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Formerly Utilized Sites Remedial Action Program (FUSRAP)
Contract No. DE-AC05-810R20722

RADIOLOGICAL CHARACTERIZATION REPORT FOR THE MUNICIPAL PROPERTY AT J. F. KENNEDY PARK (KENNEDY DRIVE)

Lodi, New Jersey

September 1989



Bechtel National, Inc.

Bechtel National, Inc.

Systems Engineers -- Constructors

Jackson Plaza Tower 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37830

Mail Address: P.O. Box 350, Oak Ridge, TN 37831-0350 Telex: 3785873

SEP 29 1989

U.S. Department of Energy Oak Ridge Operations Post Office Box 2001 Oak Ridge, Tennessee 37831-8723

Attention: Robert G. Atkin

Technical Services Division

Subject: Bechtel Job No. 14501, FUSRAP Project DOE Contract No. DE-AC05-810R20722

Publication of Radiological Characterization Report for seventeen residential properties, four municipal

properties, and seven commercial properties in

Lodi and Maywood, New Jersey

Code: 7315/WBS: 138

Dear Mr. Atkin:

Enclosed is one copy each of the 28 subject published reports for the properties listed in Attachment 1. These reports incorporate all comments received in this review cycle (CCNs 063165, 063327, 062285, and 061568) and are being published with approval of Steve Oldham, as reported in CCN 063868.

Also enclosed (as Attachment 2) is a proposed distribution list for these reports. Please send us any changes to the proposed distribution list at your earliest convenience so we may distribute the reports.

BNI would like to express our thanks to Mr. Oldham for his cooperation and efforts to review these drafts in an accelerated manner. His efforts have allowed us to publish these reports of schedule. If you have any questions about these documents, please call me at 576-4718.

Very truly yours,

R. C. Robertson

Project Manager - FUSRAP

RCR:wfs:1756x

Enclosure: As stated

J. D. Berger, ORAU (w/e)
N. J. Beskid, ANL (w/e)

CONCURRENCE

RADIOLOGICAL CHARACTERIZATION REPORT FOR THE MUNICIPAL PROPERTY AT JOHN F. KENNEDY PARK (KENNEDY DRIVE)

LODI, NEW JERSEY

SEPTEMBER 1989

Prepared for

UNITED STATES DEPARTMENT OF ENERGY

OAK RIDGE OPERATIONS OFFICE

Under Contract No. DE-AC05-810R20722

Ву

N. C. Ring, D. J. Whiting, and W. F. Stanley

Bechtel National, Inc.

Oak Ridge, Tennessee

Bechtel Job No. 14501

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ABBREVIATIONS

cm centimeter cm² square centimeter

cpm counts per minute

dpm disintegrations per minute

ft foot h hour in. inch

km² square kilometer

L liter

L/min liters per minute

m meter

m² square meter

MeV million electron volts μ R/h microroentgens per hour

mi mile

mi² square mile

min minute

mrad/h millirad per hour

mrem millirem

mrem/yr millirem per year
pCi/g picocuries per gram
pCi/L picocuries per liter

WL working level

yd **ya**rd

yd³ cubic yard

1.0 INTRODUCTION AND SUMMARY

This section provides a brief description of the history and background of the Maywood site and its vicinity properties. Data obtained from the radiological characterization of this vicinity property are also presented.

1.1 INTRODUCTION

The 1984 Energy and Water Appropriations Act authorized the U.S. Department of Energy (DOE) to conduct a decontamination research and development project at four sites, including the site of the former Maywood Chemical Works (now owned by the Stepan Company) and its vicinity properties. The work is being administered under the Formerly Utilized Sites Remedial Action Program (FUSRAP) under the direction of the DOE Division of Facility and Site Decommissioning Projects. Several residential, commercial, and municipal properties in Lodi, New Jersey, are included in FUSRAP as vicinity properties. Figure 1-1 shows the location of the Lodi vicinity properties in relation to the former Maywood Chemical Works.

The U.S. Government initiated FUSRAP in 1974 to identify, clean up, or otherwise control sites where low-activity radioactive contamination (exceeding current guidelines) remains from the early years of the nation's atomic energy program or from commercial operations that resulted in conditions Congress has mandated that DOE remedy (Ref. 1).

FUSRAP is currently being managed by DOE Oak Ridge Operations. As the Project Management Contractor for FUSRAP, Bechtel National, Inc. (BNI) is responsible to DOE for planning, managing, and implementing FUSRAP.

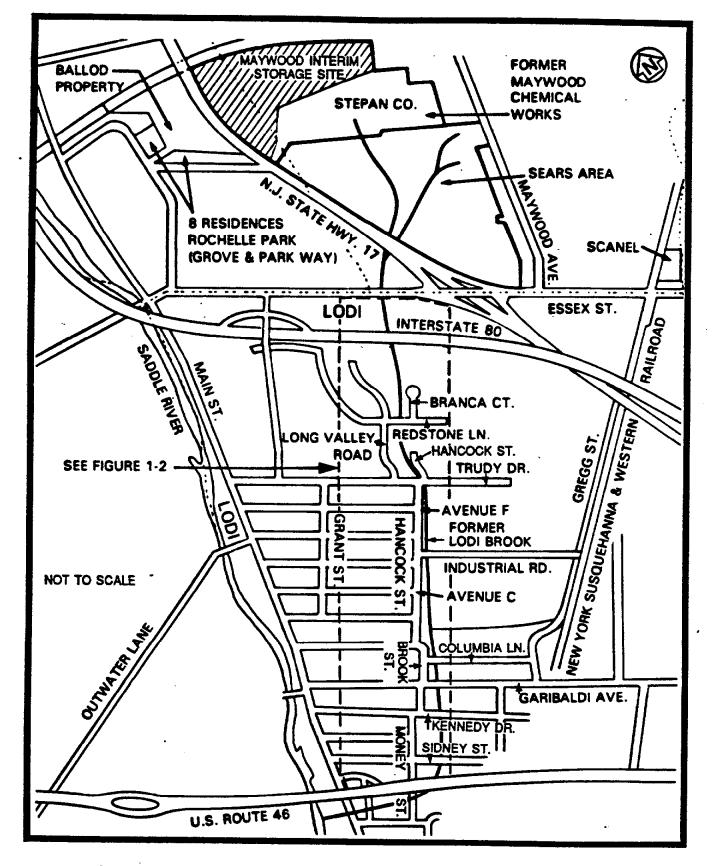


FIGURE 1-1 LOCATION OF LODI VICINITY PROPERTIES

1.2 PURPOSE

The purpose of the 1987 survey performed by BNI was to locate the horizontal and vertical boundaries of radionuclide concentrations exceeding remedial action guidelines.

1.3 SUMMARY

This report details the procedures and results of the radiological characterization of the property at John F. Kennedy Park (Figure 1-2) in Lodi, New Jersey, which was conducted in November and December 1987. Additional data was obtained in October 1988.

Ultimately, the data generated during the radiological characterization will be used to define the complete scope of remedial action necessary to release the site.

The John F. Kennedy Park is a municipal property that consists of two concrete buildings, an asphalt basketball court, two baseball diamonds, and accompanying dugouts. The property is situated between Kennedy Drive and Sidney Street in a densely populated residential area. It is bordered on the west by Money Street. Another municipal property and a commercial property are located nearby. The primary use of the park is for recreational activities.

This characterization confirmed that thorium-232 is the primary radioactive contaminant at this property. Results of surface soil samples for John F. Kennedy Park showed maximum concentrations of thorium-232 and radium-226 to be 11.6 and less than 2.3 pCi/g, respectively. The maximum concentration of uranium-238 in surface soil samples was less than 7.7 pCi/g.

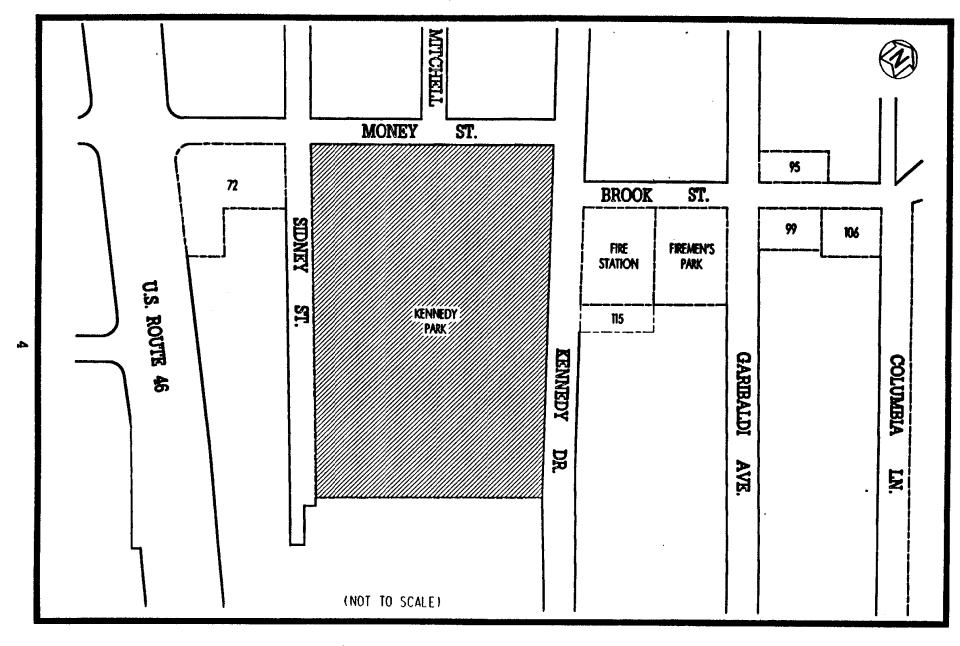


FIGURE 1-2 LOCATION OF KENNEDY PARK

Subsurface soil sample concentrations ranged from less than 0.4 to 93.1 pCi/g for thorium-232 and from less than 0.3 to 5.3 pCi/g for radium-226. The average background level in this area for both radium-226 and thorium-232 is 1.0 pCi/g. The concentrations of uranium-238 in subsurface soil samples ranged from less than 0.7 to less than 24.0 pCi/g. Because the major contaminants at the vicinity properties are thorium and radium, the decontamination guidelines provide the appropriate guidance for the cleanup activities. DOE believes that these guidelines are conservative for considering potential adverse health effects that might occur in the future from any residual contamination. The dose contributions from uranium and any other radionuclides not numerically specified in these guidelines are not expected to be significant following decontamination. In addition, the vicinity properties will be decontaminated in a manner so as to reduce future doses to levels that are as low as reasonably achievable (ALARA) (Ref. 2).

Soil analysis data for this property indicated surface contamination. Subsurface investigation by gamma logging indicated contamination to a depth of 2.28 m (7.5 ft).

Exterior gamma radiation exposure rates ranged from 5 to 22 μ R/h, including background.

Restricted access to the park buildings prohibited the taking of indoor measurements.

All data tables for this property appear at the end of this report.

1.4 <u>CONCLUSIONS</u>

Evaluation of data collected, analyses performed, and historical documentation reviewed indicates the presence of radiological contamination on the property located at John F. Kennedy Park. This contamination is both surface and subsurface contamination. Surface contamination is indicated along the property boundary/fenceline adjacent to the Money Street boundary of the park. There is a small, isolated area of marginal surface contamination in front of the dugout on the first-base line of the playing field in the northeast corner as well. The subsurface contamination ranges from a depth of 15.2 cm (6.0 in.) to 2.28 m (7.5 ft). In addition, the contamination appears to extend beneath the baseball field and adjacent dugouts in the northeast corner of the property. There is a high probability the contamination extends beneath the streets (Kennedy Drive, Money Street, and Sidney Street) that border the property. The total affected area is estimated to be approximately 25 percent of the property. These conclusions are supported by documentation that establishes the presence of the former channel of Lodi Brook in this area. This channel is the suspected transport mechanism for the radiological contamination.

2.0 SITE HISTORY

The Maywood Chemical Works was founded in 1895. The company began processing thorium from monazite sand in 1916 (during World War I) for use in manufacturing gas mantles for various lighting devices. Process wastes from manufacturing operations were pumped to two areas surrounded by earthen dikes on property west of the plant. Subsequently, some of the contaminated wastes migrated onto adjacent and vicinity properties.

In 1928 and again between 1944 and 1946, some of the residues from the processing operations were moved from the company's property and used as mulch and fill in nearby low-lying areas. The fill material consisted of tea and coca leaves mixed with other material resulting from operations at the plant. Some fill material apparently contained thorium process wastes (Ref. 3).

Uncertainty exists as to how the properties in Lodi were contaminated. According to an area resident, fill from an unknown source was brought to Lodi and spread over large portions of the previously low-lying and swampy area. For several reasons, however, a more plausible explanation is that the contamination migrated along a drainage ditch originating on the Maywood Chemical Works property. First, it can be seen from photographs and tax maps of the area that the course of a previously existing stream known as Lodi Brook, which originated at the former Maywood Chemical Works, generally coincides with the path of contamination in Lodi. The brook was subsequently replaced by a storm drain system as the area was developed. Second, samples taken from Lodi properties indicate elevated concentrations of a series of elements known as rare earths. Rare earth elements are typically found in monazite sands, which also contain

thorium. This type of sand was feedstock at the Maywood Chemical Works, and elevated levels are known to exist in the by-product of the extraction process. Third, the ratio of thorium to other radionuclides found on these Lodi properties is comparable to the ratio found in contaminated material on other properties in Lodi (Ref. 4). And finally, long-time residents of Lodi recalled chemical odors in and around the brook in Lodi and steam rising off the water. These observations suggest that discharges of contaminants occurred upstream.

The Stepan Chemical Company (now called the Stepan Company) purchased Maywood Chemical Works in 1959. The Stepan Company itself has never been involved in the manufacture or processing of any radioactive materials (Ref. 5).

2.1 PREVIOUS RADIOLOGICAL SURVEYS

Numerous surveys of the Maywood site and its vicinity properties have been conducted. Among the past surveys, three that are pertinent to this vicinity property are detailed in this section.

January 1981--The Nuclear Regulatory Commission directed that a survey be conducted of the Stepan Company property and its vicinity properties in January 1981. Using the Stepan Company plant as the center, a 10.3-km² (4-mi²) aerial survey was conducted by the EG&G Energy Measurements Group, which identified anomalous concentrations of thorium-232 to the north and south of the Stepan Company property. The Lodi vicinity properties were included in this survey (Ref. 6).

June 1984 -- In June 1984, Oak Ridge National Laboratory (ORNL) conducted a "drive-by" survey of Lodi using its

"scanning van." Although not comprehensive, the survey indicated areas requiring further investigation (Ref. 7).

<u>September 1986</u>—At the request of DOE, ORNL conducted radiological surveys of the vicinity properties in Lodi in September 1986 to determine which properties contained radioactive contamination in excess of DOE guidelines and would, therefore, require remedial action (Ref. 8).

2.2 REMEDIAL ACTION GUIDELINES

Table 2-1 summarizes the DOE guidelines for residual contamination. The thorium-232 and radium-226 limits listed in Table 2-1 will be used to determine the extent of remedial action required at the vicinity properties. DOE developed these guidelines to be consistent with the guidelines established by the U.S. Environmental Protection Agency (EPA) for the Uranium Mill Tailings Remedial Action Program.

TABLE 2-1 SUMMARY OF RESIDUAL CONTAMINATION GUIDELINES

BASIC DOSE LIMITS

The basic limit for the annual radiation dose received by an individual member of the general public is 100 mrem/yr.

SOIL GUIDELINES

Radionuciide	Soil Concentration (pCl/g) Above Background ^{a,b,c}
Radium-226 Radium-228 Thorium-230 Thorium-232	5 pCi/g when averaged over the first 15 cm of soil below the surface; 15 pCi/g when averaged over any 15-cm-thick soil layer below the surface layer.
Other Radionuclides	Soil guidelines will be calculated on a site-specific basis using the DOE manual developed for this use.

STRUCTURE GUIDELINES

Airborne Radon Decay Products

Generic guidelines for concentrations of airborne radon decay products shall apply to existing occupied or habitable structures on private property that has no radiological restrictions on its use; structures that will be demolished or buried are excluded. The applicable generic guideline (40 CFR 192) is: In any occupied or habitable building, the objective of remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL. Remedial actions are not required in order to comply with this guideline when there is reasonable assurance that residual radioactive materials are not the cause.

External Gamma Radiation

The average level of gamma radiation inside a building or habitable structure on a site that has no radiological restrictions on its use shall not exceed the background level by more than 20 µR/h.

Indoor/Outdoor Structure Surface Contamination

Allowable Surface Residual Contamination® (dpm/100 cm²)

Radionuclide ^f	Average ^{g,h}	Maximum ^{h,i}	Removable ^{h,}
Transuranics, Ra-226, Ra-228, Th-230, Th-228 Pa-231, Ac-227, I-125, I-129	100	300	20
Th-Natural, Th-232, Sr-90, Ra-223, Ra-224 U-232, I-126, I-131, I-133	1,000	3,000	200
U-Natural, U-235, U-238, and associated decay products	5,000 α	15,000 α	1,000 α
Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above	5,000 8 - y	15,000 B - ₇	1,000 в - ү

TABLE 2-1 (CONTINUED)

These guidelines take into account ingrowth of radium-226 from thorium-230 and of radium-228 from thorium-232, and assume secular equilibrium. If either thorium-230 and radium-226 or thorium-232 and radium-228 are both present, not in secular equilibrium, the guidelines apply to the higher concentration. If other mixtures of radionuclides occur, the concentrations of individual radionuclides shall be reduced so that 1) the dose for the mixtures will not exceed the basic dose limit, or 2) the sum of ratios of the soil concentration of each radionuclide to the allowable limit for that radionuclide will not exceed 1 ("unity").

These guidelines represent allowable residual concentrations above background averaged across any 15-cm-thick layer to any depth and over any contiguous 100-m² surface area.

^CLocalized concentrations in excess of these limits are allowable, provided that the average concentration over a 100-m² area does not exceed these limits. In addition, every reasonable effort shall be made to remove any source of radionuclide that exceeds 30 times the appropriate soil limit, regardless of the average concentration in the soil.

dA working level (WL) is any combination of short-lived radon decay products in 1 liter of air that will result in the ultimate emission of 1.3 x 105 MeV of potential alpha energy.

As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

Where surface contamination by both alpha- and beta-gamma-emitting radionuclides exists, the limits established for alpha- and beta-gamma-emitting radionuclides should apply independently.

⁹Measurements of average contamination should not be averaged over more than 1 m². For objects of less surface area, the average shall be derived for each such object.

hThe average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h and 1.0 mrad/h, respectively, at 1 cm.

The maximum contamination level applies to an area of not more than 100 cm².

The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm² is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped. The numbers in this column are maximum amounts.

3.0 HEALTH AND SAFETY PLAN

BNI is responsible for protecting the health of personnel assigned to work at the site. As such, all subcontractors and their personnel were required to comply with the provisions of BNI health and safety requirements and as directed by the on-site BNI Health and Safety Officer.

3.1 SUBCONTRACTOR TRAINING

Before the start of work, all subcontractor personnel attended an orientation session presented by the BNI Health and Safety Officer to explain the nature of the material to be encountered in the work and the personnel monitoring and safety measures that are required.

3.2 SAFETY REQUIREMENTS

Subcontractor personnel complied with the following BNI requirements:

- o Bioassay--Subcontractor personnel submitted bioassay samples before or at the beginning of on-site activity, upon completion of the activity, and periodically during site activities as requested by BNI.
- o Protective Clothing/Equipment--Subcontractor personnel were required to wear the protective clothing/equipment specified in the subcontract or as directed by the BNI Health and Safety Officer.
- o Dosimetry--Subcontractor personnel were required to wear and return daily the dosimeters and monitors issued by BNI.
- o Controlled Area Access/Egress--Subcontractor personnel and equipment entering areas where access and egress were controlled for radiation and/or chemical safety purposes were surveyed by the BNI Health and Safety Officer (or personnel representing BNI) for contamination before leaving those areas.

o Medical Surveillance--Upon written direction from BNI, subcontractor personnel who work in areas where hazardous chemicals might exist were given a baseline and periodic health assessment defined in BNI's Medical Surveillance Program.

Radiation and/or chemical safety surveillance of all activities related to the scope of work was under the direct supervision of personnel representing BNI.

Health and safety-related requirements for all activities involving exposure to radiation, radioactive material, chemicals, and/or chemically contaminated materials and other associated industrial safety hazards are generated in compliance with applicable regulatory requirements and industry-wide standards. Copies of these requirements are located at the BNI project office for use by project personnel.

4.0 CHARACTERIZATION PROCEDURES

A master grid was established by the surveyor. BNI's radiological support subcontractor, Thermo Analytical/Eberline (TMA/E), established a grid on individual properties. The size of the grid blocks was adjusted to characterize each property adequately. The grid origin allows the grid to be reestablished during remedial action and is correlated with the New Jersey state grid system. All data correspond to coordinates on the characterization grid. The grid with the east and north coordinates is shown on all figures included in Sections 4.0 and 5.0 of this report.

4.1 FIELD RADIOLOGICAL CHARACTERIZATION

This section provides a description of the instrumentation and methodologies used to obtain exterior surface and subsurface measurements during radiological characterization of this property.

4.1.1 Measurements Taken and Methods Used

An initial walkover survey was performed using an unshielded gamma scintillation detector [5.0- by 5.0-cm (2- by 2-in.) thallium-activated sodium iodide probe] to identify areas of elevated radionuclide activity. Near-surface gamma measurements taken using a cone-shielded gamma scintillation detector were also used to determine areas of surface contamination. The shielded detector ensured that the majority of the radiation detected by the instrument originated from the ground directly beneath the unit. Shielding against lateral gamma flux, or shine, from nearby areas of contamination minimized potential sources of error in the measurements. The measurements were taken 30.4 cm (12 in.) above the ground at the intersections of

3.0-m (10-ft) grid lines. The shielded detector was calibrated at the Technical Measurements Center (TMC) in Grand Junction, Colorado, to provide a correlation of counts per minute (cpm) to picocuries per gram (pCi/g). This calibration demonstrated that approximately 11,000 cpm corresponds to the DOE guideline of 5 pCi/g plus local average background of 1 pCi/g for thorium-232 in surface soils (Ref. 9).

A subsurface investigation was conducted to determine the depth to which the previously identified surface contamination extended and to locate subsurface contamination where there was no surface manifestation. The subsurface characterization consisted of drilling 68 boreholes (Figure 4-1), using either a 7.6-cm- (3-in.-) or 15.2-cm- (6-in.-) diameter auger bit, and gamma logging them. The boreholes were drilled to depths determined in the field by the radiological and geological support representatives.

The downhole gamma logging technique was used because the procedure can be accomplished in less time than collecting soil samples, and the need for analyzing these samples in a laboratory is eliminated. A 5.0- by 5.0-cm (2- by 2-in.) sodium iodide gamma scintillation detector was used to perform the downhole logging. The instrument was calibrated at TMC where it was determined that a count rate of approximately 40,000 cpm corresponds to the 15-pCi/g subsurface contamination guideline for thorium-232. This relationship has also been corroborated by results from previous characterizations where thorium-232 was found (Ref. 9).

Gamma radiation measurements were taken at 15.2-cm (6-in.) vertical intervals to determine the depth and concentration

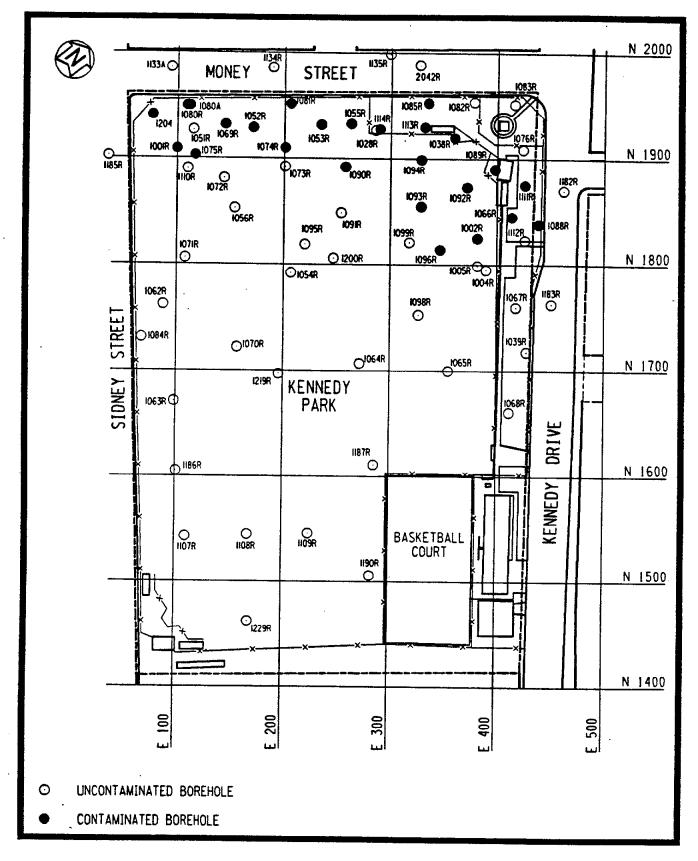


FIGURE 4-1 BOREHOLE LOCATIONS AT KENNEDY PARK

of the contamination. The gamma-logging data were reviewed to identify trends, whether or not concentrations exceeded the guidelines.

4.1.2 Sample Collection and Analysis

To identify surface areas where the level of contamination exceeded the DOE guideline of 5 pCi/g for thorium-232, areas with measurements of more than 11,000 cpm were plotted. Using these data as well as data from previous surveys (Refs. 5, 6, 7, and 8), the locations of biased surface soil samples were selected to better define the limits of contamination. Surface soil samples were taken at 19 locations (Figure 4-2) and analyzed for thorium-232, uranium-238, and radium-226. Each sample was dried, pulverized, and counted for 10 min using an intrinsic germanium detector housed in a lead counting cave lined with cadmium and copper. The pulse height distribution was sorted using a computer-based, multichannel analyzer. Radionuclide concentrations were determined by comparing the gamma spectrum of each sample with the spectrum of a certified counting standard for the radionuclide of interest.

Subsurface soil samples were collected from 67 locations (Figure 4-2) using a 7.6-cm (3.0-in.) outside diameter (0.D.) split-spoon sampler mounted on a tripod or attached to a truck-mounted auger stem. The subsurface soil samples were analyzed for radium-226, uranium-238, and thorium-232 in the same manner as the surface soil samples.

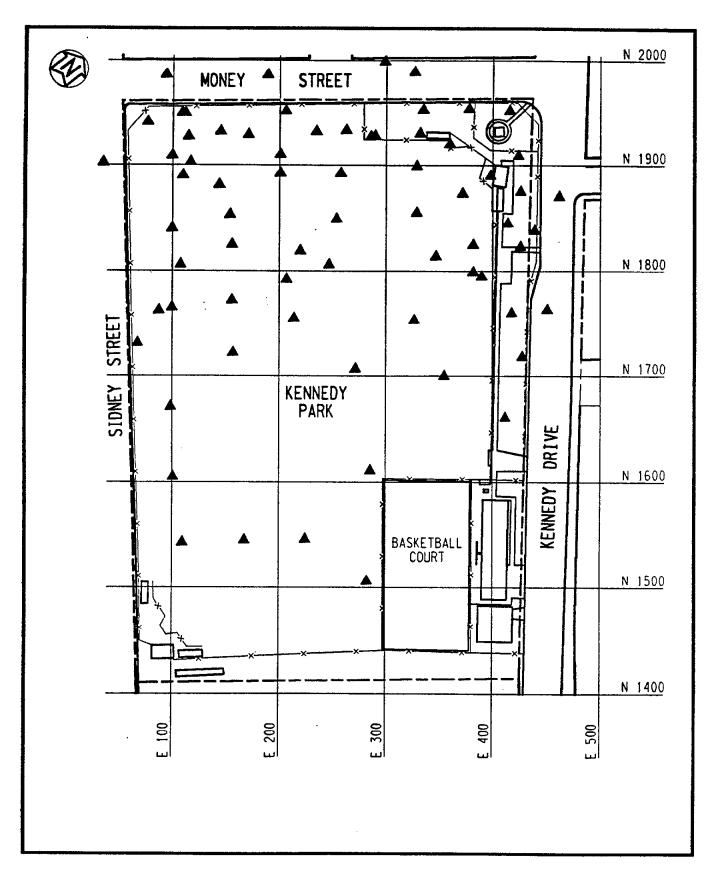


FIGURE 4-2 SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS AT KENNEDY PARK

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4.2 BUILDING RADIOLOGICAL CHARACTERIZATION

Restricted access and scheduling conflicts prohibited indoor measurements from being obtained; therefore, this element of the radiological characterization activities was not conducted.

Exterior gamma exposure rate measurements were made at six locations along the northwest property grid system. obtain these measurements, either a 5.0- by 5.0-cm (2- by 2-in.) thallium-activated sodium iodide gamma scintillation detector designed to detect gamma radiation only or a pressurized ionization chamber (PIC) was used. Measurement locations are shown in Figure 4-3. instrument has a response to gamma radiation that is proportional to exposure in roentgens. A conversion factor for gamma scintillation to the PIC was established through a correlation of these two measurements at four locations in the vicinity of the property. The unshielded gamma scintillation detector readings were then used to estimate gamma exposure rates for each location. These measurements were taken 1 m (3 ft) above the ground. The locations were determined to be representative of the entire property.

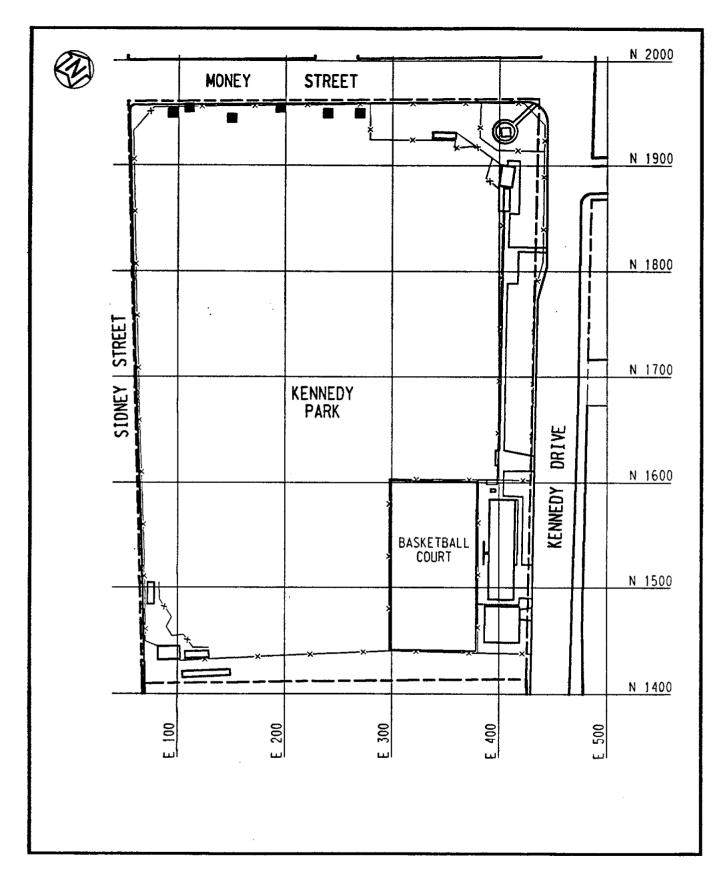


FIGURE 4-3 GAMMA EXPOSURE RATE MEASUREMENT LOCATIONS AT KENNEDY PARK

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5.0 CHARACTERIZATION RESULTS

Radiological characterization results are presented in this section. The data included represent exterior surface and subsurface radiation measurements and interior radiation measurements.

5.1 FIELD RADIOLOGICAL CHARACTERIZATION

Near-surface gamma radiation measurements on the property ranged from 7,000 cpm to approximately 23,000 cpm. The average background level for this area is 5,000 cpm. A measurement of 11,000 cpm is approximately equal to the DOE guideline for thorium-232 of 5 pCi/g above background for surface soil contamination. Using this correlation, the near-surface gamma measurements were used to determine the extent of surface contamination and the basis for selecting the locations of soil samples. Areas of surface contamination are shown in Figure 5-1.

Surface soil samples [depths from 0.0 to 15.2 cm (6.0 in.)] were taken at 14 locations on the property and six locations in the streets that border the property (Figure 4-2). These samples were analyzed for thorium-232, uranium-238, and radium-226. The concentrations in these samples ranged from less than 2.0 to less than 7.7 pCi/g for uranium-238, from less than 0.8 to 11.6 pCi/g for thorium-232, and from less than 0.5 to less than 2.3 pCi/g for radium-226. Analytical results for surface soils are provided in Table 5-1; these data showed that concentrations of thorium-232 exceeded DOE guidelines (5 pCi/g plus background of 1 pCi/g for surface soils) with a maximum concentration of 11.6 pCi/g. Use of the "less than" (<) notation in reporting results indicates that the radionuclide was not present in concentrations that are quantitative with the instruments and techniques used.

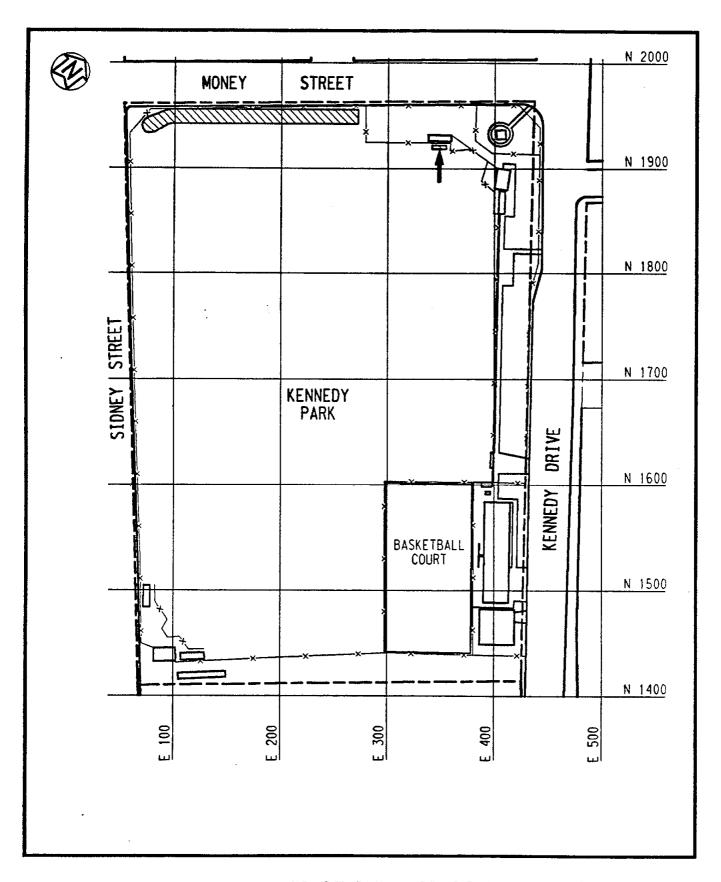


FIGURE 5-1 AREAS OF SURFACE CONTAMINATION AT KENNEDY PARK

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The "less than" value represents the lower bound of the quantitative capacity of the instrument and technique used. The "less than" value is based on various factors, including the volume, size, and weight of the sample; the type of detector used; the counting time; and the background count rate. The actual concentration of the radionuclide is less than the value indicated. In addition, since radioactive decay is a random process, a correlation between the rate of disintegration and a given radionuclide concentration cannot. be precisely established. For this reason, the exact concentration of the radionuclide cannot be determined. such, each value that can be quantitatively determined has an associated uncertainty term (+), which represents the amount by which the actual concentration can be expected to differ from the value given in the table. The uncertainty term has an associated confidence level of 95 percent.

