtler, 1960).

Arsenic was not reported present in any of the ground water samples collected from the Mill View location (Table 23). The laboratory's MDL for arsenic was from 1.0 to 9.0 ug/L.

Cadmium was reported above the laboratory's MDL in samples collected from seven locations (Table 23 and Figure 48). The primary standard for cadmium is 5 ug/L.

The highest reported concentration of cadmium was in a sample collected from monitor well DEP8 at a level of 2.4 ug/L. A filtered sample, which was collected from this location because of turbidity concerns, was analyzed to contain cadmium at a concentration of 2.2 ug/L. A sample collected from monitor well DEP5 was reported to have the next highest concentration of cadmium at a level of 2.3 ug/L.

The highest concentration of lead was reported present in a sample collected from the irrigation well located at 502 Peters Street (109 ug/L) (Figure 8). The primary standard for lead is 15 ug/L. Elsewhere, lead concentrations were much lower suggesting the irrigation well result was atypical (Table 23). The next highest concentration of lead was reported in monitor well DEP2 at a concentration of 11.1 ug/L. Other reported levels were generally less than 4 ug/L (Figure 49).

Nickel was reported present in a monitor well DEP8 sample at a concentration of 34.4 ug/L; the filtered sample from this location was analyzed to contain nickel at a concentration of 31.0 ug/L (Table 23 and Figure 50). Nickel's primary standard according to FAC Chapter 62 is 100 ug/L.

As previously reported, the metals calcium, iron, magnesium, manganese, potassium, and sodium were analyzed in ground water samples collected during the week October 15th, 2001.

Calcium was present in monitor well DEP8 at a concentration of 212 mg/L; the duplicate sample was reported to have a concentration of 219 mg/L. These levels represent the highest concentrations observed at the site. Samples from monitor wells DEP5 (143 mg/L) and DEP7 (90.4 mg/L) were reported to contain the next highest concentrations of calcium (Table 23 and Figure 51). All three of these wells are located adjacent to the former ditch location. The lowest level of calcium was observed in DEP2 with a concentration of 4.14 mg/L. The filtered sample collected at this location due to elevated turbidity values was reported to contain calcium at a concentration of 4 mg/L.

Calcium does not have a primary or secondary ground water standard. Surface water sample SW1 contained calcium at a concentration of 61.6 mg/L.

Iron was reported present in the DEP6 sample at a concentration of 8750 ug/L (Table 23 and Figure 52). The filtered sample contained iron at a concentration of 8910 ug/L. These are the highest concentrations of iron reported in samples collected from the SIS monitor well network. The next highest concentrations reported were in well DEP8 (5790 ug/L; 6060 ug/L in a duplicate sample), DEP1 (4780 ug/L), and DEP 10 (4750 ug/L; 4350 ug/L in a filtered sample). Iron's secondary standard according to FAC Chapter 62 is 300 ug/L. Secondary standards relate to undesirable organoleptic properties of water including taste and odor. For contrast, the lowest concentration of iron in a ground water sample was from DEP9 with a level of 89 ug/L. Surface water sample SW1 contained iron at a concentration of 593 ug/L.

The highest concentration of magnesium reported in a sample collected from the SIS monitor well network was 51.3 mg/L in DEP5 (Table 23 and Figure 53). This concentration is significantly higher than the next two highest levels reported present; 14.2 mg/L in DEP 8 (14.9 mg/L in a duplicate sample) and 7.7 mg/L in DEP 9. Magnesium does not have a primary or secondary ground water standard.

Manganese has a secondary standard according to FAC Chapter 62 of 50 ug/L. This concentration was exceeded in a ground water sample collected from monitor well DEP6 at a concentration of 77.5 ug/L; the filtered sample had a concentration of 67.7 ug/L. The DEP5 sample contained manganese just below the standard threshold with a level of 49.6 ug/L (Table 23 and Figure 54). The DEP3 sample had the lowest concentration of manganese (0.82 ug/L).

Potassium in ground water levels ranged from 0.46 mg/L in DEP3 to 36.1 mg/L in DEP10 (34.4 mg/L in a filtered sample) and 36.6 mg/L in DEP5 (Table 23 and Figure 55). Potassium does not have a primary or secondary ground water standard.

The highest concentration of sodium was reported present in a sample collected from DEP8 (1900 mg/L; 1980 mg/L in a duplicate sample). The primary standard for sodium is 160 mg/L. This standard was also exceeded in samples collected from DEP2 (626 mg/L; 637 mg/L in a filtered sample) and DEP10 (210 mg/L; 205 mg/L in a filtered sample) (Table 23 and Figure 56). Sodium hydroxide is utilized in the chemical pulping process.

5.2.3 Inorganic Compounds (Other than Metals) in Water Analytical Results

Alkalinity is a measure of the ability of a water system to resist changes in pH when an acid is added. Water that contains concentrations of CaCO_3 in excess of 300 milligrams per liter is considered very hard. The source of hardness in water is generally calcium or magnesium from limestone that have been dissolved by groundwater (NBIF, 2001). Because naturally occurring limestone is not present in the shallow sediments encountered by SIS, the likely source of carbonates appears to be from the backfilled lime grits. Alkalinity values ranged from 4,680 mg CaCO_3 /L in a sample collected from monitor well DEP8 and 1,480 mg CaCO_3 /L in monitor well DEP2 to 36 mg CaCO_3 /L in monitor well DEP11. Surface water sample SW1 was reported to have an alkalinity value of 240 mg CaCO_3 /L (Table 24 and Figure 57).

Chloride is associated with taste and electrolytic corrosion problems. As a result, a secondary drinking water standard for chloride has been set at 250 mg/L. Concentrations of chloride in ground water at the Mill View site ranged from 40 and 32 milligrams of chloride per liter (mg Cl/L) in waters sampled from monitor wells DEP2 and DEP8 respectively, to 4.2 mg Cl/L in the monitor well DEP3 sample (Table 24 and Figure 58).

Sulfur occurs in several oxidation states, depending upon the reduction/oxidation potential of the water. Two are of major importance in aquifer systems including sulfate and sulfide. Sulfate rich water may produce adverse taste in drinking water thus a

secondary drinking water standard for sulfate has been set at 250 mg/L. The highest concentration of sulfate reported present in the SIS network of monitor wells was 32 milligrams of sulfate per liter (mg SO₄/L) in the water sample from DEP 6. Monitor well DEP9 contained sulfate at a concentration of 31 mg SO₄/L. Concentrations of sulfide reported present were less. The highest concentrations of sulfide were reported present in samples from monitor wells DEP5 (2.6 mg S/L) and DEP10 (1.1 mg S/L)([Table 24 and Figures 59 and 60](#)).

5.2.4 Volatile Organic Compounds in Water Analytical Results

No volatile organic compounds were reported present above the laboratory's MDLs which were either 0.20 or 0.50 ug/L, depending on the particular analyte. [Table 25](#) presents all the volatile organic compounds analyzed for utilizing EPA Method 624/8260.

5.2.5 Semivolatile Organic Compounds in Water Analytical Results

No semivolatile organic compounds were reported present above the laboratory's MDLs. [Table 26](#) presents all the semivolatile organic compounds analyzed for utilizing EPA Method 8270.

5.2.6 Dioxin and Furan in Water Analytical Results

All water samples collected by SIS were reported to contain very low concentrations of dioxins and furans([Table 27, Figure 61](#)). Concentrations for each congener are reported in picograms per Liter (pg/L) or parts per quadrillion. The dioxin congener 2,3,7,8-TCDD, which is considered the most toxic of these organic compounds, was not reported present. This compound has a primary standard of 30 pg/L. The current approach to determine the toxicity potential of dioxins and furans found in water is identical to that used in soils. The highest TEQ identified in a monitor well sample was

DEP2 with a value of 1.453 picograms of 2,3,7,8-TCDD TEQ per liter (pg TEQ/L). Surface water sample SW1 had a TEQ of 1.310 pg TEQ/L. The lab blank associated with these two samples had a TEQ of 1.245 pg TEQ/L. The highest TEQ reported was in a laboratory blank associated with sample DEP8. This blank had a calculated TEQ of 2.518 pg TEQ/L; sample DEP8 had a reported TEQ concentration of 1.085 pg TEQ/L.

6.0 Conclusions and Recommendations

The landfilling of waste from the St. Joe Paper Company mill did occur within the Mill View #2 and #3 neighborhoods in Port St. Joe, Florida. The bulk of the fill identified present consists primarily of woodchips in various stages of decomposition. In addition, lime grits, which are byproducts of the lignin removal process, were recognized in several SIS collected soil samples. Lesser amounts of ash and slag (boiler residue) were also identified in samples collected from within Mill View #2. At most sample locations evaluated by SIS, the materials encountered and their associated depths were diverse, testifying to the heterogeneity of the fill material. Other than the presence of lime grits used as road base, most waste was first encountered several inches below land surface. The horizontal extent of landfilling identified by SIS conductivity profiling is consistent with St. Joe employee reports. Depths of backfill within Mill View #2 exceed 15 feet near a former ditch location that once traversed the area. In Mill View #3, the extent of fill material extends east from an area adjacent to Bay Street to a parallel service road. A wetland that previously existed in this area was backfilled with wood chips and lime grits. Some houses located on Bay Street exhibit signs of structural damage. Many residents believe these problems are the results of fill material settling after home construction; homes located in the sock in Mill View #2 display similar problems.

Impacts to soils from inorganic and organic contamination associated with paper mill waste streams were identified in samples collected primarily within the sock

bisecting the Mill View #2 neighborhood. The pollution discovered is widespread but generally found at low concentrations, although several sample locations exhibit levels that exceed FDEP risk based residential SGLs. Residential SGLs were surpassed for the organic PAH compounds benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene at a number of sample points. In addition, PCB1260 was also reported present at a concentration above its respective residential SGL. No PCB or PAH contamination was reported in samples collected from Mill View #3. TEQ concentrations of dioxins and furans were reported in collected soil samples at levels below 3.6 parts per trillion.

The Florida Department of Health (FDOH) reviewed soil sample analytical results. FDOH conclusions and recommendations have been published in two Health Consultations: *Mill View Subdivision, Port St. Joe, Gulf County Florida*, dated October 31, 2001, and *Mill View/Millville Subdivision, Port St. Joe, Gulf County, Florida*, dated February 14, 2003. These consultations were prepared under cooperative agreement with the Agency for Toxic Substances and Disease Registry, United States Department of Health and Human Services. SIS analytical data has also been provided to the United States Environmental Protection Agency (EPA). The EPA is presently performing a site inspection in this area of Gulf County.

The landfilled mill waste has detrimentally impacted ground water quality. Sodium was reported in concentrations exceeding its Florida primary drinking water standard in three SIS monitor wells positioned within the sock. Sodium hydroxide is utilized in the chemical pulping process. In addition, concentrations of iron and manganese exceeded secondary drinking water standards in samples collected primarily from monitor wells positioned in areas that were landfilled. Buffered pH values, likely from buried lime grits, and high specific conductivity values were also observed in wells positioned within the sock. Lead was reported present in an irrigation well at a

concentration exceeding the primary standard for that metal, however, levels were far reduced elsewhere suggesting the result to be atypical.

No volatile or semivolatile organic compounds were reported present in ground and surface water samples collected. Extremely low concentrations of dioxins and furans were identified in all SIS water samples. The calculated TEQ values for these compounds are well below the concern threshold of 2,3,7,8-TCDD.

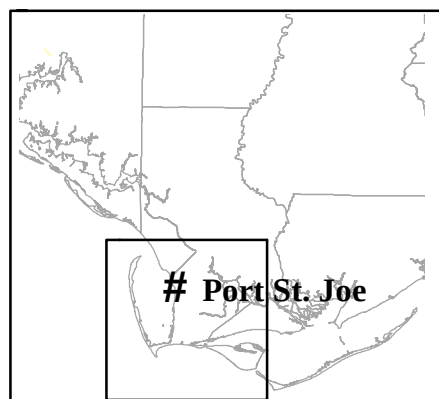
Ground water flow within this neighborhood is primarily towards the west with a slight vector to the south. The ground water surface becomes complex within and immediately adjacent to the former ditch area location, which represents the topographic low of the immediate study site. As a consequence, ground water within the surficial aquifer just west of the ditch location area, flows east towards the former ditch. The aquifer likely flows towards the west again when it escapes the influence of the former ditch area. In that direction, located less than one mile away, is the St. Joseph Bay coastline.

It is the recommendation of the FDEP Northwest District and SIS that additional assessment be performed by the Potential Responsible Parties (PRPs) in areas where the primary standard for sodium in ground water was exceeded to understand the extent of that metal's contamination. The impacted aquifer does supply several irrigation wells within the Mill View #2 neighborhood. Furthermore, a risk assessment should be performed by the PRPs due to the presence of residential SGL exceedances. This assessment would consider data from additional assessment recommended to be performed by the PRPs in areas where elevated concentrations of SGLs have been identified. Ground water samples should also be collected and evaluated for PCBs in areas where elevated PCB concentrations in soils were identified. This risk assessment should also include areas where material was placed on ANRR property during and before 1970 (Figure 62).

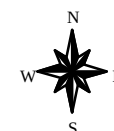
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Figures



**Figure 1: Mill View Location Map
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**



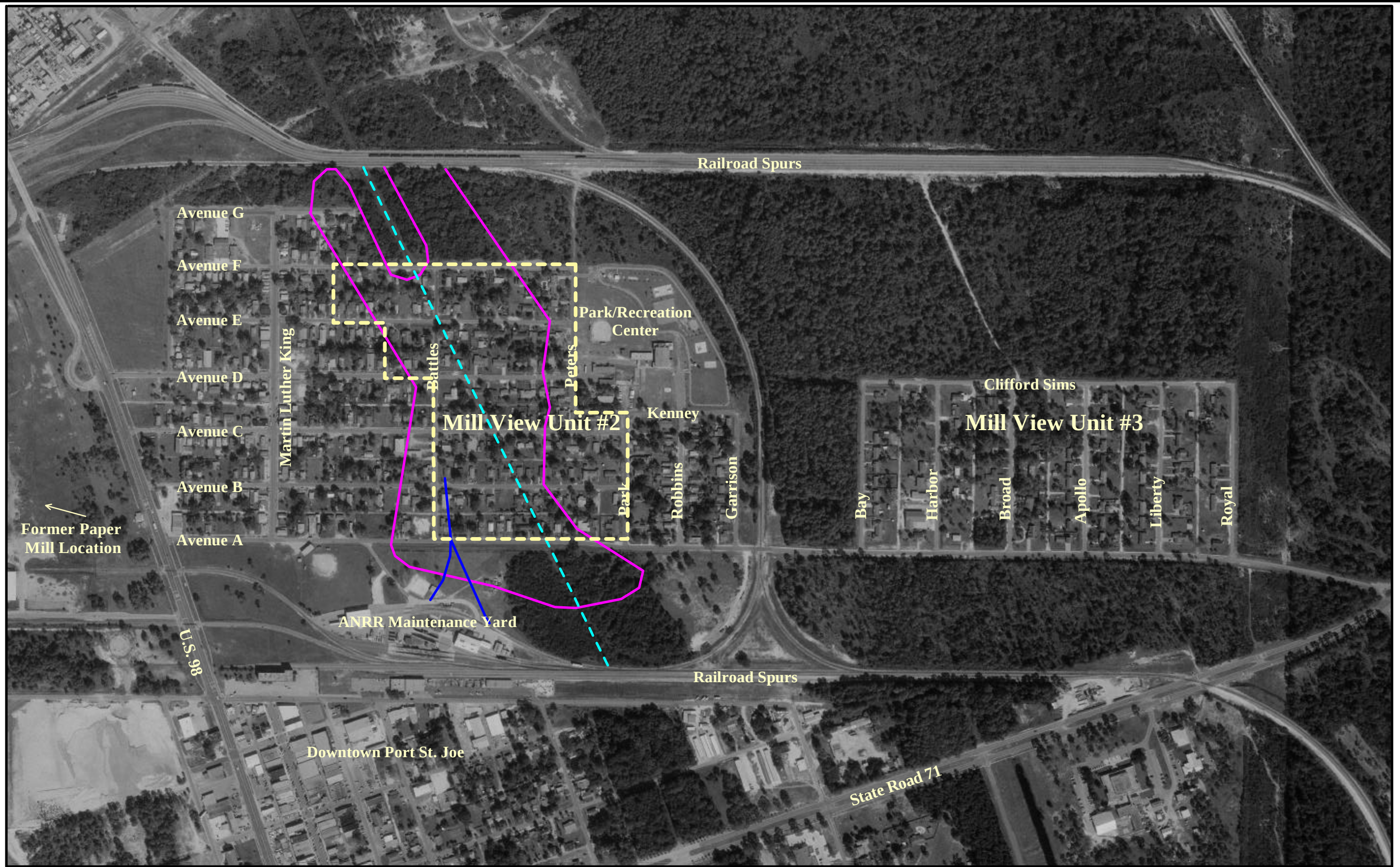


Figure 2: Mill View Units #2 and #3 Site Map
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

- Former railroad spur location
- Approximate extent of fill sock
- - Current and previous ditch location

500 0 500 Feet

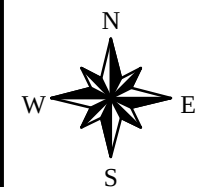




Figure 3: Mill View 1953 Site View
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

- Former railroad spur location
- Approximate extent of fill sock
- - - Current and previous ditch location

0 500 Feet

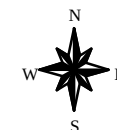
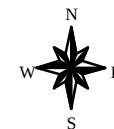




Figure 4: Mill View #3 1983 Site View
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

— Extent of dumped mill waste
 shown in 1983 aerial photograph

200 0 200 Feet



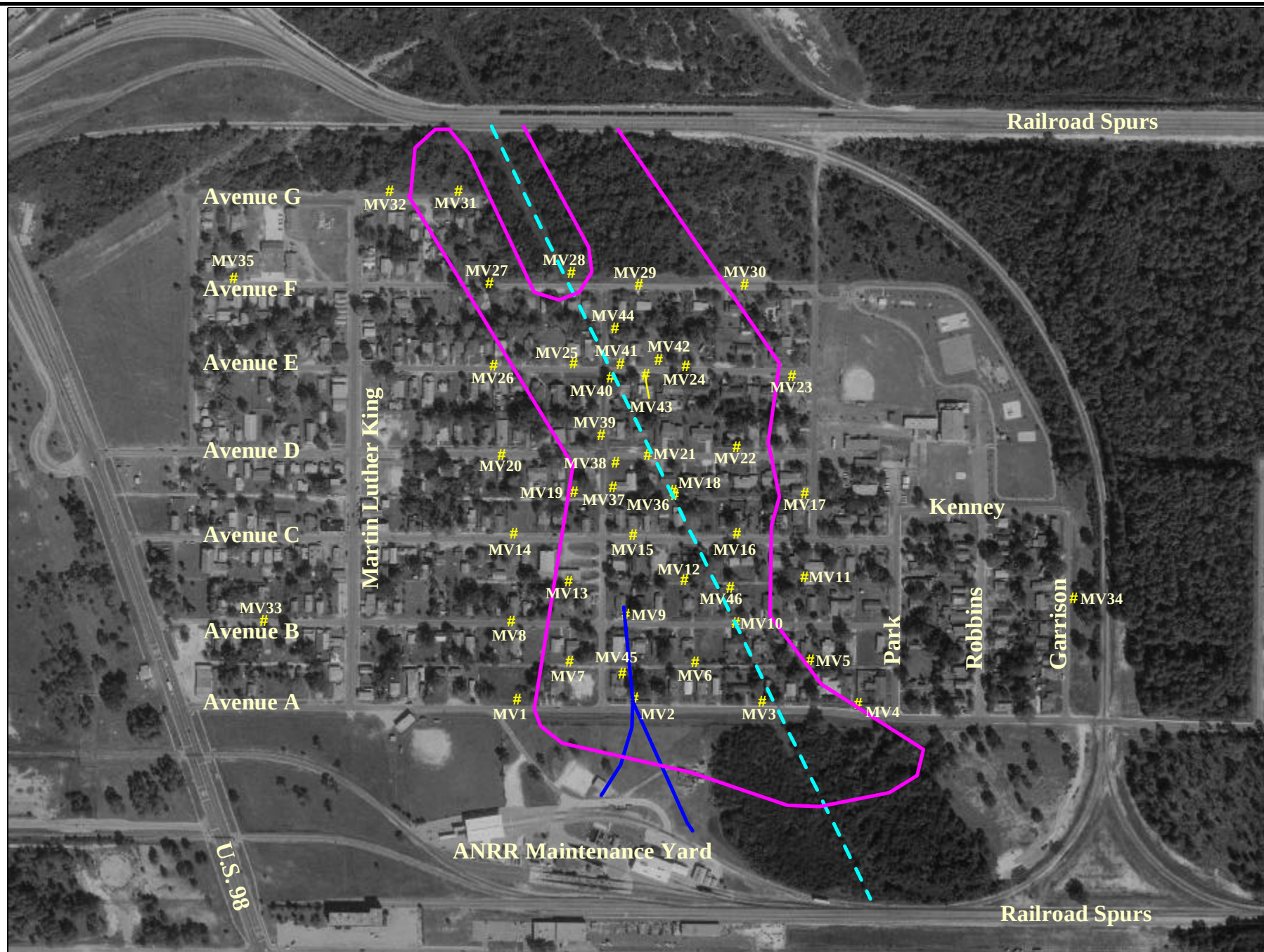


Figure 5: Mill View #2 Soil Sample Locations
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

- # SIS Soil Sample Location
- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location

0 500 Feet





Figure 6: Mill View #3 Soil Sample Locations
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

U Wood chips and sand
 U Sand fill X Lime grits
 U Native soils # Conductivity log
 # SIS Soil Sample Location (lime grits)
 — Extent of dumped mill waste
 shown in 1983 aerial photograph

100 0 100 Feet



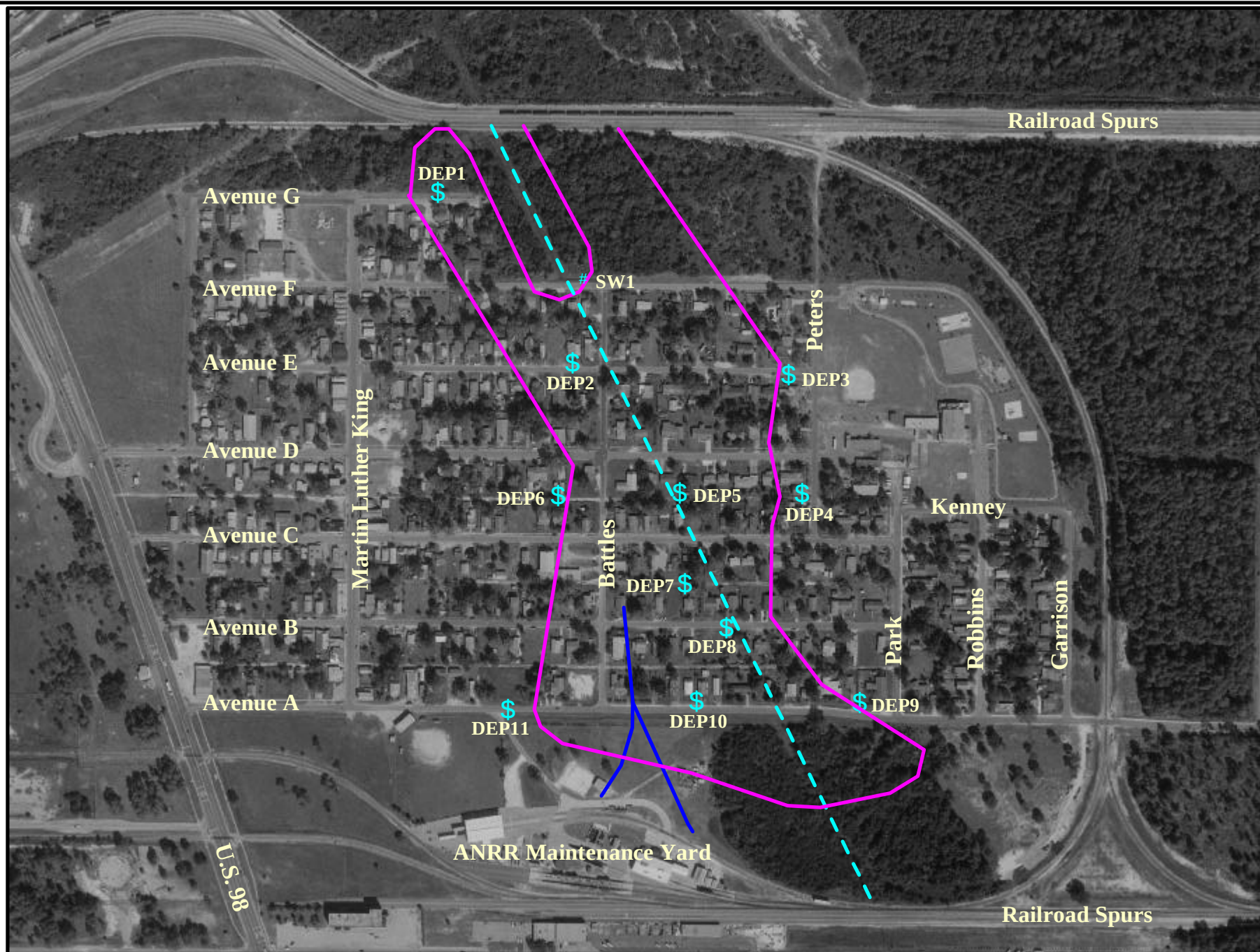
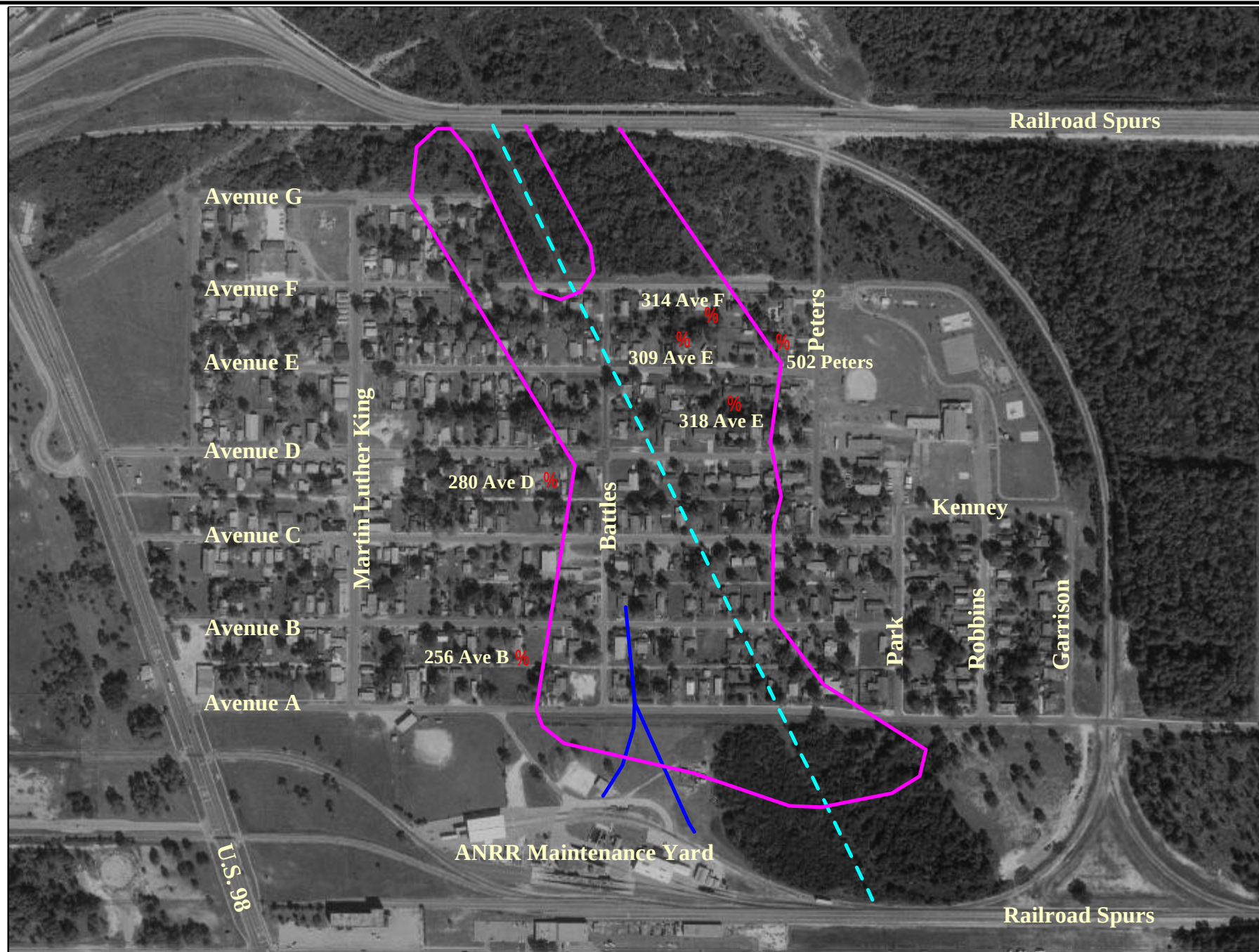


Figure 7: Mill View #2 Monitor Well Locations
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

- # SIS surface water sample location
- \$ SIS monitor well location
- Former railroad spur location
- Approximate extent of fill sock
- - - Current and previous ditch location

200 0 200 Feet





**Figure 8: Mill View #2 Irrigation Well Locations
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

- % Irrigation well location
- Former railroad spur location
- Approximate extent of fill sock
- - - Current and previous ditch location

200 0 200 Feet



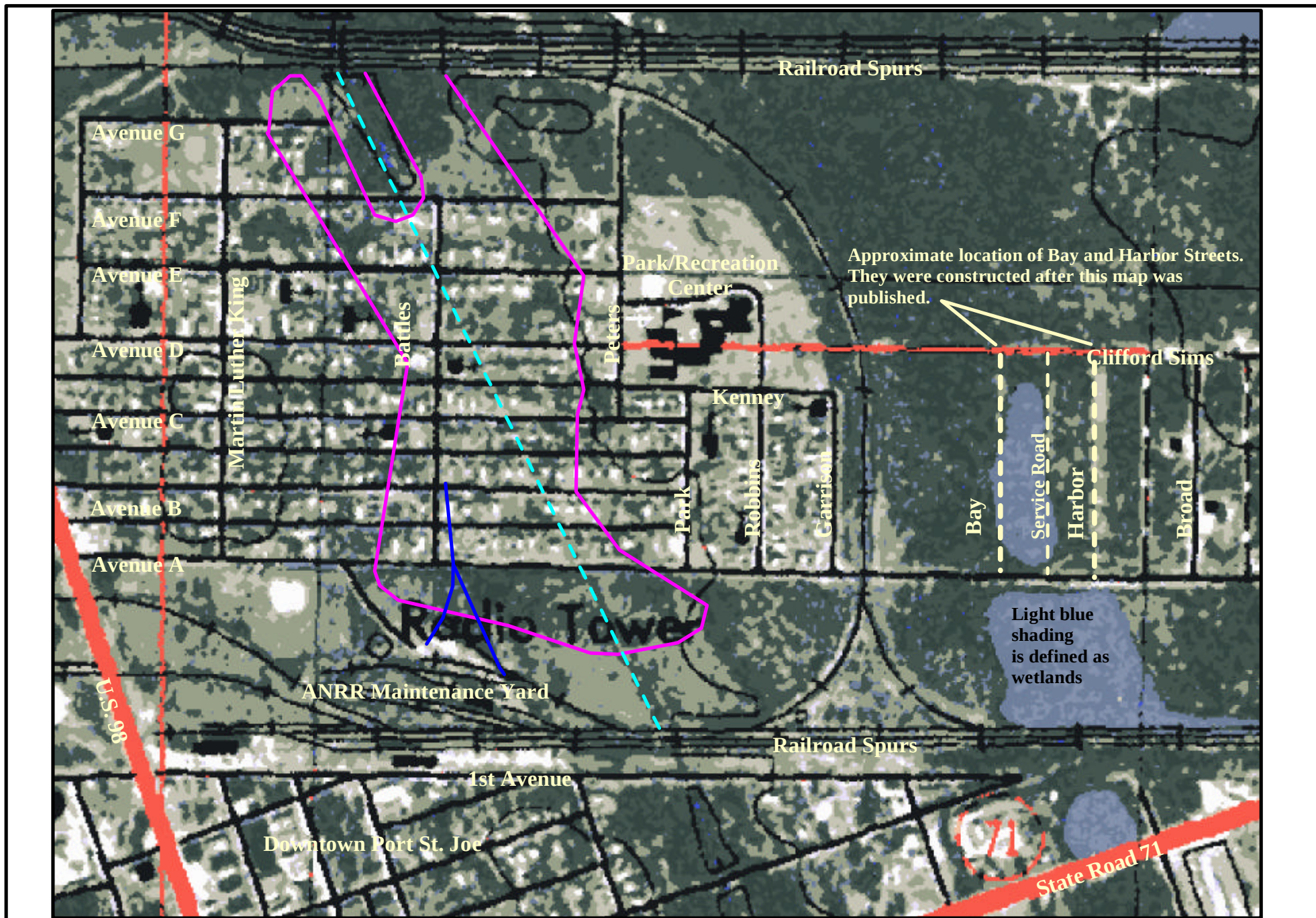


Figure 9: 1982 U.S.G.S Topographic Map
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location

200 0 200 Feet



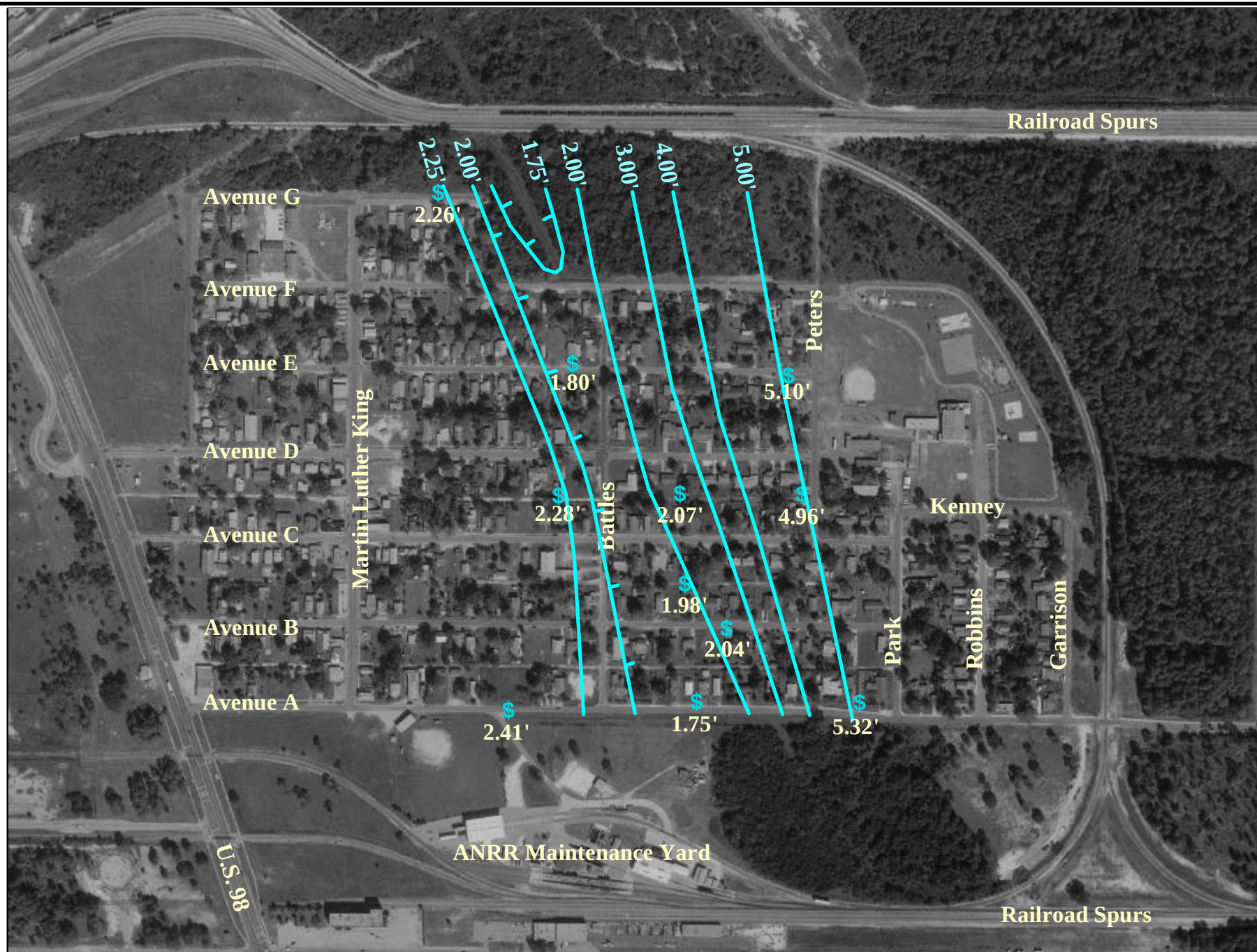


Figure 10: Mill View #2 Ground Water Surface
09/06/2001
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

\$ SIS monitor well location
 — Ground water equalpotential contour line

200 0 200 Feet



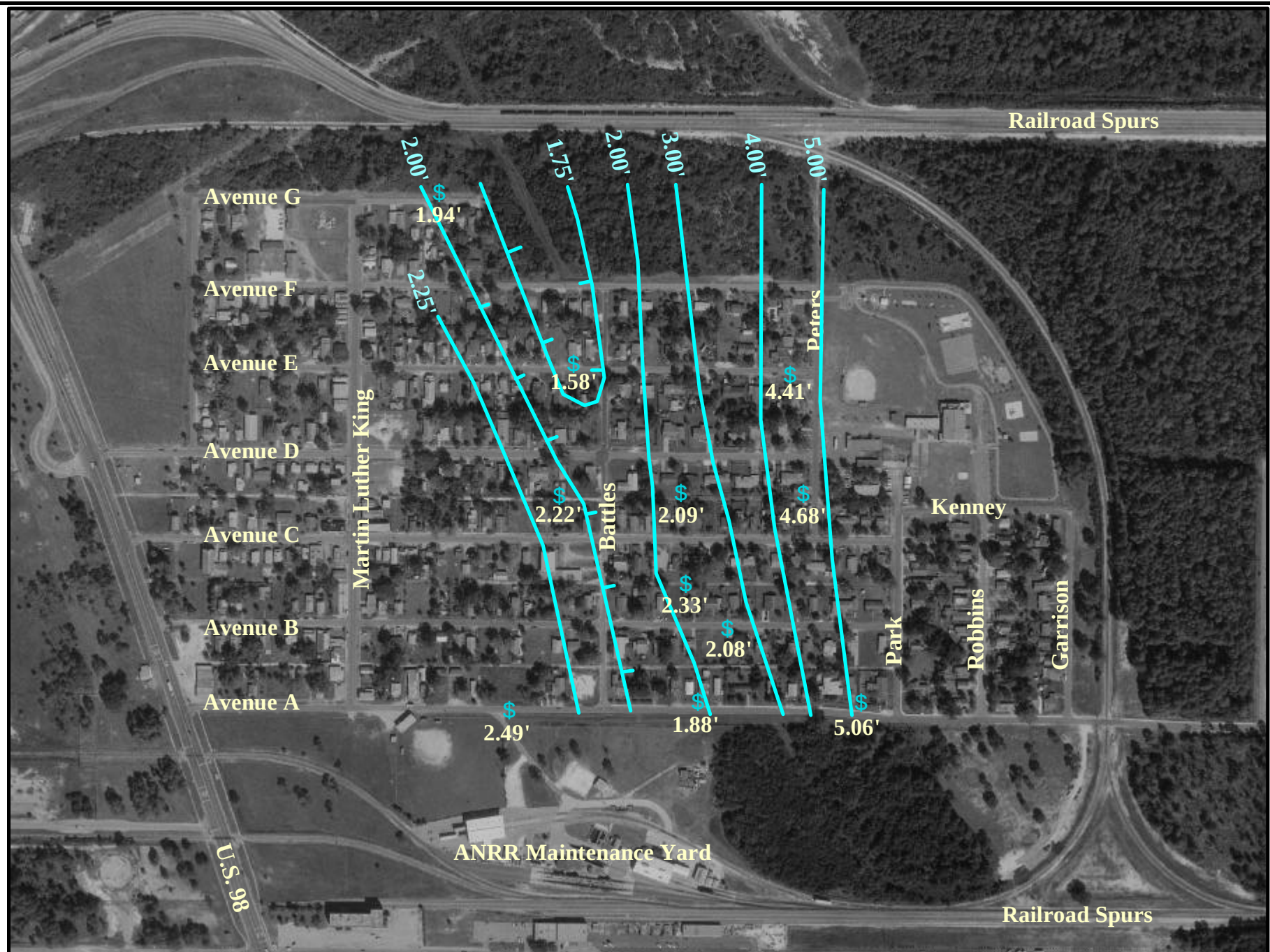
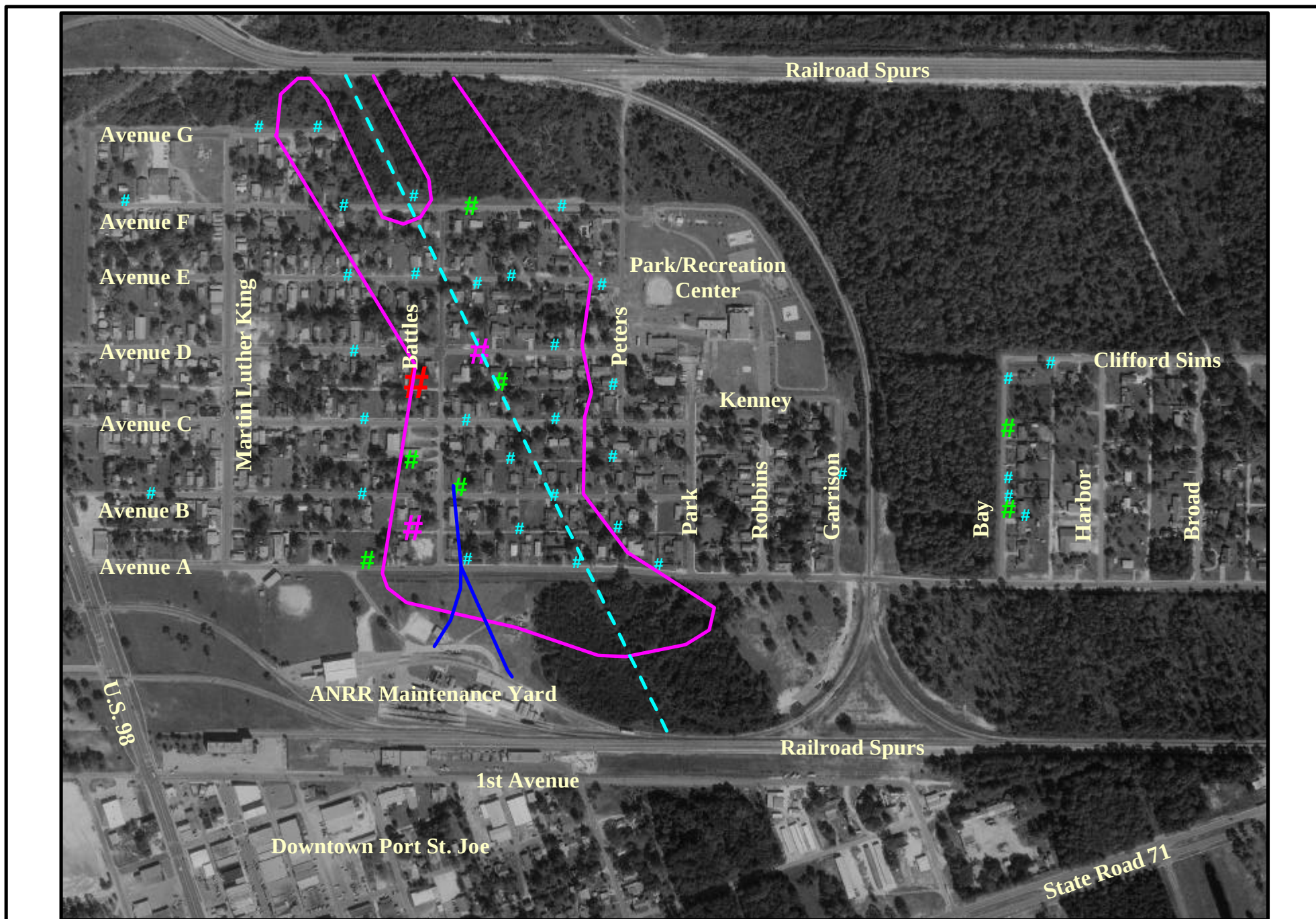


Figure 11: Mill View #2 Ground Water Surface
10/16/2001
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

\$ SIS monitor well location
 — Ground water equalpotential contour line

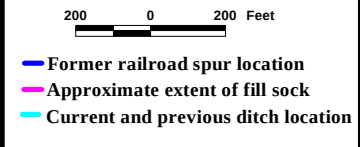
200 0 200 Feet





**Figure 12: Mercury in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Mercury (mg/Kg)	
# Below Detection Limit	# 0.11 - 0.50
# 0.001 - 0.05	# 0.51 - 1.00
# 0.051 - 0.10	



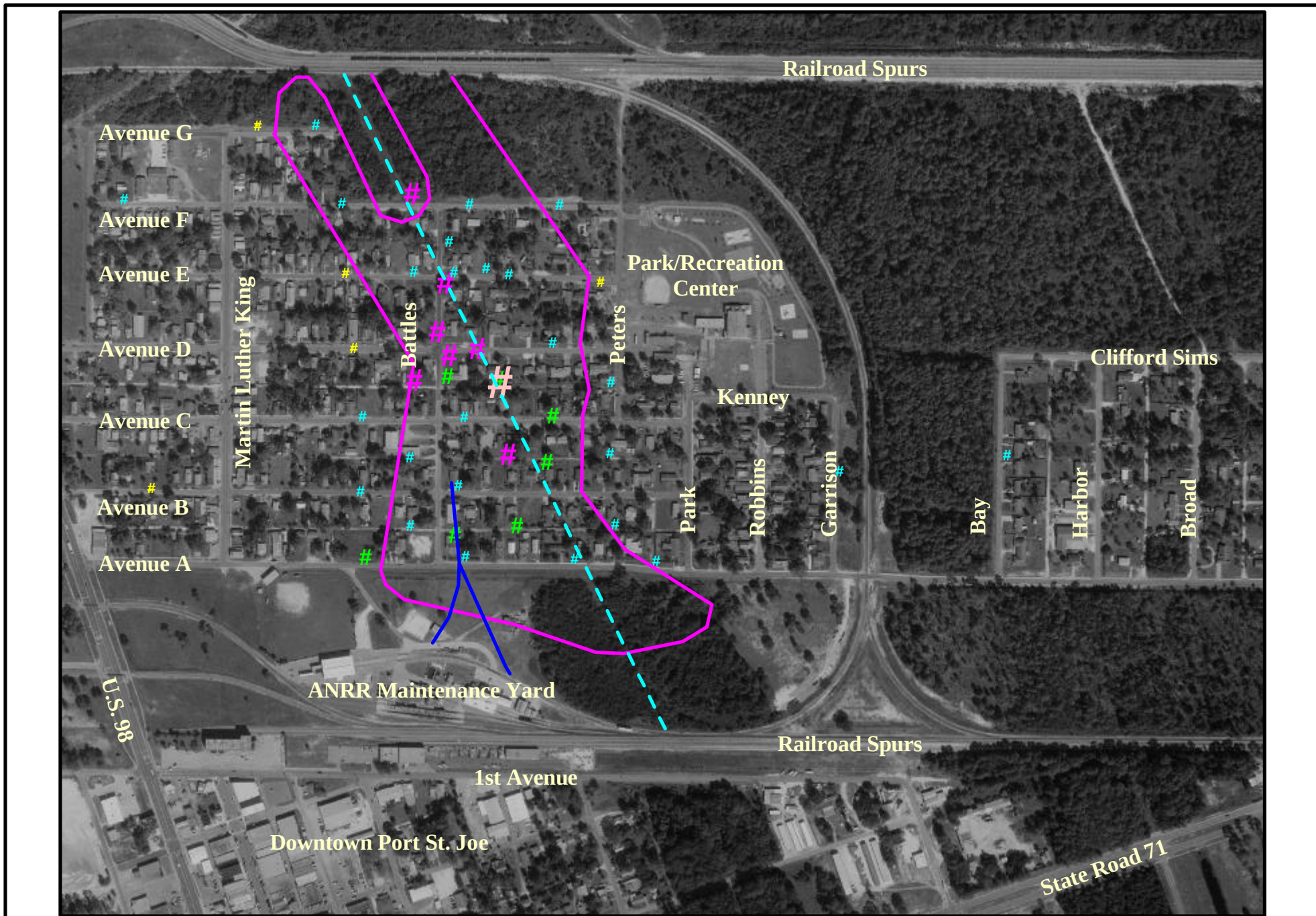
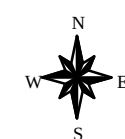


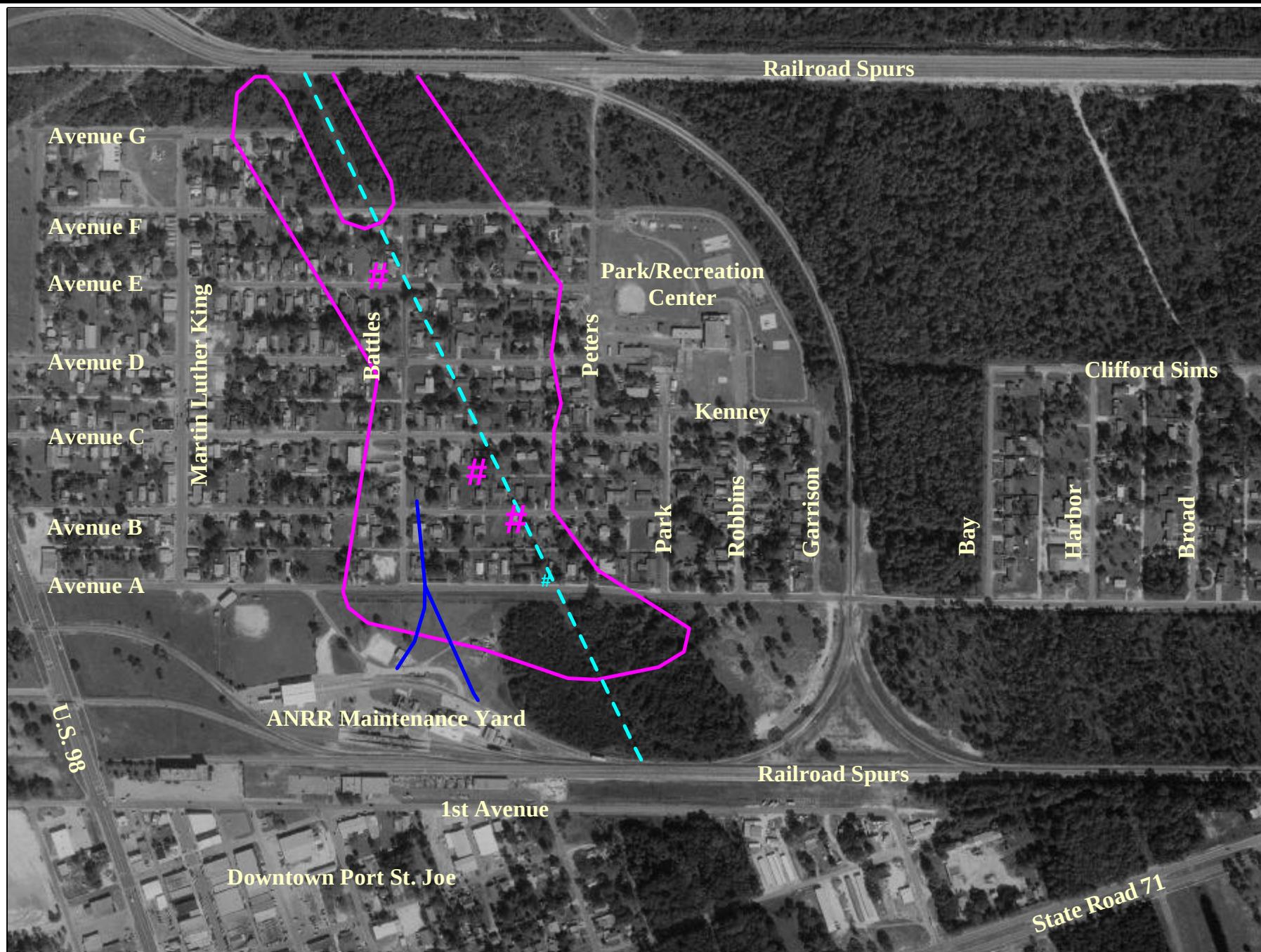
Figure 13: Mercury in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Mercury (mg/Kg)	
# Below Detection Limit	# 0.11 - 0.50
# 0.001 - 0.05	# 0.51 - 1.00
# 0.051 - 0.10	# 1.1 - 2.0

200 0 200 Feet

— Former railroad spur location
 — Approximate extent of fill sock
 — Current and previous ditch location





**Figure 14: Mercury in Saturated Soils
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**



**Figure 15: Arsenic in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Arsenic (mg/Kg)	
# Below Detection Limit	# 3.71 - 7
# 0.1 - 0.79	# 7.1 - 10.6
# 0.8 - 3.7	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location





**Figure 16: Arsenic in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Arsenic (mg/Kg)	
# Below Detection Limit	# 3.71 - 7
# 0.1 - 0.79	# 7.1 - 10.6
# 0.8 - 3.7	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location



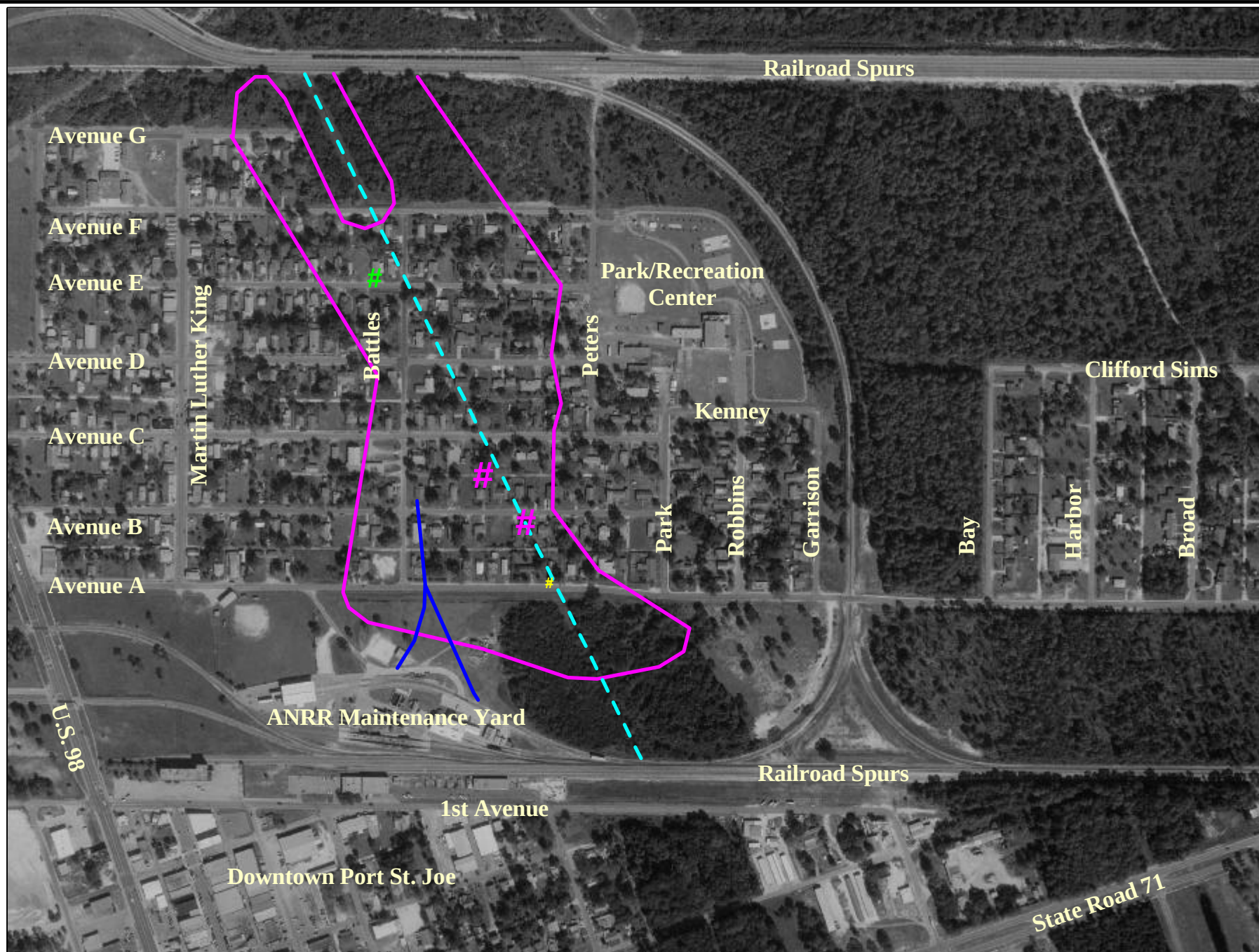


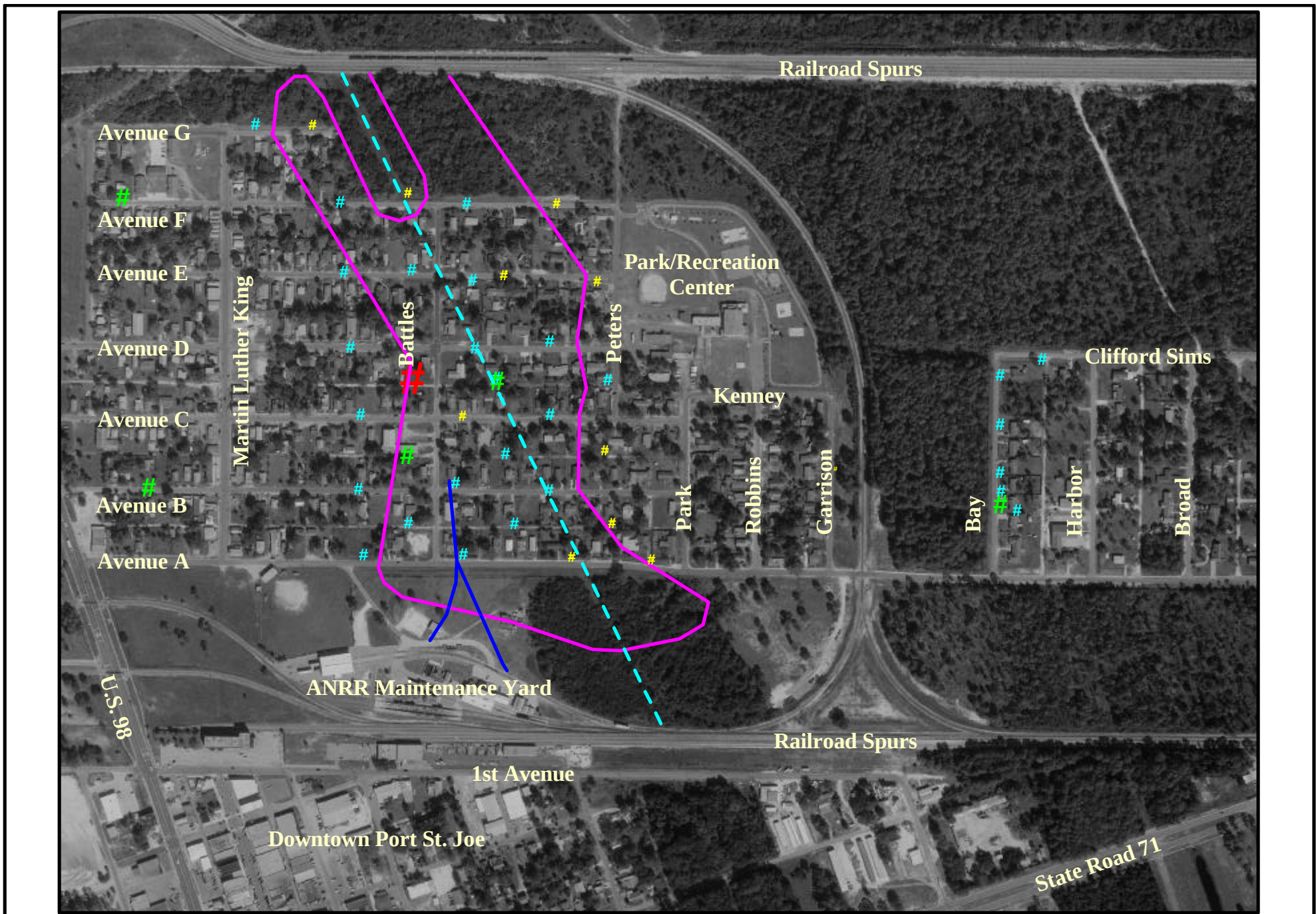
Figure 17: Arsenic in Saturated Soils
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Arsenic (mg/Kg)	
# Below Detection Limit	# 3.71 - 7
# 0.1 - 0.79	# 7.1 - 10.6
# 0.8 - 3.7	

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- - Current and previous ditch location



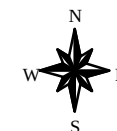


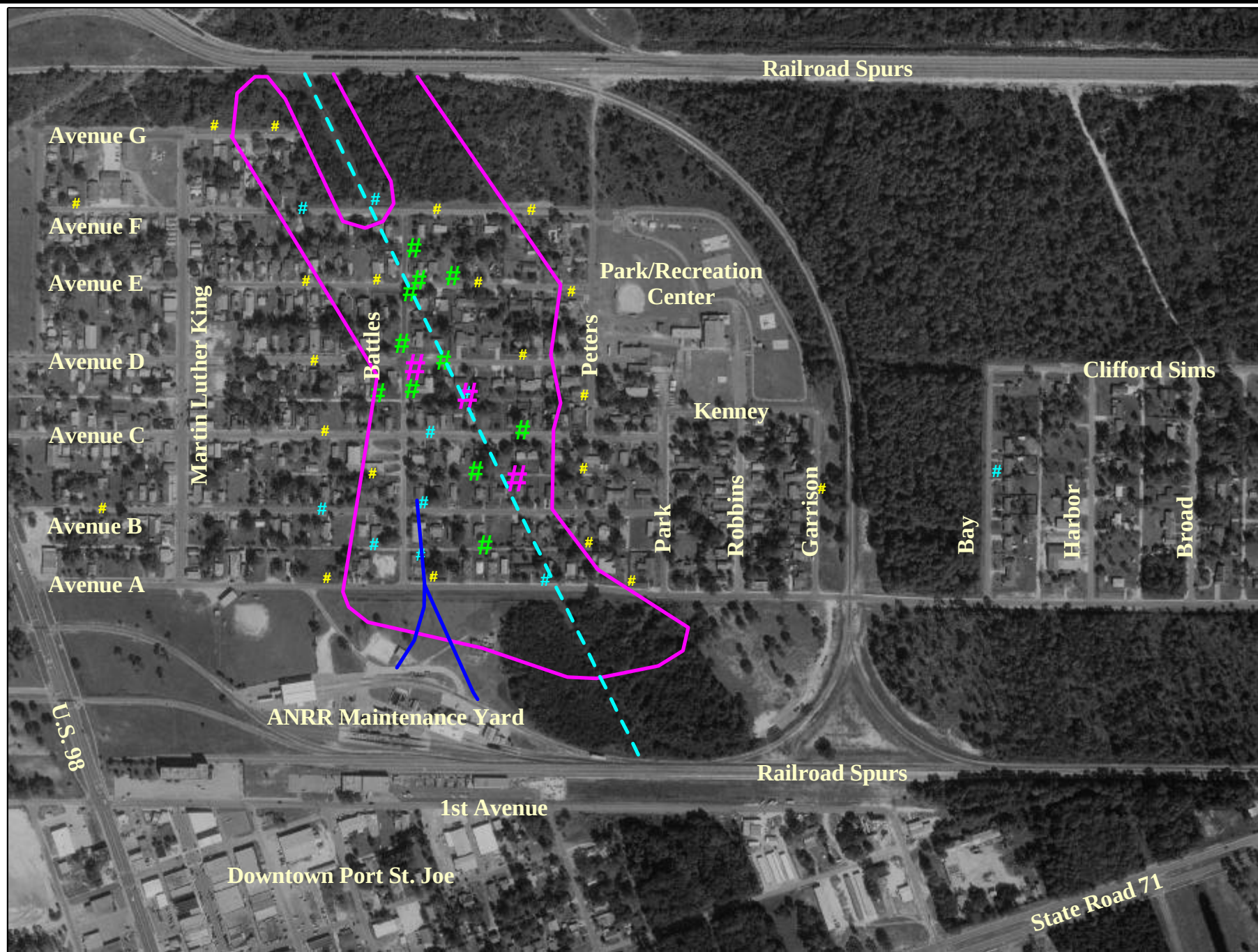
**Figure 18: Cadmium in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Cadmium (mg/Kg)	
# Below Detection Limit	# 1.51 - 3
# 0.1 - 0.5	# 3.1 - 5
# 0.51 - 1.5	

200 0 200 Feet

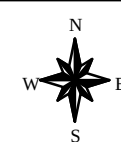
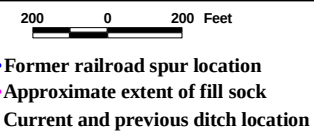
- Former railroad spur location
- Approximate extent of fill sock
- - Current and previous ditch location





**Figure 19: Cadmium in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Cadmium (mg/Kg)			
#	Below Detection Limit	#	1.51 - 3
#	0.1 - 0.5	#	3.1 - 5
#	0.51 - 1.5		



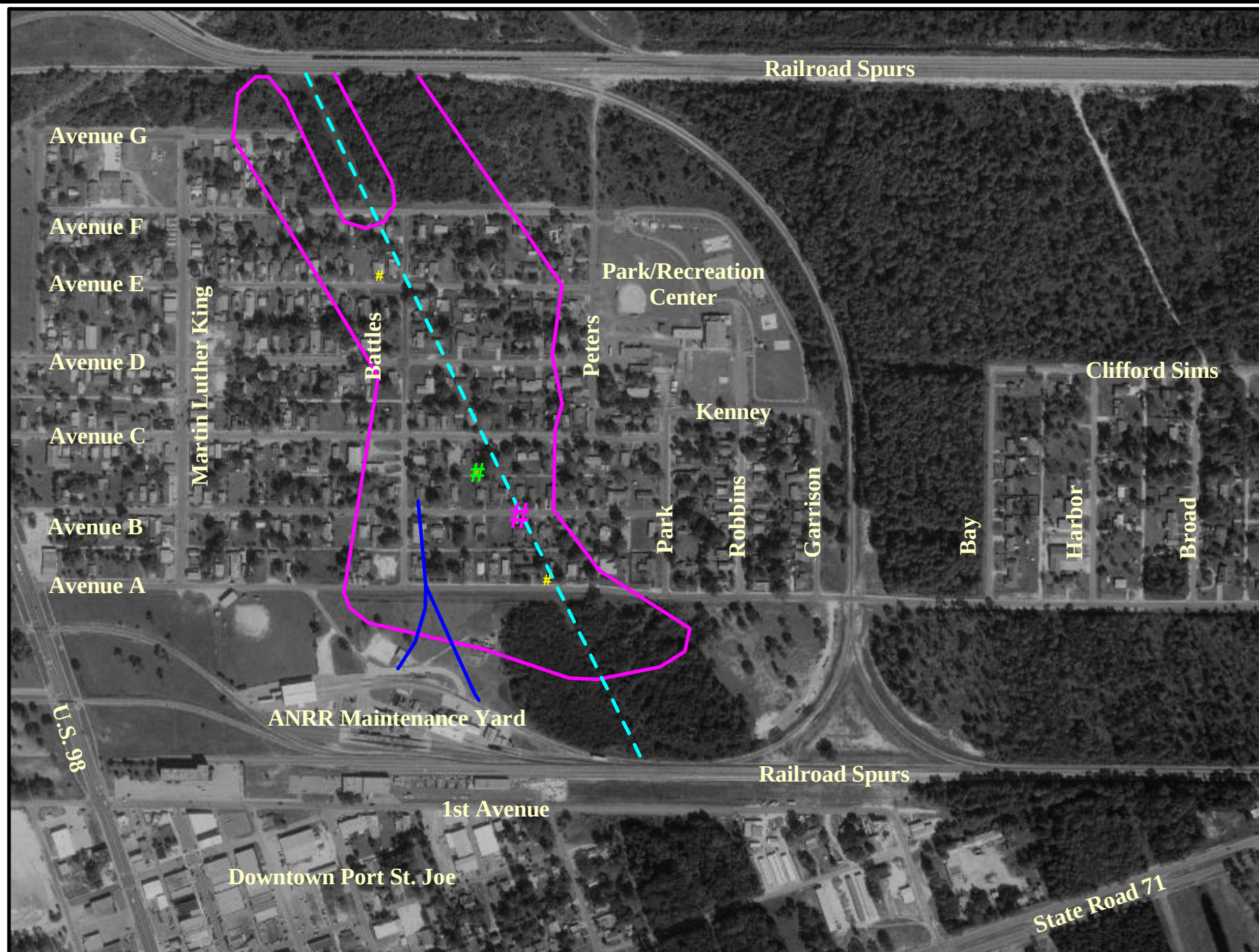
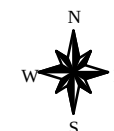


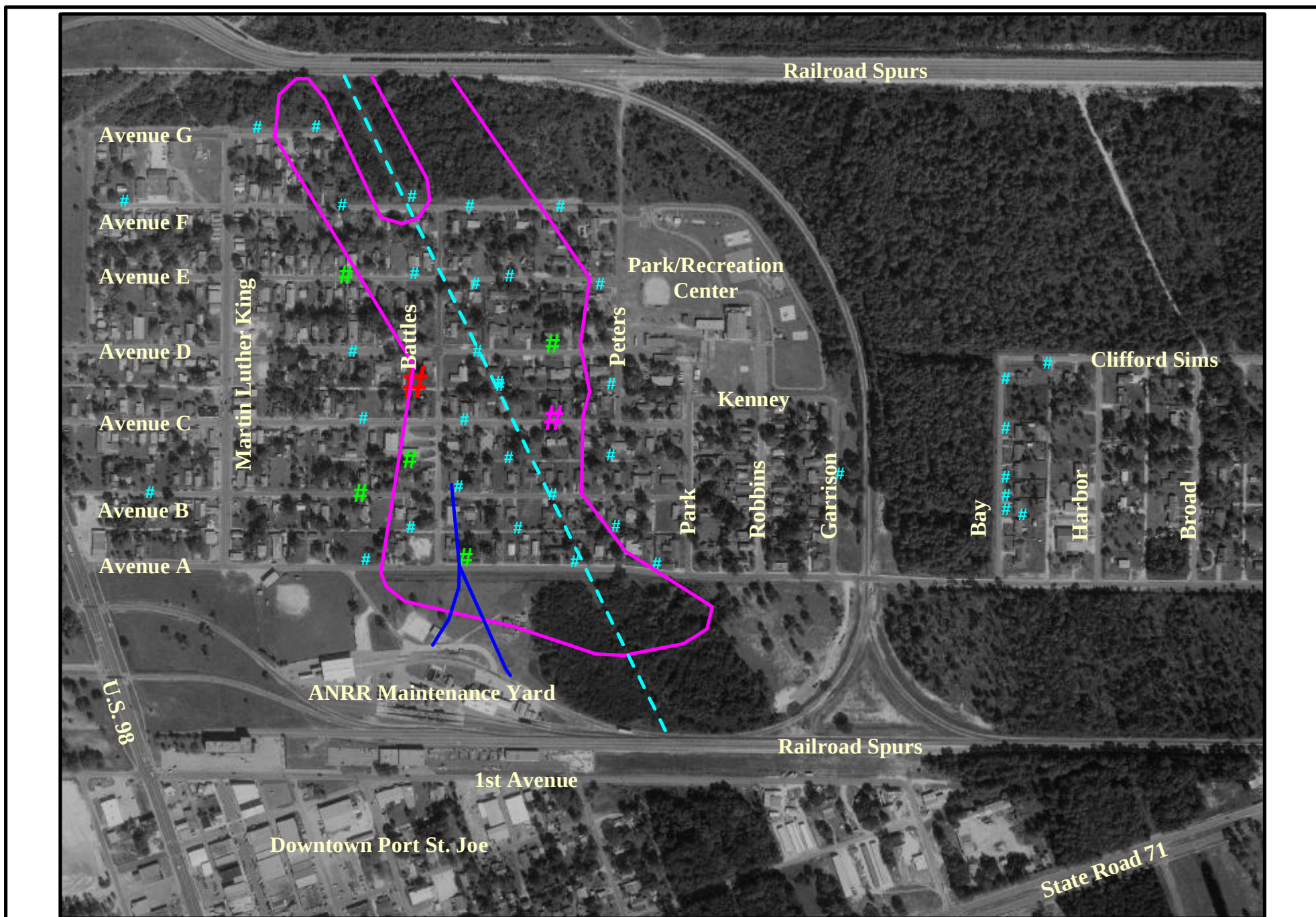
Figure 20: Cadmium in Saturated Soils
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Cadmium (mg/Kg)	
# Below Detection Limit	# 1.51 - 3
# 0.1 - 0.5	# 3.1 - 5
# 0.51 - 1.5	

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location



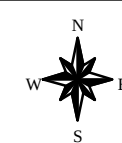


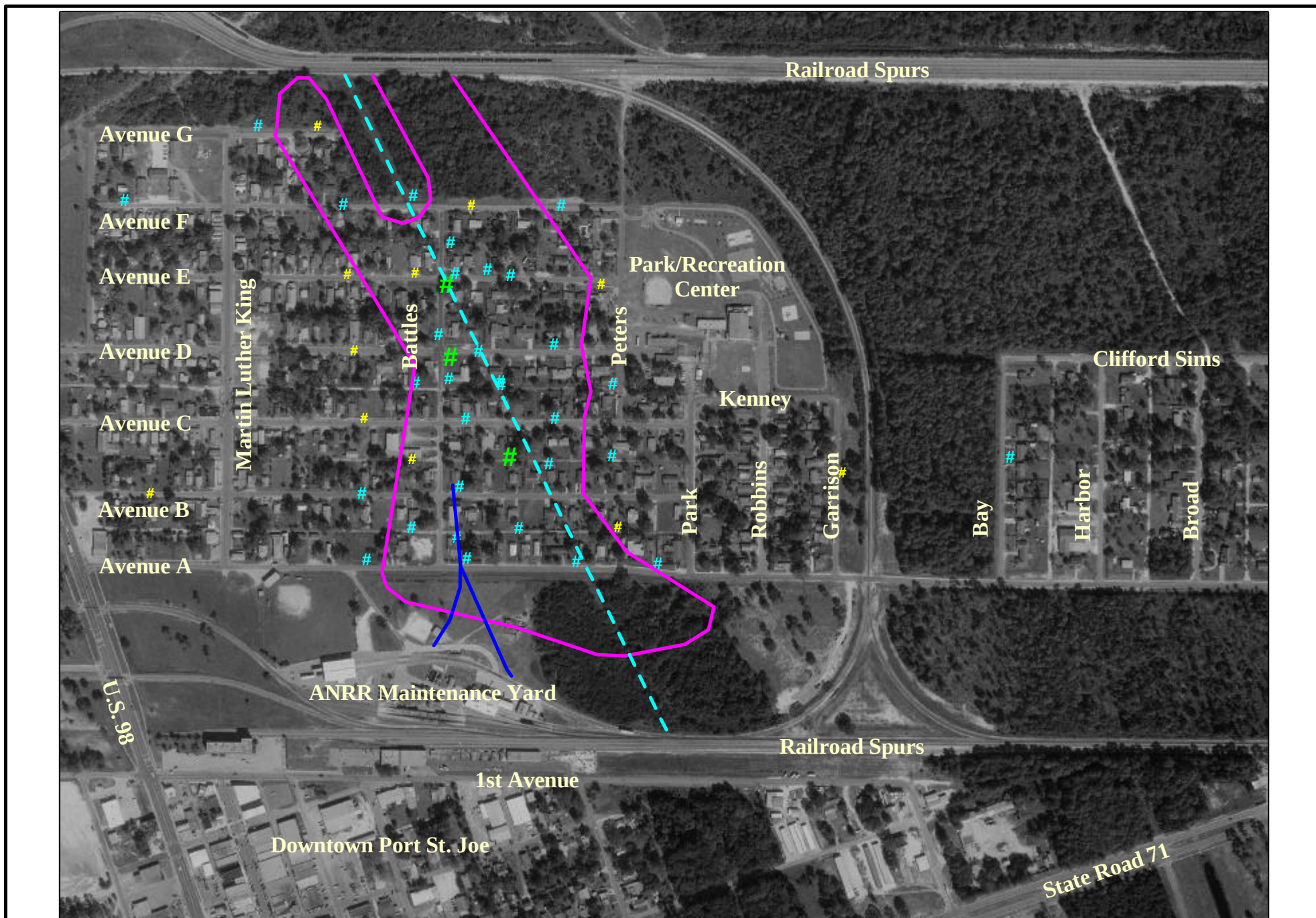
**Figure 21: Lead in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Lead (mg/Kg)			
#	Below Detection Limit	#	100.1 - 200
#	0.1 - 50	#	200.1 - 300
#	50.1 - 100		

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
- - Current and previous ditch location





**Figure 22: Lead in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Lead (mg/Kg)	
# Below Detection Limit	# 100.1 - 200
# 0.1 - 50	# 200.1 - 300
# 50.1 - 100	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
- - Current and previous ditch location



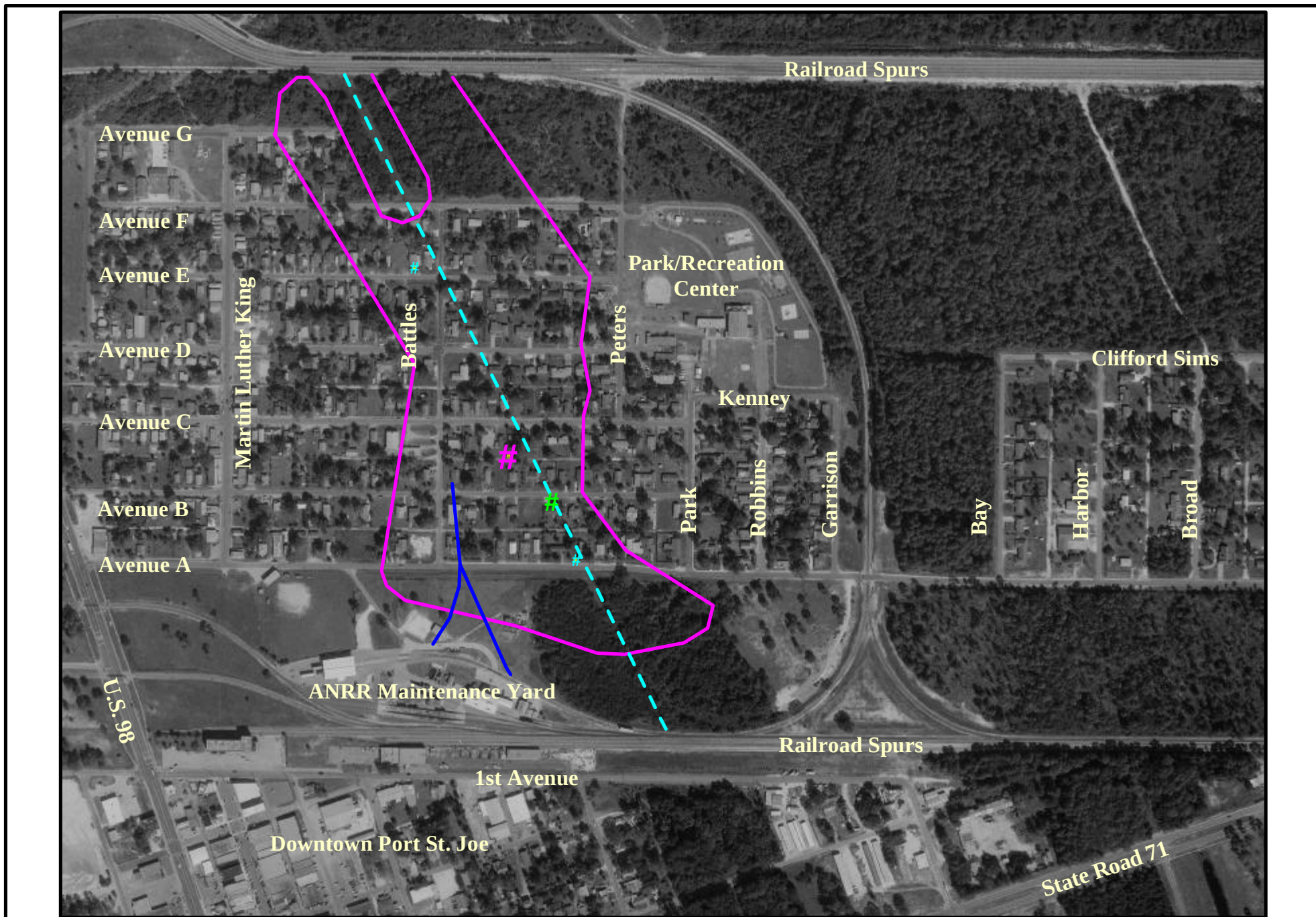
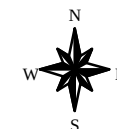


Figure 23: Lead in Saturated Soils
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Lead (mg/Kg)	
# Below Detection Limit	# 100.1 - 200
# 0.1 - 50	# 200.1 - 300
# 50.1 - 100	

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location



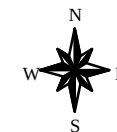


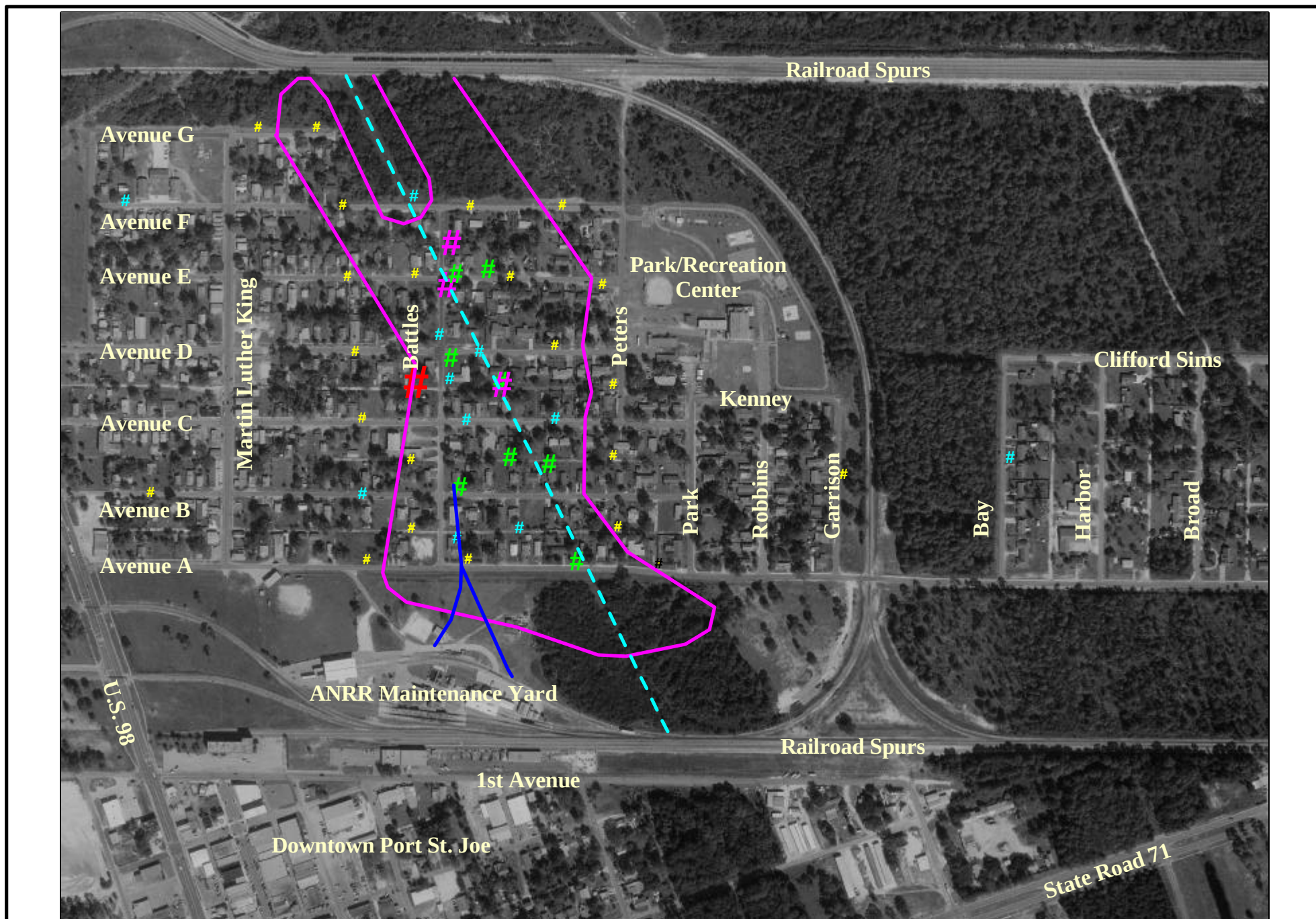
**Figure 24: Nickel in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Nickel (mg/Kg)	
# Below Detection Limit	# 50.1 - 100
# 0.1 - 10	# 100.1 - 150
# 10.1 - 50	

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location



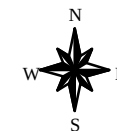


**Figure 25: Nickel in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Nickel (mg/Kg)			
#	Below Detection Limit	#	50.1 - 100
#	0.1 - 10	#	100.1 - 150
#	10.1 - 50		

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location



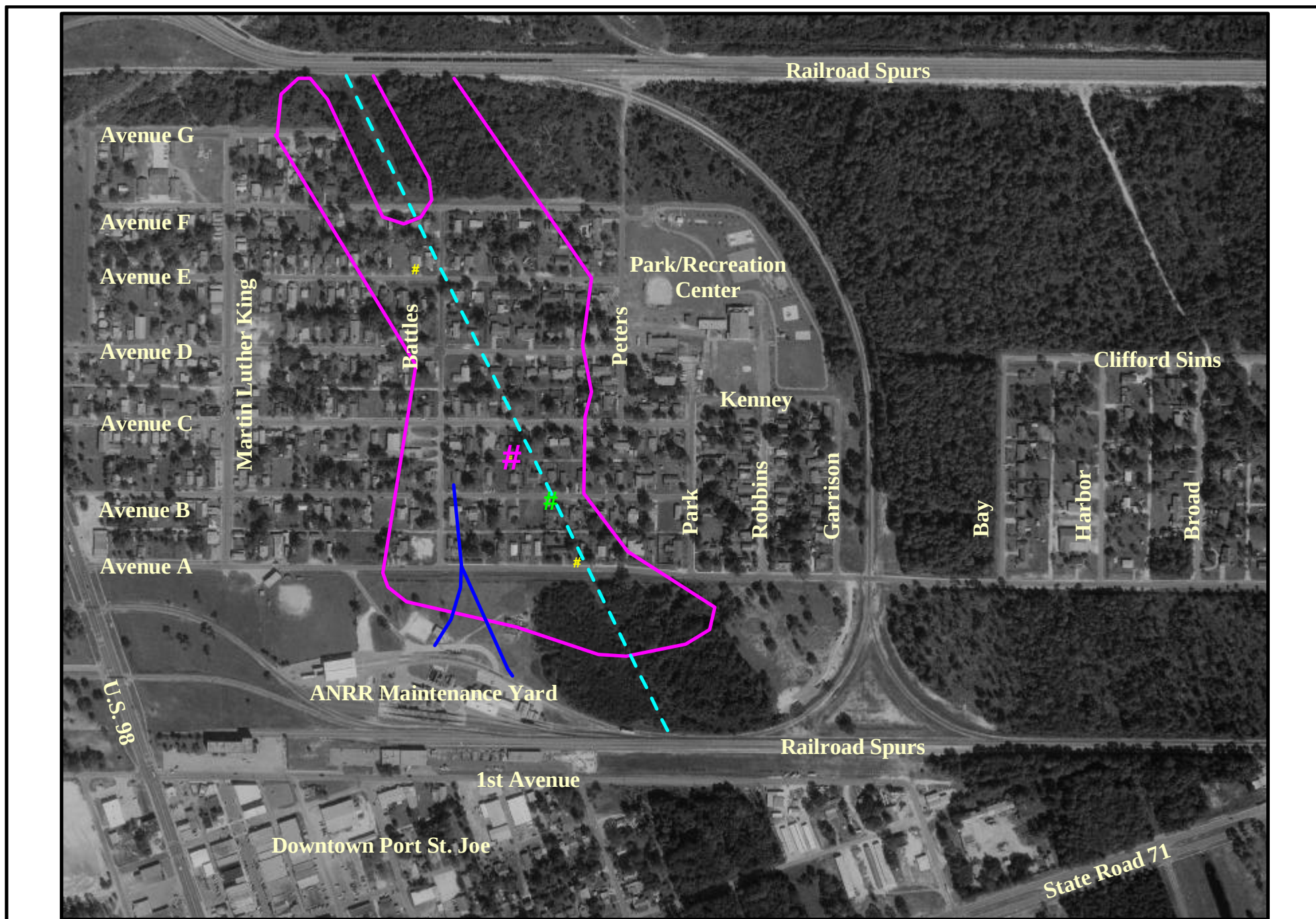
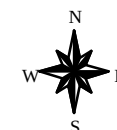


Figure 26: Nickel in Saturated Soils
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Nickel (mg/Kg)			
#	Below Detection Limit	#	50.1 - 100
#	0.1 - 10	#	100.1 - 150
#	10.1 - 50		

200 0 200 Feet

— Former railroad spur location
 — Approximate extent of fill sock
 — Current and previous ditch location



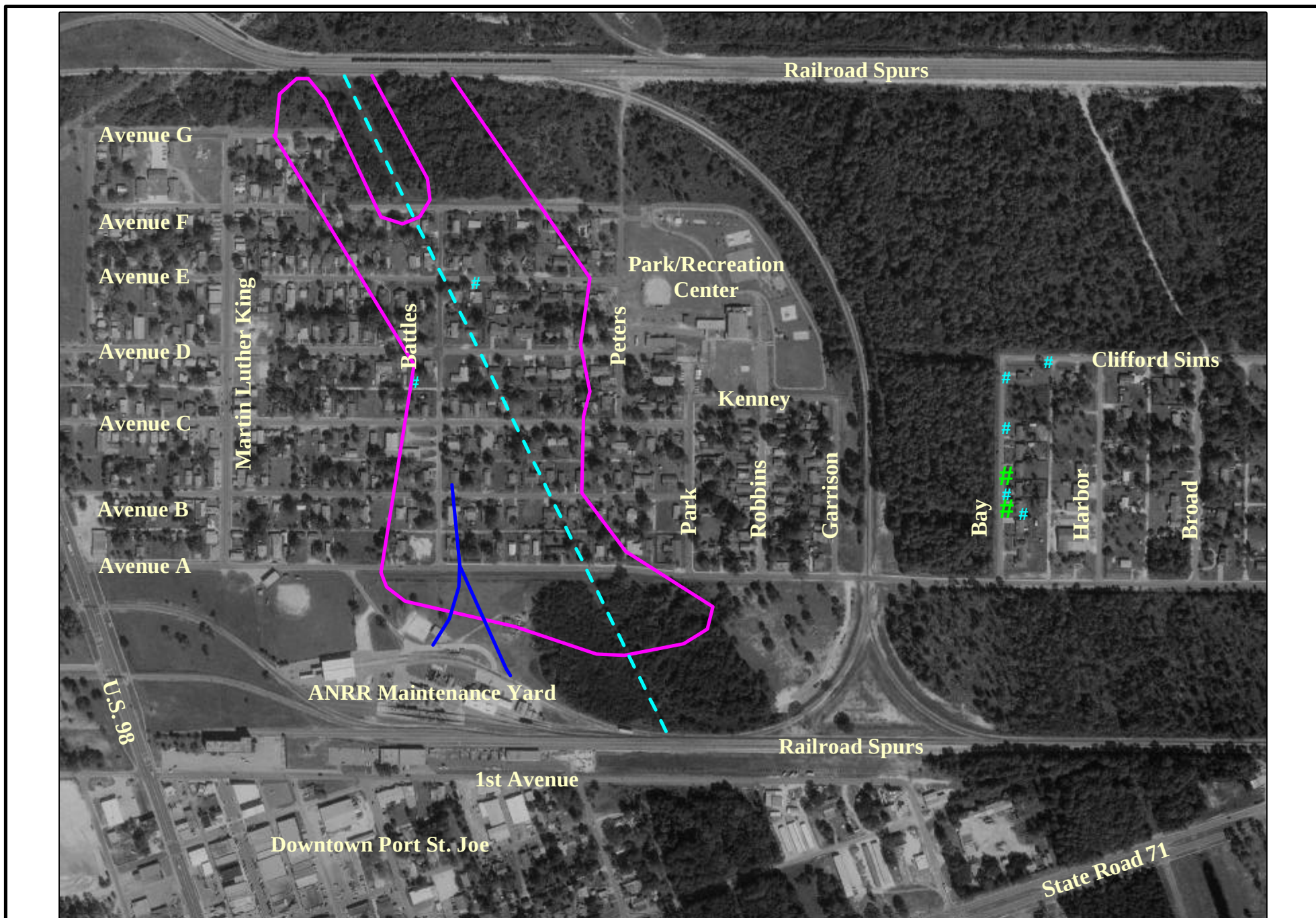


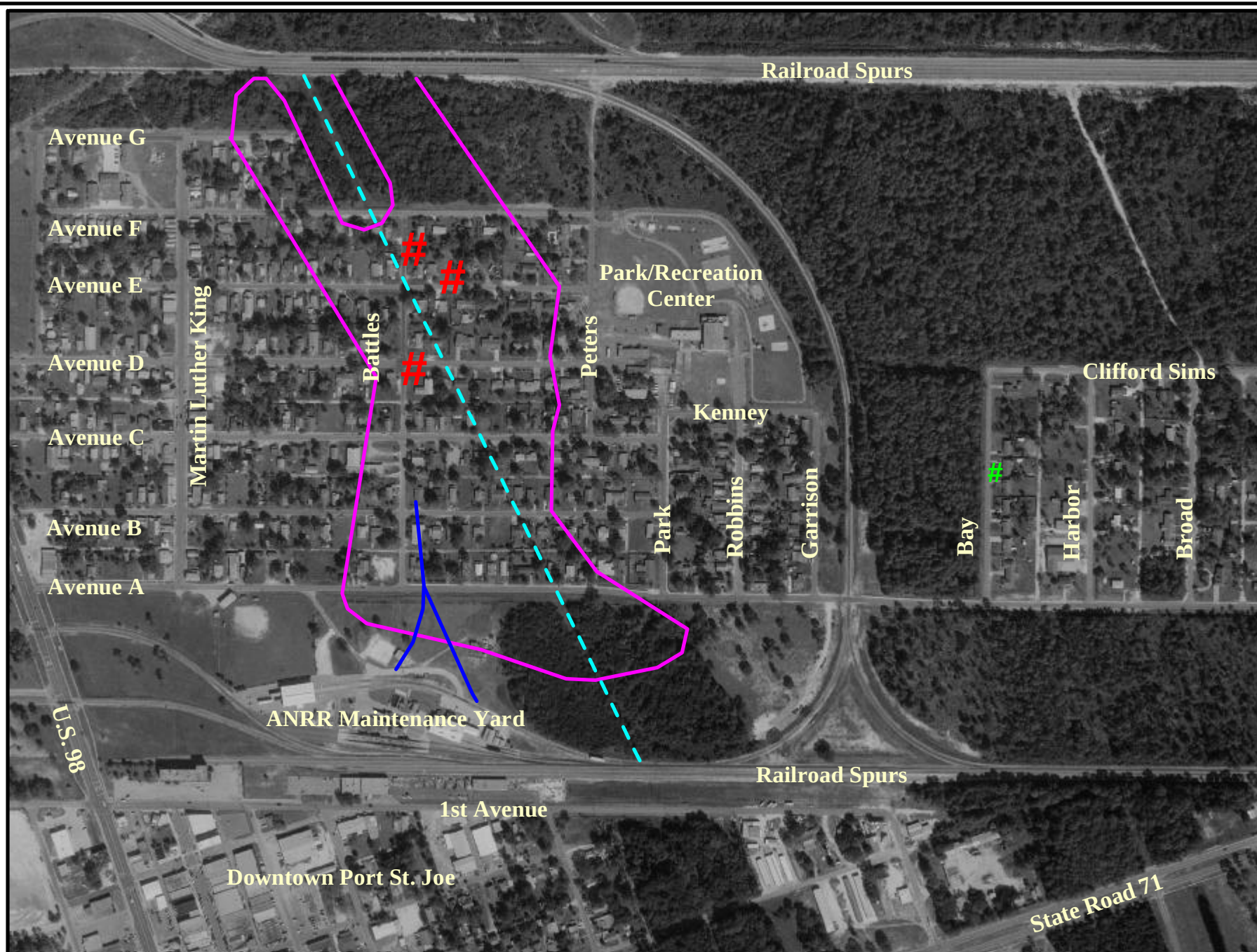
Figure 27: Barium in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Barium (mg/Kg)	
# Below Detection Limit	# 50.1 - 100
# 0.1 - 25	# 100.1 - 320
# 25.1 - 50	

200 0 200 Feet

— Former railroad spur location
 — Approximate extent of fill sock
 - - Current and previous ditch location





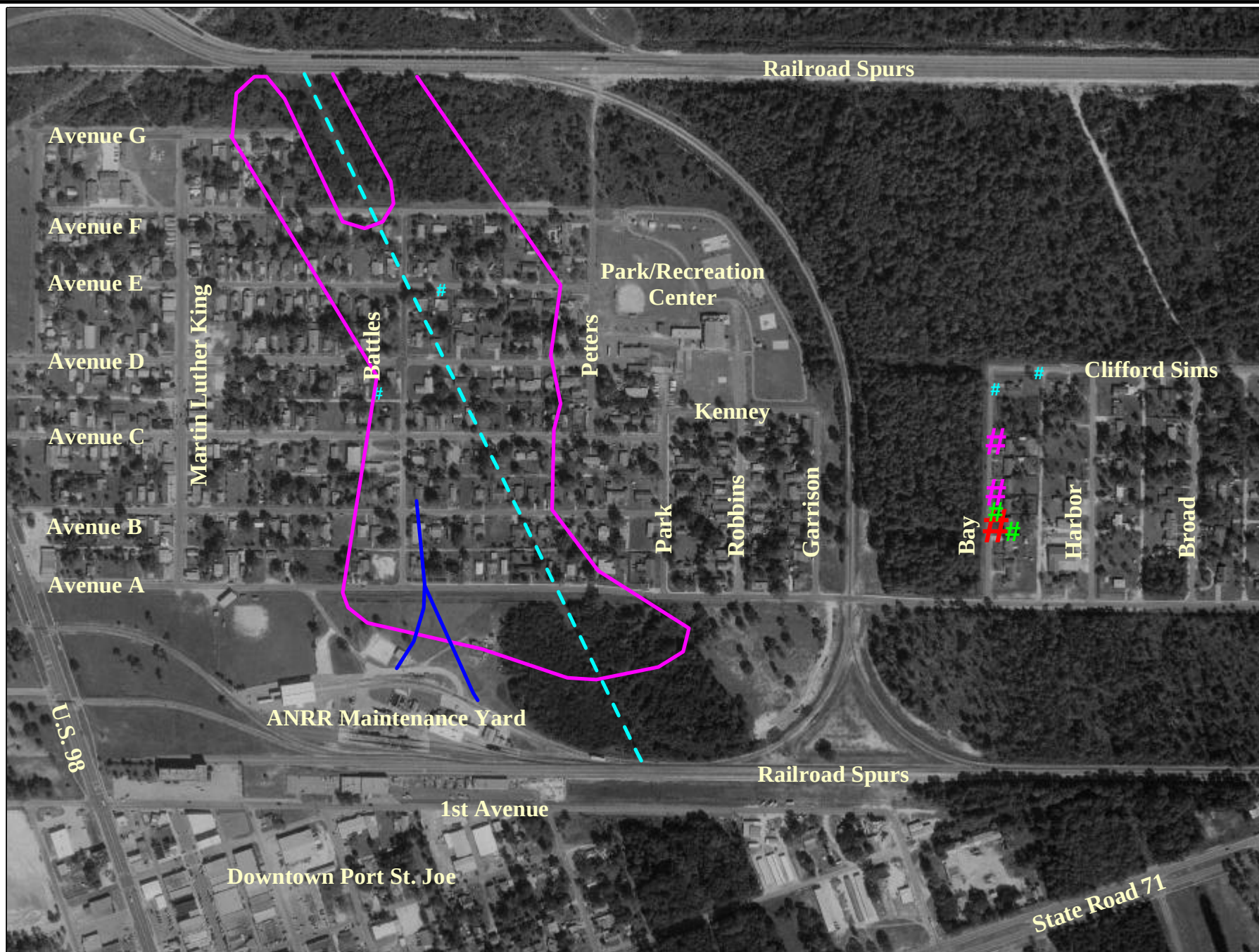
**Figure 28: Barium in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Barium (mg/Kg)	
# Below Detection Limit	# 50.1 - 100
# 0.1 - 25	# 100.1 - 320
# 25.1 - 50	

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location





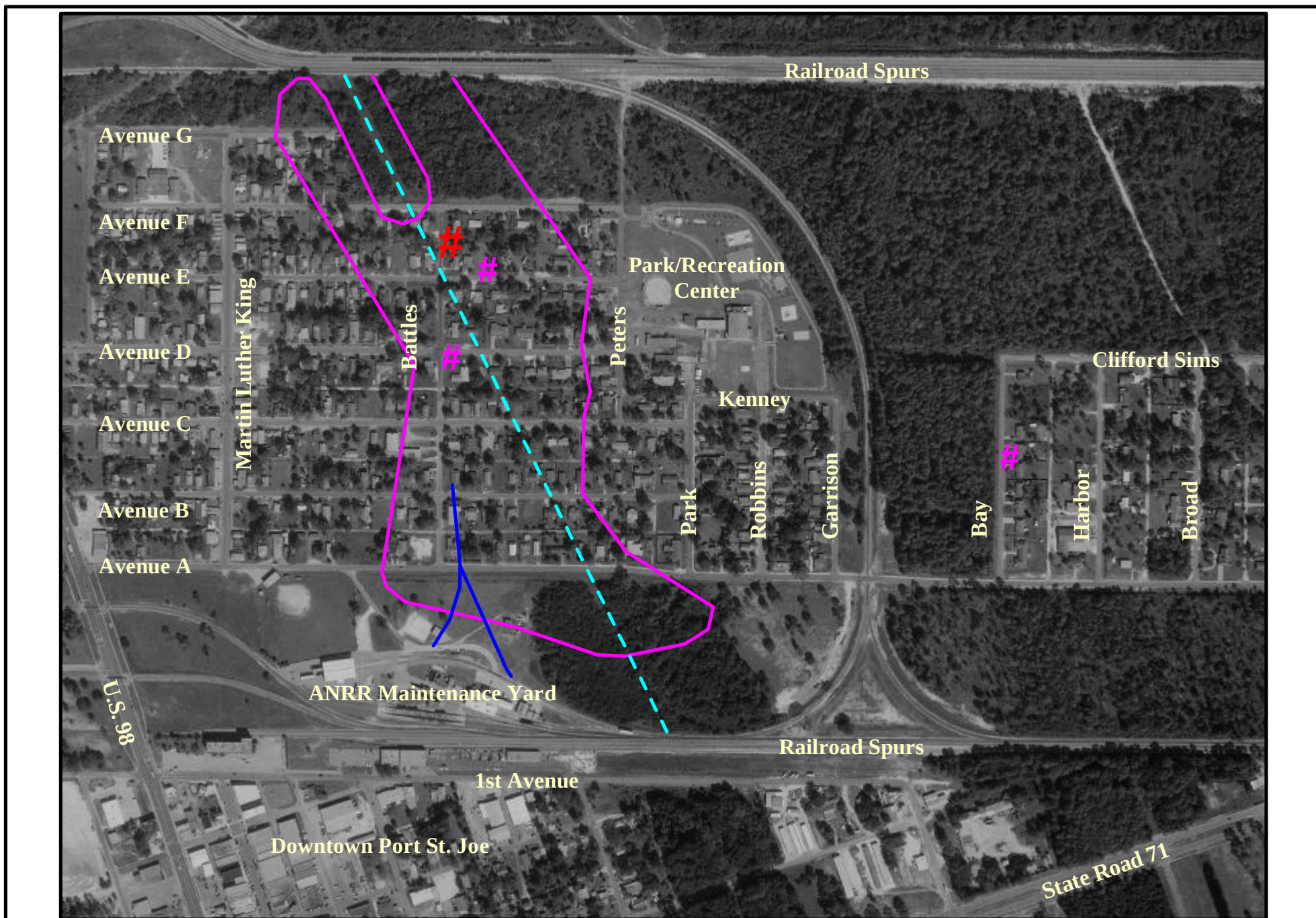
**Figure 29: Calcium in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Calcium (mg/Kg)	
# Below Detection Limit	# 150001 - 300000
# 0.1 - 75000	# 300001 - 360000
# 75001 - 150000	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location





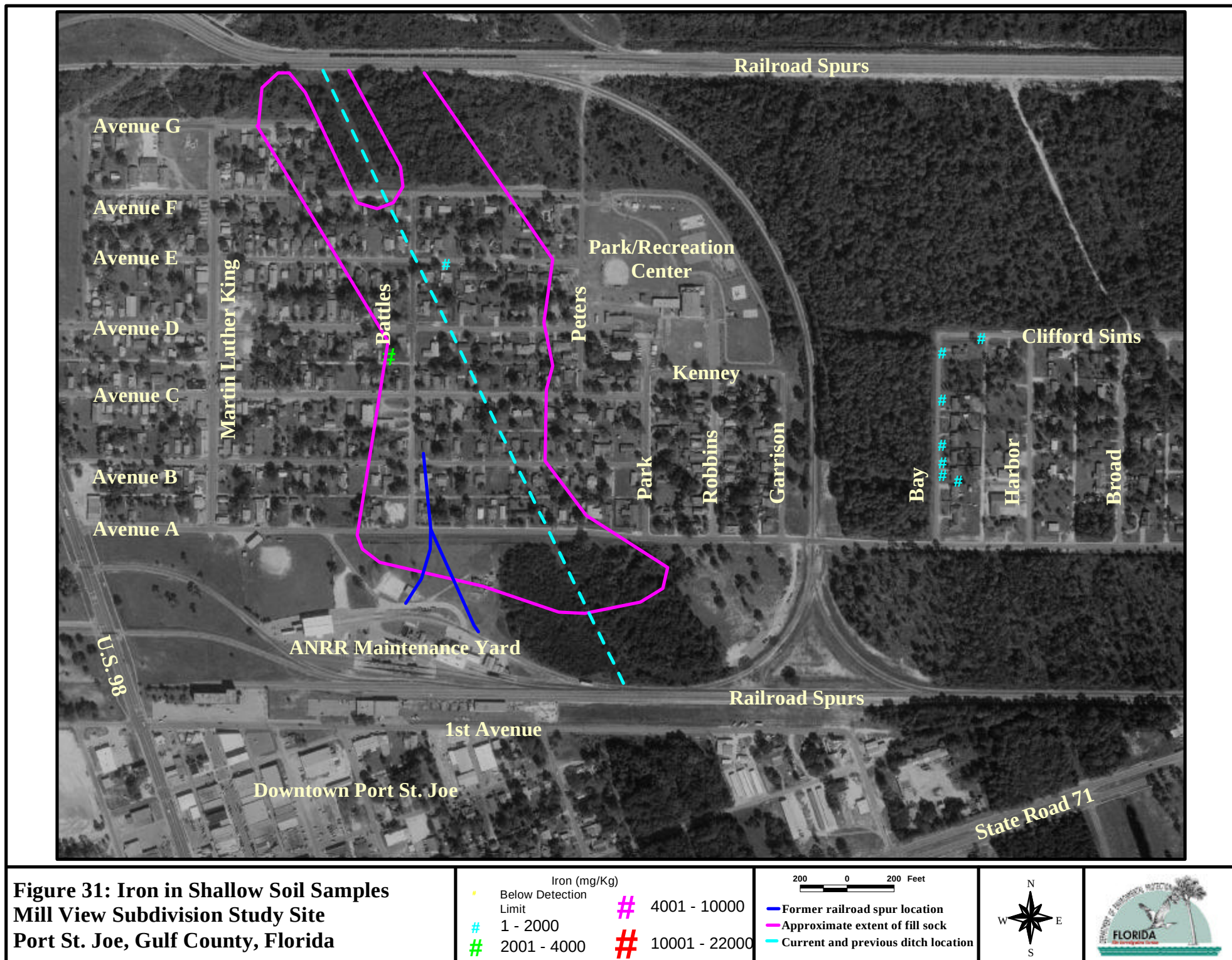
**Figure 30: Calcium in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

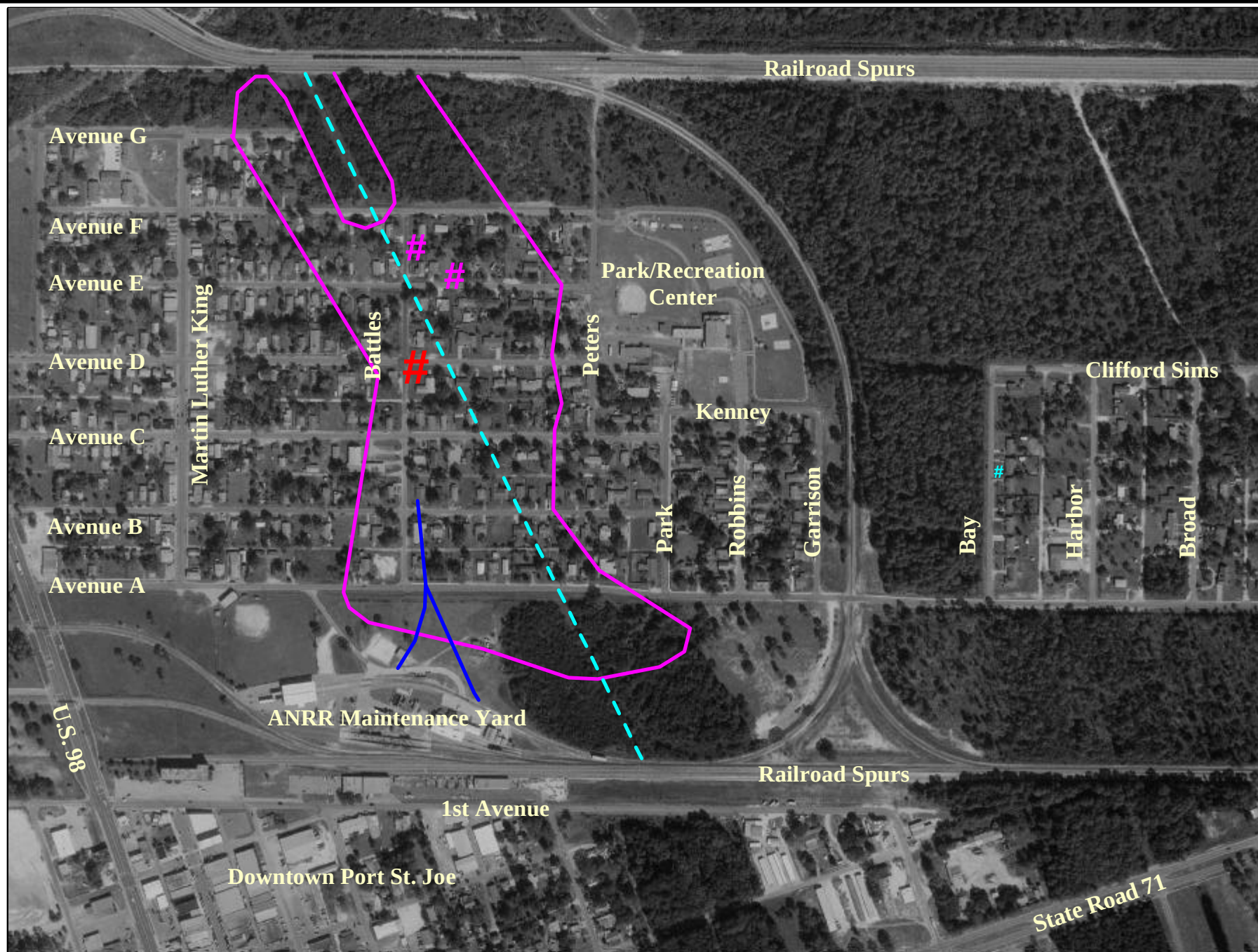
Calcium (mg/Kg)	
# Below Detection Limit	# 150001 - 300000
# 0.1 - 75000	# 300001 - 360000
# 75001 - 150000	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location







**Figure 32: Iron in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Iron (mg/Kg)	
# Below Detection Limit	# 4001 - 10000
# 1 - 2000	# 10001 - 22000
# 2001 - 4000	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location



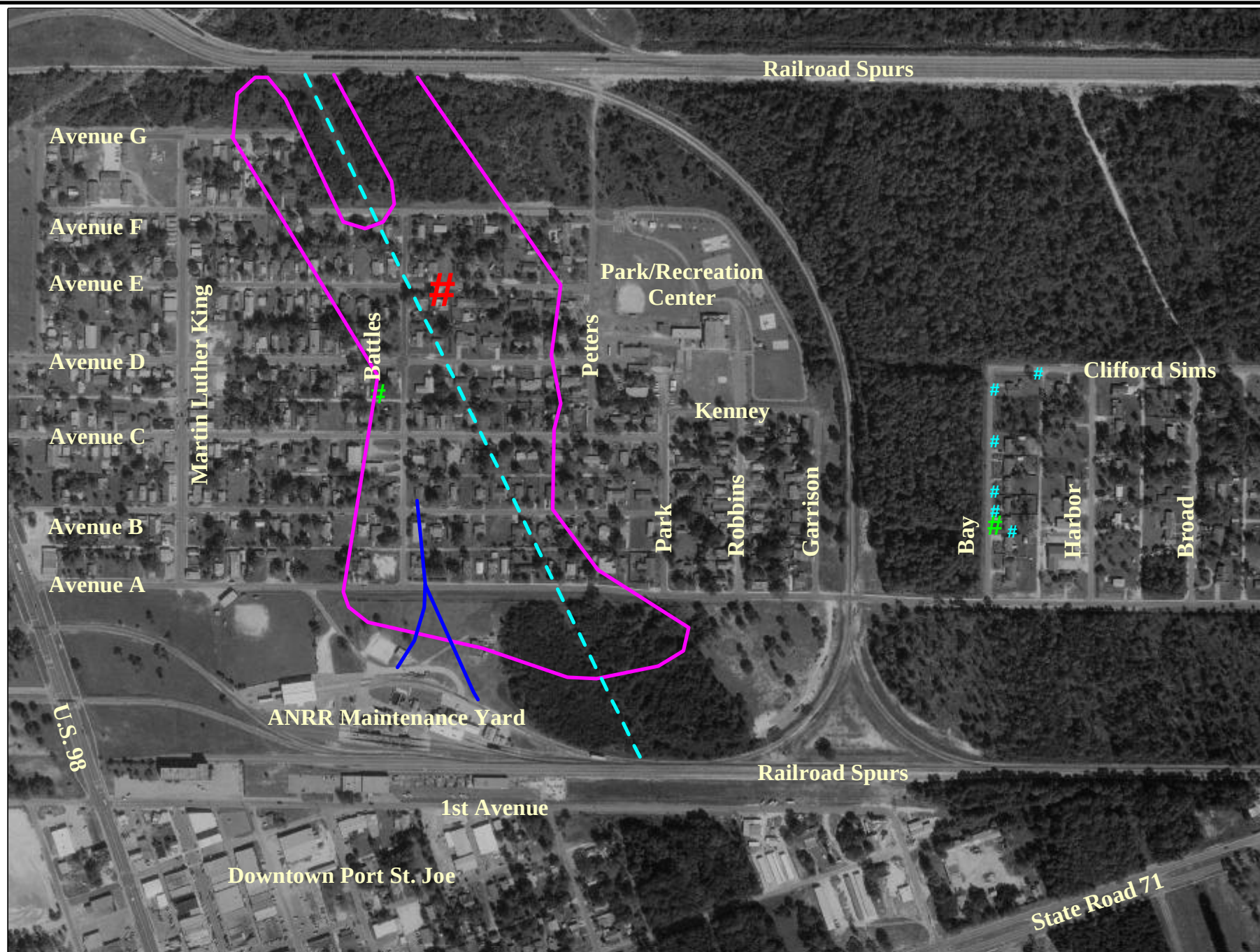


Figure 33: Magnesium in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

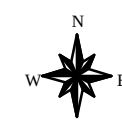
Magnesium (mg/Kg)	
# Below Detection Limit	# 5001 - 25000
# 1 - 1000	# 25001 - 56000
# 1001 - 5000	

200 0 200 Feet

— Former railroad spur location

— Approximate extent of fill sock

— Current and previous ditch location



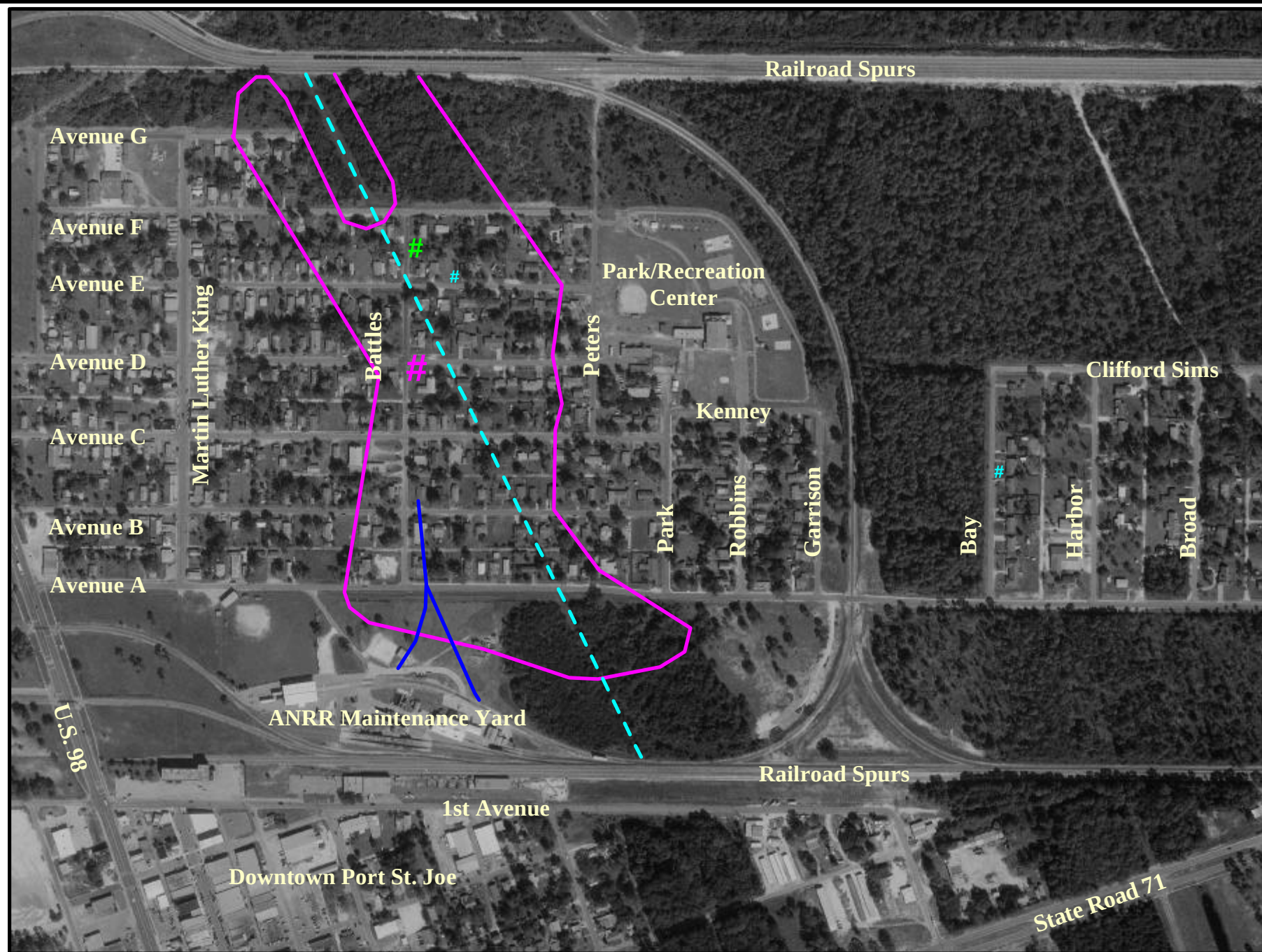
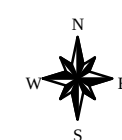
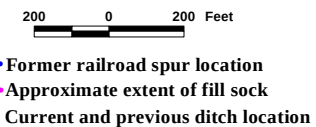
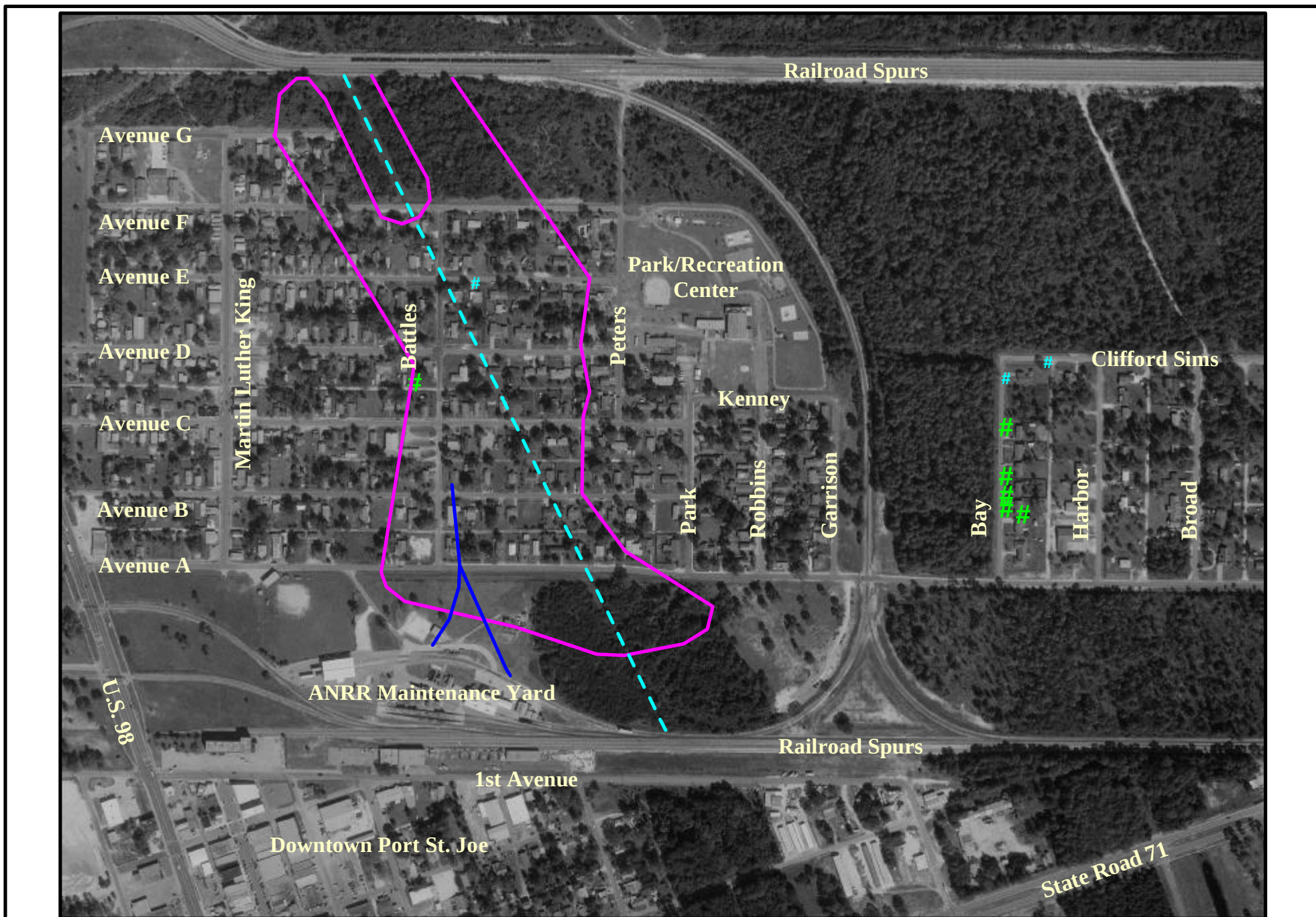


Figure 34: Magnesium in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

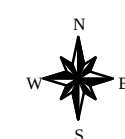
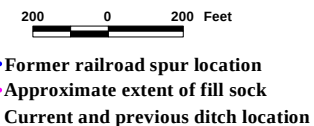
Magnesium (mg/Kg)			
•	Below Detection Limit	#	5001 - 25000
#	1 - 1000	#	25001 - 56000
#	1001 - 5000		





**Figure 35: Manganese in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Manganese (mg/Kg)	
Below Detection Limit	# 100.1 - 1000
# 1 - 25	# 1001 - 3300
# 25.1 - 100	



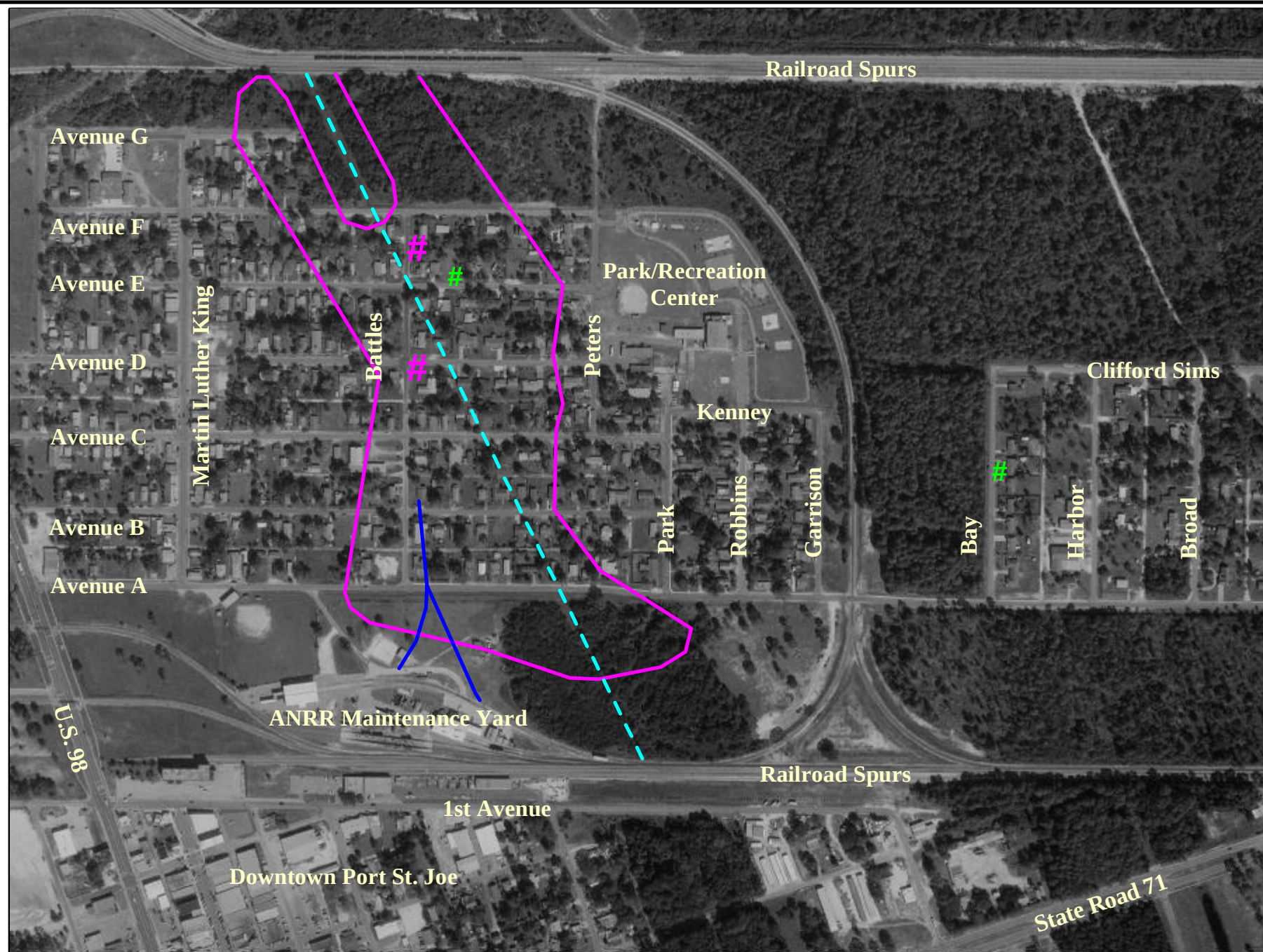
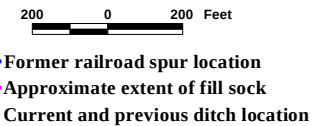


Figure 36: Manganese in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Manganese (mg/Kg)	
#	Below Detection Limit
#	1 - 25
#	25.1 - 100
#	100.1 - 1000
#	1001 - 3300



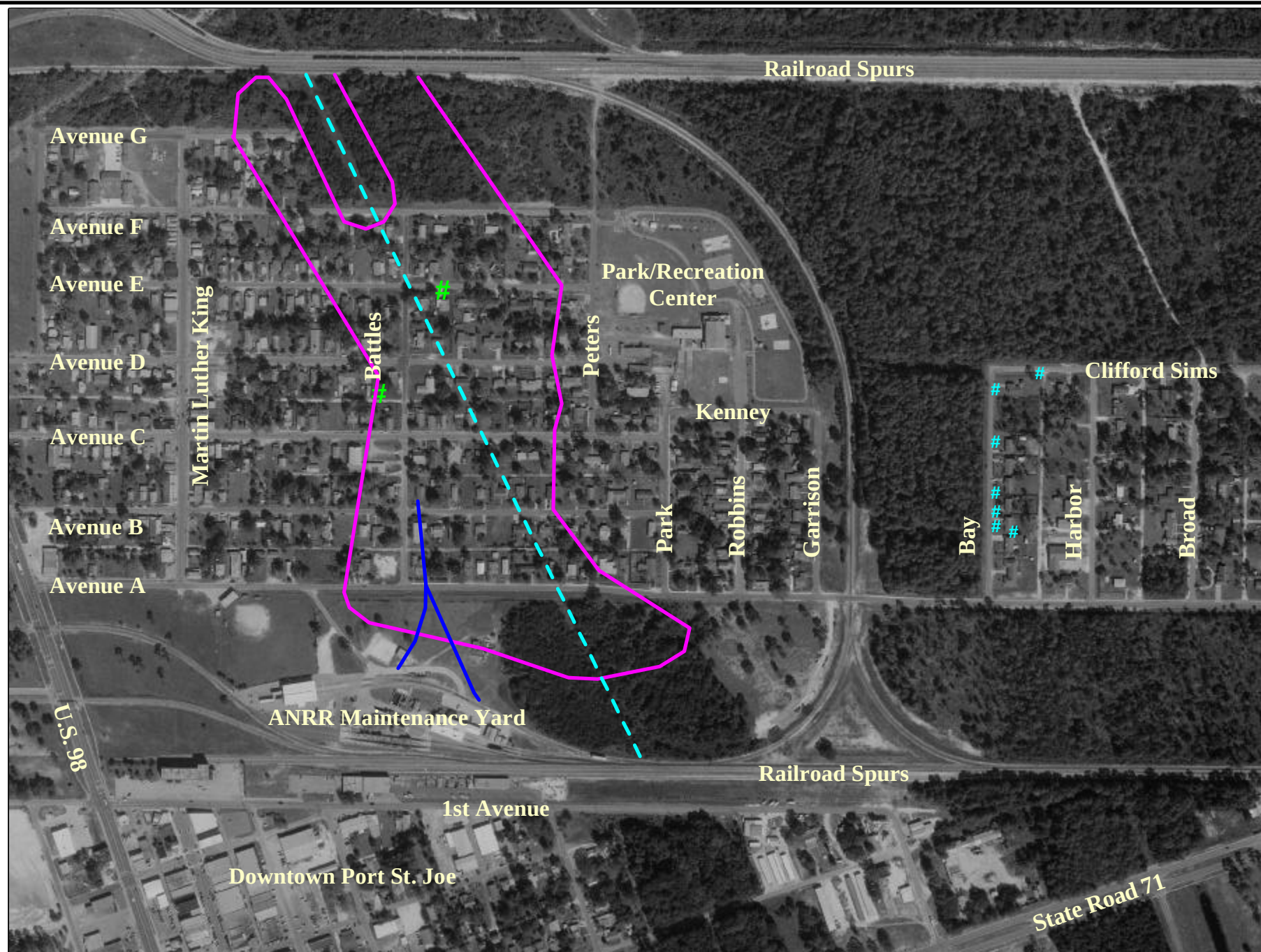
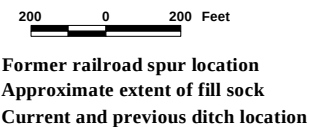
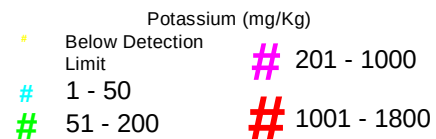
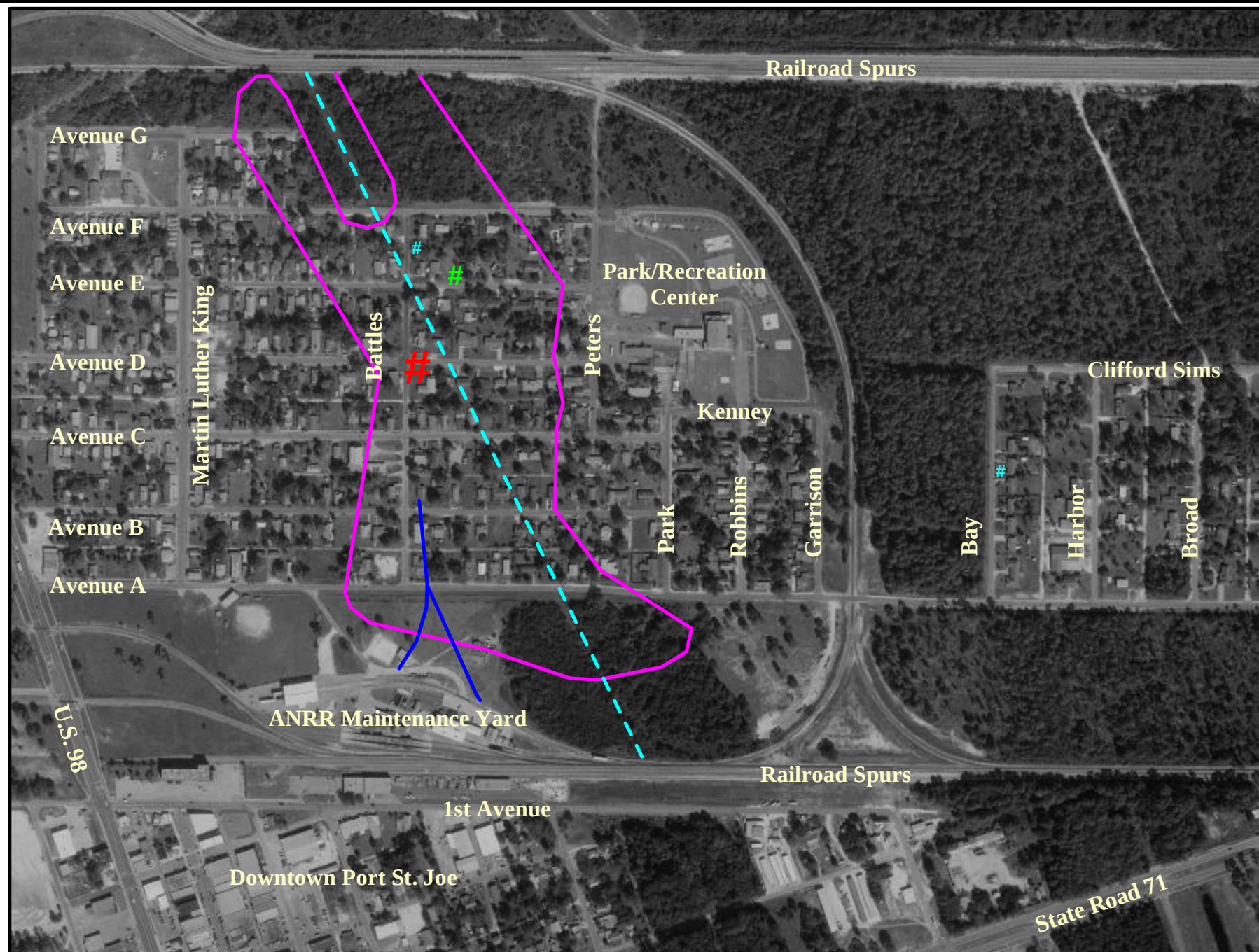
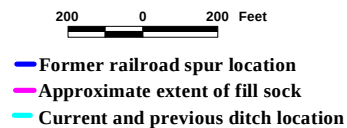
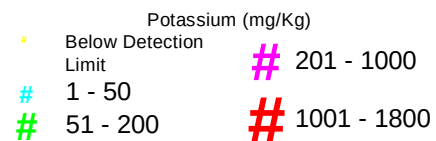


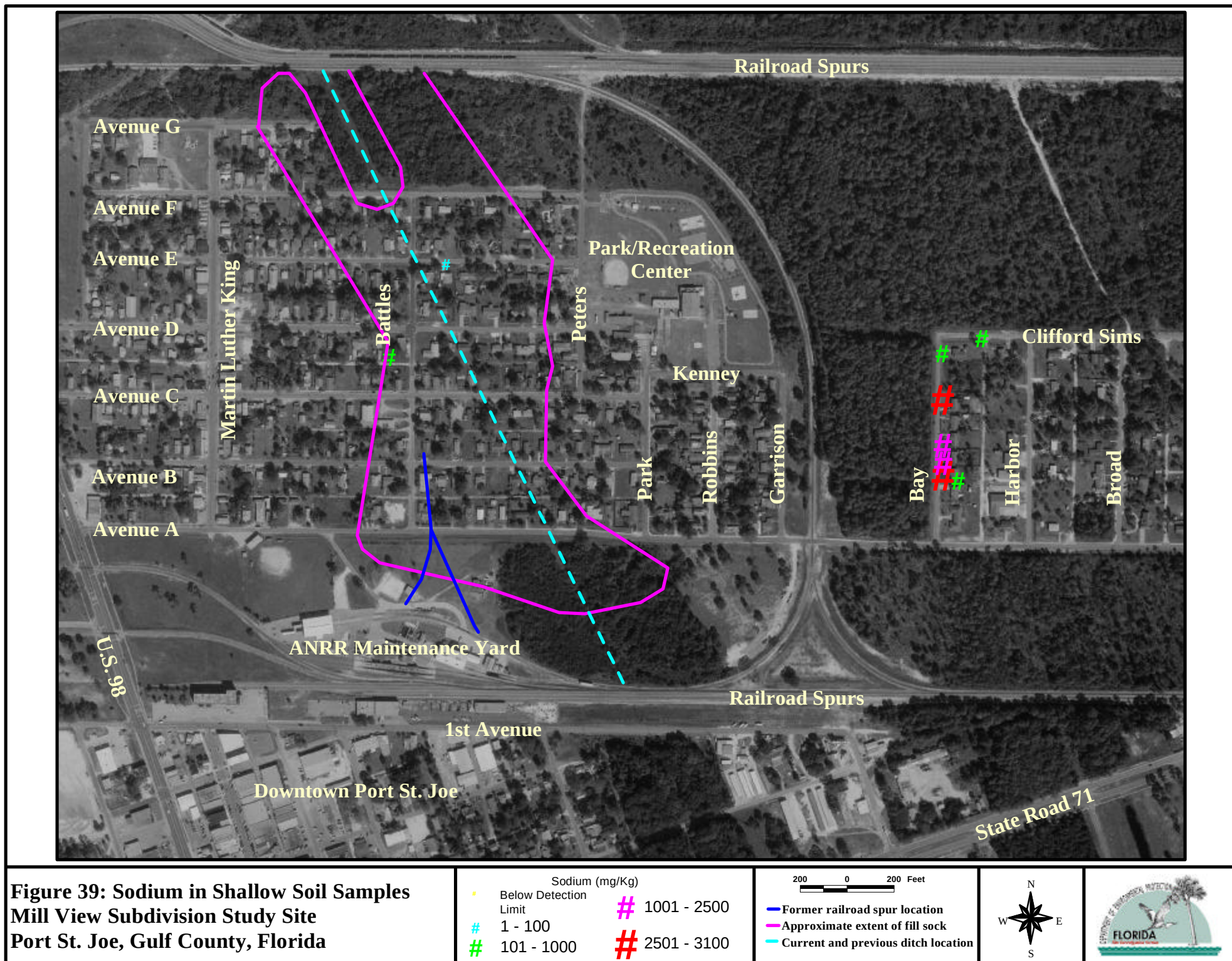
Figure 37: Potassium in Shallow Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida





**Figure 38: Potassium in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





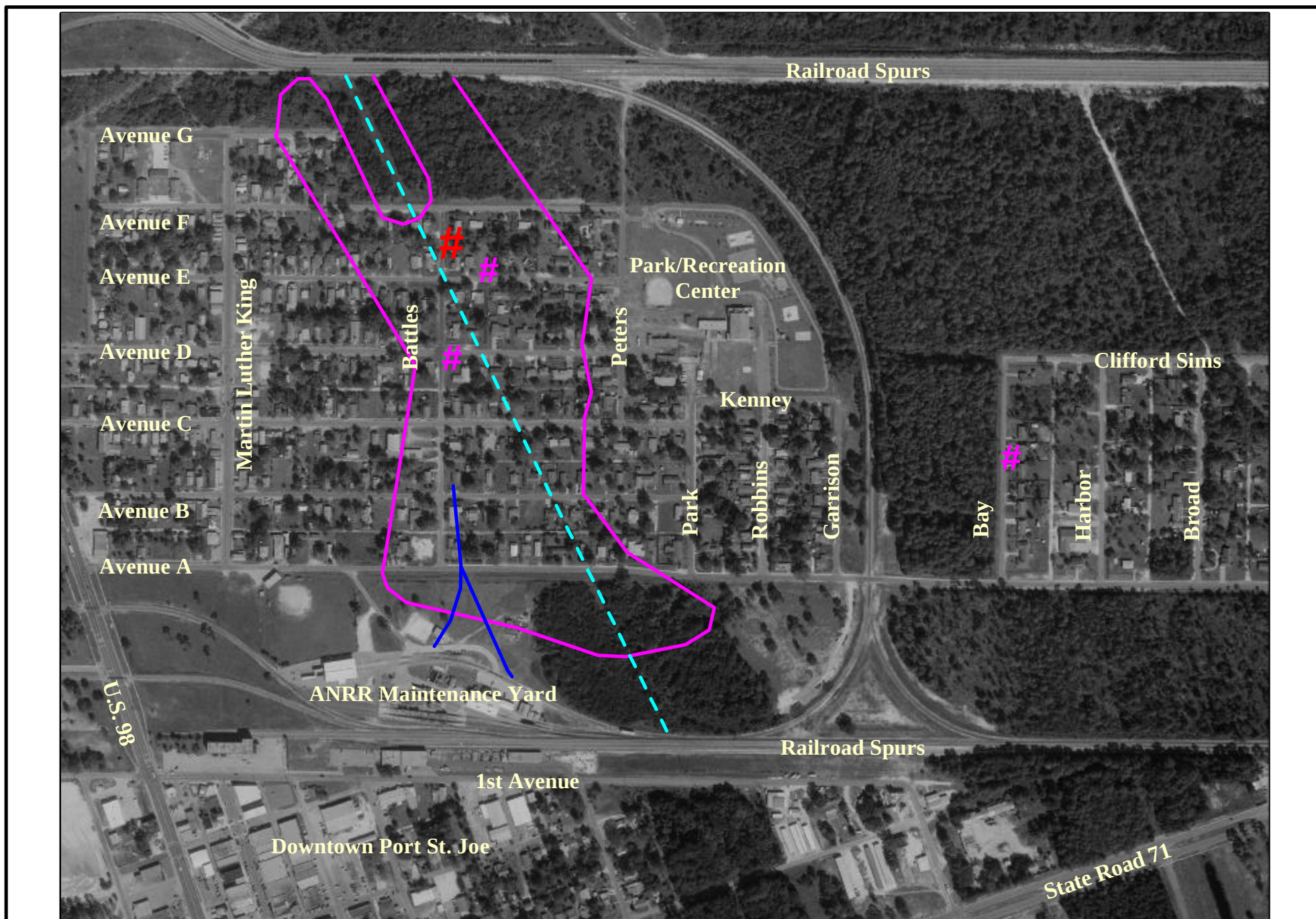


Figure 40: Sodium in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Sodium (mg/Kg)	
# Below Detection Limit	# 1001 - 2500
# 1 - 100	# 2501 - 3100
# 101 - 1000	

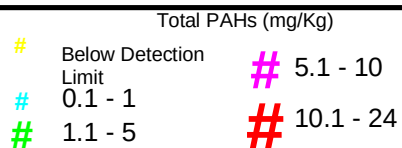
200 0 200 Feet

— Former railroad spur location
 — Approximate extent of fill sock
 — Current and previous ditch location





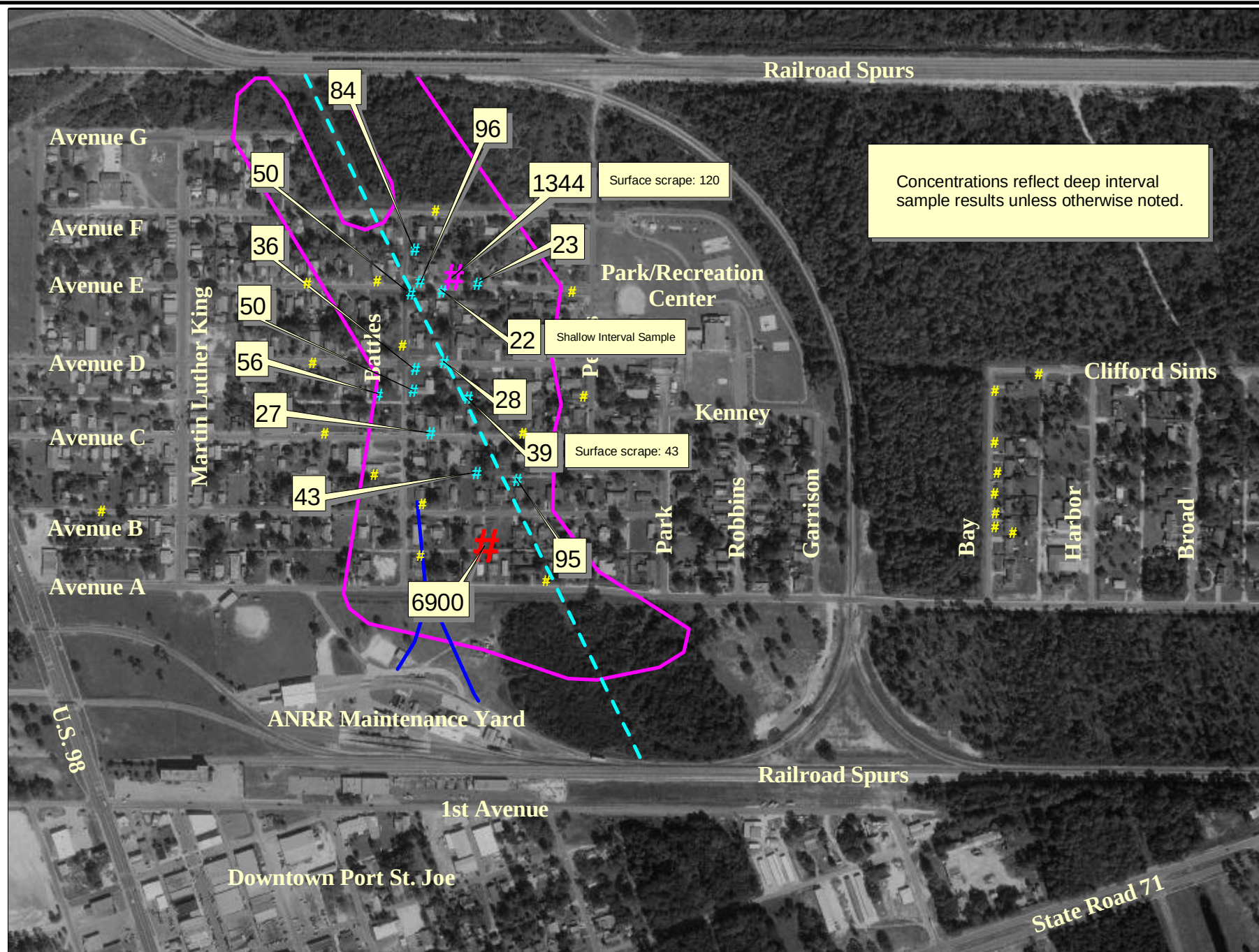
**Figure 41: Total PAHs in Deep Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**



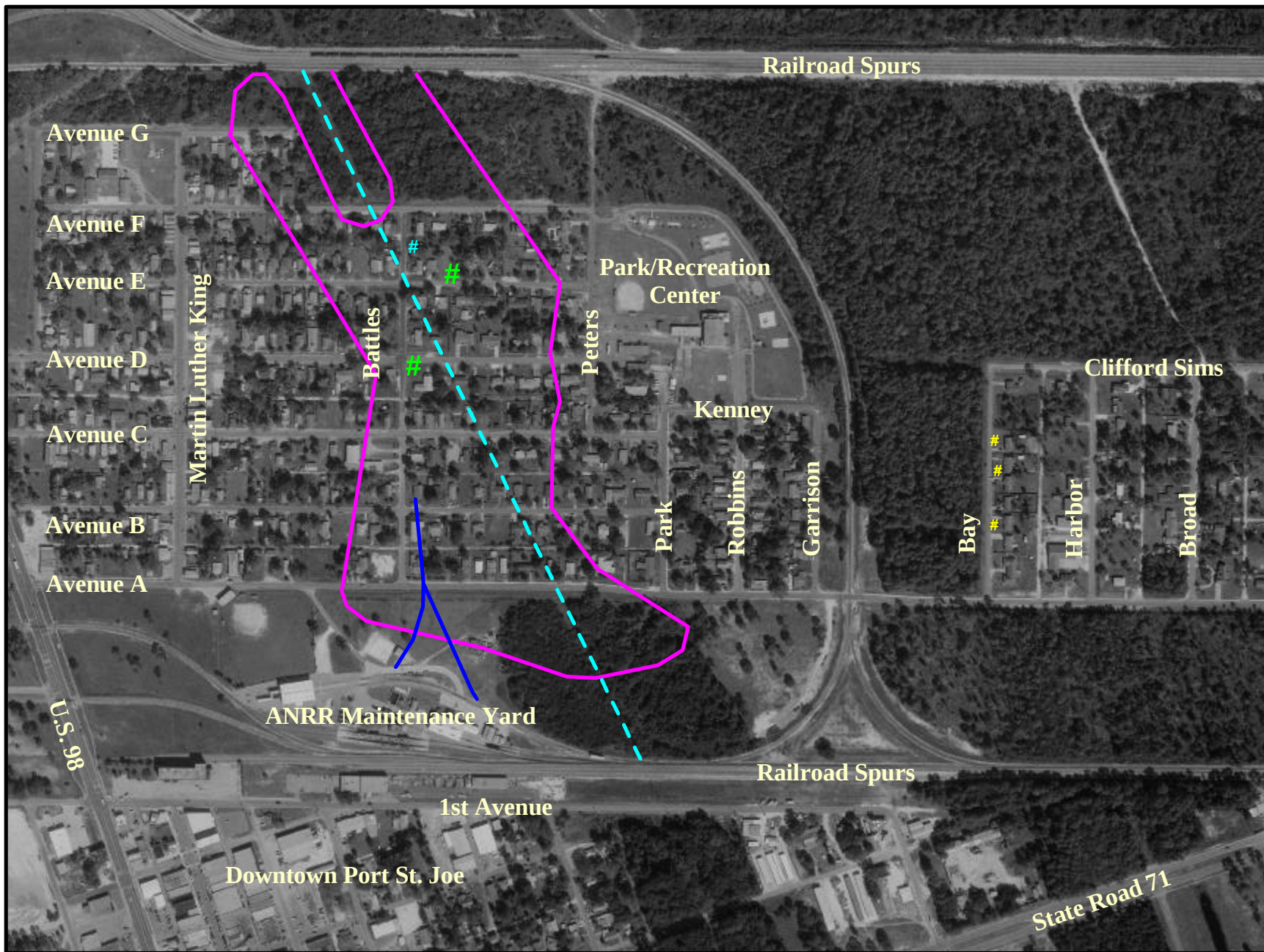
200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location





**Figure 42: PCBs in Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**



**Figure 43: 2,3,7,8-TCDD TEQs in Soil Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

2,3,7,8-TCDD TEQs (pg/G)

#	0.1 - 0.5	#	4.01 - 7.00
#	0.51 - 1.00	#	7.01 - 10.00
#	1.01 - 4.00		

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- - - Current and previous ditch location



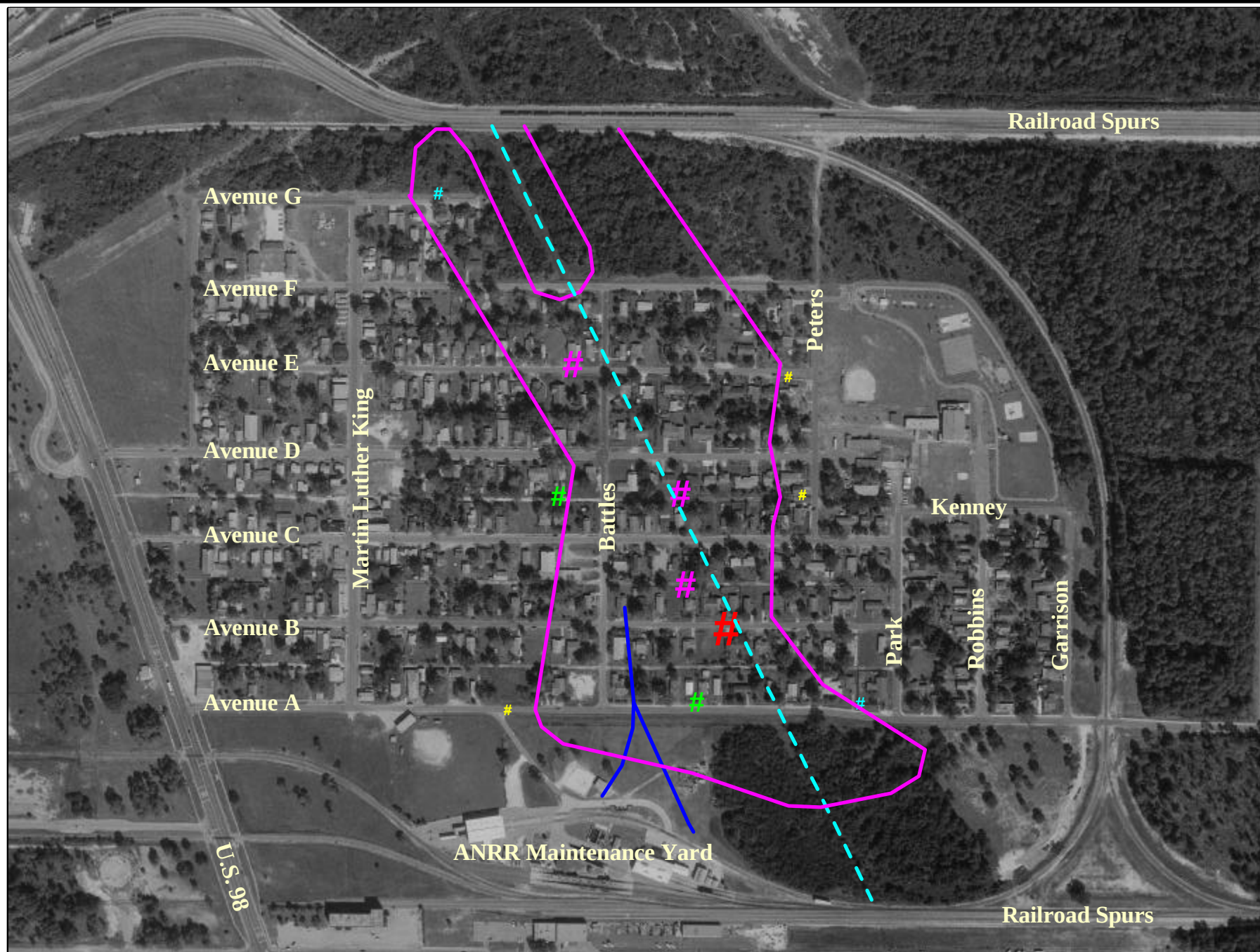
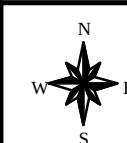