Thorium-232, the primary contaminant at the site, is the radionuclide most likely to exceed a specific DOE guideline in soil. Parameters for soil sample analysis were selected to ensure that the thorium-232 would be detected and measured at concentrations well below the lower guideline value of 5 pCi/g in excess of background level. Radionuclides of the uranium series, specifically uranium-238 and radium-226, are also potential contaminants but at lower concentrations than thorium-232. Therefore, these radionuclides (considered secondary contaminants) would not be present in concentrations in excess of guidelines unless thorium-232 was also present in concentrations in excess of its guideline Parameters selected for the thorium-232 analyses also provide detection sensitivities for uranium-238 and radium-226 that demonstrate that concentrations of these radionuclides are below guidelines. However, because of the relatively low gamma photon abundance of uranium-238, many of the uranium-238 concentrations were below the detection

sensitivity of the analytical procedure; these concentrations are reported in the data tables as "less than" values. To obtain more sensitive readings for the uranium-238 radionuclide with these analytical methods, much longer instrument counting times would be required than were necessary for analysis of thorium-232, the primary contaminant.

Analytical results for subsurface soil samples are given in Table 5-1, and gamma logging data are given in Table 5-2. The results in Table 5-2 showed a range from 5,000 cpm to 373,000 cpm. A measurement of 40,000 cpm is approximately equal to the DOE guideline for subsurface contamination of 15 pCi/g. Analyses of subsurface soil samples indicated uranium-238 concentrations ranging from less than 0.7 to less than 24.0 pCi/g, thorium-232 concentrations ranging from less than 0.4 to 93.1 pCi/g, and radium-226 concentrations ranging from less than 0.3 to 5.3 pCi/g.

On the basis of near-surface gamma radiation measurements, surface and subsurface soil sample analyses, and downhole gamma logging, contamination on this property is believed to consist primarily of subsurface contamination at depths ranging from 15.2 cm (6.0 in.) to 2.28 m (7.5 ft). The areas of subsurface contamination are shown in Figure 5-2. The subsurface contamination appears to extend beneath the baseball field and adjacent dugouts in the northeast corner of the property. There is a high probability the contamination extends beneath the streets (Kennedy Drive, Money Street, and Sidney Street) that border the property.

It is apparent from review of historical documentation (e.g., aerial photographs of the area, interviews with local residents, and previous radiological surveys) that the

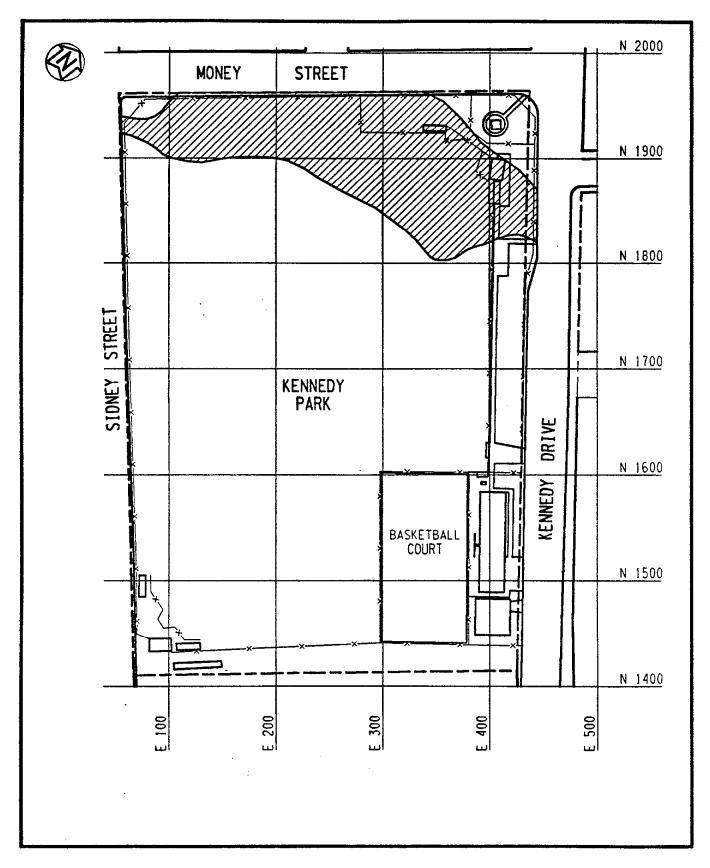


FIGURE 5-2 AREAS OF SUBSURFACE CONTAMINATION AT KENNEDY PARK

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subsurface contamination on this property lies along the former channel of Lodi Brook and its associated floodplain.

The contamination on this property is similar to contamination found on municipal and commercial properties in close proximity to this property. It has been established that the Lodi Brook channel through these neighboring properties once occupied locations connecting to those where stream sediments were found at John F. Kennedy Park. Thus, the elevated gamma readings shown on gamma logs from boreholes drilled on this property serve as further indication of the suspected mechanism of transport for radiological contamination (i.e., stream deposition from Lodi Brook).

The vertical and horizontal limits of contamination as determined by this characterization effort are being evaluated to determine the volume of contaminated material that will require remedial action. To develop this estimate, BNI will consider the location of the contamination, construction techniques, and safety procedures.

5.2 BUILDING RADIOLOGICAL CHARACTERIZATION

No indoor measurements were obtained because of restricted access to the buildings and scheduling conflicts. Exterior gamma radiation exposure rate measurements ranged from 5 to 22 μ R/h, including background. These results can be found in Table 5-3. Because the contamination is restricted to the north-northeast edge of the park, it is unlikely that prolonged exposures will occur. Assuming an individual spends 10 hours per week for 50 weeks per year (500 hours or 2 hours per day for 5 days per week) at the park in the contaminated area, the average exposure rate of 15 μ R/h would result in a yearly dose of 3 mrem above background (after subtracting average

background of 9 μ R/h) (Ref. 10). The DOE guideline is 100 mrem/yr above background.

Based on the above information, the exposure rates and doses at this property are within DOE guidelines. Further, it should be emphasized that natural background exposure rates vary widely across the United States and are often significantly higher than average background for this area.

SURFACE AND SUBSURFACE RADIONUCLIDE CONCENTRATIONS IN SOIL

FOR KENNEDY PARK

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_Coordinatesa		Depth	Concentration (pCi/g ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
36	1902	0.0 - 0.5	< 5.7	< 1.1	< 1.6	
36	1902	0.0 - 1.0	< 6.9	< 1.3	< 1.9	
36	1902	4.0 - 6.0	< 3.3	< 0.5	< 0.9	
36	1902	8.0 - 9.0	< 5.4	< 0.9	< 1.4	
36	1902	9.0 - 10.0	< 3.5	< 0.6	< 1.1	
68	1731	0.0 - 0.5	< 2.8	< 0.6	< 1.0	
68	1731	0.0 - 1.0	< 3.2	< 0.7	< 1.2	
68	1731	3.0 - 4.0	< 1.4	< 0.3	< 0.5	
68	1731	4.0 - 4.8	< 2.6	< 0.5	< 0.8	
68	1731	4.8 - 5.8	< 1.5	< 0.4	< 0.6	
68	1731	5.8 - 6.8	< 2.4	< 0.6	< 0.6	
68	1731	6.8 - 7.8	< 1.5	< 0.3	< 0.5	
68	1731	7.8 - 8.8	< 1.5	< 0.4	< 0.6	
68	1731	8.8 - 9.8	< 2.1	< 0.5	< 0.8	
68	1731	9.8 - 10.8	< 1.5	< 0.4	< 0.5	
68	1731	10.8 - 11.8	< 2.2	< 0.6	< 0.8	
68	1731	11.8 - 12.8	< 1.7	< 0.5	< 0.5	
68	1731	12.8 - 13.8	< 2.3	< 0.7	< 0.8	
68	1731	13.8 - 14.8	< 1.4	< 0.3	< 0.6	
68	1731	14.8 - 15.8	< 2.3	< 0.6	< 0.8	
68	1731	15.8 - 16.8	< 2.0	< 0.5	< 0.5	
68	1731	16.8 - 18.8	< 1.8	< 0.4	< 0.7	
77	1941	0.0 - 0.5	< 6.9	< 1.3	6.7 ± 1.	
77	1941	0.0 - 1.0	< 5.2	< 1.1	< 1.8	
77	1941	1.0 - 2.0	< 3.8	< 0.7	< 1.5	

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<u>Coordinates</u>		Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
77	1941	2.0 - 3.0	< 7.6	< 1.2	< 3.0	
77	1941	3.0 - 4.0	< 9.5	< 1.5	21.3 ± 0.1	
77	1941	4.0 - 5.0	< 7.3	< 1.2	15.5 ± 1.5	
· 77	1941	6.0 - 7.0	< 6.0	< 0.9	< 2.6	
77	1941	7.0 - 9.0	< 4.1	< 1.0	< 1.4	
88	1762	0.0 - 2.0	< 3.3	< 0.6	< 1.2	
88	1762	6.0 - 8.0	< 3.1	< 0.8	< 1.0	
88	1762	8.0 - 9.0	< 2.1	< 0.5	< 0.9	
88	1762	9.0 - 10.0	< 2.7	< 0.7	< 1.1	
88	1762	10.0 - 11.0	< 2.0	< 0.4	< 0.8	
88	1762	11.0 - 12.0	< 1.8	< 0.5	< 0.9	
88	1762	12.0 - 13.0	< 3.2	< 0.8	< 1.1	
88	1762	13.0 - 14.0	< 1.8	< 0.4	< 0.9	
94	1986	0.0 - 0.5	< 3.7	< 1.0	< 1.9	
94	1986	0.0 - 2.0	< 1.4	< 0.6	< 0.9	
94	1986	4.0 - 5.0	< 2.0	< 0.7	< 0.9	
94	1986	7.0 - 8.0	< 3.1	< 0.8	< 1.3	
94	1986	8.0 - 10.0	< 3.1	< 0.8	< 1.1	
99	1671	0.0 - 1.0	< 6.2	< 1.4	< 1.9	
99	1671	5.0 - 6.0	< 3.0	< 0.5	< 1.0	
99	1671	6.0 - 7.0	< 1.6	< 0.5	< 0.5	
99	1671	7.0 - 8.0	< 1.8	< 0.5	< 0.5	
99	1671	8.0 - 9.0	< 2.3	< 0.6	< 0.7	
99	1671	9.0 - 10.0	< 2.0	< 0.5	< 0.8	
99	1671	10.0 - 11.0	<15.4	< 5.3	< 2.2	
99	1671	11.0 - 12.0	< 3.9	< 1.0	< 1.3	

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_Coordinatesa		Depth	Concentration (pCi/g ± 2 sigma)		
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
100	1765	0.0 - 2.0	< 4.4	< 1.0	< 1.9
100	1765	5.0 - 6.0	< 2.9	< 0.8	< 1.2
100	1765	9.0 - 10.0	< 2.8	< 0.7	< 1.2
100	1840	0.0 - 2.0	< 3.7	< 1.2	< 1.8
100	1840	4.0 - 5.0	< 5.3	< 1.4	< 2.1
100	1840	9.0 - 10.0	< 3.7	< 0.9	< 1.5
100	1909	0.0 - 0.5	< 4.2	< 0.6	< 1.2
100	1909	0.5 - 1.0	< 5.1	< 0.5	< 1.0
100	1909	1.0 - 2.0	< 4.0	< 0.7	< 1.0
100	1909	2.0 - 3.0	< 6.8	< 0.9	11.0 ± 0.8
100	1909	3.0 - 4.0	< 3.8	< 0.6	2.8 ± 0.3
100	1909	4.0 - 5.0	< 7.5	< 1.1	8.8 ± 0.7
100	1909	5.0 - 6.0	< 4.4	< 0.8	< 1.2
100	1909	6.0 - 7.0	< 3.6	< 0.8	4.1 ± 0.5
100	1909	7.0 - 8.0	< 3.3	< 0.6	< 0.9
100	1909	8.0 - 10.0	< 0.9	< 0.3	< 0.6
100	1909	10.0 - 12.0	< 1.1	< 0.3	< 0.4
101	1605	0.0 - 0.5	< 3.6	< 0.6	< 1.0
101	1605	0.0 - 1.0	< 5.8	< 1.1	< 1.7
101	1605	4.0 - 5.0	< 1.5	< 0.4	< 0.5
101	1605	6.0 - 8.0	< 1.5	< 0.4	< 0.6
101	1605	8.0 - 9.0	< 2.6	< 0.6	< 1.1
101	1605	9.0 - 10.0	< 3.1	< 0.8	< 1.1

TABLE 5-1 (continued)

Coord	linates ^a	Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
104	1883	0.0 - 2.0	< 3.2	< 0.8	< 1.6	
104	1883	4.0 - 5.0	< 3.9	< 0.9	< 1.4	
104	1883	8.0 - 9.0	< 4.0	< 0.8	< 1.4	
108	1806	0.0 - 2.0	< 5.3	3.6 ± 0.4	< 2.1	
108	1806	4.0 - 6.0	< 2.7	< 0.6	< 0.8	
108	1806	6.0 - 8.0	< 3.1	< 0.8	< 1.2	
108	1806	8.0 - 10.0	< 2.9	< 0.6	< 1.1	
108	1806	10.0 - 12.0	< 2.4	< 0.5	< 0.7	
109	1950	0.0 - 0.5	< 5.9	< 2.3	11.6 ± 0.8	
109	1950	0.0 - 1.0	< 9.9	< 1.4	57.6 ± 2.1	
109	1950	1.0 - 2.0	<12.7	< 1.9	91.5 ± 2.1	
109	1950	2.0 - 3.0	<10.4	< 1.6	72.0 ± 33.0	
109	1950	3.0 - 4.0	< 5.7	< 1.3	12.1 ± 0.7	
109	1950	6.7 - 7.4	< 4.3	< 1.1	< 1.7	
110	1543	0.0 - 1.0	< 4.4	< 1.2	< 1.7	
110	1543	4.0 - 5.0	< 6.3	< 1.6	< 2.0	
110	1543	7.0 - 8.0	< 2.6	< 0.7	< 0.7	
110	1543	8.0 - 10.0	< 1.8	< 0.4	< 0.9	
114	1928	0.0 - 2.0	< 2.5	< 0.9	< 1.0	
114	1928	5.0 - 6.0	< 2.4	< 0.5	< 0.9	
114	1928	10.0 - 11.0	< 2.5	< 0.6	< 1.0	
114	1928	12.0 - 13.0	< 3.4	< 0.8	< 1.3	
114	1928	13.0 - 13.5	< 3.2	< 0.8	< 1.1	

TABLE 5-1 (continued)

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Coordinatesa		Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
117	1903	0.0 - 2.0	< 3.0	< 0.8	< 1.0	
117	1903	2.0 - 3.0	< 3.0	< 0.7	< 1.2	
117	1903	3.0 - 4.0	< 7.1	< 1.1	21.2 ± 1.	
117	1903	4.0 - 5.0	< 8.0	< 1.7	< 4.1	
117	1903	6.0 - 8.0	< 2.3	< 0.5	< 1.0	
144	1881	0.0 - 2.0	< 3.6	< 0.8	< 1.0	
144	1881	4.0 - 6.0	< 3.2	< 0.7	< 1.1	
144	1881	8.0 - 10.0	< 2.3	< 0.6	< 0.8	
145	1932	0.0 - 2.0	< 2.6	< 0.6	< 1.0	
145	1932	4.0 - 6.0	< 1.8	< 0.4	< 0.7	
L45	1932	8.0 - 10.0	< 4.3	< 1.1	< 1.5	
145	1932	10.0 - 12.0	< 2.8	< 0.6	< 1.1	
154	1853	0.0 - 1.0	< 2.2	< 0.6	< 0.7	
L54	1853	8.0 - 9.0	< 3.5	< 1.0	< 1.7	
154	1853	10.0 - 11.0	< 5.1	< 1.5	< 2.0	
L54	1853	13.0 - 14.0	< 3.5	< 0.9	< 1.2	
154	1853	14.0 - 15.0	< 2.7	< 0.5	< 0.9	
L54	1853	15.0 - 16.0	< 3.7	< 0.9	< 1.3	
154	1853	16.0 - 17.0	< 1.8	< 0.3	< 0.8	
154	1853	17.0 - 18.0	< 2.8	< 0.8	< 1.1	
156	1772	0.0 - 1.0	< 3.4	< 0.8	< 1.5	
L56	1772	4.0 - 5.0	< 2.0	< 0.6	< 0.7	
156	1772	9.0 - 10.0	< 2.9	< 0.8	< 0.9	

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Coordinatesa		Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
156	1825	0.0 - 1.0	< 2.3	. < 0.6	< 0.8	
156	1825	5.0 - 6.0	< 4.7	< 1.4	< 1.8	
156	1825	11.0 - 12.0	< 4.7	< 1.1	< 1.9	
157	1722	0.0 - 2.0	< 6.7	< 1.7	< 2.3	
157	1722	8.0 - 9.0	< 3.1	< 0.8	< 1.3	
157	1722	9.0 - 10.0	< 3.4	< 0.8	< 0.9	
157	1722	10.0 - 11.0	< 3.1	< 0.8	< 1.1	
157	1722	11.0 - 12.0	< 2.9	< 0.7	< 1.1	
157	1722	12.0 - 13.0	< 2.1	< 0.5	< 0.8	
157	1722	13.0 - 14.0	< 2.8	< 0.7	< 1.3	
157	1722	16.0 - 18.0	< 2.3	< 0.6	< 0.7	
157	1722	18.0 - 20.0	< 2.9	< 0.8	< 1.0	
157	1722	20.0 - 22.0	< 1.8	< 0.4	< 0.6	
168	1545	0.0 - 1.0	< 2.7	< 0.7	< 1.1	
168	1545	4.0 - 5.0	< 2.9	< 0.8	< 1.1	
168	1545	7.0 - 8.0	< 2.1	< 0.6	< 0.8	
168	1545	8.0 - 10.0	< 1.6	< 0.4	< 0.8	
171	1928	0.0 - 2.0	< 3.0	< 0.7	< 0.9	
171	1928	2.0 - 3.0	< 8.5	< 1.5	14.4 ± 2.5	
171	1928	3.0 - 4.0	< 3.1	< 0.7	< 1.6	
171	1928	7.0 - 8.0	< 3.2	< 0.8	< 1.5	
171	1928	10.0 - 12.0	< 2.9	< 0.6	< 1.1	
171	1928	12.0 - 13.0	< 2.6	< 0.5	< 1.1	
171	1928	13.0 - 14.0	< 1.7	< 0.4	< 0.8	

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<u>Coordinates</u> ^a		Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
L71	1928	14.0 - 15.0	< 4.1	< 1.1	< 1.6	
L71	1928	15.0 - 15.5	< 4.8	< 1.1	< 2.1	
189	1986	0.0 - 0.5	< 2.0	< 0.5	< 0.9	
L89	1986	0.0 - 1.0	< 4.2	< 1.3	< 1.6	
L89	1986	3.0 - 4.0	< 1.8	< 0.5	< 1.1	
L89	1986	4.0 - 6.0	< 1.6	1.1 ± 0.1	< 0.6	
L89	1986	6.0 - 7.0	< 4.3	< 1.4	< 1.8	
L89	1986	7.0 - 8.0	< 1.7	< 0.7	< 1.1	
201	1892	0.0 - 2.0	< 3.4	< 0.9	< 1.3	
201	1892	4.0 - 6.0	< 2.1	< 0.5	< 0.9	
201	1892	8.0 - 10.0	< 3.8	< 0.9	< 1.4	
201	1910	0.0 - 2.0	< 2.3	< 0.6	< 1.0	
201	1910	2.0 - 4.0	< 1.7	< 0.5	< 0.6	
201	1910	4.0 - 6.0	< 5.7	< 1.3	< 2.7	
201	1910	8.0 - 10.0	< 3.3	< 0.7	< 1.3	
206	1954	0.0 - 1.0	< 7.0	< 1.6	14.7 ± 0.	
206	1954	1.0 - 2.0	< 7.7	< 1.1	32.6 ± 0	
206	1954	2.0 - 3.0	< 9.5	< 1.5	45.7 ± 0.	
206	1954	3.0 - 4.0	<10.7	< 1.6	70.1 ± 1.	
206	1954	4.0 - 5.0	< 8.2	< 1.5	19.2 ± 0.	
206	1954	5.0 - 6.0	< 3.2	< 0.8	< 1.3	
206	1954	8.0 - 9.0	< 2.6	< 0.5	2.9 ± 0	

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_Coordinatesa		Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
207	1792	1.0 - 2.0	< 2.7	< 0.5	< 1.1	
207	1792	8.0 - 9.0	< 2.9	< 0.6	< 1.1	
207	1792	13.0 - 14.0	< 2.1	< 0.5	< 0.7	
207	1792	14.0 - 15.0	< 1.9	< 0.5	< 0.7	
207	1792	15.0 - 16.0	< 4.5	< 1.1	< 1.9	
207	1792	16.0 - 17.0	< 2.6	< 0.6	< 1.3	
207	1792	17.0 - 18.0	< 3.0	< 0.6	< 1.0	
214	1755	0.0 - 1.0	< 7.4	< 1.8	< 2.7	
214	1755	4.0 - 5.0	< 3.3	< 0.7	< 1.4	
214	1755	9.0 - 10.0	< 3.5	< 0.9	< 1.3	
220	1892	0.0 - 0.5	< 3.5	< 0.8	< 1.1	
220	1892	0.0 - 1.0	< 5.1	< 0.8	< 1.2	
220	1892	4.0 - 5.0	< 3.6	< 0.6	< 1.1	
220	1892	7.0 - 8.0	< 5.5	< 0.9	< 1.3	
225	1546	0.0 - 1.0	< 5.8	< 1.5	< 1.7	
225	1546	4.0 - 6.0	< 1.9	< 0.5	< 0.8	
225	1546	8.0 - 10.0	< 3.1	< 0.8	< 0.9	
235	1932	0.0 - 2.0	< 3.6	< 0.9	< 1.6	
235	1932	6.0 - 7.0	< 3.9	< 1.0	< 1.4	
235	1932	8.0 - 9.0	< 3.5	< 0.8	< 3.5	
235	1932	13.0 - 14.0	< 4.5	< 1.2	< 1.6	
235	1932	14.0 - 15.0	< 4.5	< 1.2	< 1.9	
235	1932	15.0 - 16.0	< 2.4	< 0.5	< 1.1	
235	1932	16.0 - 17.0	< 1.5	< 0.8	< 0.6	
235	1932	17.0 - 18.0	< 3.3	< 0.7	< 1.4	

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<u>Coordinates^a</u>		Depth	Concentration (pCi/g ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
247	1806	0.0 - 1.0	< 3.5	< 0.6	< 1.1	
247	1806	1.0 - 2.0	< 2.5	< 0.6	< 0.9	
247	1806	4.0 - 5.0	< 2.3	< 0.5	< 1.0	
247	1806	7.0 - 8.0	< 2.2	< 0.6	< 0.7	
247	1806	8.0 - 9.0	< 4.3	< 0.8	< 1.7	
254	1849	0.0 - 0.5	< 3.3	< 0.8	< 1.4	
254	1849	0.0 - 1.0	< 2.6	< 0.4	< 0.9	
254	1849	4.0 - 5.0	< 2.8	< 0.8	< 1.1	
254	1849	7.0 - 8.0	< 3.3	< 0.6	< 1.0	
254	1849	8.0 - 9.0	< 3.5	< 0.7	< 1.0	
258	1892	0.0 - 0.5	< 6.7	< 1.2	< 1.7	
258	1892	4.0 - 5.0	< 3.5	< 0.7	< 1.2	
258	1892	5.0 - 6.0	< 6.2	< 1.0	5.4 ± 0.5	
258	1892	6.0 - 7.0	11.3 ± 2.2	< 0.8	< 1.6	
258	1892	8.0 - 9.0	< 6.1	< 1.1	< 1.3	
262	1953	0.0 - 1.0	< 4.6	< 1.3	< 1.8	
262	1953	3.0 - 4.0	< 4.8	< 1.0	< 2.2.	
262	1953	4.0 - 5.0	<24.0	< 3.7	12.2 ± 1.2	
262	1953	5.0 - 6.0	< 4.5	2.4 ± 0.2	10.4 ± 0.7	
262	1953	7.0 - 8.0	< 3.8	< 0.8	< 1.4	
262	1953	13.0 - 14.0	< 1.9	< 0.5	< 0.7	
262	1953	14.0 - 15.0	< 3.3	< 0.9	< 1.3	
262	1953	15.0 - 16.0	< 3.5	< 0.8	< 0.8	
262	1953	16.0 - 17.0	< 4.2	< 0.9	< 1.4	

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Coordinatesa		Depth	Concentration (pCi/g ± 2 sigma)		
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
272	1707	0.0 - 1.0	< 3.3	< 0.8	< 1.5
272	1707	8.0 - 9.0	< 2.8	< 0.6	< 1.0
272	1707	9.0 - 10.0	< 3.3	< 0.7	< 1.1
272	1707	10.0 - 11.0	< 2.5	< 0.7	< 1.0
272	1707	11.0 - 12.0	< 3.4	< 0.7	< 1.1
272	1707	12.0 - 13.0	< 2.5	< 0.6	< 1.0
272	1707	13.0 - 14.0	< 3.3	< 0.8	< 1.0
272	1707	14.0 - 15.0	< 2.9	< 0.7	< 1.3
272	1707	15.0 - 16.0	< 3.8	< 1.0	< 1.0
272	1707	16.0 - 17.0	< 2.9	< 0.6	< 1.3
272	1707	17.0 - 18.0	< 3.3	< 0.8	< 0.9
272	1707	18.0 - 19.0	< 4.5	< 1.1	< 1.3
272	1707	19.0 - 20.0	< 2.5	< 0.6	< 0.9
272	1707	20.0 - 21.0	< 1.9	< 0.6	< 0.6
272	1707	21.0 - 22.0	< 2.4	< 0.6	< 0.8
283	1506	0.0 - 0.5	< 3.5	< 0.7	< 1.3
283	1506	0.0 - 1.0	< 4.8	< 1.2	< 1.7
283	1506	3.0 - 4.0	< 3.9	< 0.9	< 1.5
283	1506	6.0 - 7.0	< 3.3	< 0.6	< 0.9
283	1506	7.0 - 8.0	< 4.0	< 0.8	< 1.1
286	1611	0.0 - 0.5	< 4.2	< 0.9	< 1.5
286	1611	0.0 - 1.0	< 3.9	< 1.0	< 1.4
286	1611	3.0 - 4.0	< 4.5	< 1.0	< 1.6
286	1611	7.0 - 8.0	< 2.8	< 0.7	< 1.1

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Coordinatesa		Depth	Concentration (pCi/q ± 2 sigma)			
East	North	(ft)	Uranium-238	Radium-226	Thorium-232	
286	1927	0.0 - 1.0	< 2.9	< 0.8	< 1.0	
286	1927	2.0 - 2.5	< 2.3	< 0.6	< 0.9	
286	1927	3.5 - 5.5	< 3.3	< 0.6	< 1.5	
290	1928	0.0 - 2.0	< 3.5	< 0.6	< 1.3	
290	1928	2.0 - 4.0	< 3.6	< 0.9	< 1.6	
290	1928	4.0 - 6.0	< 6.2	< 1.1	13.3 ± 0.3	
290	1928	6.0 - 7.0	< 7.6	< 1.2	22.9 ± 1.4	
290	1928	8.0 - 9.0	4.9 ± 1.3	< 0.8	< 1.4	
290	1928	9.0 - 10.0	< 2.9	< 0.7	< 0.9	
290	1928	10.0 - 12.0	< 3.6	< 0.9	< 1.2	
299	1991	0.0 - 0.5	< 2.9	< 0.7	< 1.0	
299	1991	0.0 - 2.0	< 3.4	< 0.7	< 1.1	
299	1991	4.0 - 6.0	< 2.9	< 0.7	< 1.0	
299	1991	7.0 - 8.0	< 3.1	< 0.7	< 1.3	
307	1819	0.0 - 1.0	< 4.0	< 0.6	< 0.9	
307	1819	1.0 - 2.0	< 3.2	< 0.5	< 0.9	
307	1819	5.0 - 6.0	< 5.5	< 1.0	< 1.2	
307	1819	7.0 - 8.0	< 4.0	< 0.6	< 1.1	
307	1819	8.0 - 9.0	< 3.2	< 0.6	< 1.0	
307	1819	9.0 - 10.0	< 4.0	< 0.6	< 1.0	
307	1819	10.0 - 11.0	< 2.3	< 0.5	< 0.8	
327	1753	0.0 - 1.0	< 6.2	< 0.8	< 1.7	
327	1753	1.0 - 2.0	< 4.3	< 0.6	< 1.1	
327	1753	4.0 - 5.0	< 4.3	< 0.6	< 1.1	
327	1753	8.0 - 9.0	< 3.7	< 0.6	< 0.9	

TABLE 5-1 (continued)

	2 of 18				
	<u>linates</u> a	Depth	Conce	ntration (pCi/g ±	
East ————	North	(ft)	Uranium-238	Radium-226	Thorium-232
329	1855	0.0 - 1.0	< 5.9	< 0.8	< 1.3
329	1855	1.0 - 2.0	< 4.6	< 0.9	< 1.4
329	1855	4.0 - 5.0	< 3.6	< 0.7	< 1.4
329	1855	5.0 - 6.0	< 4.9	< 0.8	< 1.4
329	1855	6.0 - 7.0	< 7.0	< 1.0	9.3 ± 0.8
329	1855	8.0 - 9.0	< 6.3	< 0.9	< 1.5
329	1855	9.0 - 11.0	< 4.0	< 0.7	< 1.3
329	1899	0.0 - 1.0	< 5.2	< 0.9	< 1.4
329	1899	3.0 - 4.0	< 2.9	< 0.4	< 0.9
329	1899	4.0 - 5.0	< 0.7	< 0.9	11.6 ± 1.2
329	1899	5.0 - 6.0	< 1.0	< 1.3	23.0 ± 1.7
329	1899	6.0 - 7.0	< 7.1	< 1.1	< 2.0
329	1899	7.0 - 8.0	< 4.0	< 0.7	< 1.1
329	1899	8.0 - 9.0	< 7.0	< 1.1	< 1.7
330	1930	0.0 - 1.0	< 3.4	< 0.8	< 1.6
330	1930	1.0 - 2.0	< 3.2	< 0.8	< 1.3
330	1930	2.0 - 3.0	< 2.7	< 0.9	< 1.0
330	1930	3.0 - 4.0	< 3.9	< 0.7	< 1.9
330	1930	4.0 - 5.0	< 7.6	< 1.6	< 3.4
330	1930	5.0 - 6.0	<15.0	< 2.2	93.1 ± 2.5
330	1930	6.0 - 7.0	17.0 ± 4.2	5.3 ± 0.4	28.0 ± 2.1
330	1930	8.0 - 10.0	< 2.3	< 0.6	< 0.8
330	1930	10.0 - 12.0	< 2.8	< 0.9	< 1.0
330	1930	12.0 - 13.0	< 3.1	< 0.8	< 1.1
330	1930	13.0 - 14.0	< 3.2	< 0.8	< 1.2
330	1930	14.0 - 15.0	< 4.4	< 1.1	< 1.6
330	1930	15.0 - 18.0	< 3.1	< 1.0	< 1.3

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1700

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1700

14.0 - 15.0

16.0 - 17.0

17.0 - 18.0

18.0 - 19.0

19.0 - 20.0

20.0 - 21.0

21.0 - 22.0

15.0 - 16.0

TABLE 5-1 (continued)

_Coord	linates ^a	Depth	Conce	ntration (pCi/g ±	2 sigma)
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
335	1953	0.0 - 0.5	< 2.9	< 0.6	< 1.3
335	1953	0.0 - 1.0	< 4.2	< 0.9	< 1.5
335	1953	1.0 - 2.5	< 2.8	< 0.6	< 1.1
335	1953	7.5 - 8.5	< 4.6	< 0.9	< 1.3
335	1953	8.5 - 9.4	< 2.7	< 0.6	< 1.0
347	1814	0.0 - 1.0	< 5.3	< 0.8	< 1.3
347	1814	1.0 - 2.0	< 3.1	< 0.6	< 1.1
347	1814	3.0 - 4.0	< 7.0	< 1.1	35.9 ± 2.5
347	1814	4.0 - 5.0	< 5.9	< 0.7	< 1.6
347	1814	8.0 - 9.0	< 3.9	< 0.7	< 1.4
355	1700	0.0 - 1.0	< 5.6	< 1.5	< 1.8
355	1700	8.0 - 9.0	< 2.9	< 0.7	< 0.9
355	1700	9.0 - 10.0	< 3.3	< 0.8	< 1.3
355	1700	10.0 - 11.0	< 2.3	< 0.5	< 0.7
355	1700	11.0 - 12.0	< 3.3	< 0.7	< 0.7
355	1700	12.0 - 13.0	< 3.3	< 0.8	< 0.9
355	1700	13.0 - 14.0	< 3.0	< 0.8	< 1.0

< 3.2

< 3.4

< 3.3

< 3.9

< 2.9

< 3.8

< 2.9

< 3.6

< 0.9

< 1.0

< 0.9

< 0.8

< 0.7

< 0.7

< 0.7

< 0.8

< 1.3

< 1.2

< 1.1

< 1.2

< 1.1

< 1.2

< 1.2

< 1.3

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<u>Coordinatesa</u>		Depth	Concentration (pCi/g ± 2 sigma)		
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
360	1920	0.0 - 1.0	< 4.5	< 0.7	< 1.2
360	1920	1.0 - 2.0	< 2.6	< 0.4	< 0.7
360	1920	3.0 - 4.0	< 3.9	< 0.7	< 1.2
360	1920	4.0 - 5.0	< 5.0	< 0.7	< 1.6
360	1920	5.0 - 6.0	< 4.5	< 0.6	< 1.5
360	1920	8.0 - 8.4	< 4.8	< 0.7	2.7 ± 0.6
372	1878	0.0 - 1.0	< 3.0	< 0.6	< 0.9
372	1878	1.0 - 2.0	< 5.0	< 0.7	< 1.2
372	1878	3.0 - 4.0	< 3.1	< 0.7	< 0.9
372	1878	4.0 - 5.0	< 5.4	< 0.8	< 1.5
372	1878	5.0 - 6.0	< 5.2	< 0.6	7.8 ± 0.9
372	1878	7.0 - 8.0	< 8.0	< 0.9	11.1 ± 0.3
372	1878	8.0 - 9.0	< 4.0	< 0.6	< 1.4
372	1878	9.0 - 11.0	< 5.9	< 0.9	< 1.4
378	1954	0.0 - 0.5	< 3.9	< 1.0	< 1.3
378	1954	0.0 - 1.0	< 2.2	< 0.5	< 0.9
378	1954	4.0 - 6.0	< 2.1	< 0.4	< 0.7
378	1954	7.0 - 8.0	< 4.0	< 1.0	< 1.2
378	1954	8.0 - 9.6	< 2.2	< 0.5	< 0.8
378	1954	9.6 - 10.6	< 3.0	< 0.7	< 0.9
378	1954	10.6 - 11.6	< 2.2	< 0.4	< 0.8
382	1799	0.0 - 1.0	< 4.3	< 0.6	< 0.8
382	1799	1.0 - 2.0	< 3.4	< 0.5	< 0.7
382	1799	2.0 - 4.0	< 2.9	< 0.4	< 0.5
382	1799	4.0 - 5.0	< 2.7	< 0.4	< 0.6

TABLE 5-1 (continued)