Figure 44: Specific Conductivity in Ground Water
08/15/2001
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Specific Conductivity (microhms/cm)			
#	0 - 250	#	1001 - 3000
#	251 - 500	#	
#	501 - 1000	#	3001 - 7400

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location



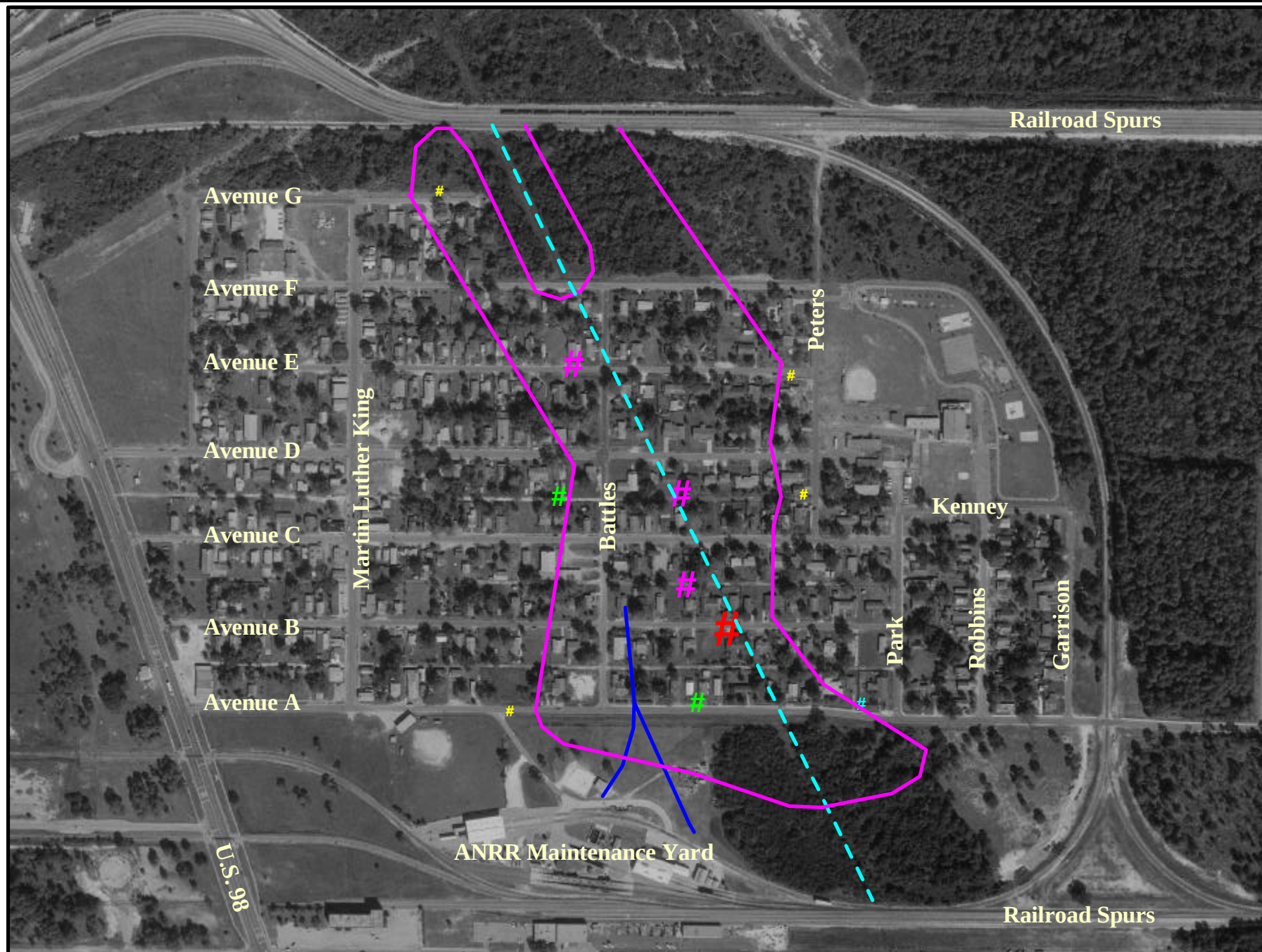
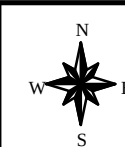


Figure 45: Specific Conductivity in Ground Water
10/16/2001
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

Specific Conductivity (microhms/cm)			
#	0 - 250	#	1001 - 3000
#	251 - 500	#	
#	501 - 1000	#	3001 - 7400

200 0 200 Feet

— Former railroad spur location
 — Approximate extent of fill sock
 - - Current and previous ditch location



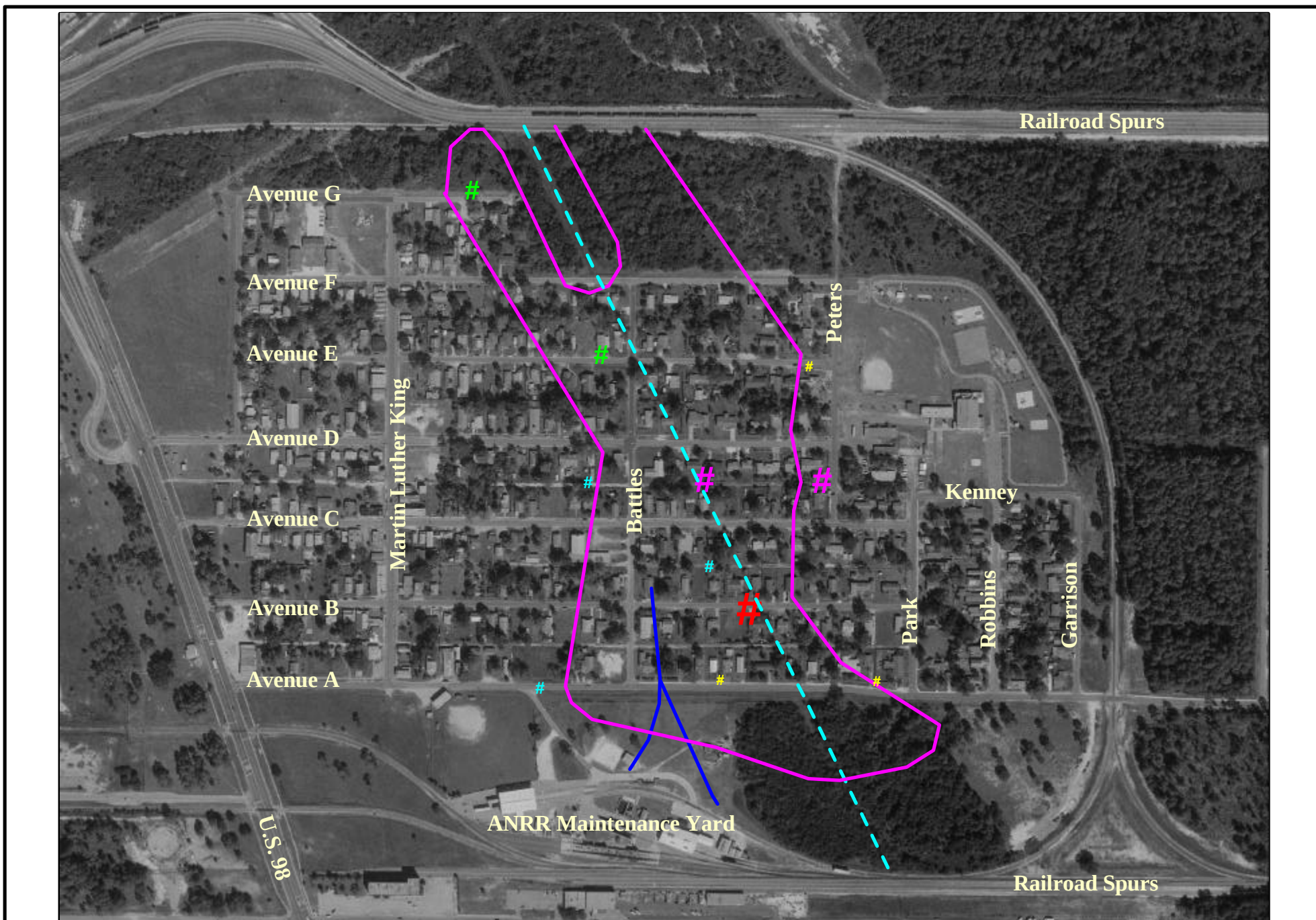
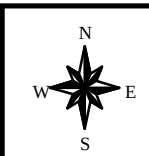
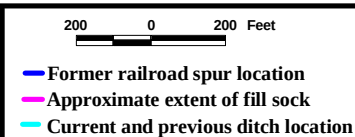


Figure 46: pH Measurements in Ground Water
08/15/2001
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida

pH (standard units)			
#	5.9 - 6.1	#	6.51 - 6.7
#	6.11 - 6.3	#	
#	6.31 - 6.5	#	6.71 - 6.9



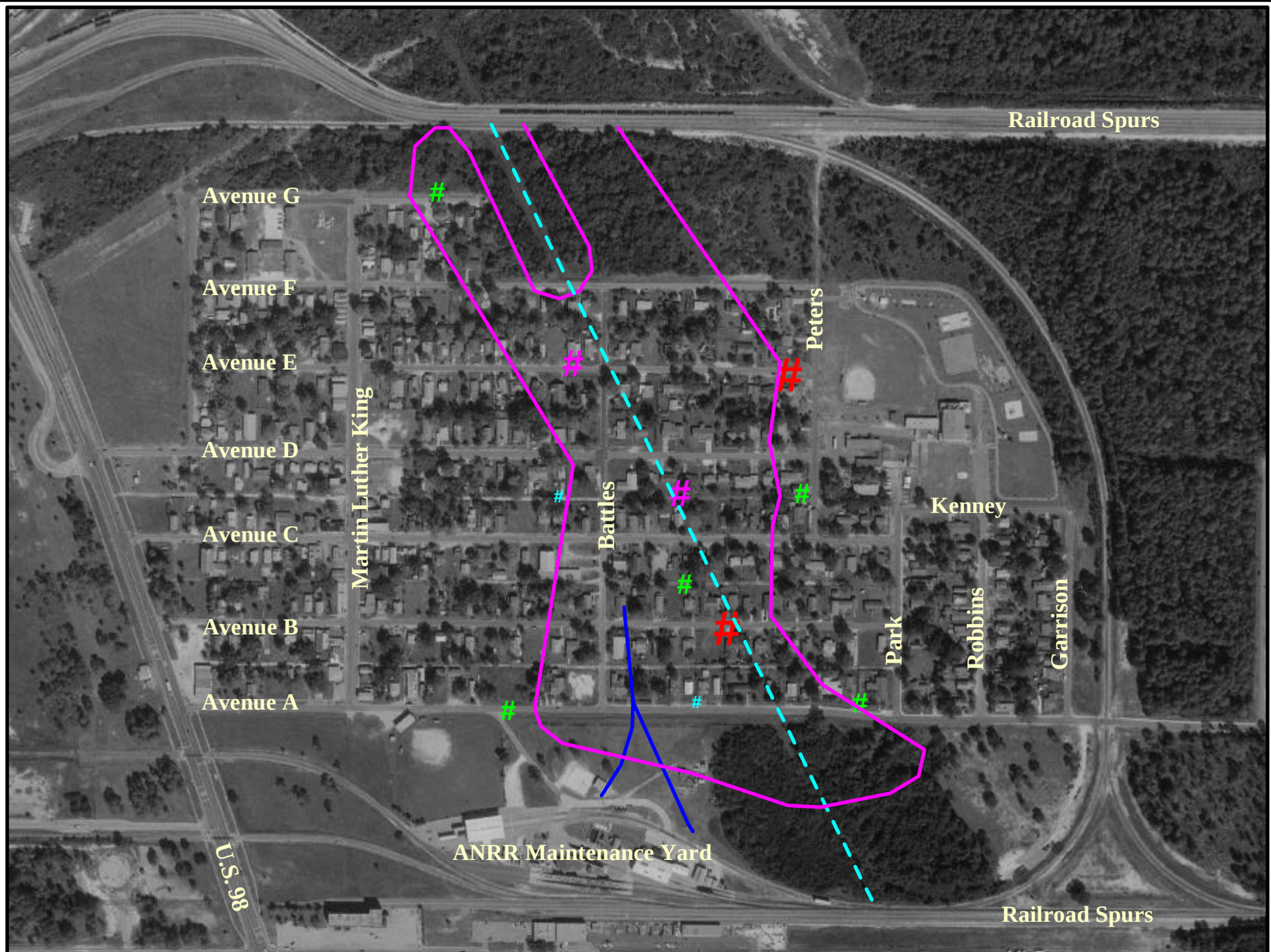
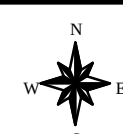
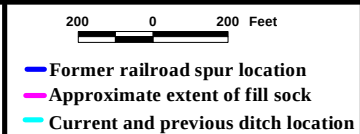
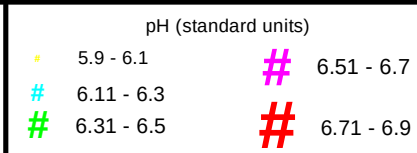
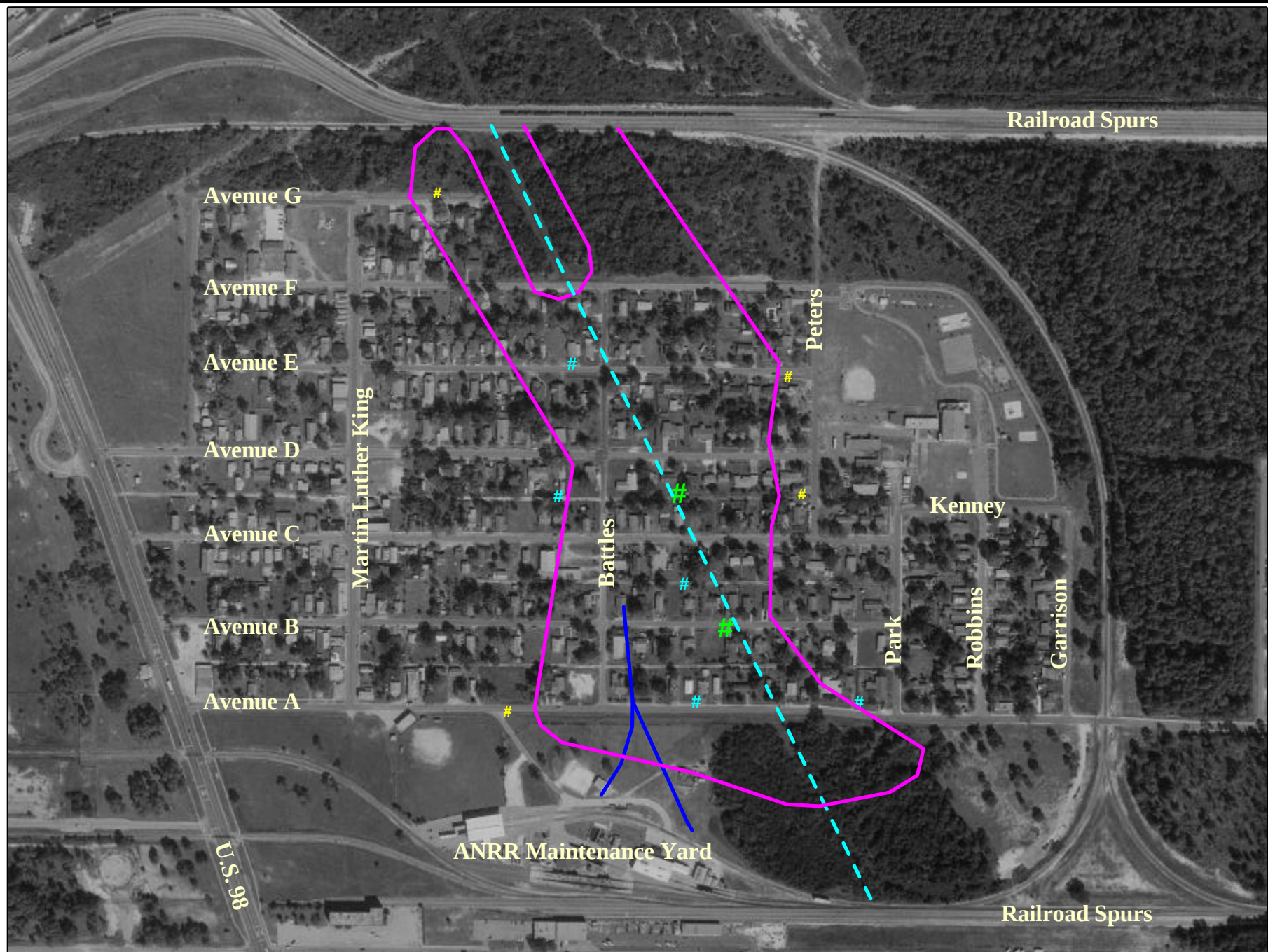


Figure 47: pH Measurements in Ground Water
10/16/2001
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida





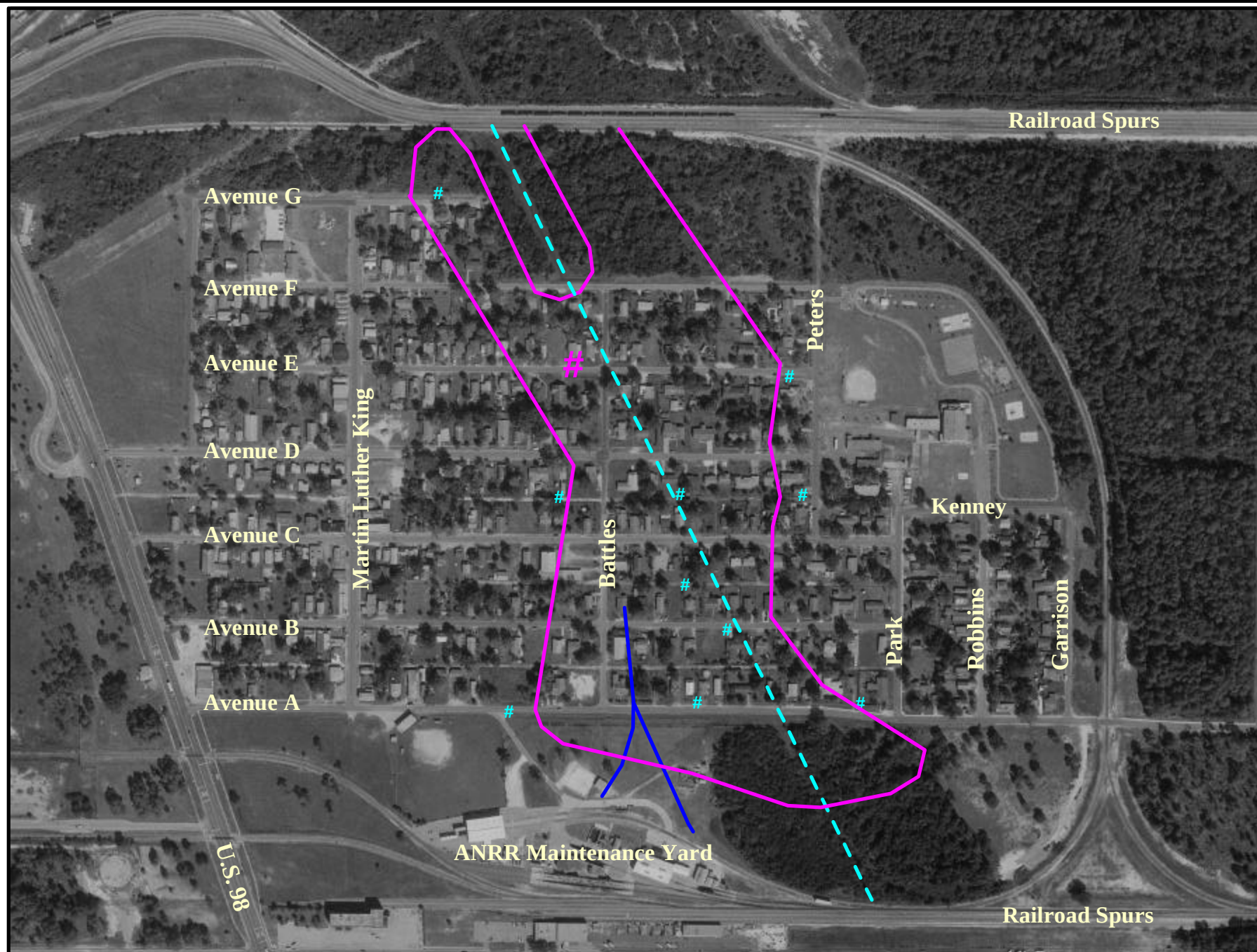
**Figure 48: Cadmium in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Cadmium (ug/L)			
#	Below Detection Limit	#	3.0 - 4.9
#	0.1 - 1.4	#	5.0 - 10.0
#	1.5 - 2.9		

200 0 200 Feet

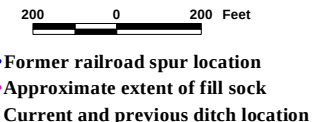
— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location

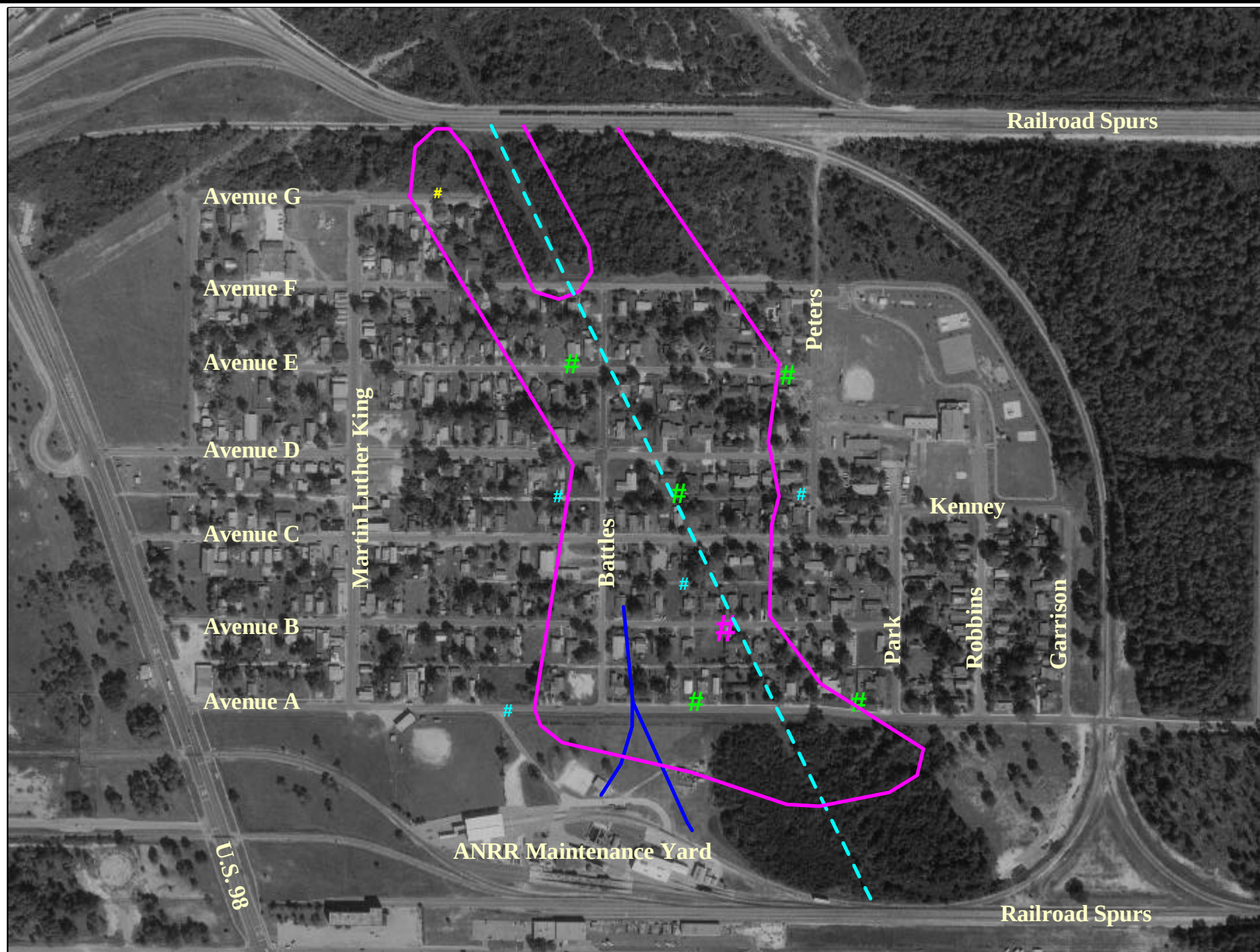




**Figure 49: Lead in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Lead (ug/L)	
# Below Detection Limit	# 10.0 - 14.9
# 0.1 - 4.9	# 15.0 - 30
# 5.0 - 9.9	





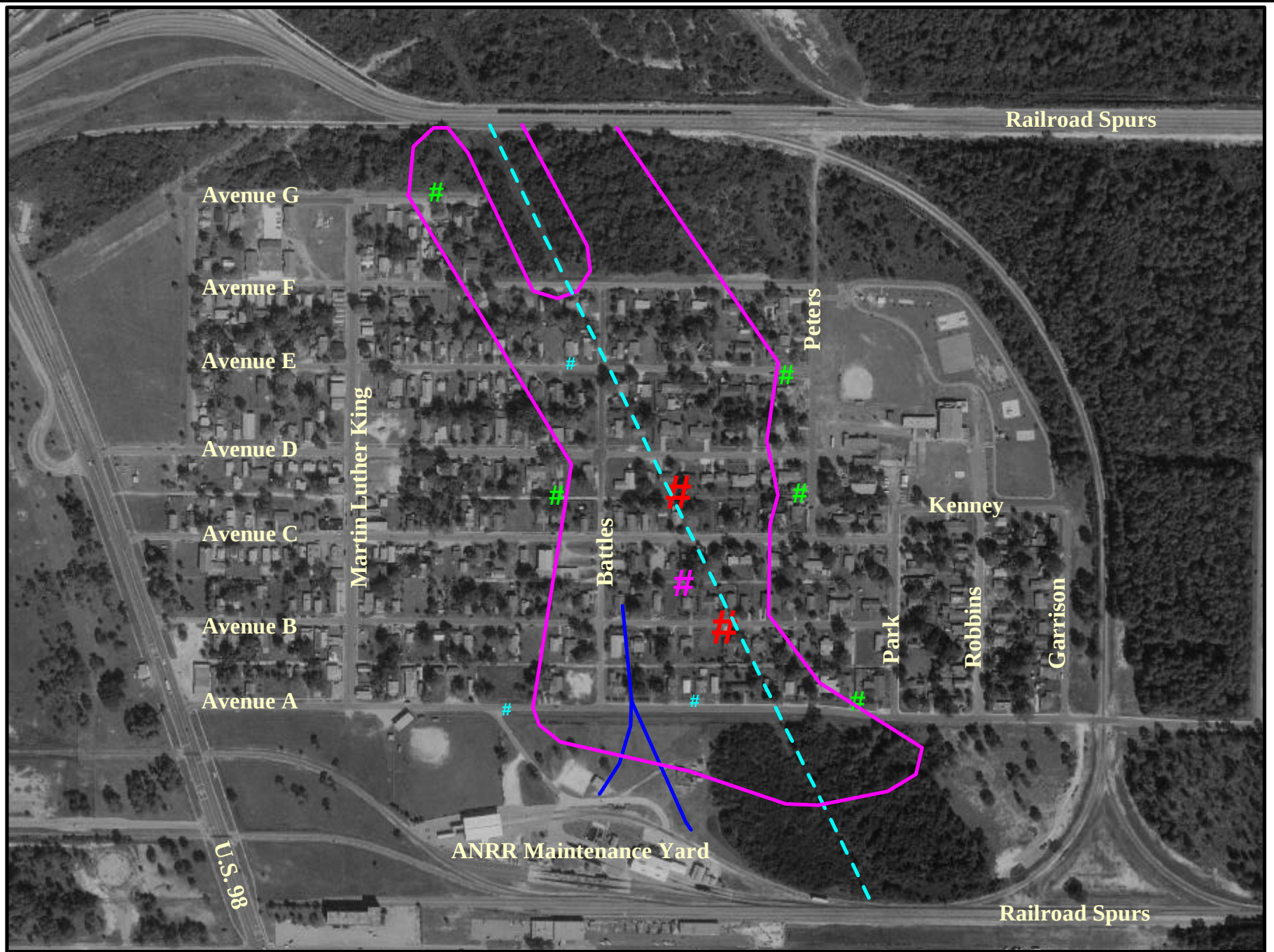
**Figure 50: Nickel in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Nickel (ug/L)	
# Below Detection Limit	# 30.0 - 99.9
# 0.1 - 4.9	# 100 - 200
# 5.0 - 29.9	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location





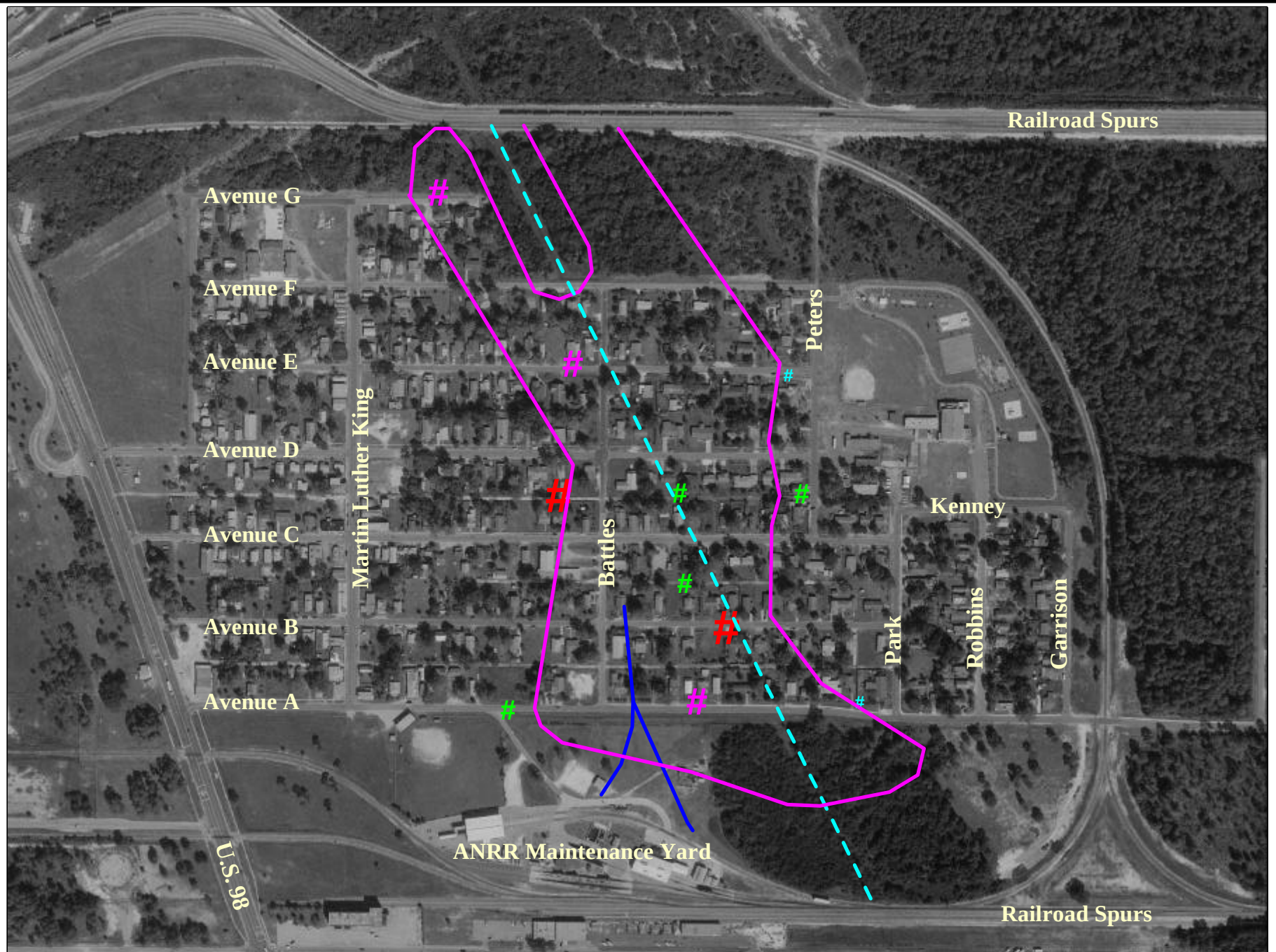
**Figure 51: Calcium in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Calcium (mg/L)	
Yellow #	Below Detection Limit
Light Blue #	0.1 - 20
Green #	20.1 - 50
Pink #	50.1 - 100
Red #	100.1 - 220

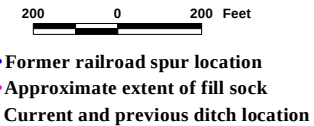
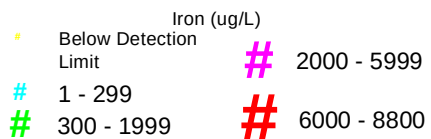
200 0 200 Feet

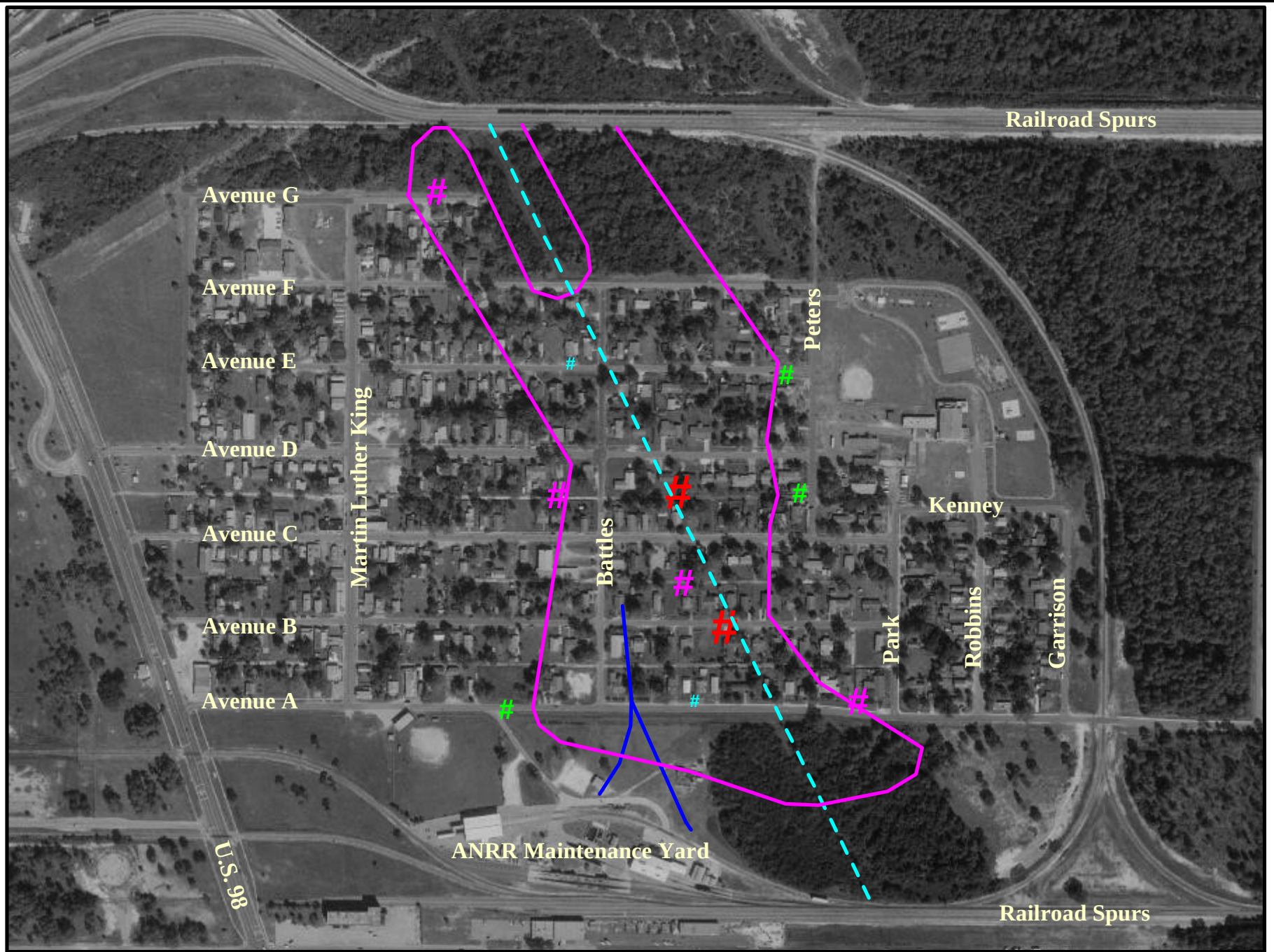
- Blue line: Former railroad spur location
- Pink line: Approximate extent of fill sock
- Cyan line: Current and previous ditch location





**Figure 52: Iron in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





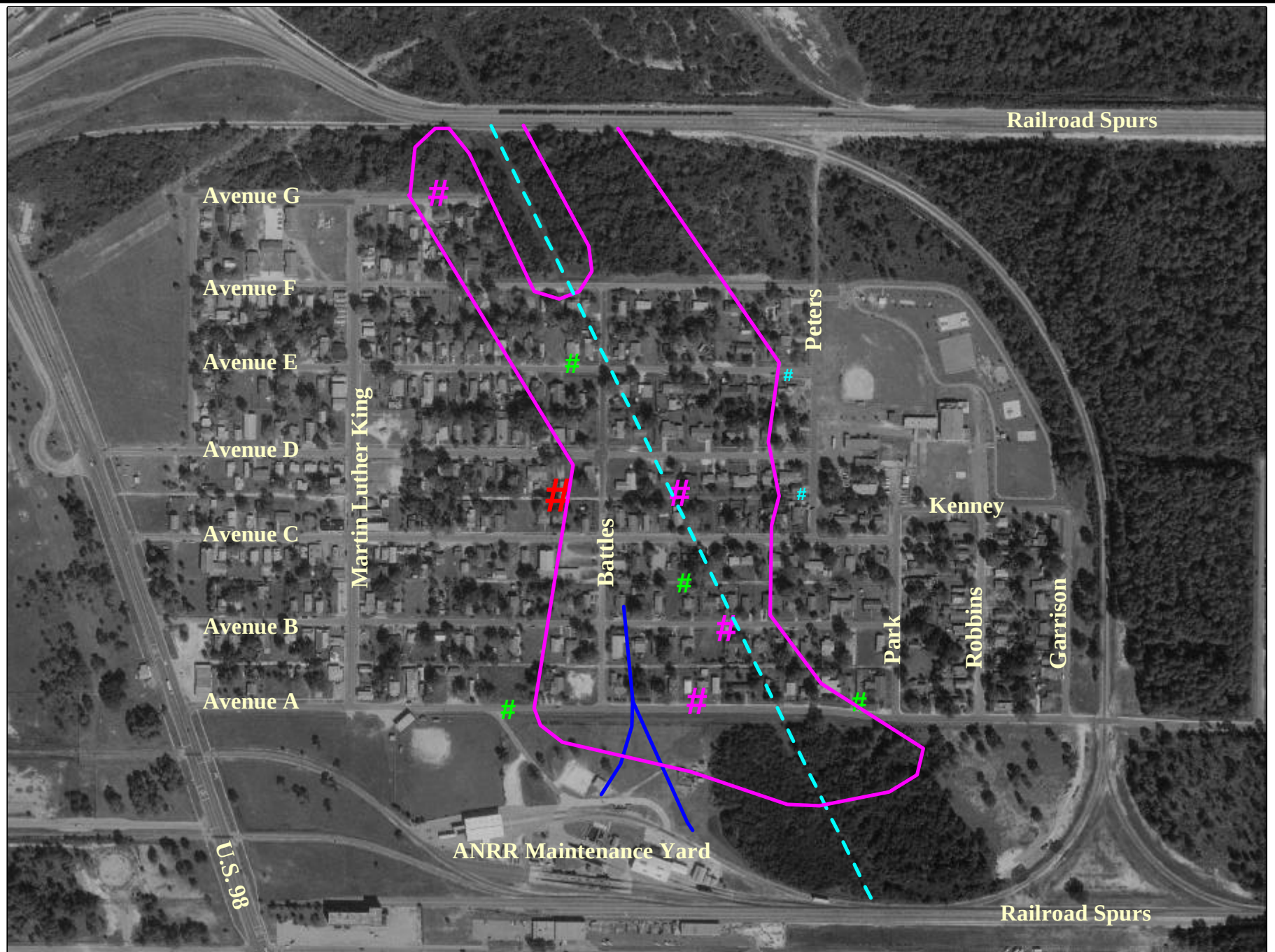
**Figure 53: Magnesium in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Magnesium (mg/L)	
# Below Detection Limit	# 5.1 - 10.0
# 0.1 - 1.0	# 10.1 - 55.0
# 1.1 - 5.0	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
- - Current and previous ditch location





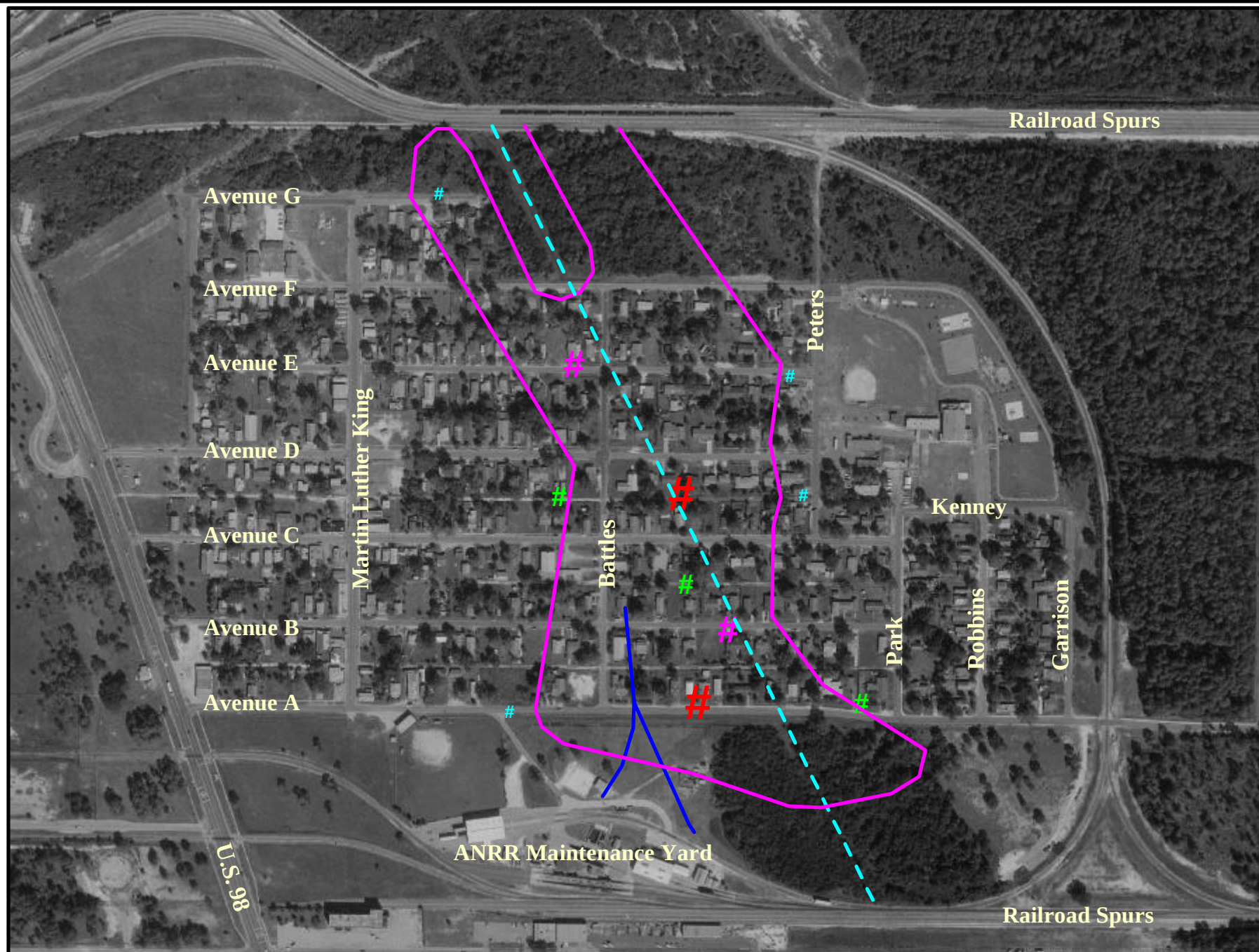
**Figure 54: Manganese in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Manganese (ug/L)	
# Below Detection Limit	# 20.0 - 49.9
# 0.1 - 4.9	# 50.0 - 80.0
# 5.0 - 19.9	

200 0 200 Feet

— Former railroad spur location
 — Approximate extent of fill sock
 - - Current and previous ditch location





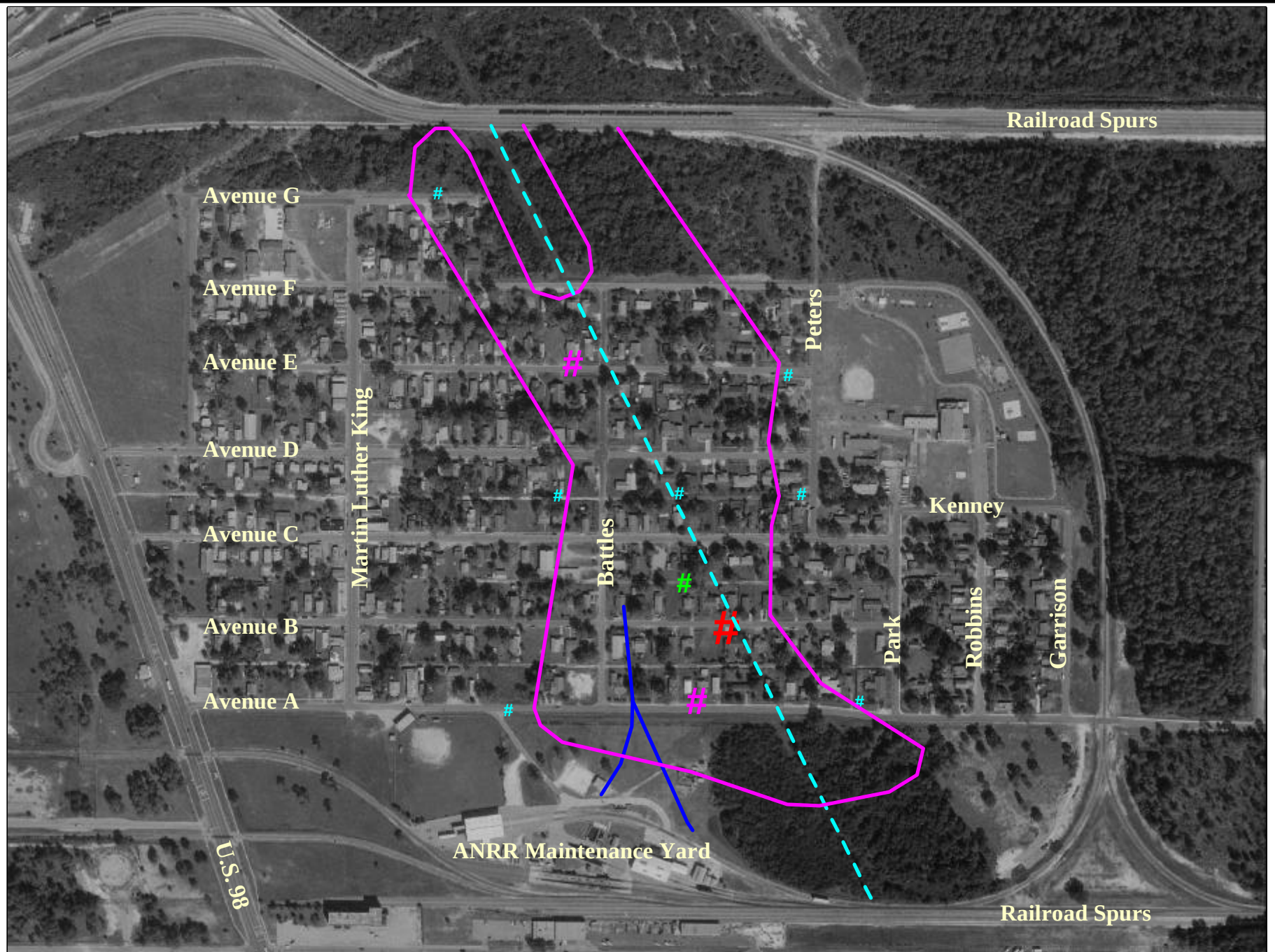
**Figure 55: Potassium in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Potassium (mg/L)	
# Below Detection Limit	# 10.0 - 29.9
# 0.1 - 1.9	# 30.0 - 40.0
# 2.0 - 9.9	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
- - Current and previous ditch location





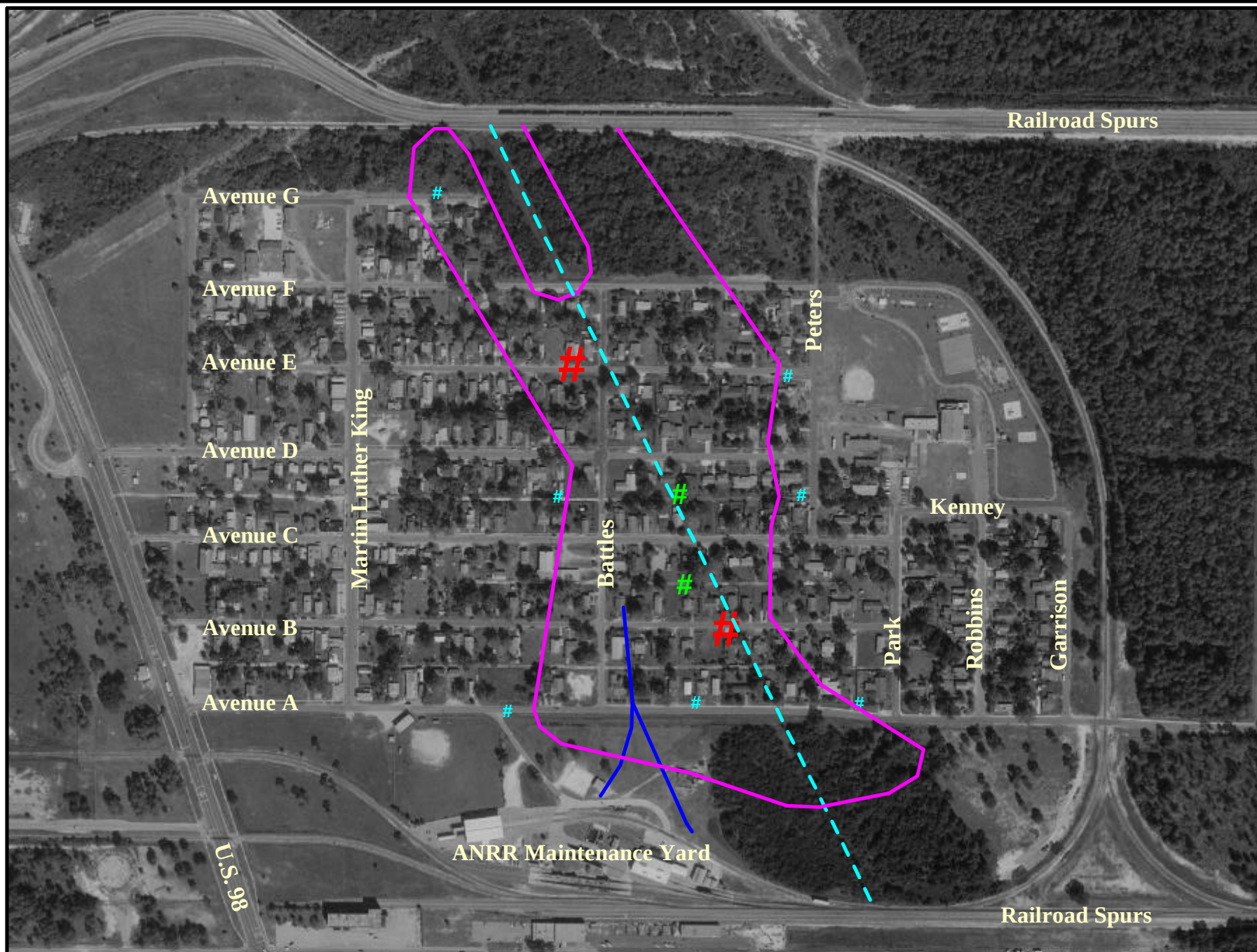
**Figure 56: Sodium in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Sodium (mg/L)	
# Below Detection Limit	# 160 - 999
# 0.1 - 99	# 1000 - 2000
# 100 - 159	

200 0 200 Feet

— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location





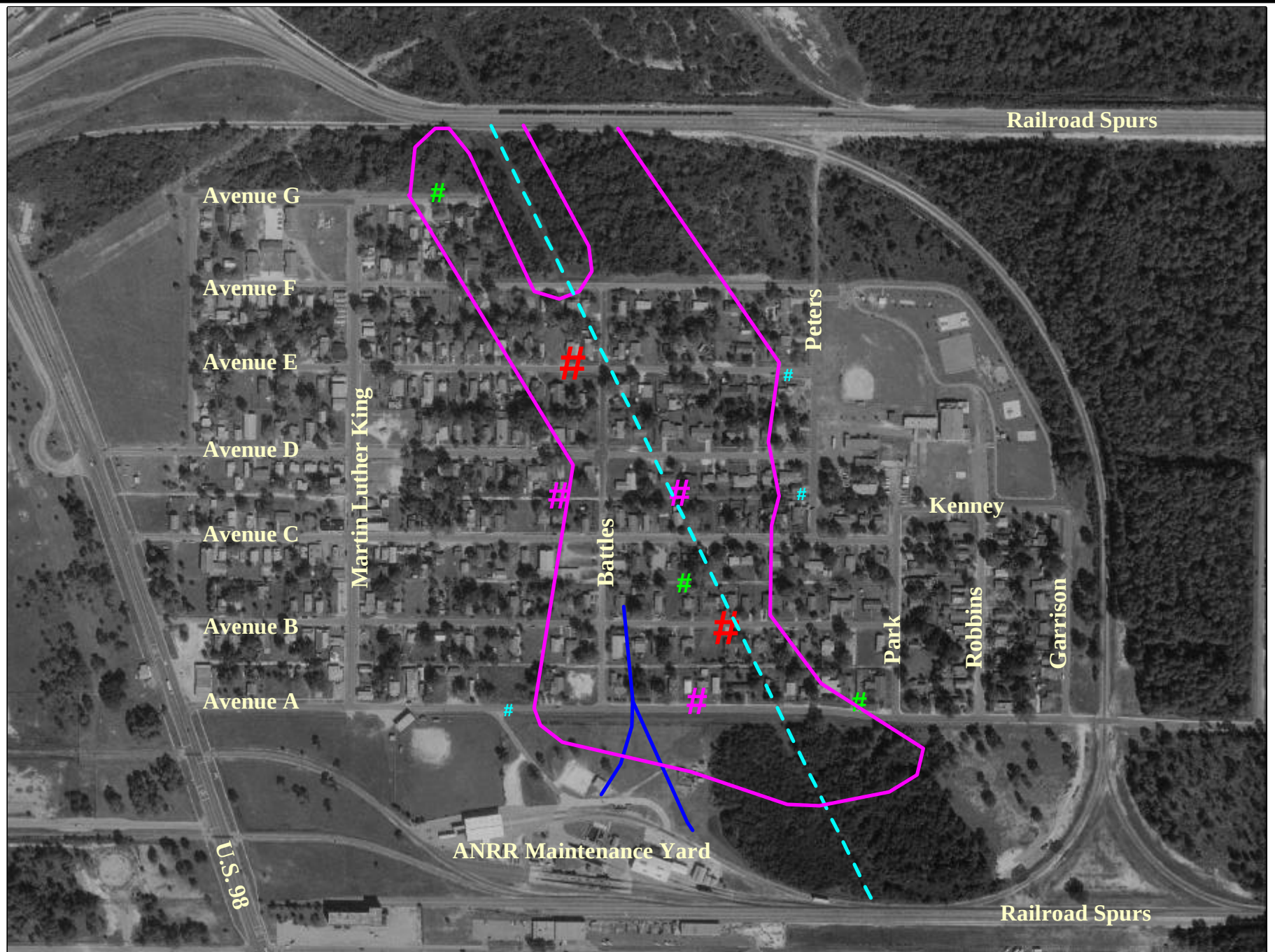
**Figure 57: Alkalinity in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Alkalinity (mg CaCO ₃ /L)			
#	Below Detection Limit	#	1000 - 1399
#	1 - 499	#	1400 - 4800
#	500 - 999		

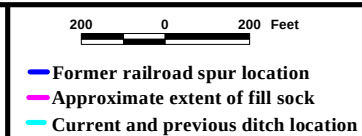
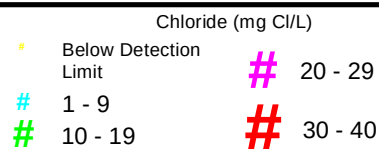
200 0 200 Feet

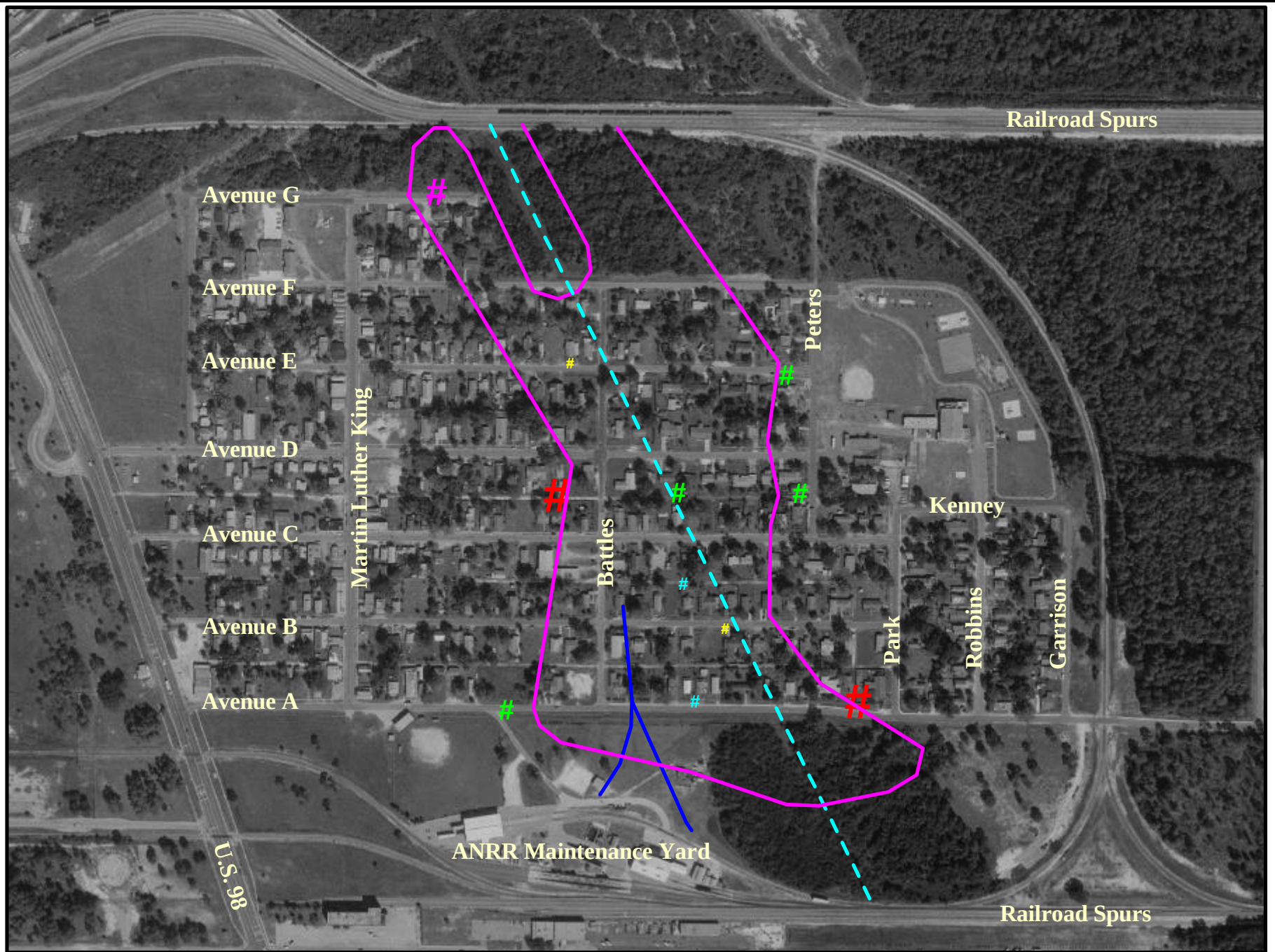
- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location





**Figure 58: Chloride in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





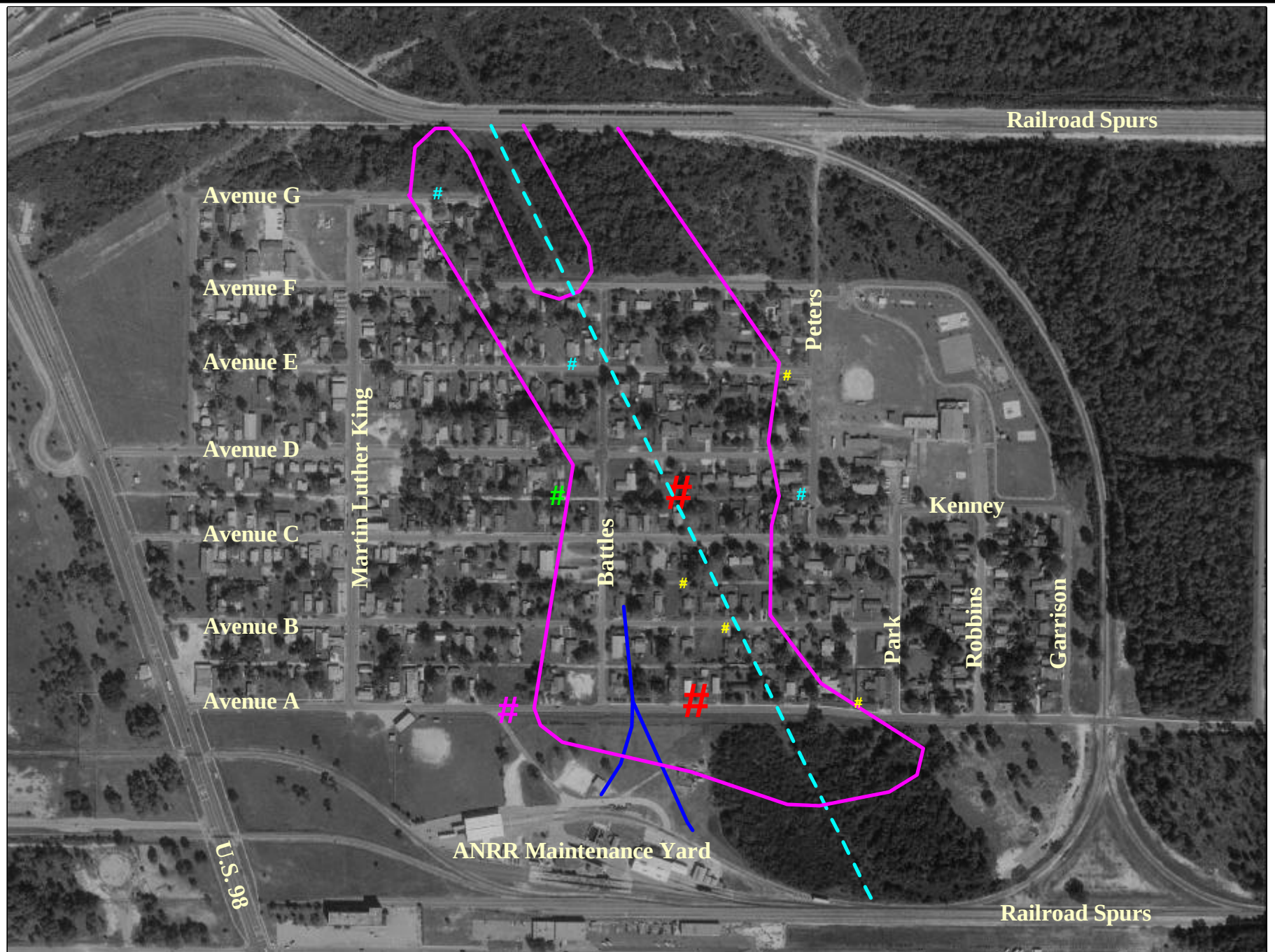
**Figure 59: Sulfate in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Sulfate (mg SO ₄ /L)			
#	Below Detection Limit	#	10 - 19.9
#	0.1 - 0.49	#	20 - 32
#	0.5 - 9.9		

200 0 200 Feet

- Former railroad spur location
- Approximate extent of fill sock
- Current and previous ditch location





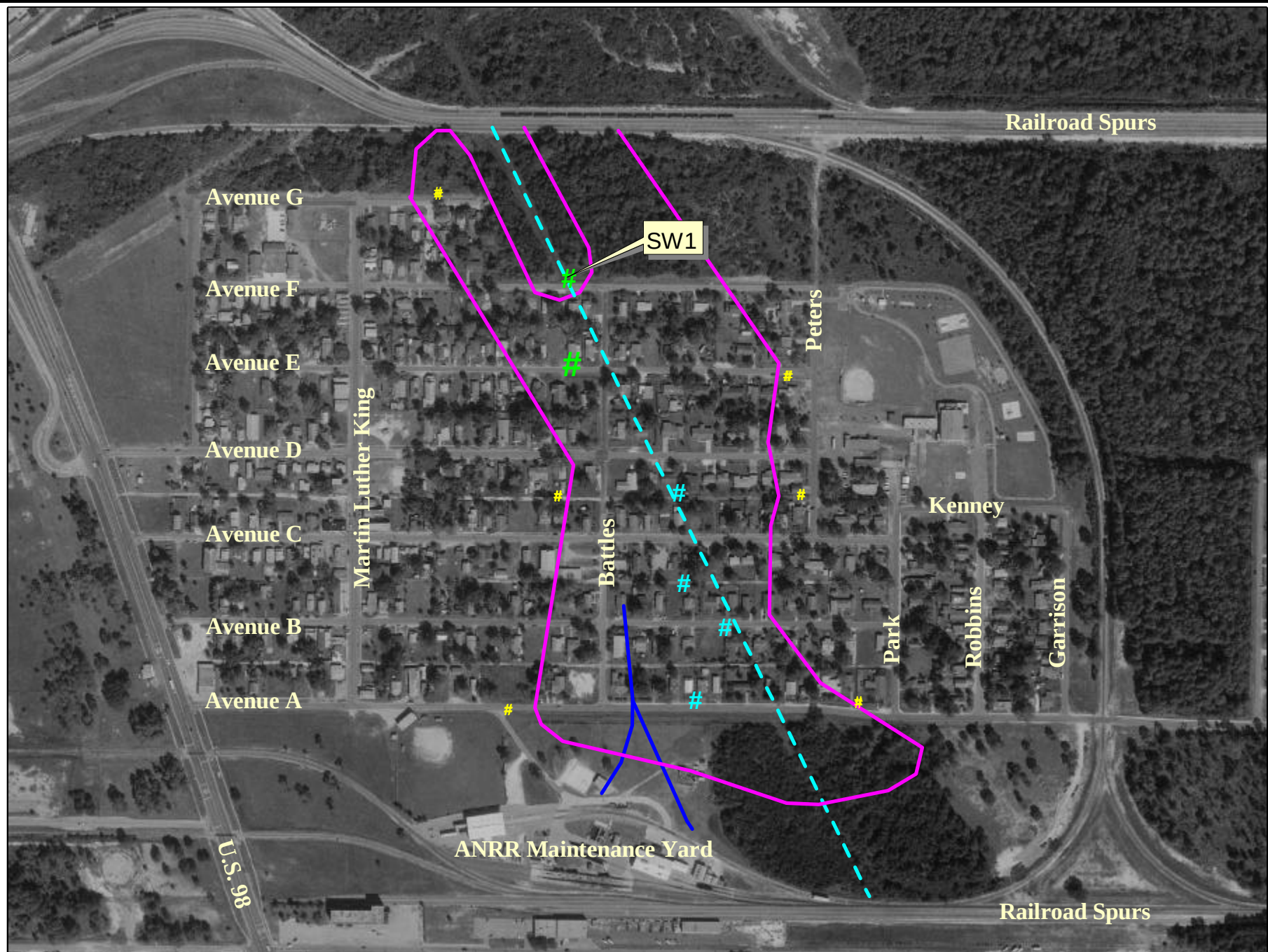
**Figure 60: Sulfide in SIS
Monitor Well Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

Sulfide (mg S/L)	
# Below Detection Limit	# 0.51 - 0.99
# 0.1 - 0.19	# 1 - 2.6
# 0.2 - 0.5	

200 0 200 Feet

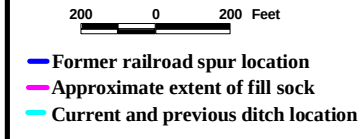
— Former railroad spur location
— Approximate extent of fill sock
— Current and previous ditch location





**Figure 61: 2,3,7,8-TCDD TEQs in Water Samples
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**

2,3,7,8-TCDD TEQs (pg/L)			
#	Not Sampled	#	2.0 - 9.9
#	0.1 - 1.049	#	10.0 - 30.0
#	1.05 - 1.99		



Photographs



**Photograph 1: ANRR Maintenance Yard
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





**Photograph 2: Closed St. Joe Paper Mill
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





Photograph 3: Lime Grits as Road Base
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida





**Photograph 4: Ditch Located North of Avenue F
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





Photograph 5: Typical Mill View Neighborhood Streets and Alleys
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida





**Photograph 6: Decomposing Wood Chips
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





**Photograph 7: Ash/Slag in SIS Core Sample
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





Photograph 8: Lime Grits in Blue/Green Clayey Matrix
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida





**Photograph 9: Mill View Neighborhood Private Irrigation Wells
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





Bay Street (Looking south-southeast)

Avenue A

Low area (continues towards the west)

**Photograph 10: Mill View #3 Surface Topography
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida**





Photograph 11: Mill View Neighborhood Homes With Visible Cracks
Mill View Subdivision Study Site
Port St. Joe, Gulf County, Florida



Tables

Table 1
Soil Sample Collection Intervals and Descriptions
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample Intervals ¹	Lithologic Description	Approximate Lower Extent of Backfill ²
MV1(0-1') MV1(2-3')	Gray to tan sand, predominantly fine grain quartz with organic material. Soils become wet ~ 3.5' BLS.	Dense sand encountered approximately 4.8' BLS.
MV2(0-1') MV2(2-3')	Gray to tan sand, predominantly fine grain quartz with organics. What appears to be ash and slag present from 1.5 to 3' BLS. Soils become wet at 3.8' BLS.	Dense sand encountered approximately 5.8' BLS.
MV3(0-1') MV3(1.5-2.5') MV3(2.5-3.5') PAH-PCB samples MV3(7-8') ~20% core recovery	Gray to tan sand, predominantly fine grain quartz with silt and organics. What appears to be ash and slag present from land surface to 1.5' BLS. Soils become wet at 4.3' BLS. MV3(7-8) interval mostly organic muck.	Dense sand encountered approximately 15' BLS.
MV4(0-1') MV4(3-4')	Dark brown to black sand, fine grain quartz with silt and organics; grades into light gray to brown sand, lesser organics and silt in (3-4) interval. Soils become wet at 4.3' BLS.	Dense sand encountered approximately 9.8' BLS.
MV5(0-1') MV5(3-4')	Sand with pine bark and lime grits. Soils become wet at 4.0' BLS.	Dense sand encountered approximately 2.3' BLS.
MV6(0-1') MV6(2.5-3.5') PAH-PCB samples MV6(4-5')	Matrix is predominantly black organic silt with pine bark chips and wood fiber. 2" interval of gray slag at 3.0' BLS. Material wet at 5.0' BLS.	Dense sand encountered approximately 14.0' BLS.
MV7(0-1') MV7(3.5-4.5')	Primarily decomposing pine bark chips and organic material. Saturation approximately 5.1' BLS.	Dense sand encountered approximately 5.0' BLS.
MV8(0-1') MV8(3.5-4.5')	Predominantly fine grain sand. What appears to be lime grits from 3.5 to 3.85' BLS. Material wet 4.3' BLS.	Dense sand encountered approximately 8.7' BLS.
MV9(0-1') MV9(3-4')	Fine grain sand near surface grading into black organic muck at 3' BLS. Saturated at 4.5' BLS.	Dense sand encountered approximately 7.0' BLS.

Table 1 (Continued)
Soil Sample Collection Intervals and Descriptions
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Sample Intervals ¹	Lithologic Description	Approximate Lower Extent of Backfill ²
MV10(0-1') MV10(7-8') ~25% core recovery	Top 1' interval is primarily light gray to yellow fine grain quartz sand. Remaining matrix to depth is wood chips with pieces of brick or red terra cotta like material imbedded in matrix. Material wet 5.0' BLS.	Dense sand encountered approximately 15.5' BLS.
MV11(0-1') MV11(3-4')	Gray quartz sand with increased presence of organics with depth. Matrix saturated approximately 4.3' BLS.	Dense sand encountered approximately 1.3' BLS.
MV12(0-1') MV12(2.5-3.5') MV12(7.5-8.5') ~25% core recovery	Interval from (0-1') dry, tan, fine grain sand with some organics. Intervals below consist primarily of bark and wood chips and decomposed organic matter. Water table at 4.2' BLS.	Dense sand encountered approximately 19.7' BLS.
MV13(0-1') MV13(3-4')	Dry compacted silt and fine grain sand grading into a white to gray fine to medium grain quartz beach sand. Water table ~4.6'.	Dense sand encountered approximately 0.5' BLS.
MV14(0-1') MV14(3-4')	Fine grain organic sand from land surface to 4' BLS. Trace of silts near top of core. Water table ~4.3' BLS.	Dense sand encountered approximately 1.0' BLS.
MV15(0-1') MV15(3-4') MV15(4-5') ~25% core recovery	Sand with abundant organic material and concrete debris. Deep interval is primarily organic ooze with wood chips and trace amounts of fine grain sand. Water table ~4.3' BLS.	Dense sand encountered approximately 14.7' BLS.
MV16(0-1') MV16(2-3') MV16(3-4')	First interval is organic sand. The matrix within the second interval contains black fine grain material (ash?) that glitters. This material then grades into organic muck that contains wood chips. Depth to water about 4.3'.	Dense sand encountered approximately 15.5' BLS.
MV17(0-1') MV17(3-4')	Material to depth primarily fine grain sand with some organics. Depth to water approximately 4'.	Dense sand encountered approximately 8.5' BLS.
MV18(surface scrape) PAH-PCB samples MV18(0-1') MV18(3-4')	Matrix primarily fine grain sand and pine bark chips. Water table ~5' BLS.	Dense sand encountered approximately 17.5' BLS.

Table 1 (Continued)
Soil Sample Collection Intervals and Descriptions
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample Intervals¹	Lithologic Description	Approximate Lower Extent of Backfill²
MV19(0-1') MV19(2-3') and MV19A(2-3') MV19(3-4')	Organic sand with muck, wood chips, brick debris, and possible slag (2-3'). Depth to water ~4.0'. Location resampled for organic compounds (MV19A).	Dense sand encountered approximately 5.7' BLS.
MV20(0-1') MV20(3-4')	Fine to medium grain sand to depth. Water table 3.5' BLS.	Dense sand encountered approximately 4.7' BLS.
MV21(0-1') MV21(3-4')	Organic sand with wood chips and concrete rubble. Water table ~4.5 BLS.	Dense sand encountered approximately 18.5' BLS.
MV22(0-1') MV22(3.5-4.5')	Organic sand increasing with organics to depth. Water table 4.8' BLS.	Dense sand encountered approximately 5.8' BLS.
MV23(0-1') MV23(3.5-4.5')	Light yellow to white fine grain quartz sand. Water table ~5.6' BLS.	Dense sand encountered approximately 5.0' BLS.
MV24(0-1') MV24(3-4')	Fine to medium grain sand becoming more organic with depth. Depth to water 4.2' BLS.	Dense sand encountered approximately 5.0' BLS.
MV25(0-1') MV25(3.5-4.5') MV25(7-8') ~10% core recovery	Light tan, silty sand grading into medium size grain. Deep interval sample primarily organic in nature with trace of fine grain sand. Depth to water ~5.4'.	Dense sand encountered approximately 19.4' BLS.
MV26(0-1') MV26(3.5-4.5')	Fine grain sand, slightly organic grading into fine to medium grain beach sand. Depth to water ~5.0'.	Dense sand encountered approximately 6.0' BLS.
MV27(0-1') MV27(3-4')	Fine grain sand grading into organic sand with abundant pine bark chips and concrete rubble. Water table ~4.2' BLS.	Dense sand encountered approximately 4.7' BLS.
MV28(0-1') MV28(3.4-4.5')	Tan to gray fine grain sand grading into very organic sand with wood chips. Water table ~5.0'.	Dense sand encountered approximately 12.9' BLS.
MV29(0-1') MV29(3.5-4.5')	Dark gray, fine grain sand grading to dark black, silty organic sand. Water table ~5.0' BLS.	Dense sand encountered approximately 5.1' BLS.
MV30(0-1') MV30(4.5-5.5')	Fine to medium grain beach sand. Organic layer 5.5' BLS. Water saturated soils at 5.7' BLS.	Dense sand encountered approximately 6.0' BLS.
MV31(0-1') MV31(3.5-4.5')	Fine to medium grain tan to gray sand. Water table ~5.0' BLS.	Dense sand encountered approximately 1.5' BLS.
MV32(0-1') MV32(3.5-4.5')	Fine to medium grain tan to gray sand. Water table ~5.0' BLS.	Dense sand encountered approximately 0.1' BLS.

Table 1 (Continued)
Soil Sample Collection Intervals and Descriptions
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Sample Intervals ¹	Lithologic Description	Approximate Lower Extent of Backfill ²
MV33(0-1') MV33(3.5-4.5')	Fine grain tan/gray sand with organics increasing with depth (peaty brown color). Sulfur odor in deeper interval. Water table ~5.0' BLS.	Conductivity log not collected.
MV34(0-1') MV34(3.5-4.5')	Fine grain tan/gray sand with organics increasing with depth (peaty brown color). Water table ~5.0' BLS.	Conductivity log not collected.
MV35(0-1') MV35(3.5-4.5')	Fine grain tan/gray sand. Water table ~5.0' BLS.	Conductivity log not collected.
MV36(0-1') MV36(2-3') and MV36A(2-3')	Fine grain brown gray sands at surface. Second interval sample is a blue green matrix consisting of fine grain sand, clay and gravel material. Reacts strongly with HCl. Sour odor. Below this interval is decomposing wood chips, organic sands and pieces of broken brick. Location resampled for organic compounds (MV36A).	Dense sand encountered approximately 19.5' BLS.
MV37(2-3')	Fine grain gray/black sands to 14" BLS. Wood chips with trace of lime grits then encountered to 2' BLS. From 2 to 4' BLS, wood chips interbedded with clay.	Conductivity log not collected.
MV38(1.5-2.5')	Gray fine grain sands with organics to 12' BLS. Increasing silts to 16" BLS. From 16 to 20", blue/green sour smelling clay matrix with lime. Below this interval to 4' BLS, wood chips and sand.	Conductivity log not collected.
MV39(2-3')	Gray fine grain sands with organics to 12' BLS. 12 to 14" BLS white/gray clay with sand. From 14 to 24", wood chips with sand. From 24 to 28" BLS, off white to light blue green limey clay.	Conductivity log not collected.
MV40(3-4')	Gray fine grain sands with organics to 12' BLS. Increasing silts to 3.5' BLS then a white/tan clay matrix.	Conductivity log not collected.

Table 1 (Continued)
Soil Sample Collection Intervals and Descriptions
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample Intervals¹	Lithologic Description	Approximate Lower Extent of Backfill²
MV41(2-3')	Gray fine grain sands to 12" BLS. Increased silts to 2' then pine bark chips, slag(?), and grits.	Conductivity log not collected.
MV42(surface scrape) PAH-PCB samples MV42(2-3')	Gray fine grain sands to 10" BLS. 10"-13" concrete rubble, then organic sand/silt and bark to 2' BLS. Light tan clay with bark to 30" BLS underlain by silts and sands to 4' BLS.	Conductivity log not collected.
MV43(0-1')	Collected from a driveway patch. From land surface to 10" BLS lime grit fill. 10" to 14" road base red clay. 14" to 18" BLS fine grain sands, then to 4' BLS, organic sands/silts and bark chips.	Conductivity log not collected.
MV44(1-2')	Fine grain sands to 12" then 2" interval of tan silty clay. 14" to 16" BLS, gray silty clay underlain with 8" of blue gray lime and clay. From 2 to 3' BLS, clay, silt and pine bark present. Active garden situated 8' from sample location.	Dense sand encountered approximately 20.5' BLS.
MV45(3-4')	Tan/white fine grain sand to 1' BLS. 4" interval of crushed oyster shell then encountered underlain by organic rich dark brown sand with silt. Organic odor detected. Sample collected near former RR spur.	Conductivity log not collected.
MV46(1-2')	Organic sands to 1' BLS then underlain by tan lime grits to 2'.	Conductivity log not collected.
MV47(1-2')	Sample is limey clay, off-white with tinge of light green.	Conductivity log not collected.
MV48(0-1')	Sample is limey clay, off-white with tinge of light green.	Dense sand encountered approximately 6.5' BLS.
MV49(0-1')	Sample is limey clay, off-white with tinge of light green.	Conductivity log not collected.
MV50(0-1')	Sample is limey clay, off-white with tinge of light green.	Dense sand encountered approximately 9.5' BLS.
MV51(0-1')	Sample is limey clay, off-white with tinge of light green.	Conductivity log not collected.
MV52(0-1')	Sample is limey clay, off-white with tinge of light green.	Dense sand encountered approximately 7.5' BLS.
MV53(0-1')	Sample is limey clay, off-white with tinge of light green.	Conductivity log not collected.

Table 1 (Continued)
Soil Sample Collection Intervals and Descriptions
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample Intervals ¹	Lithologic Description	Approximate Lower Extent of Backfill ²
MV54(0-1')	Sample is limey clay, off-white with tinge of light green.	Conductivity log not collected.

1. Intervals are presented in feet below land surface.
2. The dense sand contact was defined as when the direct push's rate of penetration slowed to less than 10 feet per minute.
3. Intervals labeled PAH-PCB were sampled for these parameters only. PAH: Polycyclic Aromatic Hydrocarbons; PCB: Polychlorinated Biphenyls.

Table 2
Monitor Well Placement Rational
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Monitor Well I.D.	Placement Rational
DEP1	Although reported to be in sock, no backfill was identified at this location. No elevated concentrations of metals reported. Monitor well to be used for background and water level informational purposes.
DEP2	Elevated conductivity values in nearby electrical conductivity log. Location is near former ditch location. Monitor well is near an area where plant waste was reported to have been stockpiled.
DEP3	Location is outside sock and potentially upgradient of backfill. Monitor well to be used for background and water level informational purposes.
DEP4	Location is outside sock and potentially upgradient of backfill. Monitor well to be used for background and water level informational purposes.
DEP5	Elevated conductivity values in nearby electrical conductivity log. Location is near former ditch location. Slightly elevated concentrations of cadmium, arsenic, and nickel in nearby soil samples compared to rest of site.
DEP6	Located just outside of sock. Highest concentrations of metals analyzed present in nearby soil sample. Possible slag identified in nearby soil sample. Monitor well to be used for down gradient of backfill analytical and water level information purposes.
DEP7	Slightly elevated concentrations of mercury, cadmium, arsenic, and lead in nearby soil samples compared to rest of site. Elevated conductivity values in nearby electrical conductivity log. Location is near former ditch location.
DEP8	Slightly elevated concentrations of mercury, cadmium, arsenic, and lead in nearby soil samples compared to rest of site. Elevated conductivity values in nearby electrical conductivity log. Location is near former ditch location.
DEP9	Location is outside sock and potentially upgradient of backfill. Monitor well to be used for background and water level informational purposes.
DEP10	Ash and slag identified in nearby soil sample.
DEP11	Located outside sock. No backfill observed at location. Slightly elevated concentrations of arsenic in shallow and deep interval soil samples compared to rest of site. Monitor well to be used for down gradient of backfill analytical and water level information purposes.

Table 3
Construction Data of SIS Installed Monitor Wells
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Well ID	Casing Diameter (Inches) ¹	Top of Casing Elevation ²	Total Depth (Feet)	Sand Pack Sieve Size	Screened Interval (Feet Below Land Surface)
DEP1	3/4	4.59	11.20	80/120	6.20 – 11.20
DEP2	3/4	4.88	11.58	80/120	6.58 - 11.58
DEP3	3/4	8.98	11.40	80/120	6.40 - 11.40
DEP4	3/4	7.39	11.65	80/120	6.65 - 11.65
DEP5	3/4	4.48	11.56	80/120	6.56 - 11.56
DEP6	3/4	4.56	11.12	80/120	6.12 - 11.12
DEP7	3/4	3.97	11.56	80/120	6.56 - 11.56
DEP8	3/4	4.88	11.53	80/120	6.53 - 11.53
DEP9	3/4	7.53	11.51	80/120	6.51 - 11.51
DEP10	3/4	4.40	11.25	80/120	6.25 - 11.25
DEP11	3/4	5.00	11.30	80/120	6.30 - 11.30

1. Inside diameter.
2. Elevation was tied to monitor well DEP11 with an arbitrarily assigned elevation of 5.00 feet.

Table 4
Water Level Measurements
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Well I.D.	Top-of-Casing Elevation (NGVD) ¹	Date / Time	Water Level Below Top-of- Casing	Water Level (NGVD)
DEP1	4.59	09/06/2001 / 1309 10/16/2001 / 1442	2.33 2.65	2.26 1.94
DEP2	4.88	09/06/2001 / 1256 10/16/2001 / 1453	3.08 3.30	1.80 1.58
DEP3	8.98	09/06/2001 / 1245 10/16/2001 / 1458	3.88 4.57	5.10 4.41
DEP4	7.39	09/06/2001 / 1235 10/16/2001 / 1504	2.43 2.71	4.96 4.68
DEP5	4.48	09/06/2001 / 1225 10/16/2001 / 1509	2.41 2.39	2.07 2.09
DEP6	4.56	09/06/2001 / 1215 10/16/2001 / 0900	2.28 2.34	2.28 2.22
DEP7	3.97	09/06/2001 / 1150 10/16/2001 / 0913	1.99 1.64	1.98 2.33
DEP8	4.88	09/06/2001 / 1137 10/16/2001 / 0846	2.84 2.80	2.04 2.08
DEP9	7.53	09/06/2001 / 1128 10/16/2001 / 1305	2.21 2.47	5.32 5.06
DEP10	4.40	09/06/2001 / 1116 10/16/2001 / 1333	2.65 2.52	1.75 1.88
DEP11	5.00	09/06/2001 / 1158 10/16/2001 / 1300	2.59 2.51	2.41 2.49

1. NGVD: National Geodetic Vertical Datum. Monitor well DEP11 was assigned an arbitrary elevation of 5.00 feet NGVD.

Table 5
Sampled Private Irrigation Wells
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Name	Location
Bolden	309 Avenue E
Osborne	256 Avenue B
Byrd	280 Avenue D
King	318 Avenue E
?	502 Peters Street
?	314 Avenue F

Table 6
GPS Locations of SIS Environmental Sampling Points
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample ID	Longitude	Latitude
Soil Samples		
MV1	-85.302262999	29.818174243
MV2	-85.301002780	29.818200168
MV3	-85.299629565	29.818179121
MV4	-85.298601865	29.818164934
MV5	-85.299119540	29.818567595
MV6	-85.300356199	29.818538508
MV7	-85.301700215	29.818531511
MV8	-85.302333142	29.818899122
MV9	-85.301104187	29.818979827
MV10	-85.299923843	29.818907156
MV11	-85.299192785	29.819343534
MV12	-85.300478245	29.819306747
MV13	-85.301709591	29.819325729
MV14	-85.302314143	29.819688612
MV15	-85.301035788	29.819696325
MV16	-85.299918433	29.819702867
MV17	-85.299196337	29.820124064
MV18	-85.300608723	29.820137363
MV19	-85.301672471	29.820115330
MV20	-85.302453224	29.820455637
MV21	-85.300883748	29.820465167
MV22	-85.299935077	29.820548962
MV23	-85.299351654	29.821261289
MV24	-85.300500434	29.821269810
MV25	-85.301692825	29.821351053
MV26	-85.302548605	29.821283954
MV27	-85.302603761	29.822051228
MV28	-85.301727559	29.822159863
MV29	-85.301002328	29.822054966
MV30	-85.299864625	29.822063888
MV31	-85.302945523	29.822906058
MV32	-85.303685153	29.822896933
MV33	-85.304986644	29.818883716
MV34	-85.296304568	29.819171171
MV35	-85.305350059	29.822112134
MV36	-85.300548000	29.820137000
MV37	-85.3013	29.8202
MV38	-85.3012	29.8204
MV39	-85.3014	29.8206
MV40	-85.3013	29.8212
MV41	-85.3012	29.8213

Table 6 (Continued)
GPS Locations of SIS Environmental Sampling Points
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample ID	Longitude	Latitude
MV42	-85.3008	29.8214
MV43	-85.3009	29.8212
MV44	-85.3013	29.8216
MV45	-85.3011	29.8184
MV46	-85.3000	29.8192
MV47	-85.2942	29.8194
MV48	-85.2942	29.8188
MV49	-85.2940	29.8187
MV50	-85.8189	29.8189
MV51	-85.8192	29.8192
MV52	-85.8197	29.8197
MV53	-85.8204	29.8204
MV54	-85.8202	29.8202
Monitor Wells		
DEP1	-85.303163619	29.822908819
DEP2	-85.301705622	29.821352562
DEP3	-85.299392435	29.821282528
DEP4	-85.299230958	29.820138875
DEP5	-85.300540571	29.820134158
DEP6	-85.301849280	29.820126651
DEP7	-85.300476964	29.819290652
DEP8	-85.300027642	29.818888657
DEP9	-85.298589203	29.818174249
DEP10	-85.300336972	29.818187080
DEP11	-85.302352388	29.818095766
Irrigation Wells		
502 Peters Street	-85.299445798	29.821630885
314 Avenue F	-85.300114144	29.821756617
309 Avenue E	-85.300505124	29.821632029
318 Avenue E	-85.299968925	29.820976319
280 Avenue D	-85.301900970	29.820367513
256 Avenue B	-85.302207373	29.818606806
Surface Water Sample		
SW1	-85.301455000	29.822134000

Table 7
Summary of Soil Sample Analysis Performed
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample I.D.	As, Cd, Ni, Pb EPA Methods 6010B and 7471(Hg)	Ba, Ca, Fe, K, Mg, Mn, Na EPA Method 6010B	VOCs EPA Method 8260	SVOCs (PAHs) EPA Method 8270	PCBs EPA Method 8080 Modified	Dioxins/Furans EPA Method 8290
MV1(0-1')	x					
MV1(2-3')	x					
MV2(0-1')	x					
MV2(2-3')	x					
MV3(0-1')	x					
MV3(1.5-2.5')	x					
MV3(2.5-3.5')				x	x	
MV3(7-8')	x					
MV4(0-1')	x					
MV4(3-4')	x					
MV5(0-1')	x					
MV5(3-4')	x					
MV6(0-1')	x					
MV6(2.5-3.5')				x	x	
MV6(4-5')	x					
MV7(0-1')	x					
MV7(3.5-4.5')	x					
MV8(0-1')	x					
MV8(3.5-4.5')	x					
MV9(0-1')	x					
MV9(3-4')	x			x	x	
MV10(0-1')	x					
MV10(7-8')	x					
MV11(0-1')	x					
MV11(3-4')	x					

Table 7 (Continued)
Summary of Soil Sample Analysis Performed
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Sample I.D.	As, Cd, Ni, Pb EPA Methods 6010B and 7471(Hg)	Ba, Ca, Fe, K, Mg, Mn, Na EPA Method 6010B	VOCs EPA Method 8260	SVOCs (PAHs) EPA Method 8270	PCBs EPA Method 8080 Modified	Dioxins/Furans EPA Method 8290
MV12(0-1')	x					
MV12(2.5-3.5')	x			x	x	
MV12(7.5-8.5')	x					
MV13(0-1')	x					
MV13(3-4')	x			x	x	
MV14(0-1')	x					
MV14(3-4')	x			x	x	
MV15(0-1')	x					
MV15(3-4')	x			x	x	
MV15(4-5')	x					
MV16(0-1')	x					
MV16(2-3')	x					
MV16(3-4')	x			x	x	
MV17(0-1')	x					
MV17(3-4')	x			x	x	
MV18(Surface scrape)				x	x	
MV18(0-1')	x					
MV18(3-4')	x					
MV19(0-1')	x					
MV19 and 19A(2-3')	x	x	x	x	x	
MV19(3-4')	x					
MV20(0-1')	x					
MV20(3-4')	x			x	x	

Table 7 (Continued)
Summary of Soil Sample Analysis Performed
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Sample I.D.	As, Cd, Ni, Pb EPA Methods 6010B and 7471(Hg)	Ba, Ca, Fe, K, Mg, Mn, Na EPA Method 6010B	VOCs EPA Method 8260	SVOCs (PAHs) EPA Method 8270	PCBs EPA Method 8080 Modified	Dioxins/Furans EPA Method 8290
MV21(0-1')	x					
MV21(3-4')	x			x	x	
MV22(0-1')	x					
MV22(3.5-4.5')	x			x	x	
MV23(0-1')	x					
MV23(3.5-4.5')	x			x	x	
MV24(0-1')	x					
MV24(3-4')	x			x	x	
MV25(0-1')	x					
MV25(3.5-4.5')	x			x	x	
MV25(7-8')	x					
MV26(0-1')	x					
MV26(3.5-4.5')	x			x	x	
MV27(0-1')	x					
MV27(3-4')	x					
MV28(0-1')	x					
MV28(3.4-4.5')	x					
MV29(0-1')	x					
MV29(3.5-4.5')	x			x	x	
MV30(0-1')	x					
MV30(4.5-5.5')	x					
MV31(0-1')	x					
MV31(3.5-4.5')	x					
MV32(0-1')	x					
MV32(3.5-4.5')	x					

Table 7 (Continued)
Summary of Soil Sample Analysis Performed
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Sample I.D.	As, Cd, Ni, Pb EPA Methods 6010B and 7471(Hg)	Ba, Ca, Fe, K, Mg, Mn, Na EPA Method 6010B	VOCs EPA Method 8260	SVOCs (PAHs) EPA Method 8270	PCBs EPA Method 8080 Modified	Dioxins/Furans EPA Method 8290
MV33(0-1')	x					
MV33(3.5-4.5')	x			x	x	
MV34(0-1')	x					
MV34(3.5-4.5')	x					
MV35(0-1')	x					
MV35(3.5-4.5')	x					
MV36(0-1')	x					
MV36 and 36A(2-3')	x	x	x	x	x	
MV37(2-3')	x	x	x	x	x	
MV38(1.5-2.5')	x	x	x	x	x	x
MV39(2-3')	x	x	x	x	x	
MV40(3-4')	x	x	x	x	x	
MV41(2-3')	x	x	x	x	x	
MV42(Surface scrape)				x	x	
MV42(2-3')	x	x	x	x	x	x
MV43(0-1')	x	x	x	x	x	
MV44(1-2')	x	x	x	x	x	x
MV45(3-4')	x	x	x	x	x	
MV46(1-2')	x	x	x	x	x	
MV47(1-2')	x	x	x	x	x	x
MV48(0-1')	x	x	x	x	x	x
MV49(0-1')	x	x	x	x	x	
MV50(0-1')	x	x	x	x	x	

Table 7 (Continued)
Summary of Soil Sample Analysis Performed
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample I.D.	As, Cd, Ni, Pb EPA Methods 6010B and 7471(Hg)	Ba, Ca, Fe, K, Mg, Mn, Na EPA Method 6010B	VOCs EPA Method 8260	SVOCs (PAHs) EPA Method 8270	PCBs EPA Method 8080 Modified	Dioxins/Furans EPA Method 8290
MV51(0-1')	x	x	x	x	x	
MV52(0-1')	x	x	x	x	x	x
MV53(0-1')	x	x	x	x	x	
MV54(0-1')	x	x	x	x	x	

As: Arsenic; Ba: Barium; Ca: Calcium; Cd: Cadmium; Fe: Iron; Hg: Mercury; K: Potassium; Mg: Magnesium; Mn: Manganese;
 Na: Sodium; Ni: Nickel; Pb: Lead.

VOCs: Volatile organic compounds.

SVOCs: Semivolatile organic compounds including polycyclic aromatic hydrocarbons (PAHs).

PCBs: Polychlorinated biphenyls.

Table 8
Mercury in Shallow Interval Soil Analytical Results (EPA Method 7471 modified)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
MV1(0-1')	Mercury	0.063		mg/Kg	
MV2(0-1')	Mercury	0.024		mg/Kg	
MV3(0-1')	Mercury	0.013		mg/Kg	I
MV4(0-1')	Mercury	0.034		mg/Kg	
MV5(0-1')	Mercury	0.01		mg/Kg	I
MV6(0-1')	Mercury	0.024		mg/Kg	
MV7(0-1')	Mercury	0.13		mg/Kg	
MV8(0-1')	Mercury	0.024		mg/Kg	A
MV9(0-1')	Mercury	0.089		mg/Kg	
MV10(0-1')	Mercury	0.023		mg/Kg	
MV11(0-1')	Mercury	0.036		mg/Kg	
MV12(0-1')	Mercury	0.027		mg/Kg	A
MV13(0-1')	Mercury	0.081		mg/Kg	
MV14(0-1')	Mercury	0.045		mg/Kg	
MV15(0-1')	Mercury	0.02		mg/Kg	
MV16(0-1')	Mercury	0.043		mg/Kg	
MV17(0-1')	Mercury	0.045		mg/Kg	
MV18(0-1')	Mercury	0.081		mg/Kg	
MV19(0-1')	Mercury	0.83		mg/Kg	A
MV20(0-1')	Mercury	0.043		mg/Kg	
MV21(0-1')	Mercury	0.2		mg/Kg	
MV22(0-1')	Mercury	0.024		mg/Kg	
MV23(0-1')	Mercury	0.013		mg/Kg	I
MV24(0-1)	Mercury	0.038		mg/Kg	
MV25(0-1)	Mercury	0.032		mg/Kg	
MV26(0-1')	Mercury	0.019		mg/Kg	I
MV27(0-1)	Mercury	0.043		mg/Kg	
MV28(0-1')	Mercury	0.0079		mg/Kg	I
MV29(0-1)	Mercury	0.058		mg/Kg	
MV30(0-1')	Mercury	0.0092		mg/Kg	I
MV31(0-1')	Mercury	0.019		mg/Kg	I
MV32(0-1')	Mercury	0.014		mg/Kg	I
08/2001 sample event					
MV33(0-1')	Mercury	0.023		mg/Kg	I
MV34(0-1')	Mercury	0.010		mg/Kg	I
MV35(0-1')	Mercury	0.017		mg/Kg	I
MV36(0-1')	Mercury	0.074		mg/Kg	
04/2002 sample event					
MV43(0-1')	Mercury	0.012		mg/Kg	I
MV48(0-1')	Mercury	0.051		mg/Kg	
MV49(0-1')	Mercury	0.013		mg/Kg	I

Table 8 (Continued)
Mercury in Shallow Interval Soil Analytical Results (EPA Method 7471 modified)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV50(0-1')	Mercury	0.015		mg/Kg	I
MV51(0-1')	Mercury	0.010		mg/Kg	I
MV52(0-1')	Mercury	0.010		mg/Kg	
MV53(0-1')	Mercury	0.012		mg/Kg	I
MV54(0-1')	Mercury	0.013		mg/Kg	I

Results are presented in milligrams per Kilogram (mg/Kg).

- I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- A: Value reported is the mean of two or more determinations.

Table 9
Mercury in Deep Interval Soil Analytical Results (EPA Method 7471 modified)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
MV1(2-3')	Mercury	0.076		mg/Kg	
MV2(2-3')	Mercury	0.0075		mg/Kg	I
MV3(1 1/2-2 1/2)	Mercury	0.011		mg/Kg	I
MV4(3-4')	Mercury	0.0064		mg/Kg	I
MV5(3-4')	Mercury	0.013		mg/Kg	I
MV6(4-5')	Mercury	0.077		mg/Kg	
MV7(3 1/2-4 1/2')	Mercury	0.039		mg/Kg	
MV8(3 1/2-4 1/2)	Mercury	0.034		mg/Kg	
MV9(3-4')	Mercury	0.027		mg/Kg	
MV11(3-4')	Mercury	0.012		mg/Kg	I
MV12(2 1/2-3 1/2)	Mercury	0.15		mg/Kg	
MV13(3-4')	Mercury	0.007		mg/Kg	I
MV14(3-4')	Mercury	0.0096		mg/Kg	I
MV15(3-4')	Mercury	0.033		mg/Kg	
MV15(4-5')	Mercury	0.043		mg/Kg	
MV16(2-3')	Mercury	0.034		mg/Kg	
MV16(3-4')	Mercury	0.064		mg/Kg	
MV17(3-4')	Mercury	0.028		mg/Kg	
MV18(3-4')	Mercury	0.071		mg/Kg	
MV19(2-3')	Mercury	0.14		mg/Kg	
MV19(3-4')	Mercury	0.084		mg/Kg	
MV20(3-4')	Mercury	0.006	0.006	mg/Kg	U
MV21(3-4')	Mercury	0.24		mg/Kg	
MV22(3 1/2-4 1/2')	Mercury	0.0068		mg/Kg	I
MV23(3 1/2-4 1/2)	Mercury	0.0048	0.0048	mg/Kg	U
MV24(3-4)	Mercury	0.015		mg/Kg	I
MV25(3 1/2-4 1/2)	Mercury	0.0077		mg/Kg	I
MV26(3 1/2-4 1/2)	Mercury	0.0057	0.0057	mg/Kg	U
MV27(3-4')	Mercury	0.023		mg/Kg	I
MV28(3 1/2-4 1/2)	Mercury	0.17		mg/Kg	
MV29(3 1/2-4 1/2)	Mercury	0.015		mg/Kg	I
MV30(4 1/2-5 1/2)	Mercury	0.0077		mg/Kg	I
MV31(3 1/2-4 1/2)	Mercury	0.0062		mg/Kg	I
08/2001 sample event					
MV32(3 1/2-4 1/2)	Mercury	0.0055	0.0055	mg/Kg	U
MV33(3 1/2-4 1/2)	Mercury	0.0058	0.0058	mg/Kg	U
MV34(3 1/2-4 1/2)	Mercury	0.013		mg/Kg	I
MV35(3 1/2-4 1/2)	Mercury	0.012		mg/Kg	I
MV36(2-3)	Mercury	0.056		mg/Kg	

Table 9 (Continued)
Mercury in Deep Interval Soil Analytical Results (EPA Method 7471 modified)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
04/2002 sample event					
MV19A(2-3')	Mercury	0.20		mg/Kg	
MV36A(2-3')	Mercury	1.2		mg/Kg	
MV37(2-3')	Mercury	0.065		mg/Kg	
MV38(1.5-2.5')	Mercury	0.37		mg/Kg	A
MV39(2-3')	Mercury	0.12		mg/Kg	
MV40(3-4')	Mercury	0.47		mg/Kg	
MV41(2-3')	Mercury	0.013		mg/Kg	I
MV42(2-3')	Mercury	0.047		mg/Kg	
MV44(1-2')	Mercury	0.038		mg/Kg	
MV45(3-4')	Mercury	0.084		mg/Kg	
MV46(1-2')	Mercury	0.068		mg/Kg	
MV47(1-2')	Mercury	0.010		mg/Kg	I

Results are presented in milligrams per Kilogram (mg/Kg).

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

A: Value reported is the mean of two or more determinations.

Table 10
Mercury in Saturated Interval Analytical Results (EPA Method 7471 modified)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
MV3(7-8')	Mercury	0.011		mg/Kg	I
MV10(7-8')	Mercury	0.30		mg/Kg	
MV12(7 1/2-8 1/2)	Mercury	0.13		mg/Kg	
MV25(7-8)	Mercury	0.13		mg/Kg	

Results are presented in milligrams per Kilogram (mg/Kg).

I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Table 11
Metals in Shallow Interval Soil Analytical Results (EPA Method 6010B)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
MV1(0-1')	Arsenic	1.1		mg/Kg	I
MV1(0-1')	Cadmium	0.25		mg/Kg	I
MV1(0-1')	Lead	24.1		mg/Kg	
MV1(0-1')	Nickel	3		mg/Kg	I
MV2(0-1')	Arsenic	0.73		mg/Kg	I
MV2(0-1')	Cadmium	0.21		mg/Kg	I
MV2(0-1')	Lead	70.7		mg/Kg	
MV2(0-1')	Nickel	2.8		mg/Kg	I
MV3(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV3(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV3(0-1')	Lead	10.3		mg/Kg	
MV3(0-1')	Nickel	2	2	mg/Kg	U
MV4(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV4(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV4(0-1')	Lead	15.1		mg/Kg	
MV4(0-1')	Nickel	3.1		mg/Kg	I
MV5(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV5(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV5(0-1')	Lead	1.2		mg/Kg	
MV5(0-1')	Nickel	2	2	mg/Kg	U
MV6(0-1')	Arsenic	0.59	0.59	mg/Kg	U
MV6(0-1')	Cadmium	0.21		mg/Kg	I
MV6(0-1')	Lead	21.8		mg/Kg	
MV6(0-1')	Nickel	2	2	mg/Kg	U
MV7(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV7(0-1')	Cadmium	0.28		mg/Kg	I
MV7(0-1')	Lead	13.7		mg/Kg	A
MV7(0-1')	Nickel	2	2	mg/Kg	U
MV8(0-1')	Arsenic	0.59	0.59	mg/Kg	U
MV8(0-1')	Cadmium	0.26		mg/Kg	I
MV8(0-1')	Lead	90.9		mg/Kg	
MV8(0-1')	Nickel	2	2	mg/Kg	U
MV9(0-1')	Arsenic	0.62		mg/Kg	I
MV9(0-1')	Cadmium	0.32		mg/Kg	I
MV9(0-1')	Lead	20.9		mg/Kg	
MV9(0-1')	Nickel	3.2		mg/Kg	I
MV10(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV10(0-1')	Cadmium	0.31		mg/Kg	I
MV10(0-1')	Lead	34.8		mg/Kg	
MV10(0-1')	Nickel	2	2	mg/Kg	U
MV11(0-1')	Arsenic	0.6	0.6	mg/Kg	U

Table 11 (Continued)
Metals in Shallow Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV11(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV11(0-1')	Lead	3.2		mg/Kg	
MV11(0-1')	Nickel	2	2	mg/Kg	U
MV12(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV12(0-1')	Cadmium	0.28		mg/Kg	I
MV12(0-1')	Lead	8		mg/Kg	A
MV12(0-1')	Nickel	2	2	mg/Kg	U
MV13(0-1')	Arsenic	1.4		mg/Kg	I
MV13(0-1')	Cadmium	0.52		mg/Kg	I
MV13(0-1')	Lead	63.2		mg/Kg	
MV13(0-1')	Nickel	2	2	mg/Kg	U
MV14(0-1')	Arsenic	1.1		mg/Kg	I
MV14(0-1')	Cadmium	0.41		mg/Kg	I
MV14(0-1')	Lead	37.3		mg/Kg	
MV14(0-1')	Nickel	2	2	mg/Kg	U
MV15(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV15(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV15(0-1')	Lead	30.6		mg/Kg	
MV15(0-1')	Nickel	2	2	mg/Kg	U
MV16(0-1')	Arsenic	1.4		mg/Kg	I
MV16(0-1')	Cadmium	0.41		mg/Kg	I
MV16(0-1')	Lead	108		mg/Kg	
MV16(0-1')	Nickel	2	2	mg/Kg	U
MV17(0-1')	Arsenic	0.9		mg/Kg	I
MV17(0-1')	Cadmium	0.35		mg/Kg	I
MV17(0-1')	Lead	15.1		mg/Kg	
MV17(0-1')	Nickel	2	2	mg/Kg	U
MV18(0-1')	Arsenic	3		mg/Kg	A
MV18(0-1')	Cadmium	0.27		mg/Kg	I
MV18(0-1')	Lead	7.9		mg/Kg	A
MV18(0-1')	Nickel	2	2	mg/Kg	U
MV19(0-1')	Arsenic	10.6		mg/Kg	
MV19(0-1')	Cadmium	3.45		mg/Kg	
MV19(0-1')	Lead	261		mg/Kg	
MV19(0-1')	Nickel	34		mg/Kg	
MV20(0-1')	Arsenic	0.59	0.59	mg/Kg	U
MV20(0-1')	Cadmium	0.22		mg/Kg	I
MV20(0-1')	Lead	13.8		mg/Kg	
MV20(0-1')	Nickel	2	2	mg/Kg	U
MV21(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV21(0-1')	Cadmium	0.24		mg/Kg	I

Table 11 (Continued)
Metals in Shallow Interval Soil Analytical Results (EPA Method 6010B)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV21(0-1')	Lead	25.3		mg/Kg	
MV21(0-1')	Nickel	2	2	mg/Kg	U
MV22(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV22(0-1')	Cadmium	0.25		mg/Kg	I
MV22(0-1')	Lead	69.1		mg/Kg	
MV22(0-1')	Nickel	2	2	mg/Kg	U
MV23(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV23(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV23(0-1')	Lead	10.8		mg/Kg	
MV23(0-1')	Nickel	2	2	mg/Kg	U
MV24(0-1)	Arsenic	0.6	0.6	mg/Kg	U
MV24(0-1)	Cadmium	0.2	0.2	mg/Kg	U
MV24(0-1)	Lead	6.4		mg/Kg	J
MV24(0-1)	Nickel	2	2	mg/Kg	U
MV25(0-1)	Arsenic	0.6	0.6	mg/Kg	U
MV25(0-1)	Cadmium	0.23		mg/Kg	I
MV25(0-1)	Lead	15.6		mg/Kg	
MV25(0-1)	Nickel	2	2	mg/Kg	U
MV26(0-1')	Arsenic	0.6		mg/Kg	I
MV26(0-1')	Cadmium	0.37		mg/Kg	I
MV26(0-1')	Lead	68		mg/Kg	
MV26(0-1')	Nickel	2.3		mg/Kg	I
MV27(0-1)	Arsenic	0.6	0.6	mg/Kg	U
MV27(0-1)	Cadmium	0.34		mg/Kg	I
MV27(0-1)	Lead	24.4		mg/Kg	
MV27(0-1)	Nickel	2	2	mg/Kg	U
MV28(0-1')	Arsenic	0.6	0.6	mg/Kg	U
MV28(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV28(0-1')	Lead	3.1		mg/Kg	AJ
MV28(0-1')	Nickel	2	2	mg/Kg	U
MV29(0-1)	Arsenic	0.84		mg/Kg	I
MV29(0-1)	Cadmium	0.48		mg/Kg	I
MV29(0-1)	Lead	38.6		mg/Kg	
MV29(0-1)	Nickel	10.6		mg/Kg	
MV30(0-1')	Arsenic	0.59	0.59	mg/Kg	U
MV30(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV30(0-1')	Lead	7.3		mg/Kg	
MV30(0-1')	Nickel	2	2	mg/Kg	U
MV31(0-1')	Arsenic	0.59	0.59	mg/Kg	U
MV31(0-1')	Cadmium	0.2	0.2	mg/Kg	U
MV31(0-1')	Lead	15.3		mg/Kg	

Table 11 (Continued)
Metals in Shallow Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV31(0-1')	Nickel	2	2	mg/Kg	U
MV32(0-1')	Arsenic	0.59	0.59	mg/Kg	U
MV32(0-1')	Cadmium	0.3		mg/Kg	I
MV32(0-1')	Lead	15.4		mg/Kg	
MV32(0-1')	Nickel	2	2	mg/Kg	U
08/2001 sample event					
MV33(0-1')	Arsenic	0.49	0.49	mg/Kg	U
MV33(0-1')	Cadmium	0.73		mg/Kg	I
MV33(0-1')	Lead	28		mg/Kg	
MV33(0-1')	Nickel	1.7		mg/Kg	I
MV34(0-1')	Arsenic	0.49	0.49	mg/Kg	U
MV34(0-1')	Cadmium	0.29	0.29	mg/Kg	U
MV34(0-1')	Lead	4.1		mg/Kg	I
MV34(0-1')	Nickel	1.3		mg/Kg	I
MV35(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV35(0-1')	Cadmium	0.68		mg/Kg	I
MV35(0-1')	Lead	18		mg/Kg	
MV35(0-1')	Nickel	2.3		mg/Kg	I
MV36(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV36(0-1')	Cadmium	0.67		mg/Kg	I
MV36(0-1')	Lead	12		mg/Kg	
MV36(0-1')	Nickel	6.5		mg/Kg	
04/2002 sample event					
MV43(0-1')	Arsenic	0.55		mg/Kg	I
MV43(0-1')	Cadmium	0.35		mg/Kg	AJ
MV43(0-1')	Lead	13.5		mg/Kg	AJ
MV43(0-1')	Nickel	3.4		mg/Kg	A
MV43(0-1')	Barium	10.6		mg/Kg	A
MV43(0-1')	Calcium	1.67E4		mg/Kg	A
MV43(0-1')	Iron	1.38E3		mg/Kg	AJ
MV43(0-1')	Magnesium	2.96E4		mg/Kg	A
MV43(0-1')	Manganese	44.4		mg/Kg	A
MV43(0-1')	Potassium	91		mg/Kg	A
MV43(0-1')	Sodium	78		mg/Kg	I
MV48(0-1')	Arsenic	0.29	0.29	mg/Kg	U
MV48(0-1')	Cadmium	0.94		mg/Kg	J
MV48(0-1')	Lead	19.5		mg/Kg	J
MV48(0-1')	Nickel	4.0		mg/Kg	
MV48(0-1')	Barium	33.4		mg/Kg	
MV48(0-1')	Calcium	3.56E5		mg/Kg	
MV48(0-1')	Iron	1.29E3		mg/Kg	J
MV48(0-1')	Magnesium	1.31E3		mg/Kg	

Table 11 (Continued)
Metals in Shallow Interval Soil Analytical Results (EPA Method 6010B)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV48(0-1')	Manganese	75.1		mg/Kg	
MV48(0-1')	Potassium	37		mg/Kg	
MV48(0-1')	Sodium	3.02E3		mg/Kg	
MV49(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV49(0-1')	Cadmium	0.32		mg/Kg	J
MV49(0-1')	Lead	10.1		mg/Kg	J
MV49(0-1')	Nickel	2.0		mg/Kg	I
MV49(0-1')	Barium	11.0		mg/Kg	
MV49(0-1')	Calcium	8.56E4		mg/Kg	
MV49(0-1')	Iron	958		mg/Kg	J
MV49(0-1')	Magnesium	377		mg/Kg	
MV49(0-1')	Manganese	33.8		mg/Kg	
MV49(0-1')	Potassium	26		mg/Kg	
MV49(0-1')	Sodium	933		mg/Kg	
MV50(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV50(0-1')	Cadmium	0.48		mg/Kg	J
MV50(0-1')	Lead	10.6		mg/Kg	J
MV50(0-1')	Nickel	2.4		mg/Kg	
MV50(0-1')	Barium	12.9		mg/Kg	
MV50(0-1')	Calcium	1.25E5		mg/Kg	
MV50(0-1')	Iron	626		mg/Kg	J
MV50(0-1')	Magnesium	686		mg/Kg	
MV50(0-1')	Manganese	40.0		mg/Kg	
MV50(0-1')	Potassium	22		mg/Kg	
MV50(0-1')	Sodium	1.06E3		mg/Kg	
MV51(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV51(0-1')	Cadmium	0.48		mg/Kg	J
MV51(0-1')	Lead	13.3		mg/Kg	J
MV51(0-1')	Nickel	2.9		mg/Kg	
MV51(0-1')	Barium	30.6		mg/Kg	
MV51(0-1')	Calcium	2.21E5		mg/Kg	
MV51(0-1')	Iron	888		mg/Kg	J
MV51(0-1')	Magnesium	813		mg/Kg	
MV51(0-1')	Manganese	45.8		mg/Kg	
MV51(0-1')	Potassium	21		mg/Kg	
MV51(0-1')	Sodium	2.1E3		mg/Kg	
MV52(0-1')	Arsenic	0.69	0.69	mg/Kg	U
MV52(0-1')	Cadmium	0.37		mg/Kg	J
MV52(0-1')	Lead	9.3		mg/Kg	J
MV52(0-1')	Nickel	1.41		mg/Kg	
MV52(0-1')	Barium	20.0		mg/Kg	

Table 11 (Continued)
Metals in Shallow Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV52(0-1')	Calcium	2.04E5		mg/Kg	
MV52(0-1')	Iron	474		mg/Kg	J
MV52(0-1')	Magnesium	443		mg/Kg	
MV52(0-1')	Manganese	35.2		mg/Kg	
MV52(0-1')	Potassium	29		mg/Kg	
MV52(0-1')	Sodium	2.73E3		mg/Kg	
MV53(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV53(0-1')	Cadmium	0.25		mg/Kg	J
MV53(0-1')	Lead	9.6		mg/Kg	J
MV53(0-1')	Nickel	1.9		mg/Kg	I
MV53(0-1')	Barium	10.3		mg/Kg	
MV53(0-1')	Calcium	7.21E4		mg/Kg	
MV53(0-1')	Iron	686		mg/Kg	J
MV53(0-1')	Magnesium	454		mg/Kg	
MV53(0-1')	Manganese	23.0		mg/Kg	
MV53(0-1')	Potassium	23		mg/Kg	
MV53(0-1')	Sodium	624		mg/Kg	
MV54(0-1')	Arsenic	0.50	0.50	mg/Kg	U
MV54(0-1')	Cadmium	0.22		mg/Kg	J
MV54(0-1')	Lead	6.8		mg/Kg	J
MV54(0-1')	Nickel	0.99		mg/Kg	I
MV54(0-1')	Barium	9.6		mg/Kg	
MV54(0-1')	Calcium	6.43E4		mg/Kg	
MV54(0-1')	Iron	372		mg/Kg	J
MV54(0-1')	Magnesium	715		mg/Kg	
MV54(0-1')	Manganese	19.3		mg/Kg	
MV54(0-1')	Potassium	16		mg/Kg	I
MV54(0-1')	Sodium	497		mg/Kg	

Results are presented in milligrams per Kilogram (mg/Kg).

- U: Material was analyzed for but not detected; the value reported is the minimum detection limit.
 I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
 A: Value reported is the mean of two or more determinations.
 J: Estimated value.

Table 12
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
MV1(2-3')	Arsenic	0.8		mg/Kg	I
MV1(2-3')	Cadmium	0.2	0.2	mg/Kg	U
MV1(2-3')	Lead	36.7		mg/Kg	
MV1(2-3')	Nickel	2	2	mg/Kg	U
MV2(2-3')	Arsenic	0.66		mg/Kg	I
MV2(2-3')	Cadmium	0.2	0.2	mg/Kg	U
MV2(2-3')	Lead	3.3		mg/Kg	
MV2(2-3')	Nickel	2	2	mg/Kg	U
MV3(1 1/2-2 1/2)	Arsenic	0.76		mg/Kg	I
MV3(1 1/2-2 1/2)	Cadmium	0.36		mg/Kg	I
MV3(1 1/2-2 1/2)	Lead	18.6		mg/Kg	
MV3(1 1/2-2 1/2)	Nickel	27.8		mg/Kg	
MV4(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV4(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV4(3-4')	Lead	0.65		mg/Kg	I
MV4(3-4')	Nickel	2	2	mg/Kg	U
MV5(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV5(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV5(3-4')	Lead	0.8	0.8	mg/Kg	U
MV5(3-4')	Nickel	2	2	mg/Kg	U
MV6(4-5')	Arsenic	1.9		mg/Kg	I
MV6(4-5')	Cadmium	1.06		mg/Kg	
MV6(4-5')	Lead	35.6		mg/Kg	
MV6(4-5')	Nickel	8.7		mg/Kg	
MV7(3 1/2-4 1/2')	Arsenic	0.6	0.6	mg/Kg	U
MV7(3 1/2-4 1/2')	Cadmium	0.22		mg/Kg	I
MV7(3 1/2-4 1/2')	Lead	9.4		mg/Kg	
MV7(3 1/2-4 1/2')	Nickel	2	2	mg/Kg	U
MV8(3 1/2-4 1/2)	Arsenic	1.5		mg/Kg	I
MV8(3 1/2-4 1/2)	Cadmium	0.49		mg/Kg	I
MV8(3 1/2-4 1/2)	Lead	9.2		mg/Kg	
MV8(3 1/2-4 1/2)	Nickel	4.4		mg/Kg	I
MV9(3-4')	Arsenic	1		mg/Kg	I
MV9(3-4')	Cadmium	0.34		mg/Kg	I
MV9(3-4')	Lead	38.5		mg/Kg	
MV9(3-4')	Nickel	23.4		mg/Kg	
MV11(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV11(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV11(3-4')	Lead	0.88		mg/Kg	I
MV11(3-4')	Nickel	2	2	mg/Kg	U
MV12(2 1/2-3 1/2)	Arsenic	1.7		mg/Kg	I

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV12(2 1/2-3 1/2)	Cadmium	0.65		mg/Kg	I
MV12(2 1/2-3 1/2)	Lead	52.5		mg/Kg	
MV12(2 1/2-3 1/2)	Nickel	10.8		mg/Kg	
MV13(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV13(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV13(3-4')	Lead	0.79	0.79	mg/Kg	U
MV13(3-4')	Nickel	2	2	mg/Kg	U
MV14(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV14(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV14(3-4')	Lead	0.8	0.8	mg/Kg	U
MV14(3-4')	Nickel	2	2	mg/Kg	U
MV15(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV15(3-4')	Cadmium	0.24		mg/Kg	I
MV15(3-4')	Lead	21.6		mg/Kg	
MV15(3-4')	Nickel	2.3		mg/Kg	I
MV15(4-5')	Arsenic	0.77		mg/Kg	I
MV15(4-5')	Cadmium	0.32		mg/Kg	I
MV15(4-5')	Lead	7		mg/Kg	
MV15(4-5')	Nickel	2	2	mg/Kg	U
MV16(2-3')	Arsenic	0.73		mg/Kg	I
MV16(2-3')	Cadmium	0.6		mg/Kg	I
MV16(2-3')	Lead	15.1		mg/Kg	
MV16(2-3')	Nickel	2.3		mg/Kg	I
MV16(3-4')	Arsenic	1.5		mg/Kg	I
MV16(3-4')	Cadmium	0.36		mg/Kg	I
MV16(3-4')	Lead	26.1		mg/Kg	
MV16(3-4')	Nickel	3.3		mg/Kg	I
MV17(3-4')	Arsenic	0.59	0.59	mg/Kg	U
MV17(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV17(3-4')	Lead	1.2		mg/Kg	I
MV17(3-4')	Nickel	2	2	mg/Kg	U
MV18(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV18(3-4')	Cadmium	0.5		mg/Kg	I
MV18(3-4')	Lead	9.9		mg/Kg	
MV18(3-4')	Nickel	24.3		mg/Kg	
MV19(2-3')	Arsenic	6.2		mg/Kg	
MV19(2-3')	Cadmium	1.11		mg/Kg	
MV19(2-3')	Lead	48.9		mg/Kg	
MV19(2-3')	Nickel	129		mg/Kg	
MV19(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV19(3-4')	Cadmium	0.2	0.2	mg/Kg	U

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV19(3-4')	Lead	5		mg/Kg	
MV19(3-4')	Nickel	2	2	mg/Kg	U
04/2002 sample event					
MV19A(2-3')	Arsenic	0.92		mg/Kg	I
MV19A(2-3')	Cadmium	0.74		mg/Kg	J
MV19A(2-3')	Lead	30.7		mg/Kg	J
MV19A(2-3')	Nickel	4.4		mg/Kg	
MV19A(2-3')	Barium	23.0		mg/Kg	
MV19A(2-3')	Calcium	6.84E4		mg/Kg	
MV19A(2-3')	Iron	3.92E3		mg/Kg	J
MV19A(2-3')	Magnesium	3.25E3		mg/Kg	
MV19A(2-3')	Manganese	91.3		mg/Kg	
MV19A(2-3')	Potassium	159		mg/Kg	
MV19A(2-3')	Sodium	587		mg/Kg	
06/2001 sample event					
MV20(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV20(3-4')	Cadmium	0.2	0.2	mg/Kg	U
MV20(3-4')	Lead	0.8	0.8	mg/Kg	U
MV20(3-4')	Nickel	2	2	mg/Kg	U
MV21(3-4')	Arsenic	1.8		mg/Kg	I
MV21(3-4')	Cadmium	0.61		mg/Kg	I
MV21(3-4')	Lead	27.2		mg/Kg	
MV21(3-4')	Nickel	7.2		mg/Kg	I
MV22(3 1/2-4 1/2')	Arsenic	0.6	0.6	mg/Kg	U
MV22(3 1/2-4 1/2')	Cadmium	0.2	0.2	mg/Kg	U
MV22(3 1/2-4 1/2')	Lead	2.3		mg/Kg	AJ
MV22(3 1/2-4 1/2')	Nickel	2	2	mg/Kg	U
MV23(3 1/2-4 1/2)	Arsenic	0.6	0.6	mg/Kg	U
MV23(3 1/2-4 1/2)	Cadmium	0.2	0.2	mg/Kg	U
MV23(3 1/2-4 1/2)	Lead	0.79	0.79	mg/Kg	U
MV23(3 1/2-4 1/2)	Nickel	2	2	mg/Kg	U
MV24(3-4)	Arsenic	0.59	0.59	mg/Kg	U
MV24(3-4)	Cadmium	0.2	0.2	mg/Kg	U
MV24(3-4)	Lead	1		mg/Kg	I
MV24(3-4)	Nickel	2	2	mg/Kg	U
MV25(3 1/2-4 1/2)	Arsenic	0.59	0.59	mg/Kg	U
MV25(3 1/2-4 1/2)	Cadmium	0.2	0.2	mg/Kg	U
MV25(3 1/2-4 1/2)	Lead	0.79	0.79	mg/Kg	U
MV25(3 1/2-4 1/2)	Nickel	2	2	mg/Kg	U
MV26(3 1/2-4 1/2)	Arsenic	0.6	0.6	mg/Kg	U
MV26(3 1/2-4 1/2)	Cadmium	0.2	0.2	mg/Kg	U

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV26(3 1/2-4 1/2)	Lead	0.8	0.8	mg/Kg	U
MV26(3 1/2-4 1/2)	Nickel	2	2	mg/Kg	U
MV27(3-4')	Arsenic	0.6	0.6	mg/Kg	U
MV27(3-4')	Cadmium	0.23		mg/Kg	I
MV27(3-4')	Lead	4.7		mg/Kg	J
MV27(3-4')	Nickel	2	2	mg/Kg	U
MV28(3 1/2-4 1/2)	Arsenic	1.5		mg/Kg	I
MV28(3 1/2-4 1/2)	Cadmium	0.42		mg/Kg	I
MV28(3 1/2-4 1/2)	Lead	26.8		mg/Kg	
MV28(3 1/2-4 1/2)	Nickel	6.3		mg/Kg	I
MV29(3 1/2-4 1/2)	Arsenic	0.6	0.6	mg/Kg	U
MV29(3 1/2-4 1/2)	Cadmium	0.2	0.2	mg/Kg	U
MV29(3 1/2-4 1/2)	Lead	0.79	0.79	mg/Kg	U
MV29(3 1/2-4 1/2)	Nickel	2	2	mg/Kg	U
MV30(4 1/2-5 1/2)	Arsenic	0.6	0.6	mg/Kg	U
MV30(4 1/2-5 1/2)	Cadmium	0.2	0.2	mg/Kg	U
MV30(4 1/2-5 1/2)	Lead	4		mg/Kg	J
MV30(4 1/2-5 1/2)	Nickel	2	2	mg/Kg	U
MV31(3 1/2-4 1/2)	Arsenic	0.59	0.59	mg/Kg	U
MV31(3 1/2-4 1/2)	Cadmium	0.2	0.2	mg/Kg	U
MV31(3 1/2-4 1/2)	Lead	0.79	0.79	mg/Kg	U
MV31(3 1/2-4 1/2)	Nickel	2	2	mg/Kg	U
MV32(3 1/2-4 1/2)	Arsenic	0.6	0.6	mg/Kg	U
MV32(3 1/2-4 1/2)	Cadmium	0.2	0.2	mg/Kg	U
MV32(3 1/2-4 1/2)	Lead	0.92		mg/Kg	I
MV32(3 1/2-4 1/2)	Nickel	2	2	mg/Kg	U
08/2001 sample event					
MV33(3 1/2-4 1/2)	Arsenic	0.50	0.50	mg/Kg	U
MV33(3 1/2-4 1/2)	Cadmium	0.30	0.30	mg/Kg	U
MV33(3 1/2-4 1/2)	Lead	3.0	3.0	mg/Kg	U
MV33(3 1/2-4 1/2)	Nickel	0.60	0.60	mg/Kg	U
MV34(3 1/2-4 1/2)	Arsenic	0.50	0.50	mg/Kg	U
MV34(3 1/2-4 1/2)	Cadmium	0.30	0.30	mg/Kg	U
MV34(3 1/2-4 1/2)	Lead	3.0	3.0	mg/Kg	U
MV34(3 1/2-4 1/2)	Nickel	0.60	0.60	mg/Kg	U
MV35(3 1/2-4 1/2)	Arsenic	0.50	0.50	mg/Kg	U
MV35(3 1/2-4 1/2)	Cadmium	0.30	0.30	mg/Kg	U
MV35(3 1/2-4 1/2)	Lead	4.2		mg/Kg	I
MV35(3 1/2-4 1/2)	Nickel	0.85		mg/Kg	I
MV36(2-3)	Arsenic	1.4		mg/Kg	I
MV36(2-3)	Cadmium	2.52		mg/Kg	

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV36(2-3)	Lead	32		mg/Kg	
MV36(2-3)	Nickel	57.4		mg/Kg	
04/2002 sample event					
MV36A(2-3')	Arsenic	4.86		mg/Kg	
MV36A(2-3')	Cadmium	1.7		mg/Kg	J
MV36A(2-3')	Lead	30.2		mg/Kg	J
MV36A(2-3')	Nickel	40.6		mg/Kg	
MV36A(2-3')	Barium	76.1		mg/Kg	
MV36A(2-3')	Calcium	5.52E4		mg/Kg	
MV36A(2-3')	Iron	2.00E4		mg/Kg	J
MV36A(2-3')	Magnesium	2.00E3		mg/Kg	
MV36A(2-3')	Manganese	191		mg/Kg	
MV36A(2-3')	Potassium	601		mg/Kg	
MV36A(2-3')	Sodium	663		mg/Kg	
MV37(2-3')	Arsenic	0.82		mg/Kg	I
MV37(2-3')	Cadmium	1.2		mg/Kg	J
MV37(2-3')	Lead	39.7		mg/Kg	J
MV37(2-3')	Nickel	8.9		mg/Kg	
MV37(2-3')	Barium	58.6		mg/Kg	
MV37(2-3')	Calcium	9.03E4		mg/Kg	
MV37(2-3')	Iron	5.97E3		mg/Kg	J
MV37(2-3')	Magnesium	1.39E3		mg/Kg	
MV37(2-3')	Manganese	193		mg/Kg	
MV37(2-3')	Potassium	468		mg/Kg	
MV37(2-3')	Sodium	778		mg/Kg	
MV38(1.5-2.5')	Arsenic	2.36		mg/Kg	
MV38(1.5-2.5')	Cadmium	1.8		mg/Kg	J
MV38(1.5-2.5')	Lead	53.7		mg/Kg	J
MV38(1.5-2.5')	Nickel	15.9		mg/Kg	
MV38(1.5-2.5')	Barium	133		mg/Kg	
MV38(1.5-2.5')	Calcium	1.96E5		mg/Kg	
MV38(1.5-2.5')	Iron	1.57E4		mg/Kg	J
MV38(1.5-2.5')	Magnesium	5.09E3		mg/Kg	
MV38(1.5-2.5')	Manganese	408		mg/Kg	
MV38(1.5-2.5')	Potassium	1.73E3		mg/Kg	
MV38(1.5-2.5')	Sodium	1.84E3		mg/Kg	
MV39(2-3')	Arsenic	1.33		mg/Kg	
MV39(2-3')	Cadmium	0.75		mg/Kg	J
MV39(2-3')	Lead	32.0		mg/Kg	J
MV39(2-3')	Nickel	5.3		mg/Kg	
MV39(2-3')	Barium	68.0		mg/Kg	

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV39(2-3')	Calcium	1.47E5		mg/Kg	
MV39(2-3')	Iron	3.17E3		mg/Kg	J
MV39(2-3')	Magnesium	2.27E3		mg/Kg	
MV39(2-3')	Manganese	74.4		mg/Kg	
MV39(2-3')	Potassium	188		mg/Kg	
MV39(2-3')	Sodium	273		mg/Kg	
MV40(3-4')	Arsenic	2.24		mg/Kg	
MV40(3-4')	Cadmium	1.4		mg/Kg	J
MV40(3-4')	Lead	95.2		mg/Kg	J
MV40(3-4')	Nickel	50.1		mg/Kg	
MV40(3-4')	Barium	304		mg/Kg	
MV40(3-4')	Calcium	7.56E4		mg/Kg	
MV40(3-4')	Iron	1.15E4		mg/Kg	J
MV40(3-4')	Magnesium	8.58E3		mg/Kg	
MV40(3-4')	Manganese	180		mg/Kg	
MV40(3-4')	Potassium	572		mg/Kg	
MV40(3-4')	Sodium	1.81E3		mg/Kg	
MV41(2-3')	Arsenic	1.48		mg/Kg	
MV41(2-3')	Cadmium	0.86		mg/Kg	J
MV41(2-3')	Lead	44.6		mg/Kg	J
MV41(2-3')	Nickel	15.7		mg/Kg	
MV41(2-3')	Barium	63.2		mg/Kg	
MV41(2-3')	Calcium	2.63E4		mg/Kg	
MV41(2-3')	Iron	5.81E3		mg/Kg	J
MV41(2-3')	Magnesium	2.41E3		mg/Kg	
MV41(2-3')	Manganese	235		mg/Kg	
MV41(2-3')	Potassium	328		mg/Kg	
MV41(2-3')	Sodium	205		mg/Kg	
MV42(2-3')	Arsenic	1.14		mg/Kg	
MV42(2-3')	Cadmium	0.92		mg/Kg	J
MV42(2-3')	Lead	31.2		mg/Kg	J
MV42(2-3')	Nickel	8.9		mg/Kg	
MV42(2-3')	Barium	58.6		mg/Kg	
MV42(2-3')	Calcium	1.85E5		mg/Kg	
MV42(2-3')	Iron	5.45E3		mg/Kg	J
MV42(2-3')	Magnesium	819		mg/Kg	
MV42(2-3')	Manganese	98.9		mg/Kg	
MV42(2-3')	Potassium	59		mg/kg	
MV42(2-3')	Sodium	1.04E3		mg/Kg	
MV44(1-2')	Arsenic	0.85		mg/Kg	I
MV44(1-2')	Cadmium	0.96		mg/Kg	J

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
MV44(1-2')	Lead	20.5		mg/Kg	J
MV44(1-2')	Nickel	54.4		mg/Kg	
MV44(1-2')	Barium	156		mg/Kg	
MV44(1-2')	Calcium	3.07E5		mg/Kg	
MV44(1-2')	Iron	6.51E3		mg/Kg	J
MV44(1-2')	Magnesium	2.69E3		mg/Kg	
MV44(1-2')	Manganese	116		mg/Kg	
MV44(1-2')	Potassium	49		mg/Kg	
MV44(1-2')	Sodium	3.00E3		mg/Kg	
MV45(3-4')	Arsenic	0.50		mg/Kg	I
MV45(3-4')	Cadmium	0.12		mg/Kg	I
MV45(3-4')	Lead	6.9		mg/Kg	J
MV45(3-4')	Nickel	0.98		mg/Kg	I
MV45(3-4')	Barium	4.9		mg/Kg	
MV45(3-4')	Calcium	1.27E4		mg/Kg	
MV45(3-4')	Iron	689		mg/Kg	J
MV45(3-4')	Magnesium	291		mg/Kg	
MV45(3-4')	Manganese	11.4		mg/Kg	
MV45(3-4')	Potassium	32		mg/Kg	
MV45(3-4')	Sodium	187		mg/Kg	
MV46(1-2')	Arsenic	7.36		mg/Kg	
MV46(1-2')	Cadmium	1.9		mg/Kg	J
MV46(1-2')	Lead	32.4		mg/Kg	J
MV46(1-2')	Nickel	31.3		mg/Kg	
MV46(1-2')	Barium	50.9		mg/Kg	
MV46(1-2')	Calcium	6.22E4		mg/Kg	
MV46(1-2')	Iron	2.18E4		mg/Kg	
MV46(1-2')	Magnesium	5.54E4		mg/Kg	
MV46(1-2')	Manganese	255		mg/Kg	
MV46(1-2')	Potassium	96		mg/Kg	
MV46(1-2')	Sodium	114		mg/Kg	
MV47(1-2')	Arsenic	0.50	0.50	mg/Kg	U
MV47(1-2')	Cadmium	0.46		mg/Kg	J
MV47(1-2')	Lead	12.4		mg/Kg	J
MV47(1-2')	Nickel	2.7		mg/Kg	
MV47(1-2')	Barium	34.6		mg/Kg	
MV47(1-2')	Calcium	2.16E5		mg/Kg	
MV47(1-2')	Iron	916		mg/Kg	J
MV47(1-2')	Magnesium	917		mg/Kg	
MV47(1-2')	Manganese	44.6		mg/Kg	
MV47(1-2')	Potassium	29		mg/Kg	
MV47(1-2')	Sodium	2.00E3		mg/Kg	

Table 12 (Continued)
Metals in Deep Interval Soil Analytical Results (EPA Method 6010B)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Results are presented in milligrams per Kilogram (mg/Kg).

- U: Material was analyzed for but not detected; the value reported is the minimum detection limit.
- I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- A: Value reported is the mean of two or more determinations.
- J: Estimated value.

Table 13
Metals in Saturated Interval Analytical Results (EPA Method 6010B)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
MV3(7-8')	Arsenic	0.6	0.6	mg/Kg	U
MV3(7-8')	Cadmium	0.2	0.2	mg/Kg	U
MV3(7-8')	Lead	5.6		mg/Kg	
MV3(7-8')	Nickel	2	2	mg/Kg	U
MV10(7-8')	Arsenic	5.9		mg/Kg	
MV10(7-8')	Cadmium	1.81		mg/Kg	
MV10(7-8')	Lead	80		mg/Kg	
MV10(7-8')	Nickel	49.5		mg/Kg	
MV12(7 1/2-8 1/2)	Arsenic	6.3		mg/Kg	
MV12(7 1/2-8 1/2)	Cadmium	0.96		mg/Kg	
MV12(7 1/2-8 1/2)	Lead	194		mg/Kg	
MV12(7 1/2-8 1/2)	Nickel	54.6		mg/Kg	
MV25(7-8)	Arsenic	1.7		mg/Kg	I
MV25(7-8)	Cadmium	0.2	0.2	mg/Kg	U
MV25(7-8)	Lead	8.1		mg/Kg	J
MV25(7-8)	Nickel	2	2	mg/Kg	U

Results are presented in milligrams per Kilogram (mg/Kg).

- U: Material was analyzed for but not detected; the value reported is the minimum detection limit.
 I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
 J: Estimated value.

Table 14
Volatile Organic Compounds in Soil Analytical Results (EPA Method 8260 Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
04/2002 sample event				
MV38(1.5-2.5')	1,1,1-Trichloroethane	2.5	ug/kg	U
MV38(1.5-2.5')	1,1,2,2-Tetrachloroethane	2.5	ug/kg	U
MV38(1.5-2.5')	1,1,2-Trichloroethane	2.5	ug/kg	U
MV38(1.5-2.5')	1,1-Dichloroethane	2.5	ug/kg	U
MV38(1.5-2.5')	1,1-Dichloroethene	2.5	ug/kg	U
MV38(1.5-2.5')	1,2-Dichlorobenzene	2.5	ug/kg	U
MV38(1.5-2.5')	1,2-Dichloroethane	2.5	ug/kg	U
MV38(1.5-2.5')	1,2-Dichloropropane	2.5	ug/kg	U
MV38(1.5-2.5')	1,3-Dichlorobenzene	2.5	ug/kg	U
MV38(1.5-2.5')	1,4-Dichlorobenzene	2.5	ug/kg	U
MV38(1.5-2.5')	2-Chloroethylvinyl ether	2.5	ug/kg	U
MV38(1.5-2.5')	Benzene	2.5	ug/kg	U
MV38(1.5-2.5')	Bromodichloromethane	2.5	ug/kg	U
MV38(1.5-2.5')	Bromoform	2.5	ug/kg	U
MV38(1.5-2.5')	Bromomethane	2.5	ug/kg	U
MV38(1.5-2.5')	Carbon tetrachloride	2.5	ug/kg	U
MV38(1.5-2.5')	Chlorobenzene	2.5	ug/kg	U
MV38(1.5-2.5')	Chloroethane	2.5	ug/kg	U
MV38(1.5-2.5')	Chloroform	2.5	ug/kg	U
MV38(1.5-2.5')	Chloromethane	2.5	ug/kg	U
MV38(1.5-2.5')	Dibromochloromethane	2.5	ug/kg	U
MV38(1.5-2.5')	Ethylbenzene	2.5	ug/kg	U
MV38(1.5-2.5')	Methylene chloride	2.5	ug/kg	U
MV38(1.5-2.5')	Tetrachloroethene	2.5	ug/kg	U
MV38(1.5-2.5')	Toluene	9.6	ug/kg	I
MV38(1.5-2.5')	Trichloroethene	2.5	ug/kg	U
MV38(1.5-2.5')	Trichlorofluoromethane	2.5	ug/kg	U
MV38(1.5-2.5')	Vinyl chloride	2.5	ug/kg	U
MV38(1.5-2.5')	cis-1,3-Dichloropropene	2.5	ug/kg	U
MV38(1.5-2.5')	m,p-Xylene	2.5	ug/kg	U
MV38(1.5-2.5')	o-Xylene	2.5	ug/kg	U
MV38(1.5-2.5')	trans-1,2-Dichloroethene	2.5	ug/kg	U
MV38(1.5-2.5')	trans-1,3-Dichloropropene	2.5	ug/kg	U

MV38(1.5-2.5') results are presented in their entirety to display all compounds analyzed for by the FDEP Central Laboratory using the EPA Method 8260 analysis. All remaining shallow and deep soil samples collected during the 04/2002 sampling event were reported to be laboratory nondetect.

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is in between the laboratory method detection limit and the laboratory practical quantitation limit.

ug/kg: Micrograms per kilogram.

Table 15
Semivolatile Organic Compounds in Shallow Soil Analytical Results (EPA Method 8270 Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
04/2002 sample event				
MV43(0-1')	Acenaphthene	66	ug/Kg	U
MV43(0-1')	Acenaphthylene	66	ug/Kg	U
MV43(0-1')	Aldrin	66	ug/Kg	U
MV43(0-1')	Anthracene	66	ug/Kg	U
MV43(0-1')	Azobenzene/1,2-Diphenylhydrazine	66	ug/Kg	U
MV43(0-1')	Benzidine	1.4E3	ug/Kg	U
MV43(0-1')	Benzo(a)anthracene	66	ug/Kg	U
MV43(0-1')	Benzo(a)pyrene	66	ug/Kg	U
MV43(0-1')	Benzo(b)fluoranthene	66	ug/Kg	U
MV43(0-1')	Benzo(k)fluoranthene	66	ug/Kg	U
MV43(0-1')	Benzo(g,h,i)perylene	66	ug/Kg	U
MV43(0-1')	Bis(2-chloroethoxy)methane	66	ug/Kg	U
MV43(0-1')	Bis(2-chloroethyl)ether	66	ug/Kg	U
MV43(0-1')	Bis(2-chloroisopropyl)ether	66	ug/Kg	U
MV43(0-1')	Bis(2-ethylhexyl)phthalate	400	ug/Kg	U
MV43(0-1')	Butyl benzyl phthalate	66	ug/Kg	U
MV43(0-1')	4-Bromophenyl ether	66	ug/Kg	U
MV43(0-1')	2-Chloronaphthalene	66	ug/Kg	U
MV43(0-1')	4-Chlorophenyl phenyl ether	66	ug/Kg	U
MV43(0-1')	Chrysene	66	ug/Kg	U
MV43(0-1')	4,4'-DDD	66	ug/Kg	U
MV43(0-1')	4,4'-DDE	66	ug/Kg	U
MV43(0-1')	4,4'-DDT	66	ug/Kg	U
MV43(0-1')	Di-n-butyl phthalate	400	ug/Kg	U
MV43(0-1')	Di-n-octyl phthalate	66	ug/Kg	U
MV43(0-1')	Dibenzo(a,h)anthracene	66	ug/Kg	U
MV43(0-1')	1,2-Dichlorobenzene	200	ug/Kg	U
MV43(0-1')	1,3-Dichlorobenzene	200	ug/Kg	U
MV43(0-1')	1,4-Dichlorobenzene	200	ug/Kg	U
MV43(0-1')	3,3'-Dichlorobenzene	4.0E3	ug/Kg	U
MV43(0-1')	Dieldrin	66	ug/Kg	U
MV43(0-1')	Diethyl phthalate	66	ug/Kg	U
MV43(0-1')	Dimethyl phthalate	66	ug/Kg	U
MV43(0-1')	2,4-Dinitrotoluene	66	ug/Kg	U
MV43(0-1')	2,6-Dinitrotoluene	66	ug/Kg	U
MV43(0-1')	Endosulfan I	66	ug/Kg	U
MV43(0-1')	Endosulfan II	66	ug/Kg	U
MV43(0-1')	Endosulfan sulfate	66	ug/Kg	U
MV43(0-1')	Endrin	66	ug/Kg	U
MV43(0-1')	Endrin aldehyde	66	ug/Kg	U
MV43(0-1')	Fluoranthene	66	ug/Kg	U

Table 15 (Continued)
Semivolatile Organic Compounds in Shallow Soil Analytical Results (EPA Method 8270 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV43(0-1')	Fluorene	66	ug/Kg	U
MV43(0-1')	Heptachlor	66	ug/Kg	U
MV43(0-1')	Heptachlor epoxide	66	ug/Kg	U
MV43(0-1')	Hexachlorobenzene	66	ug/Kg	U
MV43(0-1')	Hexachlorobutadiene	200	ug/Kg	U
MV43(0-1')	Hexachlorocyclopentadiene	66	ug/Kg	U
MV43(0-1')	Hexachloroethane	200	ug/Kg	U
MV43(0-1')	Indeno(1,2,3-cd)pyrene	66	ug/Kg	U
MV43(0-1')	Isophorone	66	ug/Kg	U
MV43(0-1')	Naphthalene	66	ug/Kg	U
MV43(0-1')	Nitrobenzene	66	ug/Kg	U
MV43(0-1')	N-Nitrosodi-n-propylamine	66	ug/Kg	U
MV43(0-1')	N-Nitrosodimethylamine	400	ug/Kg	U
MV43(0-1')	N-Nitrosodiphenylamine	66	ug/Kg	U
MV43(0-1')	Phenanthrene	66	ug/Kg	U
MV43(0-1')	Pyrene	66	ug/Kg	U
MV43(0-1')	1,2,4-Trichlorobenzene	200	ug/Kg	U
MV43(0-1')	4-Chloro-3-methylphenol	66	ug/Kg	U
MV43(0-1')	2-Chlorophenol	200	ug/Kg	U
MV43(0-1')	2,4-Dichlorophenol	66	ug/Kg	U
MV43(0-1')	2,4-Dimethylphenol	2.0E3	ug/Kg	U
MV43(0-1')	2,4-Dinitrophenol	400	ug/Kg	U
MV43(0-1')	2-Methyl-4,6-dinitrophenol	66	ug/Kg	U
MV43(0-1')	2-Nitrophenol	66	ug/Kg	U
MV43(0-1')	4-Nitrophenol	66	ug/Kg	U
MV43(0-1')	Pentachlorophenol	66	ug/Kg	U
MV43(0-1')	Phenol	66	ug/Kg	U
MV43(0-1')	2,4,6-Trichlorophenol	66	ug/Kg	U

MV43(0-1') results are presented in their entirety to display all compounds analyzed for by the FDEP Central Laboratory using the EPA Method 8270 analysis. No shallow samples collected during the 04 and 06/2002 sample events had reportable concentrations of 8270 compounds.

T: Value reported is less than the criterion of detection.

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is in between the laboratory method detection limit and the laboratory practical quantitation limit.

ug/kg: Micrograms per kilogram.

Table 16
Semivolatile Organic Compounds in Deep Soil Analytical Results (EPA Method 8270 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
04/2002 sample event				
MV19A(2-3')	Acenaphthene	87	ug/Kg	U
MV19A(2-3')	Acenaphthylene	87	ug/Kg	U
MV19A(2-3')	Aldrin	87	ug/Kg	U
MV19A(2-3')	Anthracene	87	ug/Kg	U
MV19A(2-3')	Azobenzene/1,2-Diphenylhydrazine	87	ug/Kg	U
MV19A(2-3')	Benzidine	1.9E3	ug/Kg	U
MV19A(2-3')	Benzo(a)anthracene	87	ug/Kg	U
MV19A(2-3')	Benzo(a)pyrene	87	ug/Kg	U
MV19A(2-3')	Benzo(b)fluoranthene	87	ug/Kg	U
MV19A(2-3')	Benzo(k)fluoranthene	87	ug/Kg	U
MV19A(2-3')	Benzo(g,h,i)perylene	87	ug/Kg	U
MV19A(2-3')	Bis(2-chloroethoxy)methane	87	ug/Kg	U
MV19A(2-3')	Bis(2-chloroethyl)ether	87	ug/Kg	U
MV19A(2-3')	Bis(2-chloroisopropyl)ether	87	ug/Kg	U
MV19A(2-3')	Bis(2-ethylhexyl)phthalate	520	ug/Kg	U
MV19A(2-3')	Butyl benzyl phthalate	87	ug/Kg	U
MV19A(2-3')	4-Bromophenyl ether	87	ug/Kg	U
MV19A(2-3')	2-Chloronaphthalene	87	ug/Kg	U
MV19A(2-3')	4-Chlorophenyl phenyl ether	87	ug/Kg	U
MV19A(2-3')	Chrysene	87	ug/Kg	U
MV19A(2-3')	4,4'-DDD	87	ug/Kg	U
MV19A(2-3')	4,4'-DDE	87	ug/Kg	U
MV19A(2-3')	4,4'-DDT	87	ug/Kg	U
MV19A(2-3')	Di-n-butyl phthalate	520	ug/Kg	U
MV19A(2-3')	Di-n-octyl phthalate	87	ug/Kg	U
MV19A(2-3')	Dibenzo(a,h)anthracene	87	ug/Kg	U
MV19A(2-3')	1,2-Dichlorobenzene	260	ug/Kg	U
MV19A(2-3')	1,3-Dichlorobenzene	260	ug/Kg	U
MV19A(2-3')	1,4-Dichlorobenzene	260	ug/Kg	U
MV19A(2-3')	3,3'-Dichlorobenzene	5.2E3	ug/Kg	U
MV19A(2-3')	Dieldrin	87	ug/Kg	U
MV19A(2-3')	Diethyl phthalate	87	ug/Kg	U
MV19A(2-3')	Dimethyl phthalate	87	ug/Kg	U
MV19A(2-3')	2,4-Dinitrotoluene	87	ug/Kg	U
MV19A(2-3')	2,6-Dinitrotoluene	87	ug/Kg	U
MV19A(2-3')	Endosulfan I	87	ug/Kg	U
MV19A(2-3')	Endosulfan II	87	ug/Kg	U
MV19A(2-3')	Endosulfan sulfate	87	ug/Kg	U
MV19A(2-3')	Endrin	87	ug/Kg	U
MV19A(2-3')	Endrin aldehyde	87	ug/Kg	U
MV19A(2-3')	Fluoranthene	87	ug/Kg	U

Table 16 (Continued)
Semivolatile Organic Compounds in Deep Soil Analytical Results (EPA Method 8270 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV19A(2-3')	Fluorene	87	ug/Kg	U
MV19A(2-3')	Heptachlor	87	ug/Kg	U
MV19A(2-3')	Heptachlor epoxide	87	ug/Kg	U
MV19A(2-3')	Hexachlorobenzene	87	ug/Kg	U
MV19A(2-3')	Hexachlorobutadiene	260	ug/Kg	U
MV19A(2-3')	Hexachlorocyclopentadiene	87	ug/Kg	U
MV19A(2-3')	Hexachloroethane	260	ug/Kg	U
MV19A(2-3')	Indeno(1,2,3-cd)pyrene	87	ug/Kg	U
MV19A(2-3')	Isophorone	87	ug/Kg	U
MV19A(2-3')	Naphthalene	87	ug/Kg	U
MV19A(2-3')	Nitrobenzene	87	ug/Kg	U
MV19A(2-3')	N-Nitrosodi-n-propylamine	87	ug/Kg	U
MV19A(2-3')	N-Nitrosodimethylamine	520	ug/Kg	U
MV19A(2-3')	N-Nitrosodiphenylamine	87	ug/Kg	U
MV19A(2-3')	Phenanthrene	87	ug/Kg	U
MV19A(2-3')	Pyrene	87	ug/Kg	U
MV19A(2-3')	1,2,4-Trichlorobenzene	260	ug/Kg	U
MV19A(2-3')	4-Chloro-3-methylphenol	87	ug/Kg	U
MV19A(2-3')	2-Chlorophenol	260	ug/Kg	U
MV19A(2-3')	2,4-Dichlorophenol	87	ug/Kg	U
MV19A(2-3')	2,4-Dimethylphenol	2.6E3	ug/Kg	U
MV19A(2-3')	2,4-Dinitrophenol	520	ug/Kg	U
MV19A(2-3')	2-Methyl-4,6-dinitrophenol	87	ug/Kg	U
MV19A(2-3')	2-Nitrophenol	87	ug/Kg	U
MV19A(2-3')	4-Nitrophenol	87	ug/Kg	U
MV19A(2-3')	Pentachlorophenol	87	ug/Kg	U
MV19A(2-3')	Phenol	87	ug/Kg	U
MV19A(2-3')	2,4,6-Trichlorophenol	87	ug/Kg	U
MV36A(2-3')	Acenaphthylene	140	ug/Kg	I
MV36A(2-3')	Anthracene	220	ug/Kg	I
MV36A(2-3')	Benzo(a)anthracene	2.0E3	ug/Kg	
MV36A(2-3')	Benzo(a)pyrene	1.5E3	ug/Kg	
MV36A(2-3')	Benzo(b)fluoranthene	3.2E3	ug/Kg	
MV36A(2-3')	Benzo(k)fluoranthene	2.1E3	ug/Kg	
MV36A(2-3')	Benzo(g,h,i)perylene	250	ug/Kg	I
MV36A(2-3')	Chrysene	4.3E3	ug/Kg	
MV36A(2-3')	Dibenzo(a,h)anthracene	230	ug/Kg	I
MV36A(2-3')	Fluoranthene	4.0E3	ug/Kg	
MV36A(2-3')	Fluorene	230	ug/Kg	I
MV36A(2-3')	Ideno(1,2,3-cd)pyrene	460	ug/Kg	
MV36A(2-3')	Phenanthrene	2.5E3	ug/Kg	
MV36A(2-3')	Pyrene	2.8E3	ug/Kg	

Table 16 (Continued)
Semivolatile Organic Compounds in Deep Soil Analytical Results (EPA Method 8270 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV37(2-3')	Benzo(a)anthracene	110	ug/Kg	I
MV37(2-3')	Benzo(a)pyrene	120	ug/Kg	I
MV37(2-3')	Benzo(b)fluoranthene	160	ug/Kg	I
MV37(2-3')	Benzo(k)fluoranthene	150	ug/Kg	I
MV37(2-3')	Chrysene	130	ug/Kg	I
MV37(2-3')	Fluoranthene	190	ug/Kg	I
MV37(2-3')	Phenanthrene	81	ug/Kg	I
MV37(2-3')	Pyrene	160	ug/Kg	I
MV38(2-3')	Benzo(a)anthracene	220	ug/Kg	I
MV38(2-3')	Benzo(a)pyrene	240	ug/Kg	I
MV38(2-3')	Benzo(b)fluoranthene	260	ug/Kg	I
MV38(2-3')	Benzo(k)fluoranthene	270	ug/Kg	I
MV38(2-3')	Benzo(g,h,i)perylene	130	ug/Kg	I
MV38(2-3')	Chrysene	290	ug/Kg	I
MV38(2-3')	Fluoranthene	310	ug/Kg	I
MV38(2-3')	Ideno(1,2,3-cd)pyrene	150	ug/Kg	I
MV38(2-3')	Phenanthrene	190	ug/Kg	I
MV38(2-3')	Pyrene	230	ug/Kg	I
MV41(2-3')	Benzo(a)anthracene	90	ug/Kg	I
MV41(2-3')	Benzo(a)pyrene	89	ug/Kg	I
MV41(2-3')	Benzo(b)fluoranthene	120	ug/Kg	I
MV41(2-3')	Benzo(k)fluoranthene	100	ug/Kg	I
MV41(2-3')	Chrysene	120	ug/Kg	I
MV41(2-3')	Fluoranthene	160	ug/Kg	I
MV41(2-3')	Pyrene	140	ug/Kg	I
MV42(2-3')	Benzo(a)anthracene	110	ug/Kg	I
MV42(2-3')	Benzo(a)pyrene	120	ug/Kg	I
MV42(2-3')	Benzo(b)fluoranthene	200	ug/Kg	I
MV42(2-3')	Benzo(k)fluoranthene	130	ug/Kg	I
MV42(2-3')	Chrysene	180	ug/Kg	I
MV42(2-3')	Fluoranthene	160	ug/Kg	I
MV42(2-3')	Pyrene	140	ug/Kg	I
06/2002 sample event				
MV6(2.5-3.5')	Benzo(a)anthracene	210	ug/Kg	I
MV6(2.5-3.5')	Benzo(a)pyrene	190	ug/Kg	I
MV6(2.5-3.5')	Benzo(b)fluoranthene	250	ug/Kg	I
MV6(2.5-3.5')	Benzo(g,h,i)perylene	120	ug/Kg	I
MV6(2.5-3.5')	Benzo(k)fluoranthene	110	ug/Kg	I
MV6(2.5-3.5')	Chrysene	220	ug/Kg	I
MV6(2.5-3.5')	Fluoranthene	360	ug/Kg	I
MV6(2.5-3.5')	Ideno(1,2,3-cd)pyrene	110	ug/Kg	I
MV6(2.5-3.5')	Phenanthrene	130	ug/Kg	I
MV6(2.5-3.5')	Pyrene	350	ug/Kg	I

Table 16 (Continued)
Semivolatile Organic Compounds in Deep Soil Analytical Results (EPA Method 8270 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV12(2.5-3.5')	Benzo(k)fluoranthene	150	ug/Kg	I
MV12(2.5-3.5')	Phenanthrene	150	ug/Kg	I
MV12(2.5-3.5')	Pyrene	200	ug/Kg	I
MV25(3.5-4.5')	Benzo(a)pyrene	220	ug/Kg	I
MV26(3.5-4.5')	Benzo(a)pyrene	110	ug/Kg	I

MV19A(2-3') results are presented in their entirety to display all compounds analyzed for by the FDEP Central Laboratory using the EPA Method 8270 analysis. The remaining results are reportable detections identified by the FDEP Central Laboratory.