<u>Coordinates^a</u> Depth		Depth	Concentration (pCi/q ± 2 sigma)		
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
382	1799	5.0 - 6.0	< 3.4	< 0.4	< 0.8
382	1799	6.0 - 7.0	< 3.3	< 0.4	< 0.6
382	1799	7.0 - 8.4	< 3.8	< 0.4	< 0.7
382	1799	8.4 - 8.8	< 3.6	< 0.5	< 0.8
382	1799	8.8 - 10.4	< 3.4	< 0.4	< 0.7
382	1799	10.4 - 10.9	< 4.1	< 0.5	< 0.9
382	1799	10.9 - 11.4	< 3.6	< 0.6	< 0.7
382	1825	0.0 - 1.0	< 1.5	< 0.6	< 1.0
382	1825	0.0 - 2.0	< 1.4	< 0.4	< 0.8
382	1825	3.0 - 5.0	< 1.4	< 0.4	3.0 ± 0.3
382	1825	6.0 - 6.0	< 1.5	< 0.4	2.8 ± 0.4
382	1825	6.0 - 8.0	< 1.2	< 0.4	< 0.8
382	1825	8.0 - 10.0	< 1.1	< 0.4	< 0.7
382	1825	10.0 - 12.0	< 1.1	< 0.3	< 0.8
382	1825	12.5 - 12.5	< 1.5	< 0.4	< 0.9
382	1825	12.5 - 14.0	< 1.1	< 0.3	< 0.6
390	1795	0.0 - 0.5	< 3.9	< 0.5	< 0.8
390	1795	0.5 - 1.0	< 3.7	< 0.5	< 0.7
390	1795	1.0 - 2.0	< 3.9	< 0.6	< 0.8
390	1795	2.0 - 2.5	< 4.2	< 0.6	< 0.9
398	1890	0.0 - 0.5	< 4.6	< 0.9	< 1.2
398	1890	0.0 - 1.0	< 3.5	< 0.8	< 1.1
398	1890	2.0 - 3.0	< 2.8	< 0.7	< 1.2
398	1890	3.0 - 4.0	< 3.1	< 0.5	< 0.8

TABLE 5-1 (continued)

Coord	inates ^a	Depth	Conce	ntration (pCi/q ±	2 sigma)
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
398	1890	4.0 - 5.0	< 5.9	< 0.9	9.2 ± 1.4
398	1890	5.0 - 6.0	< 0.9	< 1.1	24.2 ± 1.1
398	1890	6.0 - 7.0	10.4 ± 3.0	< 1.4	16.4 ± 0.4
398	1890	7.0 - 8.0	22.0 ± 2.9	4.1 ± 0.2	7.3 ± 0.4
398	1890	8.0 - 9.0	< 3.1	< 0.5	< 0.9
412	1661	0.0 - 1.5	< 4.9	< 1.3	< 2.1
412	1661	2.0 - 4.0	< 2.7	< 0.7	< 1.4
412	1661	6.0 - 8.0	< 2.7	< 0.7	< 1.0
412	1661	8.0 - 10.0	< 1.6	< 0.4	< 0.6
412	1661	10.0 - 12.0	< 2.4	< 0.6	< 0.7
412	1661	12.0 - 14.0	< 2.4	< 0.6	< 1.0
414	1845	0.0 - 2.0	< 2.7	< 0.5	< 1.1
414	1845	2.0 - 4.0	< 9.1	< 1.5	32.5 ± 1.6
414	1845	4.0 - 5.0	< 3.6	< 0.7	5.3 ± 1.3
414	1845	8.0 - 9.0	< 5.4	< 1.3	< 2.3
414	1845	15.0 - 16.0	< 2.0	< 0.4	< 0.8
415	1761	0.0 - 2.0	< 3.4	< 0.9	< 1.2
415	1761	5.0 - 6.0	< 2.4	< 0.6	< 0.9
415	1761	8.0 - 9.0	< 4.3	< 1.0	< 1.5
415	1761	9.0 - 10.0	< 2.7	< 0.7	< 1.2
415	1761	10.0 - 11.0	< 4.0	< 0.8	< 1.2
415	1761	11.0 - 12.0	< 3.7	< 0.9	< 1.3
416	1952	0.0 - 1.0	< 3.7	< 0.7	< 1.4
416	1952	4.7 - 5.5	< 1.8	< 0.4	< 0.7

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Coord	linates ^a	Depth	Conce	ntration (pCi/q ±	2 sigma)
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
416	1952	7.1 - 7.7	< 3.0	< 0.8	< 1.1
416	1952	7.7 - 8.7	< 1.8	< 0.4	< 0.8
416	1952	8.7 - 9.8	< 2.3	< 0.5	< 0.8
424	1909	0.0 - 2.0	< 3.2	< 0.7	< 1.3
424	1909	8.0 - 9.0	< 4.7	< 1.0	< 1.6
424	1909	13.0 - 14.0	< 2.7	< 0.6	< 1.0
424	1909	14.0 - 16.0	< 3.5	< 0.8	< 1.0
424	1909	16.0 - 18.0	< 2.2	< 0.5	< 0.9
126	1823	0.0 - 1.0	< 4.2	< 0.9	< 1.7
426	1823	4.0 - 5.0	< 4.1	< 0.9	< 1.1
426	1823	8.0 - 9.0	< 3.3	< 0.8	< 1.2
426	1823	9.0 - 10.0	< 3.7	< 1.0	< 1.2
426	1875	0.0 - 1.0	< 3.4	< 0.8	< 1.2
126	1875	2.0 - 4.0	< 5.2	< 1.3	< 1.7
126	1875	4.0 - 5.0	< 4.7	< 0.9	< 2.2
126	1875	9.0 - 10.0	< 5.7	< 1.3	< 2.1
128	1718	0.0 - 1.0	< 2.6	< 0.5	< 0.8
128	1718	1.0 - 2.0	< 3.2	< 0.5	< 1.0
128	1718	6.7 - 7.7	< 5.1	< 0.9	< 1.5
128	1718	7.7 - 8.7	< 3.0	< 0.5	< 1.0
128	1718	8.7 - 9.7	< 3.4	< 0.5	< 1.0
128	1718	9.7 - 10.7	< 2.5	< 0.4	< 0.8
128	1718	10.7 - 11.7	< 4.9	< 0.8	< 1.2
128	1718	11.7 - 12.7	< 4.4	< 0.6	< 1.0

TABLE 5-1 (continued)

_Coord	<u>inates</u> a	Depth		ntration (pCi/g ±	2 sigma)
East	North	(ft)	Uranium-238	Radium-226	Thorium-232
439	1838	0.0 - 1.0	< 2.5	< 0.6	< 1.0
439	1838	1.0 - 2.0	< 5.2	< 1.0	7.4 ± 0.1
439	1838	4.0 - 5.0	< 2.8	< 0.7	< 1.0
439	1838	5.0 - 6.0	< 5.8	< 1.0	8.9 ± 0.5
439	1838	7.0 - 8.0	< 2.8	< 0.7	< 1.1
439	1838	8.0 - 9.0	< 5.0	< 1.0	< 1.5
439	1838	9.0 - 10.0	< 3.3	< 0.7	< 1.4
439	1838	10.0 - 11.0	< 5.1	< 1.3	< 1.6
451	1763	0.0 - 0.5	< 7.7	< 1.0	< 1.3
451	1763	0.5 - 2.0	< 3.0	< 0.6	< 0.9
451	1763	6.0 - 8.0	< 5.3	< 0.8	< 1.4
451	1763	8.0 - 9.0	< 5.1	< 0.9	< 1.7
451	1763	9.0 - 10.0	< 6.5	< 1.0	< 1.8
462	1870	0.0 - 0.5	< 7.4	< 1.3	< 2.1
462	1870	0.0 - 1.0	< 3.5	< 0.7	< 1.4
462	1870	4.0 - 5.0	< 7.1	< 1.1	< 1.7
462	1870	8.0 - 9.0	< 7.7	< 1.2	< 2.0
462	1870	9.0 - 10.0	< 5.1	< 0.9	< 1.8

^aSampling locations are shown in Figure 4-2.

TABLE 5-2
DOWNHOLE GAMMA LOGGING RESULTS

FOR KENNEDY PARK

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East	North	D epth ^b	Count Rate ^C
		(ft)	(cpm)
Borehole	1185R		
36	1902	0.5	9 000
36	1902	1.0	10000
36	1902	1.5	9000
36	1902	2.0	9000
36	1902	2.5	9000
36	1902	3.0	10000
36	1902	3.5	11000
36	1902	4.0	11000
36	1902	4.5	11000
36	1902	5.0	11000
36	1902	5.5	11000
36	1902	6.0	10000
36	1902	6.5	10000
36	1902	7.0	10000
36	1902	7.5	9000
36	1902	8.0	10000
36	1902	8.5	10000
Borehole	1084R ^d		
74	1731	0.5	8000
74	1731	1.0	8000
74	1731	1.5	8000
74	1731	2.0	7000
74	1731	2.5	6000
74	1731	3.0	6000
74	1731	3.5	6000
74	1731	4.0	6000
Borehole	1204R ^d		
77	1941	0.5	24000
7 7	1941	1.0	27000
77	1941	1.5	30000
77	1941	2.0	40000
77	1941	2.5	53000
77	1941	3.0	63000
77	1941	3.5	47000
77	1941	4.0	44000
77	1941	4.5	38000

TABLE 5-2 (continued)

Pac	1e	2	of	3.2

<u>Coordi</u> East	nates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehole	1204R (con	tinued) d	
77	1941	5.0	21000
77	1941	5.5	15000
77	1941	6.0	14000
77	1941	6.5	14000
Borehole	1062Rd		
88	1762	0.5	7000
88	1762	1.0	10000
88	1762	1.5	10000
88	1762	2.0	9000
88	1762	2.5	9000
88	1762	3.0	8000
88	1762	3.5	6000
88	1762	4.0	6000
88	1762	4.5	5000
88	1762	5.0	6000
88	1762	5.5	6000
88	1762	6.0	6000
88	1762	6.5	5000
Borehole	<u>1133A</u> đ		
94	1986	0.5	8000
94	1986	1.0	8000
94	1986	1.5	8000
94	1986	2.0	8000
94	1986	2.5	8000
94	1986	3.0	8000
94 `	1986	3.5	8000
94	1986	4.0	8000
94	1986	4.5	7000
94	1986	5.0	9000
94	1986	5.5	9000
94	1986	6.0	9000
94	1986	6.5	9000
94	1986	7.0	8000
94	1986	7.5	8000

TABLE 5-2 (continued)

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Borehole 1063R ^d 99 1671 0.5 6000 99 1671 1.0 8000 99 1671 1.5 9000 99 1671 2.0 9000 99 1671 2.5 9000)))))))
99 1671 1.0 8000 99 1671 1.5 9000 99 1671 2.0 9000)))))))
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99 1671 3.0 8000)))
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99 1671 4.0 6000))
99 1671 4.5 5000)
99 1671 5.0 5000	
99 1671 5.5 5000	
99 1671 6.0 4000)
Borehole 1001Rd	
100 1909 0.5 8000)
100 1909 1.0 11000	ı
100 1909 1.5 12000	ı
100 1909 2.0 12000	ı
100 1909 2.5 28000	ı
100 1909 3.0 76000)
100 1909 3.5 59000	1
100 1909 4.0 17000	t
100 1909 4.5 11000	ı
Borehole 1186Rd	
101 1605 0.5 8000	1
101 1605 1.0 9000	
101 1605 1.5 9000	
101 1605 2.0 9000	
101 1605 2.5 8000	
101 1605 3.0 7000	
101 1605 3.5 6000	
101 1605 4.0 5000	
101 1605 4.5 5000	:
101 1605 5.0 5000	
101 1605 5.5 5000	

TABLE 5-2 (continued)

Pa	qe	4	of	32

1090 7	<u>01 94 </u>		····
<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehol	e 1186R (con	tinued) d	
101	1605	6.0	5000
101	1605	6.5	6000
101	1605	7.0	5000
101	1605	7.5	6000
Borehol	e 1071R ^d		
108	1806	0.5	9000
108	1806	1.0	9000
108	1806	1.5	8000
108	1806	2.0	8000
108	1806	2.5	8000
108	1806	3.0	8000
108	1806	3.5	8000
108	1806	4.0	8000
108	1806	4.5	8000
108	1806	5.0	7000
108	1806	5.5	7000
108	1806	6.0	7000
Borehol	<u>e 1110R</u> d		
110	1888	0.5	8000
110	1888	1.0	10000
110	1888	1.5	11000
110	1888	2.0	11000
110	1888	2.5	11000
110	1888	3.0	11000
110	1888	3.5	10000
110	1888	4.0	10000
110	1888	4.5	11000
110	1888	5.0	11000
110	1888	5.5	11000
110	1888	6.0	11000
110	1888	6.5	11000
110	1888	7.0	11000
110	1888	7.5	11000
110	1888	8.0	11000
		=	

TABLE 5-2 (continued)

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<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)	
Borehol	e 1107R ^d			
110	1543	0.5	7000	
110	1543	1.0	9000	
110	1543	1.5	8000	
110	1543	2.0	8000	
110	1543	2.5	8000	
110	1543	3.0	7000	
110	1543	3.5	7000	
110	1543	4.0	8000	
110	1543	4.5	6000	
110	1543	5.0	6000	
110	1543	5.5	6000	
110	1543	6.0	6000	
110	1543	6.5	6000	
110	1543	7.0	6000	
110	1543	7.5	6000	
Borehole	<u>e 1080R</u> đ			
111	1951	0.5	78000	
111	1951	1.0	132000	
111	1951	1.5	159000	
111	1951	2.0	257000	
111	1951	2.5	220000	
111	1951	3.0	95000	
111	1951	3.5	57000	
Borehole	e 1080R-A ^d			
112	1951	0.5	93000	
112	1951	1.0	135000	
112	1951	1.5	147000	
112	1951	2.0	254000	
112	1951	2.5	200000	
112	1951	3.0	82000	
112	1951	3.5	42000	
112	1951	4.0	18000	
112	1951	4.5	12000	
112	1951	5.0	10000	
112	1951	5.5	10000	
112	1951	6.0	9000	
112	1951	6.5	7000	

TABLE 5-2 (continued)

Pa	qe	6	of	32

	natesa	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	1080R-A (co	ontinued)d	
112	1951	7.0	7000
112	1951	7.5	7000
Borehole	1051R ^d		
114	1928	0.5	10000
114	1928	1.0	13000
114	1928	1.5	18000
114	1928	2.0	15000
114	1928	2.5	13000
114	1928	3.0	13000
114	1928	3.5	10000
114	1928	4.0	10000
114	1928	4.5	11000
114	1928	5.0	13000
114	1928	5.5	22000
114	1928	6.0	18000
114	1928	6.5	13000
114	1928	7.0	12000
114	1928	7.5	11000
114	1928	8.0	9000
114	1928	8.5	7000
114	1928	9.0	7000
114	1928	9.5	7000
114	1928	10.0	7000
Borehole	: 1075R ^d		
117	1903	0.5	10000
117	1903	1.0	10000
117	1903	1.5	12000
117	1903	2.0	13000
117	1903	2.5	14000
117	1903	3.0	28000
117	1903	3.5	67000
117	1903	4.0	36000
117	1903	4.5	17000
117	1903	5.0	12000
117	1903	5.5	11000
117	1903	6.0	12000
117	1903	6.5	13000

TABLE 5-2 (continued)

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Coor East	dinates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Boreho	<u>le 1072R</u> d		
144	1881	0.5	9000
144	1881	1.0	. 9000
144	1881	1.5	10000
144	1881	2.0	9000
144	· 1881	2.5	9000
144	1881	3.0	8000
144	1881	3.5	8000
144	1881	4.0	9000
144	1881	4.5	9000
144	1881	5.0	10000
144	1881	5.5	10000
144	1881	6.0	11000
144	. 1881	6.5	12000
144	1881	7.0	12000
144	1881	7.5	12000
144	1881	8.0	11000
144	1881	8.5	11000
Boreho	le 1069R ^d		
145	1932	0.5	13000
145	1932	1.0	21000
145	1932	1.5	20000
145	1932	2.0	16000
145	1932	2.5	14000
145	1932	3.0	14000
145	1932	3.5	16000
145	1932	4.0	17000
145	1932	4.5	20000
145	1932	5.0	37000
145	1932	5.5	55000
145	1932	6.0	32000
145	1932	6.5	18000
145	1932	7.0	15000
145	1932	7.5	13000
145	1932	8.0	13000
145	1932	8.5	13000

TABLE 5-2 (continued)

<u>e 8</u>	of	3	2

Coordinatesa		Depthb	Count Rate ^C
East	North	(Ît)	(cpm)
Borehol	e 1056R ^d		
154	1853	0.5	9000
154	1853	1.0	10000
154	1853	1.5	9000
154	1853	2.0	10000
154	1853	2.5	10000
154	1853	3.0	10000
154	1853	3.5	10000
154	1853	4.0	10000
154	1853	4.5	10000
154	1853	5.0	9000
154	1853	5.5	9000
154	1853	6.0	9000
154	1853	6.5	9000
154	1853	7.0	10000
154	1853	7.5	10000
154	1853	8.0	10000
154	1853	8.5	11000
154	1853	9.0	11000
154	1853	9.5	11000
154	1853	10.0	11000
154	1853	10.5	11000
154	1853	11.0	11000
154	1853	11.5	10000
154	1853	12.0	10000
154	1853	12.5	9000
154	1853	13.0	8000
154	1853	13.5	8000
<u>Borehole</u>	<u> 1070R</u> ₫		
157	1722	0.5	10000
157	1722	1.0	9000
157	1722	1.5	8000
157	1722	2.0	8000
157	1722	2.5	7000
157	1722	3.0	6000
157	1722	3.5	5000
157	1722	4.0	5000
157	1722	4.5	5000
157	1722	5.0	5000
157	1722	5.5	6000
			3000

TABLE 5-2 (continued)

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	inatesa	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	1070R (con	tinued)d	
157	1722	6.0	6000
157	1722	6.5	6000
157	1722	7.0	6000
157	1722	7.5	6000
157	1722	8.0	6000
157	1722	8.5	6000
Borehole	1108R ^d		
168	154 5	0.5	4000
168	1545	1.0	5000
168	1545	1.5	7000
168	1545	2.0	9000
168	1545	2.5	8000
168	1545	3.0	8000
168	1545	3.5	7000
168	1545	4.0	7000
168	1545	4.5	6000
168	1545	5.0	5000
168	1545	5.5	4000
168	1545	6.0	5000
168	1545	6.5	4000
168	1545	7.0	5000
168	1545	7.5	5000
Borehole	1229Rd		
169	1462	0.5	10000
169	1462	1.0	9000
169	1462	1.5	8000
169	1462	2.0	8000
169	1462	2.5	8000
169	1462	3.0	9000
169	1462	3.5	10000
169	1462	4.0	11000
169	1462	4.5	11000
169	1462	5.0	12000
169	1462	5.5	13000
169	1462	6.0	13000
169	1462	6.5	13000
169	1462	7.0	13000
203	740V	7.0	13000

TABLE 5-2 (continued)

	<u>Page</u>	10	of	32
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	inates ^a	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehol	e 1229R (con	tinued) d	
169	1462	7.5	13000
169	1462	8.0	12000
Borehol	e 1052R ^d		
171	1928	0.5	8000
171	1928	1.0	10000
171	1928	1.5	11000
171	1928	2.0	17000
171	1928	2.5	34000
171	1928	3.0	26000
171	1928	3.5	17000
171	1928	4.0	14000
171	1928	4.5	11000
171	1928	5.0	12000
171	1928	5.5	12000
171	1928	6.0	14000
171	1928	6.5	14000
171	1928	7.0	10000
171	1928	7.5	10000
171	1928	8.0	10000
171	1928	8.5	10000
171	1928	9.0	8000
171	1928	9.5	7000
171	1928	10.0	6000
171	1928	10.5	6000
<u>Borehole</u>	e 1134R		
189	1986	0.5	7000
189	1986	1.0	8000
189	1986	1.5	8000
189	1986	2.0	7000
189	1986	2.5	8000
189	1986	3.0	8000
189	1986	3.5	7000
189	1986	4.0	7000
189	1986	4.5	10000
189	1986	5.0	12000
189	1986	5.5	12000

TABLE 5-2 (continued)

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Fade II	01 32		
<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehol	e 1219R ^d		
196	1697	0.5	8000
196	1697	1.0	8000
196	1697	1.5	7000
196	1697	2.0	7000
196	1697	2.5	7000
196	1697	3.0	7000
196	1697	3.5	6000
196	1697	4.0	6000
196	1697	4.5	5000
196	1697	5.0	5000
196	1697	5.5	5000
196	1697	6.0	5000
196	1697	6.5	5000
196	1697	7.0	6000
196	1697	7.5	6000
Borehole	<u> 1073R</u> d		
201	1892	0.5	9000
201	1892	1.0	10000
201	1892	1.5	10000
201	1892	2.0	8000
201	1892	2.5	10000
201	1892	3.0	10000
201	1892	3.5	8000
201	1892	4.0	8000
201	1892	4.5	8000
201	1892	5.0	8000
201	1892	5.5	9000
201	1892	6.0	11000
201	1892	6.5	11000
201	1892	7.0	12000
201	1892	7.5	12000
201	1892	8.0	13000
201	1892	8.5	12000
Borehole	<u>= 1074R</u> d		
201	1910	0.5	10000
201	1910	1.0	12000
201	1910	1.5	11000

TABLE 5-2 (continued)

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Coord	inates ^a	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	≥ 1074R (con	tinued) d	
201	1910	2.0	11000
201	1910	2.5	12000
201	1910	3.0	13000
201	1910	3.5	21000
201	1910	4.0	37000
201	1910	4.5	32000
201	1910	5.0	14000
201	1910	5.5	11000
201	1910	6.0	11000
201	1910	6.5	12000
201	1910	7.0	13000
201	1910	7.5	13000
201	1910	8.0	13000
201	1910	8.5	13000
<u>Borehole</u>	≥ 1081R ^d		
206	1952	0.5	58000
206	1952	1.0	129000
206	1952	1.5	177000
206	1952	2.0	190000
206	1952	2.5	254000
206	1952	3.0	327000
206	1952	3.5	202000
206	1952	4.0	90000
206	1952	4.5	48000
206	1952	5.0	30000
206	1952	5.5	22000
206	1952	6.0	18000
206	1952	6.5	15000
206	1952	7.0	14000
206	1952	7.5	13000
Borehole	≥ 1054R ^d		
207	1792	0.5	10000
207	1792	1.0	12000
207	1792	1.5	10000
207	1792	2.0	8000
207	1792	2.5	8000
207	1792	3.0	8000

TABLE 5-2 (continued)

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<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehol	e 1054R (cont	tinued)d	
207	1792	3.5	8000
207	1792	4.0	9000
207	1792	4.5	10000
207	1792	5.0	12000
207	1792	5.5	12000
207	1792	6.0	12000
207	1792	6.5	12000
207	1792	7.0	12000
207	1792	7.5	11000
207	1792	8.0	11000
207	1792	8.5	11000
207	1792	9.0	10000
207	1792	9.5	9000
207	1792	10.0	8000
207	1792	10.5	9000
207	1792	11.0	9000
207	1792	11.5	9000
207	1792	12.0	8000
207	1792	12.5	8000
207	1792	13.0	8000
207	1792	13.5	8000
<u>Borehole</u>	e 1095R ^d .		
220	1819	0.5	7000
220	1819	1.0	9000
220	1819	1.5	9000
220	1819	2.0	11000
220	1819	2.5	11000
220	1819	3.0	11000
220	1819	3.5	10000
220	1819	4.0	11000
220	1819	4.5	15000
220	1819	5.0	11000
220	1819	5.5	11000
220	1819	6.0	9000
220	1819	6.5	9000

TABLE 5-2 (continued)

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	inates ^a	Depth b	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	1109R ^đ		
225	1546	0.5	7000
225	1546	1.0	8000
225	1546	1.5	9000
225	1546	2.0	9000
225	1546	2.5	9000
225	1546	3.0	8000
225	1545	3.5	8000
225	1545	4.0	7000
225	1545	4.5	6000
225	1545	5.0	6000
225	1545	5.5	6000
225	1545	6.0	5000
225	1545	6.5	5000
225	1545	7.0	5000
225	1545	7.5	6000
225	1545	8.0	6000
Borehole	1053R ^đ		
235	1932	0.5	9000
235	1932	1.0	10000
235	1932	1.5	11000
235	1932	2.0	12000
235	1932	2.5	12000
235	1932	3.0	13000
235	1932	3.5	14000
235	1932	4.0	13000
235	1932	4.5	13000
235	1932	5.0	13000
235	1932	5.5	13000
235	1932	6.0	21000
235	1932	6.5	41000
235	1932	7.0	26000
235	1932	7.5	15000
235	1932	8.0	13000
235	1932	8.5	12000
235	1932	9.0	12000
235	1932	9.5	12000
235	1932	10.0	12000
235	1932	10.5	12000
235	1932	11.0	10000

TABLE 5-2 (continued)

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<u>Coordi</u> East	nates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehole	1053R (con	tinued)d	
235	1932	11.5	8000
235	1932	12.0	7000
235	1932	12.5	7000
235	1932	13.0	8000
235	1932	13.5	8000
Borehole	1200R ^đ		
246	1806	0.5	9000
246	1806	1.0	10000
246	1806	1.5	10000
246	1806	2.0	9000
246	1806	2.5	9000
246	1806	3.0	9000
246	1806	3.5	9000
246	1806	4.0	9000
246	1806	4.5	9000
246	1806	5.0	9000
246	1806	5.5	9000
246	1806	6.0	10000
246	1806	6.5	12000
246	1806	7.0	13000
Borehole	1091R ^d		
254	1849	0.5	9000
254	1849	1.0	9000
254	1849	1.5	8000
254	1849	2.0	9000
254	1849	2.5	10000
254	1849	3.0	9000
254	1849	3.5	8000
254	1849	4.0	8000
254	1849	4.5	8000
254	1849	5.0	9000
254	1849	5.5	9000
254	1849	6.0	12000
254	1849	6.5	11000
254	1849	7.0	8000
254	1849	7.5	8000
			•

TABLE 5-2 (continued)

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<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)	
Borehol	e 1090R ^d			
258	1892	0.5	6000	
258	1892	1.0	7000	
258	1892	1.5	10000	
258	1892	2.0	10000	
258	1892	2.5	10000	
258	1892	3.0	10000	
258	1892	3.5	11000	
258	1892	4.0	12000	
258	1892	4.5	14000	
258	1892	5.0	25000	
258	1892	5.5	50000	
258	1892	6.0	82000	
258	1892	6.5	39000	
258	1892	7.0	19000	
258	1892	7.5	13000	
258	1892	8.0	12000	
258	1892	8.5	13000	
Borehole	e 1055R ^d			
263	1933	0.5	10000	
263	1933	1.0	11000	
263	1933	1.5	12000	
263	1933	2.0	16000	
263	1933	2.5	18000	
263	1933	3.0	22000	
263	1933	3.5	36000	
263	.1933	4.0	101000	
0.00	4000			

4.5

5.0

5.5

6.0

6.5

7.0

7.5

8.0

8.5

9.0

9.5

10.0

10.5

TABLE 5-2 (continued)

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raue		U.	32

Coord: East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehole	e 1055R (con	inued) d	
263	1933	11.0	10000
263	1933	11.5	11000
263	1933	12.0	11000
263	1933	12.5	11000
263	1933	13.0	11000
Borehole	<u> 1064R</u> d		
272	1707	0.5	8000
272	1707	1.0	9000
272	1707	1.5	8000
272	1707	2.0	7000
272	1707	2.5	7000
272	1707	3.0	7000
272	1707	3.5	7000
272	1707	4.0	7000
272	1707	4.5	7000
272	1707	5.0	6000
272	1707	5.5	7000
272	1707	6.0	7000
272	1707	6.5	7000
272	1707	7.0	7000
272	1707	7.5	7000
272	1707	8.0	6000
Borehole	≥ 1190R ^d		
283	1506	0.5	8000
283	1506	1.0	9000
283	1506	1.5	10000
283	1506	2.0	4 4 4 4 4
283	1506	2.5	10000
283	1506	3.0	
283	1506		10000
283	1506	3.5 4.0	10000
283	1506	4.5	10000
283	1506 1506		11000
283		5.0	10000
283	1506 1506	5.5	10000
	1506 1506	6.0	8000
283	1506	6.5	6000

TABLE 5-2 (continued)

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<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)	
Borehol	e 1187R			
286	1611	0.5	9000	
286	1611	1.0	10000	
286	1611	1.5	10000	
286	1611	2.0	10000	
286	1611	2.5	10000	
286	1611	3.0	10000	
286	1611	3.5	10000	
286	1611	4.0	10000	
286	1611	4.5	9000	
286	1611	5.0	8000	
286	1611	5.5	8000	
286	1611	6.0	8000	
286	1611	6.5	6000	
286	1611	7.0	8000	
286	1611	7.5	7000	
286	1611	8.0	6000	
Borehole	e 1028R ^d			
286	1927	0.5	9000	
286	1927	1.0	10000	
286	1927	1.5	11000	
286	1927	2.0	11000	
286	1927	2.5	13000	
286	1927	3.0	17000	
286	1927	3.5	19000	
286	. 1927	4.0	18000	
286	1927	4.5	20000	
Borehole	e 1114R ^d			
290	1928	0.5	14000	
290	1928	1.0	15000	
290	1928	1.5	16000	
290	1928	2.0	17000	
290	1928	2.5	29000	
290	1928	3.0	51000	
290	1928	3.5	78000	
290	1928	4.0	79000	
290	1928	4.5	75000	
290	1928	5.0	86000	

TABLE 5-2 (continued)

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<u> </u>			
<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehol	e 1114R (con	tinued) d	
290	1928	5.5	105000
290	1928	6.0	78000
290	1928	6.5	35000
290	1928	7.0	15000
290	1928	7.5	8000
290	1928	8.0	12000
290	1928	8.5	12000
Borehole	≥ 1135R		
299	1999	0.5	6000
299	1999	1.0	7000
299	1999	1.5	7000
299	1999	2.0	7000
299	1999	2.5	7000
299	1999	3.0	7000
299	1999	3.5	9000
299	1999	4.0	9000
299	1999	4.5	8000
299	1999	5.0	8000
299	1999	5.5	9000
Borehole	<u> 1099R</u> d		
318	1821	0.5	8000
318	1821	1.0	9000
318	1821	1.5	10000
318	1821	2.0	10000
318	1821	2.5	9000
318	1821	3.0	10000
318	1821	3.5	9000
318	1821	4.0	10000
318	1821	4.5	9000
318	1821	5.0	8000
318	1821	5.5	8000
318	1821	6.0	9000
318	1821	6.5	9000
318	1821	7.0	12000
318	1821	7.5	11000

TABLE 5-2 (continued)

3	Pac	ie.	20	of	32

Coord: East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehole	2042R		
326	1988	0.5	7000
326	1988	1.0	7000
326	1988	1.5	8000
326	1988	2.0	10000
326	1988	2.5	8000
326	1988	3.0	8000
326	1988	3.5	9000
326	1988	4.0	9000
326	1988	4.5	9000
326	1988	5.0	9000
326	1988	5.5	9000
326	1988	6.0	10000
326	1988	6.5	11000
326	1988	7.0	12000
326	1988	7.5	13000
326	1988	8.0	13000
326	1988	8.5	13000
326	1988	9.0	13000
326	1988	9.5	11000
326	1988	10.0	12000
Borehole	1098R ^d		
329	1753	0.5	6000
329	1753	1.0	8000
329	1753	1.5	7000
329	1753	2.0	8000
329	1753	2.5	7000
329	1753	3.0	7000
329	1753	3.5	7000
329	1753	4.0	7000
329	1753	4.5	7000
329	1753	5.0	6000
329	1753	5.5	6000
329	1753	6.0	6000
329	1753	6.5	6000
329	1753	7.0	5000
329	1753	7.5	5000
329	1753	8.0	5000

TABLE 5-2 (continued)

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	inates ^a	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	e 1093R ^d		
329	1855	0.5	7000
329	1855	1.0	12000
329	1855	1.5	13000
329	1855	2.0	12000
329	· 1855	2.5	12000
329	1855	3.0	12000
329	1855	3.5	13000
329	1855	4.0	16000
329	1855	4.5	32000
329	1855	5.0	49000
329	1855	5.5	36000
329	1855	6.0	47000
329	1855	6.5	24000
329	1855	7.0	13000
329	1855	7.5	11000
329	1855	8.0	12000
Borehole	= 1094R ^d		
329	1899	0.5	8000
329	1899	1.0	11000
329	1899	1.5	12000
329	1899	2.0	13000
329	1899	2.5	14000
329	1899	3.0	14000
329	1899	3.5	19000
329	1899	4.0	36000
329	1899	4.5	50000
329	1899	5.0	132000
329	1899	5.5	87000
329	1899	6.0	37000
329	1899	6.5	17000
329	1899	7.0	12000
Borehole	≥ 1113R ^d		
330	1930	0.5	13000
330	1930	1.0	15000
330	1930	1.5	27000
330	1930	2.0	34000
330	1930	2.5	43000

TABLE 5-2 (continued)

Page 22 of 32				
<u>Coordi</u>	North	Depth ^b (ft)	Count Rate ^C (Cpm)	
Borehole	1113R (con	tinued) d		
330	1930	3.0	41000	
330	1930	3.5	45000	
330	1930	4.0	96000	
330	1930	4.5	306000	
330	1930	5.0	373000	
330	1930	5.5	137000	
330	1930	6.0	78000	
330	1930	6.5	48000	
330	1930	7.0	22000	
330	1930	7.5	14000	
330	1930	8.0	10000	
330	1930	8.5	9000	
Borehole	1085R ^d			
334	1953	0.5	13000	
334	1953	1.0	18000	
334	1953	1.5	33000	
334	1953	2.0	28000	
334	1953	2.5	15000	
334	1953	3.0	9000	
334	1953	3.5	7000	
334	1953	4.0	7000	
334	1953	4.5	8000	
334	1953	5.0	10000	
334	1953	5.5	12000	
334	1953	6.0	12000	
334	1953	6.5	12000	
334	1953	7.0	13000	
334	1953	7.5	13000	
Borehole	1096R ^d			
347	1814	0.5	8000	
347	1814	1.0	11000	
347	1814	1.5	11000	
347	1814	2.0	11000	
347	1814	2.5	12000	
347	1814	3.0	21000	
347	1814	3.5	52000	
347	1814	4.0	52000	

TABLE 5-2 (continued)

Page	23	of	32

Coord	inates ^a	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	e 1096R (con	tinued) d	
347	1814	4.5	14000
347	1814	5.0	9000
347	1814	5.5	9000
347	1814	6.0	8000
347	1814	6.5	8000
347	1814	7.0	9000
347	1814	7.5	10000
347	1814	8.0	10000
Borehole	e 1065R ^d		
355	1700	0.5	9000
355	1700	1.0	9000
355	1700	1.5	10000
355	1700	2.0	9000
355	1700	2.5	8000
355	1700	3.0	8000
355	1700	3.5	8000
355	1700	4.0	7000
355	1700	4.5	7000
355	1700	5.0	7000
355	1700	5.5	7000
355	1700	6.0	7000
355	1700	6.5	7000
355	1700	7.0	7000
355	1700	7.5	7000
355	1700	8.0	7000
355	1700	8.5	7000
Borehole	≥ 1038R		
360	1920	0.5	10000
360	1920	1.0	10000
360	1920	1.5	11000
360	1920	2.0	11000
360	1920	2.5	11000
360	1920	3.0	13000
360	1920	3.5	16000
360	1920	4.0	26000
360	1920	4.5	58000
360	1920	5.0	135000
300	1320	5.0	T32000

TABLE 5-2 (continued)