T: Value reported is less than the criterion of detection.

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is in between the laboratory method detection limit and the laboratory practical quantitation limit.

ug/kg: Micrograms per kilogram.

Table 17
PCBs in Shallow Soil Analytical Results (EPA Method 8080 modified Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
04/2002 sample event				
MV43(0-1')	PCB-1016	11	ug/Kg	U
MV43(0-1')	PCB-1221	7.7	ug/Kg	U
MV43(0-1')	PCB-1232	17	ug/Kg	U
MV43(0-1')	PCB-1242	11	ug/Kg	U
MV43(0-1')	PCB-1248	7.3	ug/Kg	U
MV43(0-1')	PCB-1254	7.3	ug/Kg	U
MV43(0-1')	PCB-1260	22	ug/Kg	I
MV48(0-1')	PCB-1016	14	ug/Kg	U
MV48(0-1')	PCB-1221	9.9	ug/Kg	U
MV48(0-1')	PCB-1232	21	ug/Kg	U
MV48(0-1')	PCB-1242	14	ug/Kg	U
MV48(0-1')	PCB-1248	9.4	ug/Kg	U
MV48(0-1')	PCB-1254	9.4	ug/Kg	U
MV48(0-1')	PCB-1260	14	ug/Kg	U
MV49(0-1')	PCB-1016	12	ug/Kg	U
MV49(0-1')	PCB-1221	8.5	ug/Kg	U
MV49(0-1')	PCB-1232	18	ug/Kg	U
MV49(0-1')	PCB-1242	12	ug/Kg	U
MV49(0-1')	PCB-1248	8.1	ug/Kg	U
MV49(0-1')	PCB-1254	8.1	ug/Kg	U
MV49(0-1')	PCB-1260	12	ug/Kg	U
MV50(0-1')	PCB-1016	12	ug/Kg	U
MV50(0-1')	PCB-1221	8.1	ug/Kg	U
MV50(0-1')	PCB-1232	17	ug/Kg	U
MV50(0-1')	PCB-1242	12	ug/Kg	U
MV50(0-1')	PCB-1248	7.8	ug/Kg	U
MV50(0-1')	PCB-1254	7.8	ug/Kg	U
MV50(0-1')	PCB-1260	12	ug/Kg	U
MV51(0-1')	PCB-1016	10	ug/Kg	U
MV51(0-1')	PCB-1221	7.0	ug/Kg	U
MV51(0-1')	PCB-1232	15	ug/Kg	U
MV51(0-1')	PCB-1242	10	ug/Kg	U
MV51(0-1')	PCB-1248	6.7	ug/Kg	U
MV51(0-1')	PCB-1254	6.7	ug/Kg	U
MV51(0-1')	PCB-1260	10	ug/Kg	U
MV52(0-1')	PCB-1016	14	ug/Kg	U
MV52(0-1')	PCB-1221	9.5	ug/Kg	U
MV52(0-1')	PCB-1232	20	ug/Kg	U
MV52(0-1')	PCB-1242	14	ug/Kg	U
MV52(0-1')	PCB-1248	9.1	ug/Kg	U
MV52(0-1')	PCB-1254	9.1	ug/Kg	U

Table 17 (Continued)
PCBs in Shallow Soil Analytical Results (EPA Method 8080 modified Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV52(0-1')	PCB-1260	14	ug/Kg	U
MV53(0-1')	PCB-1016	10	ug/Kg	U
MV53(0-1')	PCB-1221	7.2	ug/Kg	U
MV53(0-1')	PCB-1232	15	ug/Kg	U
MV53(0-1')	PCB-1242	10	ug/Kg	U
MV53(0-1')	PCB-1248	6.8	ug/Kg	U
MV53(0-1')	PCB-1254	6.8	ug/Kg	U
MV53(0-1')	PCB-1260	10	ug/Kg	U
MV54(0-1')	PCB-1016	11	ug/Kg	U
MV54(0-1')	PCB-1221	8	ug/Kg	U
MV54(0-1')	PCB-1232	17	ug/Kg	U
MV54(0-1')	PCB-1242	11	ug/Kg	U
MV54(0-1')	PCB-1248	7.6	ug/Kg	U
MV54(0-1')	PCB-1254	7.6	ug/Kg	U
MV54(0-1')	PCB-1260	11	ug/Kg	U
06/2002 sample event			ug/Kg	U
MV18(surface scrape)	PCB-1016	11	ug/Kg	U
MV18(surface scrape)	PCB-1221	7.6	ug/Kg	U
MV18(surface scrape)	PCB-1232	17	ug/Kg	U
MV18(surface scrape)	PCB-1242	11	ug/Kg	U
MV18(surface scrape)	PCB-1248	7.6	ug/Kg	U
MV18(surface scrape)	PCB-1254	7.6	ug/Kg	U
MV18(surface scrape)	PCB-1260	43	ug/Kg	I
MV42(surface scrape)	PCB-1016	11	ug/Kg	U
MV42(surface scrape)	PCB-1221	7.4	ug/Kg	U
MV42(surface scrape)	PCB-1232	17	ug/Kg	U
MV42(surface scrape)	PCB-1242	11	ug/Kg	U
MV42(surface scrape)	PCB-1248	7.4	ug/Kg	U
MV42(surface scrape)	PCB-1254	7.4	ug/Kg	U
MV42(surface scrape)	PCB-1260	120	ug/Kg	

T: Value reported is less than the criterion of detection.

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is in between the laboratory method detection limit and the laboratory practical quantitation limit.

ug/kg: Micrograms per kilogram.

Table 18
PCBs in Deep Soil Analytical Results (EPA Method 8080 modified Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
04/2002 sample event				
MV19A(2-3')	PCB-1016	14	ug/Kg	U
MV19A(2-3')	PCB-1221	10	ug/Kg	U
MV19A(2-3')	PCB-1232	22	ug/Kg	U
MV19A(2-3')	PCB-1242	14	ug/Kg	U
MV19A(2-3')	PCB-1248	9.6	ug/Kg	U
MV19A(2-3')	PCB-1254	9.6	ug/Kg	U
MV19A(2-3')	PCB-1260	56	ug/Kg	
MV36A(2-3')	PCB-1016	15	ug/Kg	U
MV36A(2-3')	PCB-1221	11	ug/Kg	U
MV36A(2-3')	PCB-1232	23	ug/Kg	U
MV36A(2-3')	PCB-1242	15	ug/Kg	U
MV36A(2-3')	PCB-1248	10	ug/Kg	U
MV36A(2-3')	PCB-1254	10	ug/Kg	U
MV36A(2-3')	PCB-1260	39	ug/Kg	I
MV37(2-3')	PCB-1016	13	ug/Kg	U
MV37(2-3')	PCB-1221	8.9	ug/Kg	U
MV37(2-3')	PCB-1232	19	ug/Kg	U
MV37(2-3')	PCB-1242	13	ug/Kg	U
MV37(2-3')	PCB-1248	8.5	ug/Kg	U
MV37(2-3')	PCB-1254	8.5	ug/Kg	U
MV37(2-3')	PCB-1260	50	ug/Kg	I
MV38(1.5-2.5')	PCB-1016	15	ug/Kg	U
MV38(1.5-2.5')	PCB-1221	10	ug/Kg	U
MV38(1.5-2.5')	PCB-1232	22	ug/Kg	U
MV38(1.5-2.5')	PCB-1242	15	ug/Kg	U
MV38(1.5-2.5')	PCB-1248	9.9	ug/Kg	U
MV38(1.5-2.5')	PCB-1254	9.9	ug/Kg	U
MV38(1.5-2.5')	PCB-1260	36	ug/Kg	I
MV39(2-3')	PCB-1016	14	ug/Kg	U
MV39(2-3')	PCB-1221	10	ug/Kg	U
MV39(2-3')	PCB-1232	21	ug/Kg	U
MV39(2-3')	PCB-1242	14	ug/Kg	U
MV39(2-3')	PCB-1248	9.5	ug/Kg	U
MV39(2-3')	PCB-1254	9.5	ug/Kg	U
MV39(2-3')	PCB-1260	27	ug/Kg	U
MV40(3-4')	PCB-1016	23	ug/Kg	U
MV40(3-4')	PCB-1221	16	ug/Kg	U
MV40(3-4')	PCB-1232	35	ug/Kg	U
MV40(3-4')	PCB-1242	23	ug/Kg	U
MV40(3-4')	PCB-1248	16	ug/Kg	U
MV40(3-4')	PCB-1254	16	ug/Kg	U
MV40(3-4')	PCB-1260	50	ug/Kg	J

Table 18 (Continued)
PCBs in Deep Soil Analytical Results (EPA Method 8080 modified Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV41(2-3')	PCB-1016	11	ug/Kg	U
MV41(2-3')	PCB-1221	8.0	ug/Kg	U
MV41(2-3')	PCB-1232	17	ug/Kg	U
MV41(2-3')	PCB-1242	11	ug/Kg	U
MV41(2-3')	PCB-1248	7.6	ug/Kg	U
MV41(2-3')	PCB-1254	7.6	ug/Kg	U
MV41(2-3')	PCB-1260	96	ug/Kg	
MV42(2-3')	PCB-1016	44	ug/Kg	I
MV42(2-3')	PCB-1221	11	ug/Kg	U
MV42(2-3')	PCB-1232	24	ug/Kg	U
MV42(2-3')	PCB-1242	16	ug/Kg	U
MV42(2-3')	PCB-1248	11	ug/Kg	U
MV42(2-3')	PCB-1254	11	ug/Kg	U
MV42(2-3')	PCB-1260	1300	ug/Kg	
MV44(1-2')	PCB-1016	15	ug/Kg	U
MV44(1-2')	PCB-1221	10	ug/Kg	U
MV44(1-2')	PCB-1232	22	ug/Kg	U
MV44(1-2')	PCB-1242	15	ug/Kg	U
MV44(1-2')	PCB-1248	9.7	ug/Kg	U
MV44(1-2')	PCB-1254	9.7	ug/Kg	U
MV44(1-2')	PCB-1260	84	ug/Kg	
MV45(3-4')	PCB-1016	13	ug/Kg	U
MV45(3-4')	PCB-1221	9.0	ug/Kg	U
MV45(3-4')	PCB-1232	19	ug/Kg	U
MV45(3-4')	PCB-1242	13	ug/Kg	U
MV45(3-4')	PCB-1248	8.6	ug/Kg	U
MV45(3-4')	PCB-1254	8.6	ug/Kg	U
MV45(3-4')	PCB-1260	13	ug/Kg	U
MV46(1-2')	PCB-1016	13	ug/Kg	U
MV46(1-2')	PCB-1221	9.3	ug/Kg	U
MV46(1-2')	PCB-1232	20	ug/Kg	U
MV46(1-2')	PCB-1242	13	ug/Kg	U
MV46(1-2')	PCB-1248	8.9	ug/Kg	U
MV46(1-2')	PCB-1254	8.9	ug/Kg	U
MV46(1-2')	PCB-1260	95	ug/Kg	
MV47(1-2')	PCB-1016	14	ug/Kg	U
MV47(1-2')	PCB-1221	9.8	ug/Kg	U
MV47(1-2')	PCB-1232	21	ug/Kg	U
MV47(1-2')	PCB-1242	14	ug/Kg	U
MV47(1-2')	PCB-1248	9.3	ug/Kg	U
MV47(1-2')	PCB-1254	9.3	ug/Kg	U
MV47(1-2')	PCB-1260	14	ug/Kg	U

Table 18 (Continued)
PCBs in Deep Soil Analytical Results (EPA Method 8080 modified Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
06/2002 sample event				
MV3(2.5-3.5')	PCB-1016	13	ug/Kg	U
MV3(2.5-3.5')	PCB-1221	8.8	ug/Kg	U
MV3(2.5-3.5')	PCB-1232	20	ug/Kg	U
MV3(2.5-3.5')	PCB-1242	13	ug/Kg	U
MV3(2.5-3.5')	PCB-1248	8.8	ug/Kg	U
MV3(2.5-3.5')	PCB-1254	8.8	ug/Kg	U
MV3(2.5-3.5')	PCB-1260	13	ug/Kg	U
MV6(2.5-3.5')	PCB-1016	17	ug/Kg	U
MV6(2.5-3.5')	PCB-1221	11	ug/Kg	U
MV6(2.5-3.5')	PCB-1232	25	ug/Kg	U
MV6(2.5-3.5')	PCB-1242	17	ug/Kg	U
MV6(2.5-3.5')	PCB-1248	11	ug/Kg	U
MV6(2.5-3.5')	PCB-1254	11	ug/Kg	U
MV6(2.5-3.5')	PCB-1260	6900	ug/Kg	
MV9(3-4')	PCB-1016	19	ug/Kg	U
MV9(3-4')	PCB-1221	12	ug/Kg	U
MV9(3-4')	PCB-1232	28	ug/Kg	U
MV9(3-4')	PCB-1242	19	ug/Kg	U
MV9(3-4')	PCB-1248	12	ug/Kg	U
MV9(3-4')	PCB-1254	12	ug/Kg	U
MV9(3-4')	PCB-1260	19	ug/Kg	U
MV12(2.5-3.5')	PCB-1016	24	ug/Kg	U
MV12(2.5-3.5')	PCB-1221	16	ug/Kg	U
MV12(2.5-3.5')	PCB-1232	35	ug/Kg	U
MV12(2.5-3.5')	PCB-1242	24	ug/Kg	U
MV12(2.5-3.5')	PCB-1248	16	ug/Kg	U
MV12(2.5-3.5')	PCB-1254	16	ug/Kg	U
MV12(2.5-3.5')	PCB-1260	43	ug/Kg	I
MV13(3-4')	PCB-1016	12	ug/Kg	U
MV13(3-4')	PCB-1221	8.1	ug/Kg	U
MV13(3-4')	PCB-1232	18	ug/Kg	U
MV13(3-4')	PCB-1242	12	ug/Kg	U
MV13(3-4')	PCB-1248	8.1	ug/Kg	U
MV13(3-4')	PCB-1254	8.1	ug/Kg	U
MV13(3-4')	PCB-1260	12	ug/Kg	U
MV14(3-4')	PCB-1016	12	ug/Kg	U
MV14(3-4')	PCB-1221	8.0	ug/Kg	U
MV14(3-4')	PCB-1232	18	ug/Kg	U
MV14(3-4')	PCB-1242	12	ug/Kg	U
MV14(3-4')	PCB-1248	8.0	ug/Kg	U
MV14(3-4')	PCB-1254	8.0	ug/Kg	U
MV14(3-4')	PCB-1260	12	ug/Kg	U

Table 18 (Continued)
PCBs in Deep Soil Analytical Results (EPA Method 8080 modified Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV15(3-4')	PCB-1016	16	ug/Kg	U
MV15(3-4')	PCB-1221	10	ug/Kg	U
MV15(3-4')	PCB-1232	24	ug/Kg	U
MV15(3-4')	PCB-1242	16	ug/Kg	U
MV15(3-4')	PCB-1248	10	ug/Kg	U
MV15(3-4')	PCB-1254	10	ug/Kg	U
MV15(3-4')	PCB-1260	27	ug/Kg	I
MV16(2-3')	PCB-1016	15	ug/Kg	U
MV16(2-3')	PCB-1221	10	ug/Kg	U
MV16(2-3')	PCB-1232	23	ug/Kg	U
MV16(2-3')	PCB-1242	15	ug/Kg	U
MV16(2-3')	PCB-1248	10	ug/Kg	U
MV16(2-3')	PCB-1254	10	ug/Kg	U
MV16(2-3')	PCB-1260	15	ug/Kg	U
MV17(3-4')	PCB-1016	12	ug/Kg	U
MV17(3-4')	PCB-1221	8.2	ug/Kg	U
MV17(3-4')	PCB-1232	18	ug/Kg	U
MV17(3-4')	PCB-1242	12	ug/Kg	U
MV17(3-4')	PCB-1248	8.2	ug/Kg	U
MV17(3-4')	PCB-1254	8.2	ug/Kg	U
MV17(3-4')	PCB-1260	12	ug/Kg	U
MV20(3-4')	PCB-1016	12	ug/Kg	U
MV20(3-4')	PCB-1221	8.3	ug/Kg	U
MV20(3-4')	PCB-1232	19	ug/Kg	U
MV20(3-4')	PCB-1242	12	ug/Kg	U
MV20(3-4')	PCB-1248	8.4	ug/Kg	U
MV20(3-4')	PCB-1254	8.4	ug/Kg	U
MV20(3-4')	PCB-1260	12	ug/Kg	U
MV21(3-4')	PCB-1016	12	ug/Kg	U
MV21(3-4')	PCB-1221	8.4	ug/Kg	U
MV21(3-4')	PCB-1232	19	ug/Kg	U
MV21(3-4')	PCB-1242	12	ug/Kg	U
MV21(3-4')	PCB-1248	8.4	ug/Kg	U
MV21(3-4')	PCB-1254	8.4	ug/Kg	U
MV21(3-4')	PCB-1260	28	ug/Kg	I
MV22(3.5-4.5')	PCB-1016	14	ug/Kg	U
MV22(3.5-4.5')	PCB-1221	9.2	ug/Kg	U
MV22(3.5-4.5')	PCB-1232	21	ug/Kg	U
MV22(3.5-4.5')	PCB-1242	14	ug/Kg	U
MV22(3.5-4.5')	PCB-1248	9.2	ug/Kg	U
MV22(3.5-4.5')	PCB-1254	9.2	ug/Kg	U
MV22(3.5-4.5')	PCB-1260	14	ug/Kg	U
MV23(3.5-4.5')	PCB-1016	10	ug/Kg	U

Table 18 (Continued)
PCBs in Deep Soil Analytical Results (EPA Method 8080 modified Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	Units	Remark
MV23(3.5-4.5')	PCB-1221	6.8	ug/Kg	U
MV23(3.5-4.5')	PCB-1232	15	ug/Kg	U
MV23(3.5-4.5')	PCB-1242	10	ug/Kg	U
MV23(3.5-4.5')	PCB-1248	6.8	ug/Kg	U
MV23(3.5-4.5')	PCB-1254	6.8	ug/Kg	U
MV23(3.5-4.5')	PCB-1260	10	ug/Kg	U
MV24(3-4')	PCB-1016	17	ug/Kg	U
MV24(3-4')	PCB-1221	11	ug/Kg	U
MV24(3-4')	PCB-1232	26	ug/Kg	U
MV24(3-4')	PCB-1242	17	ug/Kg	U
MV24(3-4')	PCB-1248	11	ug/Kg	U
MV24(3-4')	PCB-1254	11	ug/Kg	U
MV24(3-4')	PCB-1260	23	ug/Kg	I
MV25(3.5-4.5')	PCB-1016	12	ug/Kg	U
MV25(3.5-4.5')	PCB-1221	8.0	ug/Kg	U
MV25(3.5-4.5')	PCB-1232	18	ug/Kg	U
MV25(3.5-4.5')	PCB-1242	12	ug/Kg	U
MV25(3.5-4.5')	PCB-1248	8.0	ug/Kg	U
MV25(3.5-4.5')	PCB-1254	8.0	ug/Kg	U
MV25(3.5-4.5')	PCB-1260	12	ug/Kg	U
MV26(3.5-4.5')	PCB-1016	12	ug/Kg	U
MV26(3.5-4.5')	PCB-1221	7.8	ug/Kg	U
MV26(3.5-4.5')	PCB-1232	18	ug/Kg	U
MV26(3.5-4.5')	PCB-1242	12	ug/Kg	U
MV26(3.5-4.5')	PCB-1248	7.8	ug/Kg	U
MV26(3.5-4.5')	PCB-1254	7.8	ug/Kg	U
MV26(3.5-4.5')	PCB-1260	12	ug/Kg	U
MV29(3.5-4.5')	PCB-1016	14	ug/Kg	U
MV29(3.5-4.5')	PCB-1221	9.1	ug/Kg	U
MV29(3.5-4.5')	PCB-1232	21	ug/Kg	U
MV29(3.5-4.5')	PCB-1242	14	ug/Kg	U
MV29(3.5-4.5')	PCB-1248	9.1	ug/Kg	U
MV29(3.5-4.5')	PCB-1254	9.1	ug/Kg	U
MV29(3.5-4.5')	PCB-1260	14	ug/Kg	U
MV33(3.5-4.5')	PCB-1016	12	ug/Kg	U
MV33(3.5-4.5')	PCB-1221	8.0	ug/Kg	U
MV33(3.5-4.5')	PCB-1232	18	ug/Kg	U
MV33(3.5-4.5')	PCB-1242	12	ug/Kg	U
MV33(3.5-4.5')	PCB-1248	8.0	ug/Kg	U
MV33(3.5-4.5')	PCB-1254	8.0	ug/Kg	U
MV33(3.5-4.5')	PCB-1260	12	ug/Kg	U

Table 18 (Continued)
PCBs in Deep Soil Analytical Results (EPA Method 8080 modified Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

- T: Value reported is less than the criterion of detection.
U: Material was analyzed for but not detected; the value reported is the minimum detection limit.
I: The reported value is in between the laboratory method detection limit and the laboratory practical quantitation limit.
ug/kg: Micrograms per kilogram.

Table 19
Dioxins/Furans in Soil Analytical Results (EPA Method 8290)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

	MV38 (1.5-2.5')	MV42 (2-3')	MV44 (1-2')	MV47 (1-2')	MV48 (1-2')	MV52 (1-2')	Lab Blank
04/2002 sample event							
Compound (TEF)							
2,3,7,8-TCDD(1)	0.21 J	0.27 J	0.1 J	0.2 U	0.1 U	0.2 U	0.2 U
1,2,3,7,8-PeCDD(1)	0.63 J	0.84 J	0.1 U	0.2 U	0.09 U	0.2 U	0.2 U
1,2,3,4,7,8-HxCDD(0.1)	0.89 J	1.4 J	0.2 U	0.2 U	0.11 J	0.3 U	0.2 U
1,2,3,6,7,8-HxCDD(0.1)	3.8 J	2.6 J	1.1 J	0.2 U	0.44 J	0.3 U	0.2 U
1,2,3,7,8,9-HxCDD(0.1)	3.6 J	1.7 J	0.2 U	0.2 U	0.34 J	0.3 U	0.2 U
1,2,3,4,6,7,8-HpCDD(0.01)	63.2	7.6	18.7	0.90 J	10.1	1.8 J	0.3 U
OCDD(.0001)	179	68.1	73.2	8.2 JV	90.8	19.8	0.55 J
TEQ (Dioxins)	2.3189	1.7628	0.467	0.2398	0.2061	0.263	0.2312
Total Tetra-Dioxins	6	0.27	3.2	0.18	0.37	0.2 U	0.2 U
Total Penta-Dioxins	4.4	0.84	1.7	0.44	1.2	0.99	0.53
Total Hexa-Dioxins	29.1	5.7	4.1	0.44	6.6	0.76	0.26
Total Hepta-Dioxins	109	15.7	33.3	2.6	57	14.9	0.3 U
2,3,7,8-TCDF(0.1)	0.61 J	1.5	1.9	0.41 J	0.30 U	0.65 J	0.1 U
1,2,3,7,8-PeCDF(0.05)	0.24 J	0.75 J	0.1 U	0.1 U	0.07 U	0.2 U	0.1 U
2,3,4,7,8-PeCDF(0.5)	0.23 J	1.6 J	0.40 J	0.1 U	0.07 U	0.2 U	0.1 U
1,2,3,4,7,8-HxCDF(0.1)	0.22 J	2.2 J	0.71 J	0.1 U	0.23 J	0.2 U	0.1 U
1,2,3,6,7,8-HxCDF(0.1)	0.06 U	1.6 J	0.2 U	0.1 U	0.08 U	0.2 U	0.1 U
2,3,4,6,7,8-HxCDF(0.1)	0.07 U	2.4 J	0.2 U	0.2 U	0.09 U	0.2 U	0.1 U
1,2,3,7,8,9-HxCDF(0.1)	0.09 U	1.3 J	0.2 U	0.2 U	0.1 U	0.3 U	0.2 U
1,2,3,4,6,7,8-HpCDF(0.01)	0.65 J	4.1 J	1.1 J	0.28 J	1.2 J	2.1 J	0.2 U
1,2,3,4,7,8,9-HpCDF(0.01)	0.1 U	2.5 J	0.4 U	0.3 U	0.2 U	0.4 U	0.2 U
OCDF(0.0001)	0.64 J	10.2	1.1 U	0.7	4.4 J	0.85 J	0.4 U
TEQ (Furans)	0.2281	1.8035	0.5066	0.0929	0.0842	0.1761	0 ²
Total Tetra-Furans	0.61	4.5	8.2	0.63	0.6	0.53	0.3 U
Total Penta-Furans	0.37	5.8	3.6	0.1 U	0.16	0.21	0.14
Total Hexa-Furans	0.43	10.5	2.3	0.2 U	1.2	0.33	0.1 U
Total Hepta-Furans	1.2	6.7	1.9	0.28	3.2	3	0.2 U
Total 2,3,7,8-TCDD TEQ¹	2.547	3.567	0.981	0.333	0.378	0.439	0.231

Table 19 (Continued)
Dioxins/Furans in Soil Analytical Results (EPA Method 8290)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Concentrations of congeners are presented in picograms per Gram (parts per trillion or ppt).

J: Estimated value.
 U: Material was analyzed for but not detected. The value reported is the minimum detection limit.

TCDD:	Tetrachlorodibenzo-p-dioxin	TCDF:	Tetrachlorodibenzofuran
PeCDD:	Pentachlorodibenzo-p-dioxin	PeCDF:	Pentachlorodibenzofuran
HxCDD:	Hexachlorodibenzo-p-dioxin	HxCDF:	Hexachlorodibenzofuran
HpCDD:	Heptachlorodibenzo-p-dioxin	HpCDF:	Heptachlorodibenzofuran
OCDD:	Octachlorodibenzo-p-dioxin	OCDF:	Octachlorodibenzofuran

TEF: Toxicity Equivalence Factor

TEQ: 2,3,7,8-TCDD Toxicity Equivalence = Sum(concentration x TEF). Congeners not detected are assumed to be present at one-half of their minimum detection limit if another congener is present.

TEQ unit is presented as pg TEQ/G.

Total 2,3,7,8-TCDD TEQ: TEQ (Dioxins) + TEQ (Furans)

1. TEQ calculations includes the MDL (method detection limit) of all congeners at ½ the reported value per EPA reporting guidelines. Total hexa-dioxin and/or furan results were used instead of individual hexa-dioxin and furan congeners results for calculating TEQs in samples MV38, MV47, MV52 and the lab blank.
2. A TEQ value for furans in the Lab Blank sample was assigned a 0 since no furans were reported above the MDL in that particular sample.

Table 20
Ground Water and Surface Water Parameters
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Well ID	Sample Date	pH (Standard Units)	Specific Conductivity (MicroSiemen per meter)	Temperature (Degrees Centigrade)	Dissolved Oxygen	Turbidity (NTUs) Unfiltered/ Filtered
DEP1	08/14/2001 10/15/2001	6.34 6.43	449 244	28.13 25.57	10.9 % 1.08 mg/L (13.3%)	52.1/39.5 19.9/NC
DEP2	08/14/2001 10/15/2001	6.41 6.60	2456 2615	27.68 28.83	2.4 % 0.34 mg/L	86.7/72.8 75.6/14.6
DEP3	08/14/2001 10/15/2001	6.04 6.73	142 177	28.01 27.86	8.9 % 3.70 mg/L (47.1%)	32.4/NC 9.46/NC
DEP4	08/14/2001 10/15/2001	6.57 6.49	232 214	27.21 26.68	6.3 % 0.48 mg/L	37.6/23.9 9.25/NC
DEP5	08/15/2001 10/15/2001	6.61 6.65	1553 1505	24.88 27.92	7.8 % 1.03 mg/L (13.2%)	3.35/NC 1.07/NC
DEP6	08/15/2001 10/16/2001	6.30 6.24	561 517	26.12 22.64	11.1 % 0.62 mg/L (7.2%)	98.5/83.7 74.1/68.3
DEP7	08/15/2001 10/16/2001	6.30 6.44	1048 1083	25.47 24.22	8.5 % 4.24 mg/L	25.7/24.1 8.79/NC
DEP8	08/15/2001 10/16/2001	6.89 6.91	6908 7319	30.59 22.99	0.4 % 0.41 mg/L	28.2/18.4 19.0/NC
DEP9	08/15/2001 10/16/2001	6.10 6.48	417 299	27.81 25.25	9.9 % 0.72 mg/L (8.8%)	11.1 4.55/NC
DEP10	08/15/2001 10/16/2001	5.98 6.13	987 982	29.15 27.52	33.1 % 4.00 mg/L (50.9%)	189/143 72.7/55.9
DEP11	08/15/2001 10/16/2001	6.17 6.37	142 138	30.49 28.15	1.0 % 2.34 mg/L	27.6/27.1 7.34/NC
SW1	10/15/2001	7.31	561	25.66	7.11 mg/L	3.32/NC
309 Avenue E	08/13/2001	5.65	104	22.63	0.10 mg/L	7.29/NC
314 Avenue F	08/13/2001	7.14	180	25.85	0.08 mg/L	2.24/NC
256 Avenue B	08/14/2001	6.71	423	23.85	3.36 %	4.99/NC
280 Avenue D	08/14/2001	6.39	507	23.68	65.1 %	2.36/NC
318 Avenue E	08/14/2001	6.24	180	22.76	41.9 %	4.44/NC
502 Peters Street	08/15/2001	4.70	66	24.17	25.2 %	4.91/NC

NC: Not collected.

Table 21
Summary of Water Sample Analysis Performed
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Sample I.D.	Metals: EPA Methods 200.7/6010B: Ca, Fe, Mg, Mn, K, Na	Metals: EPA Methods 200.7/6010B: As, Cd, Ni; 245.1: Hg; 200.8/6020: Pb	Chloride and Sulfate: EPA Method 300.0	Sulfide: EPA Method 376.2	VOCs: EPA Method 624/8260	SVOCs including PAHs: EPA Method 8270	Alkalinity: EPA Method 310.1	Dioxins/Furans EPA Method 1613
DEP1	x	x	x	x	x	x	x	
DEP2	x	x	x	x	x	x	x	x
DEP3	x	x	x	x	x	x	x	
DEP4	x	x	x	x	x	x	x	
DEP5	x	x	x	x	x	x	x	x
DEP6	x	x	x	x	x	x	x	
DEP7	x	x	x	x	x	x	x	x
DEP8	x	x	x	x	x	x	x	x
DEP9	x	x	x	x	x	x	x	
DEP10	x	x	x	x	x	x	x	
DEP11	x	x	x	x	x	x	x	
SW1	x	x	x	x	x	x	x	x
309 Avenue E		x			x			
256 Avenue B		x			x			
280 Avenue D		x			x			
318 Avenue E		x			x			
502 Peters Street		x			x			
314 Avenue F		x			x			

As: Arsenic; Ba: Barium; Ca: Calcium; Cd: Cadmium; Fe: Iron; Hg: Mercury; K: Potassium; Mg: Magnesium; Mn: Manganese; Na: Sodium; Ni: Nickel; Pb: Lead.

VOCs: Volatile organic compounds.

SVOCs: Semivolatile organic compounds including polycyclic aromatic hydrocarbons (PAHs).

PCBs: Polychlorinated biphenyls.

Table 22
Mercury in Water Analytical Results (EPA Method 200.8/6020 Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
Equip Blank#1	Mercury	0.1	0.1	ug/L	U
Equip Blank#2	Mercury	0.1	0.1	ug/L	U
Equip Blank#3	Mercury	0.1	0.1	ug/L	U
Equip Blank#4	Mercury	0.1	0.1	ug/L	U
Equip Blank#5	Mercury	0.1	0.1	ug/L	U
Equip Blank#6	Mercury	0.1	0.1	ug/L	U
08/2001 sample event					
DEP1 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP2 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP3 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP4 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP5	Mercury	0.1	0.1	ug/L	U
DEP6 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP7 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP8 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP8	Mercury	0.14	0.1	ug/L	I
DEP9	Mercury	0.1	0.1	ug/L	U
DEP9 Dup	Mercury	0.1	0.1	ug/L	U
DEP10	Mercury	0.1	0.1	ug/L	U
DEP11 (Filtered)	Mercury	0.1	0.1	ug/L	U
DEP11	Mercury	0.1	0.1	ug/L	U
256 Avenue B	Mercury	0.1	0.1	ug/L	U
256 Avenue B Dup	Mercury	0.1	0.1	ug/L	U
280 Avenue D	Mercury	0.1	0.1	ug/L	U
309 Avenue E	Mercury	0.1	0.1	ug/L	U
314 Avenue F	Mercury	0.1	0.1	ug/L	U
318 Avenue E	Mercury	0.1	0.1	ug/L	U
502 Peters Street	Mercury	0.1	0.1	ug/L	U
Equip Blank#7	Mercury	0.1	0.1	ug/L	U
Equip Blank#8	Mercury	0.1	0.1	ug/L	U
Field Blank#1	Mercury	0.1	0.1	ug/L	U
04/2002 sample event					
Equip Blank#10	Mercury	0.1	0.1	ug/L	U
Field Blank#3	Mercury	0.1	0.1	ug/L	U

Results are presented in micrograms per Liter (ug/L).

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Note: Filtered samples were also digested.

Table 23
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
06/2001 sample event					
Equip Blank#1	Arsenic	1.0	1.0	ug/L	U
Equip Blank#1	Cadmium	0.025	0.025	ug/L	U
Equip Blank#1	Lead	0.25	0.25	ug/L	U
Equip Blank#1	Nickel	0.20	0.20	ug/L	U
Equip Blank#2	Arsenic	1.0	1.0	ug/L	U
Equip Blank#2	Cadmium	0.025	0.025	ug/L	U
Equip Blank#2	Lead	0.25	0.25	ug/L	U
Equip Blank#2	Nickel	0.20	0.20	ug/L	U
Equip Blank#3	Arsenic	1.0	1.0	ug/L	U
Equip Blank#3	Cadmium	0.025	0.025	ug/L	U
Equip Blank#3	Lead	0.25	0.25	ug/L	U
Equip Blank#3	Nickel	0.24		ug/L	I
Equip Blank#4	Arsenic	1.0	1.0	ug/L	U
Equip Blank#4	Cadmium	0.025	0.025	ug/L	U
Equip Blank#4	Lead	0.25	0.25	ug/L	U
Equip Blank#4	Nickel	0.20	0.20	ug/L	U
Equip Blank#5	Arsenic	1.0	1.0	ug/L	U
Equip Blank#5	Cadmium	0.025	0.025	ug/L	U
Equip Blank#5	Lead	0.32		ug/L	I
Equip Blank#5	Nickel	0.20	0.20	ug/L	U
Equip Blank#6	Arsenic	1.0	1.0	ug/L	U
Equip Blank#6	Cadmium	0.025	0.025	ug/L	U
Equip Blank#6	Lead	0.25	0.25	ug/L	U
Equip Blank#6	Nickel	0.20	0.20	ug/L	U
08/2001 sample event					
Equip Blank#7	Arsenic	9	9	ug/L	U
Equip Blank#7	Cadmium	1	1	ug/L	U
Equip Blank#7	Lead	0.25	0.25	ug/L	U
Equip Blank#7	Nickel	2	2	ug/L	U
Equip Blank#8	Arsenic	9	9	ug/L	U
Equip Blank#8	Cadmium	1	1	ug/L	U
Equip Blank#8	Lead	0.25	0.25	ug/L	U
Equip Blank#8	Nickel	2	2	ug/L	U
Field Blank#1	Arsenic	9	9	ug/L	U
Field Blank#1	Cadmium	1	1	ug/L	U
Field Blank#1	Lead	0.25	0.25	ug/L	U
Field Blank#1	Nickel	2	2	ug/L	U
DEP1 (Filtered)	Arsenic	9	9	ug/L	U
DEP1 (Filtered)	Cadmium	1	1	ug/L	U
DEP1 (Filtered)	Lead	0.41	0.25	ug/L	I
DEP1 (Filtered)	Nickel	2	2	ug/L	U
DEP2 (Filtered)	Arsenic	9	9	ug/L	U

Table 23 (Continued)
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP2 (Filtered)	Cadmium	1.4	1	ug/L	I
DEP2 (Filtered)	Lead	11.1	0.25	ug/L	
DEP2 (Filtered)	Nickel	22.1	2	ug/L	
DEP3 (Filtered)	Arsenic	9	9	ug/L	U
DEP3 (Filtered)	Cadmium	1	1	ug/L	U
DEP3 (Filtered)	Lead	0.36	0.25	ug/L	I
DEP3 (Filtered)	Nickel	14.1	2	ug/L	
DEP4 (Filtered)	Arsenic	9	9	ug/L	U
DEP4 (Filtered)	Cadmium	1	1	ug/L	U
DEP4 (Filtered)	Lead	0.6	0.25	ug/L	I
DEP4 (Filtered)	Nickel	3.7	2	ug/L	I
DEP5	Arsenic	9	9	ug/L	U
DEP5	Cadmium	2.3	1	ug/L	I
DEP5	Lead	0.26	0.25	ug/L	I
DEP5	Nickel	12.7	2	ug/L	
DEP6 (Filtered)	Arsenic	9	9	ug/L	U
DEP6 (Filtered)	Cadmium	1.1	1	ug/L	I
DEP6 (Filtered)	Lead	0.77	0.25	ug/L	I
DEP6 (Filtered)	Nickel	2.2	2	ug/L	I
DEP7 (Filtered)	Arsenic	9	9	ug/L	U
DEP7 (Filtered)	Cadmium	1.2	1	ug/L	I
DEP7 (Filtered)	Lead	0.5	0.25	ug/L	I
DEP7 (Filtered)	Nickel	4.2	2	ug/L	I
DEP8	Arsenic	9	9	ug/L	U
DEP8	Cadmium	2.4	1	ug/L	I
DEP8	Lead	3.38	0.25	ug/L	
DEP8	Nickel	34.4	2	ug/L	
DEP8 (Filtered)	Arsenic	9	9	ug/L	U
DEP8 (Filtered)	Cadmium	2.2	1	ug/L	I
DEP8 (Filtered)	Lead	1.82	0.25	ug/L	
DEP8 (Filtered)	Nickel	31	2	ug/L	
DEP9	Arsenic	9	9	ug/L	U
DEP9	Cadmium	1.1	1	ug/L	I
DEP9	Lead	0.29	0.25	ug/L	I
DEP9	Nickel	15.2	2	ug/L	
DEP9 Dup	Arsenic	9	9	ug/L	U
DEP9 Dup	Cadmium	1.4	1	ug/L	I
DEP9 Dup	Lead	0.29	0.25	ug/L	I
DEP9 Dup	Nickel	13.7	2	ug/L	
DEP10 (Filtered)	Arsenic	9	9	ug/L	U
DEP10 (Filtered)	Cadmium	1.1	1	ug/L	I
DEP10 (Filtered)	Lead	3.7	0.25	ug/L	
DEP10 (Filtered)	Nickel	6.4	2	ug/L	I

Table 23 (Continued)
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP11	Arsenic	9	9	ug/L	U
DEP11	Cadmium	1	1	ug/L	U
DEP11	Lead	0.47	0.25	ug/L	I
DEP11	Nickel	3.4	2	ug/L	I
DEP11 (Filtered)	Arsenic	9	9	ug/L	U
DEP11 (Filtered)	Cadmium	1	1	ug/L	U
DEP11 (Filtered)	Lead	0.64	0.25	ug/L	I
DEP11 (Filtered)	Nickel	2.8	2	ug/L	I
256 Avenue B	Arsenic	9	9	ug/L	U
256 Avenue B	Lead	2.27		ug/L	
256 Avenue B	Cadmium	1.2	1	ug/L	I
256 Avenue B	Nickel	2	2	ug/L	U
256 Avenue B Dup	Arsenic	9	9	ug/L	U
256 Avenue B Dup	Lead	2.33	0.25	ug/L	
256 Avenue B Dup	Cadmium	1.8	1	ug/L	I
256 Avenue B Dup	Nickel	2	2	ug/L	U
280 Avenue D	Arsenic	9	9	ug/L	U
280 Avenue D	Cadmium	1	1	ug/L	U
280 Avenue D	Lead	0.49	0.25	ug/L	I
280 Avenue D	Nickel	2	2	ug/L	U
309 Avenue E	Arsenic	9	9	ug/L	U
309 Avenue E	Cadmium	1	1	ug/L	U
309 Avenue E	Lead	4.18	0.25	ug/L	
309 Avenue E	Nickel	2	2	ug/L	U
314 Avenue F	Arsenic	9	9	ug/L	U
314 Avenue F	Cadmium	1	1	ug/L	U
314 Avenue F	Lead	0.25	0.25	ug/L	U
314 Avenue F	Nickel	2	2	ug/L	U
318 Avenue E	Arsenic	9	9	ug/L	U
318 Avenue E	Cadmium	1	1	ug/L	U
318 Avenue E	Lead	0.62	0.25	ug/L	I
318 Avenue E	Nickel	2	2	ug/L	U
502 Peters Street	Arsenic	9	9	ug/L	U
502 Peters Street	Cadmium	1	1	ug/L	U
502 Peters Street	Lead	109	0.5	ug/L	
502 Peters Street	Nickel	2	2	ug/L	U
10/2001 sample event					
DEP1	Calcium	21.4		mg/L	
DEP1	Iron	4780		ug/L	
DEP1	Magnesium	9.8		mg/L	
DEP1	Manganese	27.5		ug/L	
DEP1	Potassium	1.8		mg/L	
DEP1	Sodium	7.4		mg/L	

Table 23 (Continued)
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP2	Calcium	4.14		mg/L	
DEP2	Iron	2060		ug/L	
DEP2	Magnesium	0.72		mg/L	
DEP2	Manganese	15.6		ug/L	
DEP2	Potassium	22.9		mg/L	
DEP2	Sodium	626		ug/L	
DEP2 (Filtered)	Calcium	4		mg/L	
DEP2 (Filtered)	Iron	1860		ug/L	
DEP2 (Filtered)	Magnesium	0.63		mg/L	
DEP2 (Filtered)	Manganese	14.6		ug/L	
DEP2 (Filtered)	Potassium	21.7		mg/L	
DEP2 (Filtered)	Sodium	637		mg/L	
DEP3	Calcium	26		mg/L	
DEP3	Iron	298		ug/L	
DEP3	Magnesium	3.6		mg/L	
DEP3	Manganese	0.82		ug/L	I
DEP3	Potassium	0.46		mg/L	
DEP3	Sodium	2.9		mg/L	
DEP4	Calcium	28.1		mg/L	
DEP4	Iron	654		ug/L	
DEP4	Magnesium	4.5		mg/L	
DEP4	Manganese	3.2		ug/L	
DEP4	Potassium	1.6		mg/L	
DEP4	Sodium	7.3		mg/L	
DEP4 Duplicate	Calcium	28		mg/L	
DEP4 Duplicate	Iron	619		ug/L	
DEP4 Duplicate	Magnesium	4.5		mg/L	
DEP4 Duplicate	Manganese	3		ug/L	
DEP4 Duplicate	Potassium	1.6		mg/L	
DEP4 Duplicate	Sodium	7.3		mg/L	
DEP5	Calcium	143		mg/L	
DEP5	Iron	827		ug/L	
DEP5	Magnesium	51.3		mg/L	
DEP5	Manganese	49.5		ug/L	
DEP5	Potassium	36.6		mg/L	
DEP5	Sodium	83.7		mg/L	
DEP6	Calcium	43.8		mg/L	AJ
DEP6	Iron	8750		ug/L	AJ
DEP6	Magnesium	5.9		mg/L	AJ
DEP6	Manganese	77.5		ug/L	AJ
DEP6	Potassium	5.7		mg/L	AJ
DEP6	Sodium	39.8		mg/L	AJ
DEP6 (Filtered)	Calcium	48.2		mg/L	

Table 23 (Continued)
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP6 (Filtered)	Iron	8910		ug/L	
DEP6 (Filtered)	Magnesium	6.5		mg/L	
DEP6 (Filtered)	Manganese	67.7		ug/L	
DEP6 (Filtered)	Potassium	6.4		mg/L	
DEP6 (Filtered)	Sodium	44.4		mg/L	
DEP7	Calcium	90.4		mg/L	
DEP7	Iron	1770		ug/L	
DEP7	Magnesium	7.5		mg/L	
DEP7	Manganese	18.8		ug/L	
DEP7	Potassium	4.1		mg/L	
DEP7	Sodium	149		mg/L	
DEP8	Calcium	212		mg/L	
DEP8	Iron	5790		ug/L	
DEP8	Magnesium	14.2		mg/L	
DEP8	Manganese	36.3		ug/L	
DEP8	Potassium	19.3		mg/L	
DEP8	Sodium	1900		mg/L	
DEP8 (Duplicate)	Calcium	219		mg/L	
DEP8 (Duplicate)	Iron	6060		ug/L	
DEP8 (Duplicate)	Magnesium	14.9		mg/L	
DEP8 (Duplicate)	Manganese	38.2		ug/L	
DEP8 (Duplicate)	Potassium	20		mg/L	
DEP8 (Duplicate)	Sodium	1980		mg/L	
DEP9	Calcium	39.9		mg/L	
DEP9	Iron	89		ug/L	I
DEP9	Magnesium	7.7		mg/L	
DEP9	Manganese	12.1		ug/L	
DEP9	Potassium	4		mg/L	
DEP9	Sodium	7.1		mg/L	
DEP10	Calcium	1.1		mg/L	
DEP10	Iron	4750		ug/L	
DEP10	Magnesium	0.66		mg/L	
DEP10	Manganese	37.9		ug/L	
DEP10	Potassium	36.1		mg/L	
DEP10	Sodium	210		mg/L	
DEP10 (Filtered)	Calcium	1.1		ug/L	
DEP10 (Filtered)	Iron	4350		ug/L	
DEP10 (Filtered)	Magnesium	0.56		mg/L	
DEP10 (Filtered)	Manganese	34.2		ug/L	
DEP10 (Filtered)	Potassium	34.4		mg/L	
DEP10 (Filtered)	Sodium	205		mg/L	
DEP11	Calcium	14.6		mg/L	
DEP11	Iron	1180		ug/L	

Table 23 (Continued)
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP11	Magnesium	3.3		mg/L	
DEP11	Manganese	5.1		ug/L	
DEP11	Potassium	0.56		mg/L	
DEP11	Sodium	4.7		mg/L	
SW1	Calcium	61.6		mg/L	
SW1	Iron	593		ug/L	
SW1	Magnesium	13.5		mg/L	
SW1	Manganese	40.4		ug/L	
SW1	Potassium	6.1		mg/L	
SW1	Sodium	32.6		mg/L	
Field Blank#2	Calcium	0.2		mg/L	U
Field Blank#2	Iron	7		ug/L	U
Field Blank#2	Magnesium	0.015		mg/L	U
Field Blank#2	Manganese	0.75		ug/L	U
Field Blank#2	Potassium	0.04		mg/L	U
Field Blank#2	Sodium	0.1		mg/L	U
Equip Blank#9	Calcium	0.2		mg/L	U
Equip Blank#9	Iron	7		ug/L	U
Equip Blank#9	Magnesium	0.015		mg/L	U
Equip Blank#9	Manganese	0.75		ug/L	U
Equip Blank#9	Potassium	0.04		mg/L	U
Equip Blank#9	Sodium	0.1		mg/L	U
04/2002 sample event					
Field Blank#3	Arsenic	3.0		ug/L	U
Field Blank#3	Barium	1.0		ug/L	U
Field Blank#3	Cadmium	0.50		ug/L	U
Field Blank#3	Lead	5.0		ug/L	U
Field Blank#3	Nickel	2.0		ug/L	U
Field Blank#3	Calcium	0.10		mg/L	U
Field Blank#3	Iron	25		ug/L	U
Field Blank#3	Magnesium	0.025		mg/L	U
Field Blank#3	Manganese	1.0		ug/L	U
Field Blank#3	Potassium	0.015		mg/L	U
Field Blank#3	Sodium	1.0		mg/L	U
Equipment Blank #10	Arsenic	3.0		ug/L	U
Equipment Blank #10	Barium	1.0		ug/L	U
Equipment Blank #10	Cadmium	0.50		ug/L	U
Equipment Blank #10	Lead	5.0		ug/L	U
Equipment Blank #10	Nickel	3.0		ug/L	U
Equipment Blank #10	Calcium	0.16		mg/L	I
Equipment Blank #10	Iron	48		ug/L	I
Equipment Blank #10	Magnesium	0.025		mg/L	U
Equipment Blank #10	Manganese	1.0		ug/L	U

Table 23 (Continued)
Metals in Water Analytical Results (EPA Method 200.7/6010B and 200.8/6020 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
Equipment Blank #10	Potassium	0.015		mg/L	U
Equipment Blank #10	Sodium	1.0		mg/L	U

Results are presented in micrograms per Liter (ug/L) and milligrams per Liter (mg/L).

A: Value reported is the mean of two or more determinations.

J: Estimated value.

I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

Note: Filtered samples were also digested.

Table 24
Inorganics (Other than Metals) in Water Analytical Results (EPA Method 300, 376.2, 310.1 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
10/2001 sample event					
DEP1	Alkalinity	70	1.0	mg CaCO3/L	Q
DEP1	Chloride	10	0.20	mg Cl/L	
DEP1	Sulfate	13	0.20	mg SO4/L	
DEP1	Sulfide	0.15	0.050	mg S/L	I
DEP2	Alkalinity	1480	1.0	mg CaCO3/L	Q
DEP2	Chloride	40	0.20	mg Cl/L	
DEP2	Sulfate	0.20	0.20	mg SO4/L	U
DEP2	Sulfide	0.14	0.050	mg S/L	I
DEP3	Alkalinity	67	0.65	mg CaCO3/L	
DEP3	Chloride	4.2	0.20	mg Cl/L	
DEP3	Sulfate	8.4	0.20	mg SO4/L	
DEP3	Sulfide	0.050	0.050	mg S/L	U
DEP4	Alkalinity	86	0.65	mg CaCO3/L	
DEP4	Chloride	9.0	0.20	mg Cl/L	
DEP4	Sulfate	9.1	0.20	mg SO4/L	
DEP4	Sulfide	0.20	0.050	mg S/L	I
DEP4 Duplicate	Alkalinity	86	0.65	mg CaCO3/L	
DEP4 Duplicate	Chloride	8.9	0.20	mg Cl/L	
DEP4 Duplicate	Sulfate	9.1	0.20	mg SO4/L	
DEP4 Duplicate	Sulfide	0.19	0.050	mg S/L	I
DEP5	Alkalinity	810	0.65	mg CaCO3/L	
DEP5	Chloride	28	2.0	mg Cl/L	
DEP5	Sulfate	8.0	2.0	mg SO4/L	
DEP5	Sulfide	2.6	0.050	mg S/L	
DEP6	Alkalinity	170	1.0	mg CaCO3/L	
DEP6	Chloride	23	0.40	mg Cl/L	
DEP6	Sulfate	32	0.40	mg SO4/L	
DEP6	Sulfide	0.22	0.050	mg S/L	
DEP7	Alkalinity	590	0.65	mg CaCO3/L	
DEP7	Chloride	18	1.0	mg Cl/L	
DEP7	Sulfate	0.25	0.20	mg SO4/L	I
DEP7	Sulfide	0.050	0.050	mg S/L	U
DEP8	Alkalinity	4680	1.0	mg CaCO3/L	
DEP8	Chloride	32	10	mg Cl/L	
DEP8	Sulfate	0.20	0.20	mg SO4/L	U
DEP8	Sulfide	1.0	1.0	mg S/L	U
DEP8 Duplicate	Alkalinity	4620	1.0	mg CaCO3/L	
DEP8 Duplicate	Chloride	32	10	mg Cl/L	
DEP8 Duplicate	Sulfate	0.34	0.20	mg SO4/L	I
DEP8 Duplicate	Sulfide	1.0	1.0	mg S/L	U
DEP9	Alkalinity	103	0.65	mg CaCO3/L	
DEP9	Chloride	10	0.20	mg Cl/L	

Table 24 (Continued)
Inorganics (Other than Metals) in Water Analytical Results (EPA Method 300, 376.2, 310.1 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP9	Sulfate	31	0.20	mg SO4/L	
DEP9	Sulfide	0.050	0.050	mg S/L	U
DEP10	Alkalinity	450	1.0	mg CaCO3/L	
DEP10	Chloride	22	1.0	mg Cl/L	
DEP10	Sulfate	0.27	0.20	mg SO4/L	I
DEP10	Sulfide	1.1	0.25	mg S/L	
DEP11	Alkalinity	36	0.65	mg CaCO3/L	
DEP11	Chloride	8.3	0.20	mg Cl/L	A
DEP11	Sulfate	6.8	0.20	mg SO4/L	A
DEP11	Sulfide	0.51	0.050	mg S/L	
SW1	Alkalinity	240	0.65	mg CaCO3/L	
SW1	Chloride	19	1.0	mg Cl/L	
SW1	Sulfate	31	1.0	mg SO4/L	
SW1	Sulfide	0.050	0.050	mg S/L	U
Equipment Blank #9	Alkalinity	137	0.65	mg CaCO3/L	
Equipment Blank #9	Chloride	3.4	0.20	mg Cl/L	
Equipment Blank #9	Sulfate	1.9	0.20	mg SO4/L	
Equipment Blank #9	Sulfide	0.050	0.050	mg S/L	U
Field Blank#2	Alkalinity	136	0.65	mg CaCO3/L	
Field Blank#2	Chloride	3.5	2.0	mg Cl/L	
Field Blank#2	Sulfate	2.0	2.0	mg SO4/L	
Field Blank#2	Sulfide	0.050	0.050	mg S/L	U

Results are presented in micrograms per Liter (ug/L).

A: Value reported is the mean of two or more determinations.

U: material was analyzed for but not detected; the value reported is the minimum detection limit.

I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Table 25
Volatile Organic Compounds in Water Analytical Results (EPA Method 624/8260 Analysis)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP1	1,1,1-Trichloroethane	0.2	0.2	ug/L	U
DEP1	1,1,2,2-Tetrachloroethane	0.2	0.2	ug/L	U
DEP1	1,1,2-Trichloroethane	0.2	0.2	ug/L	U
DEP1	1,1-Dichloroethane	0.2	0.2	ug/L	U
DEP1	1,1-Dichloroethene	0.2	0.2	ug/L	U
DEP1	1,2-Dichlorobenzene	0.2	0.2	ug/L	U
DEP1	1,2-Dichloroethane	0.2	0.2	ug/L	U
DEP1	1,2-Dichloropropane	0.2	0.2	ug/L	U
DEP1	1,3-Dichlorobenzene	0.2	0.2	ug/L	U
DEP1	1,4-Dichlorobenzene	0.2	0.2	ug/L	U
DEP1	2-Chloroethylvinyl ether	0.5	0.5	ug/L	U
DEP1	Benzene	0.5	0.5	ug/L	U
DEP1	Bromodichloromethane	0.2	0.2	ug/L	U
DEP1	Bromoform	0.2	0.2	ug/L	U
DEP1	Bromomethane	0.5	0.5	ug/L	U
DEP1	Carbon tetrachloride	0.2	0.2	ug/L	U
DEP1	Chlorobenzene	0.2	0.2	ug/L	U
DEP1	Chloroethane	0.5	0.5	ug/L	U
DEP1	Chloroform	0.2	0.2	ug/L	U
DEP1	Chloromethane	0.5	0.5	ug/L	U
DEP1	Dibromochloromethane	0.2	0.2	ug/L	U
DEP1	Ethylbenzene	0.5	0.5	ug/L	U
DEP1	Methylene chloride	0.5	0.5	ug/L	U
DEP1	Tetrachloroethene	0.2	0.2	ug/L	U
DEP1	Toluene	0.5	0.5	ug/L	U
DEP1	Trichloroethene	0.2	0.2	ug/L	U
DEP1	Trichlorofluoromethane	0.2	0.2	ug/L	U
DEP1	Vinyl chloride	0.5	0.5	ug/L	U
DEP1	cis-1,3-Dichloropropene	0.2	0.2	ug/L	U
DEP1	m,p-Xylene	0.5	0.5	ug/L	U
DEP1	o-Xylene	0.5	0.5	ug/L	U
DEP1	trans-1,2-Dichloroethene	0.2	0.2	ug/L	U
DEP1	trans-1,3-Dichloropropene	0.2	0.2	ug/L	U

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

ug/L: Micrograms per liter.

MDL: Minimum detection limit.

DEP1 results are presented in their entirety to display all compounds analyzed for by the FDEP Central Laboratory using the EPA Method 624/8260 analysis. No water samples collected by SIS during the Mill View assessment had reportable concentrations of volatile organic compounds.

Table 26
Semivolatile Organic Compounds in Water Analytical Results (EPA Method 8270)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP1	1,2,4,5-Tetrachlorobenzene	1	1	ug/L	U
DEP1	1,2,4-Trichlorobenzene	1	1	ug/L	U
DEP1	1,2-Dichlorobenzene	1	1	ug/L	U
DEP1	1,3,5-Trinitrobenzene	4.1	4.1	ug/L	U
DEP1	1,3-Dichlorobenzene	1	1	ug/L	U
DEP1	1,3-Dinitrobenzene	2.1	2.1	ug/L	U
DEP1	1,4-Dichlorobenzene	1	1	ug/L	U
DEP1	1,4-Naphthoquinone	21	21	ug/L	U
DEP1	1-Naphthylamine	10	10	ug/L	U
DEP1	2,3,4,6-Tetrachlorophenol	2.1	2.1	ug/L	U
DEP1	2,4,5-Trichlorophenol	1	1	ug/L	U
DEP1	2,4,6-Trichlorophenol	1	1	ug/L	U
DEP1	2,4-Dichlorophenol	1	1	ug/L	U
DEP1	2,4-Dimethylphenol	52	52	ug/L	U
DEP1	2,4-Dinitrophenol	15	15	ug/L	U
DEP1	2,4-Dinitrotoluene	1	1	ug/L	U
DEP1	2,6-Dichlorophenol	1	1	ug/L	U
DEP1	2,6-Dinitrotoluene	1	1	ug/L	U
DEP1	2-Acetylaminofluorene	1	1	ug/L	U
DEP1	2-Chloronaphthalene	1	1	ug/L	U
DEP1	2-Chlorophenol	1	1	ug/L	U
DEP1	2-Methyl-4,6-dinitrophenol	3.1	3.1	ug/L	U
DEP1	2-Methylnaphthalene	1	1	ug/L	U
DEP1	2-Naphthylamine	10	10	ug/L	U
DEP1	2-Nitroaniline	1	1	ug/L	U
DEP1	2-Nitrophenol	1	1	ug/L	U
DEP1	2-Picoline	1	1	ug/L	U
DEP1	3,3'-Dichlorobenzidine	41	41	ug/L	U
DEP1	3,3'-Dimethylbenzidine	21	21	ug/L	U
DEP1	3-Methylcholanthrene	1	1	ug/L	U
DEP1	3-Nitroaniline	1	1	ug/L	U
DEP1	4,4'-DDD	1.5	1.5	ug/L	U
DEP1	4,4'-DDE	1.5	1.5	ug/L	U
DEP1	4,4'-DDT	1.5	1.5	ug/L	U
DEP1	4-Aminobiphenyl	4.1	4.1	ug/L	U
DEP1	4-Bromophenyl phenyl ether	1	1	ug/L	U
DEP1	4-Chloro-3-methylphenol	1	1	ug/L	U

Table 26 (Continued)
Semivolatile Organic Compounds in Water Analytical Results (EPA Method 8270)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP1	4-Chloroaniline	1	1	ug/L	U
DEP1	4-Chlorophenyl phenyl ether	2.1	2.1	ug/L	U
DEP1	4-Nitroaniline	1	1	ug/L	U
DEP1	4-Nitrophenol	15	15	ug/L	U
DEP1	5-Nitro-o-toluidine	1	1	ug/L	U
DEP1	7,12-Dimethylbenz(a)anthracene	1	1	ug/L	U
DEP1	Acenaphthene	1	1	ug/L	U
DEP1	Acenaphthylene	1	1	ug/L	U
DEP1	Acetophenone	1	1	ug/L	U
DEP1	Aldrin	1.5	1.5	ug/L	U
DEP1	Aniline	1	1	ug/L	U
DEP1	Anthracene	1	1	ug/L	U
DEP1	Azobenzene/1,2-Diphenylhydrazine	1	1	ug/L	U
DEP1	Benzidine	100	100	ug/L	U
DEP1	Benzo(a)anthracene	1	1	ug/L	U
DEP1	Benzo(a)pyrene	1	1	ug/L	U
DEP1	Benzo(b)fluoranthene	1	1	ug/L	U
DEP1	Benzo(g,h,i)perylene	1	1	ug/L	U
DEP1	Benzo(k)fluoranthene	1	1	ug/L	U
DEP1	Benzyl alcohol	1	1	ug/L	U
DEP1	Bis(2-chloroethoxy)methane	1	1	ug/L	U
DEP1	Bis(2-chloroethyl)ether	1	1	ug/L	U
DEP1	Bis(2-chloroisopropyl)ether	3.1	3.1	ug/L	U
DEP1	Bis(2-ethylhexyl)phthalate	15	15	ug/L	U
DEP1	Butyl benzyl phthalate	5.2	5.2	ug/L	U
DEP1	Chrysene	1	1	ug/L	U
DEP1	Di-n-butyl phthalate	5.2	5.2	ug/L	U
DEP1	Di-n-octyl phthalate	1	1	ug/L	U
DEP1	Dibenzo(a,h)anthracene	1	1	ug/L	U
DEP1	Dibenzofuran	1	1	ug/L	U
DEP1	Dieldrin	1.5	1.5	ug/L	U
DEP1	Diethyl phthalate	1	1	ug/L	U
DEP1	Dimethyl phthalate	52	52	ug/L	U
DEP1	Dimethylaminoazobenzene	1	1	ug/L	U
DEP1	Dinoseb	4.1	4.1	ug/L	U
DEP1	Diphenylamine	3.1	3.1	ug/L	U

Table 26 (Continued)
Semivolatile Organic Compounds in Water Analytical Results (EPA Method 8270)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP1	Endosulfan I	4.1	4.1	ug/L	U
DEP1	Endosulfan II	4.1	4.1	ug/L	U
DEP1	Endosulfan sulfate	1.5	1.5	ug/L	U
DEP1	Endrin	1.5	1.5	ug/L	U
DEP1	Endrin aldehyde	4.1	4.1	ug/L	U
DEP1	Ethyl methanesulfonate	1	1	ug/L	U
DEP1	Fluoranthene	1	1	ug/L	U
DEP1	Fluorene	1	1	ug/L	U
DEP1	Heptachlor	1.5	1.5	ug/L	U
DEP1	Heptachlor epoxide	1.5	1.5	ug/L	U
DEP1	Hexachlorobenzene	1	1	ug/L	U
DEP1	Hexachlorobutadiene	3.1	3.1	ug/L	U
DEP1	Hexachlorocyclopentadiene	3.1	3.1	ug/L	U
DEP1	Hexachloroethane	3.1	3.1	ug/L	U
DEP1	Hexachloropropene	2.1	2.1	ug/L	U
DEP1	Indeno(1,2,3-cd)pyrene	1	1	ug/L	U
DEP1	Isophorone	1	1	ug/L	U
DEP1	Isosafrole	1	1	ug/L	U
DEP1	Methapyrilene	4.1	4.1	ug/L	U
DEP1	Methyl methanesulfonate	1	1	ug/L	U
DEP1	N-Nitrosodi-n-butylamine	1	1	ug/L	U
DEP1	N-Nitrosodi-n-propylamine	2.1	2.1	ug/L	U
DEP1	N-Nitrosodiethylamine	1	1	ug/L	U
DEP1	N-Nitrosodimethylamine	2.1	2.1	ug/L	U
DEP1	N-Nitrosodiphenylamine	3.1	3.1	ug/L	U
DEP1	N-Nitrosomethylethylamine	2.1	2.1	ug/L	U
DEP1	N-Nitrosomorpholine	1	1	ug/L	U
DEP1	N-Nitrosopiperidine	1	1	ug/L	U
DEP1	N-Nitrosopyrrolidine	2.1	2.1	ug/L	U
DEP1	Naphthalene	1	1	ug/L	U
DEP1	Nitrobenzene	2.1	2.1	ug/L	U
DEP1	Nitroquinoline-1-oxide	21	21	ug/L	U
DEP1	Pentachlorobenzene	1	1	ug/L	U
DEP1	Pentachloroethane	52	52	ug/L	U
DEP1	Pentachloronitrobenzene	1	1	ug/L	U
DEP1	Pentachlorophenol	3.1	3.1	ug/L	U
DEP1	Phenacetin	4.1	4.1	ug/L	U

Table 26 (Continued)
Semivolatile Organic Compounds in Water Analytical Results (EPA Method 8270)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Field ID	Component	Result	MDL	Units	Remark
DEP1	Phenanthrene	1	1	ug/L	U
DEP1	Phenol	1	1	ug/L	U
DEP1	Pyrene	1	1	ug/L	U
DEP1	Pyridine	4.1	4.1	ug/L	U
DEP1	Safrole	1	1	ug/L	U
DEP1	alpha-BHC	1.5	1.5	ug/L	U
DEP1	beta-BHC	1.5	1.5	ug/L	U
DEP1	delta-BHC	1.5	1.5	ug/L	U
DEP1	gamma-BHC	1.5	1.5	ug/L	U
DEP1	m,p-Cresols	2.1	2.1	ug/L	U
DEP1	o-Cresol	2.1	2.1	ug/L	U
DEP1	o-Toluidine	1	1	ug/L	U

U: Material was analyzed for but not detected; the value reported is the minimum detection limit.

ug/L: Micrograms per liter.

MDL: Minimum detection limit.

DEP1 results are presented in their entirety to display all compounds analyzed for by the FDEP Central Laboratory using the EPA Method 8270 analysis. No water samples collected by SIS during the Mill View assessment had reportable concentrations of semivolatile organic compounds.

Table 27
Dioxins/Furans in Water Analytical Results (EPA Method 1613)
Mill View Subdivision
Port St. Joe, Gulf County, Florida

	DEP2	DEP5	DEP7	DEP10	SW1	Lab blank	DEP8	Lab blank DEP8
Compound (TEF)								
2,3,7,8-TCDD(1)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.687 J
1,2,3,7,8-PeCDD(1)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.740 J
1,2,3,4,7,8-HxCDD(0.1)	0.742 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3,6,7,8-HxCDD(0.1)	0.5 U	0.5 U	0.5 U	0.5 U	0.774	0.5 U	0.5 U	0.621 J
1,2,3,7,8,9-HxCDD(0.1)	0.5 U	0.5 U	0.5 U	0.5 U	0.776 J	0.764	0.501 J	0.571
1,2,3,4,6,7,8-HpCDD(0.01)	3.13	1.13 J	0.873 J	3.92	13.2	1.03	5.56	1.27
OCDD(.0001)	34.6	4.55	3.76	55.2	93.7	3.81	33.1	3.51 J
TEQ (Dioxins)	0.659	0.5768	0.5741	0.6198	0.8214	0.6371	0.659	1.5843
Total Tetra-Dioxins	8.05	0.5 U	0.76	2.05	0.5 U	0.5 U	4.01	0.5 U
Total Penta-Dioxins	1.15	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total Hexa-Dioxins	2.05	0.5 U	0.5 U	7.58	2.36	0.764	2.84	0.571
Total Hepta-Dioxins	3.13	0.5 U	0.5 U	10.2	28	1.03	5.56	2.31
2,3,7,8-TCDF(0.1)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3,7,8-PeCDF(0.05)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.922 J
2,3,4,7,8-PeCDF(0.5)	1.13 J	0.725 J	0.594	0.652 J	0.574 J	0.76	0.566 J	1.15 J
1,2,3,4,7,8-HxCDF(0.1)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.698 J
1,2,3,6,7,8-HxCDF(0.1)	0.588	0.5 U	0.5 U	0.5 U	0.529	0.5 U	0.5 U	0.777
2,3,4,6,7,8-HxCDF(0.1)	0.644 J	0.5 U	0.5 U	0.5 U	0.5 U	0.627	0.5 U	0.803 J
1,2,3,7,8,9-HxCDF(0.1)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.635	0.5 U	0.5 U
1,2,3,4,6,7,8-HpCDF(0.01)	0.968 J	0.5 U	0.5 U	0.5 U	3.3	0.747	0.5 U	2.89 J
1,2,3,4,7,8,9-HpCDF(0.01)	0.866 J	0.5 U	0.5 U	0.5 U	0.5 U	0.636	0.5 U	0.602 J
OCDF(0.0001)	2.66	0.512	0.5 U	0.975 J	4.3 J	1.38	1.02 J	1.46
TEQ (Furans)	0.7943	0.3551	0.2895	0.3186	0.4883	0.6077	0.2756	0.9334
Total Tetra-Furans	6.45	0.5 U	0.6	4.39	0.5 U	0.5 U	2.75	0.5 U
Total Penta-Furans	0.788	0.5 U	0.594	0.5 U	0.5 U	0.76	0.686	0.5 U
Total Hexa-Furans	0.588	0.5 U	0.5 U	0.5 U	2.71	1.26	0.5 U	0.777
Total Hepta-Furans	0.5 U	0.5 U	0.5 U	0.5 U	7.13	0.747	0.5 U	0.5 U
Total 2,3,7,8-TCDD TEQ¹	1.453	0.9319	0.8636	0.9384	1.310	1.245	0.9346	2.518

Table 27 (Continued)
Dioxins/Furans in Water Analytical Results (EPA Method 1613)
 Mill View Subdivision
 Port St. Joe, Gulf County, Florida

Concentrations are presented in picograms per Liter (parts per quadrillion or ppq).

J: Estimated value.
 U: Material was analyzed for but not detected. The value reported is the minimum detection limit.

TCDD:	Tetrachlorodibenzo-p-dioxin	TCDF:	Tetrachlorodibenzofuran
PeCDD:	Pentachlorodibenzo-p-dioxin	PeCDF:	Pentachlorodibenzofuran
HxCDD:	Hexachlorodibenzo-p-dioxin	HxCDF:	Hexachlorodibenzofuran
HpCDD:	Heptachlorodibenzo-p-dioxin	HpCDF:	Heptachlorodibenzofuran
OCDD:	Octachlorodibenzo-p-dioxin	OCDF:	Octachlorodibenzofuran

TEF: Toxicity Equivalence Factor

TEQ: 2,3,7,8-TCDD Toxicity Equivalence = Sum(concentration x TEF). Congeners not detected are assumed to be present at one-half of their minimum detection limit if another congener is present.

Total 2,3,7,8-TCDD TEQ: TEQ (Dioxins) + TEQ (Furans)

Lab blank is associated with samples DEP 2, 5, 7, 10, SW1.

Lab blank DEP8 is associated with sample DEP8.

1. TEQ calculations includes the MDL (method detection limit) of all congeners at ½ the reported value per EPA reporting guidelines. Total hexa-dioxin and/or furan results were used instead of individual hexa-dioxin and furan congeners results for calculating TEQs in samples DEP5, DEP7, DEP8 and DEP10.

Appendix A (not included in draft)

Request for Assistance

Appendix B

SIS Environmental Assessment Timeline

SIS Environmental Assessment Timeline

Mill View Subdivision
Port St. Joe, Gulf County, Florida

- 05/03/2001:** A Request for Assistance was received by the Site Investigation Section from the FDEP Northwest District Office.
- 06/04/2001:** SIS initiated field work at the Port St. Joe Mill View #2 neighborhood location. During the week, SIS collected two soil samples from 32 locations. In addition, three sediment samples were collected. Sample positions were designated MV1 through MV32. The soil and sediment samples were analyzed for the presence of arsenic, cadmium, lead, nickel, and mercury. Electronic conductivity logs were performed at all soil sample locations to ascertain the extent of landfilled mill waste.
- 07/09/2001:** Sampling event 06/04/2001 analytical results were received from the FDEP Central Laboratory.
- 08/13/2001:** SIS installed a network of monitoring wells in the Mill View Unit #2 to evaluate the shallow aquifer system. Water collected from the eleven wells was sampled for arsenic, cadmium, lead, nickel, mercury, and volatile organic compound pollutants. In addition, 6 private irrigation wells were also sampled for the same analytes. Elevated specific conductivity and buffered pH values were measured in purge water from several monitoring wells. Three additional soil samples were collected to further ascertain metal “background” levels (MV 33 through MV35). A fourth sample was collected (MV36) from a location where lime grits were discovered during the installation of a nearby monitoring well.
- 09/21/2001:** Sampling event 08/13/2001 analytical results were received from the FDEP Central Laboratory.
- 10/15/2001:** Due to the anomalous ground water parameters measured in monitor well purge water during the August sampling event, SIS resampled the monitor well network for a broader range of analytes related to paper mill waste streams. Ground water samples were collected and analyzed for alkalinity, chlorides, sulfate, sulfide, semivolatile organic compounds, dioxins and furans, and the metals calcium, iron, magnesium, manganese, potassium, and sodium. One surface water sample was also collected from the ditch north of Avenue G for the same parameters.
- 02/22/2002:** Sampling event 10/15/2001 analytical results were received from the FDEP Central Laboratory.

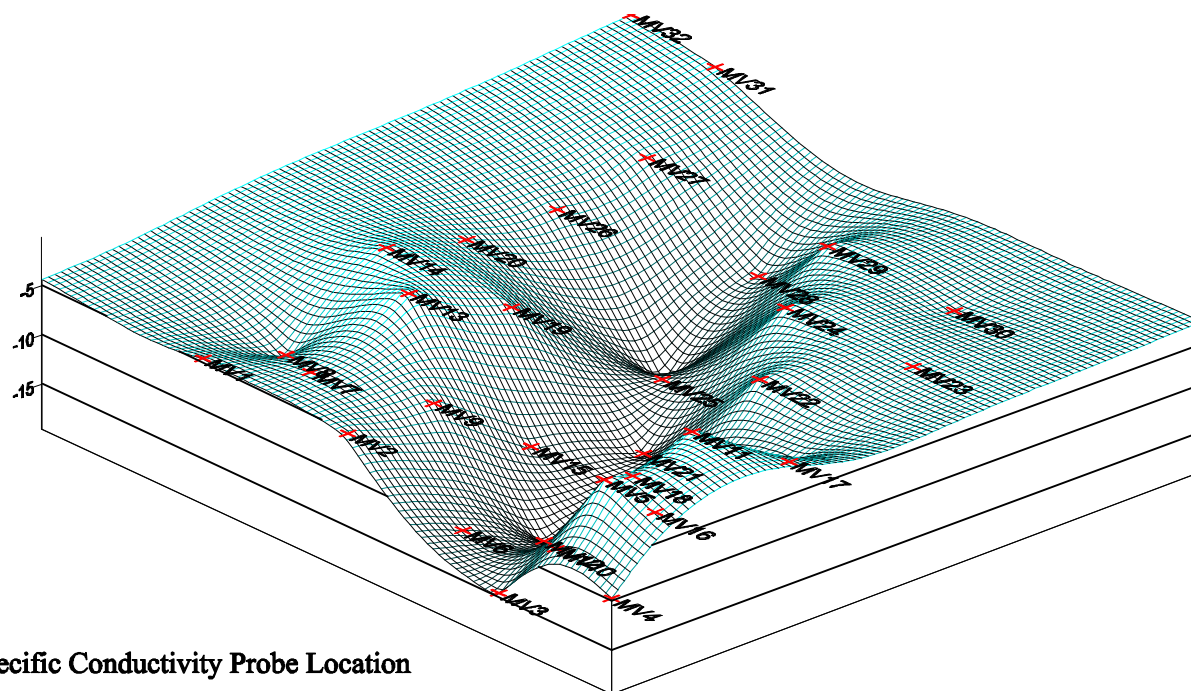
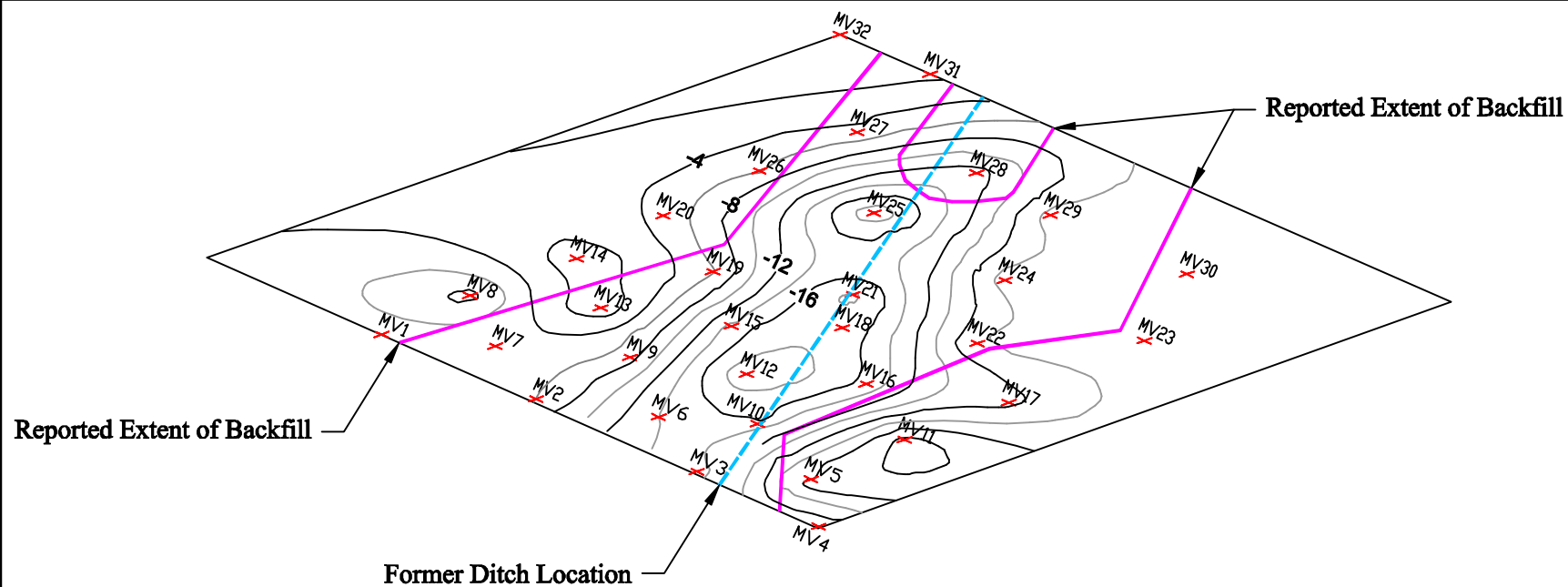
SIS Environmental Assessment Timeline (Continued)

Mill View Subdivision
Port St. Joe, Gulf County, Florida

- 02/25/2002:** A petition was received by FDEP requesting that additional assessment be performed within the Mill View #3 neighborhood and that soil samples be collected for organic analysis, including dioxins.
- 04/29/2002:** SIS collected soil samples MV37 through MV54. Samples were collected within Mill View #2 and #3 neighborhoods in areas that were likely filled after 1966. The mill began bleaching paper during that year. Samples were collected for metals analysis including mercury, arsenic, barium, cadmium, calcium, iron, lead, magnesium, manganese, nickel, potassium, sodium. In addition, samples were collected to be analyzed for the presence of semivolatile organic compounds including PCBs, volatile organic compounds, and dioxins. Additional conductivity logging was performed to realized the extent of landfilling within the Mill View #3 neighborhood.
- 06/14/2002:** Sampling event 04/29/2002 analytical results were received from the FDEP Central Laboratory.
- 06/27/2002:** SIS collected soil samples for PAH and PCB analysis from eighteen additional locations within the Mill View #2 neighborhood. Results received from the 04/29/2002 sampling event indicated the presence of these compounds at varying concentrations. It was the intention of this sampling event to identify whether a PAH/PCB contaminate pattern was evident at the Mill View site.
- 07/30/2002:** Sampling event 06/27/2002 analytical results were received from the FDEP Central Laboratory.
- 09/12/2002:** Draft of Preliminary Contamination Assessment Report released for FDEP District and Florida Department of Health review.

Appendix C

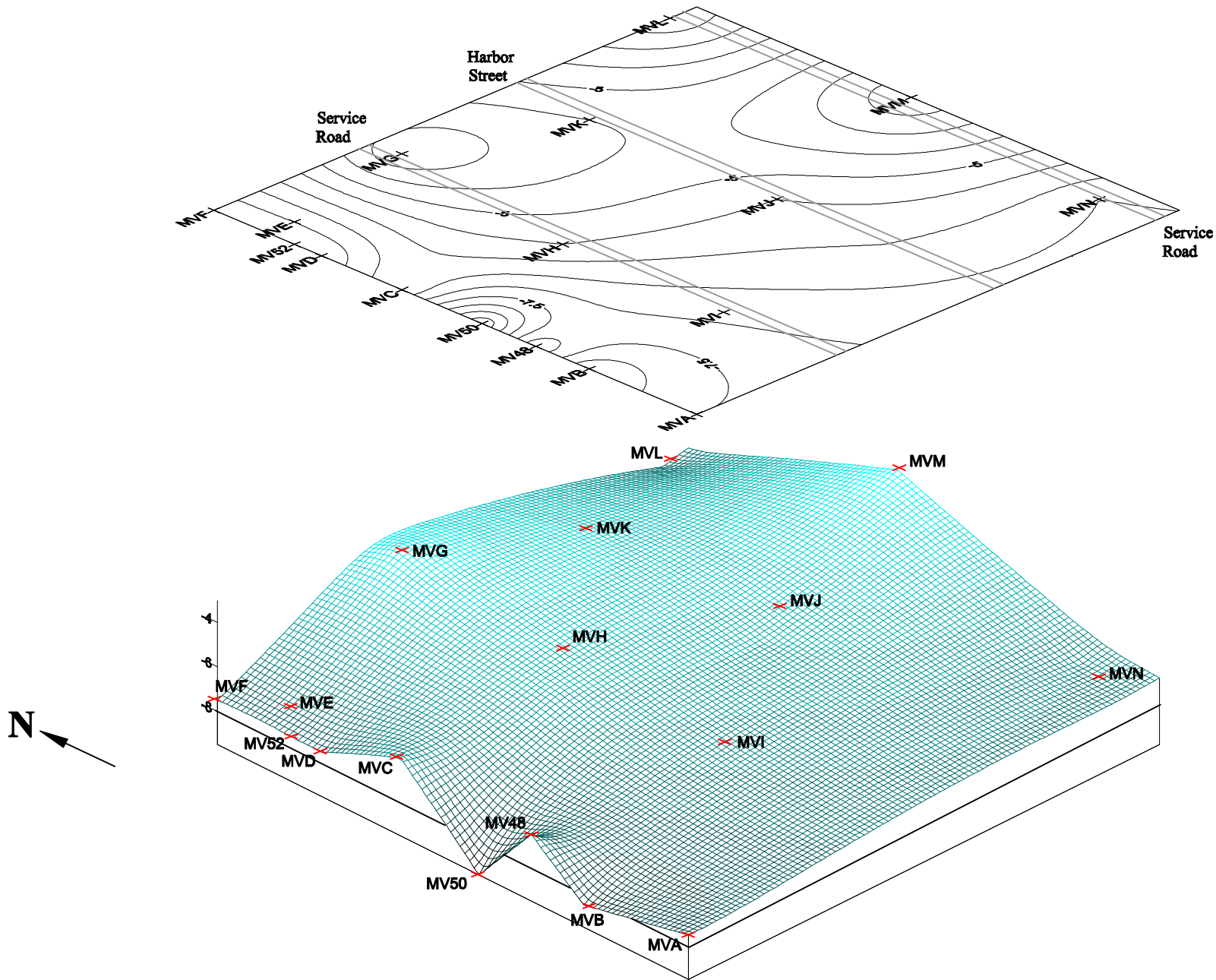
Electric Conductivity Logs



MV: SIS Soil Sample and Specific Conductivity Probe Location

Extent of Backfill in Mill View #2 Based on Direct Push Rate of Penetration
 Basal Extent Based on 10 Feet/Minute Rate of Penetration Rate
 Mill View Subdivision, Port St. Joe, Gulf County, Florida





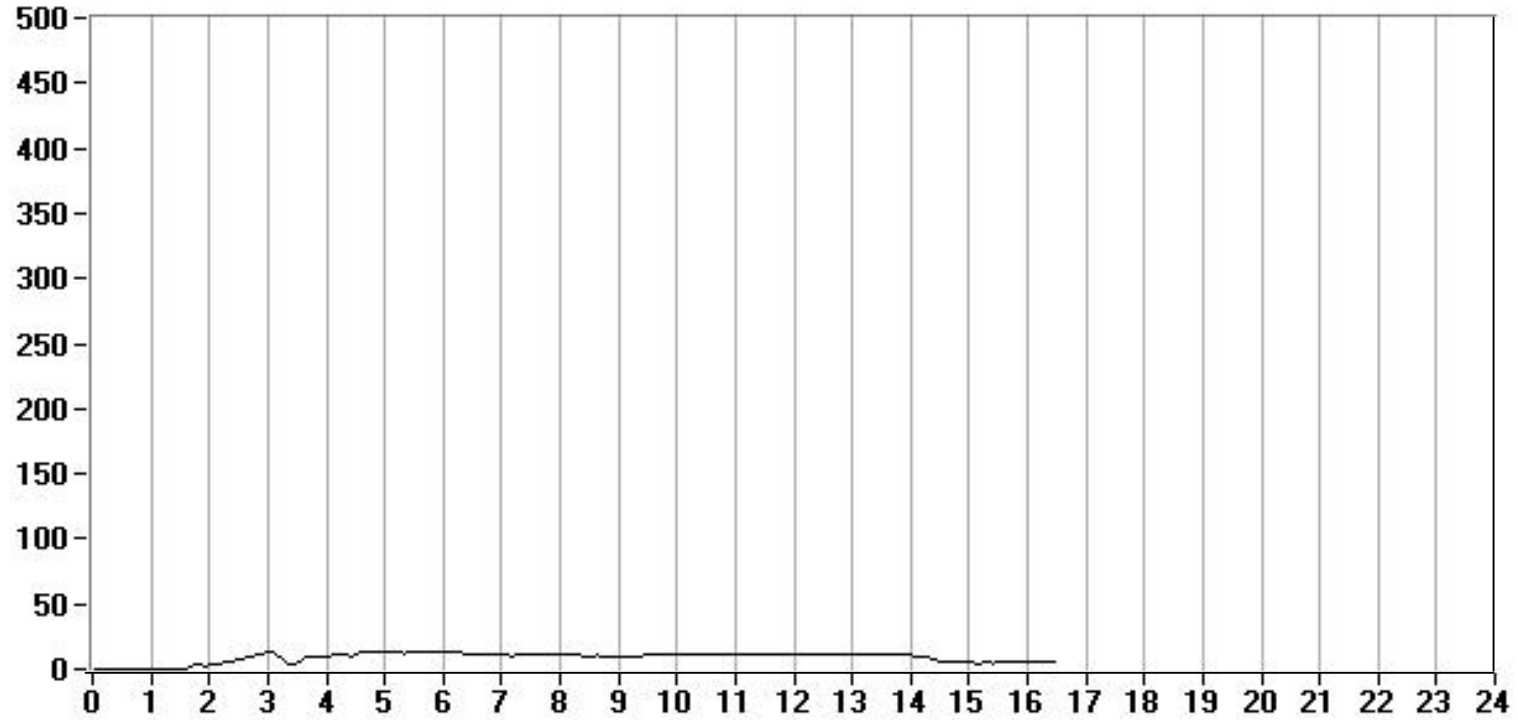
MV: SIS Soil Sample and Specific Conductivity Probe Location

Extent of Backfill in Mill View #3 Based on Direct Push Rate of Penetration
 Basal Extent Based on 10 Feet/Minute Rate of Penetration Rate
 Mill View Subdivision, Port St. Joe, Gulf County, Florida



MV1 Specific Conductivity

mS/meter



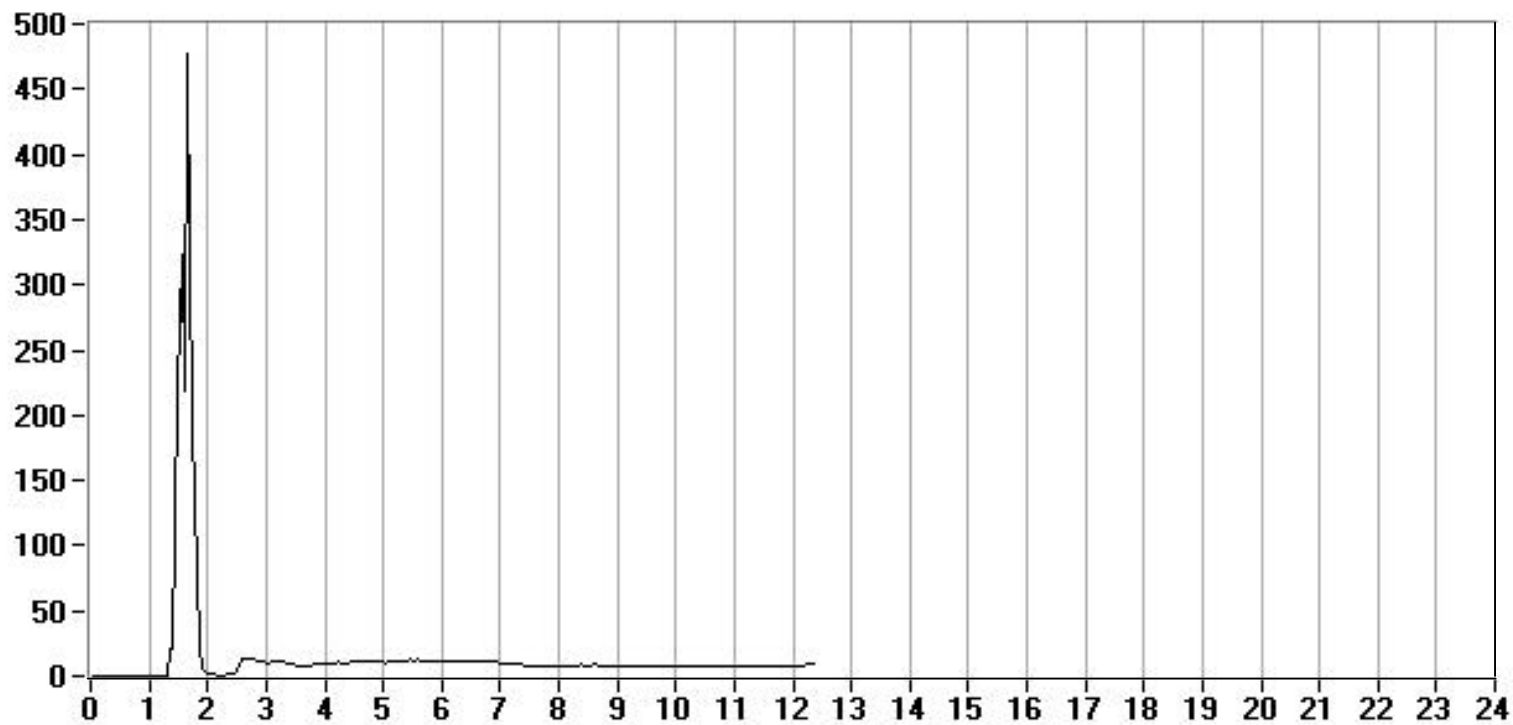
Feet/minute



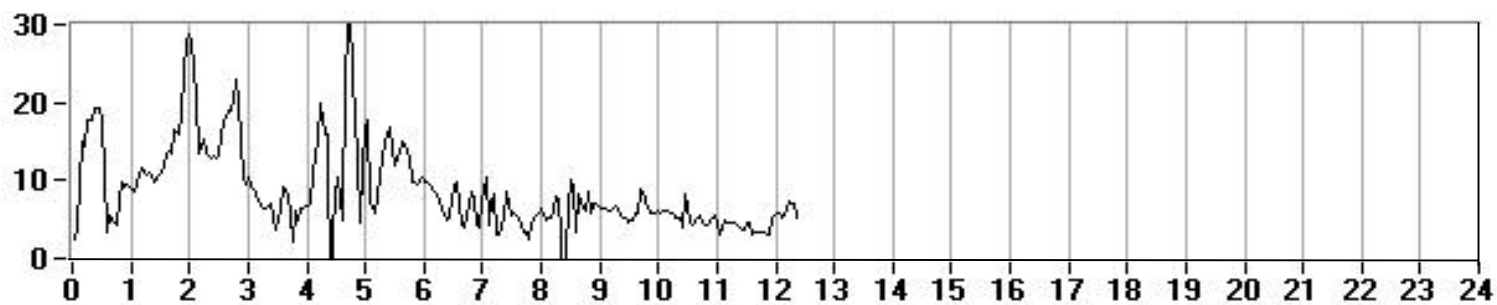
Depth (Feet)

MV2 Specific Conductivity

mS/meter



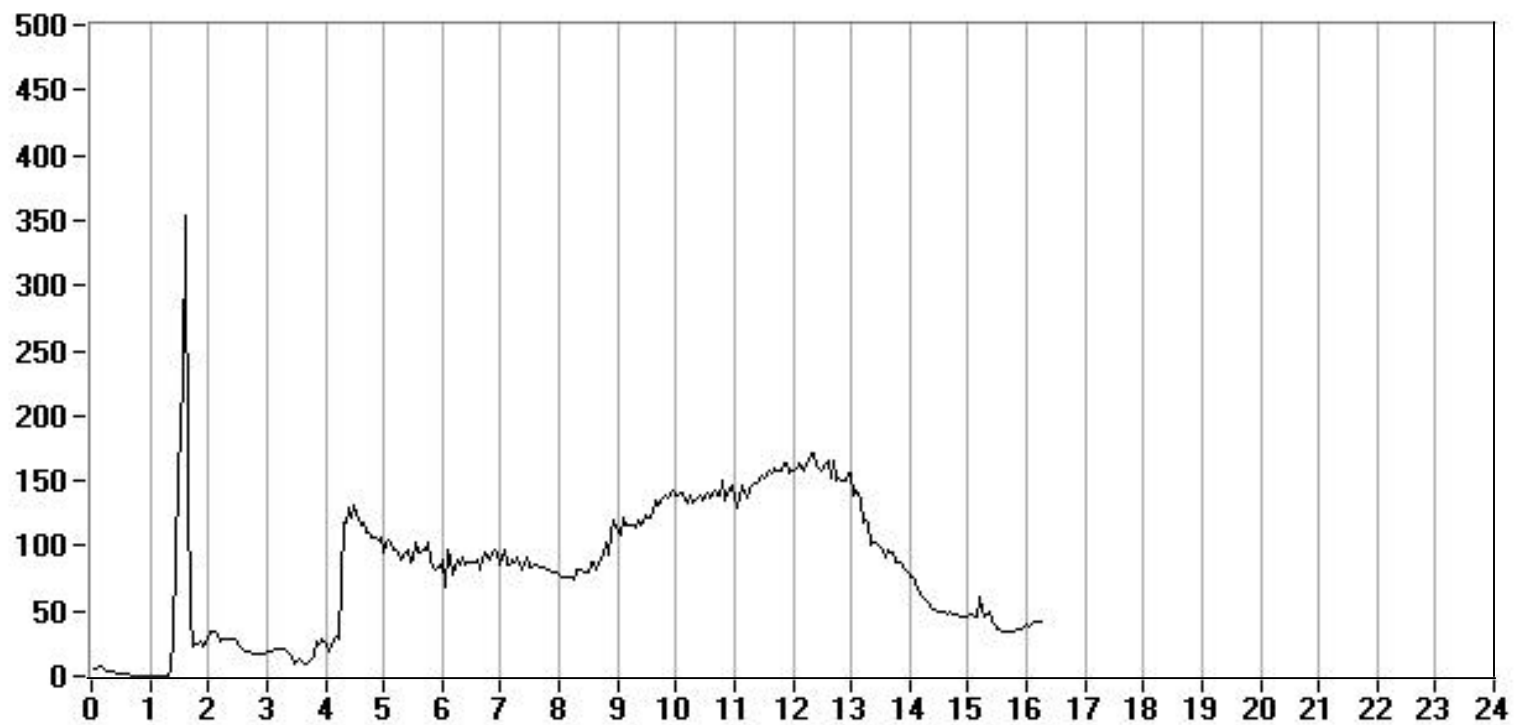
Feet/minute



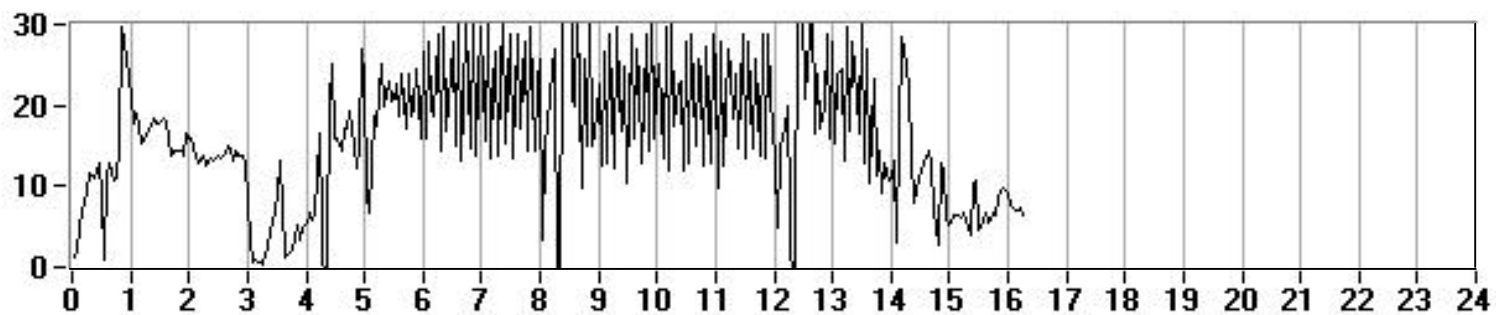
Depth (Feet)

MV3 Specific Conductivity

mS/meter



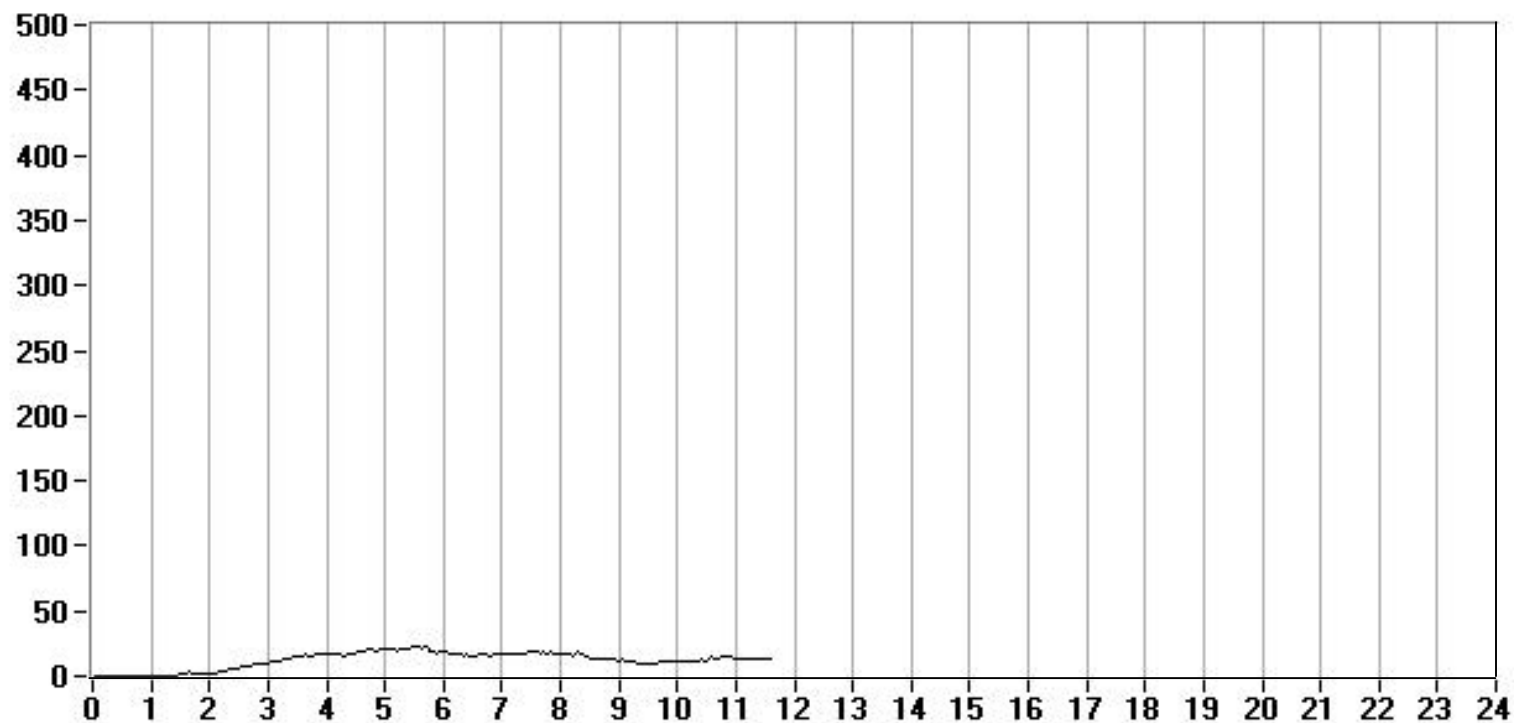
Feet/minute



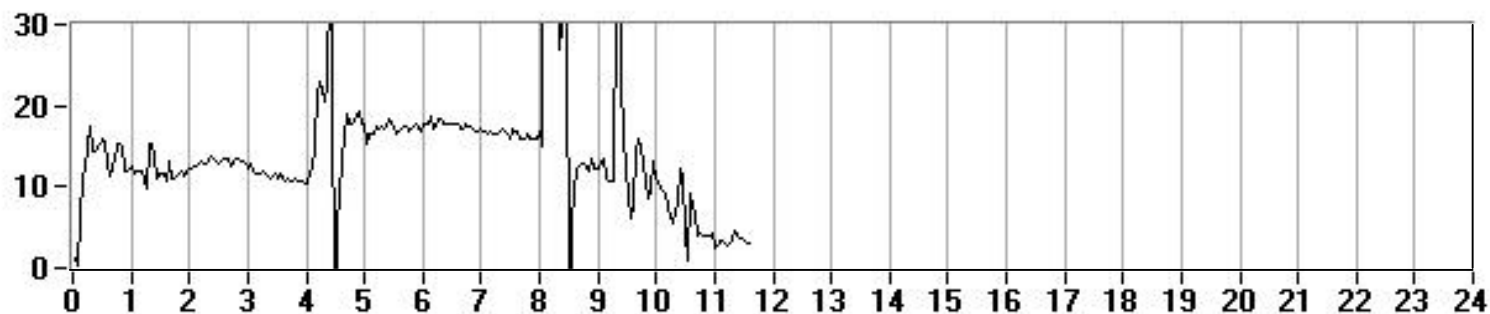
Depth (Feet)

MV4 Specific Conductivity

mS/meter



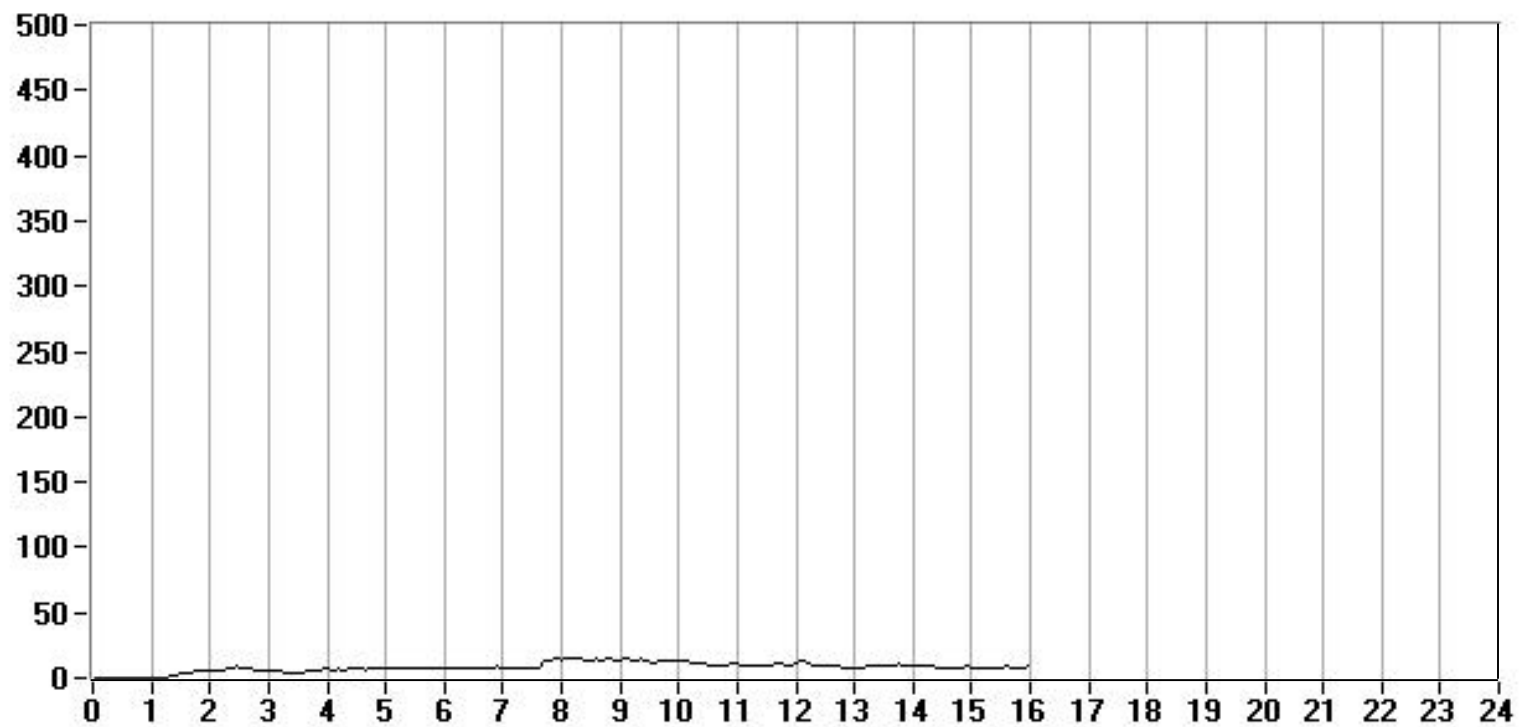
Feet/minute



Depth (Feet)

MV5 Specific Conductivity

mS/meter



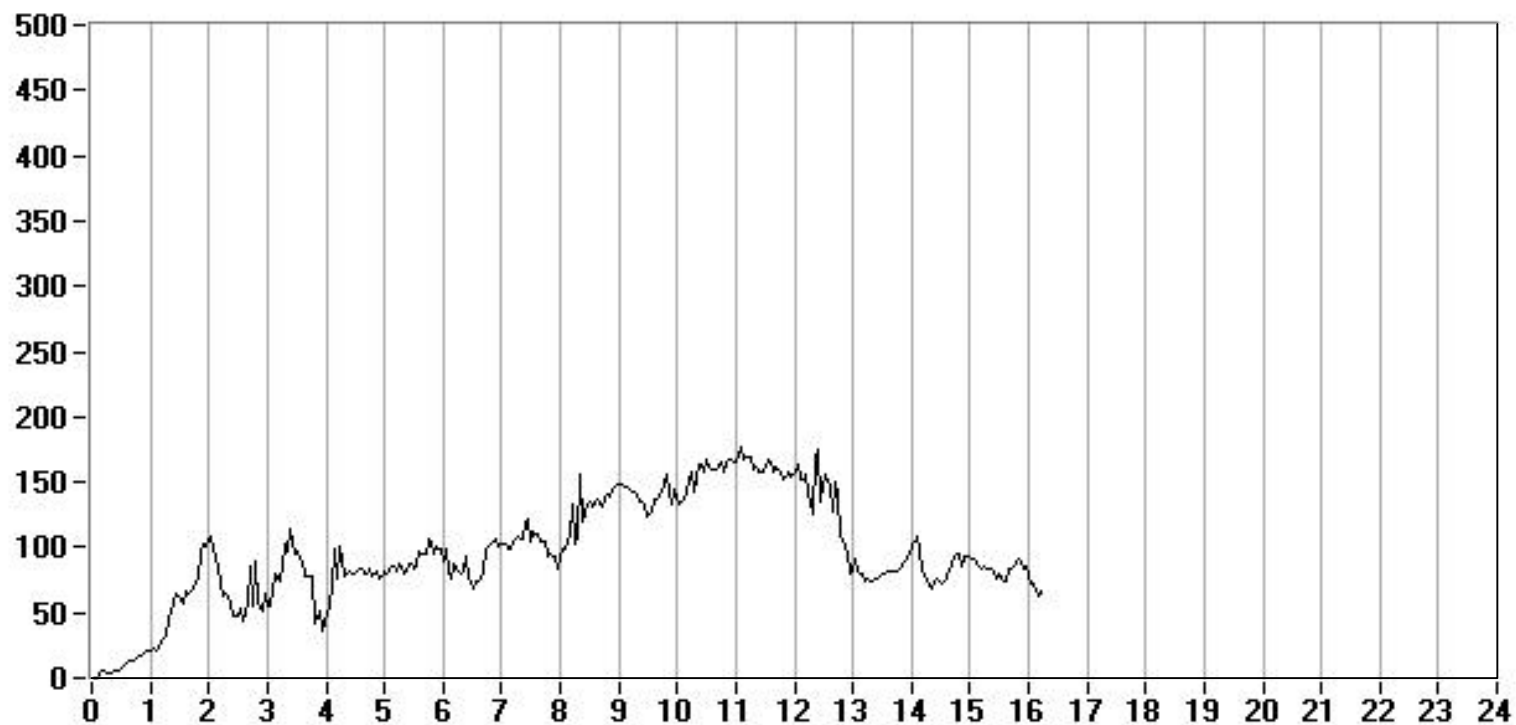
Feet/minute



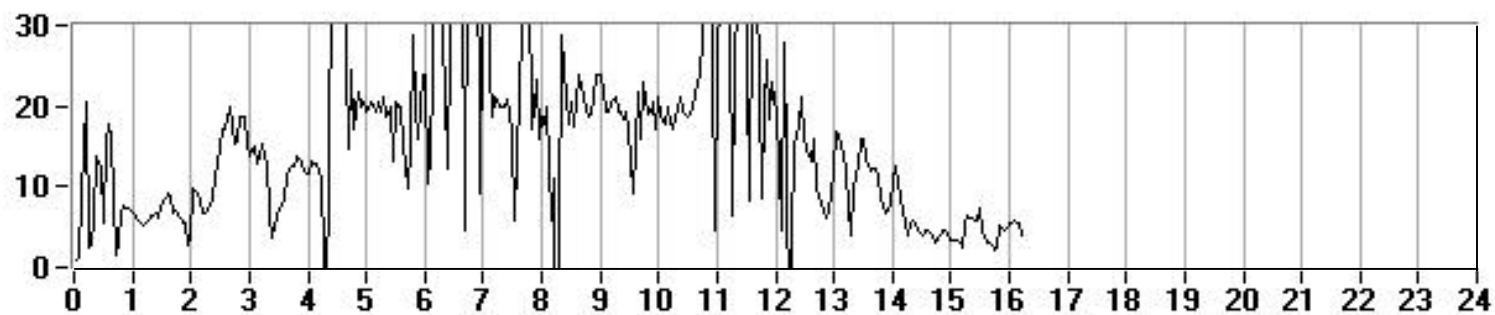
Depth (Feet)

MV6 Specific Conductivity

mS/meter



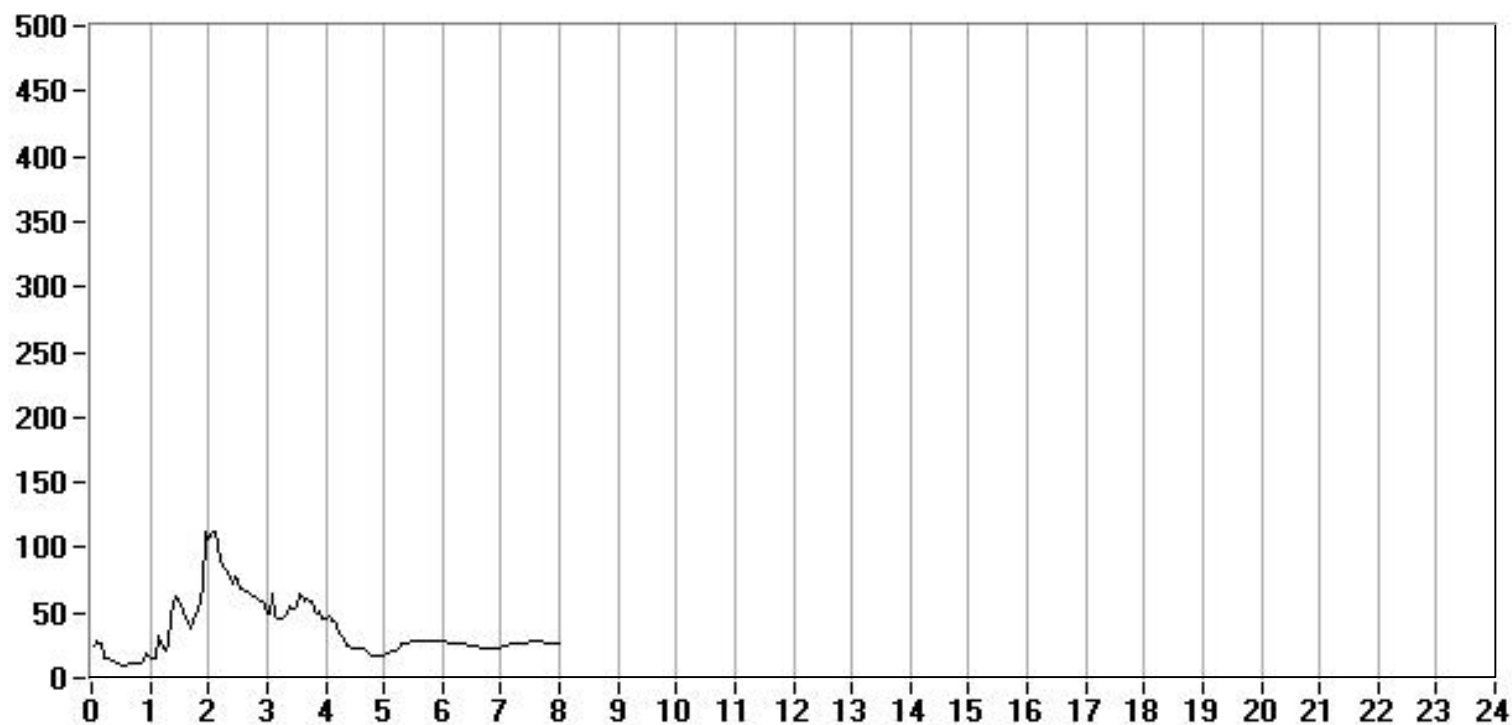
Feet/minute



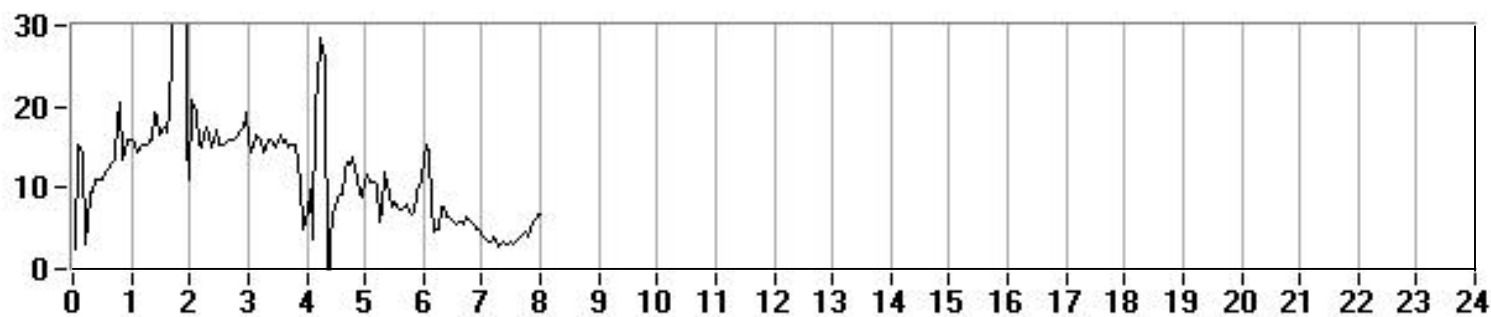
Depth (Feet)

MV7 Specific Conductivity

mS/meter



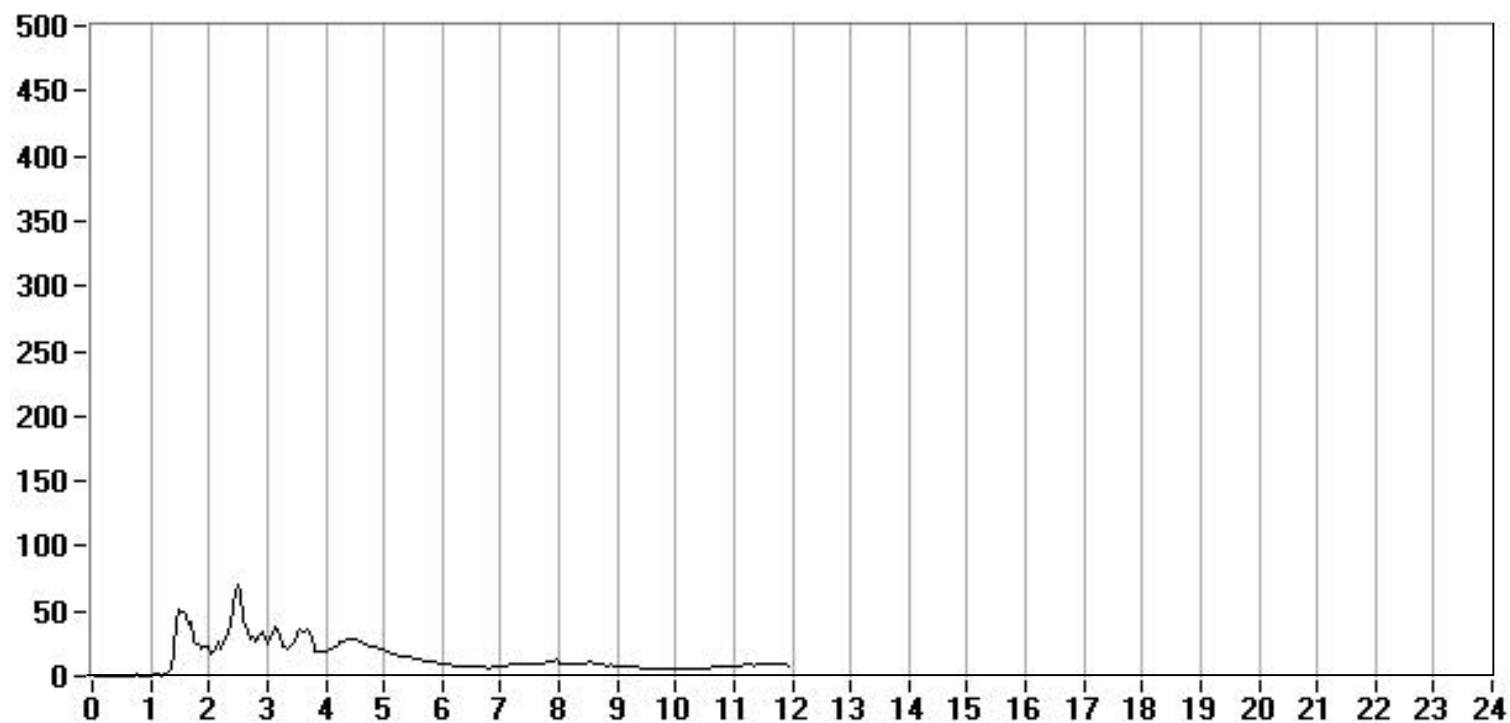
Feet/minute



Depth (Feet)

MV8 Specific Conductivity

mS/meter



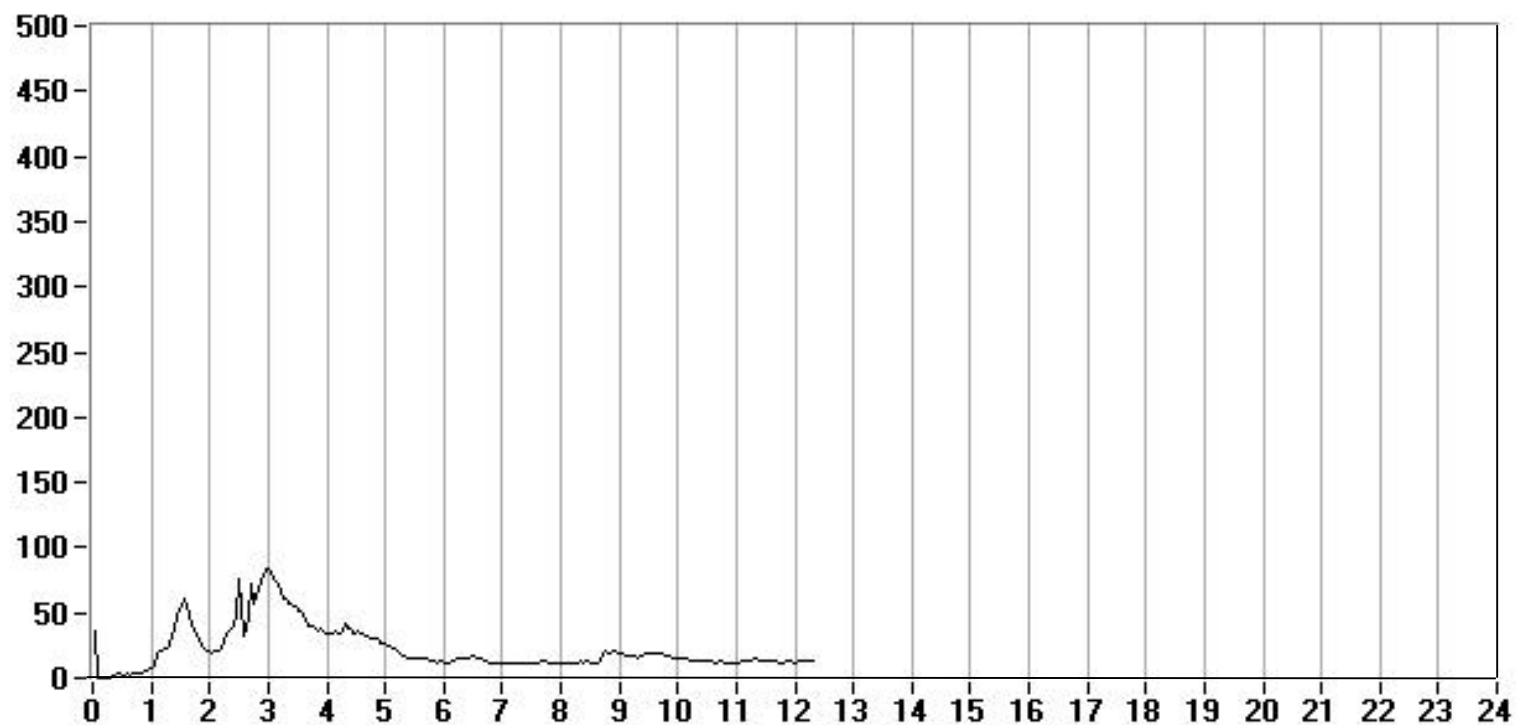
Feet/minute



Depth (Feet)

MV9 Specific Conductivity

mS/meter



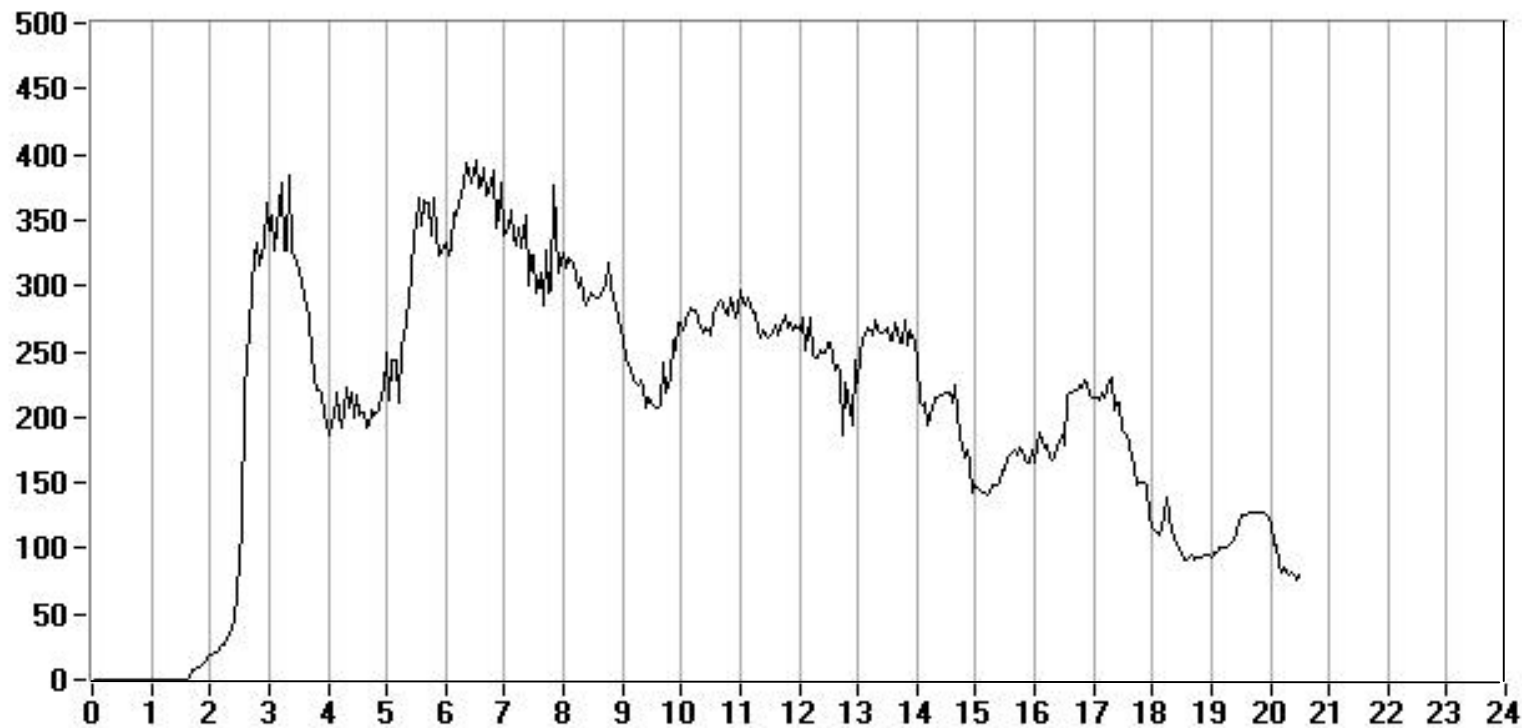
Feet/minute



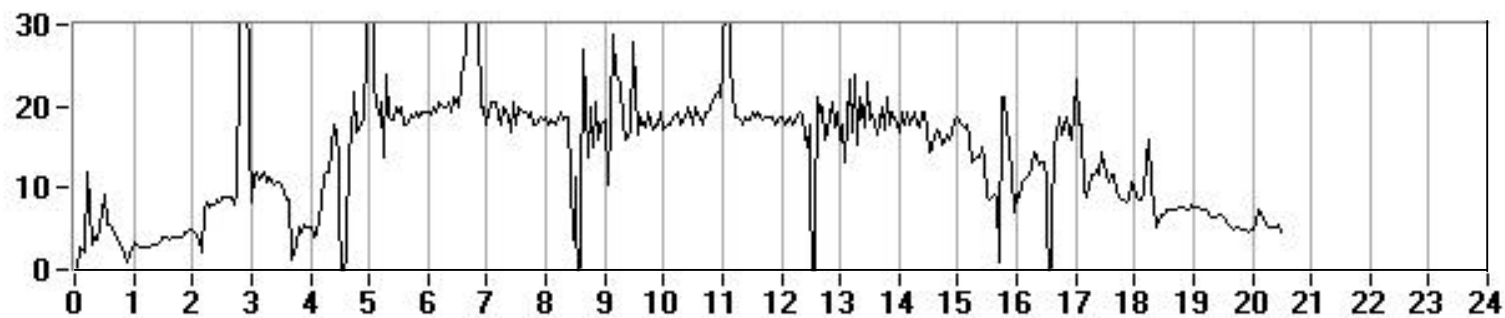
Depth (Feet)

MV10 Specific Conductivity

mS/meter



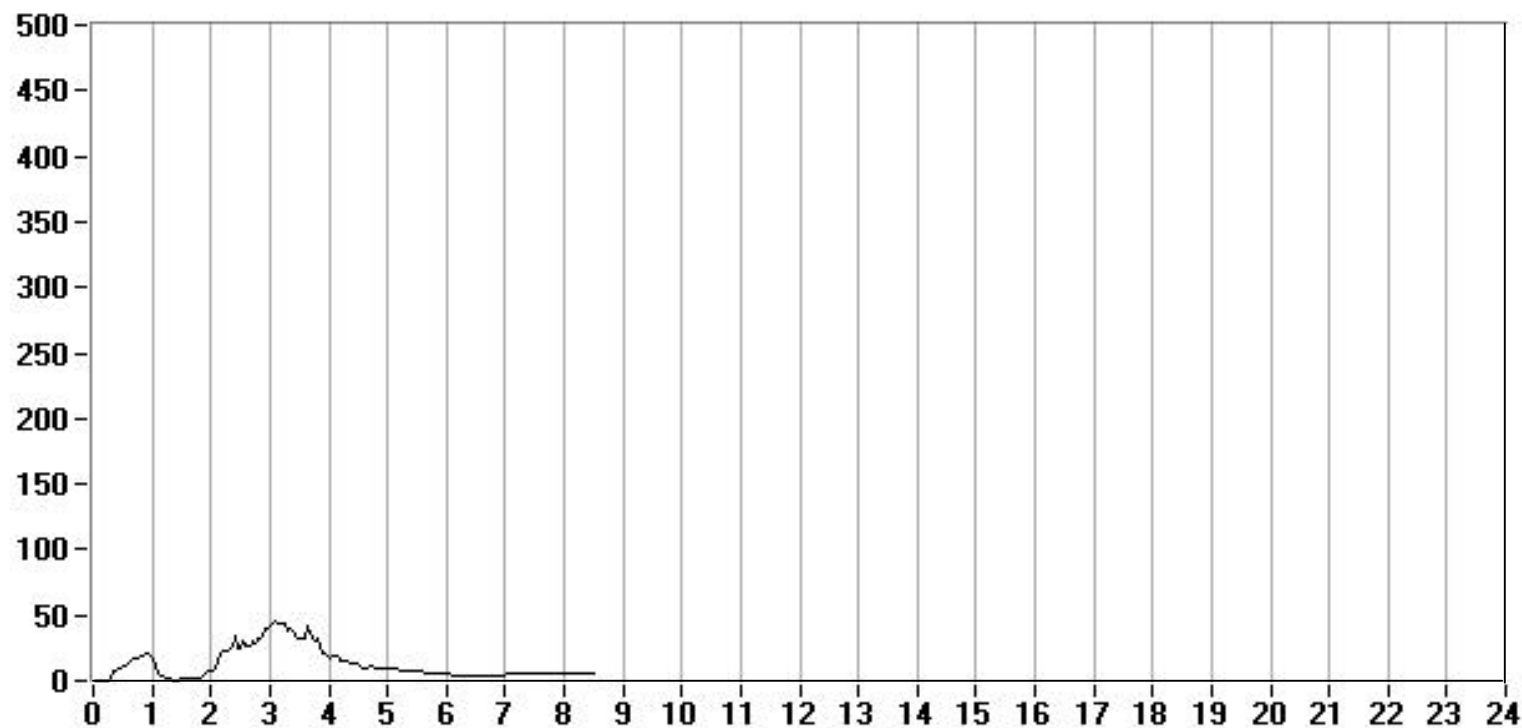
Feet/minute



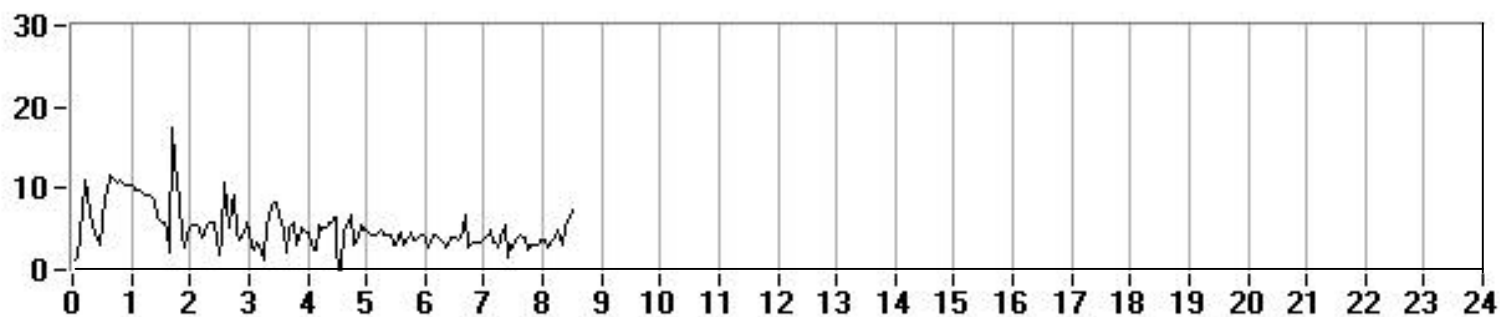
Depth (Feet)

MV11 Specific Conductivity

mS/meter



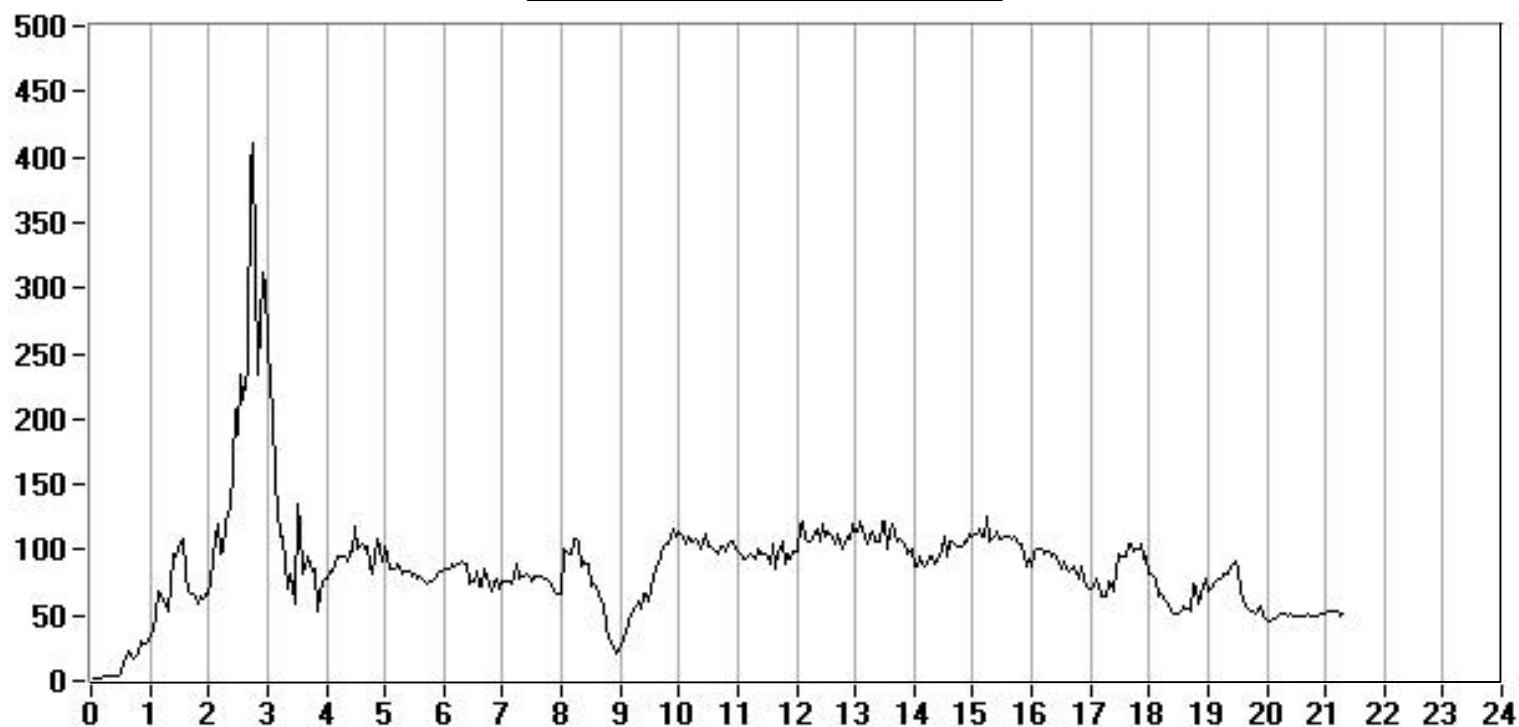
Feet/minute



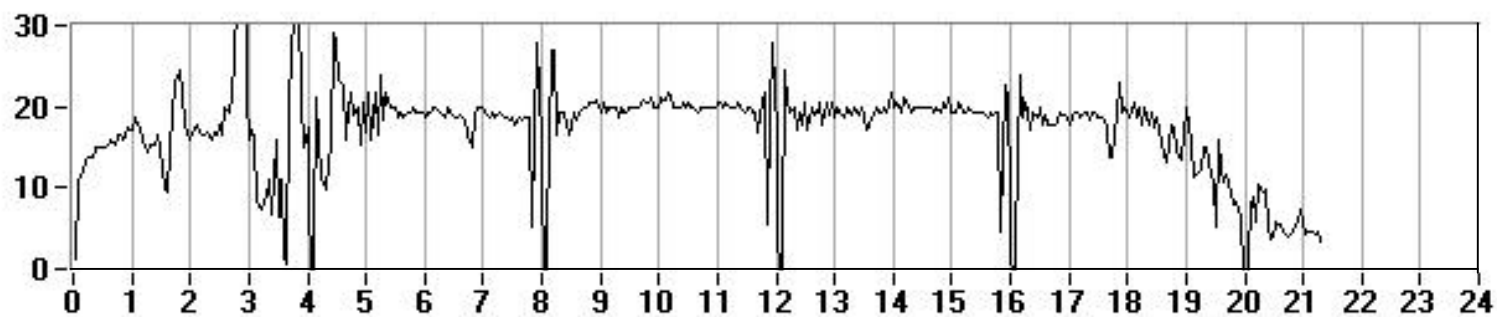
Depth (Feet)

MV12 Specific Conductivity

mS/meter



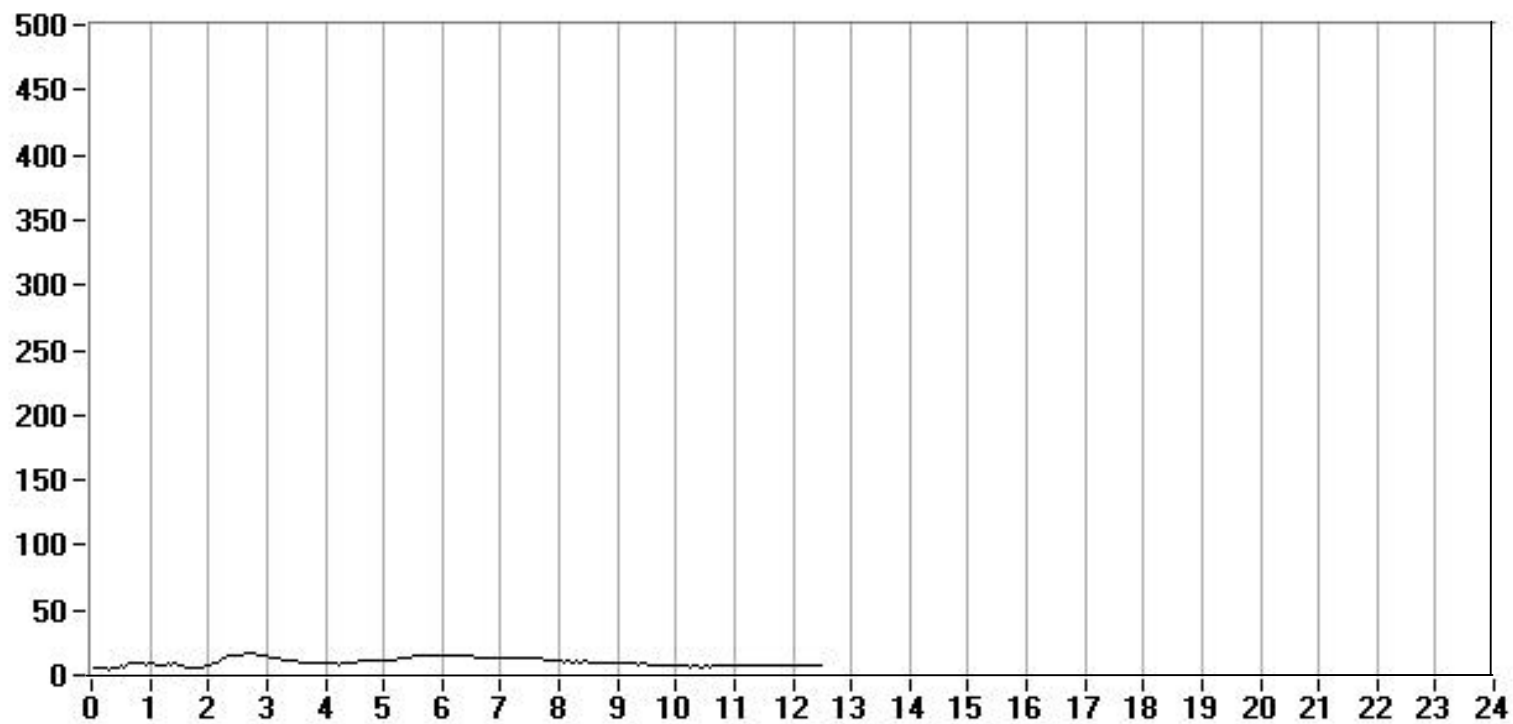
Feet/minute



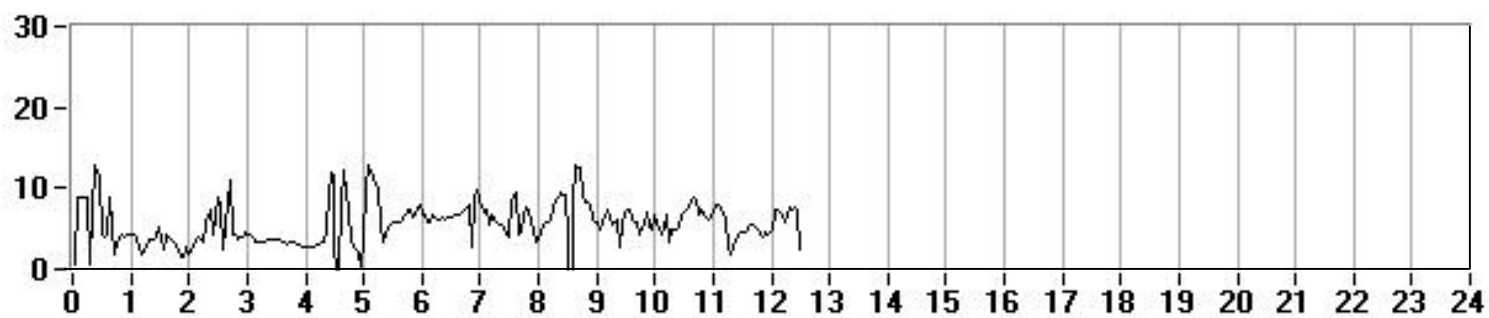
Depth (Feet)

MV13 Specific Conductivity

mS/meter



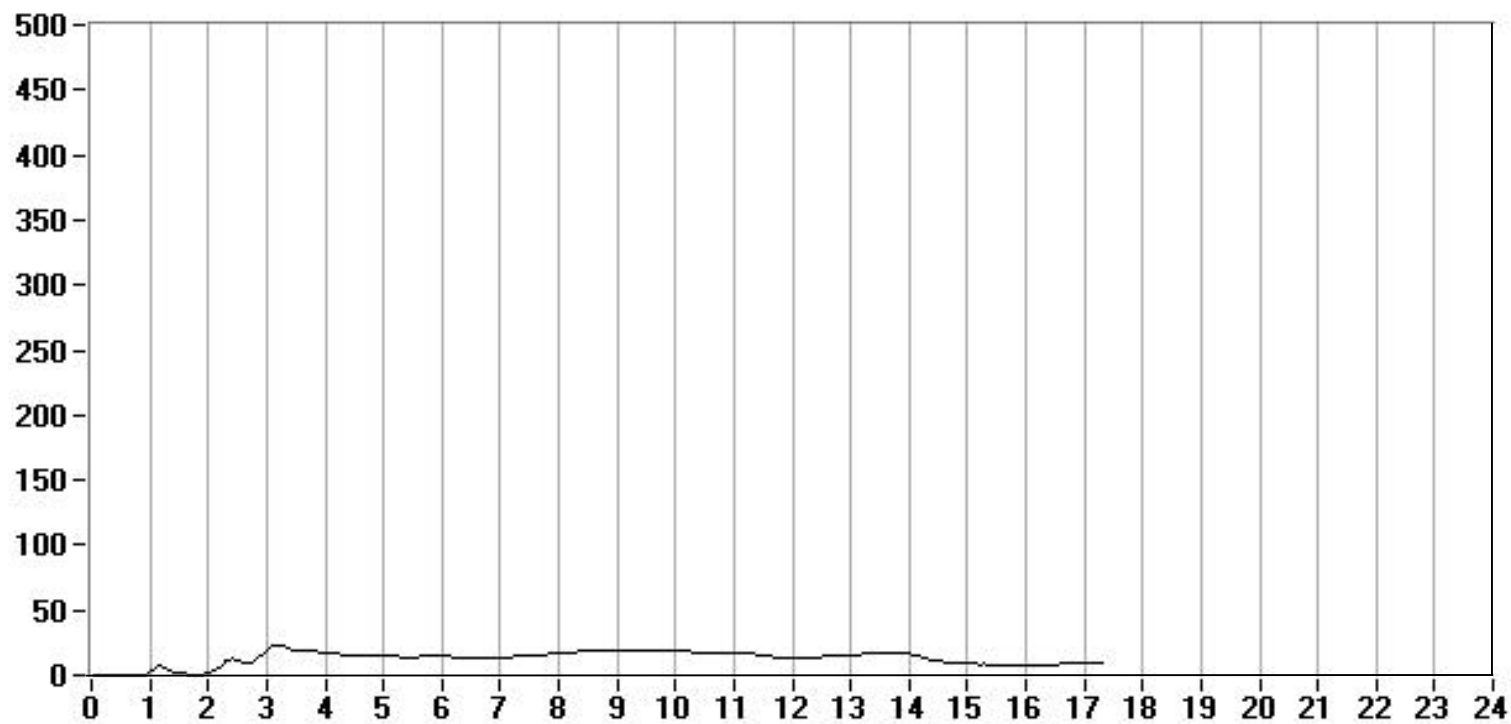
Feet/minute



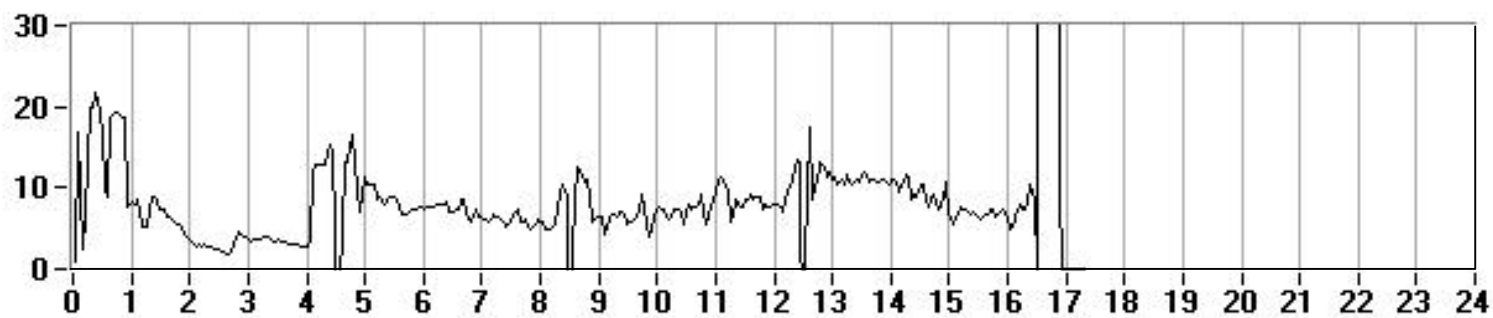
Depth (Feet)

MV14 Specific Conductivity

mS/meter



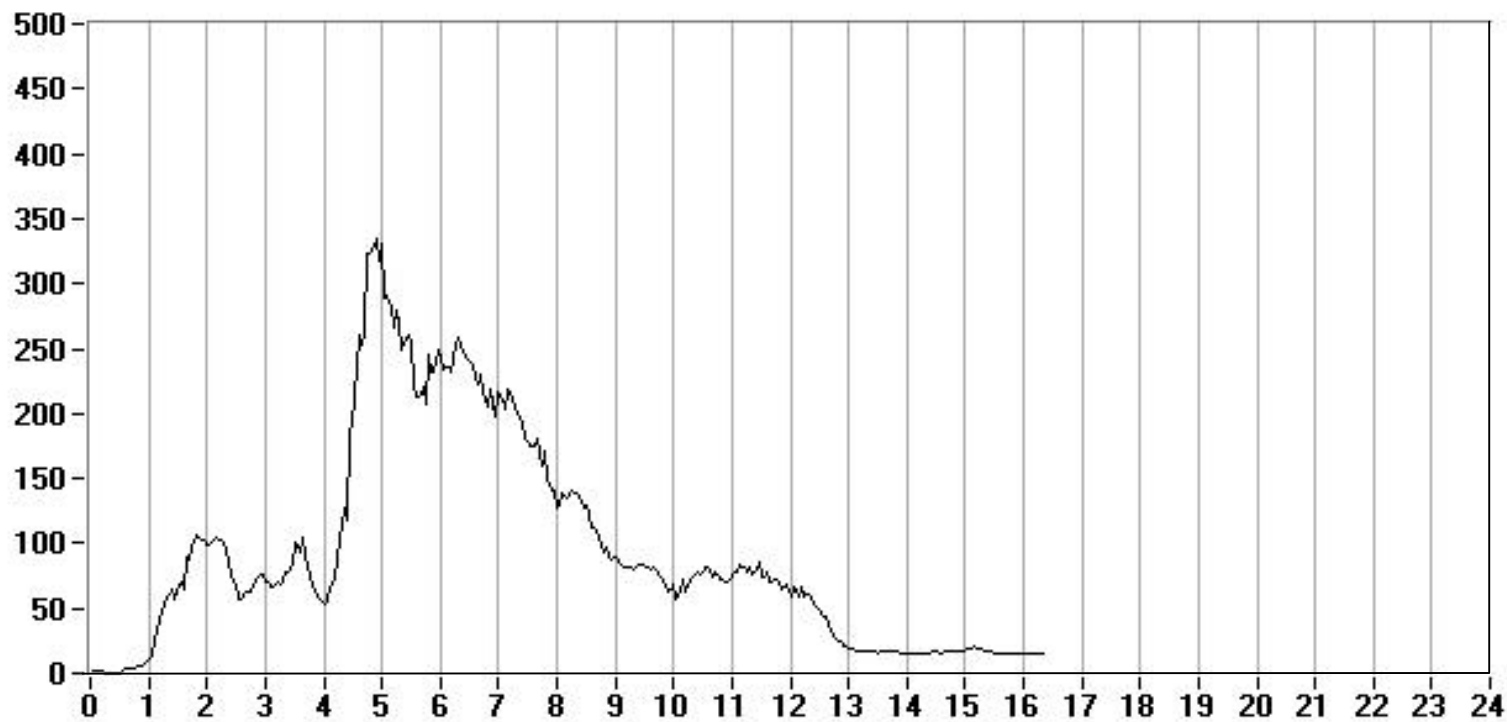
Feet/minute



Depth (Feet)