	Page	24	of	32
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Coord	inates ^a	Depthb	Count Rate ^C
East	North	(Ît)	(cpm)
Borehol	e 1038R (con	tinued)	
360	1920	5.5	57000
360	1920	6.0	18000
360	1920	6.5	12000
360	1920	7.0	10000
360	1920	7.5	9000
360	1920	8.0	9000
360	1920	8.5	9000
Borehol	e 1092R ^d		
372	1878	0.5	10000
372	1878	1.0	10000
372	1878	1.5	12000
372	1878	2.0	12000
372	1878	2.5	14000
372	1878	3.0	
372			17000
372	1878	3.5	21000
	1878	4.0	36000
372	1878	4.5	105000
372	1878	5.0	132000
372	1878	5.5	53000
372	1878	6.0	24000
372	1878	6.5	15000
372	1878	7.0	13000
372	1878	7.5	13000
Borehole	e 1082R ^d		
378	1955	0.5	9000
378	1955	1.0	9000
378	1955	1.5	8000
378	1955	2.0	7000
378	1955	2.5	8000
378	1955	3.0	8000
378	1955	3.5	8000
378	1955	4.0	8000
378	1955	4.5	8000
378	1955 1955	5.0	8000
378	1955 1955	5.0 5.5	
			9000
378	1955	6.0	11000
378	1955	6.5	12000

TABLE 5-2 (continued)

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Coord	inates ^a North	Depth ^b (ft)	Count Rate ^C
	NOT CII	(10)	(cpm)
<u>Borehol</u>	e 1082R (con	tinued)d	
378	1955	7.0	12000
378	1955	7.5	12000
Borehol	e 1005R ^d		
382	1799	0.5	9000
382	1799	1.0	10000
382	1799	1.5	11000
382	1799	2.0	10000
382	1799	2.5	10000
382	1799	3.0	9000
382	1799	3.5	10000
382	1799	4.0	10000
Borehol	e 1002R ^đ		
382	1825	0.5	9000
382	1825	1.0	10000
382	1825	1.5	11000
382	1825	2.0	16000
382	1825	2.5	40000
382	1825	3.0	48000
382	1825	3.5	40000
382	1825	4.0	16000
382	1825	4.5	11000
382	1825	5.0	9000
Borehol	e 1004R		
390	1795	0.5	9000
390	1795	1.0	10000
390	1795	1.5	11000
390	1795	2.0	10000
390	1795	2.5	10000
390	1795	3.0	10000
390	1795 1795	3.0 3.5	
390	1795 1795	4.0	10000
390	1795 1795	4.5	9000
390	1/30	4.5	9000

TABLE 5-2 (continued)

	(continued)		
Page 26	of 32		
<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (cpm)
Borehol	e 1089R ^d		
398	1890	0.5	16000
398	1890	1.0	15000
398	1890	1.5	15000
398	1890	2.0	16000
398	1890	2.5	25000
398	1890	3.0	46000
398	1890	3.5	88000
398	1890	4.0	179000
398	1890	4.5	186000
398	1890	5.0	91000
398	1890	5.5	70000
398	1890	6.0	81000
398	1890	6.5	76000
398	1890	7.0	59000
398	1890	7.5	32000
398	1890	8.0	19000
398	1890	8.5	18000
Borehole	e 1068R ^d		
412	1661	0.5	9000
412	1661	1.0	10000
412	1661	1.5	10000
412	1661	2.0	10000
412	1661	2.5	11000
412	1661	3.0	12000
412	1661	3.5	11000
412	1661	4.0	10000
412	1661	4.5	9000
412	1661	5.0	70 00
412	1661	5.5	6000
Borehole	e 1066R ^d		
414	1845	0.5	16000
414	1845	1.0	20000
414	1845	1.5	24000
414	1845	2.0	39000
414	1845	2.5	88000
414	1845	3.0	116000
414	1845	3.5	57000

TABLE 5-2 (continued)

Page	27	of	32
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	<u>North</u>	Depth ^b (ft)	Count Rate ^C (cpm)
Borehole	1066R (cont	tinued)d	
414	1845	4.0	25000
414	1845	4.5	14000
414	1845	5.0	11000
414	1845	5.5	11000
414	1845	6.0	12000
414	1845	6.5	12000
414	1845	7.0	12000
414	1845	7.5	12000
414	1845	8.0	11000
414	1845	8.5	11000
414	1845	9.0	11000
414	1845	9.5	12000
414	1845	10.0	12000
414	1845	10.5	11000
414	1845	11.0	12000
414	1845	11.5	11000
414	1845	12.0	10000
414	1845	12.5	9000
414	1845	13.0	9000
414	1845	13.5	9000
414	1845	14.0	10000
414	1845	14.5	11000
414	1845	15.0	11000
414	1845	15.5	11000
414	1845	16.0	11000
Borehole	1067R ^d		
415	1761	0.5	10000
415	1761	1.0	10000
415	1761	1.5	10000
415	1761	2.0	10000
415	1761	2.5	10000
415	1761	3.0	10000
415	1761	3.5	10000
415	1761	4.0	10000
415	1761	4.5	10000
415	1761	5.0	10000
415	1761	5.5	11000
415	1761	6.0	12000
415	1761	6.5	12000

TABLE 5-2 (continued)

<u>Page</u>	20	Ω£	32
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Coord:	inates ^a	Depth ^b	Count Rate ^C
East	North	(ft)	(cpm)
<u>Borehol</u>	e 1067R (con	tinued) d	
415	1761	7.0	11000
415	1761	7.5	11000
415	1761	8.0	11000
415	1761	8.5	11000
Borehole	e 1083R ^d	·	
416	1952	0.5	9000
416	1952	1.0	9000
416	1952	1.5	9000
416	1952	2.0	9000
416	1952	2.5	8000
416	1952	3.0	8000
416	1952	3.5	8000
416	1952	4.0	7000
416	1952	4.5	7000
416	1952	5.0	8000
416	1952	5.5	8000
416	1952	6.0	8000
416	1952	6.5	9000
416	1952	7.0	10000
416	1952	7.5	11000
Borehole	<u> 1076R</u> d		
424	1909	0.5	8000
424	1909	1.0	9000
424	1909	1.5	8000
424	1909	2.0	7000
424	1909	2.5	7000
424	1909	3.0	7000
424	1909	3.5	8000
424	1909	4.0	9000
424	1909	4.5	10000
424	1909	5.0	11000
424	1909	5.5	12000
424	1909	6.0	12000
424	1909	6.5	13000
424	1909	7.0	13000
424	1909	7.5	13000
424	1909	8.0	13000

TABLE 5-2 (continued)

	Page	29	of	32
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<u>Coordi</u> East	North	Depth ^b (ft)	Count Rate ^C (cpm)
<u>Borehole</u>	1076R (con	tinued) d	
424	1909	8.5	12000
424	1909	9.0	12000
424	1909	9.5	12000
424	1909	10.0	12000
424	1909	10.5	11000
424	1909	11.0	11000
424	1909	11.5	11000
424	1909	12.0	11000
424	1909	12.5	11000
424	1909	13.0	11000
424	1909	13.5	10000
<u>Borehole</u>	1112R ^d		
426	1823	0.5	12000
426	1823	1.0	13000
426	1823	1.5	10000
426	1823	2.0	9000
426	1823	2.5	9000
426	1823	3.0	9000
426	1823	3.5	9000
426	1823	4.0	10000
426	1823	4.5	13000
426	1823	5.0	14000
426	1823	5.5	14000
426	1823	6.0	13000
426	1823	6.5	13000
426	1823	7.0	13000
426	1823	7.5	13000
426	1823	8.0	13000
426	1823	9.5	12000
Borehole	1111R ^d		
426	1875	0.5	11000
426	1875	1.0	11000
426	1875	1.5	13000
426	1875	2.0	14000
426	1875	2.5	17000
426	1875	3.0	84000
426	1875	3.5	49000

TABLE 5-2 (continued)

		(continued)	
Page 30	of 32		
<u>Coord</u> ;	inates ^a North	Depth ^b (ft)	Count Rate ^C
		· · · · · · · · · · · · · · · · · · ·	· • · · · · · · · · · · · · · · · · · ·
Borehole	= 1111R (cont	tinued) d	
426	1875	4.0	21000
426	1875	4.5	16000
426	1875	5.0	11000
426	1875	5.5	11000
426	1875	6.0	11000
426	1875	6.5	12000
426	1875	7.0	13000
426	1875	7.5	12000
426	1875	8.0	12000
Borehole	≥ 1039R ^d		
428	1718	0.5	7000
428	1718	1.0	9000
428	1718	1.5	8000
428	1718	2.0	8000
428	1718	2.5	8000
428	1718	3.0	7000
428	1718	3.5	7000
428	1718	4.0	7000
428	1718	4.5	5000
428	1718	5.0	8000
428	1718	5.5	7000
428	1718	6.0	6000
428	1718	6.5	5000
428	- 1718	7.0	5000
428	1718	7.5	5000
428	1718	8.0	6000
Borehole	1088R ^d		
439	1838	0.5	10000
439	1838	1.0	15000
439	1838	1.5	13000
439	1838	2.0	11000
439	1838	2.5	11000
439	1838	3.0	11000
439	1838	3.5	11000
439	1838	4.0	14000
439	1838	4.5	22000
439	1838	5.0	34000

TABLE 5-2 (continued)

Page	31	of	32
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	inates ^a	Depthb	Count Rate ^C
East	North	(ft)	(cpm)
Borehole	≥ 1088R (con	tinued) d	
439	1838	5.5	35000
439	1838	6.0	23000
439	1838	6.5	15000
439	1838	7.0	13000
Borehole	≥ 1183R ^d		
451	1763	0.5	9000
451	1763	1.0	9000
451	1763	1.5	9000
451	17 63	2.0	9000
451	1763	2.5	9000
451	1763	3.0	9000
451	1763	3.5	9000
451	1763	4.0	9000
451	1763	4.5	10000
451	1763	5.0	12000
451	1763	5.5	12000
451	1763	6.0	12000
451	1763	6.5	13000
451	1763	7.0	12000
451	1763	7.5	12000
451	1763	8.0	12000
451	1763	8.5	12000
Borehole	<u>1182R</u> d		
462	1870	0.5	6000
462	1870	1.0	8000
462	1870	1.5	9000
462	1870	2.0	10000
462	1870	2.5	10000
462	1870	3.0	10000
462	1870	3.5	11000
462	1870	4.0	12000
462	1870	4.5	11000
462	1870	5.0	11000
462	1870	5.5	10000
462	1870	6.0	11000
462	1870	6.5	13000
462	1870	7.0	13000

TABLE 5-2

(continued)

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<u>Coord</u> East	inates ^a North	Depth ^b (ft)	Count Rate ^C (Cpm)
Borehol	e 1182R (cont	inued)d	
Borehol	e 1182R (cont	inued)d	13000
			13000 13000

aBorehole locations are shown in Figure 4-1.

bThe variations in depths of boreholes and corresponding results given in this table are based on the boreholes pemetrating the contamination or the drill reaching refusal.

CInstrument used was 5.0- by 5.0-cm (2- by 2-in.) thallium-activated sodium iodide gamma scintillation detector.

dBottom of borehole collapsed.

TABLE 5-3

GAMMA RADIATION EXPOSURE RATES

FOR KENNEDY PARK

Rateb	inates ^a	Coord
(μR/h	North	East
13	1950	95
22	1955	110
15	1945	150
18	1955	195
17	1950	240
5	1950	270 ·

aMeasurement locations are shown in Figure 4-3.

bMeasurements include background.

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APPENDIX A
GEOLOGIC DRILL LOGS FOR JOHN F. KENNEDY PARK

GEOLOGIC DRILL LOG		B NO. SHEET NO. HOLE NO.
	FUSRAP 14:	501-138 1 OF 1 1185R ANGLE FROM HORIZBEARING
Sidney St. (LODI)	N 1,902 E 36	Vertical
EGUN COMPLETED DRILLER	DRILL MAKE AND MODEL SIZE OVERBU	
12-2-87 12-2-87 E.D.I. ORE RECOVERY (FT./%) CORE BOXES SAMPLE		0.0 10.0
7.0/70 5	SEL. TOP CASING GROUND EL. DEPTH/EL. GROUND WATE	R DEPTH/EL. TOP OF ROCK
	T IN HOLE: DIA./LENGTH LOGGED BY:	
140 lbs/ 30 in.	NONE D. 1	Harnish
WATER PRESSURE TESTS	O.0 - 3.3 Ft. GRAVEL Gravelly Sint Fill (GP, GM-ML, OL). 0.0 - 3.1 Ft. Gravelly Silt, mixe with dark grayish brown silty say Brunswick sandstone gravel, brown gravel on top. 2.3 - 3.1 Ft. Broken basalt gravely 3.1 - 3.3 Ft. SILT, black.	WATER RETURN, CHARACTER OF DRILLING, ETC. Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
S 2.0 1.8 10-15 13-14 S 2.0 1.6 9-10 14-20	3.7-3.5 ft. Sandy SILT (ML, FIL Light gray (5Y6/1). Very fine-g dry, crumbles to powder with fin pressure. 4.2-4.5 ft. Pinkish gray (7.5YR 4.5 - 10 ft. SILT (ML). Weak red (2.5YR5/2) becoming gray down brown (5Y4/3) when mixed on a 4.5-6.7 ft. Iron-oxide stained. 8.8-10.0 ft. Laminated, gray an gray layers 3-5 mm. thick. Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 12/2	from auger for 4-6'. 7/2). ward, ugers. 6.7 Ft. Groundwater observed.
= SPLIT SPOON; ST = SHELBY TUBE; SIT = DENNISON; P = PITCHER; O = OTHER	Sidney St. (LODI)	HOLE NO. 1185R

	G	EΩ	LOG	IC D	RIL	L LO	G	1					JOB NO.				
SIT					****		COORDINA	FUSRAP 14501-138 1 ATES ANGLE FR								1084R	
	-	.Ker	nedy l	Park (LOD	I)		N 1,731 E 74 Vertic									
BEG	JN	CO	MPLETED	DRILL	ER				ORIL		KE AND HOL		SIZE	OVERBURDEN		(FT.)	TOTAL DEPTH
			1-4-87				; BNI		M	nu	teman A		4"	18.8			18.8
CORI		6.1/		CORE	BOXE	SSAMPL 19	ESEL. TO	P CAS	NG	GRO	UND EL.	DEPTH/ 室 /	EL. GROUI	ND WATER	DEPTH	/EL. TOP	OF ROCK
SAH			WEIGHT	/FALL	CAS		FT IN HO	LE: DI	A./L	ENG1	TH LOGGED	BY:		<u></u>			-
			s/ 30				NO	NE						R. Mig	ıes		<u> </u>
12.	S)III	j:	SAMPLE BLOWS "N" % CORE RECOUERY	90	IATEI ESSU					П			•				
DIAM	88	REC	7. KN N. N. KN		EST		ELEU.	Ξ	GRAPHICS	4	DESCRI	DTTO	AND 61	LASSIFICA	TZON	NOTES	
.0	a z	72	F300	ω_Σ.	ğΗ	¥ - ÷	ELEV.	ОЕРТН	Ŧ	SAMPLE	DESCRI	PIJUN	HND C	LH221L1CH	ILLUM	WATER	LEVELS, RETURN,
SSS SSS		FIS	SE XE	LOSS IN G.P.M	PRESS. P.S.I.	HAY:		"	8 8	S							CTER OF ING, ETC.
SS	1.0	0.6			<u> </u>			-			0.0 - 1.0 F	. Sanc	y silty Cl	AY (CL-ML).		
SS	1.0	0.4					-			\neg	Very du moderat	sky red ie reddi	(10R2/2) sh brown	mottled with (10R4/6). Fir	i ne- to [₹0-18.8 I	e advanced Ft. using 3"
SS	0.5	0.6								١	medium Humus.	-graine	d sand. S	ome pieces o	glass.	i.d. split	and 4" o.d.
SS	0.5	0.5 1.0		}		1	-	} .	TT.	H	ì		AND (SP)	. Dark	/}	solid-st	em augers.
<u></u>	0.8	0.4		1							yellowis pale yel	h brown lowish i	n (10YR4) prown (10). Dark /2). mottled v YR6/2). Fine	with to		
SS	1.0	1.0		1				5_	1		Very co	arse – gri	uned decr with dept	easing to med	lium	Borehol	
SS	1.0	1.0		1]		[,	_	•	ML). Pale /2). Fine- to		and gar	rically sampled nma-logged by
SS	1.0	1.0		1					-		yellowis medium	h brown	n (10YR6 d sand co	/2). Fine- to mponent.	1	TMA-E	berline, Corp.
SS	1.0	0.6									3.0 - 15.7	Ft. SA	ND (SP).	Dark yellowi	sh		
SS	1.0	1.0		1					ł		brown (10YR4	/2), line-	to very			
SS	1.0	1.0		1				10.		ı	4.0-5.4	- Ft. Pa	le brown ((5YR5/2).			i to 9.0 Ft.
SS	1.0	1.0		1					-					ish brown		Gamma 4.0 Ft.	-scanned to
SS	1.0	1.0							∤⊹		(5YR3/		-, -,, -,,				
SS	1.0	1.0		1		ŀ			1		6.5-10.0	Ft. M	oderate b	rown (5YR3/	4).		
SS	1.0	1.0		1					•		7.3-7.5	Ft. Sn	all pebble	:5.			
SS	1.0	1.0		1				15.	-		10.0-15	.7 Ft.	Pale brow	n.			
SS	1.0	1.0		1			-	1	1		11.0-11 coarse-	.2 Ft.	increased fraction;	very pebbles.	1	1	
SS	2.0	2.0		4			-		Ī		\ 15.7 - 16.6	Ft. Si	ty SAND	(SM). Gray to fine-grain	ish ed.		
	-			1				\dagger			16.6 - 16.8 brown	Ft. S	ND (SP)	. Moderate		r	
			ļ			1				\prod	``		with peb				
											as 15.7	- 16.6	St.	(SM). Same			
											Bottom of Borehole			Ft. oils, 11/4/87.			
									1								
																1	
							1										
			ļ														
							1									1	
					1											Descrip	tion and
				1						$\ \ $						soils by	visual
																Evaninii	
			POON; S			ODC,	SITE	J	J.F	.K	ennedy	Par	k (LO	DI)		HOLE N	084R

			100	16.0				PROJE	CT				JOB NO.	SHE	ET NO.	HOLE NO.
GEOLOGIC DRILL LOG FUSRAP 14501-138 1 SITE COORDINATES ANGLE FRO														OF 1	1204R	
SIT							COORDIN	ATES					AN		· I	BEARING
000			nedy			(I)	<u> </u>				N 1,941 E 77	here	husasuassu	Vert		
BEG		1	MPLETED 2-3-8			Engal	; BNI				MAKE AND MODEL uteman Auger	SIZE	OVERBURDEN 9.0	ROCI	((FT.)	TOTAL DEPTH
								P CAS				/EL. GROU		DEPTH	/EL. TOP	1
		5.9/				9					¥ /				/	** ******
SAM			WEIGHT	/FALL	CAS	ING LE	FT IN HO	LE: D	A./	EN	GTH LOGGED BY:			L		
	14	10 IL	s./18	in.			NO	NE					R. Migu	es		
Н.	ساد	<u>:</u>	SAMPLE BLOWS "N" % CORE RECOVERY	-	WATER			Ĭ	60	Π						
陸	88	黑照			TESTS			ΙE	H	H					NOTES	
ď			홅쾺얺벛	·0 - E	တ္တမ	W	ELEV.	DEPTH	Į Ž	SAMPLE	DESCRIPTION	HAD C	TH221LICH!	TON		RETURN,
鬈	野山	FR		있는 다	PRES:	A NATA		-	GRAPHICS	Ñ					CHARAC	TER OF
<u>ec</u>	1.0	8.0	ш -	- 6	āa		<u> </u>	ļ	10001	Ш	00.0974	. e	TAV (CT-MT)		PKILLI	NG, ETC.
	1.0	0.8		4			-	-			0.0 - 0.8 Ft. Silt Dusky brown (5YR2/2),	fine- to	·	Borehole	advanced using 3"
	<u> </u>			1			-	1	#		medium-grain		4300 (00 0) ([i.d. split	-spoon
	1.0	0.8					,		╢		0.8 - 1.6 Ft. Clay Moderate redd	ish brown	(10R4/6), fine	- to	sampler solid-ste	and 4" o.d. em augers.
	1.0	1.0					-	1			medium-grain			Ir	1	
SS	1.0	0.9					-	5			1.6 Ft. Basalt				┤	
SS	1.0	1.0		Ì			_]		1.6 - 3.4 Ft. Silt- brown (5YR3/ grayish black)	SAND (S	M). Moderate	d	Borehole	e was ically sampled
SS	1.0	0.8		1				1			grayish black (N2) speck	s.	_ //	land gam	ma-logged by berline, Corp.
SS	2.0	0.8		1	}						3.4 - 4.5 Ft. CL/ brown (10YR4	Y (CL).	Dark yellowish			octanic, corp.
											,		D 4 (6))		
				1	1		-	1	- Mai	П	3.5 Ft. Moder	•		\	1	
]				1					П	3.9-4.5 Ft. G				Augered	and
	1							}	1		4.5 - 5.9 Ft. <u>SAN</u> (5Y4/1), fine-	D (SP). to very co	Olive gray parse-grained w	rith	gamma- Ft.	and logged to 6.5
										\parallel	pebbles.	•	•	ľ		
									1	11	5.1-5.6 Ft. Bl	ack (N1).		}		
											5.6-5.9 Ft. Ol	ive gray (5Y4/1).	1		
	['		1	1			}			5.9 - 9.0 Ft. Silt red (5R6/2) la	CLAY (CL-ML). Pale			
										\parallel	red (5R6/2) la gray (5YR6/1) (5Y5/6) at top	yered with with ligh	i light brownis! t olive brown	1		
	1) :		<u> </u>	}]		1	11	(5Y5/6) at top	of the sec	quence.	1	Ì	
	ļ										5.9-6.2 Ft. Br	unswick s	andstone clasts	.		
	1				1				Ì	11	Bottom of boreho	1+ 0 0 E				
										$\ \cdot \ $	Borehole backfille				!	
]			Ì	Ì]]]		\parallel]	
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															classifica	visual
				1		ļ									examina	tion.
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	<u> </u>		L	<u>L</u>	<u></u>	يهسا	<u> </u>	<u> </u>		Ш					11015 115	
			POON; S1; P = P1			,,,,	ITE	J	i.F.	K	ennedy Par	k (LO	DI)		HOLE NO	204R

	G	EC	LOG	IC D	RIL	L LC)G	PROJE	T	•	FIICDAD	····	JOB NO	J	EET NO.	HOLE NO.
SITE							COORDIN	ATES		_	FUSRAP			-138	OF 1	1062R
			nedy)I)				ì	N 1,762 E 88				rtical	
BEGUN			MPLETED		.ER		_				AKE AND MODEL	SIZE	OVERBURDEN		CK (FT.)	TOTAL DEPTH
			0-26-8		BOVE	E.D.	I. ESEL. TO		N	MO.	BILE B-57	6.5"	14.0			14.0
JORE		0.2/		s) CORE	: 5046	5 SAMPL	ESEL. I	DP CAS	NG	GRO	UND EL. DEPTH,	/EL. GROU	ND WATER	DEPT	H/EL. TOP	OF ROCK
SAMPL			R WEIGHT	/FALL	CA!		FT IN HC	LE: DI	A./L	ENG	TH LOGGED BY:				/	
	14	40 I	bs/30 i	in.			N		•				D. Har	nish		
W .	ol m	ပ္ပါ	د بــً	20	JATE!	2 2				П	<u></u>	· - · · · · · · · · · · · · · · · · · ·			T	
					TEST:	5	ELEV.	E	GRAPHICS	Н					NOTES	
	ה ק		돌림입	87 E	ю́н.	¥-÷	ELEV.	DEPTH	Ĕ	SAMPLE	DESCRIPTION	AND C	LASSIFIC	ATION	imer : mr.	LEVELS, RETURN,
SAND DIAM.		F 6	BLOWS "N" % CORE RECOVERY	LOSS IN G.P.R	PRESS. P. S. I.	HAN.		-	S. C.	7					CHARAC	TER OF
SS 2	2.0	1.0	2-4-6-6	-	0.0			-	મ ા		0.0 - 2.0 Ft. Silty	SAND (S	M-OL) Va	TV	DKILLI	ING, ETC.
						1			[[:]		0.0 - 2.0 Ft. Silty dark grayish b fine-grained, o	rown (10 Y	R3/2),	-,		e advanced using 3" i.d.
SS 2	2.0	1.2	3-7-10	-				↓ .	Ш	-	0.7-2.0 Ft. Bis	=	oal and whit	•	split-sp	on sampler o.d.
			21			ľ		.			powdery mater	ial.		, .	solid-ste Borehole	em augers.
SS 2	2.0	1.4	6-7-8-8				-	-{ .			2.0 - 4.0 Ft. SAN bits of dark red	D (SP).	Fine-grained	,	radiolog	ically sampled ma-logged by
						-		5_			2.6-3.2 Ft. Gr				/ TMA-E	berline, Corp. Very wet.
SS 2	2.0	1 1	2-5-5-4								l		<u> </u>	ainea.	1 2-12 Ft.	. very wes.
55			2.0.0.9				j	.			4.0 - 14.0 Ft. Sile brown (7.5YR: medium-grains	/4), fine-	and			
SS 2	2 ()	2.0	3-6-8			1					_	•				
			60					-			6.0-8.3 Ft. Co dark reddish b	rown Brui	iswick sands	tone.		
SS 2	2.0	1.8	7-6	1				10_			9.3-10.0 Ft. S	ilt and sar	nd, fine-grain	ned,		
33		1.0	10-8			1	[interbedded wi		•			
SS 2	2.0	17	3-4-6-7				ļ				10.0-12.0 Ft.	Sana, nne	-grained.			
33 /	4.U	1.7	3-4-6-7													
				1				┇.								
											Bottom of boreho			_		d; sand heave
					ł			ŀ			Borehole backfille	d with spe	oils, 10/26/8	7.	into aug	ger.
1					,											
1]									
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- 1			ļ				•								classifica	visual
															examina	ition.
							1			$\ $						
							1									
	991	17 -	POON; ST	 - eur		I s	ITE	1	ــــــــــــــــــــــــــــــــــــــ	1.1				75	HOLE NO	
			; P = P			ODE,		J	.F.	K	ennedy Par	k (LO	DI)			062R

								PROJE	CT		· · · · · · · · · · · · · · · · · · ·		JOB NO	. SHE	ET NO.	HOLE NO.
		EC	LOG	IC D	KIL	LLO)G	FUSRAP 14501-138					-138 1			
SIT	E		_				COORDIN							ROM HORIZBEARING		
BEG			ney St.				⊥				1,986 E 94			Vert		
1			MPLETED 1-13-8		.EK	E.D.	T				KE AND MODEL	6.5"	OVERBURDEN 10.0	ROCI	((FT.)	TOTAL DEPTH
					BOXE		ESEL. TO	P CAS			BILE B-57	/EL. GROU		DEPTH	/EL. TOP	
		1.8/				5			Ī		量 ;	,			/	
SAM	PLE H	AMME	R WEIGHT	/FALL	CAS	SING LE	FT IN HO	LE: DI	A./L	ENGT	H LOGGED BY:					
-	14	0 lb	s./ 30	in.			NO	NE	·				D. Har	nish		
H-	سادا	<u>نان</u> :	SAMPLE BLOWS "N" % CORE RECOVERY	PR	WATER RESSU				S							
Ļξ	뮡뜴	E E	7. 50	<u> </u>	TESTS	\$	ELEV.	Ŧ	임		DESCRIPTION		LASSIETO	ATTON	NOTES	
.0	úΖ		돌亂요	g _z Σ.	.1.	ピッナ		DEPTH	BRAPHICS	SAMPLE	DESCRIP 110.	1 7110 0	LHJUI IU	112011		LEVELS, RETURN,
돐	준비		SH NH	LOSS IN G.P.M	PRE P. S.	ALL NIN NIN NIN NIN NIN NIN NIN NIN NIN N		"	8	S						CTER OF ING, ETC.
SS	2.0	0.0	13-19	 	<u> </u>	 					0.0 - 4.0 Ft. Silt	GRAVE	L and SILT			e advanced
			15-16			İ] .		Ì	FILL	. V.W.S.J. 201	- WAN 1840 A		0-10 Ft.	using 6.5 in.
- 55	2.0	0.6	4-8-10	ļ '			1				0.0-1.0 Ft. Sil	ty gravel.			auger. Radiolo	
-		0.5	8								1.0-4.0 Ft. Sil 3/2). Pieces o	t. Very d	ark gray (10	YR,	sampled	and
- 60	2.0	1.6	2-5-3-6				-	┆.		_	• •		-		TMA-E	logged by berline, Inc.
23	2.0	1.0	2-3-3-0				-	5_		٦.	i.0 - 4.9 Ft. <u>Org</u> Gray (10YR5/	1) with so	me yellowish	prown (-	
75	2.0	ļ.,	7 10]			[] ,			iron-oxide stai			Í		
33	2.0	1.9	7-13 9-13				-			$\neg f$	4.5-4.7 Ft. Bl	·			1	
					1	}	1			\4	9 - 6.7 Ft. <u>CLA</u> gray, minor ir	<u>lY</u> (CL). I on-oxide n	Light greenis nottling.	h /		
SS	2.0	1.3	2-4-14 21				-		H +	$\gamma_{\epsilon}^{\prime}$	5.7 - 8.5 Ft. Silts brown, very fir	SAND (S	M). Grayisl	<u>, </u>		ved in to 2.5 Irilled to 8.0
							_				brown, very fir	ne-grained	, minor grav	el.	ft. for ga	amma log.
]						Π≬	6.7-6.9 Ft. Li	ght greenis	sh gray.	-		
	İ									\ 8	3.5 - 10.0 Ft. Sili reddish gray, r	ty SAND (SM). Dark	soft		
								}			clay rip-ups, r	ound grav	el. Stream sa	.nd.	1	
								Ĭ			Bottom of boreho	lo at 10.0 i	P+			
										Î	Borehole backfille	d with spo	sils, 11/13/8	7.		
	1						į								}	
							ĺ									
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															Descript	
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	CD1	IT er	POON; ST	= Chei	L TI	IRF. S	ITE	i	لــــــــــــــــــــــــــــــــــــــ	Ц					HOLE NO.	
			P = PI			, ,			1	Mo	ney St. (l	ODI)				133R

	G	EC	LOG	IC D	RIL	L LO)G	PROJE	T		FUSR	A TD		JOB NO. 14501-	- 4		HOLE NO.
III							COORDINA	TES			FUSK	AF				OF 1	1063R BEARING
EG			nnedy 1			<u>I) </u>					,671	E 99				tical	
			MPLETED 0-26-8		.EK	E.D.	T				AND MO		51ZE 6.5"	OVERBURDEN	ROC	K (FT.)	TOTAL DEPTH
					BOXE	SSAMPL	ESEL. TO	P CASI	NG	GROUN	EL.		/EL. GROU	12.0 ND WATER	DEPT	H/EL. TOP	12.0 OF ROCK
7414		9.3/	78 R WEIGHT			6						₹ /					
3/F/F			bs/30	-	LA:	TING LE	FT IN HO		A./L	ENGTH	LOGGED	BY:		D. Harn	iak		
W.					JATE	₹		1		T		······································	• • • • • • • • • • • • • • • • • • • •	D. Hari	11511		
SAMP DIAM.	SAMP. AD! LEN CORE	SAMPLE REC	BLOWS "N* X CORE RECOVERY	LOSS IN G.P.M	PRESS. P.S. I.S.	HIN HIN NIN S	ELEV.	DEPTH	GRAPHICS	SAM				Lassifica	TION	WATER CHARAC	ON: LEVELS, RETURN, TER OF NG, ETC.
SS	2.0	1.4	2-3-8-7							0.0	- 6.0 F (ML-O	t. SIL L. SP	rand SAN	D FILL		Borehole	advanced
35	2.0	1.4	3-7-10 6			-					0.0-1.1 (10YR:	Ft. Sil 3/2); na	t, very dan il at 0.5 F	rk grayish bro t, organic top		0-12 Ft. split-spo and 6.5"	using 3" i.d. on sampler o.d. m augers.
33	2.0	1.5	2-7-11 6					5_			damp.	•		brown loose, slightl		and gam	cally sampled ma-logged by perline, Corp. Saturated.
SS	2.0	1.5	3-15 10-10				_	-		6.0	(7.5YR) - 12.0 brown	4/6). m Ft SA (5YR4/	edium-gra ND (SM). 2), mediur	d, strong bro ined. Reddish n- and	V II	5-12 Ft.	Saturated.
SS	2.0	2.0	2-4-8 57					•			fine-gr	Mined, W	ret.				
66	200	1.5		.				10_									
33	2.0	1.5	2-2-7 21			,		-						h brown (5Y.	R4/3).		
		 					-			-	saturat	ed sand	s.	d, liquefied,		4	
										Bo Bo	ttom of	boreho ackfille	le at 12.0 l d with spo	Ft. ils, 10/26/87			
								_					- v.on -pv		,	10-12 Fe collapsed Sand her auger.	to 7 Ft.
								·									
														_			
																Descript classifica soils by examina	tion of visual
	SPL	IT SI	POON; ST	= SHEI	LBY TI	JBE: S	ITE									HOLE NO.	
			; P = PI					J	F.	Ken	nedy	Par	k (LO	DI)		10	163R

	C	ΕO	LOG	ור ד	PII	10	G	PROJE	CT			ET NO. HOLE NO.				
SITI					·I\IL	LLU	COORDIN	ATES			FUSRAP 14501-138 1					
["		.Ker	nedy	Park ((LOn)T)	COOKU I N	K1E5		7	N 1,909 E 100 Ver	ON HORIZBEARING				
BEG			MPLETE			-)	<u> </u>	7	DRIL			((FT.) TOTAL DEPTH				
			-28-8				; BNI		M	lin	uteman Auger 4" 14.0	14.0				
COR	E REC	OVERY	(FT./	X) COR	E BOXE	1	ESEL. TO	P CAS	ING	GF	OUND EL. DEPTH/EL. GROUND WATER DEPTH	/EL. TOP OF ROCK				
SAM	PLE N	/	WEIGH	T/FALL	ica:	8	FT IN HO	F. 07	A /		GTH LOGGED BY:	/				
			N/A	.,	 ``	,,,,,	NO				R. Migues					
ш.	-1				WATE				Τ	П						
논		REC	WZ W	PF	RESSU TEST:			I		Ы		NOTES ON:				
Į,ö	70	A H	£ 2 0 0	g z	e H	ш .	ELEV.	DEPTH	E	SAMPLE	DESCRIPTION AND CLASSIFICATION	WATER LEVELS, WATER RETURN.				
器	퇽	FIN	80 %	LOSS	E S	ALL RISE		ā	BRAPHICS	19		CHARACTER OF				
80	1.9	98 C	SAMPLE BLOWS "N" X CORE	- 0	a a			ļ <u></u>	leen	\bot	OO BORL CLAY (OF ME)	DRILLING, ETC.				
33	1.9										0.0 - 3.8 Ft. <u>Silty CLAY</u> (CL-ML). Red-brown, powdery dry.	Borehole advanced 0-14 Ft. using 3"				
100	 A 4 =							Ι.,			0.000 March 10 and 10 a	split-spoon sampler and 4" o.d. solid-stem				
1	0.2 1.1										2.0-2.2 Ft. Transition to brown.	auger.				
L	0.8			_			-				2.2-3.8 Ft. Black fragments (<0.25 in.) in matrix of dark gray material.	Borehole gamma-logged and				
SS	0.5 1.8				1		,	¥ 5_	J		3.8 - 4.5 Ft. Silty SAND (SM).	sampled for radiological				
-				_			_	Ι.	Щ		Tan-brown, varigated red, black, gray, and tan.	contamination by TMA-Eberline, Corp.				
1	0.9			_	1						4.5 - 6.0 Ft. Clayer Sandy SILT (ML).	Moist at 1.5 Ft. Saturated at 6.0 Ft.				
33	0.3									П	Brown, fine-grained sand component.					
	6.0 - 13.8 Ft. Silty SAND (SM). Brown, fine- to medium-grained. Decreasing silt and increasing coarse-grained component with depth.															
'	and increasing coarse-grained component															
	13.8 - 14.0 Ft. Sandy CLAY (CL-ML). Red-brown.															
	13.8 - 14.0 Ft. Sandy CLAY (CL-ML). Red-brown.															
	13.8 - 14.0 Ft. Sandy CLAY (CL-ML). Red-brown. Bottom of borehole at 14.0 Ft. Borehole backfilled with grout, 8/28/87.															
	Bottom of borehole at 14.0 Ft.															
	Bottom of borehole at 14.0 Ft.															
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	-		1	-		1		1								
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1.			}													
	1			İ			1									
								1				Description and				
						1	1	'				classification of soils by visual				
				1								examination.				
-	- 60:	17.5	00041 - 7	7	187 -	lene. le	ITE	<u></u>	1_	1.		HOLE NO.				
			POON; S ; P = P			95C,	••••	J	l.F	.K	ennedy Park (LODI)	1001R				