MV15 Specific Conductivity

mS/meter



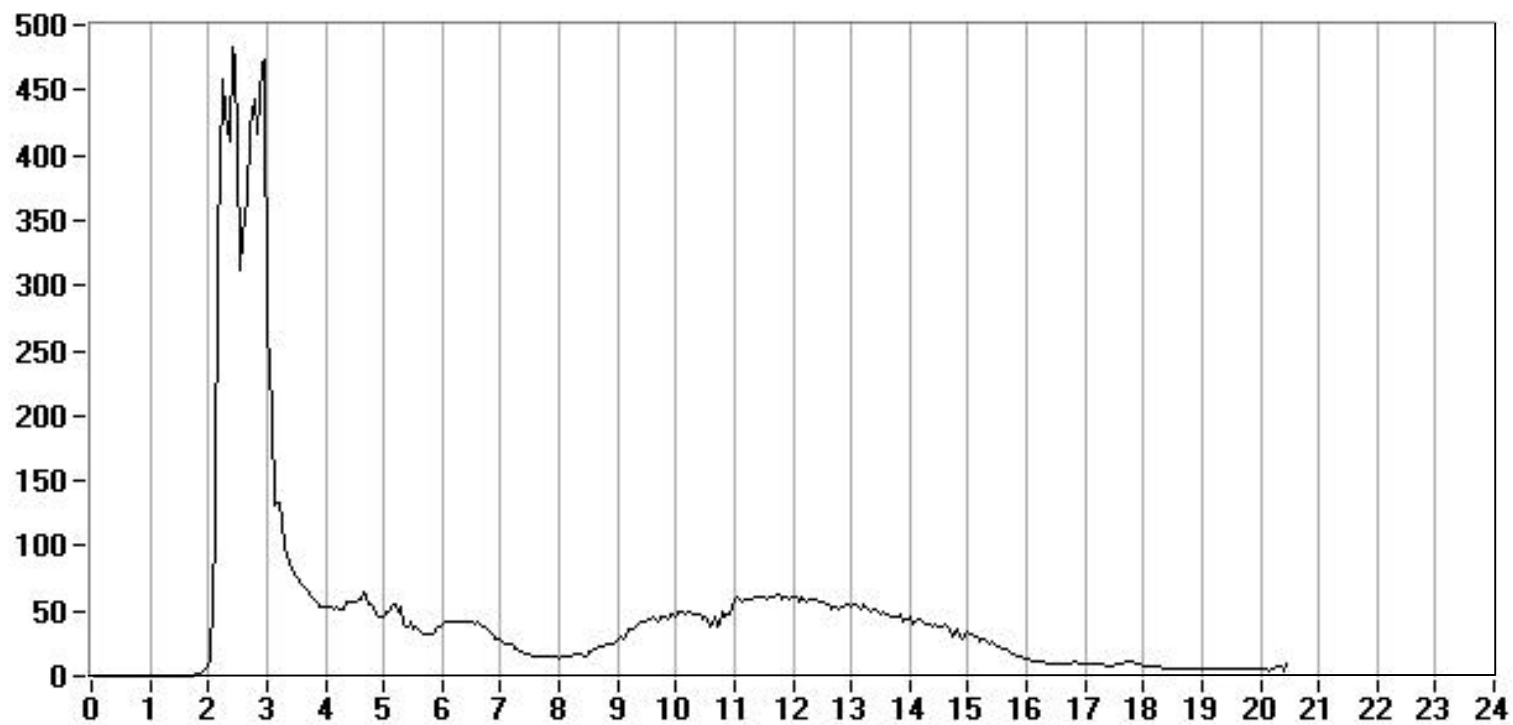
Feet/minute



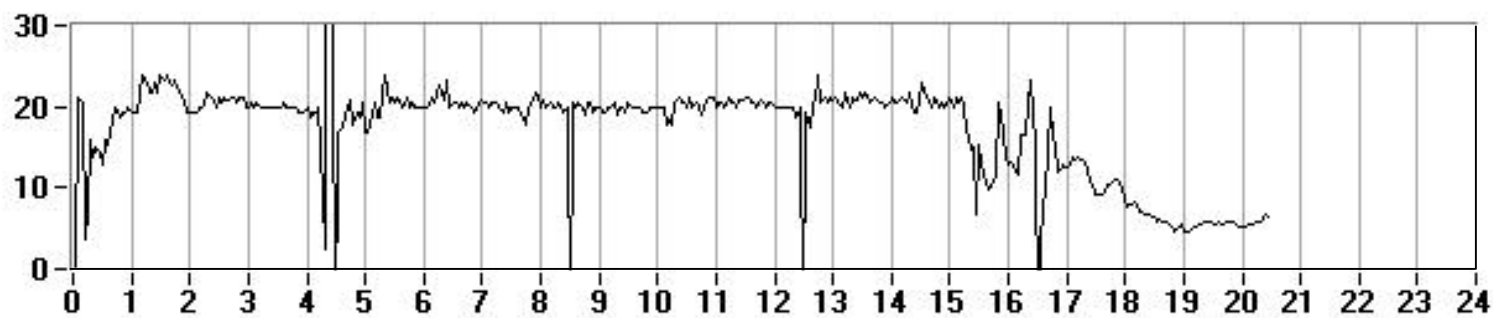
Depth (Feet)

MV16 Specific Conductivity

mS/meter



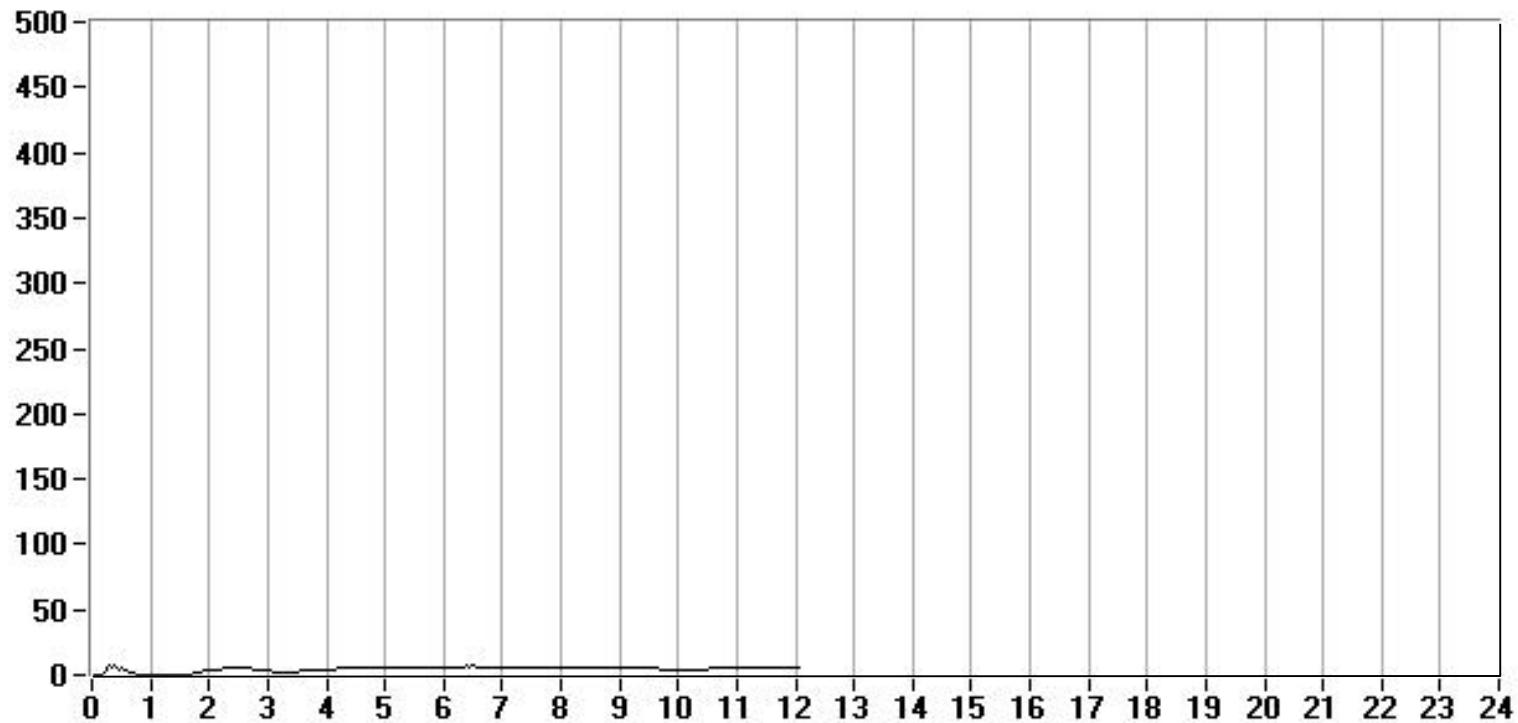
Feet/minute



Depth (Feet)

MV17 Specific Conductivity

mS/meter



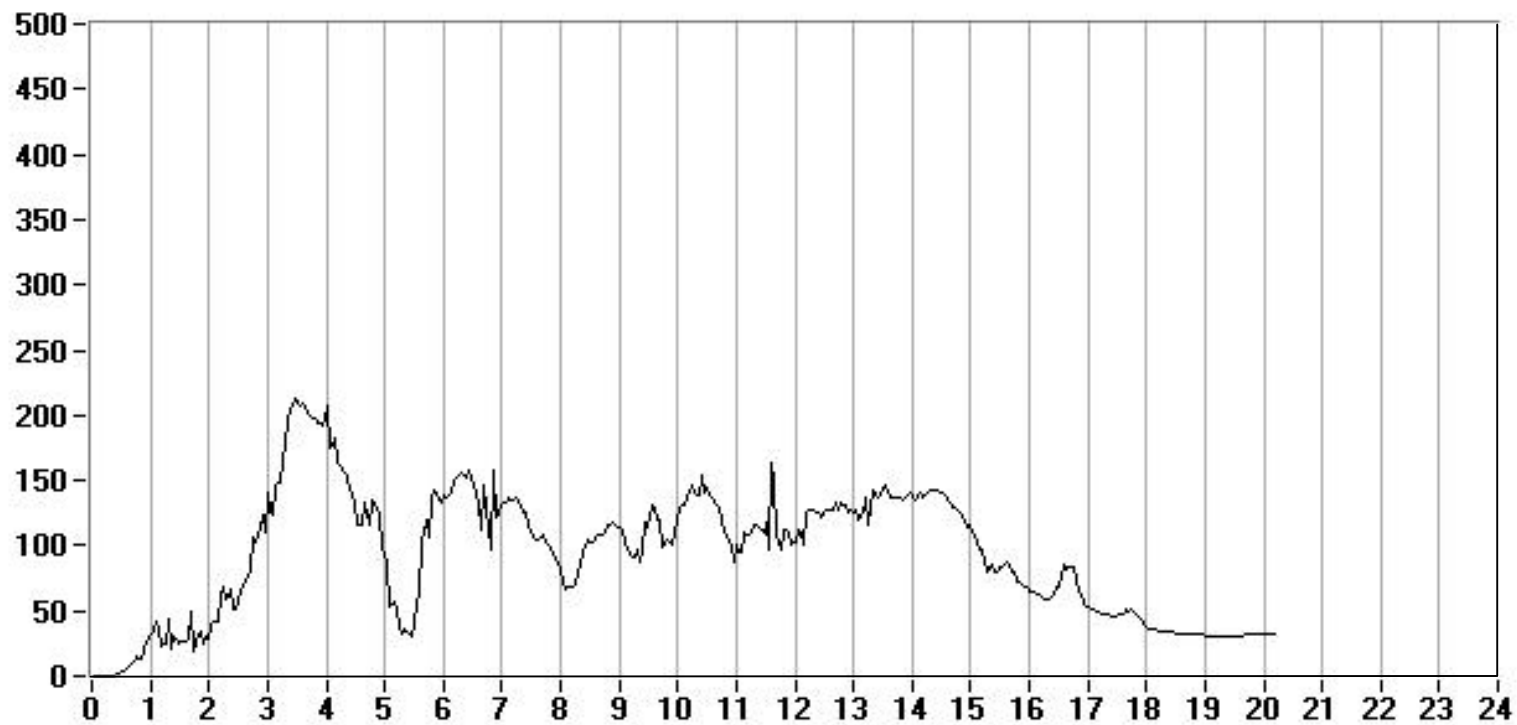
Feet/minute



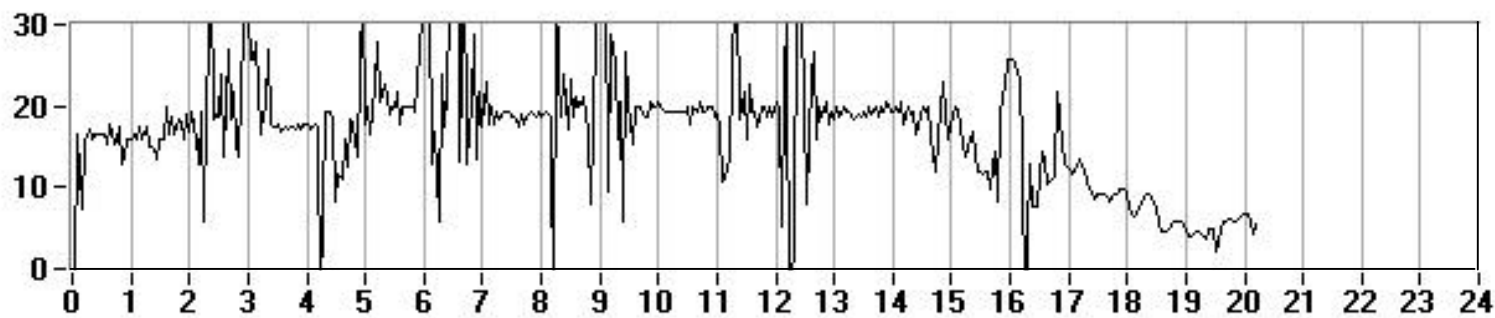
Depth (Feet)

MV18 Specific Conductivity

mS/meter



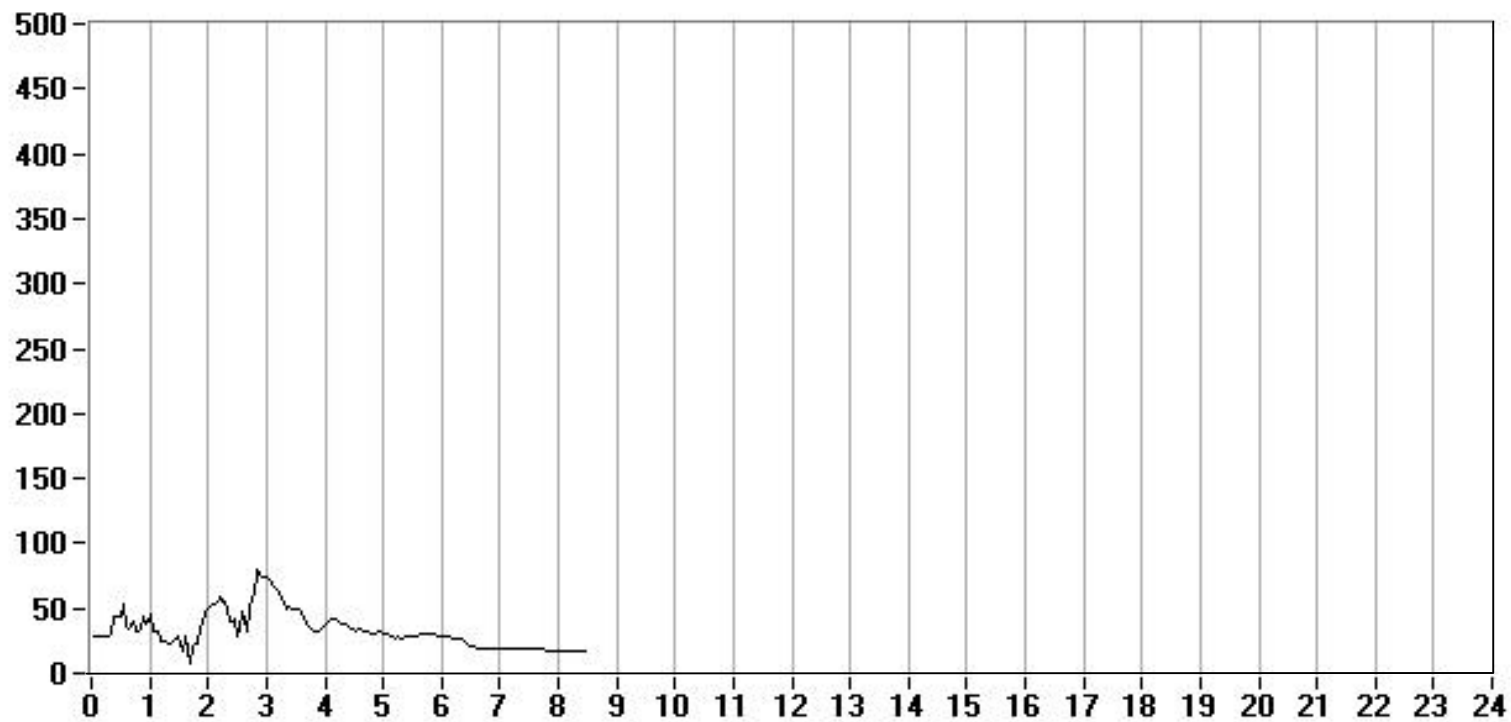
Feet/minute



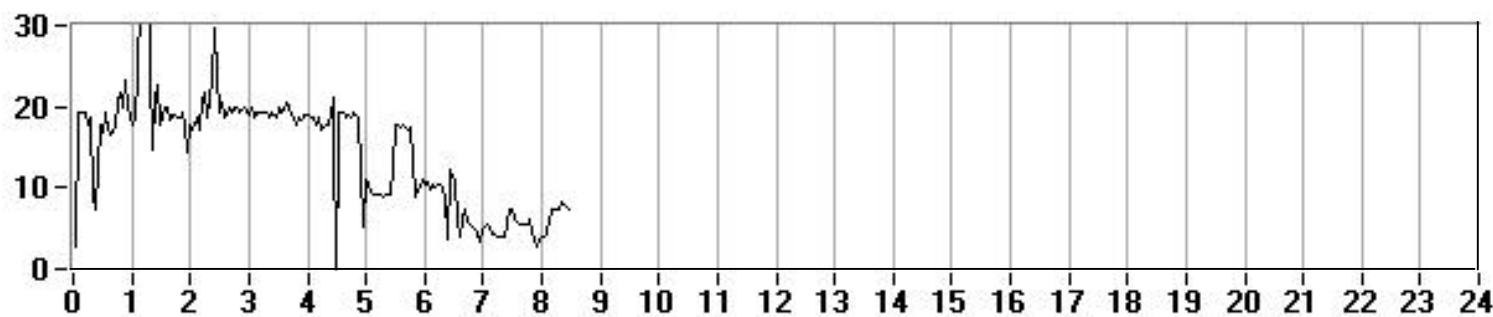
Depth (Feet)

MV19 Specific Conductivity

mS/meter



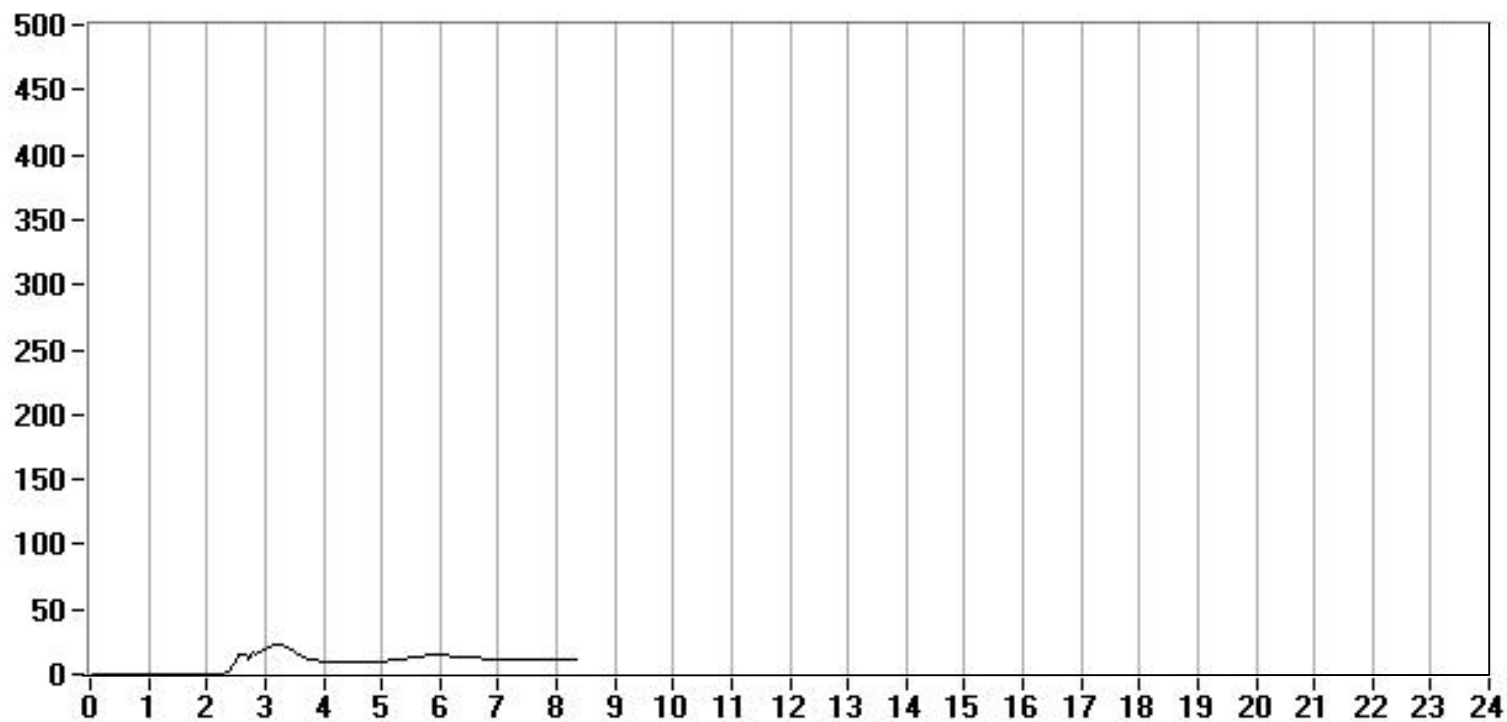
Feet/minute



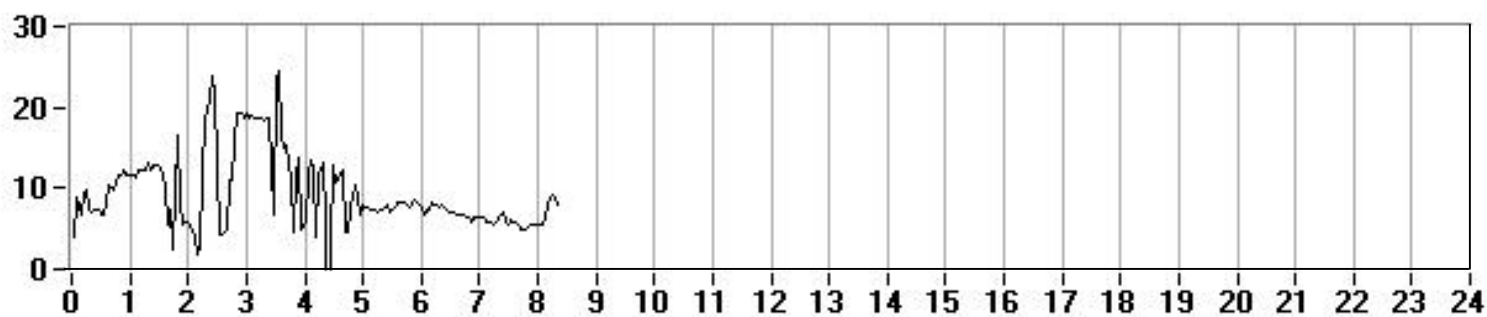
Depth (Feet)

MV20 Specific Conductivity

mS/meter



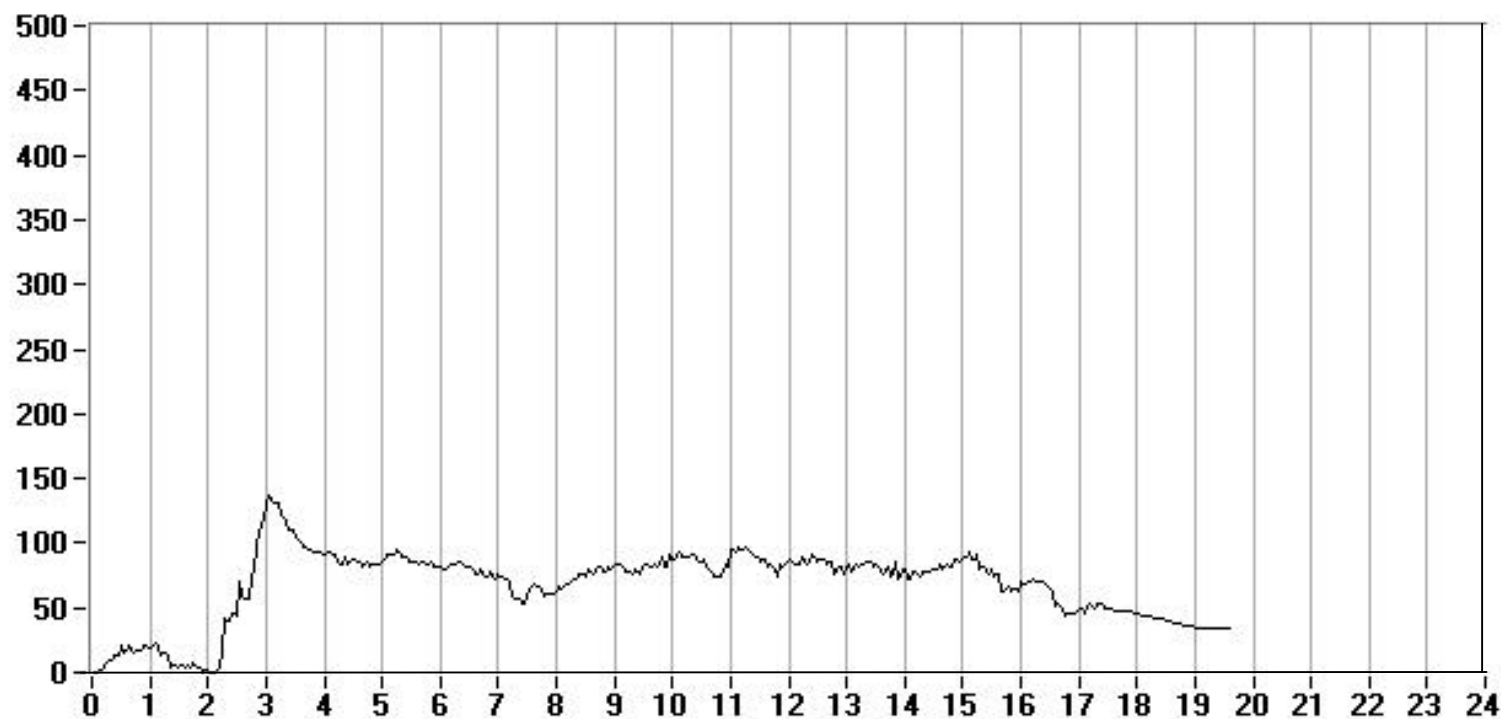
Feet/minute



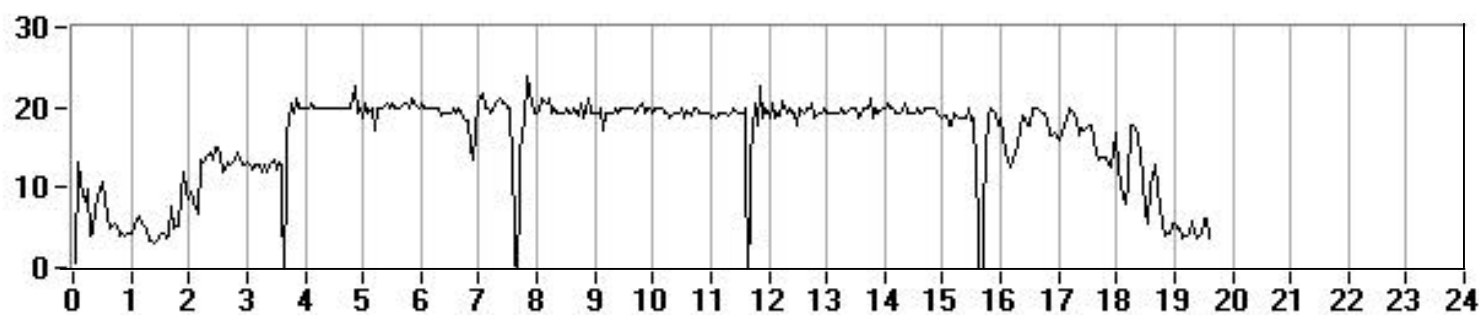
Depth (Feet)

MV21 Specific Conductivity

mS/meter



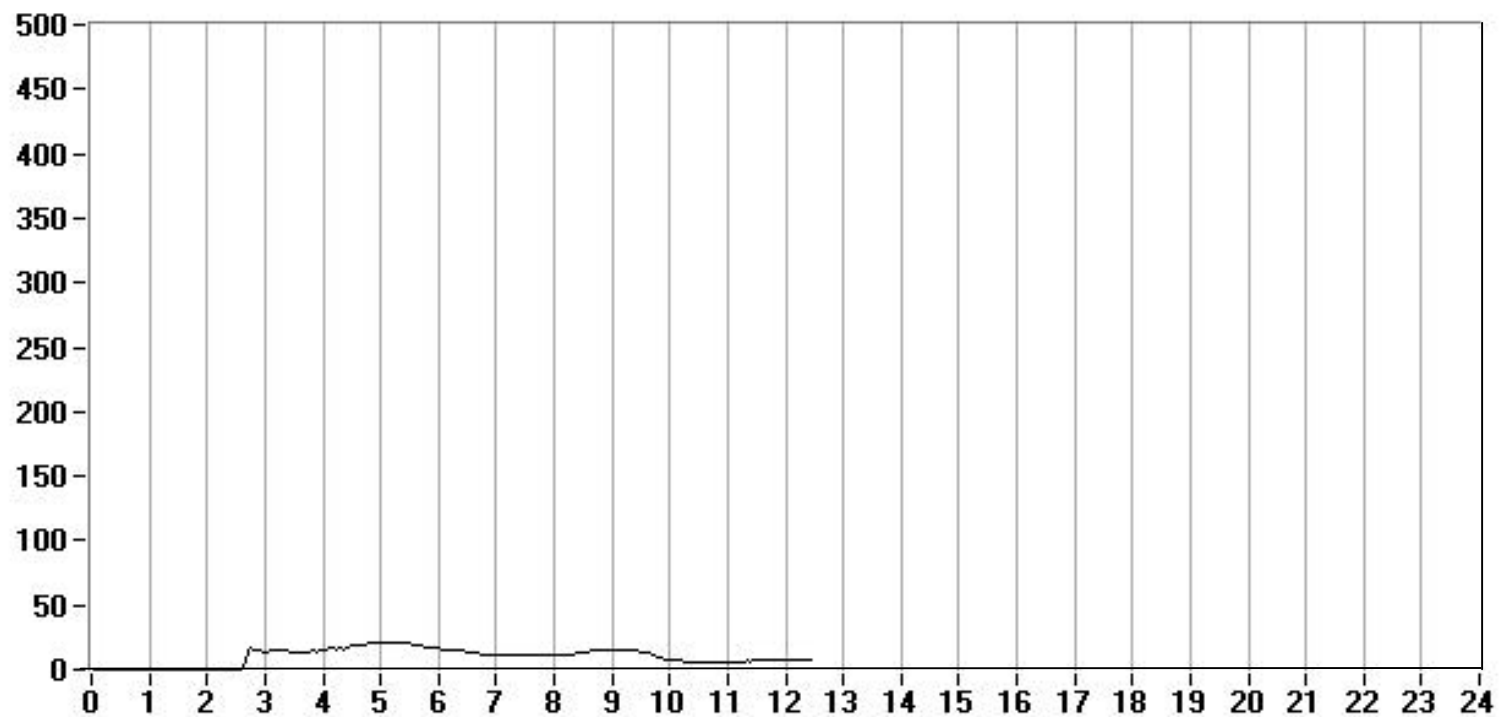
Feet/minute



Depth (Feet)

MV22 Specific Conductivity

mS/meter



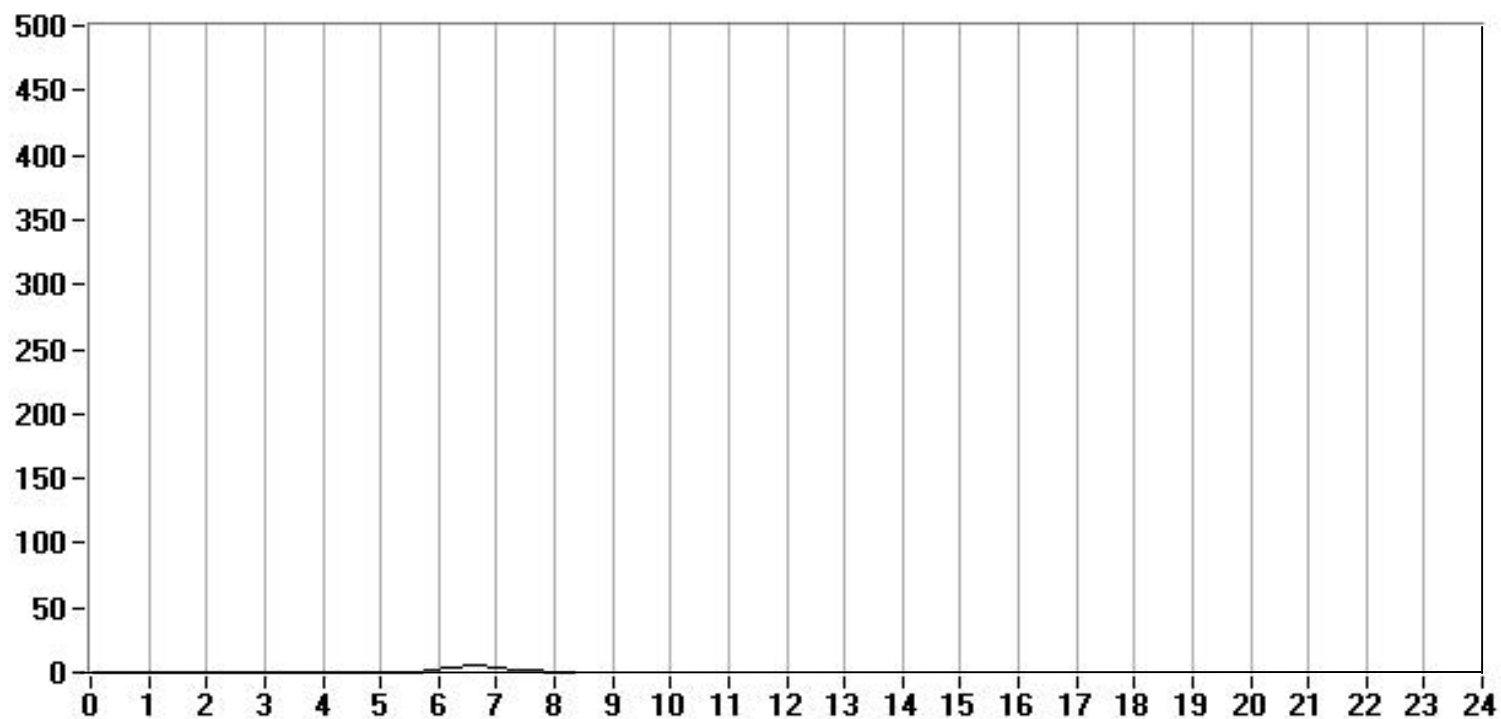
Feet/minute



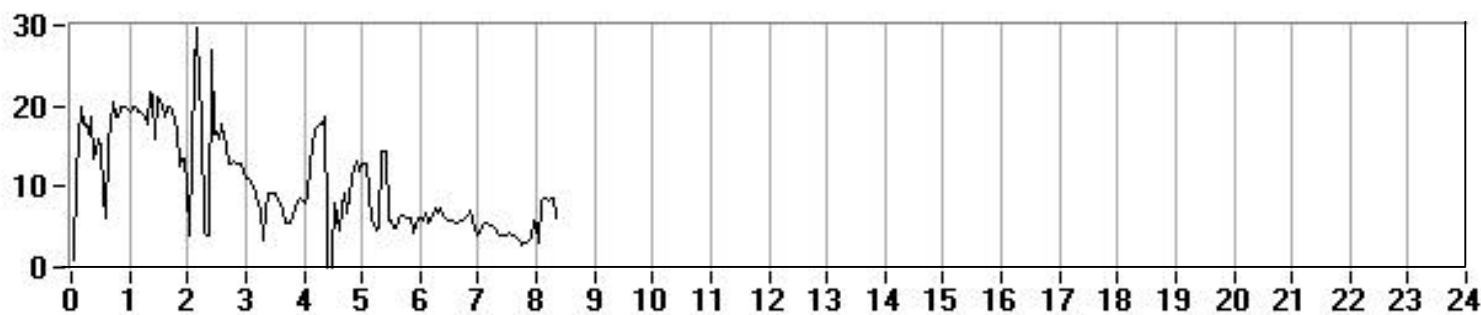
Depth (Feet)

MV23 Specific Conductivity

mS/meter



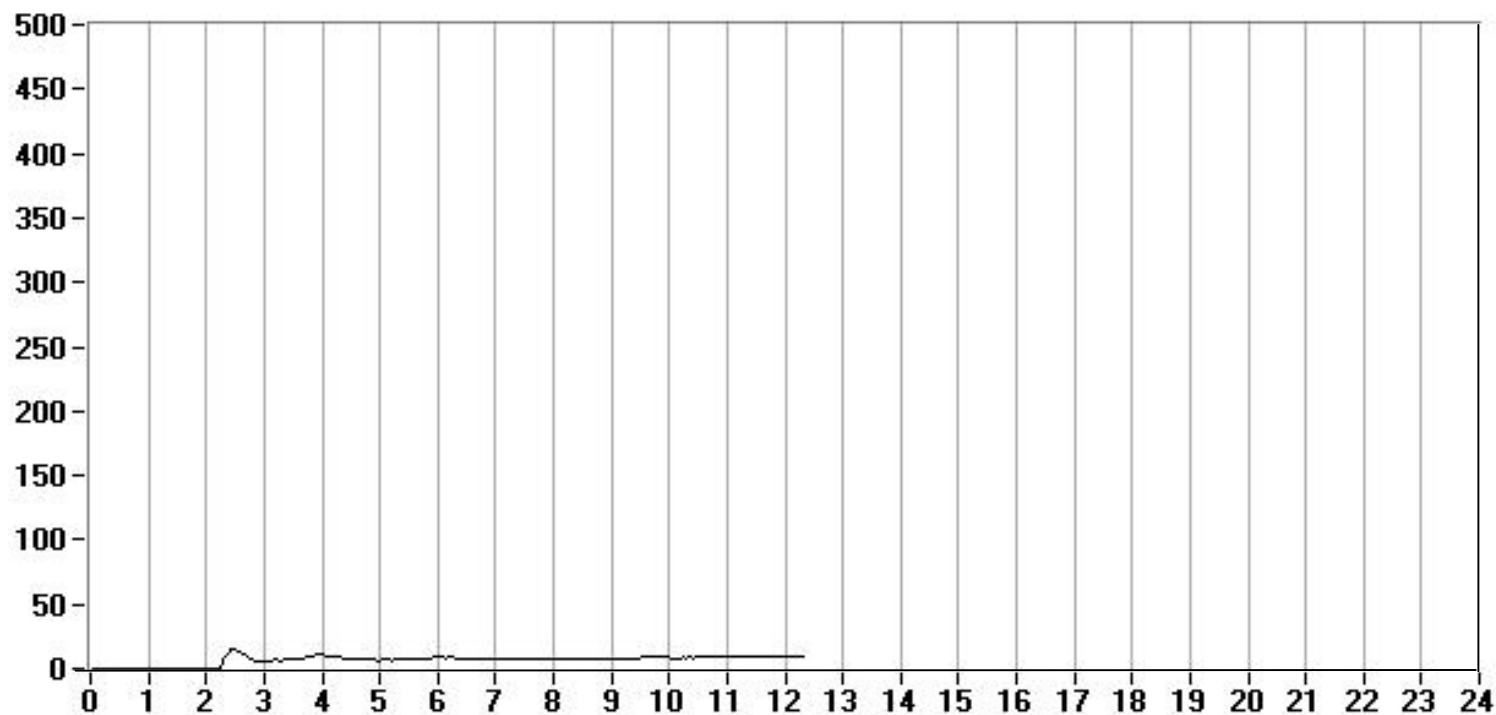
Feet/minute



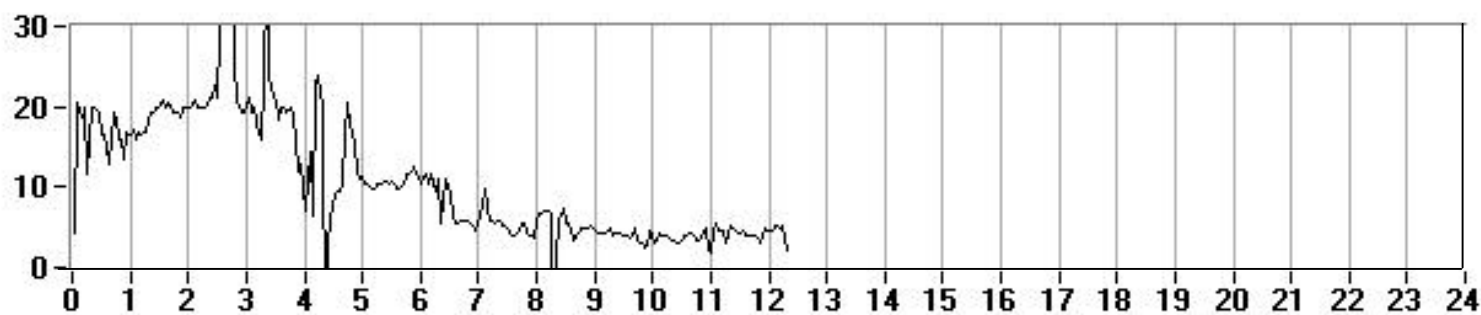
Depth (Feet)

MV24 Specific Conductivity

mS/meter



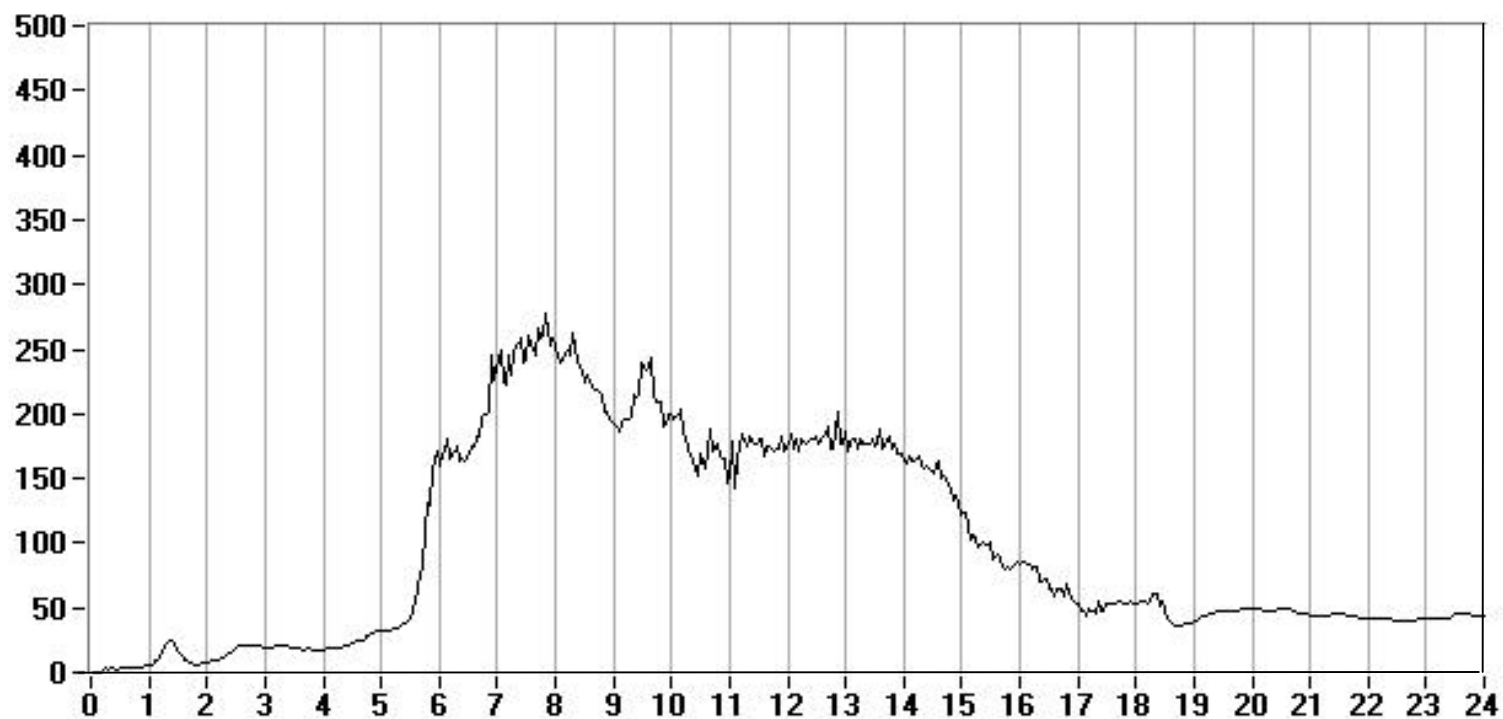
Feet/minute



Depth (Feet)

MV25 Specific Conductivity

mS/meter



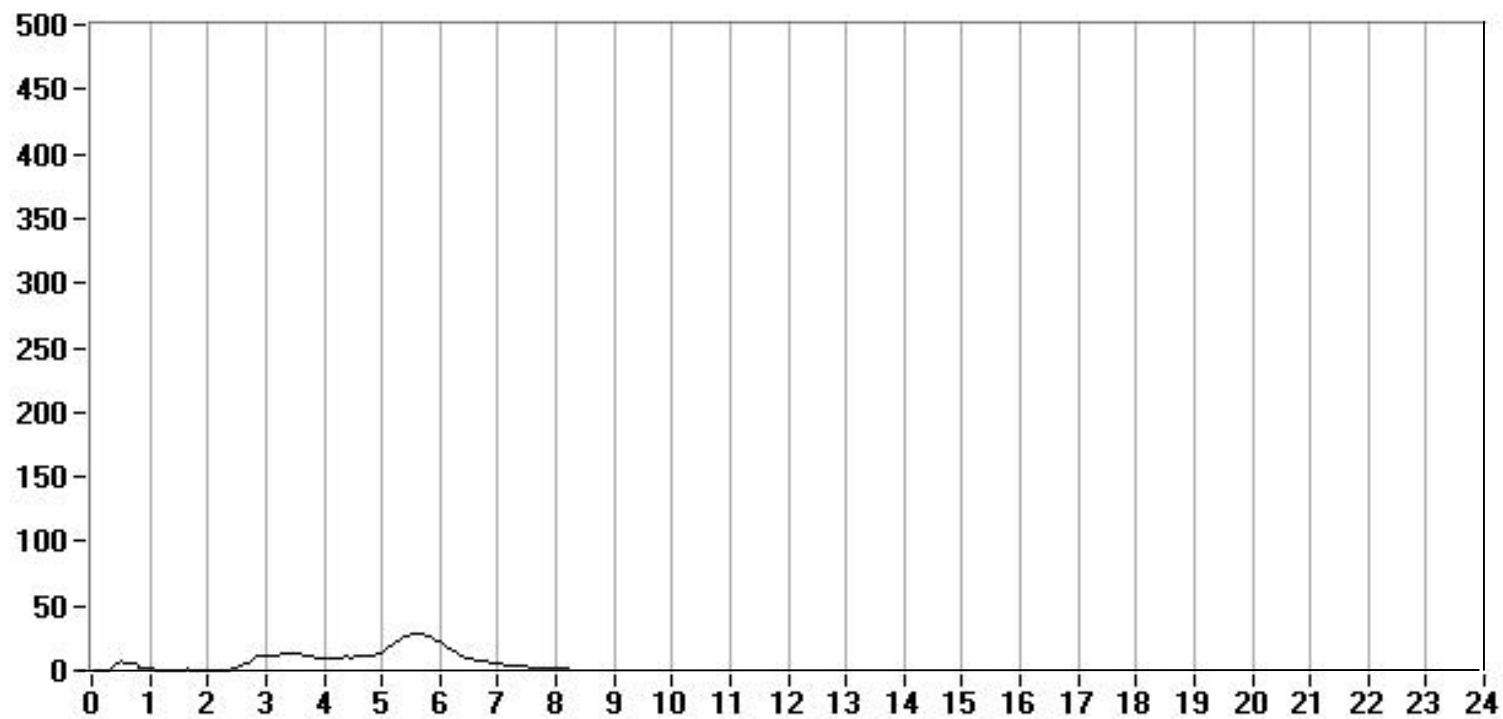
Feet/minute



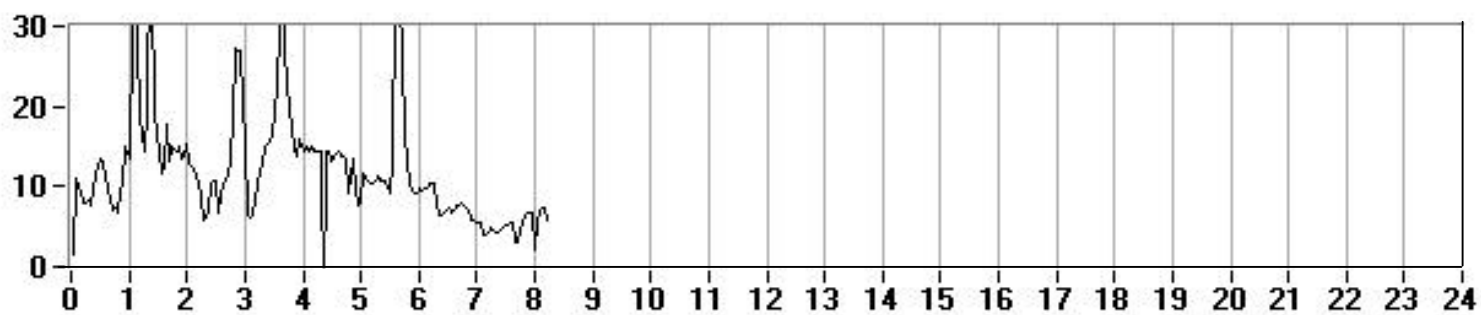
Depth (Feet)

MV26 Specific Conductivity

mS/meter



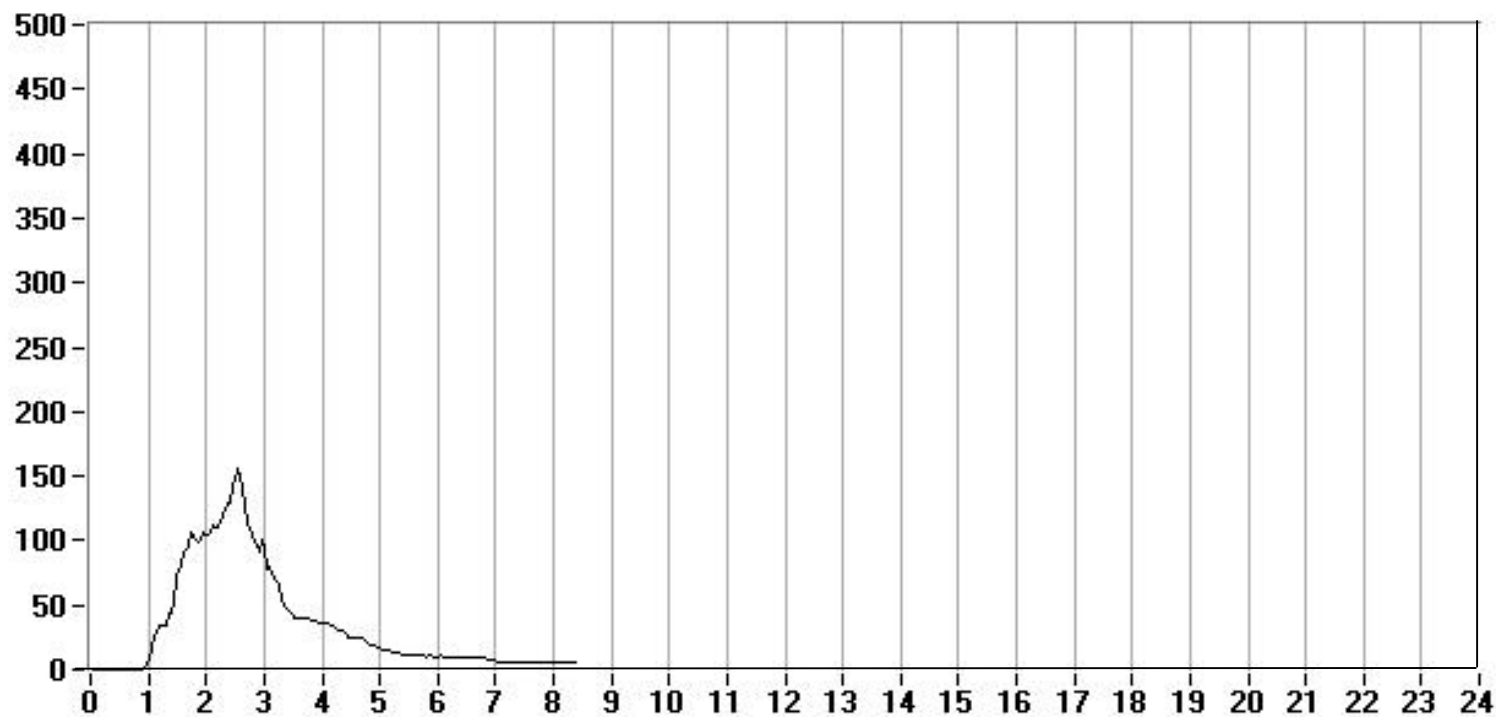
Feet/minute



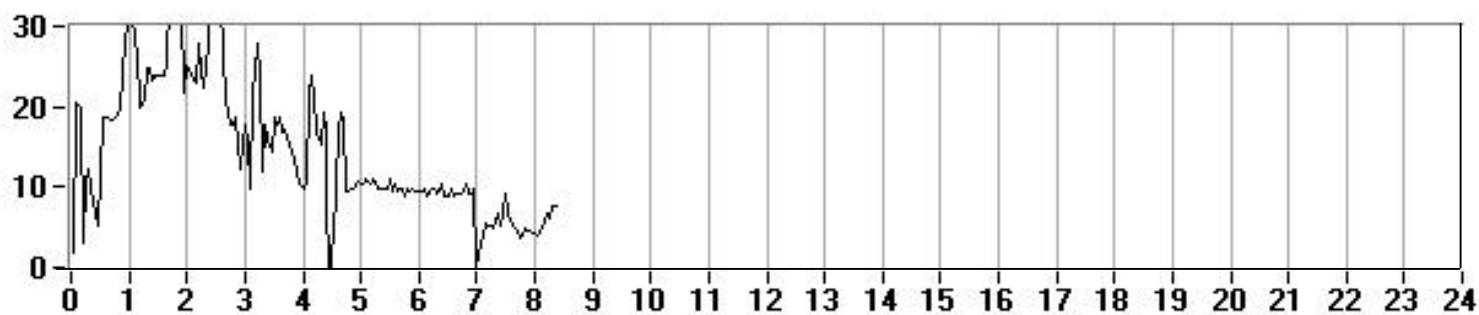
Depth (Feet)

MV27 Specific Conductivity

mS/meter



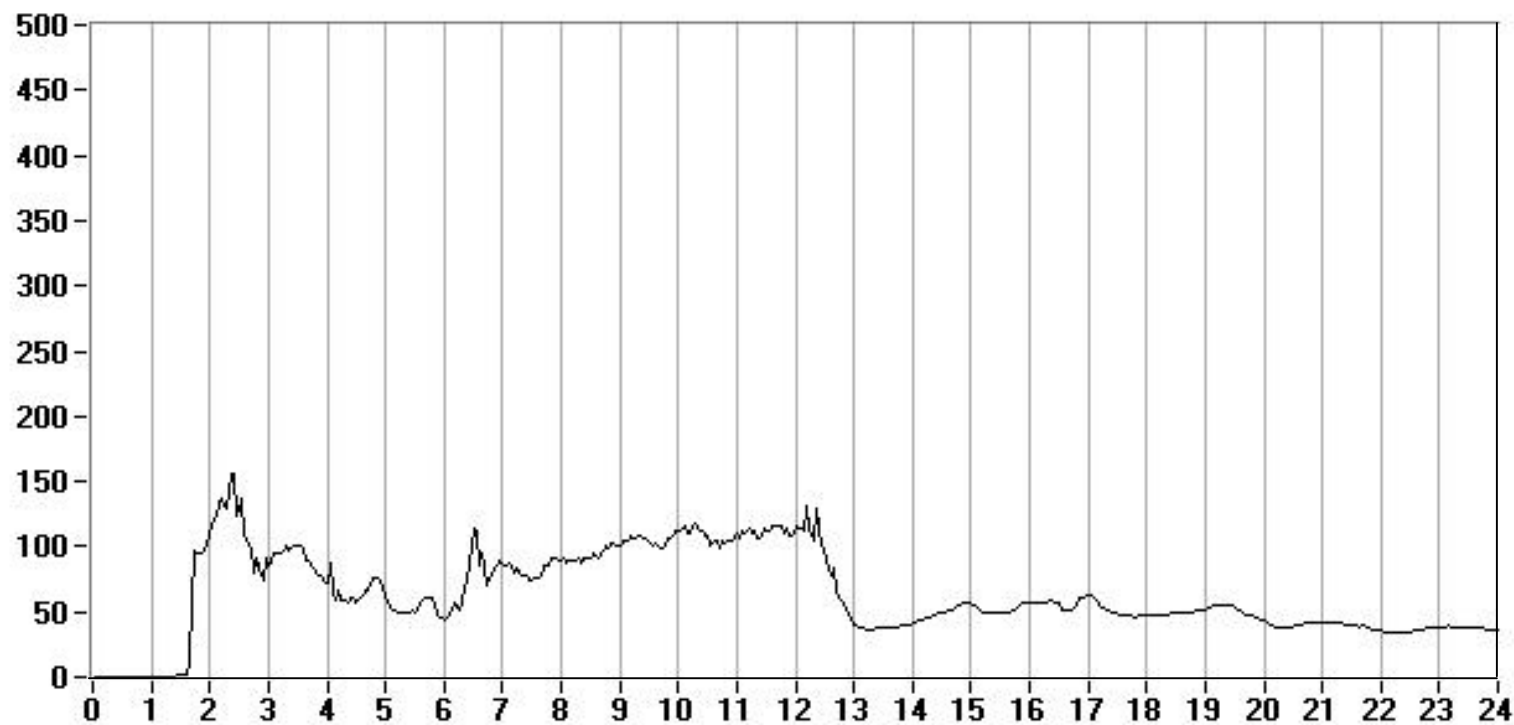
Feet/minute



Depth (Feet)

MV28 Specific Conductivity

mS/meter



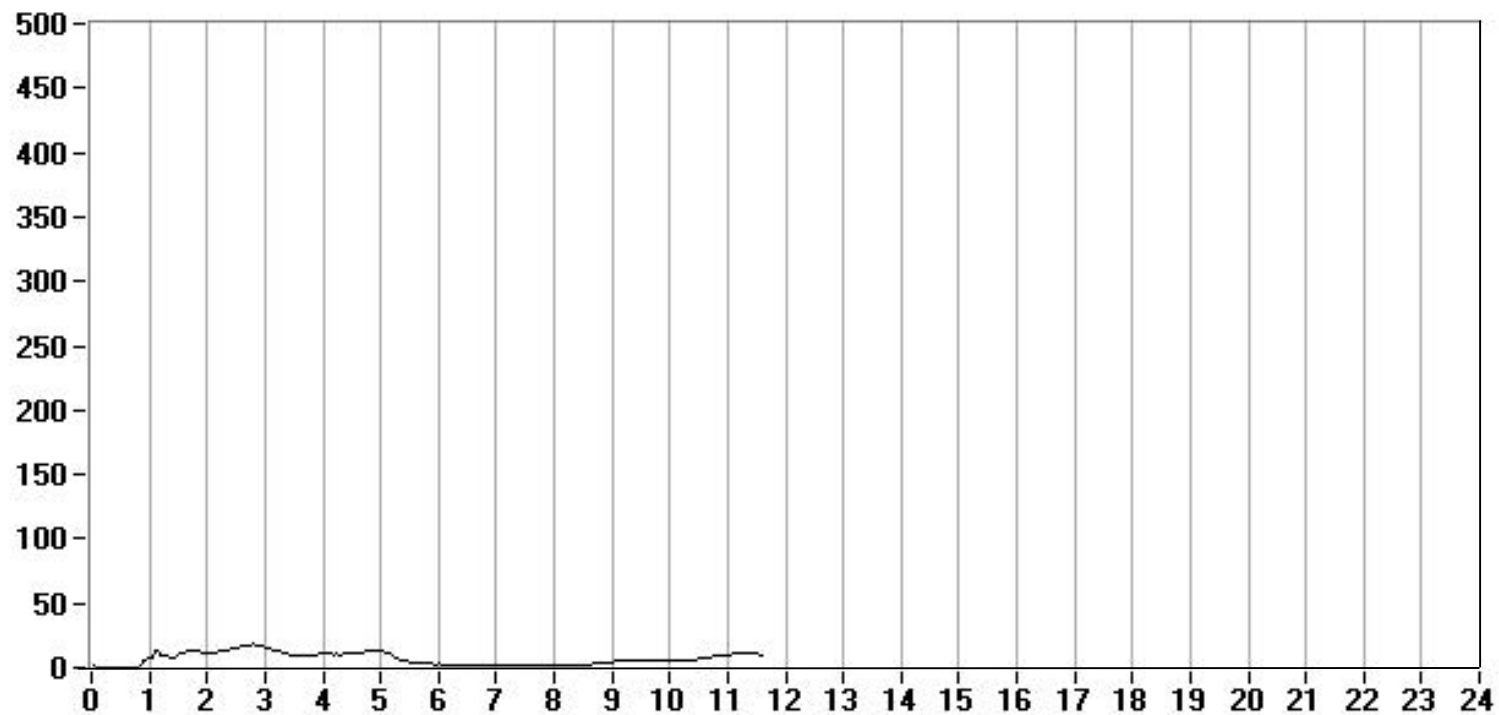
Feet/minute



Depth (Feet)

MV29 Specific Conductivity

mS/meter



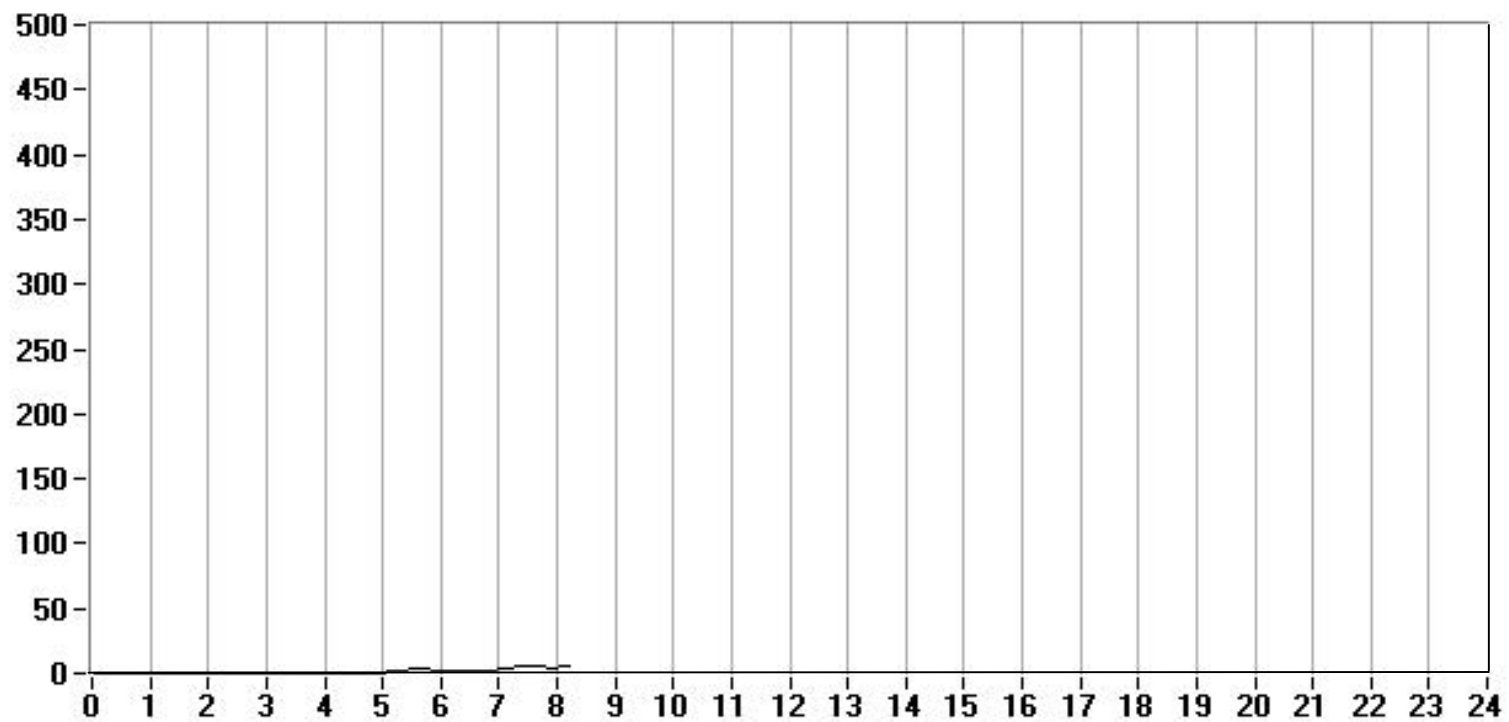
Feet/minute



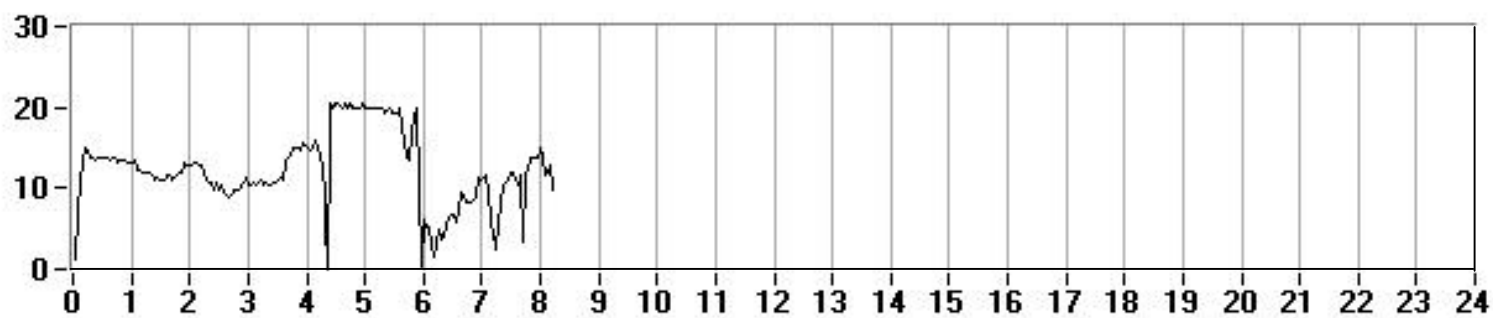
Depth (Feet)

MV30 Specific Conductivity

mS/meter



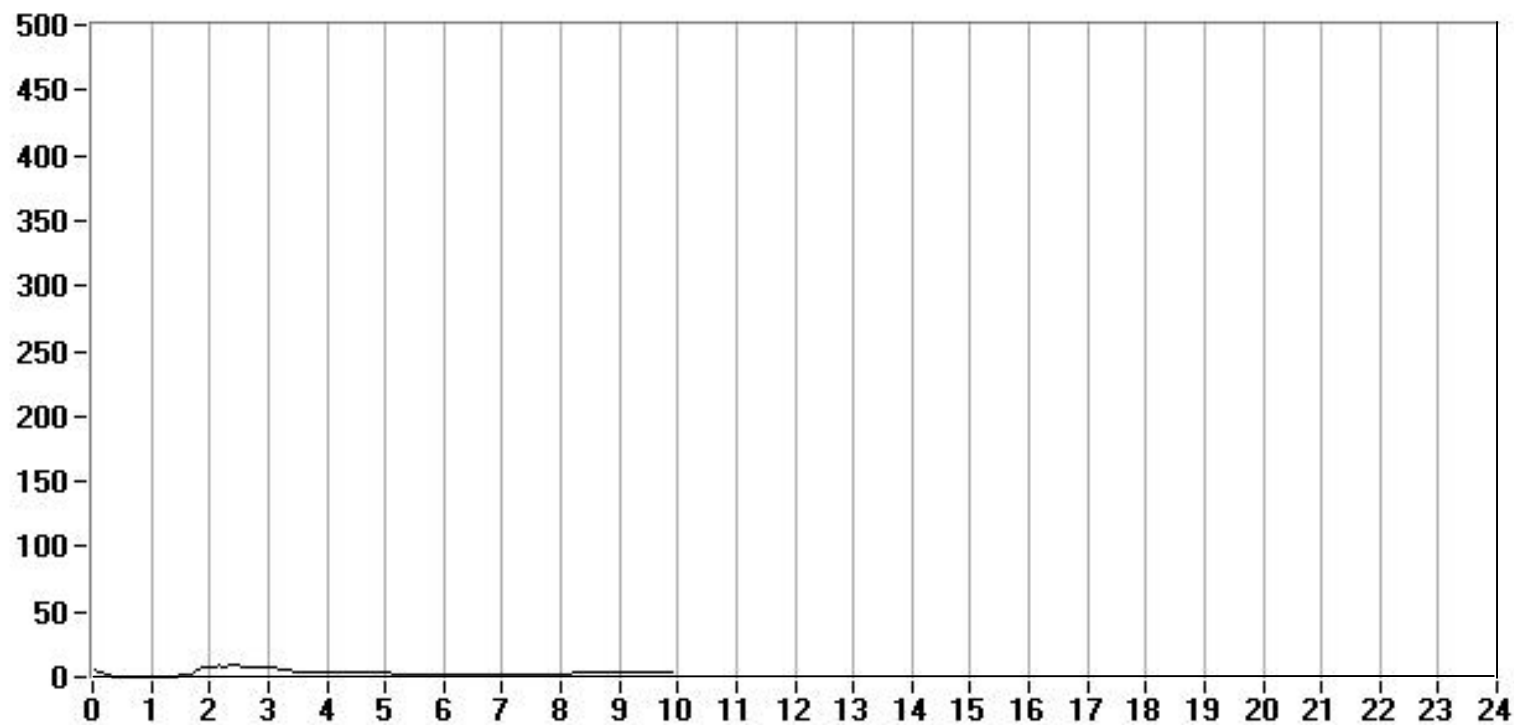
Feet/minute



Depth (Feet)

MV31 Specific Conductivity

mS/meter



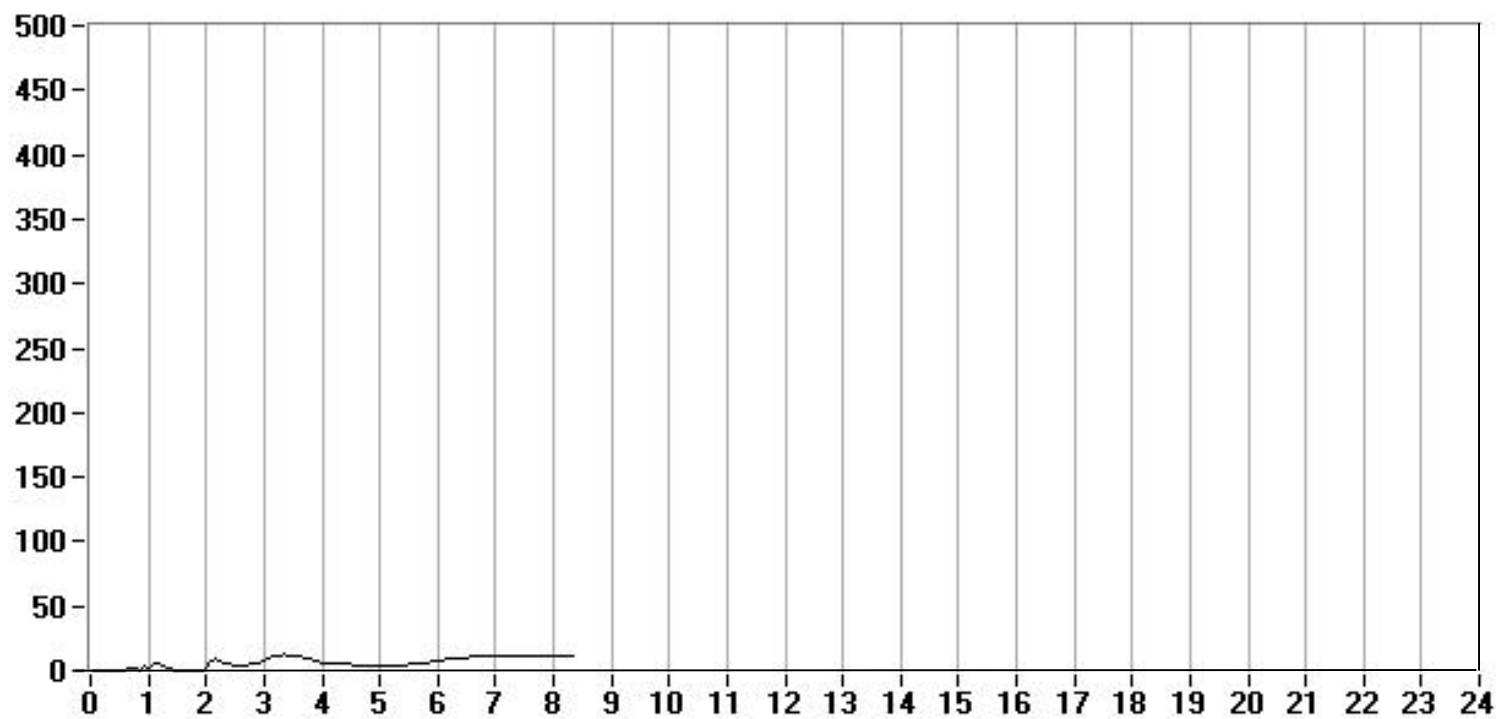
Feet/minute



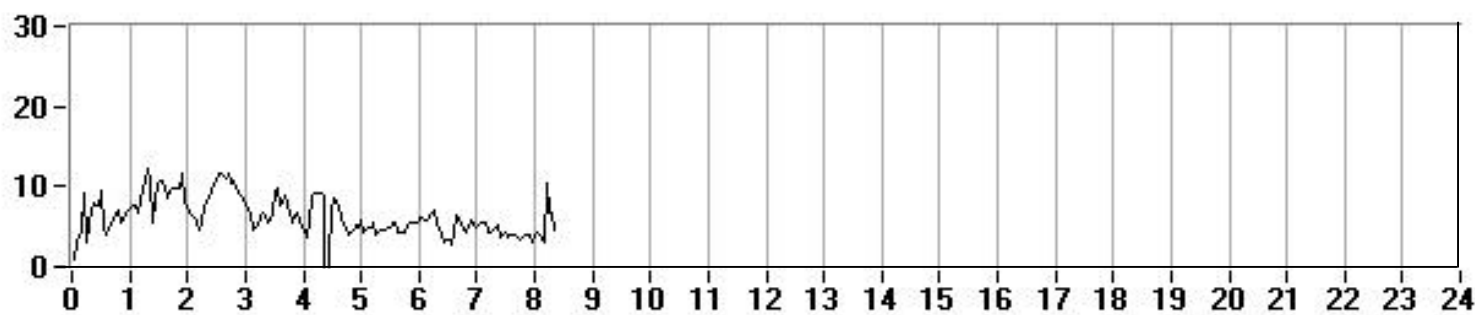
Depth (Feet)

MV32 Specific Conductivity

mS/meter



Feet/minute

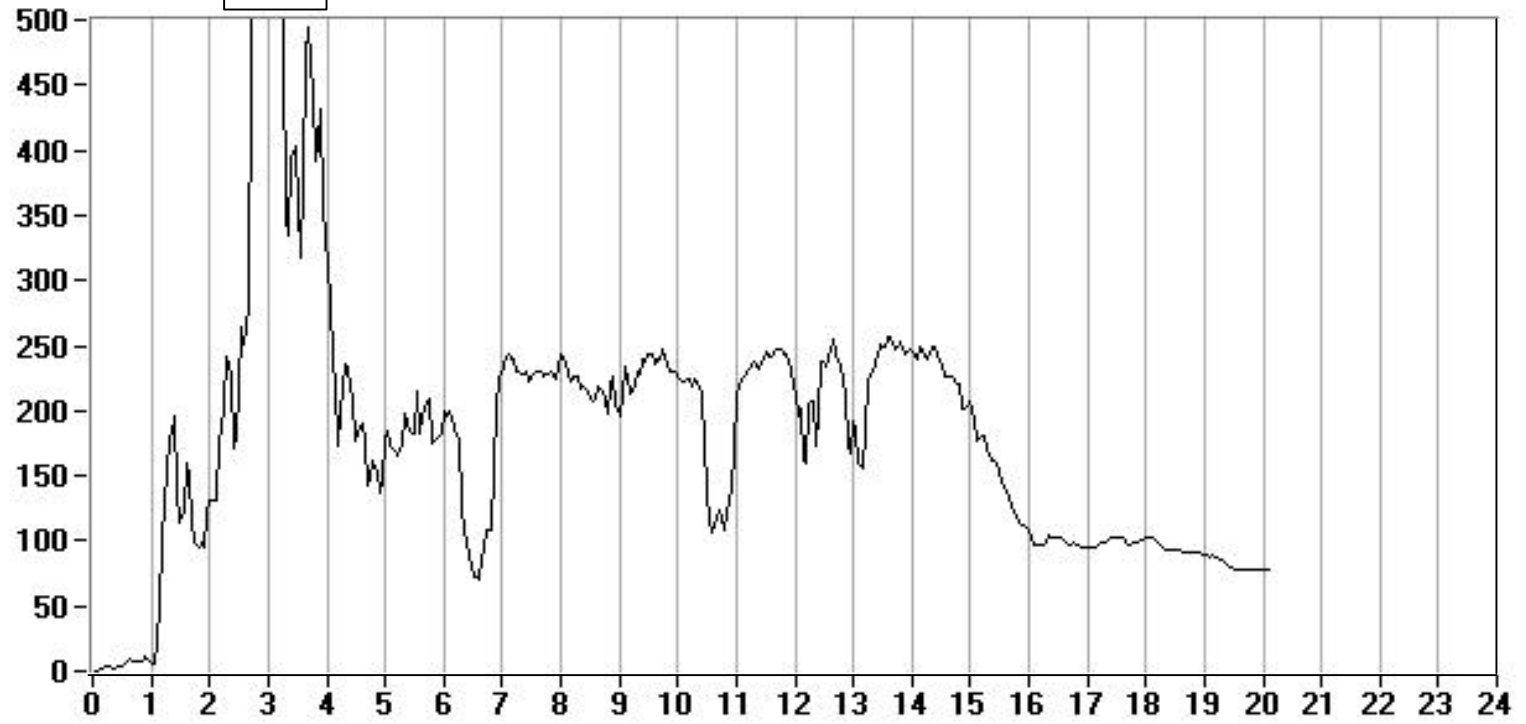


Depth (Feet)

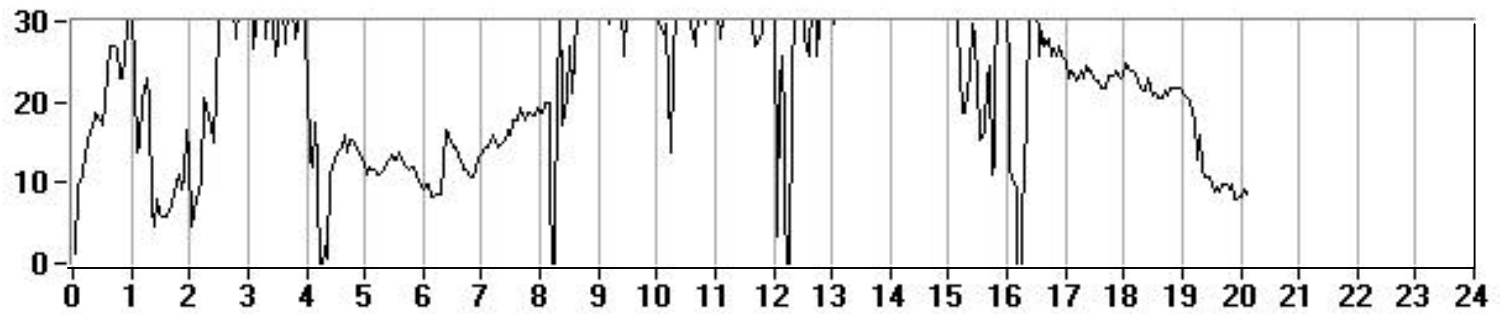
MV36 Specific Conductivity

1700

mS/meter



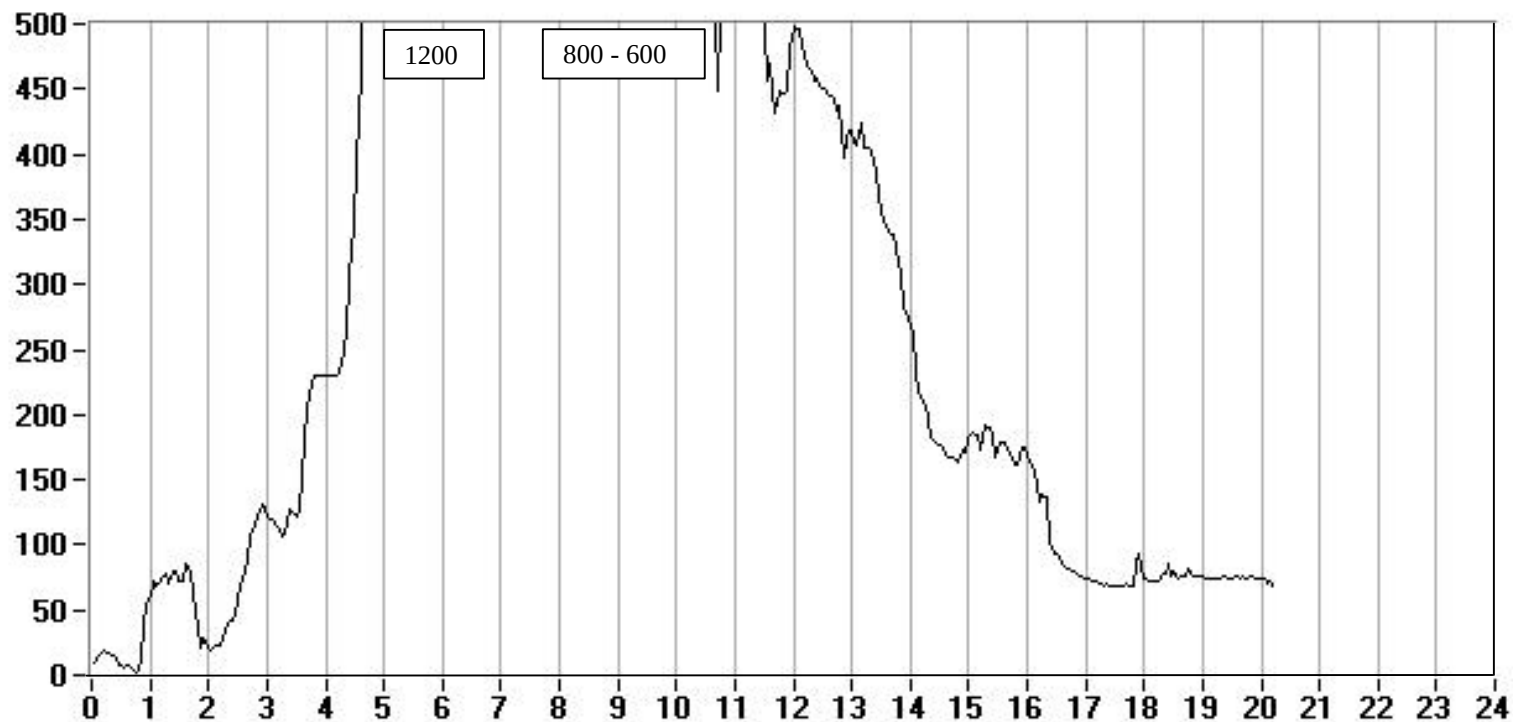
Feet/minute



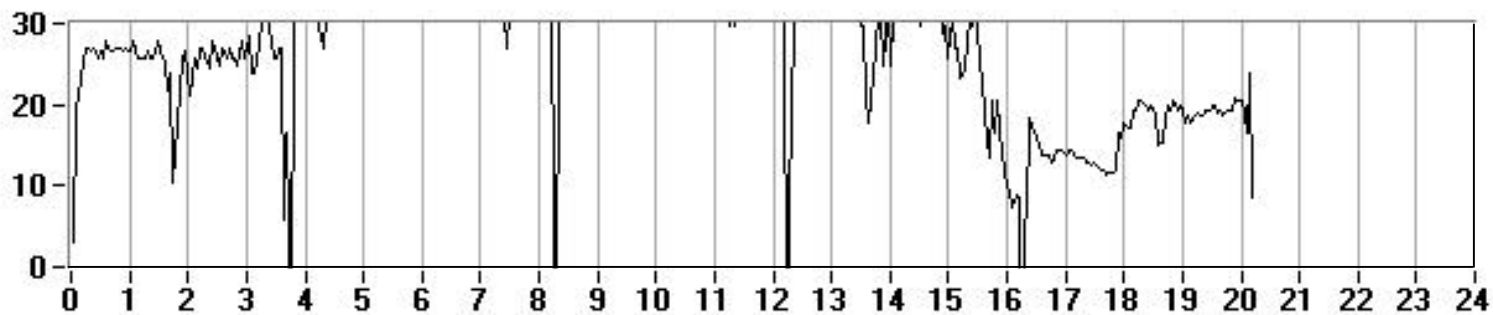
Depth (Feet)

MV44 Specific Conductivity

mS/meter



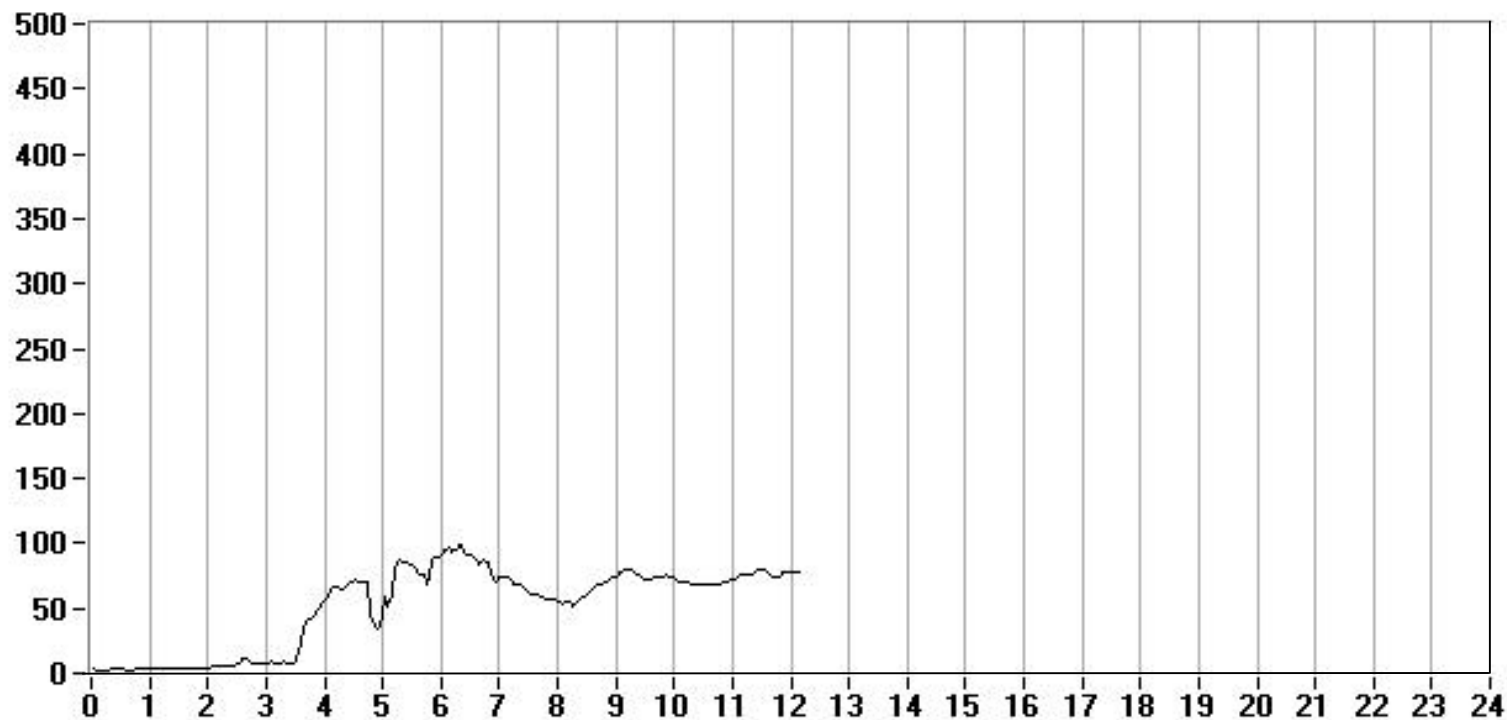
Feet/minute



Depth (Feet)

MV50 Specific Conductivity

mS/meter



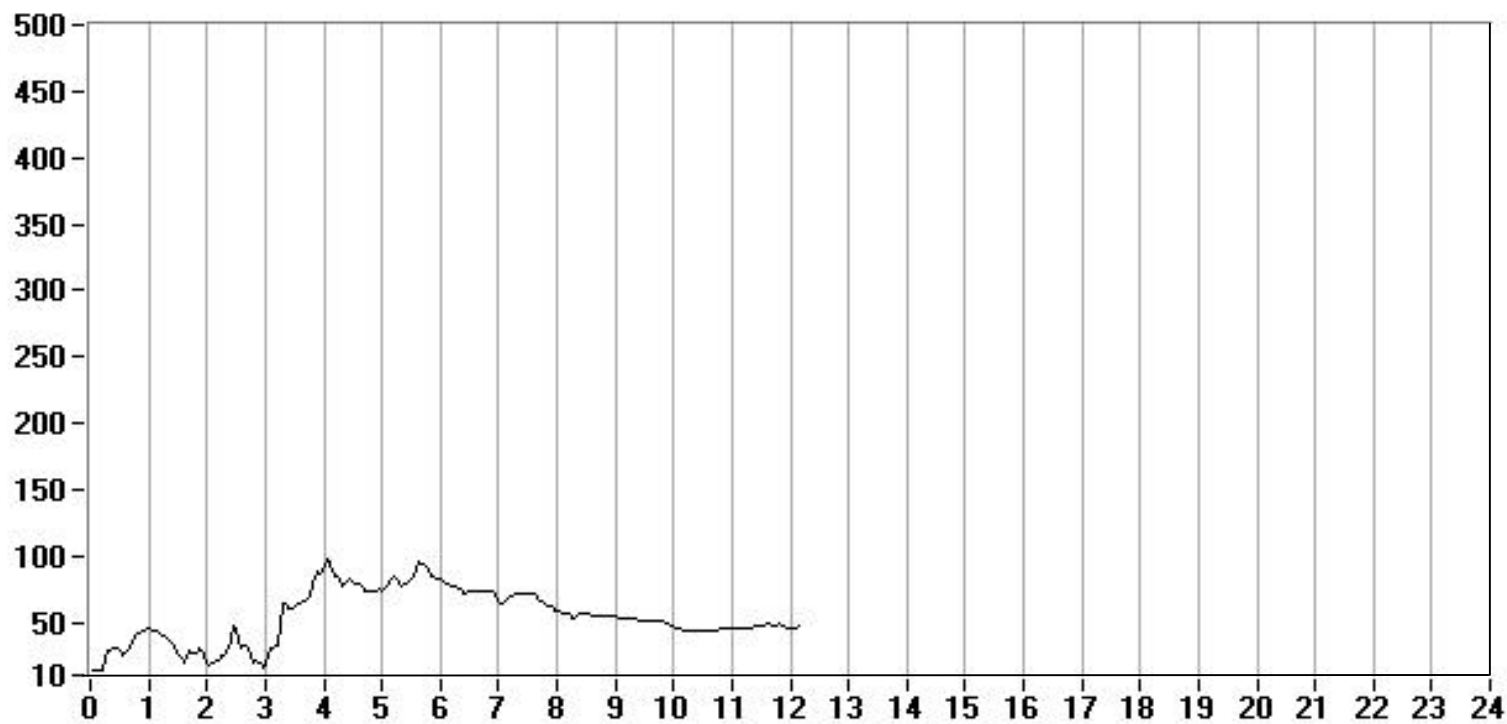
Feet/minute



Depth (Feet)

MV52 Specific Conductivity

mS/meter



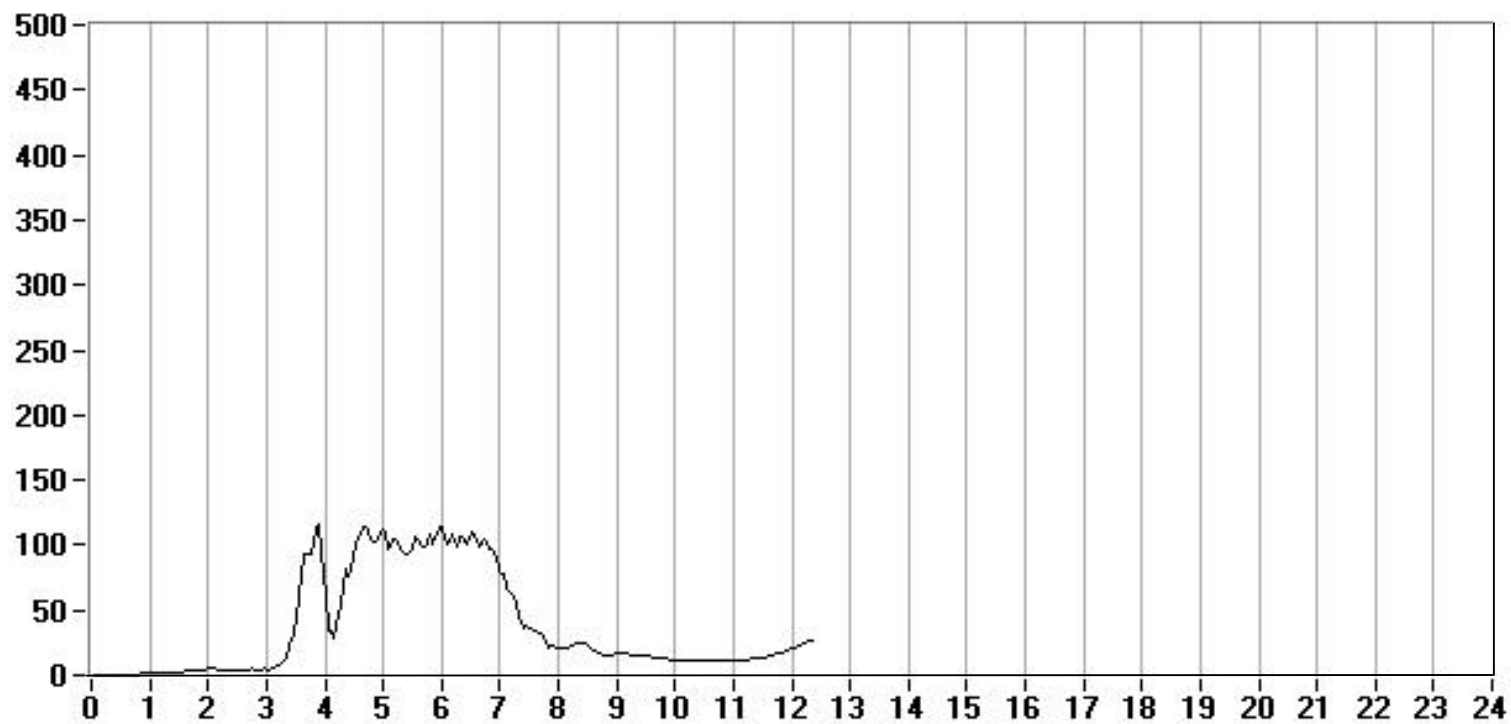
Feet/minute



Depth (Feet)

MVA Specific Conductivity

mS/meter



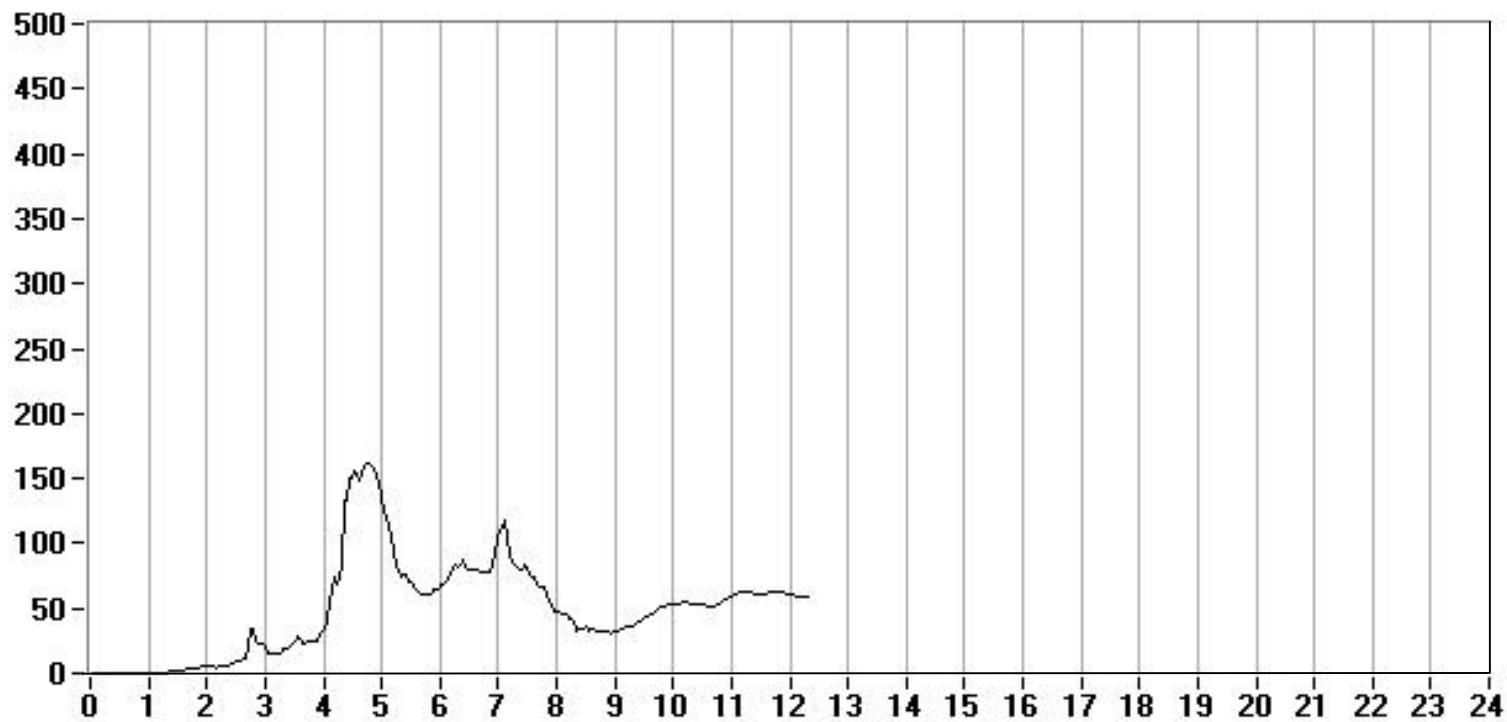
Feet/minute



Depth (Feet)

MVB Specific Conductivity

mS/meter



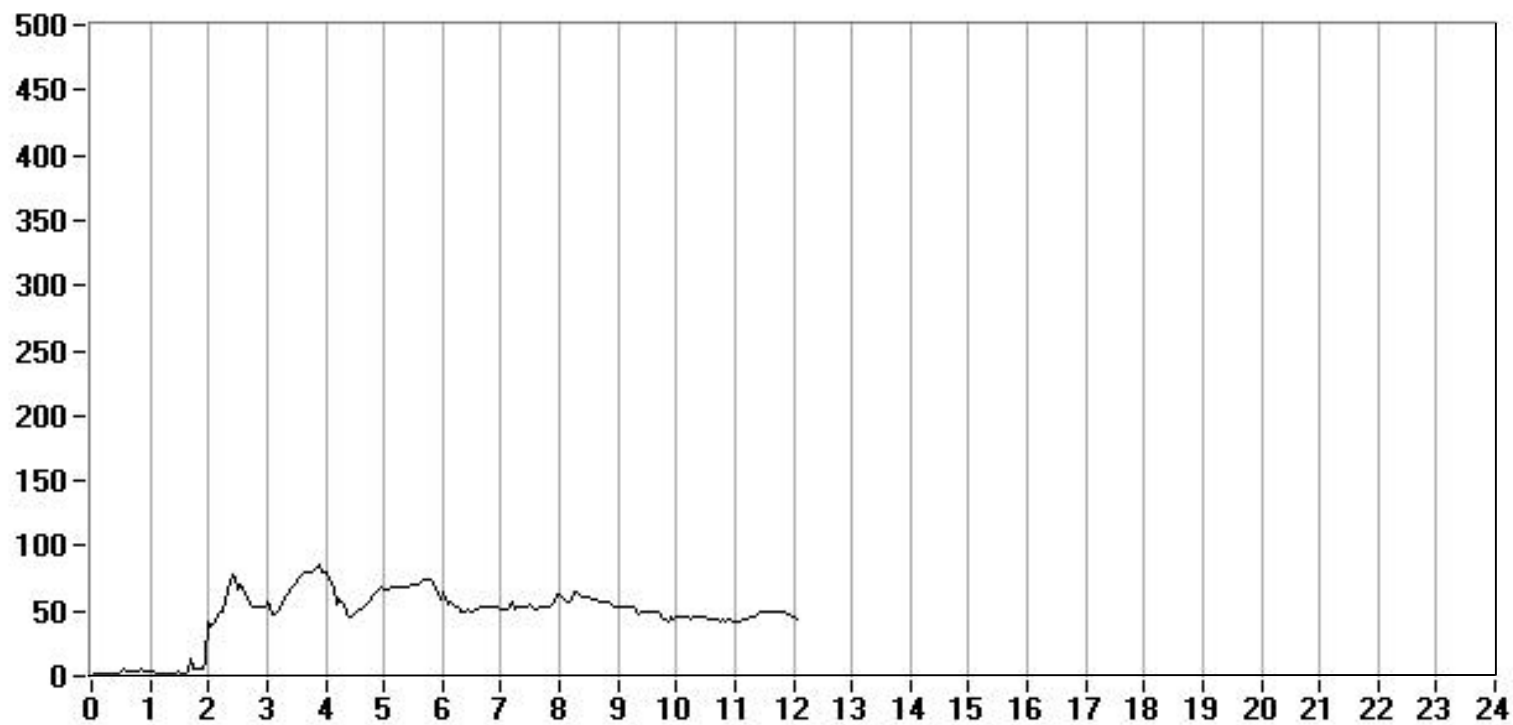
Feet/minute



Depth (Feet)

MVC Specific Conductivity

mS/meter



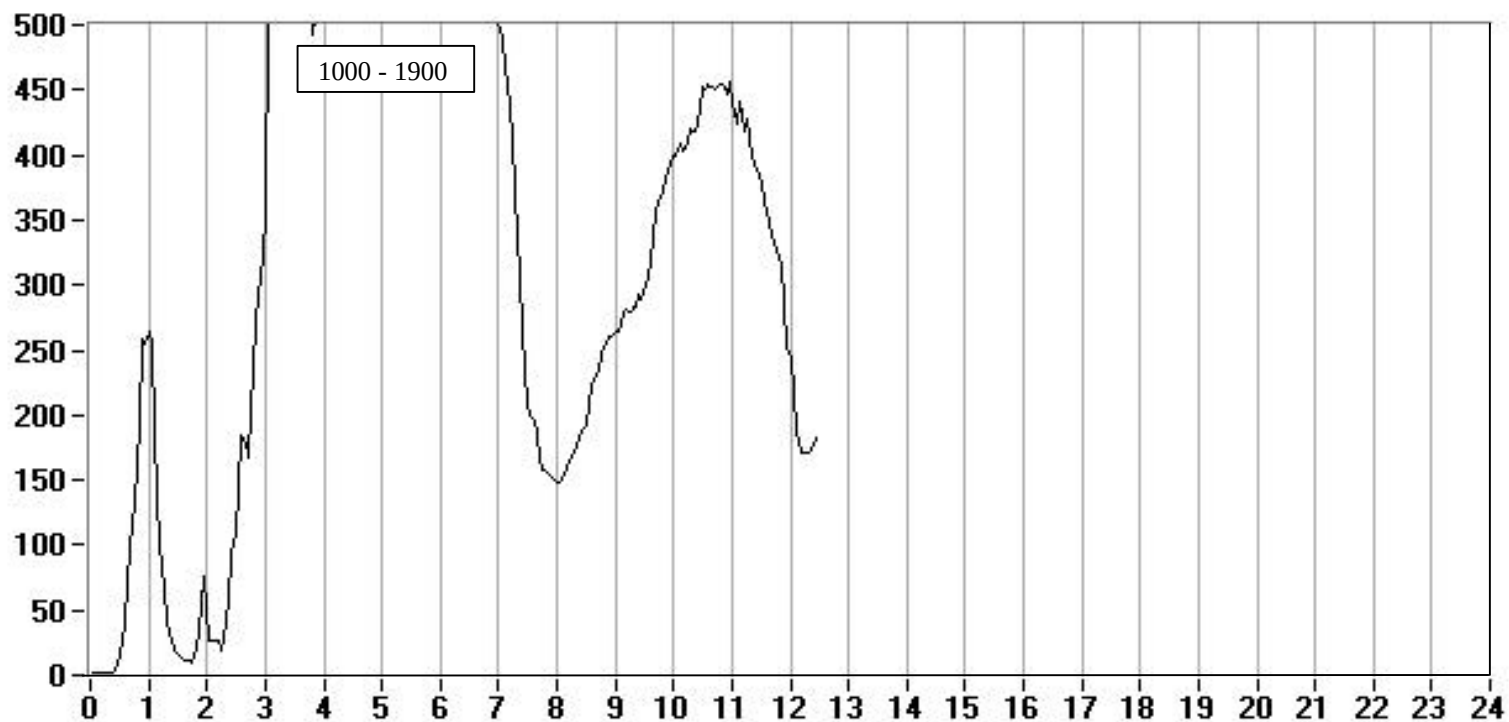
Feet/minute



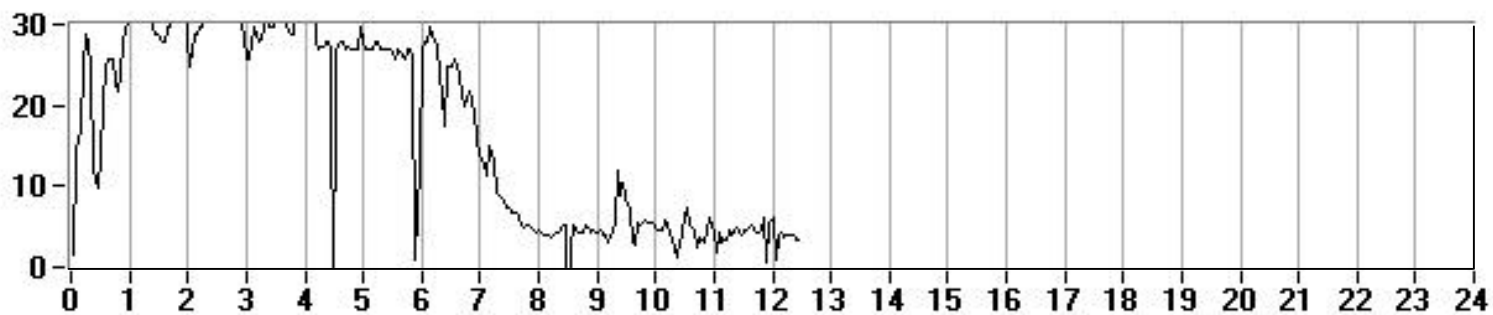
Depth (Feet)

MVD Specific Conductivity

mS/meter



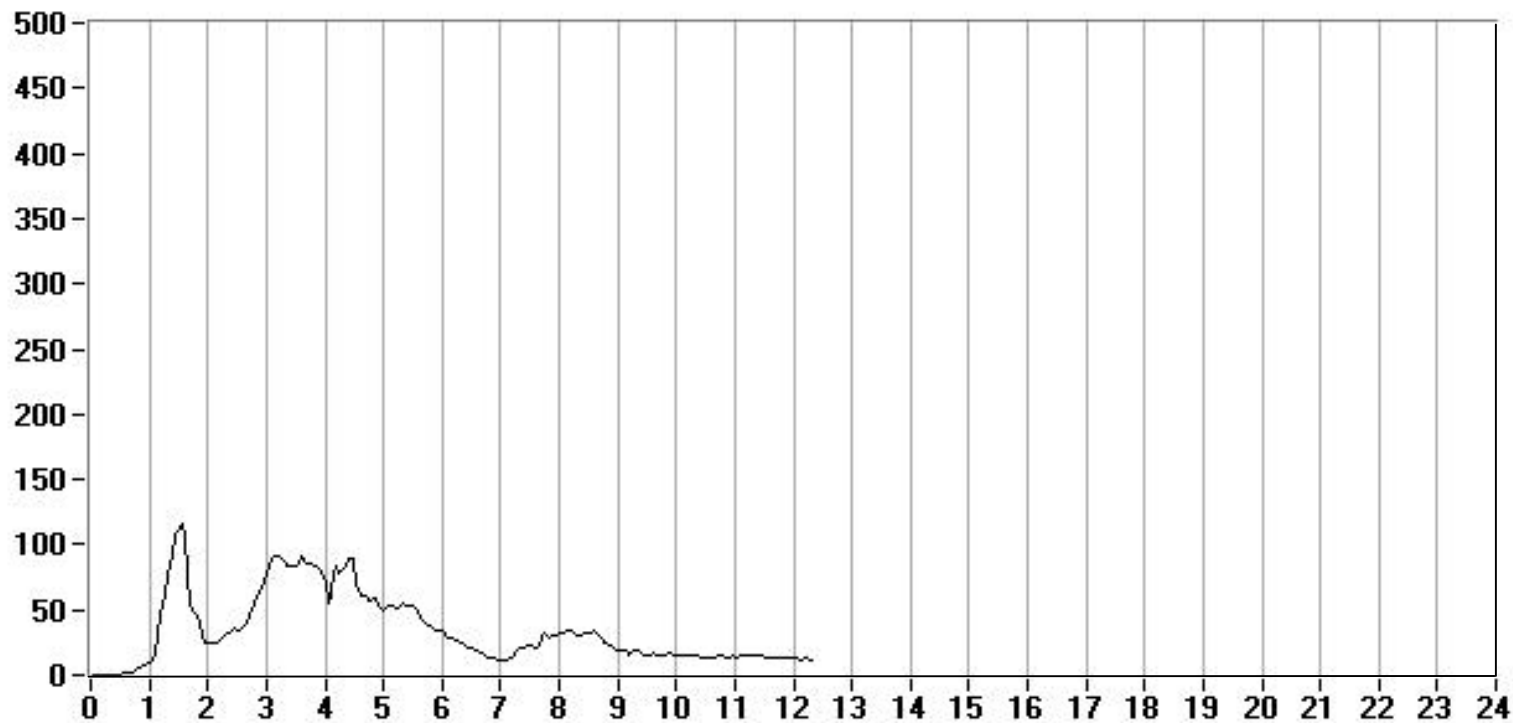
Feet/minute



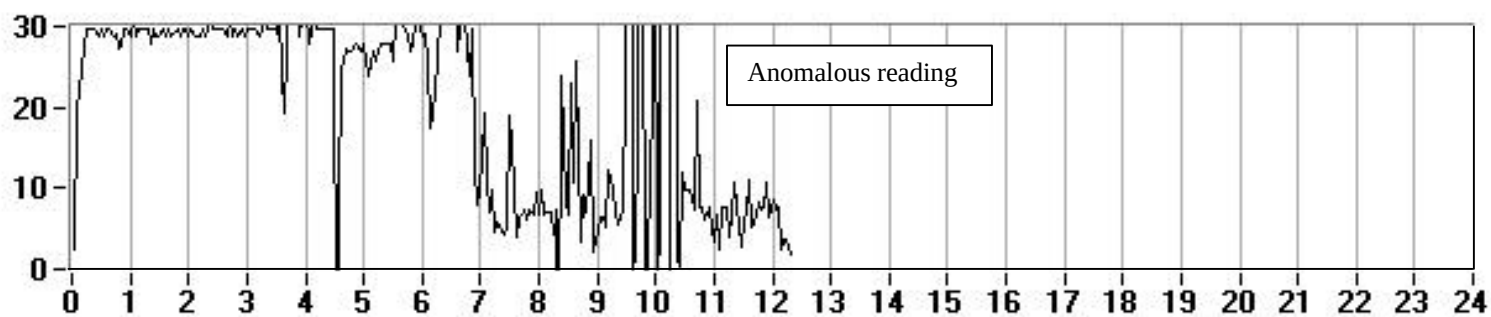
Depth (Feet)

MVE Specific Conductivity

mS/meter



Feet/minute

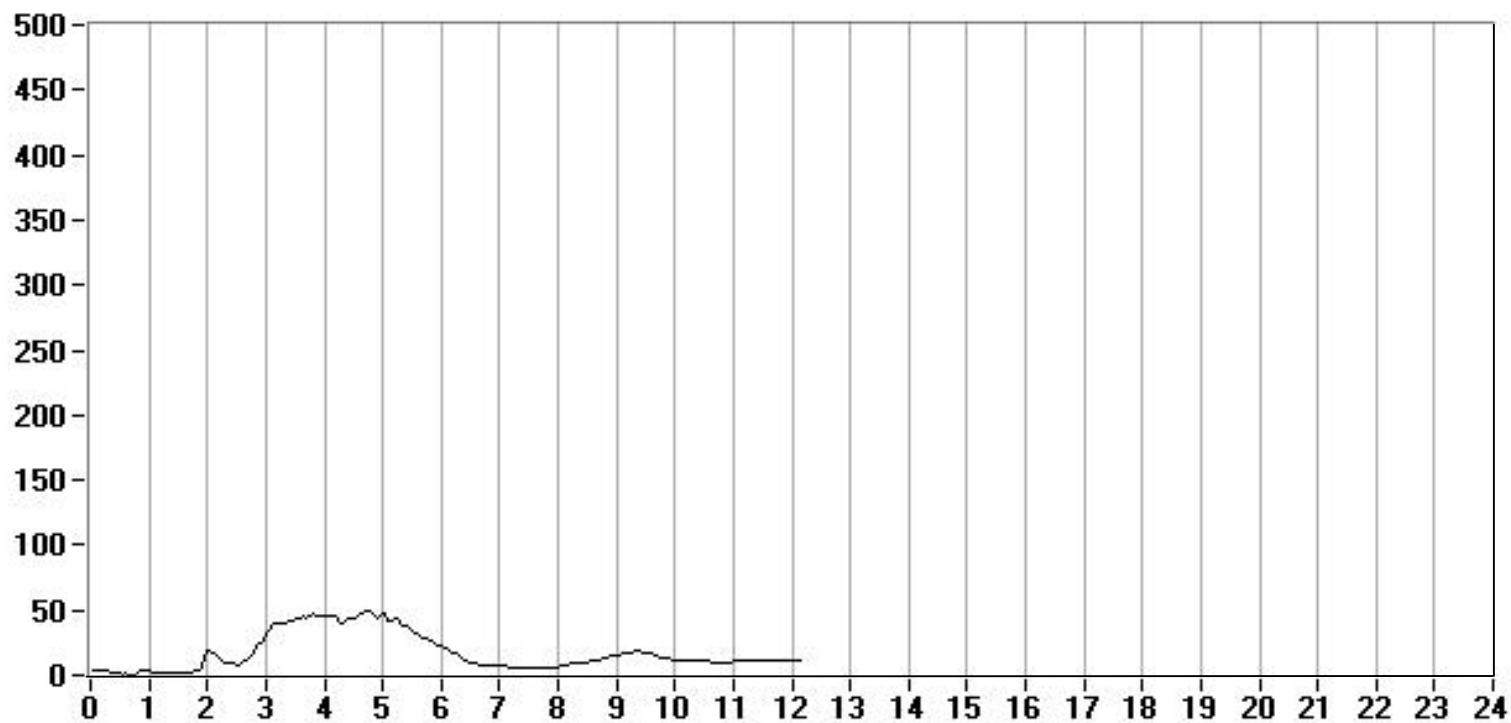


Anomalous reading

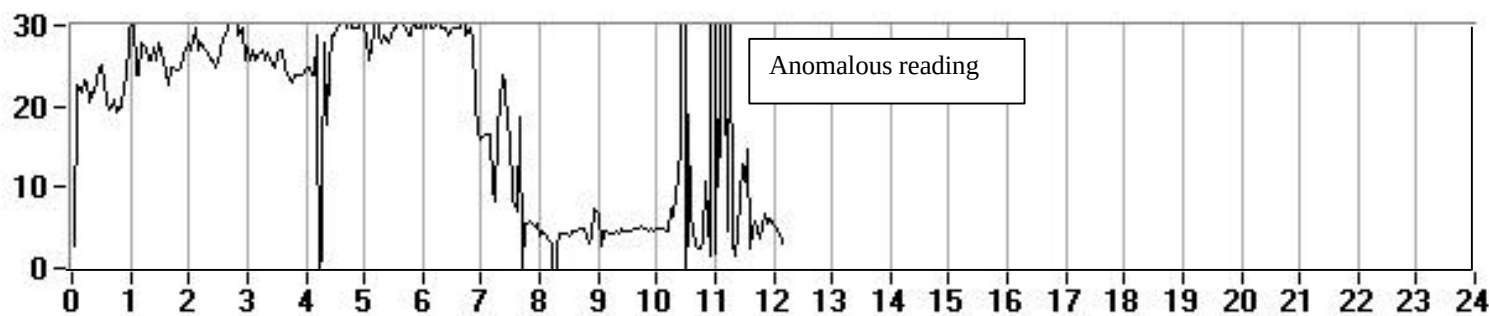
Depth (Feet)

MVF Specific Conductivity

mS/meter



Feet/minute

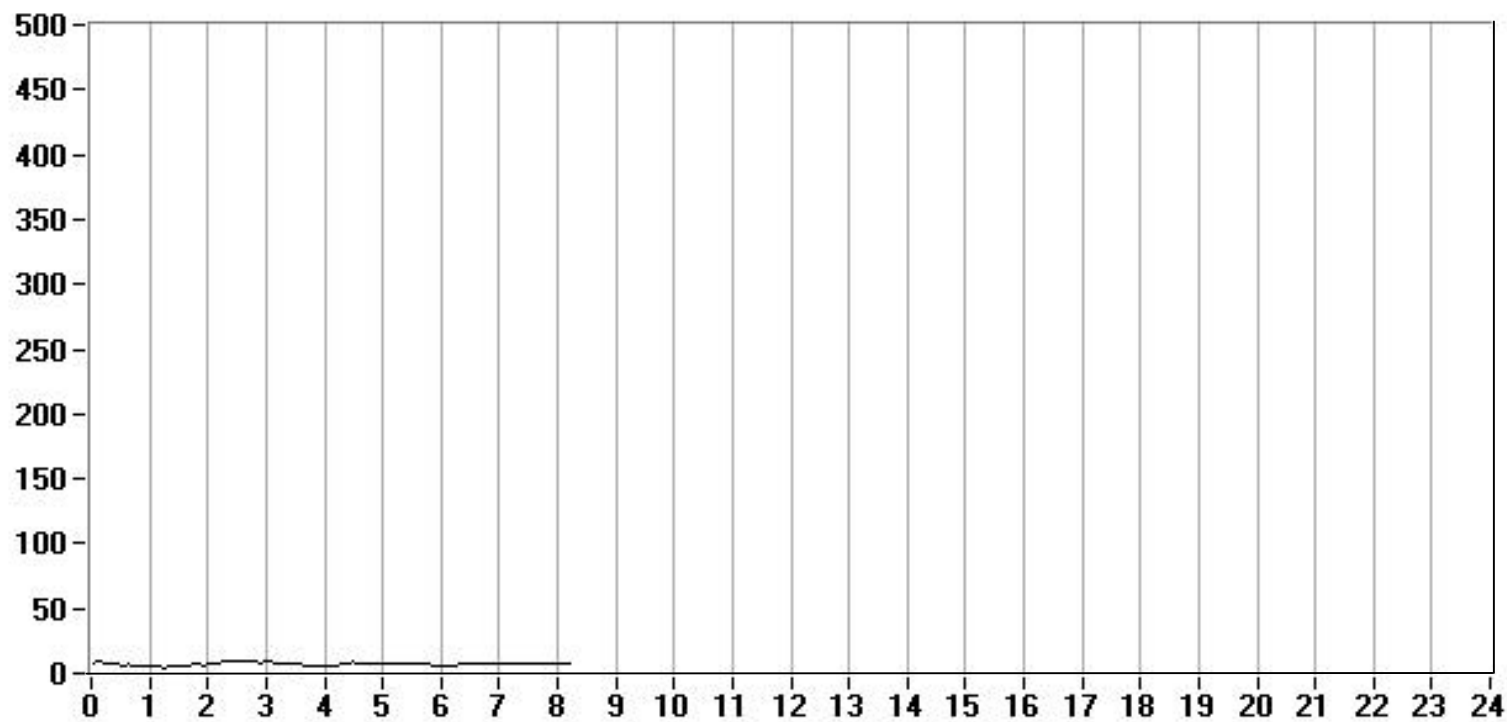


Anomalous reading

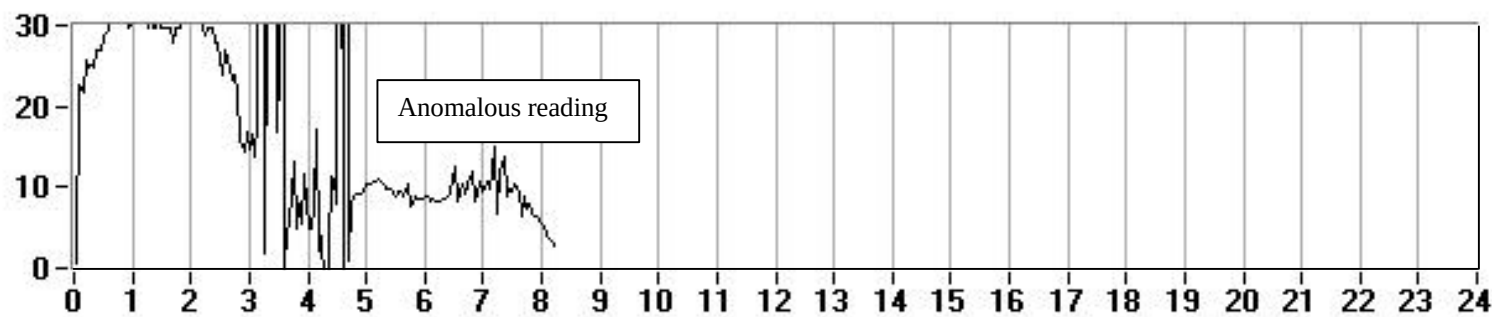
Depth (Feet)

MVG Specific Conductivity

mS/meter



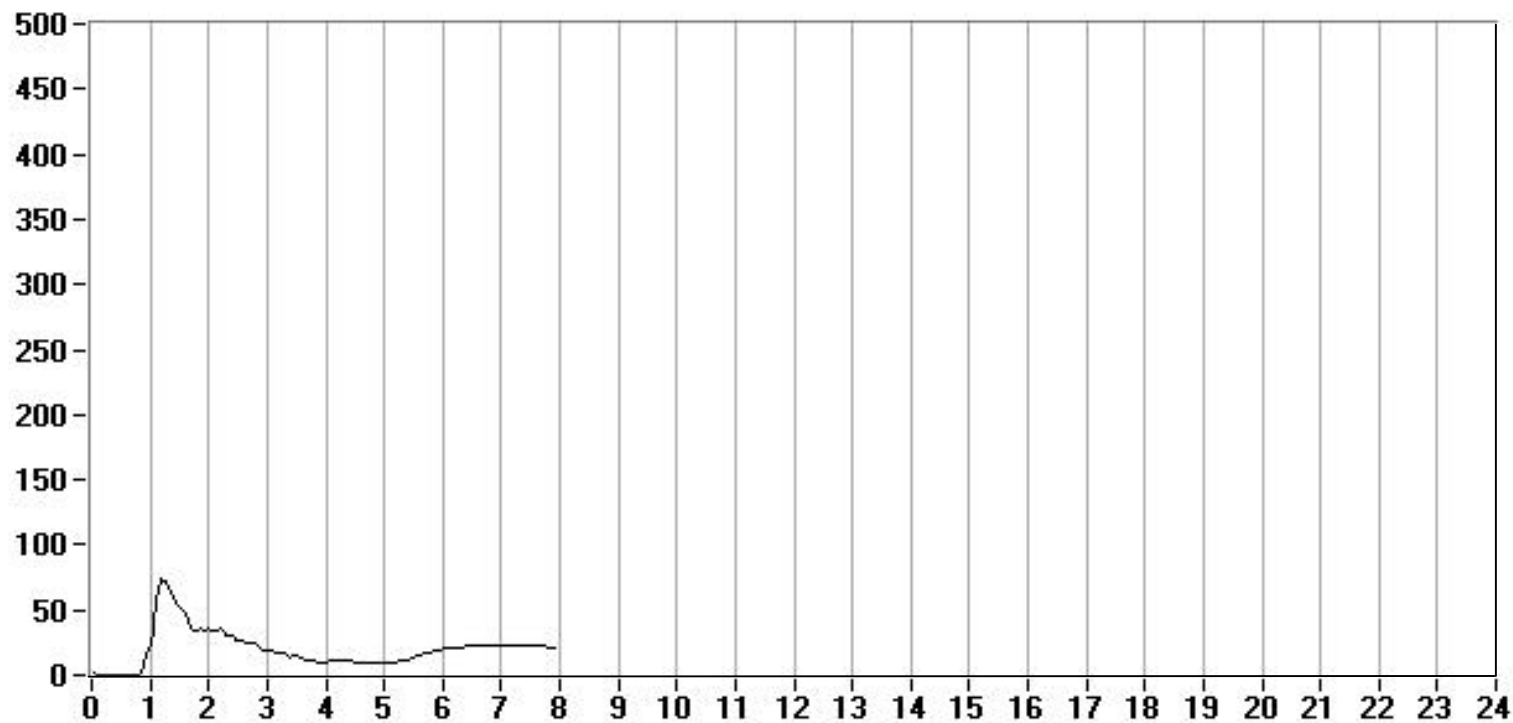
Feet/minute



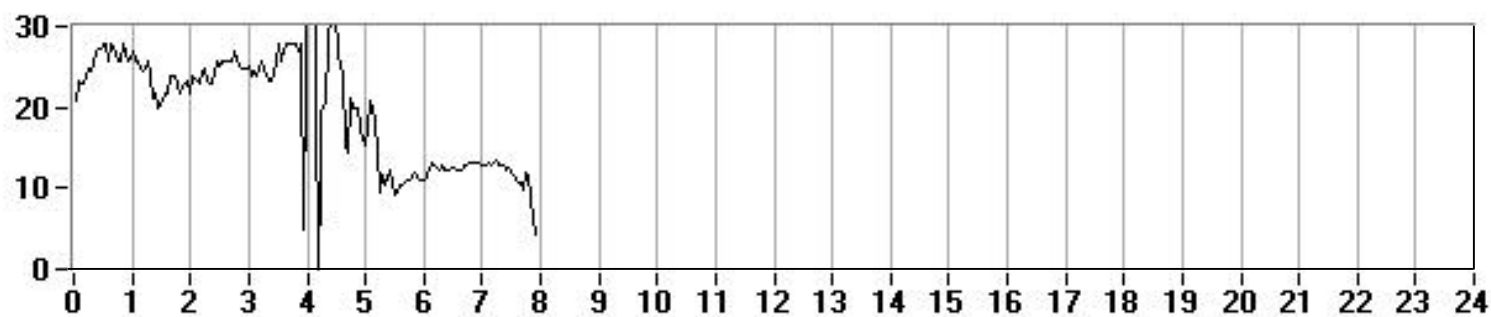
Depth (Feet)

MVH Specific Conductivity

mS/meter



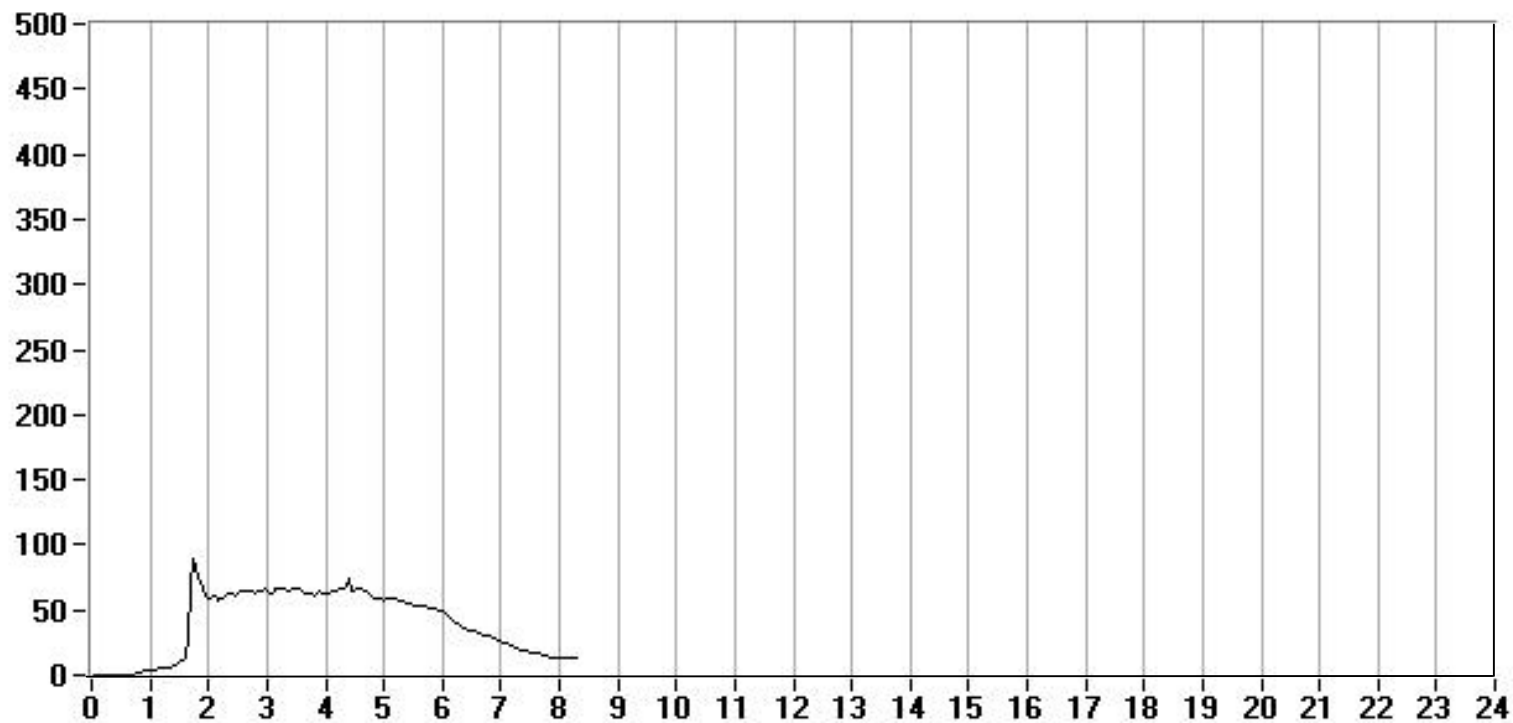
Feet/minute



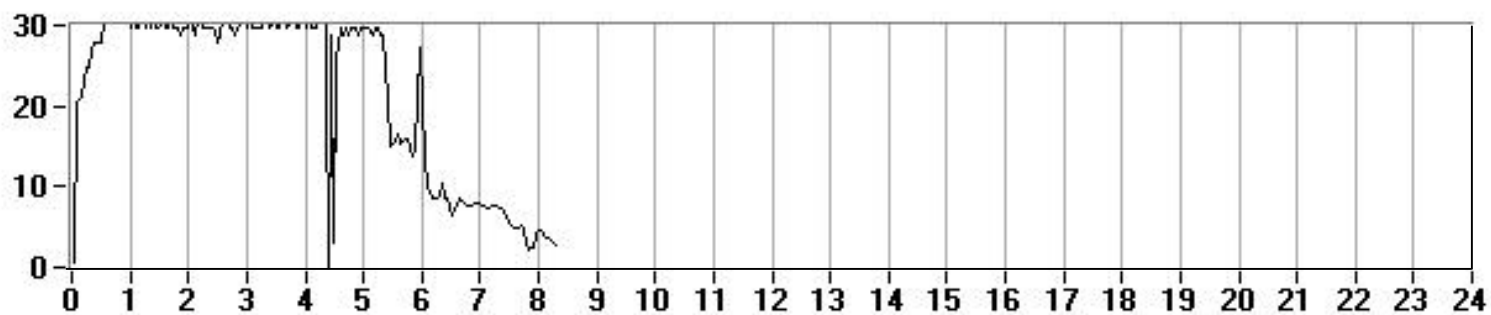
Depth (Feet)

MVI Specific Conductivity

mS/meter



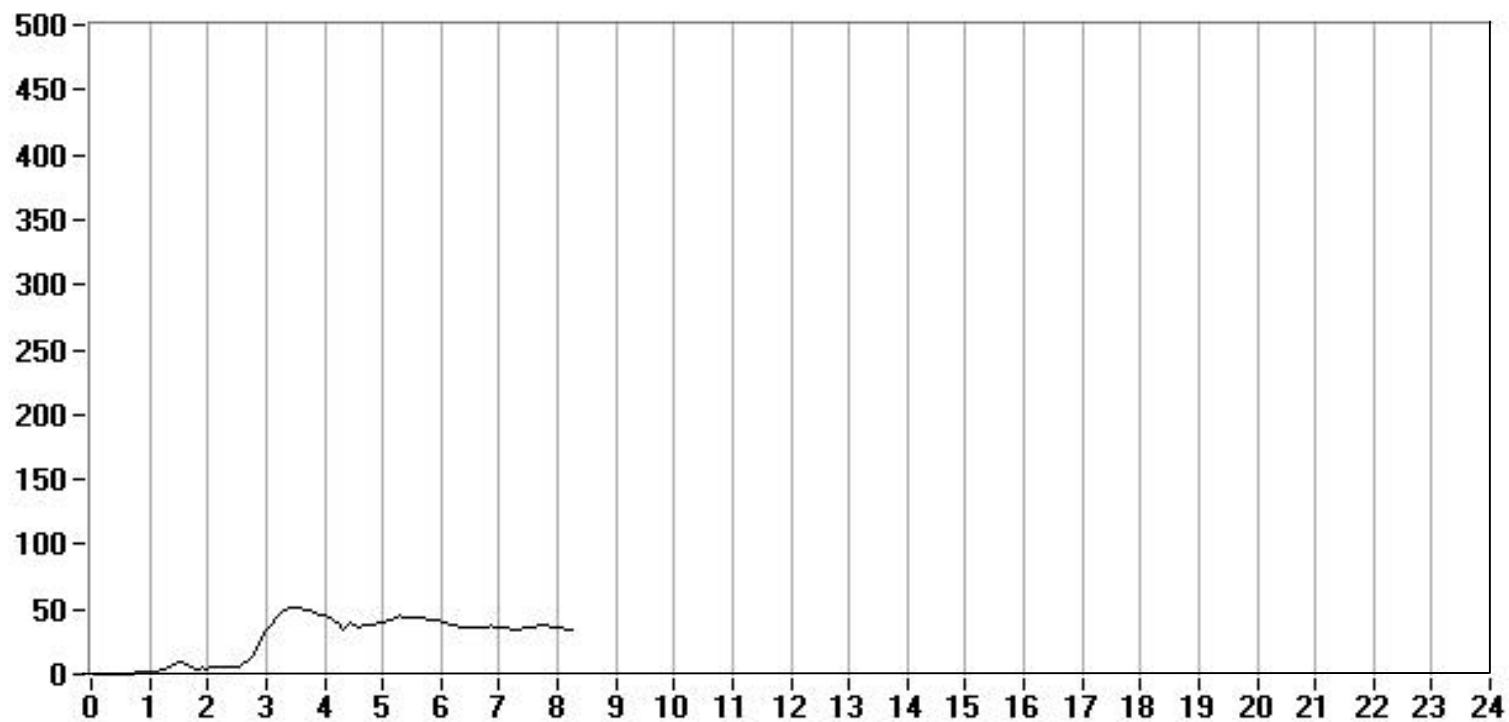
Feet/minute



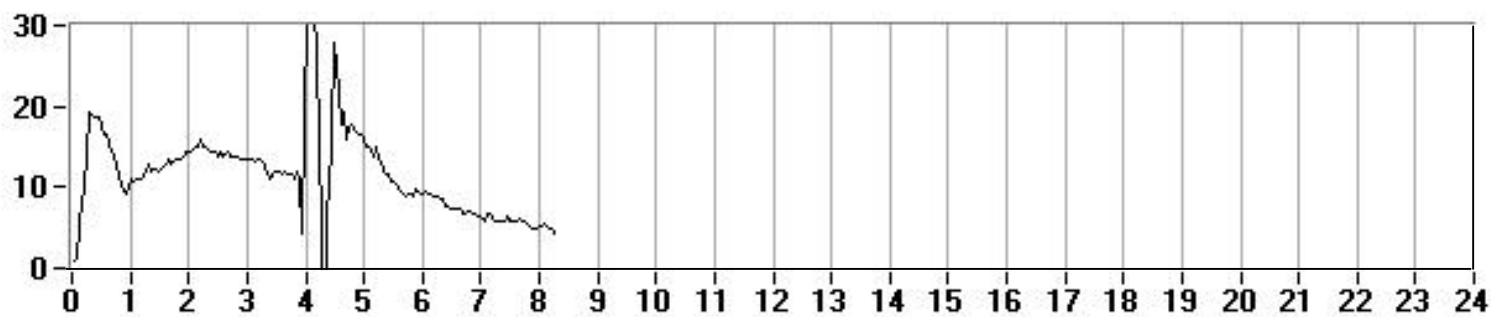
Depth (Feet)

MVJ Specific Conductivity

mS/meter



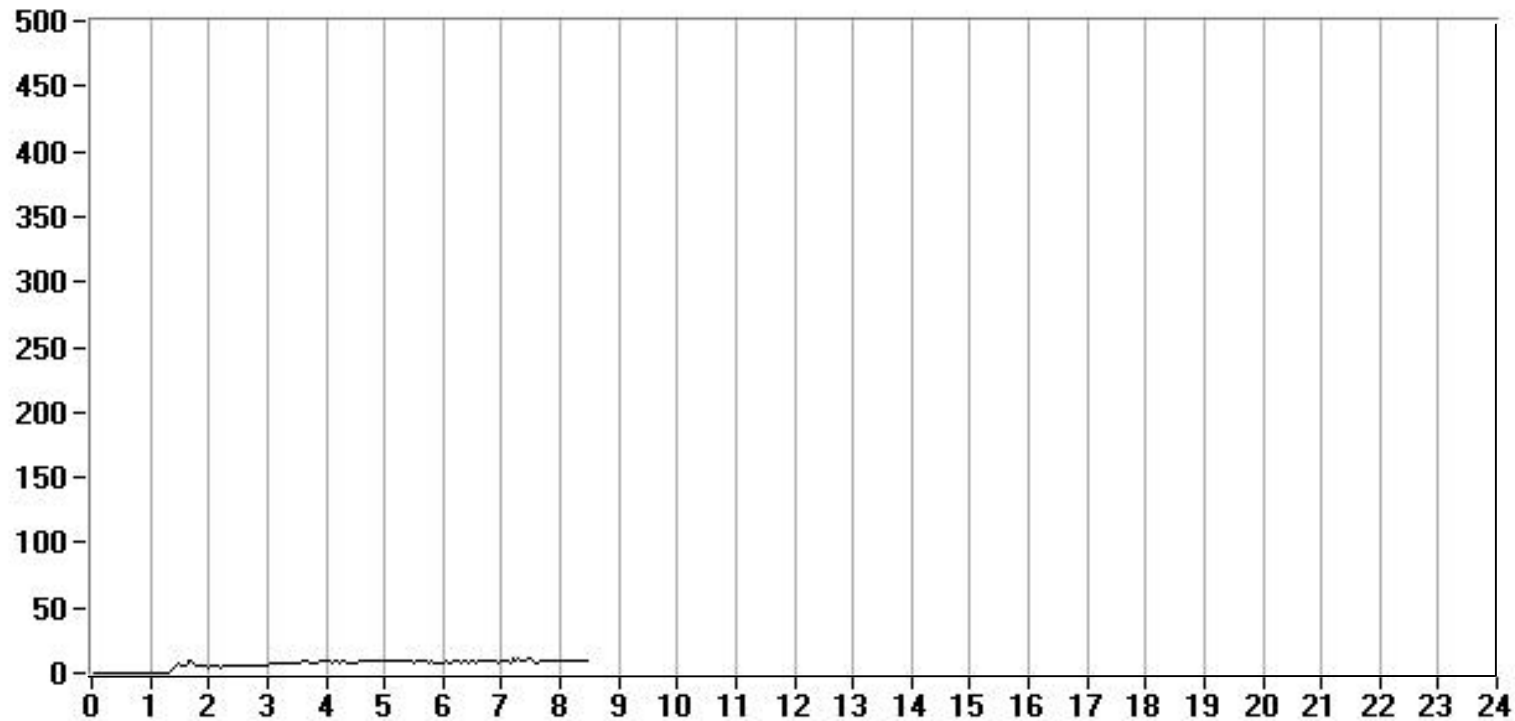
Feet/minute



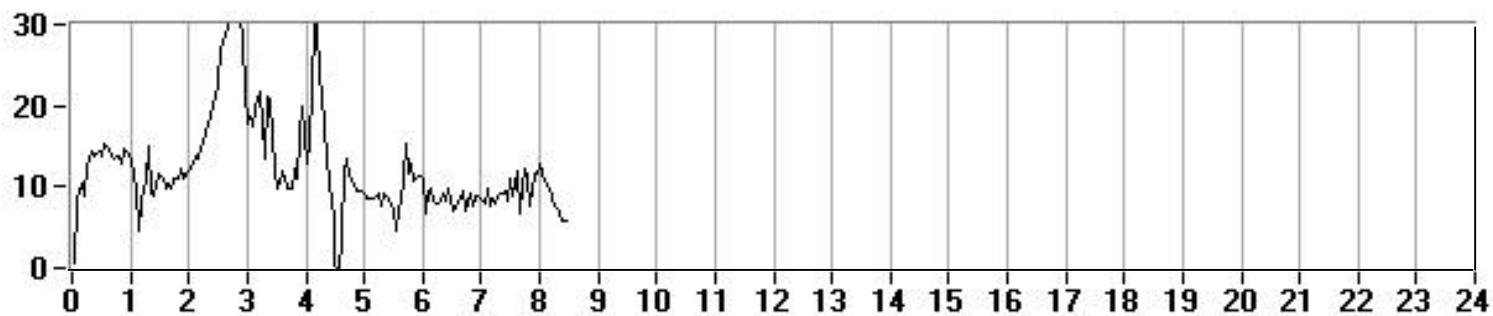
Depth (Feet)

MVK Specific Conductivity

mS/meter



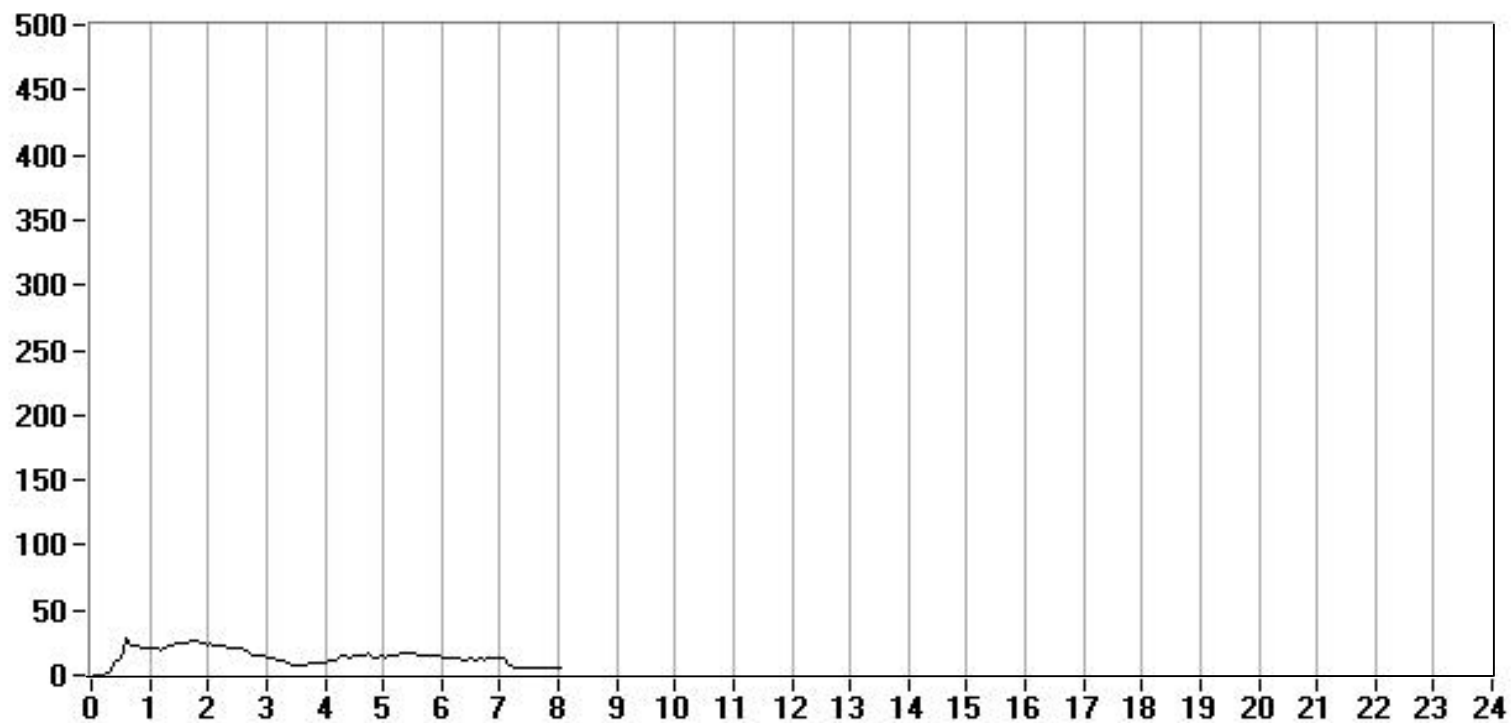
Feet/minute



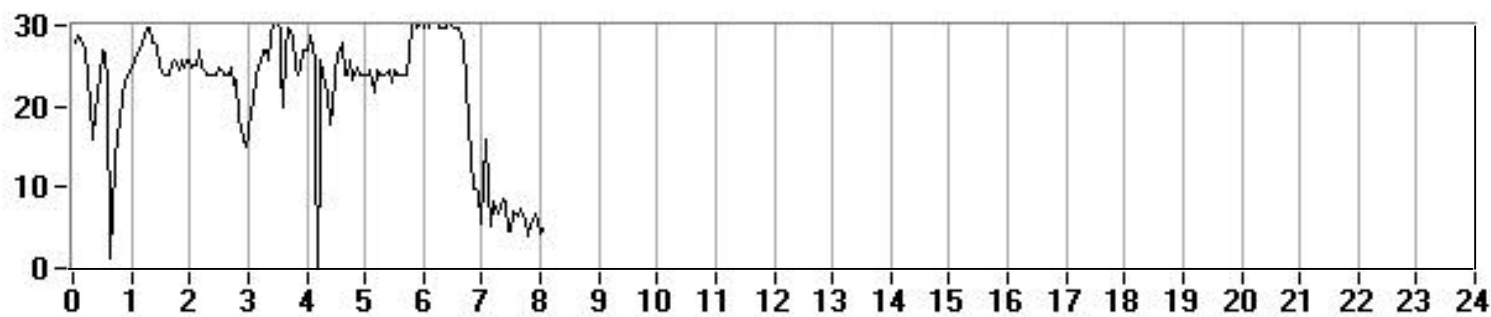
Depth (Feet)

MVL Specific Conductivity

mS/meter



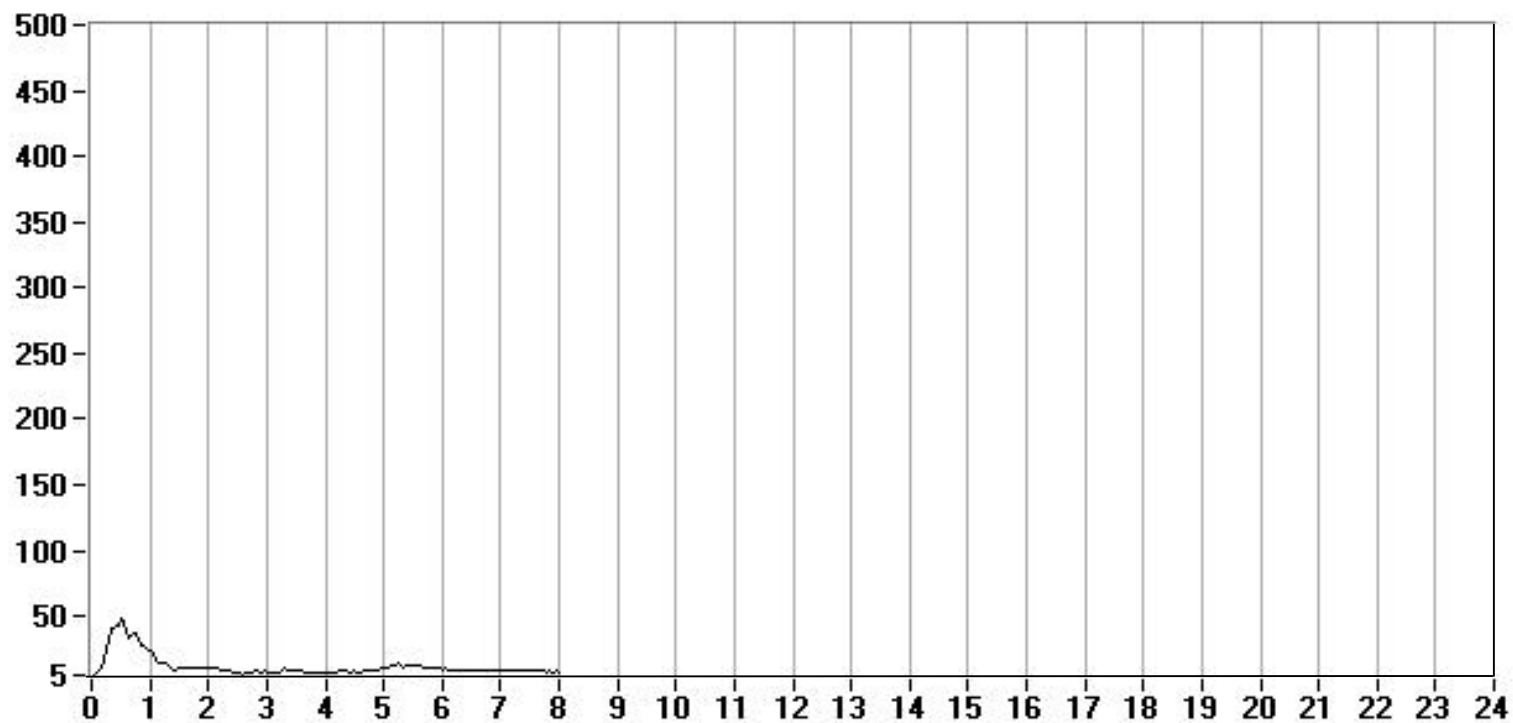
Feet/minute



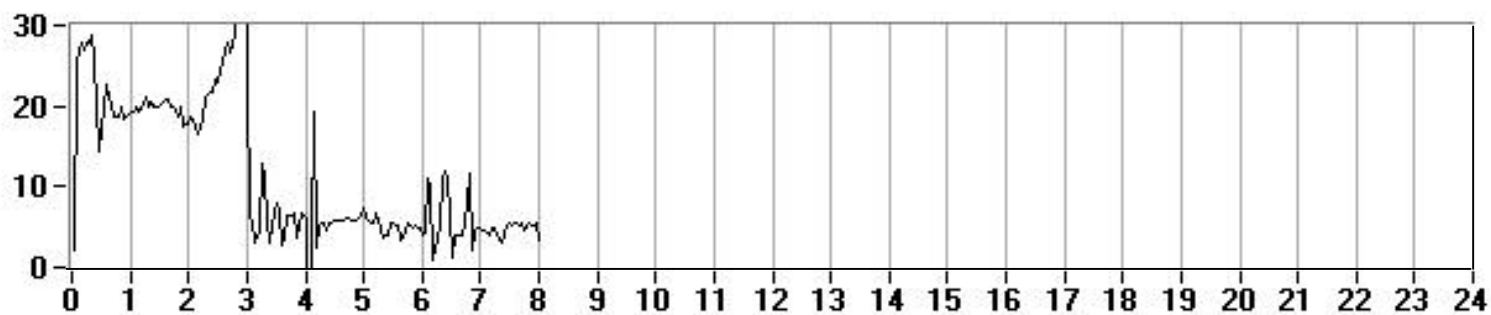
Depth (Feet)

MVM Specific Conductivity

mS/meter



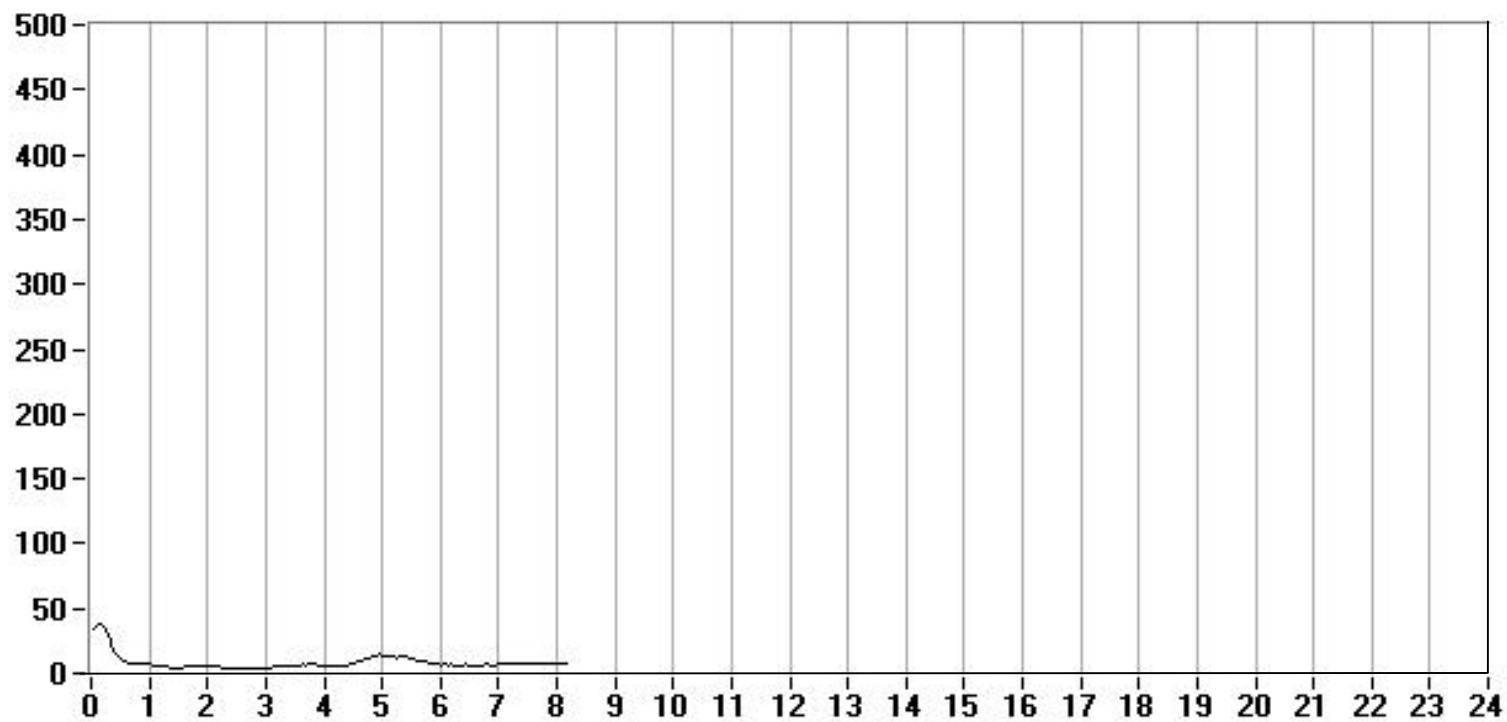
Feet/minute



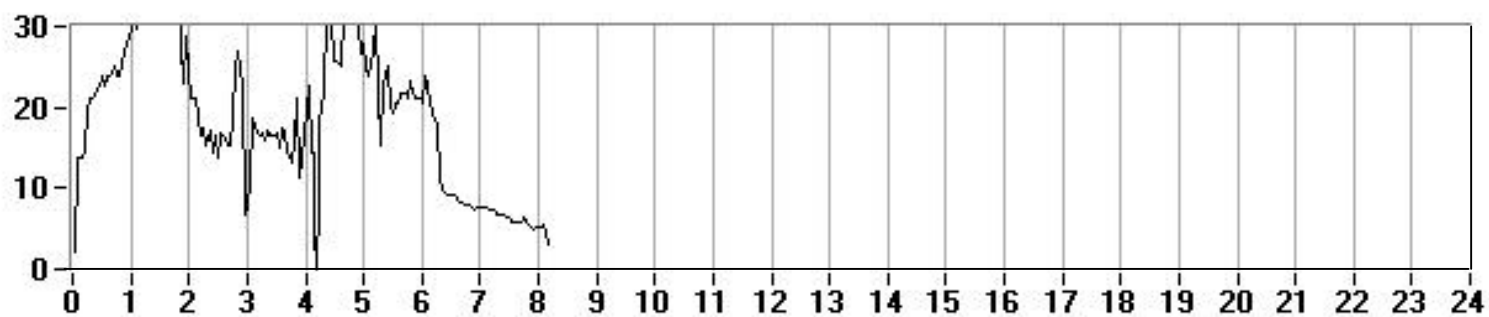
Depth (Feet)

MVN Specific Conductivity

mS/meter



Feet/minute



Depth (Feet)

Appendix D (Not included in draft)

Florida Department of Health Consultation