	G	EC	LOG	IC D	RII	LIC)G	PROJEC	:1			<u> </u>	JOB NO		ET NO.	HOLE NO.
317							COORDIN	TEC			FUSRAP			-138 1		1186R
•••		.Ke	anedy l	Park (T.OD	T)		41E9			1,605 E 101			ł	CINOH HORIZ	BEARING
3EG			MPLETED			-/			DRIL			SIZE	OVERBURDEN		tical K (FT.)	TOTAL DEPTH
			2-2-8			E.D.	I.	- 1	1	ИC	BILE B-57	6.5"	10.0		~ (1117	10.0
COR				() CORE	BOXE		ESEL. TO	P CASI	NG	GR		EL. GROUN		DEPT	I/EL. TOP	
344		7.6/			- 100	5					美 /					
SAM			R WEIGHT		CAS	SING LE			A./L	.EN	TH LOGGED BY:					
		40 I	bs/30	П	JATE	3	· NO	NE	}	1 1			D. Har	nish		
SAMP . TYPE	김씨	E C	BLOWS "N" X CORE X RECOUERY	PR	ESSU	RE		_	2		•	•			İ	
Ţ	₹8		F. 65		TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION	AND CL	.ASSIFIC	ATION	NOTES	ON: LEVELS.
6 0	e z	김씨	£3	LOSS IN G.P.M	S.H.	HAY.			₫						WATER	RETURN,
Ğ₹		돌망	M 51 2 E	9.2	F. G.	보		-	8	M,						TER OF NG, ETC.
	2.0	1.4	2-7-10								0.0 - 3.3 Ft. Silty : Dark yellowish b	SAND FI	LL (SM).		+	
			6					-			Dark yellowish b medium-grained	brown (10 1. uniform	YR5/6), fir ly graded: 1	e- to	0-10 Ft	advanced using 3" i.d.
35	2.0	1.5	6-10								medium-grained dark brown (10)	YR3/3) to	psoil.		split-spe	on sampler o.d. m augers. was
			8-10				· _	-		4					solid-ste	m augers.
35	2.0	1.7	16-20					-			3.3 - 10.0 Ft. SAN (10YR4/3), fine-	D (SP). 1	Brown		TRAINING	icaliv samniadi
			16-20					5_			gravel, wet.	-gramed,	some sut si	10	TMA-E	ima-logged by berline, Corp.
66	2.0	1.3	7-9-9					-								
33	2.0	1.5	11			Ì					6.0-6.7 Ft. Grav	velly.				
					1	ļ									İ	
SS	2.0	1.7	17-19 20-21												ł	
								10							•	
							_	10.		\prod	Bottom of borehole	-+ 10 0 F			Ī	
						! :					Borehole backfilled	with spoi	is, 12/2/87	•		
						•										
										$\ \cdot\ $. 1
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										$\ \ $					Descript classifica	
										$\ \ $					soils by	visual
										$\ \ $					examina	tion.
										$\ \ $						
			VON		0V =-	ne le	ITE	l	L	Ш					HOLE NO	
			POON; ST P = PI			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	• • •	J	.F.	K	ennedy Park	(LOI	OI)			86R

								PROJEC	:Т			<u> </u>	JOB NO	. SHEE	T NO.	HOLE NO.
		EU	LOG	CD	KIL	L LU					FUSRAP			-138 1		1110R
SITE							COORDINA	TES						ANGLE FRO	4	BEARING
22.01		~	nedy I			1)	<u> </u>				,888 E 110		OVERBURDEN	Vert		TOTAL DEPTH
BEGL		ı	MPLETED		.EK	E.D.	T	ľ			AND MODEL BILE B57			ROCK	(FT.)	9.0
			1-3-87		BOXE		ESEL. TO	P CASI			D EL. DEPTH	6.5" /EL. GROUI	D WATER	DEPTH	EL. TOP	OF ROCK
		.6/6		, ,		5					圣人	,			1	
SAME			WEIGHT	/FALL	CAS		FT IN HO	LE: DI	A./L	ENGTH	LOGGED BY:					
	1	40 I	bs/30 i	in			NO	NE_					D. Har	nish		
Н.	3 m	ပ္ပုံ :	BLOWS "N" 2 CORE RECOVERY	, t	JATER				on .							
	68		규모유		<u>rests</u>			Ξ	Ü	변			ASSTETO	ATTON	NOTES	
ੁ,⊡	. 0		훈리임증	ω E	йн	<u> </u>	ELEV.	рертн	Ē	SAMPLE	DESCRIPTION	Y AND C	-H221-10	HIZUN		RETURN,
誤	が可	MPIO	잃김%밝	LOSS IN B.P.M	PRESS. P. S. I.	ALIN MIN NIN	}	۵	BRAPHICS	5					CHARAC	CTER OF
g⊄	81	50 C		_ B	20	P			Ľ		0 50 70 500	- CD (VE)	CANT		DRILL:	ING, ETC.
55	2.0	0.8	1-7-7-2				ľ	١.	9	ľ	0 - 5.9 Ft. Silt FILL (GM, SP).	AND SAINL	2	Borehol	e advanced
]] .			0.0-0.5 Ft. To	psoil, dari	brown (10	YR3.3).	split-sp	using 3" i.d. oon sampler ' o.d.
SS	2.0	0.8	1-1-1-1	ļ ,	}						0.5-4.0 Ft. Sil	ity gravel,	dusky red		solid-ste	em augers.
							ļ	•			0.5-4.0 Ft. Sil (2.5YR3/2), desandstone and	ecomposed	Brunswick	ed.	Borehol	e was ically sampled
SS	1.0	0.4	15-11 50/0"		İ		Ì] .			4.0-5.5 Ft. Sa				and gan	nma-logged by berline, Corp.
SS	2.0	1.8	10-9		1		-	5-			(10YR5/6), ve	ry fine-gra	ined.			
			9-15	[[-	1 .			5.5-5.9 Ft. Sa	ndy gravel	, rounded.	ſ	1	
SS	2.0	1.8	9-15				1	-		5	.9 - 9.0 Ft. SIL	T and CLA	Y (ML, CL	<u>); , </u>	1	
SS 2.0 1.8 9-15 17-19 5.9 - 9.0 Ft. SILT and CLAY (ML, CL). Weak red (2YR4/2) and light gray with some iron-oxide mottling, laminated. 7.0-8.1 Ft. Silt, brown (7.5YR4/2).																
7.0-8.1 Ft. Silt, brown (7.5YR4/2).																
	Bottom of borehole at 9.0 ft. Borehole backfilled with spoils, 11/3/87.															
	Bottom of borehole at 9.0 ft. Borehole backfilled with spoils, 11/3/87.															
	Borehole backfilled with spoils, 11/3/87.															
	Borehole backfilled with spoils, 11/3/87.															
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			!												Description	tion and
	1		1			1		1	1	{ }					classific	tion and ation of
	1				[1		1		11					soils by	
															1	
		1													}	
			1		ļ					\prod						
S	= SPL	IT S	POON; ST	r = SHE	LBY T	UBE;	SITE	<u> </u>							HOLE NO	
			; P = P					J	ı.F.	Ke	nnedy Pai	rk (LO	DI)		1	110R

								PROJEC	ī				J08 NO	SHE	T NO.	HOLE NO.
	G	EU	LOG	IC D	RIL	L LU	G				FUSRAP	1	14501	-138 1		1071R
SITE	-						COORDINA	TES						ANGLE FRO		
			nedy l			(I)	<u> </u>			N 1.				Vert	ical	
BEGL		•	MPLETED	1	.ER	ED					AND MODEL	10.00	OVERBURDEN	ROCK	(FT.)	TOTAL DEPTH
				. 4	BOXE	E.D.	ESEL. TO	P CAS			LE B-57	6.5"	17.0	DESTU	/EI TOD	17.0
		.4/				6			. A. G		¥	/,	NO MAIER	DEFIN	/EL. 10P /	OF RUCK
SAM			WEIGHT	/FALL	CAS	ING LE	FT IN HOL	E: DI	A./L	NGTH	LOGGED BY	/		<u> </u>		
	1	<u>40 1</u>	bs/30 i	in			N/	4			<u> </u>		D. Har	nish		
₩.	3 m	ပ္ပံုး	BLOWS "N" X CORE	Į. PP	JATE! ESSU					T			······································			
SAMP DIAM.	48		교육없		ESTS			Ξ	BRAPHICS	<u> </u>					NOTES	
<u>.</u> =	10	믜급	통리임양	₀₂ Σ	33.	ш	ELEV.	DEPTH	Ē		ESCRIPT:	ION AND C	LASSIFIC	ATION		LEVELS, RETURN,
恕	黃血	표응	a Jak	LOSS IN G.P.M	uum	FRE		۵	E	ñ					CHARAC	CTER OF
90€	8 -	E O	m -	7 0	<u>Б</u> .	-			-	<u></u>				<u> </u>	DRILL	ING, ETC.
33	2.0	U.5	2-3-6-3				-		****	70.0) - 0.5 Ft. ; brown (7.5	Silty SAND (S YR3/2), toped	iM-OL). Da sil.	rk /		e advanced
										0.1	- 4.0 Ft. S	ilty SAND FI	LL (SM).		split-sp	. using 3" i.d. oon sampler
SS	2.0	1.5	2-5-10 17			·		·			Some grave	el.			and 6.5'	oon sampler 'o.d. em augers.
								'			0.5-2.6 Ft.	Dusky red (? d, hard, impo	7.5R3/4), ver	ry osed	Borehol	e was rically sampled
SS	2.0	1.4	20-27-28	•			_	_ `		\sqcap	Brunswick	sandstone.	rea accomp	ſ	and gan	nma-logged by berline, Corp.
								5_			2.6-4.0 Ft.	Strong brow	n (7.5YR5/6), [IMA-E	bernne, Corp.
SS	2.0	1.1						•			medium-gr wet.	ained, some s	ubangular gi	avel,	ļ.	
			10-11							4.) - 8.7 Ft. 2	SAND (SW).	Dark grav			
SS	2.0	1.9	13-13								(10YR4/1) loose, wet.	, medium-gra	ined, some g	ravel,	40 Ft	Groundwater
		1.0	17-18				-					PTT 4P / N/T) T	Namb mallamia	<u> </u>	observe	
	2.0							10_	1 1		brown (10)	<u>SILT</u> (ML). I YR4/4).	ALK AGHOMH	}		
55	2.0	2.0	2-5-7 30				<u> </u>]]	1	8.9-9.0 Ft.	Sand, fine-g	rained.			
										9.	2 - 17.0 Ft.	Silty SAND	SM\ Redd	ish		
								·	$\ \cdot\ $	7 ~	brown (5Y) gravel.	R5/3), mediu	n-grained, s	ome		ave in auger -12 Ft. sample
								·			•	04	1		attempt	
						•			1[:]		10.7-10.6	ft. Sandy gra	A 61.			Sampler
								15_							refusal.	
									1 1							
							-			-	-				17.0 Ft.	. Auger
		ļ	}							B	ottom of box	rehole at 17.0 filled with sp	Ft.	7	refusal.	
										5	orenoie Daca	rittien wien sh	ли, 10- <i>2</i> 0-0	••		
	1					1										
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					}											tion and ation of
	1														soils by	visual
	1			1												
					1					H						
-	- 65:	<u> </u>	0001 - 5	. ~ ~ ~	1 82 -	1	SITE	<u>i </u>	1.	Ш	· · · · · · · · · · · · · · · · · · ·			·	HOLE NO	
			POON; S1; P = P1			· .		J	l.F.	Ker	nedy F	Park (LC	DI)			071R

		PROJE	CT		Lion vo.	
GEOLOG	IC DRILL LO	G [FUSRAP		ET NO. HOLE NO.
SITE		COORDINATES		FUSKAI	14501-138 1	OF 1 1080R ON HORIZBEARING
J.F.Kennedy	Park (LODI)		·N 1	,951 E 111	Ver	i
	DRILLER	.		AND MODEL SIZE		((FT.) TOTAL DEPTH
10-30-8710-30-8	G. Engel			man Auger 4"	7.4	
CORE RECOVERY (FT./		ESEL. TOP CAS	ING GROUN	D EL. DEPTH/EL. GR		/EL. TOP OF ROCK
5.7/77	8			图 //	DEFIN	/ LE. 10F OF ROCK
SAMPLE HAMMER WEIGHT		FT IN HOLE: D	IA./LENGTH	LOGGED BY:		
140 lbs/30		NONE			R. Migues	
			TTT		IX. Migues	T
SAMP. TYPE SAMP. ADV. LEN CORE CORE REC. SAMPLE BLOWS "N" R. CORE R. CORE	PRESSURE TESTS	_	8 11			
그걸 의의 그리고 등등		ELEV. H	SAMPLE	DESCRIPTION AND	CLASSIFICATION	NOTES ON: WATER LEVELS,
	ST SH EZZ		6 2			WATER RETURN,
	LOSS LIN AIN HIME LIN MIN.		E 19			CHARACTER OF
\$\$ 1.0 0.6	0.0					DRILLING, ETC.
35 1.0 0.0]		U.	0 - 1.0 ft Silty Sandy (Grayish brown (5YR3	CLAY (CL-ML). /3), mottled with dark 4). Fine- to	Borehole advanced
\$S 1.0 0.7	1 1	1 7		reddish brown (10R3/ medium-grained sand	4). Fine- to	0-7.4 Ft. using 3" i.d. split-spoon
SS 1.0 1.0	1 .	"				sampler and 4" o.d.
SS 1.0 0.4	1		\1.	0 - 2.0 Ft. Silty CLAY brown (5YR2/2), mot	(CL). Dusky	solid-stem augers.
SS 1.0 1.0	4]		brown (5YR2/2), mot black (5YR2/1).		
]	- s.	2.	0 - 4.7 Ft. <u>CLAY</u> (CL)	. Dusky brown	4
SS 0.7 0.5]			with specks of modera	te red (5YR4/6) -	Borehole was
SS 1.0 1.0]]			probably brick.		radiologically sample and gamma-logged b
SS 0.7 0.5]		4.	7 - 5.7 Ft. Sandy CLA brown (5YR5/2), with	Y (CL). Pale	TMA-Eberline, Corp
	1	1 7		medium-grained sand		7
			5.	7 - 6.9 Ft. Clayey SAN	ID (SC). Pale	
				yellowish brown (10Y)	R6/2), fine- to 🛔	
				medium-grained sand	. #	Augered to 5.0 Ft.
		1		9 - 7/4 Ft. Sandy Silt (CL-ML). Grayish re with moderate reddish	y CLAY	Gamma-scanned to 3.5 Ft.
.			1 111	with moderate reddish	brown (10R4/6).	J.5 I t.
			``			
† 				ottom of borehole at 7.4		
			8	orehole backfilled with	spous, 10/30/87.	
	1		1 []		•	
			1 11			
			1 11			
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		·	1 11			
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					•••	1
			1 11			
						Description of
						Description and classification of
						soils by visual
						examination.
		1				
SS = SPLIT SPOON; S	T - QUEL DY THEF. IS	SITE				HOLE NO.
D = DENNISON: P = P	0000001	-	I.F.Ker	nedv Park (L	ODI)	1080R

	G	EC	LOG	IC D	RIL	L LC)G	PROJE	CT		ELICD AD		JOB NO.		ET NO.	HOLE NO.
SIT							COORDINA	ATES			FUSRAP			138 1	OF 1	1107R
			nnedy)I)		_			N 1,543 E 11	0			tical	DEARING
3EG			MPLETED	i	.ER	E.D.	т		DRIL		TAKE AND MODEL	SIZE	OVERBURDEN	ROC	K (FT.)	TOTAL DEPTH
					BOXE		ESEL. TO	P CAS	ING	GF	OBILE B57	6.5"	10.0	DEPTH	I/EL. TOP	10.0
_	_ {	3.8/	88			5					量 /				/ /	OF ROCK
SAF			R WEIGH bs/30	-	CAS	SING LE	FT IN HO		A./	LEN	GTH LOGGED BY:		D 11-			
Ä,					JATE		I NO		T.	П			D. Harr	iish	1	
SAMP. TYPE	E E	RES	BLOWS "N" % CORE	PR	ESSU FEST:	RE S	ELEU.	E	GRAPHICS	H					NOTES	ON:
٥٠	ů z		Fasos	S Z	ő.	¥ - ;	ELEO.	DEPTH	F	SAMPLE	DESCRIPTION	n and c	Lassifica	TION		LEVELS, RETURN,
EST EST EST EST EST EST EST EST EST EST	SAM	ES	2 N F	LOSS IN G.P.M	PRESS.P. S. I.	HAN.]	"	B 5	6					CHARAC	TER OF ING, ETC.
SS	2.0	1.9	4-7-4-	4	<u> </u>	 		-			0.0 - 4.5 Ft. SIL. (ML-OL, SP).	T and SA	D PILL	***	 	
								'			•				0-10 Ft.	e advanced . using 3" i.d.
55	2.0	1.9	3-3-3-3	§							0.0-0.3 Ft. Sa 0.3-0.8 Ft. Sa			la.	and 6.5"	oon sampler o.d.
						,		•			(10YR2/1).	mu, usrk t	rown to blac	•	Borehole	em augers. e was ically sampled
SS	2.0	1.3	2-5-11 11				-	5_			0.8-2.4 Ft. Sa fine-grained; r	ınd, reddis ninor blacı	h brown (5Y)	R4/4), Ided /	and gam	ma-logged by berline, Corp.
66	2.0	2.0	11 11								at base.			}		
23	2.0	4.0	11-11 16-11					.			2.4-4.5 Ft. Sa (10YR5/6), fir	ind, yellow ie-grained	ish brown some small	- 1		
SS	2.0	1.7	7-10					.			pebbles.	- GAND	SM) Dark			
			14-20					.			4.5 - 10.0 Ft. Sil brown (10YR4 small gravel, s	/3), mediu	m-grained, s	ome		
_	<u> </u>	<u> </u>		•	Ì		-	10 .			7.0-7.2 Ft. Si		•	ī	4	
					I				İ		8.0-8.2 Ft. Cl			- 1		
					; I						9.7-10.0 Ft. F	ine-graine	d, bedded.	- 1		
					 						Patter of banks	Ja at 30.03	~			
										\prod	Borehole backfille	ed with spo	ils, 11/3/87.			
					 					П						
										$\ \cdot\ $						
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										$\ $						
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										Ш					Descripti classifica	ion and tion of
										Ш					soils by v	
<u>;e</u> .	CDI	L	POON; ST	- GREI	RY T	BE. IS	ITE		<u> </u>	Щ					HOLE NO.	· · · · · · · · · · · · · · · · · · ·
			P = PI			, ;	· · -	j	.F.	K	ennedy Par	k (LO	DI)			107R

	EC	LOG	רט	DII I	10	G	PROJE	T					JOB N		ET NO.	HOLE NO.
SITE	<u> </u>			IXIL			ATEC			FUSRA	<u> </u>		1450	1-138 1		1080AR
	.Ke	nedy l	Park (I.OD	τı	COORDIN	RIES		N 1,	051 F	112			ANGLE FR	1	BEARING
BEGUN		MPLETED						DRILL		AND MODE		SIZE	OVERBURDE		(FT.)	TOTAL DEPTH
		-30-8		G.	Engel	BNI	1	Mi	nutei	nan Au	ger	4"	9.0		- · · · ·	9.0
CORE RE	COVER'	Y (FT./%	CORE	BOXE	SSAMPL	ESEL. TO	P CAS	NG	GROUND	EL. D	EPTH/E	L. GROU	ND WATER	DEPTH,	/EL. TOP	OF ROCK
SAMPLE	ME	R WEIGHT	/FALL	CAS	ING LE	FT IN HO	LE: DI	A./LI	NGTH	LOGGED E	Y:				/	<u></u>
]	N/A	-			NO							R. Mi	gues		
g - 5 π	igi.	حاخ	PR	ATER ESSU	RE i			9								
TE BE	E	5 BE	1	TESTS	3	ELEV.	E	GRAPHICS		FSCRTP	TTON	AND C	LASSIFI	CATION	NOTES	ON: LEVELS,
90 93	뭐	E B08	SZ.	88 H	HINE AIN.		DEPTH	1			. 2011	<i>-</i>	L-10011 1	JA18611	WATER	RETURN,
SAND DIAM. SAMP. ADV.	필딩	SAMPLE BLOWS "N" % CORE RECOVERY	L098 IN G.P.M	PRESS. P.S.I.	HHH		-	뜅	7							CTER OF ING, ETC.
	 						_	***	0.0	- 9.0 Ft	Geolog	ic drill lo	was gamin	-lamed	Boschol	e advanced
1							'	₩		and same	led, or	DOLETIOIS	WAS ESTATE		0-9 Ft.	using 3" i.d. oon sampler
] '	₩							and 4" o	o.d. solid-stem
						·	1	₩							augers.	
							١.,	₩								
							-*	₩							Borehol	
	1						'	₩							and gan	rically sampled nma-logged by
	1						'	₩							TMA-E	berline, Corp.
							•	₩								
						•	┪ ・	×××	-	AA			\ <u>.</u>		1	
									Bo	ttom of bore	orehole :kfilled	e at 9.0 F with spe	t. oils, 10/30/	87.		
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	.														*****	
												•			classific	tion and ation of
															soils by	visual
		1				1										
.SS = SP	LIT S	POON; S	r = SHE	LBY T	UBE; S	SITE	<u></u>	- 		_					HOLE NO).
		; P = P					J	J.F.	Ken	nedy	Par	k (LC)DI)		10	80AR

SITE J.F.Kennedy Park (LODI) SEGUN COMPLETED DRILLER DRILL MAKE AND MODEL 10-21-87 10-21-87 CORE RECOVERY (FT./%) SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 lbs/30 in NA DESCRIPTION AND CLASSIFICATION WATER PRESSURE TESTS TESTS SELEU. DESCRIPTION AND CLASSIFICATION WATER RETURN, CHARACTER OF DRILLING, ETC. SS 2.0 0.5 3-5-8 10 0.0 -6.0 Ft. Organic silty SAND, Sandy SILT PILL (SM-OL, ML), GM-SM-ML). SS 2.0 1.4 6-5-3 19 0.0 -1.5 Ft. Organic silty sand, dark brown (10YR3/8) topsoil. SS 2.0 2.0 2.1 21-10 SS 2.0 2.0 21-10 SO DESCRIPTION AND CLASSIFICATION NOTES ON: WATER RETURN, CHARACTER OF DRILLING, ETC. OO6.0 Ft. Organic silty SAND, Sandy SILT PILL (SM-OL, ML), GM-SM-ML). 1.5-2.3 Ft. Sandy silt, dark grayish brown (10YR3/8) topsoil. SS 2.0 2.0 2.1 21-10 SS 2.0 2.0 21-10 SS 2.0 2.0 21-10 SO DESCRIPTION AND CLASSIFICATION NOTES ON: WATER RETURN, CHARACTER OF DRILLING, ETC. OO6.0 Ft. Organic silty SAND, Sandy SILT PILL (SM-OL, ML), GM-SM-ML). OO1.5 Ft. Organic silty sand, dark brown (10YR3/8) topsoil. SS 2.0 2.0 2.0 21-10 SS 2.0 2.0 21-10 SS 2.0 2.0 21-10 SO DESCRIPTION AND CLASSIFICATION WATER RETURN, CHARACTER OF DRILLING, ETC. OO6.0 Ft. Organic silty SAND, Sandy SILT PILL (SM-OL, ML), GM-SM-SM-ML). OO1.5 Ft. Organic silty sand, dark brown (10YR3/8) topsoil. SS 2.0 2.0 2.1 21-10 SS 2.0 2.0 21-10 SS 2.0		PROJECT	JOB NO. SHEET NO. HOLE NO.											
STEEL SPECIA	GEOLOGIC DRILL LOG	•												
Description and Descriptio	COCKOTA	···· ···	······································											
10-21-87 (10-21-87) Description and St. 10-11 (10-11-87) E.D. 1														
Second Column Second Colum		1 1	i i											
August A														
140 Ibs / 30 in		<u>\</u>	/											
### DESCRIPTION AND CLASSIFICATION NOTES ON: MATER ELEU.			D 77 1 3											
0.0	Walter WATER		D. Harnish											
0.0	PRESSURE TESTS	 	NOTES ON											
0.0	TO SOOD S E SH H . ELEV.	DESCRIPTION AND CL	ASSIFICATION WATER LEVELS,											
0.0	FO FOR SHALL SE FILL	90 M. M. M. M. M. M. M. M. M. M. M. M. M.												
11 SS 2.0 0.8 5-19-6	SS 20 05 3-5-8													
SS 2.0 0.8 5-13-6 SS 2.0 1.4 6-5-3 SS 2.0 2.0 21-10 SS 2.0 1.2 3-10-11 SS 2.0 1.2 3-10-11 SS 1.5 1.5 14-22 SS 1.5 1.5 14-22 Bottom of borehole at 13.5 Ft. Borehole backfilled with spoils, 10/21/87. Bottom of borehole at 13.5 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of examination.		U.U - 6.0 Ft. Organic silty S. SILT, and Gravelly sandy	ND, Sandy SILT FILL Borehole advanced											
1.5	SS 20 08 5-10 6		i.d. split-spoon											
2.3-6.0 Pt. Gravelly sandy silt, brown, reading grained sand, bits of charcosi, brick, broken gravel. 2.3-6.0 Pt. Gravelly sandy silt, brown, and grainman logged by sanding grained sand, bits of charcosi, brick, broken gravel. 3.4 Pt. Gravelly SAND_(SW NA). Brown, coarsens and grainman logged by sanding grained sand, with medium to coarse-grained. 3.5 Pt. Gravelly sandy silt, brown, coarsens and grainman logged by sanding grained sand, with medium to coarse-grained gravel. 3.5 Pt. Gravelly sandy silt, brown, coarsens and grainman logged by sanding grained sand with medium to coarse-grained gravel. 3.5 Pt. Gravelly sandy silt, brown, coarsens and grainman logged by sanding grained sand with medium to coarse-grained gravel. 3.5 Pt. Gravelly sandy silt brown, coarse grained gravel. 3.5 Pt. Gravelly sandy silt brown, coarse grained gravel. 3.5 Pt. Gravelly sandy silt brown, coarse grained gravel. 3.5 Pt. Gravelly sandy silt gravely sanding grained grain logged by sanding grained grained gravel. 3.5 Pt. Gravelly sandy silt brown, coarse grained gravel. 3.5 Pt. Gravelly sandy silt gravely sanding grained grain logged by sanding grained gr	3 2.0 3.0 3.13.0	OLD ALVE TO CERCINIC STRUT	sand, dark brown sampler and 6.5" o.d. solid-stem augers.											
2.3-6.0 Pt. Gravelly sandy silt, brown, remaining rained sand; bits of charcos, brick, broken gravel.	SS 2.0 1.4 6-5-3	1.5-2.3 Ft. Sandy silt, da	rk grayish brown											
SS 2.0 2.1 10 10 11 10 10 11 10 10 11 10 10 11 10		5												
11-10	SS 2.0 2.0 21-10	medium-grained sand; bit	s of charcoal radiologically sampled											
SS 2.0 1.2 3-10-11 12 SS 2.0 2.0 3-3-10 SS 1.5 1.5 14-22 100/5° SS 1.5 1.5 14-22 100/5° SAMD (SW, SM). Brown, coarsens downward, we downward, we downward, we have a second of the secon			TMA-Eberline, Corp.											
12	SS 2.0 1.2 3-10-11	SAND (SW. SM). Brown.												
SS 2.0 2.0 3-3-10 SS 1.5 1.5 1.5 14-22 12.0-13.4 Ft. Medium-grained sand with medium to coarse-grained gravel. 12.0-13.4 Ft. Medium-grained sand with medium to coarse-grained gravel. 13.4-13.5 Ft. CLAY (CL). Weak red residual clay. Bottom of borehole at 13.5 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of each by vision at examination.			;											
SS 1.5 1.5 14-22 100/5* 12.0-13.4 Ft. Medium-grained sand with medium-to coarse-grained gravel. 13.4 - 13.5 Ft. CLAY (CL). Weak red residual day. Bottom of borehole at 13.5 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination.	SS 2.0 2.0 3-3-10	101.	` '											
100/5° 1.2.0-13.4 Ft. Medium-grained sand with medium-to coarse grained gravel. 13.4 - 13.5 Ft. CLAY (CL). Weak red residual clay. Bottom of borehole at 13.5 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: 511E		coarse-grained.												
100/5° 1.2.0-13.4 Ft. Medium-grained sand with medium-to coarse grained gravel. 13.4 - 13.5 Ft. CLAY (CL). Weak red residual clay. Bottom of borehole at 13.5 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: 511E	100/5" 12.0-13.4 Ft. Medium-grained sand with													
Description and classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: SITE SITE SITE SOLE NO.	100/5" 12.0-13.4 Ft. Medium-grained sand with medium- to coarse-grained gravel.													
Description and classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: SITE HOLE NO.	13.4 - 13.5 Ft. CLAY (CL). Weak red													
Description and classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: SITE HOLE NO.	13.4 - 13.5 Ft. CLAY (CL). Weak red													
Description and classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: SITE HOLE NO.	Bottom of borehole at 13.5 Ft.													
classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: SITE HOLE NO.		Borehole backfilled with spoil	s, 10/21/87.											
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classification of soils by visual examination. S = SPLIT SPOON; ST = SHELBY TUBE: SITE HOLE NO.			D											
S = SPLIT SPOON; ST = SHELBY TUBE: SITE HOLE NO.			classification of											
s = SPLIT SPOON; ST = SHELBY TUBE; SITE = DENNISON; P = PITCHER; 0 = OTHER J.F.Kennedy Park (LODI) 1051R														
s = SPLIT SPOON; ST = SHELBY TUBE; SITE = DENNISON; P = PITCHER; O = OTHER														
S = SPLIT SPOON; ST = SHELBY TUBE; SITE = DENNISON; P = PITCHER; O = OTHER J.F.Kennedy Park (LODI) 1051R														
= DENNISON; P = PITCHER; O = OTHER J.F.Kennedy Park (LODI) ### J.F.Kennedy Park (LODI)	S = SDLIX SDOOM ST = SUFERING TOPS SITE													
		J.F.Kennedy Park (LOD)) HOLE NO.											

	G	ΕΩ	LOG	ר ח	RII I		G	PROJEC	:T				JOB NO.		T NO.	HOLE NO.
SITE			LUGI		I VIL		COORDINA	TEC			FUSRAP		14501-1			1075R
7.12	=	.Ker	inedy I	Park (LOD	T)	COCKDIA	(IES		N	1,903 E 117		ANG	Verti	M HORIZ	BEARING
BEGL			MPLETED				<u> </u>	k	RIL				OVERBURDEN	~~~~	(FT.)	TOTAL DEPTH
)-29-8°			E.D.					BILE B-57	6.5"	8.0			8.0
CORE) CORE	BOXE	i	ESEL. TO	P CASI	NG	GRO	OUND EL. DEPTH	EL. GROU	NO WATER	DEPTH	EL. TOP	OF ROCK
SAME		.1/8	S WEIGHT	/FALL	ICAS	4	FT IN HO	F. DI	A /I	ENC					/	
57611			bs/30				N.		^•/ b	.	IIII LOGGED BIT.		D. Harni	sh		
ĬĮ.	٠	ol .		ı	ATE				_	П						
SAMP or TARE		REC	BLOWS "N" % CORE RECOVERY	PR	ESSU ESTS			I	GRAPHICS	Н					NOTES	ON:
ū	20	4	돌 む 89	S E	. I.	ш	ELEV.	DEPTH	E	SAMPLE	DESCRIPTION	AND C	_assificat	ION		RETURN,
榖	불교	E S	& DI * FI	LOSS IN G.P.M	: шо	HAN.		ă	Ĕ	20					CHARAC	TER OF
<u>30</u> €	2.0	80	m	7 0	<u>0</u> 0	Ε Σ			L	Ц.			\		DRILL	ING, ETC.
33	2.0	1.3	1-3-3-3								0.0 - 6.9 Ft. Silt. (SM, ML_OL)	SAND M	d Surr Full			advanced
तत	0.0	1.0	6 33 A								0.0-2.3 Ft. Sil	ty sand, d	usky red	_	split-sp	using 3" i.d. oon sampler ' o.d.
33	2.0	1.5	6-11-3 4			·	1	Ι.			(10R3/4), fine- gravel.	grained, s	ome dark greei	1	solid-st	em augers.
- 66										,	2.3-4.4 Ft. Sa brown (10YR5	ndy silt, d	ark yellowish	•		ically sampled
22	2.0	2.0	1-2-3-6				1	5_			bits.	/6}, some	gravel, charcos	ч	TMA-E	ıma-logged by berline, Corp.
SS	2.0	2.0									4.4-6.9 Ft. Sil yellowish brow	t, black, se n mixed ir	ome dark 1, minor white :	sand.		
			12				_				6.9 - 8.0 Ft. CLA gray (5YR6/2) iron-oxide stai	Y (CL-MI with yello). Pinkish wish brown			
											1			- 1		
											7.5-8.0 Ft. Re	ddish brov	wn (5YR4/4).			
											Bottom of boreho Borehole backfille	le at 8.0 F	t.			
										$\ $	Potenoie packtime	a with spe	MIS, 10/29/07.			
						1				$\ \ $						
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					1					$\ $					classific	tion and ation of
										$\ $					soils by	visual
							1			$\ $						
SS	= SPL	IT S	POON; S'	J = SHE	LBY T	UBE:	SITE	1	_ 						HOLE NO	
			; P = P						I.F.	.K	ennedy Pai	k (LO	DI)		1	075R

	2E/	LOG	ור ח	DIL		·C	PROJE	CT		JOB NO.	SHEE	T NO. HOLE NO.
SITE	320	LOG		NIL.	LLU		YE0.		FUSRAP	14501-1		
	F.Kei	nnedy l	Park (T.OD	T	COORDINA	(IES		N 1,881 E 144	AA		M HORIZBEARING
BEGUN		MPLETED			<u>-, </u>			DRILL	MAKE AND MODEL SI	ZE OVERBURDEN	Verti	(FT.) TOTAL DEPTH
		0-28-8			E.D.			M	OBILE B-57	6.5" 10.0		10.0
) CORE	BOXE)	ESEL. TO	P CAS	ING		. GROUND WATER	DEPTH/	EL. TOP OF ROCK
	7.1/	71 R WEIGHT	ZEALL	lca.	5	ET 11 1101	F. 81		<u> </u>		<u></u>	/
		bs/30	•	LA:	ING LE	PI IN HOI		A./LE	NGTH LOGGED BY:	D II	. L	
ш	1.5	05/30	1 1	JATE		17/	1	1	<u> </u>	D. Harn	ısn	
		BLOWS "N" CORE	PR	ESSU	RE		🛖	8				NOTES ON
12 9	3 2 2	f N R S	E			ELEV.	DEPTH	Ħ	DESCRIPTION A	ND CLASSIFICA		NOTES ON: WATER LEVELS,
우 우	티리밤	\$3.00 0.00	L088 IN G.P.M	83. 1.	ESS			GRAPHICS				WATER RETURN, CHARACTER OF
& <u>4</u> 8	일일	型 <u> </u>	7 .9	5.0	AIN SIN		1	9]			DRILLING, ETC.
SS 2.0	1.3	6-8-9-5							0.0 - 4.0 Ft. SAND Fine-grained, gray	PILL (SP).		Borehole advanced
İ		İ					'		,,,,	red (7.5R4/2), some	hand	0-10 Ft. using 3" i.d.
SS 2.0	1.4	2-7 10-5					'		dusky red shale gr	ravel.	natu	split-spoon sampler and 6.5" o.d.
1	İ	10-5			·		•		2.5-4.0 Ft. Dark	yellowish brown		solid-stem augers. Perched groundwater
SS 2.0	1.3	1-2-2-3		:		-		1.1	(IUYR4/6); graves pieces of charcoal.	l is white, yellow; son	1e /	observed in first sample.
-							5_		4.0 - 6.3 Ft. SAND (7.5YR5/4), media	(FILL)? (SM). Brow	n	Borehole was radiologically sampled
SS 2.0	1.5	2-6-9-9				_		Ш		, , , , , , , , , , , , , , , , , , , 		and gamma-logged by TMA-Eberline, Corp.
	1								6.3 - 8.3 Ft. <u>SAND</u> ((5YR5/3) and gra	(SP). Reddish brown w. mottled with	1	•
SS 2.0	1.6	6-12				_			vellowish-brown ii	ron stain, light grav	_	
		13-17					,	4	bedded with 2-3 n	fine-grained, finely mm layers.	- 1	
						_	10 .	Щ	8.3 - 10.0 Ft. SILT ((ML). Weak red		
								1 [9.8-9.9 Ft. Sand,	nated. medium-grained.		
							ļ		Bottom of borehole a Borehole backfilled w			
								1 1				
	}	1										
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: {												Description and classification of
												soils by visual examination.
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:												
							[
SS - SP	117.0	POON; ST	- CHE	PV 7	IRE. IS	SITE	1		<u> </u>			HOLE NO.
		; P = PI			·~-,		ال	I.F.	Kennedy Park	(LODI)		1072R

	G	EC	LOG	IC D	RIL	L LC	G	PROJE	T	TTICD AN		JOB NO.		ET NO.	HOLE NO.
IT							COORDINA	TES		FUSRAP		14501-		OF 1	1069R
	J.F	.Keı	nedy l	Park (LOD	I)				N 1,932 E 145		ſ	Vert		DEAKING
BEG			MPLETED		ER						SIZE	OVERBURDEN		(FT.)	TOTAL DEPTH
)-27-8			E.D.			M	OBILE B-57	6.5"	12.0			12.0
JOR		OVER) CORE	BOXE	S SAMPL	ESEL. TO	P CASI	NG G	ROUND EL. DEPTH/E	L. GROUN	D WATER	DEPTH,	/EL. TOP	OF ROCK
SAM			R WEIGHT	/FALL	ICA!		FT IN HO	E: DI	A./LE	NGTH LOGGED BY:		_	<u> </u>	/	
			bs/30				N.		,			D. Haro	ish		
W .	3111	ပ် •	· .		JATEI ESSU	2					•			Ĭ	
SAMP DIAM.	58		BLOWS "N" X CORE	PK	EST			E	GRAPHICS SAMPLE					NOTES	
Ğ.Ω	10	4	돌리임	g_ ¥	တ္ပဲ ၊	w	ELEV.	DEPTH	RAPHIC	DESCRIPTION	AND CL	_assifica	TION		LEVELS, RETURN,
誤	四萬	ZIO	요결~ñ	LOSS IN G.P.M	PRESS. P. S. I.	HAN S		□	5 E					CHARAC	TER OF
	2.0	G G	2-4-4-5	- 0	<u> </u>					0.0 - 8.0 Ft. SANI) and 911	<u> </u>		DRILLI	ING, ETC.
55		2.0								ML-OL).	J and Sit	T PHAD (SIVE	,	Borehole	e advanced using 3" i.d.
ত্ত	2.0	10	5-6-4-2							0.0-2.0 Ft. San	d, dusky :	red (10R3/3)	,	split-sp	oon sampler o.d.
33	2.0	1.5	3-0-4-2							silty.				solid-ste	em augera.
তত	1	~ 6	** A · A					١.		2.0-8.0 Ft. Silt, (10YR2/2), orga	, very dar anic, smal	k brown to b I pieces of or	ange lack	Borehole radiolog	ically sampled
22	2.0	0.3	2-2-4-2				•	5_		àilt, charcóal.				TMA-E	ima-logged by berline, Corp.
								١.							
SS	2.0	0.6	3-3-4-4					١.							
SS	2.0	1.1	1-2-6-6				1 -			8.0 - 10.3 Ft. <u>SIL7</u> Weak red (10R5	(2) and (2)	AY (ML, CL)i.	Fill was Easy dri	very soft.
	<u> </u>							10_		Weak red (10R5 interbedded with	h 5 mm li	yers.	-,,		
SS	2.0	1.3	1-11 17-14				=			√10.3 - 10.6 Ft. <u>CL</u>	AV (CL)	Vellowish		4	
								•		brown.	<u> </u>	1411041811	· /		•
							-	'		10.6 - 12.0 Ft. SA brown (10YR5/: (5YR5/4), medi	ND (SW)	. Grayish	[1	
	-						1			(5YR5/4), medi	um-grain	ed, some silt	, some ∫		
]	round gravel, we	et.				
									1	Bottom of borehole	at 12.0 I	?t.		}	
							1		1	Borehole backfilled	with spo	115,10/21/61.			
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			•	1										Descript classific	ation of
														soils by	
				<u>L</u>		<u> </u>	<u> </u>	<u> </u>							
			POON; 51			, j	SITE				. (1.0	O1)		HOLE NO	
) =	DENN	ISON	; P = P1	TCHER;	0 = 1	OTHER		J		Kennedy Parl	K (LU	(וט		1	069R

GEOLOGIC DRILL LOG								PROJECT FUSRAP			JOB NO. SHEET NO. HOLE NO. 14501-138 1 OF 1 1056R			1		
SITE COORDINA													1 OF 1 1056R FROM HORIZBEARING			
J.F.Kennedy Park (LODI) N 1,853 E 154 Vertical																
BEGUN COMPLETED DRILLER 10-22-8710-22-87 E.D.I.													WERBURDEN	ROCK	(FT.)	TOTAL DEPTH
20.0											20.0					
2444	10.8/54 9															
SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 lbs/30 in NA D. Harnish																
										1						
SAMP. TYPE AND DIAM.	SAMP. ADU	CORE REC	SAMPLE BLOWS "N" % CORE RECOVERY	Loss IN G.P.A	ESSU. EST: O.H.S.		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION 6	AND CLA	ASSIFIC	ATION	WATER CHARAC	ON: LEVELS, RETURN, CTER OF ING. ETC.
SS	2.0	<u> </u>	5-13 10-10		44.4		.	 			0.0 - 6.0 Ft. SAND	and SILT	PILL (SP	·,	╁╌╌	
SS	2.0	1.3									ML). 0.0-2.2 Ft. Sand, fine-grained.	l, dusky re	ed (7.5R3/	4),very	0-20 Ft. split-spe and 6.5"	e advanced using 3" i.d. oon sampler o.d.
SS	2.0	0.0	3-1-2-1								2.2-6.0 Ft. Silt, I small, soft round brown and reddis	m prown i	sut. Some i	ith I black		em augers. Very soft.
								5_			shiny (charcoal) f	fragments	i.		Borehole	e was
SS	2.0	0.4	1-1-2-4					₽ :			6.0 - 8.0 Ft. <u>SILT</u> () (5YR4/4).	(ML). Red	ddish brow	'n	and gan TMA-E 6.3 Ft.	ically sampled ima-logged by berline, Corp. Groundwater
SS	2.0	1.7	6-9-8-9				-				8.0 - 14.0 Ft. CLAY Weak red (2.5YR reddish gray (5YI	Y and SIL (15/2), be	T (CL-MI	J). rk	observed open 5 h	d after hole
SS	2.0	1.4	3-7-7-7					10_			8.0-12.0 Ft. Silty					
SS	2.0	2.0	7-13 11-14								12.0-14.0 Ft Do	امناقد قدمت ماسد	h /EV	'D 4 /9)		
SS	2.0	2.0					-				12.0-14.0 Ft. Da			R4/2).	-	
55	2.0	2.0	10 5-6-6					15_			yellowish brown (coarse-grained, sa	(10YR4/4 sturated.	i), fine- to			
33	2.0	2.0	14								14.0-15.0 Ft. Me 15.0-17.5 Ft. Fin	-				
											17.5-18.0 Ft. Co	arse-grain	ned.		No samp	ole 18-20 Ft.
							_	20		_		 				
											Bottom of borehole a Borehole backfilled v	at 20.0 Ft with spoil	i. s, 10/22/8	7.	20.0 Ft. refusal.	Auger -
							:									
														÷	Descript classifica soils by	ation of visual
														ř	examina	ition.
\$5 :	SPL	IT S	POON: ST	= SHE	LBY TI	JBE: S	ITE	<u> </u>		Ц.	· · · · · · · · · · · · · · · · · · ·				HOLE NO	
D = DENNISON; P = PITCHER; O = OTHER SITE J.F.Kennedy Park (LODI)											1	056R				

J.F.Kennedy Park (LODI) SEGUN COMPLETED DRILLER DRILL MAKE AND MODEL SIZE OVERBURDEN ROCK (FT.) TOTAL 10-28-8710-28-87 E.D.I. MOBILE B-57 SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 Ibs/30 in NA D. Harnish).		
J.F.Kennedy Park (LODI) SEGUN COMPLETED DRILLER 10-28-8710-28-87 E.D.I. MOBILE B-57 MOBILE B-57 SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 lbs/30 in NA Vertical NORE BOXES SAMPLES EL. TOP CASING GROUND EL. DEPTH/EL. GROUND WATER DEPTH/EL. TOP OF ROC 16.8/58 D. Harnish			
10-28-87 10-28-87 E.D.I. MOBILE B-57 6.5" 29.0 29 CORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TOP CASING GROUND EL. DEPTH/EL. GROUND WATER DEPTH/EL. TOP OF ROOM 16.8/58 10 PETH/EL. TOP OF ROOM SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 lbs/30 in NA D. Harnish	1		
CORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TOP CASING GROUND EL. DEPTH/EL. GROUND WATER DEPTH/EL. TOP OF ROC 16.8/58 SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 lbs/30 in NA D. Harnish			
16.8/58 10 ¥/ SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: 140 lbs/30 in NA D. Harnish			
140 lbs/30 in NA D. Harnish	,		
PRESSURE TESTS ELEU T DESCRIPTION AND CLASSIFICATION NOTES ON:			
부하여의 비행님 'K에 ···································			
O U L の O O	s,		
TESTS LOUIS AND CLASSIFICATION WATER RETUINED TO THE PROPERTY OF THE PROPERTY			
DRILLING,			
55 2.0 0.7 3-4-4-2 0.0 - 2.0 Ft. GRAVEL FILL (GW). Black slate and coal pieces. Borehole advan	ed		
0-29 Ft. using	i.d.		
SS 2.0 2.0 5-9-7-6 split-spoon same and 6.5" o.d. brown (10YR5/4), fine-grained. split-spoon same and 6.5" o.d. solid-stem auge	s.		
1			
SS 2.0 1.8 4-5-7 3.0-3.1 Ft. Gravel. radiologically standard for the standard formula for the standard for the standard for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard formula for the standard f	ged by		
medium-grained, wet.			
SS 2.0 1.5 1-2-3-5			
SS 2.0 2.0 6-6-8 4.0 Ft. Ground observed.	vater		
9.2 - 10.0 Ft. Fine- and medium-grained	ĺ		
SS 2.0 2.0 2-5-4-6 interbedded with 1-2 cm layers.			
11.4-12.0 Ft. Very fine-grained.			
SS 2.0 1.1 7-7-8-9 Sand heave in a ster 14-16 Ft.			
medium-grained beds. attempted.			
15			
SS 2.0 2.0 3-5-8 29			
17.0-18.0 Ft. Fine-grained with			
SS 2.0 2.0 5-5-6-7 interbedded silt and clay.			
18.0 - 25.0 Ft. SAND and CLAYEY SILT (SM, ML-CL). Dark grayish brown	ļ		
SS 2.0 1.7 1-1-5-5 (10YR4/2), fine-grained, wet.	ļ		
18.3-18.7 Ft. Clayey silt.			
18.7-25.0 Ft. Sand, fine- to medium-grained.			
25			
25.0 - 29.0 Ft. GRAVEL. Mostly glacially derived gravel and weathered			
bedrock.			
	ļ		
29.0 Ft. Auger refusal.			
Bottom of borehole at 29.0 Ft.	1		
Borehole backfilled with spoils, 10/28/87. Description and classification of	ļ		
soils by visual examination.			
	1		
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE D = DENNISON; P = PITCHER; O = OTHER J.F.Kennedy Park (LODI) HOLE NO. 1070F			

GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET NO. HOLE NO.									
	FUSRAP	14501-138 1 OF 1 1108R									
ANGLE FROM											
BEGUN COMPLETED DRILLER		Vertical VERBURDEN ROCK (FT.) TOTAL DEPTH									
11-3-87 11-3-87 E.D.I.	MOBILE B57 6.5"	10.0									
CORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TO	P CASING GROUND EL. DEPTH/EL. GROUND										
8.5/85 5 5 ¥/											
4.0 11 //20 1											
W J J J WATER		D. Harnish									
PRESSURE TESTS	_ <u>8 </u>										
ELEV.	DESCRIPTION AND CL	NOTES ON: WATER LEVELS,									
AND AND AND AND AND AND AND AND AND AND	GRAPHICS SAMPLE SAMPLE SAMPLE CONTACTOR	WATER RETURN, CHARACTER OF									
20 (A) (W)		DRILLING, ETC.									
SS 2.0 1.7 4-6-11	0.0 - 4.7 Ft. SILT and SAND SM-SP).	FILL (OL, Borehole advanced									
	0.0-0.3 Ft. Sand, yellow (0-10 Ft. using 3" i.d.									
SS 2.0 2.0 4-5-4-5	0.3-0.8 Ft. Silt, black.	and 6.5" o.d. solid-stem augers.									
	0.8-2.3 Ft. Sandy silt, yell	i Borehole was									
SS 2.0 1.4 9-12 11-10	(10YR5/6), and silt, dark l	prown (10YR4/3) and gamma-logged by									
		TMA-Eberline, Corp.									
SS 2.0 1.8 7-8-11	2.3-4.7 Ft. Sand, yellowish (10YR5/6), fine-grained, s	ome gravel. 6.0 Ft. Groundwater									
	4.7 - 10.0 Ft. Silty SAND (SI brown (10YR4/3), medium	M). Dark observed.									
SS 2.0 1.6 1-4-8	brown (10YR4/3), medium subangular.	- to fine-grained,									
	8.0-8.3 Ft. Silty clay, dark	brown.									
 	10										
	Bottom of borehole at 10.0 Ft Borehole backfilled with spoil	11/3/87									
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	·										
	· []]										
		Description and									
	·	classification of soils by visual									
		examination.									
		[
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE D = DENNISON; P = PITCHER; O = OTHER J.F.Kennedy Park (LODI) HOLE NO. 1108F											

GEOLOGIC DRILL LOG							ıc.					JOB NO.				
								FUSRAP					14501-138 1 OF 1 122			
J.F.Kennedy Park (LODI) COORDINATES N 1,462 E 169 Verti										EARING						
BEGL			MPLETED			- /	1	C	RILI		AKE AND MODEL SIZE	OVERBURDEN			TOTAL DEPTH	
			<u>2-8-87</u>			E.D.			N	AC	BILE B-57 6.5	" 10.0			10.0	
CORE RECOVERY (FT./X) CORE BOXES SAMPLES EL. TOP									NG	GR	OUND EL. DEPTH/EL. GI	ROUND WATER	DEPTH/	EL. TOP	OF ROCK	
SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HO									A //	EN	/					
Oru n	"		N/A	,,,,,,,,			NO		M./L	E, M	TIN LOGGED BI:	D. Harni	ch			
ш.	.a			ļ.	JATER	2	1.0			Т		D. Haini	311			
7	SAMP. ADV. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	PR	ESSU ESTS			I	GRAPHICS	Ы	•			NOTES	ON:	
Ö	٥	Щ	표하음	ωE	S.	ш.	ELEV.	DEPTH	Ī	SAMPLE	DESCRIPTION AND	CLASSIFICAT		WATER	LEVELS,	
器		SAMPLE CORE R	용기~병	LOSS IN G.P.M	PRESS. P.S.I.	TINE TINE TINE		õ	AR	阿				CHARAC	RETURN, TER OF	
20 c	<u>8</u> 1	99		- 0	āα			ļ	_	Щ				DRILLI	NG, ETC.	
								-		Ш	•			Borehole	advanced	
							,	-		Ш				o.d. holle	using 6.5" ow-stem	
							,			Ш				augers.		
								١.			310 d 11 mm	A # 4 700317				
								5_	'	$\ \ $	no sample	STAKEN				
						İ		١.						Borehole gamma-	was logged by perline, Corp.	
	i							_						TMA-E	perline, Corp.	
								_								
							_	10 .		Ш						
	1					•					BOTTOM OF HOLE	10.0 ft.		No samp	les.	
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-						105 6	ITE	Ц	1	Ц				HOLE NO.		
D = DENNISON; P = PITCHER; O = OTHER J.F.Kennedy Park (LODI) 1229R											ennedy Park (L	.ODI)		12	229R	

S. S. Complex S. S. S. S. S. S. S. S	GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET NO. HOLE NO.
SECON CONTRICTED PRILLER DRILL RAZ RON NOSE SIZE OVERRURGES CONTRICTED CONTRICTE		FUSRAP	14501-138 1 OF 1 1052R
Description and Descriptio			1
CORD ROUSE SAPE SECOND CORE SAPE SECOND SEC	BEGUN COMPLETED DRILLER	DRILL MAKE AND MODEL SIZE	OVERBURDEN ROCK (FT.) TOTAL DEPTH
### 12.11/77 ### 140 lbs/30 in ### 150 bs/31 i			
SAPPLE MAMER WE GHIT/FALL CASING LEFT IN NOLE: DIA,/LERGTH LOGGED BY: D. Harnish	; I I I		OUND WATER DEPTH/EL. TOP OF ROCK
140 lbs/30 in		OLE: DIA./LENGTH LLOGGED BY:	
Compared Compared	-		D. Harnish
Topsell. Topsel	WATER WATER		
Topsell. Topsel	FRESSORE TESTS	₹ 8 H	
Topsell. Topsel	TO UNE SOOD & E ST U . ELEV.	DESCRIPTION AND	
Topsell. Topsel	문의 필드 및 다양 이 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등	1	CHARACTER OF
Topsell. Topsel	% € % - € € € € € € € € €		
SS 2.0 1.8 3-10 17-16 SS 2.0 1.6 4-7-7-4 SS 2.0 1.7 3-4-15 SS 2.0 1.7 3-4-15 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.	33 2.0 0.9 3-11 1 1 1		/ Borehole advanced
SS 2.0 1.5 4-7-74 SS 2.0 1.7 3-4-15 SS 2.0 1.7 3-4-15 SS 2.0 1.8 6-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 1-8 13 SS 2.0 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 2.0 2.0 1.8 5-8-15 SS 2.0 2.0 2.0 1.8 5-8-15 SS 2.0 2.0 2.0 1.8 5-8-15 SS 2.0 2.0 2.0 1.8 5-8-15 SS 2.0 2.0 2.0 1.8 5-8-15 SS 2.0 1.8 5-8-15 SS 2.0 1.8 5-8-15		0.3 - 8.5 Ft. Gravelly SI	LT FILL (GM). i.d. split-spoon
SS 2.0 1.5 4-7-7-4 SS 2.0 1.7 3-4-15 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 0.7 1-2-1-5 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 2.0 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 1.8 5-8-15 SS 2.0 0.7 1-2-1-5 SS 2.0 0.		0.3-2.0 Ft. Dusky red	decomposed solid-stem augers.
with round pebbles, pieces of charcoal, sightly damp, 6.0-8.5 Ft. Silt, dark grayish brown (10YR4/2), with soft elliptical pebbles of several colors (green, reddish gray). Soft, damp of several colors (green, reddish gray) publes are discognized to several colors (green, reddish gray). Soft, damp of Smith wide a satisfication of some (10YR4/2), with soft elliptical pebbles of several colors (green, reddish gray). Soft, damp of Smith wide a satisfication of some (10YR4/4). Soft of the several colors (green, reddish gray). Soft damp of Smith wide a satisfication of some (10YR4/4). Soft of the several colors (green, reddish gray). Soft damp of Smith wide a satisfication of some (10YR4/4), medium: to coarse-grained, clean sand, rounded gravel. 13.0-13.8 Ft. Coarse-grained, clean sand, rounded gravel. 13.10.7 Ft. SAND, and Claver SILT (SM, ML). Weak red (10YR4/4), sand is very fine-grained and is above clayer silt and bedrook readdum. Bottom of borehole at 15.7 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination.		+ + ■	(101770 (0)
sightly damp. sightly damp. sightly damp. sightly damp. sightly damp. sightly damp. sightly damp. sightly damp. solution of borehole at 15.7 Ft. Borehole backfilled with spoils, 10/21/87. solution of borehole at 15.7 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of solution and classification of solution by visual examination.	SS 2.0 1.5 4-7-7-4	2.0-6.0 Ft. Very dark with round pebbles, p	eces of charcoal,
SS 2.0 1.8 5-8-15 SS 2.0 1.8 5-8-15 SS 2.0 1.8 5-8-15 SS 2.0 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 1.7 1.7 21-40-32 SS 2.0 2.0 2.0 2.0 2.5-58 SS 2.0 2.0 2.0 2.0 3.5-58 SS 2.0 2.0 2.0 3.5-58 SS 2.0 2.0 2.0 3.5-58 SS 2.0 2.0 2.0 3.5-58 SS 2.0 2.0 3.5-58 SS 2.0 2.0 3.5-58 SS 2.0 2.0 3.5-58 SS 2.0 2.0 3.5-58 SS 2.0 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.5-58 SS 2.0 3.7 1.7 21-40-32 SS 2.0 3.7 1.7 21-		slightly damp.	radiologically sampled
SS 2.0 1.8 5-8-15 13 10 10 10 10 10 10 10		6.0-8.5 Ft. Silt. dark	and gamma-logged by
SS 2.0 0.7 1-2-1-5 SS 2.0 1.7 1.721-40-32 SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138		(10YR4/2), with soft	elliptical pebbles of 9.0 Ft. Groundwater observed.
SS 2.0 0.7 1-2-1-5 SS 2.0 1.7 1.721-40-32 SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT SS 1.7 1.721-40-32 IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138-182, SAND, and Clayer SILT IS-0-138		Soft, damp (reddish gr	ray pebbles are
SS 2.0 0.7 1-2-1-5 SS 2.0 13-55 SS 1.7 1.7 21-40-32 SS 1.7 2.4 21 SS 1.7 2.4 21 SS 1.7 2.4 21 SS 1.7 2.4 21 SS 1.7 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4		} 7 . ■ ()	
SS 2.0 2.0 13.5-51 23-21 SS 1.7 1.7 21-40-32 15. 1	SS 2.0 0.7 1-2-1-5	brown (10 YR5/4).	. Tellowish
SS 2.0 2.0 13.5-51 23-21 SS 1.7 1.7 21-40-32 15. 1		9.0 - 13.8 Ft. SAND (SV	V). Yellowish
SS 1.7 1.721-40-32 100/2" 11.0 - 13.8 Ft. Coarse-grained, clean sand, rounded gravel. 11.8 - 15.7 Ft. SAND, and Clayer SILT (SM, ML). Weak red (10YRA/4), and is very fine-grained and is above clayer silt and bedrock residuum. Bottom of borehole at 15.7 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination.		coarse-grained, some	gravel.
rounded grave SILT 15.— 15.— 15.— 15.— 15.7 Ft. SAND. and Clayer SILT (SM. ML). Weak red (10YR8/4), sand is very fine-grained and is above clayer silt and bedrock residuum. Bottom of borehole at 15.7 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination.	23-21		
(SM, ML). Weak red (10 KR4/4), and is very fine-grained and is above clayey silt and bedrock residuum. Bottom of borehole at 15.7 Ft. Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination.		rounded gravel.	grained, clean sand,
Description and classification of soils by visual examination. S. S. SPILL SPOOM: SL = SHELRY TURE: SITE HOLE NO.	100/2"	18 (22)	nd Clayey SILT
Description and classification of soils by visual examination. S. S. SPILL SPOOM: SL = SHELRY TURE: SITE HOLE NO.		(SM, ML). Weak red	(10YR4/4), sand is is above clavey silt 15.7 Ft. Auger
Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination. S = SPLII SPOON: SI = SHERY TURE: SITE HOLE NO.		and bedrock residuum	retusal.
Borehole backfilled with spoils, 10/21/87. Description and classification of soils by visual examination. S = SPLII SPOON: SI = SHERY TURE: SITE HOLE NO.		Bettem of herebels at 15	7 F+
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examination. S = SPLIT SPOON: SI = SHFIRY TURE: SITE HOLE NO.			classification of
= DENNICON D = DITCHED D = DINER! I P KONNONV PARK (I I II III I I I I I I I I I I I I I	S = SPLIT SPOON; ST = SHELBY TUBE; SITE = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (L	

	PROJECT JOB NO. S	HEET NO. HOLE NO.
GEOLOGIC DRILL LOG	FUSRAP 14501-138	1
SITE CO	ORDINATES ANGLE	FROM HORIZBEARING
Money St. (LODI)		ertical
SEGUN COMPLETED DRILLER		OCK (FT.) TOTAL DEPTH
1-13-87 11-13-87 E.D.I.		TH/EL. TOP OF ROCK
5.6/70 4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	/
SAMPLE HAMMER WEIGHT/FALL CASING LEFT	N HOLE: DIA./LENGTH LOGGED BY:	
140 lbs./ 30 in.	NONE D. Harnish	
SAMPLE SAMPLE CONE SAMPLE IN IN IN IN IN IN IN IN IN IN IN IN IN	EV. H. S. H. DESCRIPTION AND CLASSIFICATION	WATER RETURN, CHARACTER OF DRILLING, ETC.
SS 2.0 1.8 1-2-3-6 SS 2.0 1.8 11-15 T7-18	0.0 - 6.0 Ft. SAND and SILT FILL (SP. OL). 0.0-0.6 Ft. Silty gravel. Broken basalt gravel, road sub-grade. 0.5-2.9 Ft. Silt. Dark grayish brown (10YR 4/2). Organic, some fine-grained sand. 1.8-1.9 Ft. Sand. Yellowish brown, fine-grained. 2.9-6.0 Ft. Sand. Yellowish brown (10YR5/6). Fine-grained. 6.0 - 8.0 Ft. CLAY (CL). Weak red (10R4/2) with yellowish brown iron-oxide mottling. 7.8-8.0 Ft. Thin interbeds of medium-grained, clean sand. Bottom of borehole at 8.0 Ft. Borehole backfilled with spoils, 11/13/87.	Description and classification of soils by visual examination.
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE D = DENNISON; P = PITCHER; O = OTHER	Money St. (LODI)	HOLE NO. 1134R

	G	EN	LOG	ור ח	DII	10	<u> </u>	PROJEC	Ţ				JOB NO	. SHE	T NO.	HOLE NO.
277			LOG		KIL	L LU		<u> </u>			FUSRAP			<u>-138 1</u>		1219R
SITE		W		Da-l. /	TOD	·Τ\	COORDIN	ATES			1 (0= = =			ANGLE FR		3EARING
BEGL			IDECY MPLETED			1)	.L	-	PIII		1,697 E	SIZE	OVERBURDE	Vert	(FT.)	TOTAL DEPTH
			2-8-81			E.D.	I.	ſ			NYY TO TO		1	· Kuck	(61.)	8.0
					BOXE		ESEL. TO	P CASI	NG	GRO	UND EL. DEI	6.5" PTH/EL. GRO	UND WATER	DEPTH,	EL. TOP	
	. =	_/				0							·			
SAMP	'LE M		WEIGHT		CAS	SING LE			A./L	ENG	TH LOGGED BY	:				
hi		•'	N/A		IATE	3	NO	NE					D. Hai	rnish	1	<u></u>
SAMP DIAME	SAMP, ADU, LEN CORE	ZEC	SAMPLE BLOWS "N" % CORE RECOVERY	PR	JATER ESSU FEST	ŘΕ		_	C3	ш		•				6 110
- Ti	C S	E	투의없을	mΣ			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPT	ION AND I	CLASSIFIC	ATION	NOTES WATER	LEVELS,
<u>€</u> 0		IPL RE	\$3 °0	LOSS IN G.P.R	90.0	HAN.			RAF	3.FF						RETURN,
SQ.	8	1년 20		7 %	PRESS. P. S. I.	FΣ			٥		•					ING, ETC.
											····		·····		Borehole	advanced
						ĺ		•							0-8 Ft.	using 6.5" ow-stem
								-							augers.	DM-RPETIT
								-			NO	SAMPLES	TAKEN]	
							İ					•				
								5_							Borehole	was .
								-							TMA-E	logged by berline, Corp.
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								1			BOTTO	M OF HOLE	8.0 ft.		•	
															No sam	oles.
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99	E SDI	IT e	POON; ST	E CHE	RY T	IRF. IS	ITE	Т	Н_	Ц.					HOLE NO	•
			; P = P			,	· -	J	.F.	Κe	ennedy P	ark (L(DDI)			219R

GEOLOGIC DRILL LOG	l +	T NO. HOLE NO.
SITE COORDIN	FUSRAP 14501-138 1	
J.F.Kennedy Park (LODI)	N 1,892 E 201 Verti	M HORIZBEARING
BEGUN COMPLETED DRILLER		(FT.) TOTAL DEPTH
10-28-87 10-28-87 E.D.I.	MOBILE B-57 6.5" 10.0	10.0
CORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TO	P CASING GROUND EL. DEPTH/EL. GROUND WATER DEPTH/	EL. TOP OF ROCK
7.5/75 5 SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HO	LE: DIA./LENGTH LOGGED BY:	
140 ibs/30 in N	•	
W. J. BATER		
SAMP DIAN. SAMP, ADU. LEN CORE SAMPLE REC. COR	DESCRIPTION AND CLASSIFICATION	NOTES ON:
TO UNITED DO S E SHI W . ELEV.	H DESCRIPTION AND CLASSIFICATION	WATER LEVELS, WATER RETURN,
SAMP. SA		CHARACTER OF
	<u> </u>	DRILLING, ETC.
SS 2.0 1.6 2-6-8-6	0.0 - 4.0 Ft. SAND and SILT FILL (SM-MP, ML-OL). Fine-grained, some	Borehole advanced
	gravel.	0-10 Ft. using 3" i.d. split-spoon sampler and 6.5" o.d.
SS 2.0 1.6 5-5-4-6	0.0-0.5 Ft. Dark brown (7.5YR3/2) topsoil.	solid-stem augers.
	0.5-2.2 Ft. Sand, dusky red (10R3/4).	Borehole was radiologically sampled
SS 2.0 1.7 4-6-4-8	2.2-3.3 Ft. Yellowish brown, clean sand.	and gamma-logged by TMA-Eberline, Corp.
	3.3-4.0 Ft. SILT (ML-OL). Black, massive, soft, top is interlayered with	
SS 2.0 1.3 8-7-15 9	fill above.	
	4.0 - 6.3 Ft. Silty SAND (SM). Dark yellowish brown (10YR4/6), fine-grained.	
SS 2.0 1.3 5-7-7-6	6.0-6.3 Ft. Gravelly sand.	
	-	
	10 6.3 - 9.2 Ft. SILT (ML). Dusky red (10R3/3) and light gray (5YR6/1), mottled with yellowish brown iron-oxide stain.	
	1 1 11 %	
	9.2 - 10.0 Ft. CLAY (CL). Gray (5YR5/1), medium stiff.	
	Bottom of borehole at 10.0 Ft.	
	Borehole backfilled with spoils, 10/28/87.	
		•
		Description and classification of
		soils by visual examination.
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE	LE Variable David (LODI)	HOLE NO. 1073P
D = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LODI)	1073R

GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET	NO. HOLE NO.
	FUSRAP	14501-138 1 OF	
J.F.Kennedy Park (LODI)	N 1,910 E 201	•	HORIZBEARING
BEGUN COMPLETED DRILLER	DRILL MAKE AND MODEL SIZE	Vertical OVERBURDEN ROCK (
10-29-8710-29-87 E.D.I.	MOBILE B-57 6.5"	10.0	10.0
CORE RECOVERY (FT./%) CORE BOXES SAMPLES	EL. TOP CASING GROUND EL. DEPTH/EL. GRO		. TOP OF ROCK
6.5/65 5	<u> </u>		/
	IN HOLE: DIA./LENGTH LOGGED BY:		
140 lbs/30 in WATER	NA .	D. Harnish	
SAMP DIAN. SAMP. ADU. LEN CORE REC. CORE	- 8		750 011
	ORAPHICS CAN NOITHINGS CAN NOI		OTES ON: ATER LEVELS,
SAMP. LEN CORE CORE CORE CORE CORE CORE CORE CORE	Service of the servic		ATER RETURN, HARACTER OF
SAMP. DI SAMP. DI SAMP. DI SAMP. CORE P. SAMP. CORE P. SAMP. CO. CORE P. S. CO. CORE P. S. I. CO. COR. CO. CO. CO. CO. CO. CO. CO. CO. CO. CO	5 []	1	RILLING, ETC.
SS 2.0 1.3 3-5-6-3	0.0 - 7.1 Ft. SAND and SI (SM-SP, ML).	LTFILL	orehole advanced
		10-	-10 Ft. using 3" i.d.
SS 2.0 0.5 6-7-6-6	0.0-0.5 Ft. Dark brown topsoil.	(1.51KS/2) Organic si	plit-spoon sampler nd 6.5" o.d.
	0.5-4.3 Ft. Sand, dusky	red (7.5R3/2), B	olid-stem augers. orehole was
SS 2.0 0.8 2-2-2-4	fine-grained.	i a.r	diologically sampled nd gamma-logged by
	5 4.3-7.1 Ft. Silt, various reddish brown, black, gr	colors mixed, T.	MA-Eberline, Corp.
SS 2.0 2.0 6-8-8	sand, chemical odor.		
10	7.1 - 10.0 Ft. CLAY (CL)	Weak red	
SS 2.0 1.9 4-6-9	(10R5/2) with yellowish mottling.	brown iron-oxide	
ii ii ii ii	mossing.		
	_ 10	·	-
	Bottom of borehole at 10.0	Ft.	
	Borehole backfilled with ap	oils, 10/29/87.	
] .] []		
			-
		·	
		D	escription and
		so	oils by visual camination.
		ا	
		•	
SS = SPLIT SPOON; ST = SHELBY TUBE; SIT			DLE NO.
D = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LC	DI)	1074R

GEOLOGIC DRILL LOG							PROJE	T				JOB NO	. SHE	ET NO.	HOLE NO.
SITE		LUG		· \		COORDINA	TEC			FUSRAP			-138 1		1081R
	'.Ker	nedy l	Park (LOD	T)	COOKD IN	1123		N	1,952 E 206	į		ANGLE FR	1	BEARING
BEGUN		MPLETED			-,	<u>' </u>		DRIL		KE AND MODEL	SIZE	OVERBURDEN		(FT.)	TOTAL DEPTH
10-30-						; BNI		M	inu	teman Auger	4"	9.5		• • • • • •	9.5
			CORE	BOXE		ESEL. TO	P CAS	NG	GRO	UND EL. DEPTH	EL. GROU	ND WATER	DEPTH,	/EL. TOP	OF ROCK
SAMPLE H	8.4/8		/FALL	icas	9	ET IN HO	E. 01	A /I	ENG	TH LOGGED BY:					
		bs/30	-		,, no ce	NO		^•/·	ENU	IN LOUGED BY:		R. Mi	71100		
ш. н.	. ان	2		JATE		1			П		•	R. MI	gues	Ţ <u>.</u>	
	REC	피기받	PR	ESSU EST:			I	5	щ					NOTES	on:
0 6	m K	E ≈ 89	σ Σ	e.∺	ш.	ELEV.	DEPTH	E	SAMPLE	DESCRIPTION	AND C	LASSIFIC	ATION	WATER	LEVELS,
SAMP. IYPE SAMP. ADV. LEN CORE	E S	SAMPLE BLOWS "N" 2 2 CORE RECOVERY	L03S IN G. P. M	PRESS. P. S. I.	FINE FINE FINE FINE FINE FINE FINE FINE		5	GRAPHICS	20					CHARAC	RETURN, TER OF
SS 1.0	0.6	<u> </u>	- 6	9	-		ļ	100		0.0 0.0 0.0	. 6	7.19		DRILLI	NG, ETC.
SS 1.0	0.8									0.0 - 2.0 Ft. Silty (CL-ML). Da Fine- to medic	k reddish	brown (10R	3/4).		advanced
SS 1.0	1.0					_								i.d. split	
SS 1.0	0.7								•	1.0-2.0 Ft. Ve specks of mode	rate reddi	red (10K2/2 ish brown (1	OR4/6).	sampler solid-ste	and 4" o.d. m augers.
SS 1.0	1.0				-	1	 ,			2.0 - 5.3 Ft. <u>CL/</u> (5R2/2) mottle	¥ (CL).	Blackish red			
							5_			brown and pal	e reddish	oderate redd brown (10R:	5/4).	_ , ,	
SS 1.1	1.1				1	-	1 .			5.3 - 7.0 Ft. San	y CLAY	(CL-ML).		Borehole radiolog	ically sampled
SS 0.9	0.9					_				Moderate brov blackish red (1	n (5YR4/ 0R4/6) cl	(4) mixed wi	th	TMA-E	ıma-logged by berline, Corp.
SS 1.0	1.0									5.3 - 7.0 Ft. San Moderate brow blackish red (1 7.0 - 8.3 Ft. Clay gray (N3), fine	- to medi	(SC). Dark um-grained.		•	
SS 1.3	1.3					-	1 .		r	8.0-8.3 Ft. Ol			Γ	1	
SS 0.2	0.0					-	1			8.3 - 9.5 Ft. SAN (5YR2/1), fine	D (SP).	Brownish bl	ack /	┪	
										Ι,		coarse-grain	ied.	Gamma	to 9.0 Ft.
									Ш	9.2-9.5 Ft. Pe	bbles.			7.5 Ft.	
										Bottom of boreho	le at 9.5 F	't.		Ì	
									$\ \ $	Borehole backfille	d with sp	oils, 11/2/87	'.		
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1]												classific	visual
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CC = CC	17.5	DOON - C3	- eur	 DV =	UPE - I	SITE	1		Щ					HOLE NO	. <u>.</u>
SS = SPI					,		j	I.F.	K	ennedy Pai	k (LC	DI)			081R

		E(OLOG	IC D	RIL	L LO	G	PROJE	L1	FUSRAP		јов но. 14501-	1	OF 1	HOLE NO. 1054R
IT I		'.Ke	nnedy	Park (T.OD	τı	COORDINA	NTES		N 1,792 E 207		A	NGLE FR Vert	OM HORIZ	BEARING
EGL	JN	C	OMPLETED	DRIL		<u>-, </u>	<u> </u>			· · · · · · · · · · · · · · · · · · ·	SIZE	OVERBURDEN		(FT.)	TOTAL DEPT
			0-22-8		POVE	E.D.	I. ESEL. TO	2 606	M	OBILE B-57	6.5"	18.1			18.1
		5.8		-,	. 5012	9	ESEL. 10	r uns.	1 NG N	ROUND EL. DEPTH/E	EL. GROUN / 10/11/8	B7 WATER	DEPTH	/EL. 10P /	OF ROCK
AMF			R WEIGH		CAS	ING LE			A./LE	NGTH LOGGED BY:					· · · · · · · · · · · · · · · · · · ·
k e			lbs/30		IATE:	3	N/	4	T T			D. Harn	ish		
SAND DIAM.	SAMP, ADU,	BAMPLE REC	SAMPLE BLOWS "N" % CORE	Loss IN G.P.M	JATEI ESST: ON ON ON ON ON ON ON ON ON ON ON ON ON O	RE	ELEV.	DEPTH	GRAPHICS					WATER CHARA	ON: LEVELS, RETURN, CTER OF LNG, ETC
<u>ss</u>	2.0	1.7	8-7-6 11			,	,			0.0 - 5.3 Ft. Silty: (SM, SP). 0.0-2.0 Ft. Silty: (5YR4/4), fine- 2.0 - 5.3 Ft. Sa: (10YR5/8), fine-	y sand, re grained, s and. yellow	ddish brown mall gravel. vish brown		0-18.1 i i.d. splii sampler	e advanced it. using 3" :-spoon and 6.5" o.c am augers.
	2.0	1.7	5-10				Ž -	5 <u>.</u>		5.3 - 10.0 Ft. CLA brown (2.5YR6/ hydroxide (light becomes dark br	Y (CL). (4), mottle yellowish	Light reddisled with iron brown) stainward.	n n,	land can	e was ically sampl ima-logged berline, Cor Groundwate
	2.0	2.0	14-13 8-7			-	_	10.		6.0-8.0 Ft. Dar plant material. 9.1-10.0 Ft. Da silt.	rk brown ((7.5YR4/2), 1		observe open 5	d after hole
	2.0	2.0					-			10.0 - 12.0 Ft. CL SM). Dark brow fine-grained; int layers.	AY and S wn (7.5YF terbedded	AND (CL, 14/2), sand is with 0.3-0.5	n. /	saturate	
	2.0	1.3	9-11 12-13				-	15.		12.0 - 14.5 Ft. SA (7.5YR4/2), fine 14.5 - 16.8 Ft. SIL (7.5YR4/2), mir clay.	ND (SP). e- to med T (ML). nor fine-g	Dark brown ium-grained Dark brown rained sand	wet.		
							-			16.8 - 18.1 Ft. SAI (7.5YR4/2) coar base; gravel is ro and green slate.	rse-graine ound to s	ed, gravelly t ubrounded q	oward	18.1 ft. refusal.	Auger
										Bottom of borehole Borehole backfilled	e at 18.1 F	°t. ils, 10/22/87			
			SPOON; S'			,,,	ITE	 	 .F.	l Kennedy Park	k (LO	DI)		HOLE NO	054R

GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET NO. HOLE NO.
SITE COORDI	FUSRAP	14501-138 1 OF 1 1095R ANGLE FROM HORIZBEARING
J.F.Kennedy Park (LODI)	N 1,819 E 220	Vertical
3EGUN COMPLETED DRILLER	DRILL MAKE AND MODEL SIZE	OVERBURDEN ROCK (FT.) TOTAL DEPTH
1-24-87 11-24-87 G. Engel; BNI		9.0 9.0
ORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. 7.0/78	OP CASING GROUND EL. DEPTH/EL. GROUND EL. DEPTH/EL	IND WATER DEPTH/EL. TOP OF ROCK
	OLE: DIA./LENGTH LOGGED BY:	
	ONE	R. Migues
		R. Migues
SAMP. DIAN. SAMP. GORE SAMPLE REC. SOMPLE REC. SOMPLE REC. SOMPLE REC. CORE BLOWS "N" X CORE RECOVERY LOSS LOSS LOSS LOSS LOSS LOSS LOSS LOS	DESCRIPTION OR SAMPLE SAMPLE CS	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS 1.0 0.8	0.0 - 1.2 Ft. <u>SAND</u> (SP). 1 (5YR5/6). Fine- to med	
SS 1.0 0.9 SS 1.0 1.0 SS 1.0 1.0 SS 1.0 0.8	(5YR5/6). Fine- to med 0.2-0.8 Ft. Silty clayey (5YR2/2), fine- to coars small rounded pebbles. 0.8-1.2 Ft. Sand; light b very fine- to fine-grained	sand; dusky brown e-grained with solid-stem augers.
SS 1.0 0.5	dusky yellowish brown (1	l0YR2/2). [[]
3\$ 1.0 1.0	1.2 - 3.3 Ft. Silty SAND (S reddish brown (10R5/4).	M). Pale Borehole was radiologically sampled
3S 1.0 1.0	1.2-1.4 Ft. Mottled with	TMA-Eberline Com
 	(5R4/6).	%
	3.3 - 4.2 Ft. SAND (SP). New yellowish brown (10YR5) coarse-grained with small 4.2 - 5.0 Ft. Sandy CLAY (Brownish gray (5YR4/1) coarse-grained sand compebbles to 0.5 in. 4.2-4.4 Ft. Capped by by (5YR2/1).	CL-SC) Fine- to ponent, with rownish black
	5.0 - 7.0 Ft. SAND (SP). I gray (5Y5/2), fine- to ver with rounded pebbles. 7.0 - 8.0 Ft. CLAY (CL). F (5R6/2) mottled with light	ry coarse-grained
	and grayish brown as bles	bs (5 Y R3/2).
	Bottom of borehole at 8.0 Ft Borehole backfilled with spot	ils, 11/24/87.
		·
		, .
		1
		1
		Description and classification of soils by visual examination.
= SPLIT SPOON; ST = SHELBY TUBE; SITE = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LOI	HOLE NO.
The state of the s	Jan altermedy Falk (LUL	DI) 1095R

_	_							PROJEC	T				JOB NO.	SHEE	T NO.	HOLE NO.
	G	EO	LOGI	CD	RILI	r ro	G				FUSRAP		14501-1			1109R
ITE							COORDINA	TES					AN	GLE FRO	M HORIZE	EARING
	J.F.		nedy I			I)					,546 E 225			Vert		
EGU	N	co	MPLETED	DRILL	ER				DRIL	L MAK	E AND MODEL	SIZE	OVERBURDEN	ROCK	(FT.)	TOTAL DEPTH
			1-3-87			E.D.		l			BILE B57	6.5"	10.0			10.0
ORE	REC	OVERY	(FT./%	CORE	BOXE	SAMPL	ESEL. TO	P CAS	ING	GROU	ND EL. DEPTH	/EL. GROU	ND WATER	DEPTH/	EL. TOP	OF ROCK
	7	.4/7	74	1		5					美分			<u> </u>	/	
AMP	LE H	AMMER	WEIGHT	/FALL	CAS	ING LE	FT IN HO	E: DI	A./L	ENGTI	LOGGED BY:					j
	1	40 I	bs/30 i	n	L_		NO	NE					D. Harn	ish		
ŭ,					JATER	₹										
ANG DIANE	35	필입	BLOWS "N" X CORE	PR	ESSU			I	BRAPHICS	Щ					NOTES	ON:
描	6 8	<u></u>	트씨유글	m E		1	ELEV.	DEPTH	돛	털	DESCRIPTION	N AND C	Lassifica [,]	TION		LEVELS,
<u></u>	<u>n</u> z	긢끭	₹ 3	82 T	E99	말고로		뷤	₫	SAMPLE						RETURN, TER OF
琵		돌	교실/문	LOSS IN G.P.P	F. C.	HAN I			8	M					1	NG, ETC.
20	2.0	1 8	2-4-3-2		<u>a.a.</u>	 		<u> </u>	-		.0 - 6.0 Ft. SA	ND PILL (SP).		 	
35	4.0	1.5	2-4-0-2						-		0.0-2.9 Ft. Y		-	• >	Borehol	advanced using 3" i.d.
	l			[]		ĺ					very fine-grai	ned.	044 (101100)	-),	split-spe	oon sampler
SS	2.0	1.73	-4-8-N	L							•				and 6.5	o.d. em augers.
	ĺ			1	İ	١.			1		2.9-6.0 Ft. B medium-grain	rown (10Y	R5/3),		Borehol	: W85
ਰਰ	2.0	1.3	10-13		1		<u> </u>		-		medium-grain	ed, some s	ilt and gravel.		and gam	ically sampled ima-logged by
25	2.0	1.3	17-22			1	1	5.							TMA-E	berline, Corp.
			ļ			l	ļ	1		;		_			1	Ţ
SS	2.0	1.3		1			-	1	1:::		3.0 - 10.0 Ft. SA	ND (SP).			4-6 Ft.	sample ng something
			14-9						† :::		6.0-7.9 Ft. G medium-grain	rayish bro	wn (10YR5/2)	,	hard.	
20-	0.0		0 7 4 4	1	1	1		1	4		medium-grair	ied, some s	ilt.			ì
22	2.0	1.3	6-4-4-4	1		1		İ]		7.9-8.0 Ft. S	and, coarse	e-grained, som	e		1
	1			ļ	1	1		10	1		gravel, well re	unded.				
				1]	1	-	1		\prod	8.0-10.0 Ft.	Fine-grain	ed, wet.	/		
	1									11 '						
)	1	İ	Ì	Ì	1		1	1	11 3	Bottom of boreh Borehole backfill	ole at 10.0	Ft.			
	İ	l					ļ			11 '	Borenoie backitti	ed with sb	OHS, 11/3/67.			
		1	{	<u> </u>											İ	
	İ	-														
						1										ŀ
		1	1	Ì		1	1)	1						1	
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		1						Į		$\parallel \parallel$					examin	
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		l	1	1	1										1	
_	 _		SPOON; S	T - 611	ELBY '	rupe.	SITE							·	HOLE N	
			SPOON; S N: P = P			,			J.F	.Ke	ennedy Pa	ırk (L(DDI)		1	.109R

į	G	EC	LOG	IC D	RIL	L LO	G	PROJEC	T		FUSRAP	JOS NO. 14501-13		ET NO. OF 1	HOLE NO. 1053R
SITE	="				***************************************		COORDINA	ATES			TODRAI			ON HORIZ	
			nnedy]			I)	<u> </u>				1,932 E 235		Vert	ical	
8EGL		1	MPLETED		.ER	~ ~	-				NKE AND MODEL SIZE	OVERBURDEN	ROCI	(FT.)	TOTAL DEPTH
			0-21-8		POVE	E.D.	I. ESEL. TO		N	10	BILE B-57 6.5'	18.0	<u> </u>		18.0
		2.2/		i) COKE	; BUAE	9	ESEL. 10	PEAS	NG	GRO	UND EL. DEPTH/EL. GROU	JND WATER	DEPTH	/EL. TOP	OF ROCK
SAME			R WEIGHT	/FALL	CA:		FT IN HO	LE: DI	A./L	ENG	TH LOGGED BY:			/	
	. 1	40	bs/30	in			N.					D. Harnis	h		
Ш.	جات	ပြုံ		1	WATE				_	Τ	 			T	
DIAM.	98		교로 유민	PK	ESSU TEST			I	ပ္သ	щ				NOTES	on:
6	.0	W	품칙 음을	o E	ë.	ш.	ELEV.	DEPTH	Ŧ	SAMPLE	DESCRIPTION AND C	LASSIFICATI	NO	WATER	LEVELS,
SAMP	취학	百品	82 %	G.P.	m S	HIN.		٥	BRAPHICS	3 8					RETURN, TER OF
Ø.⊄	81-	RO	BLOWS "N" % CORE		āa	FΣ			9					DRILLI	NG, ETC.
22	2.0	0.8	3-6-5-7] .				_			0.0 - 7.8 Ft. Sandy SILT. and Silty SAND FILL ()	Gravelly SILT.		Borehole	advanced
					-		,				0.0-4.0 Ft. Silty sand,	•	.	0-18 Ft.	using 3" i.d. on sampler
SS	2.0	0.3	3-14 5-22] .				•			(2.5YR3/4), fine-graine and Brunswick sandstor	d, bits of charcos	d	and 6.5"	o.d.
			*					-			sandy silt topsoil, dark l	brown (10YR3/3).	B011G-826	m augers.
SS	2.0	0.5	6-3-4-5												
		ł						5_			4.0-7.8 Ft. Gravelly sili (7.5YR4/6) and brown ((7.5YR5/2); grav	el is	Borehole	. Was
SS	2.0	2.0	5-5-4-4					-			concrete, broken Brunsv yellowish brown silt peb	vick shale, soft		radiolog	ically sampled ma-logged by
	İ	ļ						-			green and brown clay pe brown decomposed plan	abbles: minor dar	k	TMA-E	berline, Corp.
SS	2.0	2.0	2-4-5-9				=	-		-	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			4	
]					-		}	7.8 - 8.0 Ft. <u>SAND</u> (SM). (7.5YR2/0), medium-gr	ained, some	- [İ	
SS	2.0	10	3-6-6-8		1			10_			charcoal, horizontally be			1	
33	2.0	1.0	3-0-0-0					_			8.0 - 14.3 Ft. <u>CLAY, some</u> <u>SAND</u> (CL-ML, SM).	SILT, minor			
- 60	•	<u></u>] _		B	8.0-10.0 Ft. Clay, pinki	ish gray (7.5YR6	/2)		
SS	2.0	1.1	10-16 19-20		İ						8.0-10.0 Ft. Clay, pinki mottled with yellow iron slightly damp, moderate	ı-hydroxide; ely stiff.	. ,		
SS	0.0										10.0-11.0 Ft. Clay and			1	
33	2.0	1.7	5-10 15-13				-	15_		\bigcap	(10R5/1).		ſ	1	
SS	2.0	2.0	4-10-23		1		_				11.0-11.2 Ft. Sandy gra 11.2-12.0 Ft. Sand, gra		-	1	
			100/2"					-	•		medium-grained.	•	-		
					ĺ		=	-		Ħ	12.0-14.8 Ft. Clay, red	dish gray (10R5/	1).	18.0 ft.	Sampler
					ĺ						14.3 - 16.0 Ft. SAND and CL). Sand is dark yello	CLAY (SM, wish brown	ı	refusal.	
											14.3 - 16.0 Ft. SAND and CL). Sand is dark yello (10YR4/4); Clay is 5-10 weak, red (5YR5/2).) mm interbeds,			
											L		-1		
					1						16.0 - 17.5 Ft. Gravelly S. Strong brown (7.5YR4/ medium-grained sand as	6), fine- to nd dark green sh	ale,		
											suprounded.		·		
											17.8 - 18.0 Ft. CLAY (CL (7.5YR3/2). Bedrock, di shale at base, horizontal). Dusky red ark green Brunsv lly fractured.	rick		
											Bottom of borehole at 18.0	Ft.			
							'				Borehole backfilled with sp	oils, 10/21/87.			
;					l										
·															
														Descript	ion and
					•									classifics	tion of
														examina	
					1										
			20011 ==	L		, ₀₅ 6	1TE	L						HOLE NO	
			POON; ST ; P = PI			, ,	. 15	J	.F.	Ke	ennedy Park (LO	DI)		HOLE NO.	53R

	G	iEC	LOG	IC D	RIL	L LO	G	PROJE	CT		ETIOD AD			JOB NO.		ET NO.	HOLE NO.
SITI							COORDINA	TES			FUSRAP			14501-1		OF 1	1200R
		.Ke	nnedy 1	Park (LOD)I)					,806 E 2	16				tical	****
3EG			MPLETED	1		.	*****				AND MODEL	SIZ	_	OVERBURDEN			TOTAL DEPTH
			2-1-8'		BOXE	Engel	; BNI	P CAS	M	inute GROUN	man Augei		4"	8.4	benzu	1/21 +65	8.4
		7.6/	90			9		• •		N.COR	¥	n/EL. /	UKOU	W MAIER	DEPIR	I/EL. TOP /	OF ROCK
SAMI			R WEIGHT		CAS	SING LE			A./L	ENGTH	LOGGED BY:				1		· · · · · · · · · · · · · · · · · · ·
			os./18		-		NO	NE	-		<u> </u>			R. Migu	es		
, ,	김씨		SAMPLE BLOWS "N" % CORE RECOVERY	PR	WATER	RE		_	၅			•					
Tro	₽ B	T E	5°000	m E	TESTS	T	ELEV.	DEPTH	Ħ	SAMPLE	DESCRIPTION	ON A	ND CL	_ASSIFICAT	TION	NOTES	ON: LEVELS,
SANF or TAF.	윤교	티	SA CO	LOSS	PRESS. P.S.I	HAN.		日日	GRAPHICS					•		WATER	RETURN,
% <u>₹</u>	89	ğ ö	<u> </u>	<u>ه</u> -	<u>g</u> g	⊢ Σ:			L								NG, ETC.
33	1.0	1.0		Į		!	=			0.0) - 0.7 Ft. Si brown (5YR	ty SA	ND (S Fine-	M). Moderate to	1	Borehole	advanced
	1.0	0.8		1		,								to at the surfac	"	i.d. split	. using 3" -spoon
	1.0	1.0			İ					0.	7 - 1.0 Ft. <u>Cl</u> Dusky yellov	ish br	own (AND (SC-SM) 0YR2/2) mot	tled		and 4" o.d. m augers.
	1.0	1.0 0.6				!					with modera	ie read	lish or	ange (10R6/6)	and		-
	1.0	1.0			•			5_		1.0) - 5.6 Ft. S/	ND (SW). 1	Moderate			
	1.0	0.9					-		-	h	yellowish bro medium-grai	wn 10 ned.	YR5/4	i), line- to	1	Borehole radiolog	ically sampled
	1.0	1.0									1.0-1.7 Ft. 1	víoder	ate red	(5R4/6).		and gam	ıma-logged by berline, Corp.
	0.4	0.3		1							1.7-1.9 Ft. 1 (10YR4/2).	Dark y	ellowi	ih brown	1		
											2.5-2.6 Ft. 1)ark v	ellowie	th heaven	1	Ŋ	
											(10YR4/2).	,,	-110 111	0,0 4 11	A	Augered	and
											2.6-3.7 Ft. 1	•		• • •	Į.	gamma-	logged to 7.0
										5.0	6.4 Ft. Pe Moderate rec	bbly S	ROWN	(SG). (10YR5/4) wi	th.		
					ĺ						pale yellowis very coarse-	h brow	vn (10) d. and	YR6/2), fine- pebbles to 0.5	to		
															- 11	1	
										6.4	i - 8.4 Ft. C yellowish bro	MY (1	CL). N OYR5/	Aoderate 4) mottled wi	th		
											grayish oran brown (5YR	ze pini (/6).	k (5YA	17/3) and ligh	•		
								·			6.9-7.0 Ft.						
														6/2) mottled v		ľ	
											orange (10R)	(6).	/4) an	d dark yellowi	sh		
					1						ttom of bore		0 / 10/				
											rehole backfi						
					İ												
									ŀ								
				-													
																Descript classifics	stion of
					'											soils by	
					1												
		لـــا		<u> </u>	<u> </u>	<u> </u>				Ц							
			POON; ST				ITE	J	.F.	Ken	nedy Pa	rk ((LO	DI)		HOLE NO.	200R

	G	EC	LOG	ilC	: DI	RILI	. LO	G	PROJE	CT		FUSRAP		JOB NO	. sне -138 1	ET NO.	HOLE NO.
SITE		•					-	COORDIN	ATES							OM HORIZ	
			nedy				I)	<u> </u>				1,849 E 254			Vert	ical	
BEGU		ł	MPLETE		RILL					i			SIZE	OVERBURDEN	ROCI	((FT.)	TOTAL DEPTH
			1-17-1		COPE			BNI	D CAS			teman Auger UND EL. DEPTH/	4"	9.0	DEDT!	/C1 TOD	9.0
CORL		3.6/S		~,	CONL	DOAL.	9	-3	F LAS	ING	GKU		EL. GRUL	NAU WATER	DEPIR	/EL. 10P	OF ROCK
SAMP			R WEIGH	T/F	ALL	CAS		FT IN HO	LE: DI	A./L	ENG	TH LOGGED BY:			<u>l.</u>		<u>'</u>
			bs/18					NO	NE					R. Mig	ues		
PE	2 m	Ö.	±. ,		80	ESSU				60			•				
SAMP. TYPE	SAMP. AD	SAMPLE REC	BLOWS "N" X CORE	1 088	E N.C.	PRESS. P.S.I.		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION				WATER	ON: LEVELS, RETURN, CTER OF ING, ETC.
SS	1.0	0.8		Т								0.0 - 1.6 Ft. SAN orange (10YR6	D (SP).	Dark yellowi	sh	Boreho	le advanced
SS	1.0	1.0		1				_	- 1	,,,,		yellowish brown coarse-grained	n (10YK4	/2), fine- to	very /	0-9.0 F	t. using 3"
SS	1.0	0.8							1			\		(78C)		aample:	r and 4" o.d. em augers.
SS	1.0	1.0		7			•		'			1.6 - 2.0 Ft. Clay Moderate red 5	R4/6), fi	ne- to very	abbles	-011G-86	em enfets.
SS	1.0	1.0		1					_'			coarse-grained to 1 in.	Airu ILF	menes sua b	ennies		
SS	1.0	1.0		1				-	_ 5_	Ш		2.0 - 5.3 Ft. Silty reddish brown	SAND (SM). Moder	ate ,	Boreho	
SS	1.0	1.0	 	1					'	1		reddish brown medium-graine	10 Y K 5/4 ed.	j, nne- to	}	and gar	gically sample mma-logged b
SS	1.0	1.0	 	\dashv				-	7			2.0-2.1 Ft. Cla brownish black	yey; oily	(?) - dry son	e.	TMA-	Eberline, Corp
SS	1.0	1.0	<u> </u>	1									-	-	1		
				-	- 1			-	1			5.0-5.1 Ft. Fa sone.	int brown	nish black (5)	(R2/1)	┥	
												5.3 - 6.8 Ft. SAN	D (SP).	Dark yellowi	sh	Augere	d to 9.0 Ft.
												orange (10YR6	•	_	J)	Gamma Ft.	a-logged to 7.
						!			1			6.1 Ft. Brunsv		•	n.		
										1		6.1-6.8 Ft. Ve	ry coarse	-grained.			
			:									6.8 - 9.0 Ft. CLA	Y (CL).	Pale red	R4/2)		
				ł	}							(5R6/4) mottle and light brow	n (5YR5/	6).	,,,,,		
												8.3-9.0 Ft. Mo (10YR5/4).	oderate y	ellowish brow	'n		
												Bottom of borehol Borehole backfille	d with cle		.0 Ft.		
[1									lifts, 11/17/87.	•				
				1													
					Ì												
	ļ								1	1	Ш						
			1														
							•									1	
]									
									ŀ							1	
																	otion and
											$\ \ $						visual
										1						Evenuin	iativii.
							1										
		1							1								
ss :	SPI	IT S	POON; S	T =	SHE	LBY TU	JBE; S	ITE	1,		1 <u> </u>			,D1,		HOLE N	
D =	DEN	I I SON	; P = F	PITO	HER;	0 = 0	THER			J.F.	K	ennedy Par	K (LC	(וטו		1	.091R

	G	FΩ	LOG	וכ ח	PII I	110		PROJEC	T				JOB NO.	SHE	ET NO.	HOLE NO.
SITE			LUG			LLU	COORDINA	1750			FUSRAP			138 1		1090R
3115		.Ker	nedy]	Park (LOD	T)	COOKDINA	41ES		N	1,892 E 258		ľ		ON HORIZI	BEARING
3EGU			MPLETED				<u> </u>	k	RIL		KE AND MODEL	SIZE	OVERBURDEN		tical K (FT.)	TOTAL DEPTH
			l-17-8				; BNI		M	inut	eman Auger	4"	9.0	""		9.0
CORE				CORE	BOXE	1	ESEL. TO	P CASI	NG	GROL		EL. GROU	ND WATER	DEPTH	/EL. TOP	
2410		.5/9	4 R WEIGHT			10					¥ /					
SAMP			bs/18 i	-	LAS	SING LE	NO:		A./L	.ENG1	H LOGGED BY:		D 14:-		•	•
ш	4 7.	.:	73/10 1	1	JATE	7	140	NE		П			R. Mig	ues	T	
SAND OIAM.	EN CORE	MPLE REC ORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	PR SSOJ SSOJ	ESSU FESTS	RE	ELEV.	ОЕРТН	GRAPHICS	SAMPLE	DESCRIPTION	I AND C	lassific <i>i</i>	HOITE	WATER	ON: LEVELS, RETURN, CTER OF
8€	8 -	50		7 0	g.a.	ΕΣ			6	∐_					DRILLI	NG, ETC.
33	1.0	1.0]			ł	١.			0.0 - 1.3 Ft. <u>SAN</u> yellowish brow coarse-grained	D (SP). n (10YR5	Moderate /4), fine- to	very	Borehole	advanced
SS		1.0					-		m	h	coarse-grained	. FILL.		·	i.d. split	. using 3" -spoon
SS		1.0						•			0.3-0.7 Ft. Li	tht brown	(5YR5/6).		sampler	and 4" o.d.
SS		0.9					į	-		1	0.7-1.3 ft. Pal grains of very	e brown (5YR5/2) with	h		
SS	1.0	1.0	-]			-	5_		R	1.3 - 4.0 Ft. Silts				A	
SS	1.0	0.9		1			-	"-			Moderate red coarse-grained	5R4/6), f	ine- to very	n	Borehole	e was ically sampled
SS	1.0	1.0		1				-			in.).	wien ierk	e pennies (1.		and gan	ma-logged by berline, Corp.
SS	1.0	1.0		1			=	1 -			2.4-4.0 Ft. Da (10YR4/2).	rk yellowi	ish brown		H	bernne, oorp.
SS	1.0	0.7		1			_					ey SAND	(SC).			
											4.0 - 4.4 Ft. <u>Clay</u> Brownish gray medium-grain	(5YR4/1) ed sand.), fine- to		Augered	l to 9.0 Ft.
											4.4 - 5.7 Ft. CL/ gray (5YR6/1) gray (N6), dar (10YR6/6), an	Y (CL). mottled k yellowis d grayish	Light browni with medium h orange red (5R4/2).	sh light	Gamma Ft.	-logged to 8.5
											5.3 Ft. Thin s orange (10YR)	and sone; 5/6); fine-	dark yellowis	sh ained.		
											5.4-5.7 Ft. Be gray (5YR4/1)	coming da	arker to brow	nish		
											5.7 - 7.0 Ft. <u>Silts</u> Brownish blace medium-grain	E (5YR2/)	LAY (CL-M	L).		
											6.3-6.4 Ft. Br	ownish gr	ay (5YR4/1)			
						-					7.0 - 7.4 Ft. Silty gray (5G6/1), mottled with n and moderate	noderate d	live brown (ained. 5Y4/4)		:
			:								7.4 - 9.0 Ft. CL/ (5R6/2) mottle and light gray	Y (CL).	· · · · · · · · · · · · · · · · · · ·	YR5/6)		
											Bottom of boreho Borehole backfille			7.		
											orn or					
															Descript classific soils by examina	visual
\Box				<u> </u>		1	<u> </u>		<u> </u>	Щ					HOLE NO	 -
			POON; ST ; P = P1			, ,	ITE	J	.F.	Ke	nnedy Par	k (LO	DI)		HOLE NO	090R

	G	FO	LOG	וכ ח	PII	, i	T NO. HOLE NO.				
SIT			LOG		1712	LLU	COORDINA	TEC		FUSRAP 14501-138 1	OF 1 1055R M HORIZBEARING
		.Keı	nedy I	Park (LOD	I)		.,		N 1,933 E 263 Verti	ŀ
BEG		- 1	MPLETED		.ER						(FT.) TOTAL DEPTH
)- <u>22-8</u>			E.D.			M		0.1 17.3
CURI		2.5/) CORE	: BUXE	SISAMPI 9	ESEL. TO	P CASI	ING G	ROUND EL. DEPTH/EL. GROUND WATER DEPTH/	EL. TOP OF ROCK
SAM			WEIGHT	/FALL	CAS		FT IN HO	E: DI	A./LE	IGTH LOGGED BY:	17.0/
			bs/30			·-	N/			D. Harnish	
a.	ŞΨ	ပ္ပုံ	BLOWS "N" X CORE	PR	JATE				8		
orAM.	문	RE	7. 85		TEST:		ELEU.	Ŧ	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON:
 	ůΖ	귀	£200	SZ.	H	분고호		DEPTH	1	DECORAFIZON AND CENSUL ZORIZON	WATER LEVELS, WATER RETURN,
S S S S S S S S S S S S S S S S S S S	E E	₹ O	8월2분	1.038 1.7.9	7.4 9.8	E ZZ		"	A S		CHARACTER OF DRILLING, ETC.
SS	2.0	1.8	3-5-6-4		11.11		_		XXXX	0.0 - 0.3 Ft. TOPSOIL (PT-SM), Dark	
								-		brown (10YRS/3).	Borehole advanced 0-17.1 Ft. using 3"
SS	2.0	1.7	3-6-8-9			ļ		-	†	0.5 - 3.8 Ft. Silty SAND and SILT FILL (SM, ML). Strong brown (7.5 YR4/6), very	i.d. split-spoon sampler and 6.5" o.d.
						·			11	fine-grained, minor coarse-grained, damp toward base.	solid-stem augers.
SS	2.0	1.2	6-3-2-2			1	_	•	1111	2.3-3.8 Ft. Silt, mixed very dark brown	
!							Ž	7 5 <u>-</u>	 	(10YR2/2) and black, small charcoal pieces, plant debris, minor gravel.	Borehole was
SS	2.0	1.6	2-7-6-9						-	3.8 - 7.0 Ft. Clayey SILT, FILL (ML).	radiologically sampled and gamma-logged by
							-	-		Black (10YR2/1), sandy toward base. 7.0 - 11.0 Ft. SAND (SM). Dark gray (10YR4/1) with bluish gray mottling, very	TMA-Eberline, Corp. 5.3 Ft. Groundwater
SS	2.0	0.0	3-6-6-2					-		(10YR4/1) with bluish gray mottling, very fined-grained.	observed after hole open 5 hrs.
								-		Ť	•
SS	2.0	2.0	3-8-3-8			ļ		10_			7-11 Ft. Distinct
							-			10.0-11.0 Ft. Interbeds of silt and medium-grained sand.	chemical odor on fresh surfaces.
SS	2.0	1.5	2-3-3-4				-			\11.0 - 12.0 CLAY (CL). Weak red	
					<u> </u>			•		(2YR4/2).	
SS	2.0	2.0	7-3-8-9		ļ		_	.		12.0 - 13.8 Ft. SAND (SM). Gray (10YR5/1), fine-grained on top, coarsening	
					İ	ļ		15_	•	with depth.	
SS	1.1	1.0							•	13.8 - 14.2 Ft. SILT (ML). Yellowish brown (10YR5/6).	
-			100/0"				-		*	14.2 - 17.0 Ft. SAND (SW). Strong	17.1 ft. Sampler
										brown (7.5YR4/6), medium-grained, some subrounded gravel.	refusal.
							ļ			10.0-15.1 Ft. Some gravel.	
										16.5-17.0 Ft. Some subrounded gravel.	
i											•
					1					17.0 - 17.1 Ft. SHALE. Dusky red (10YR3/2) Brunswick shale, top of bedrock?	
										Bottom of borehole at 17.1 Ft.	
			,	1						Borehole backfilled with spoils, 10/22/87.	
					1						
					 						
				1				1		•	
							<u> </u>				
							1				
											Description and
											classification of soils by visual
1				1							examination.
				1							
-			20011 - 27	<u> </u>		I Is	ITE	<u></u>			HOLE NO.
			POON; ST ; P = PI			, ,		J	.F.k	(ennedy Park (LODI)	1055R

	G	FC	LOG	ור ח	DII	1 10)G	PROJEC	:1				JOB NO.	SHE	ET NO.	HOLE NO.
ITE			LUG	<u> </u>	KIL		_				FUSRAP		14501-			1064R
1115		Ka	nedy	Dark /	T On	AT\	COORDINA	ATES		.	T 3-	•	^		OM HORIZI	BEARING
EGU			MPLETED			<u>'1)</u>	<u> </u>		DIII		,707 E 27	SIZE	OVERBURDEN	Vert	(FT.)	TOTAL DEPTH
0-	26-	1	0-26-8			E.D.	I.				ILE B-57	6.5"	21.5	ROCI	0.5	22.0
ORE				() CORE	BOXE		ESEL. TO	P CAS	NG	GROUN	D EL. DEPT	I/EL. GROU		DEPTH	/EL. TOP	
		9.9/				11					¥ /				21.	5/
AMP			R WEIGHT	•	CAS	iing LE	FT IN HO		A./L	ENGTH	LOGGED BY:					
-			bs/30	· · · · · · · · · · · · · · · · · ·	14		N.	<u> </u>	7	-			D. Harn	ish		
毙	SAMP. ADV.	о С	BLOWS "N" % CORE	PR	JATE!	IRE			92			•				
-H	₹ Ö	H H	5 E		TEST	T	ELEV.	F	Ħ	7	DESCRIPTIO	N AND C	LASSIFICA	TION	NOTES	ON: LEVELS,
30	ůΖ	김씨	EB 00	SZ.	8 H	HAN.		DEPTH	GRAPHICS	SAMPLE					WATER	RETURN,
裻	급	₹ 0	∃\ <u>~</u> #	LOSS IN P.H.	PRESS.	HH		-	8	NI.						TER OF NG, ETC.
38	2.0	1.7	3-4-7-7			-		 		0.	0 - 4.0 Ft. SA brown (10YR	ND PILL (SP). Yellowis	h		, 2.01
								-		i	brown (10YR	5/6), fine-`ş	rained.			advanced using 3" i.d.
SS	2.0	1.3	4-5-10	1	ĺ			-							split-spe	on sampler o.d.
			7												solid-ste Borehole	m augers.
SS	2.0	1.3	4-10	1			-	-		4	1 - 7.0 Ft. SA	ND (PILL)	Grav		radiolog	ically sampled ma-logged by
			10-7					5_		•	(10YR5/1), m coarse-graine	edium-gra	ned, some		TMA-E	berline, Corp. Saturated.
<u>38</u>	20	1.8	5-10		İ						coarse-graine	d sand and	sman graver.		8-22 Ft.	Saturated.
33	2.0	1.6	10-7	i	ĺ		-						_			
	• •									7.	0 - 21.5 Ft. <u>S.</u> to medium-gr		Brown, fine-			
SS	2.0	1.8	2-3-6-6								7.0-16.0 Ft.	Brown (10)	(R5/3), some	root	1	
					1			10_			hairs.	•	· . • ·		ļ	
SS	2.0	2.0	2-2-5-6	Ì												
		,						-								
SS	2.0	2.0	6-3-3-6	1				-							ļ	
								•								
SS	2.0	2.0	4-4-4-3					-			13.0-13.7 Ft.	Medium-g	rained, some	gravel.]
								15_								
SS	2.0	2.0	2-2-6-3													
								-			16.0-20.0 Ft.	Brown (7.	5YR4/2).		!	
S\$	2.0	2.0	2-3-3-5					-								
					l			-		ŀ						
SS	2.0	2.0	WH-WI				1	20_			19.1-20.0 Ft.		ed silt, reddis	h	Walaba	-63
	4.0	2.0	1-50	1]				brown (5YR5	•	*1. 1		drove sa	of hammer impler 1 Ft., 1
_		-					-			\Box	20.0-21.0 Ft. (7.5YR5/4), f	sand and ine-grained	sut, prown l sand.	ſ,	bedrock	pped 6" to , and the last
										1 2	1.5 - 22.0 Ft.]	EDROCK	Dark reddis	h /	22.0 Ft.	into bedrock. Sampler
							ļ	1		L	brown (5YR3	/2), Brunsv	vick shale.		refusal.	
					1			ł		В	ottom of boreh	ole at 22.0	ſt.			
					ĺ					B	orehole backfill	ed with spo	oils, 10/26/87	•		
ļ					1		·									
							1								Descript	
				!							•				classifica	visual
]							examina	tion.
]							1									
						l Inc. le	ITE	<u> </u>	<u></u>	1					HOLE NO	
			POON; ST ; P = P1			, ,		J	.F.	Ker	nedy Pa	rk (LO	DI))64R

	Ŀ	FΛ	LOG	ר ה	DII I	10	C	PROJEC	Τ.				JOB NO.	1	T NO.	HOLE NO.
SITE			LOG		NIL.	LLU	COORDINA	TEC			FUSRAP		14501-1			1190R
2115		Ker	nedy l	erk (ፒረንኮ	n	TORU IN	1153		N	1,506 <u>E 283</u>		, AN	GLE FRO Vert	OM HORIZ	DEAKING
BEGL			MPLETED			<u>., </u>	1	i	RIL				OVERBURDEN		(FT.)	TOTAL DEPTH
12-	-2-8	7 1	2-2-87	,		E.D.	I.	1			BILE B-57	6.5"	8.0			8.0
CORE) CORE	BOXE		ESEL. TO	P CASI	NG	GR	OUND EL. DEPTH	EL. GROU	ND WATER	DEPTH,	EL. TOP	OF ROCK
		.9/			lase	4	F7 111 110	F			¥ /			<u> </u>		
SAM			WEIGHT		CAS	SING LE	NO!		A./I	LEN	TH LOGGED BY:		D. Harni	-L		
111	14	0 ID	s./ 30	10.	JATE	7	NO	NE.	T-	TT		ويناج وابتكاره	D. Haru	.511	T	<u></u>
<u>, , , , , , , , , , , , , , , , , , , </u>	김분	SEC.	BLOWS "N" X CORE	PR	ESSU EST:	RE		-	SS	Ш		•			NOTES	ON:
H	뜨용	3 25	투 이었음	22		T	ELEV.	DEPTH	뛽	ᆸ	DESCRIPTION	AND C	Lassifica:	rion	WATER	LEVELS,
<u></u>	후곱	피뜌	\$3.50 83 83.50 83 83 83 83 83 83 83 83 83 83 83 83 83	LOSS IN P. P. A	88	E SE			BRAPHICS	SAMPLE						RETURN, CTER OF
SE SE	찞그	Ž C	<u>, Ч, , ≖</u>	ان تر	PRESS. P. S. I.	FUE			₫	П						ING, ETC.
SS	2.0	1.5	3-8-4-4								0.0 - 4.2 Ft. Silts FILL (SM, ML	SAND at	d Sandy SILT		Borehol	e advanced
						ļ						•	allamich brown		0-8 Ft.	using 3" i.d. oon sampler
35	2.0	1.5	4-5-8-6				<u> </u>	! .			0.0-1.0 Ft. Sil (10YR5/6), da	rk brown	topsoil on top	and	and 6.5	' o.d.
						·					at base, fine-grat base.	carned; 191	Re biece or fig	D .	Borehol	
SS	2.0	1.6		1			\ -		Į Į		1.0-4.2 Ft. Sil brown (10YR4	ty sand, d	ark yellowish	ſ	and gar	rically sampled nma-logged by
			13-7					5_]		brown (10YR4) infrequent rous	/6), fine-g nd gravel,	grained with loose.	- 1	TMA-E	berline, Corp.
SS	2.0	1.3	11-11	1			1				4.2 - 8.0 Ft. SIL	r and SA	VD (ML, SM).			
			16-27					.	-[] [Strong brown medium-grain	(7.5YR4/6 ed, interbe	i), fine- to edded.		Hole car	ved in to 6.5
			<u> </u>				-		11		7 4.2-5.3 Ft. Sil			į	-	
			1		<u> </u>				ļ		5.3-6.0 Ft. Sil		ine-grained, so	me		
			-								small gravel.	,, -			1	
								ľ			6.0-6.4 Ft. Sil	t.		- 1		
					1						6.4-8.0 Ft. Sa	nd, fine-	to medium-gra	uned,∫		
	1		1								sugnery damp,	TOOSE.	<u>. </u>			
			l	1				l			Bottom of boreho	le at 8.0 F	't.			
			1							Ш	Borehole backfille	ed with sp	oils, 12/2/87.			
	1									\parallel						
					1			ţ	1							
1	1		1	-	1				1							
:	1				1	1	}		1						1	
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	-				}	}	}		1							
:			-			1										
1]	Ì	1									
								1							1	
		1.													Descri	otion and
															classifi	ation of
1	}			1		1		}	1						examin	ation.
									1							
Ì										_]						
SS	* SPI	LIT S	SPOON; S	T = SH	LBY 1	UBE;	SITE					, /	\O.1\		HOLE N	
in =	DEN	1 COL	1. P = P	ITCHED	. ^ =	OTHER			ıF	·κ	Cennedy Pa	rk (L(JUH		1 1	190R

GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET NO. HOLE NO.
	FUSRAP	14501-138 1 OF 1 1187R
J.F.Kennedy Park (LODI)	··· ···	ANGLE FROM HORIZBEARING
EGUN COMPLETED DRILLER	N 1,611 E 286 ORILL MAKE AND MODEL SIZE OVI	Vertical ERBURDEN ROCK (FT.) TOTAL DEPTH
12-2-87 12-2-87 E.D.I.	MOBILE B-57 6.5"	ROCK (FT.) TOTAL DEPTH
ORE RECOVERY (FT./%) CORE BOXES SAMPLES EL.	OP CASING GROUND EL. DEPTH/EL. GROUND	
6.5/81 4	\ \\\\\\\\\\\\\\\	/
	OLE: DIA./LENGTH LOGGED BY:	
	ONE	D. Harnish
SAMP. DIAT. SAMP. ADU. SAMP. ADU. LOSS CORE REC. CORE RE	, by []	
TESTS ELEV	GRAPHICS SAMPLICS SAMPLICS CONTRACTOR NOTATION N	NOTES ON:
	H DI DESCRIPTION AND CLAS	SSIFICATION WATER LEVELS, WATER RETURN.
SAND SAND SAND SAND SAND SAND SAND SAND		CHARACTER OF
SS 2.0 1.7 2-5-5-3	0.0 - 4.0 Ft Silty SAND and 0	DRILLING, ETC.
	0.0 - 4.0 Ft. Silty SAND and C SAND FILL (SM, SW).	Borehole advanced
SS 2.0 1.7 3-4-8	0.0-0.6 Ft. Silty sand, dark	grayish 0-8 Ft. using 3" i.d. split-spoon sampler
16	brown, topsoil.	and 6.5" o.d. solid-stem augers.
	0.6-3.2 Ft. Silty sand, yello (10YR5/6), fine-grained, sli	wish brown Borehole was ghtly damp. Borehole was radiologically sampled
SS 2.0 1.6 12-18 16-13	5 3.2-4.0 Ft. Gravelly sand, g	i and gamma-logged by
	broken and rounded basalt,	Brunswick
SS 2.0 1.5 7-11 15-12		
	4.0 - 7.3 Ft. <u>SAND</u> (SP). Gra (10YR5/2), very fine-graine	d, clean, faint
	bedding.	⊬ H !
	6.0-7.3 Ft. Minor iron-oxid	· · · · · · · · · · · · · · · · · · ·
	7.3 - 8.0 Ft. Silty SAND (SM) brown (7.5 YR5/6), fine- to medium-grained, saturated.	Strong
	medium-grained, saturated.	
	D	
	Bottom of borehole at 8.0 ft. Borehole backfilled with spoils,	12/2/87.
	· ·	ł
		İ
		Description and classification of
		soils by visual examination.
		examination.
S = SPI IT SPOON - ST = SHELRY TURE - SITE	1 1 1 1	HOLE NO.
S = SPLIT SPOON; ST = SHELBY TUBE; SITE DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LODI	

		PROJECT		JOB NO. SHEE	T NO. HOLE NO.
GEOLOGIC DRIL	L LOG	, KOBECT	FUSRAP	14501-138 1	1
SITE	COORDIN	ATES	TOSKAI		OM HORIZBEARING
J.F.Kennedy Park (LO	1		N 1,927 E 286	Verti	j
EGUN COMPLETED DRILLER					(FT.) TOTAL DEPTH
0-20-8710-20-87 G.	Engel; BNI	4	uteman Auger 4"	5.6	5.6
ORE RECOVERY (FT./%) CORE BOX	ES SAMPLESEL. TO	OP CASING GR			EL. TOP OF ROCK
3.7/66	5		₹ /		1
		LE: DIA./LEN	GTH LOGGED BY:		
N/A	NO			R. Migues	
WATE	R	T T II			
CE 김방 비리 PRESS	URE	DEPTH GRAPHICS SAMPLE			
TEST	ELEV.	DEPTH RAPHIC SAMPLE	DESCRIPTION AND C	LASSIFICATION	NOTES ON: WATER LEVELS,
	1 1 1 4 4				WATER RETURN,
SAMP. CONE SAMPLE CONE CONE CONE CONE CONE CONE CONE CON	H H H H				CHARACTER OF
No No B					DRILLING, ETC.
35 1.0 0.7			0.0 - 0.9 Ft. <u>Silty CLAY</u> (C red (5R4/2).	L). Grayish	Borehole advanced
SS 1.0 0.7			\	4 NO (CD)	0-5.6 Ft. using 3"
SS 0.7 0.6	.	1 1 1	0.9 - 2.0 Ft. Pebbly Silty S Moderate reddish brown	(10R4/6), fine- to [i.d. split-spoon sampler and 4" o.d.
SS 0.8 0.8	1	4 4	medium-grained. Pebble	is to 1.0 in.	solid stem augers.
SS 2.1 0.9	'		2.0 - 3.6 Ft. Silty Clayer S	AND (SM).	
	1 1	5_	Moderate brown (5Y3/4) dusky brown (5YR2/2) s	ilt or silty sandy	
	.		clay. Some decomposed	wood.	Borehole was
		1 11	3.5 Ft. 1.0 in. thick laye	r of silty sandy	radiologically sampled and gamma-logged by
		1 1	clay.		TMA-Eberline, Corp.
		1 11	3.6 - 5.6 Ft. Silty Sandy C	MY.	gamma-logged to 4.5
		1 []	(CL-ML). Olive black (coarse-grained sand. De	creasing sand	Ft.
		1 1 11	content with depth.		
		1 1 11			Hole was abandoned
		1 1	Bottom of borehole at 5.6 F Borehole backfilled with spo		after high toxic OVA readings were taken
		1 11	Doronto Datamica with upo	115, 10, 50, 01.	and driller was not
	1	1 11			qualified for controlled-area
	}	1 11			drilling.
]	1 11			
	1 1				
	1 1				
		1 11			
		1 1 11			
]]]			
]] []			
		1 11			
	1.				
		1 11			Description and
] [classification of
		1 11			soils by visual examination.
]			
		<u> </u>		· · · · · · · · · · · · · · · · · · ·	
SS = SPLIT SPOON; ST = SHELBY	TUBE; SITE				HOLE NO.
) = DENNISON; P = PITCHER; O =		J.F.K	Cennedy Park (LO	DI)	1028R

	G	ΕO	LOG	IC D	RIL	L LO	G	PROJE	T		FUSRAP		JOB NO.		ET NO.	HOLE NO.
SITE							COORDINA	TES			FUSKAF	<u> </u>		138 1	OF 1	1114R BEARING
			inedy l			(I)					N 1,928 E 290			Vert	ical	
3EGL		1	MPLETED 1-4-87		ER	E.D.	T	ľ			MAKE AND MODEL	SIZE	OVERBURDEN	ROCK	(FT.)	TOTAL DEPTH
					BOXE		I. ESEL. TO	P CASI	I ING	KR.	DBILE B-57	6.5"	12.0	DEDTH	/EL. TOP	12.0
		.5/				6					至 /	DD. GROO	mo wiith	DEF . II	/22. 107	OF ROCK
SAM			WEIGHT	-	CAS	SING LE	FT IN HO		A./L	EN	GTH LOGGED BY:					
-	1	<u>40 l</u>	bs/30	in			NO	NE	,	7			D. Harr	ish		
<u>F</u>	SI H	SEC.	BLOWS "N" X CORE RECOVERY	PR	JATEF ESSU	RE		_	20			•				
To	₹ 0	2 E	₹8 63 7. 80	m E	EST	T	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION	AND C	LASSIFICA	TION	WATER	DN: LEVELS.
<u>+</u>	민교	밀	\$5 \n	LOSS IN G.P.A	93. 1.	HINE NINE NINE NINE NINE NINE NINE NINE			₹	4					WATER	RETURN,
&⊈ G⊄	S I	SAP	₽ , <u>s</u>	7,9	PRESS. P. S. I.	F Ξ			9	П						ING, ETC.
SS	2.0	1.1	1-2-4-4								0.0 - 6.8 Ft. Silty (SM, ML, OL).	SAND a	od SILT PILI	4	Borehol	e advanced
								'			O0-2.0 Pt. S				0-12 Ft	using 3" id
33	2.0	0.9	1-2-6-8				,	•			(10YR5/6), fin brown topsoil.	e-grained	, mixed with	dark	and 6.5	oon sampler o.d. em augers.
								•		:	•	by sand d	lark gravish h	POWR	Borehol	e was ically sampled
SS	2.0	1.3	3-6-12 26					5_		ì	2.0-4.0 Ft. Sil (10YR4/2), fin	e-grained	, wet.		and gan	nma-logged by berline, Corp.
								*-			4.0-4.8 Ft. Sil brown and gra	and silty	y sand, reddis	h ·	1	bermie, ootp.
SS	2.0	2.0	8-5-5-7				_				1.8-6.8 Ft. Sil	•				OVA reads 6" into open
								·			of plywood and	cement,	oily wood and	1	hole.	o meo open
SS	2.0	1.8	3-4-11								6.8 - 8.8 Ft. SAN	T) and CI	TT (CD C)()			Ft. Distinct
						1	_	10			Light greenish medium-graine	gray, fine	- to	£	reads 2	ppm in
SS	2.0	1.4	2-3-5-5				_	10_			1-2 cm thick.	id, milet Di	eadea mirii sii		sample.	
											8.8 - 9.1 Ft. CLA (7.5YR5/0).	<u>Y</u> (CL).	Gray			
							-				W1			∦	1	
								•		П	9.1 - 10.7 Ft. <u>Sil</u> red, some roun	ded pes g	ravel, Brunsw	rick		
											sandstone grav		177 1 3			
										П	10.7 - 12.0 Ft. <u>C</u> (5R5/2) and gr	ay, inter	oedded 5-10 r	nm		
											Deas.					
					ĺ					Ш	Bottom of boreho					
											Borehole backfille	a with sp	0115, 11/4/87.			
										П						
										П						
	:					١.		İ		Ш						i
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															Descrip	tion and
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		1			1					$\ $						
		<u> </u>				1 1	ITE	<u> </u>	1	11					HOLE NO	<u> </u>
			POON; \$1 ; P = P1			ODC, -	115	L	l.F.	K	ennedy Par	k (LC	DI)			114R

	C	FC	LOG	ור ח	PII		G	PROJEC	T				JOB NO.		ET NO.	HOLE NO.
SITE			LUG		IXIL		COORDIN	TEC			FUSRAP		14501-		OF 1	1135R
	-	Mo	ney S	(LOI	OI)		COOKDIN	1123		N	1,991 E 299	ı	[*	Yert	ŀ	
BEGI		CC	MPLETER	DRILL			,		DRILL			SIZE	OVERBURDEN		(FT.)	TOTAL DEPTH
			1-13-8			E.D.					BILE B-57	6.5"	8.0	<u> </u>		8.0
CORE		OVER'		(a) CORE	BOXE	S SAMPL	ESEL. TO	P CASI	ING	GROL	IND EL. DEPTH/ マノ	EL. GROU	ND WATER	DEPTH,	/EL. TOP	OF ROCK
SAMI			R WEIGH	T/FALL	CA	1	FT IN HO	LE: DI	A./LE	NGT	H LOGGED BY:					
L	14	0 lb	s./ 30	in.			NO	NE					D. Harn	ish		
H.	ЫĊ	ပ္ပံု	BLOWS "N" X CORE		WATE				8	T						,
造	뮙뜴	RA	7. E	į	TEST:	\$` <u></u>	ELEV.	Ŧ	GRAPHICS		DESCRIPTION	E AND C	LASSTETCA	TTON	NOTES	
0.0	n z	빌	£305	SZ	S. H.	Wzż		DEPTH	훈		DESCRIPTION	. ~	EUGGEL FOU	. 2011	WATER	LEVELS, RETURN,
EZ	준비	E S	N 19 % P	LOSS IN G. P. M	PRESS. P. S. I.	E NIE		"	盗	7					1	CTER OF ING, ETC.
SS	2.0	0.1	10-9-8-	 	T III	 		 		-	0.0 - 6.0 Ft. Grav	relly SILT	and SAND		Borehole	e advanced
								-			FILL (GM-OL	•			o.d. holi	using 6.5 in. ow-stem
SS	2.0	0.5	4-6-9-	3				.			0.0-2.4 Ft. Gr brown (10YR4)	avelly silt /2). Orga	. Dark grayisi nic. Some bro	n oken	auger. Radiolog sampled	gically
			·				<u>'</u>				basalt gravel.		•		gamma-	and logged by berline, Inc.
SS	2.0	0.0	22-34	1	ĺ			•	200		2.4-6.0 Ft. Sa: (7.5YR5/6), fir	na. Stron ne- to med	g brown lium-grained.		IMA-E	berline, Inc.
	ļ l		24-24					5_					•			i
SS	2.0	2.0	8-9-13	-		ļ	-	٠ ا		-	5.0 - 8.0 Ft. <u>CLA</u> (10YR4/3). Sa	Y (CL).	Dark brown		Eberline	collected
			20	ļ	ļ		ļ	•			(10YR4/3). Sa	ind is line	-grained; wet.		Suger fli	nples from ghts for
-				1			-			1 .					4-6' san	2', 2-4', and aples.
!		1				1		}		i	Bottom of borehol Borehole backfille	d with spe	t. oils, 11/13/87.			
																Groundwater
					ļ	,		}							observed	1.
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					1			1							classifica	ation of
				-	•										examina	
		']		}]]	•
_				1		<u> </u>) ITE	<u> </u>		1					HOLE NO.	
			POON; S' ; P # P'			,,,	. 16		1	Mo	oney St (L	ODI)				35R

	(GE(DLOG	ilC E	RII	110)G	PROJE	СТ	-		JOB 1		EET NO.	HOLE NO.
SIT							COORDIN	ATES			FUSRAP	1450	1-138		1099R
	J.]	.Ke	nnedy	Park	(LOI	OI)		N129		1	N 1,819 E 318		1 .	ROM HORIZ	BEARING
3EG			OMPLETE	,		_			DRIL		MAKE AND MODEL SIZE	E OVERBURDI		K (FT.)	TOTAL DEPTH
			2-1-8		G.	Engel	; BNI		M	lin		4" 9.0			9.0
		8.0/	88	2) COX	E BUAL	9	ESEL. IC	IP CAS	ING	G	ROUND EL. DEPTH/EL. 又 /	GROUND WATER	DEPT	H/EL. TOP	OF ROCK
SAM			R WEIGH	T/FALL	CA		FT IN HO	LE: D	IA./	LEN	IGTH LOGGED BY:			/	
-			bs/18				NO	NE				R. M	igues		
ŽΣ.	S II		SAMPLE BLOWS "N" % CORE PECOUFDY	PF	WATE	IRE	İ		g)	П					
SAMP. TYPE	₫ë	2	F. 82	<u>-</u>	TEST	T	ELEV.	EPTH	BRAPHICS	SAMPLE	DESCRIPTION AN	ID CLASSIET	PATTON	NOTES	
÷0	후 Z	급	E 300	LOSS IN G.P.M	SS	HAY.		Ä	E E		DESCRIPTION PAR	D CEMBBIFI	CHITCH		LEVELS, RETURN,
Ğ₫	SA	<u>F</u>	, F, , g	7.9	PRESS P.S.I	E T		_	8	n				CHARAC	TER OF NG, ETC.
55	11.0	0.8									0.0 - 2.1 Ft. Silty Clay	vey SAND (SM-	SC).	 	
	1.0	0.9]				,			Moderate brown (5) coarse-grained.	YR4/4), fine- to		0-9.0 Ft.	advanced using 3"
	1.0	1.0]			-				0.0-0.4 Ft. Humus;	topsoil.		1.d. split- sampler	-spoon and 4" o.d.
	1.0	1.0]				•			0.4-0.7 Ft. Dark ye (10YR6/6) fine- to	llowish orange		solid-ste	m augers.
	1.0	0.6		j			_				sand with some pebl	very coarse-grai bles.	nea		
3\$	1.0	1.0]				<i>-</i>			0.7-2.1 Ft. Increasing Decreasing silt conte	ng clay content.	_	Borehole	was
38	1.0	0.7						•			N 155 Y R 5/6) mottled :	with dueby valle	wich //	and gam	cally sampled ma-logged by
3\$	1.0	1.0					_	•			brown (10YR2/2), fi with scattered pebbl	les.	rained	IMA-E	erline, Corp.
	1.0	1.0]	-			1.5-1.7 Ft. Alternat red (5R4/6) and bro	ing layers of mo wnish black (5Y	derate R2/1).]	
											2.1 - 4.8 Ft. Silty SAN brown (5YR4/4), fin	D (SM). Moder	ate		. ,
											2.1-2.3 Ft. Moderat		rained.	Augered gamma-l	and ogged to 8.0
							İ				3.0-4.3 Ft. Moderat		(4)	Ft.	
							İ				24	•	-).		
											4.8 - 5.0 Ft. Clayey SII Dusky yellowish brow				
					1	İ	ĺ				5.0 - 5.7 Ft. Clayev silt Dark yellowish brown	ty <u>SAND</u> (SC-S n (10YR4/2) mo	M). ottled		
							}				with light brown (5Y (5YR5/4), and graying	K5/61 Bala hen	wn		
							İ				5.7 - 8.0 Ft. SAND (SV yellowish brown (10)	V). Moderate (R5/4), fine- to		Í	
											medium-grained. 5.7-7.0 Ft. Scattered	d ameell = 45.51	- 1		
	ļ						İ				7.5-8.0 Ft. Abundan		}		
				1	1	ļ								ļ	}
		ĺ									8.0 - 9.0 Ft. <u>Silty CLA'</u> brown (5YR5/6).	I (OD-MID). Di	}		
	ļ								- 1		Bottom of borehole at 9.	.0 Ft.			.]
		1	İ	ŀ	- 1		1				Borehole backfilled with	spoils, 12/1/87	•		
					- 1										
- 1					1										
				1	l										
					1			1							
	1			ŀ				ł					.	Descriptio	
			İ					j						classificati	ual
		-		-	-			- 1						examination	on.
			1	ſ			j	ļ							
1															
= 0	SPL I	T SPC	ON; ST P = PIT	= SHELE	BY TUB	E; S11 HER	E	J.	F.K	_ (e	nnedy Park (L	ODI)		HOLE NO.	10R

	(GF(OLOG	ור ד	RII	110)G	PROJE	CT			JOB	10. s	HEET NO.	HOLE NO.
\$11							COORDIN	ATEC			FUSRAP	1450		1 OF 1	2042R
		Mo	ney S	t. (LO	DI)		COORDIN	AIES		1	N 1,988 E 326			FROM HORIZ	BEARING
BEG		С	OMPLETE	D DRIL	LER		<u> </u>	·	DRIL	L	MAKE AND MODEL \$12	E OVERBURD		ertical	TOTAL DEPTH
			10-4-8		EM	PIRE	SOILS				CMF 45R	12" 10.			10.0
COR	E REC	OVER. /	Y (FT./	%) COR	E BOXE	S SAMPI	LESEL. TO	P CAS	ING	GI	ROUND EL. DEPTH/EL. ▼ 7.0/ 1	GROUND WATER	DEP	TH/EL. TOP	
SAM	PLE I	AMME	R WEIGH	T/FALL	CA	_1 *	FT IN HO	LE: D	IA./L	.EN	▼ /			/	'
	30	0 lb	s. / 24	in.			NO:					J. 1	ord		
쁜			SAMPLE BLOWS "N"	PF	WATE	R JRE			8	П					
F	Į⊈ į	3 2	1. K	<u> </u>	TEST	5	ELEU.	E	GRAPHICS	SAMPLE	DECORTETAL AL			NOTES	
<u>.</u> .	ΔZ		돌일이	LOSS IN B.P.R		₩zż		DEPTH	효		DESCRIPTION AN	AD CLASSIFI	CATION	,	LEVELS, RETURN,
		£ 0	B B		PRES P.S.	H N N	1		GR.	7				CHARAC	TER OF
1	1.5	1.5		ك	1 11 11	 	<u> </u>			Н	0.0 - 0.5 Ft. ASPHAI	T & GRAVEL		DRILLI	ING, ETC.
33	1.5	1.5	6-5-5					•			MONEY ST.			Borehole	e advanced using 12 in.
SS	2.0	1.7	3-4-7-	7					•		0.5 - 6.0 Ft. SAND (So yellowish brown (10	G). Moderate 0YR5/4) mediur	1 to	o.d. holl- augers.	ow-stem
					i						coarse, poorly sorte adhesive sand. Sub	d. loose, moist.		Radiolog	gically and
SS	2.0	0.0	5-6-7-9	∮					•		mineralogy.			gamma- TMA-El	logged by berline, Inc.
								5_		ı					Groundwater
SS	2.0	2.0	5-5-5-6	3			-		-		6.0 - 6.4 Ft. Gravelly Moderate brown (5	SAND (SG).		observed	l.
				İ			1	<u> </u>	╢∭		Moderate brown (5 gravel. Slightly mo sorted. Subrounded	YR3/4) coarse soist, loose, poorly	and and	fl -	
				1				•			l	-		/	
								-	╢║		6.4 - 10.0 Ft. Clayey : yellowish brown (10 dense, cohesive, slig	SILT (M-C). P	ile v.		
							-	10 .		+	dense, cohesive, slig	htly stiff, no the	ead.	_	
										1	Bottom of borehole at Borehole backfilled wit	10.0 Ft.	2	6.3 Ft. 1	Pam of
												apons, 10/4/0	J.	undistur	bed soil.
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			I	İ										Description	
		ı						- 1						classificati	sual
			İ			- 1		-						examinati samples.	on of
		ĺ						- 1						'	
			ON; ST				re	L						HOLE NO.	
			P = PIT						Λ	Λ¢	oney St. (LOD	1)			42R

GEOLOGIC DRILL LOG	PROJECT JOB NO.	SHEET NO. HOLE NO.
ITE COORDIN	FUSRAP 14501-13	38 1 OF 1 1098R LE FROM HORIZBEARING
J.F.Kennedy Park (LODI)	N 1,753 E 329	Vertical
EGUN COMPLETED DRILLER	DRILL MAKE AND MODEL SIZE OVERBURDEN	ROCK (FT.) TOTAL DEPTH
ORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TO	Minuteman Auger 4" 11.0	11.0
9.5/86	P CASING GROUND EL. DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
AMPLE HAMMER WEIGHT/FALL CASING LEFT IN HO	E: DIA./LENGTH LOGGED BY:	
140 lbs/18 in. NO	NE R. Migue	s
SAMPLE REC. SAMPLE	9, 1	
TESTS ELEV.	DESCRIPTION AND CLASSIFICATION A	NOTES ON:
SAMP. LEN C. SAMP. LEN C. SAMP.	SAP DE	WATER RETURN,
용 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등 등	ا ا ا ا	CHARACTER OF DRILLING, ETC.
33 1.0 0.0	0.0 - 0.7 Ft. Clayer silty SAND (SC-SM). Dusky yellowish brown (10YR2/2), fine-	
38 1.0 0.8	medium-grained.	/ 0-11.0 Ft. using 3"
SS 1.0 0.9	0.7 - 10.2 Ft. SAND (SP). Light brown (5YR5/6), fine- to medium-grained.	i.d. split-spoon sampler and 4" o.d.
SS 1.0 1.0	(01100/0), thie to mediam-gramed.	solid-stem augers.
5\$ 1.0 1.0	2.1-4.3 Ft. Fine- to coarse-grained.	
SS 2.0 1.0	4.3 Ft. 2 in. layer of pebbles.	Borehole was
	4.7-7.0 ft. Grayish orange pink (5YR7/2	radiologically sampled and gamma-logged by TMA-Eberline, Corp.
SS 1.0 1.0	7.0-9.4 Ft. Grayish orange (10YR2/4).	TMA-Boernite, Corp.
S 1.0 1.0	[[[[[[[[[[[[[[[[[[[
S 1.0 1.0	10 9.4-10.2 Ft. Moderate yellowish brown	
S 1.0 1.0	(10YR5/4), fine- to medium-grained.	Augered and
	10.2 - 11.0 ft. Pebbly gravelly SAND (SG). Moderate yellowish brown	gamma-logged to 8.0
	(10YR5/4), fine- to very coarse-grained with well rounded pebbles and cobbles to	3 []
	i i \ inches.	1 1
	10.8-10.9 Ft. Dark reddish brown (10R3, and cemented.	·
	10.9-11.0 Ft. Very pale orange (10YR8/2 fine- to medium-grained.	2),
	Bottom of borehole at 11.0 Ft. Borehole backfilled with spoils, 12/1/87.	
		•
	1 1	Description and classification of
		soils by visual examination.
= SPLIT SPOON; ST = SHELBY TUBE; SITE = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LODI)	HOLE NO.
William Committee of the committee of th	on inclineus Falk (LUDI)	1098R

	G	ΕO	LOG	IC D	RIL	LIO	G	PROJE	CT			JOB NO.		ET NO.	HOLE NO.
SIT			-				COORDIN	ATES		FUSRAP		14501-		OF 1	1093R
	J.F	.Ker	nedy :	Park (LOD	I)			1	N 1,855 E 329)	r		tical	SEARING
BEG	JN	CO	MPLETED	DRILL							SIZE	OVERBURDEN		K (FT.)	TOTAL DEPTH
			1-23-8		G.	Engel	; BNI		Min	uteman Auger	4"	11.0			11.0
COR				() CORE	BOXE			P CAS	ING GF	ROUND EL. DEPTH	'EL. GROU	ND WATER	DEPTH	/EL. TOP	OF ROCK
SAM).2/1 AMMER	R WEIGHT	/FALL	ICA!	10	FT IN HO	F. DI	A /I EN	GTH LOGGED BY:				/	
			bs/18 i				NO		No/ 5511	LOCALD D		R. Migu	241		
뀌.	31	ပဲ			JATE	₹					 -			1	
75	58	REC	SAMPLE BLOWS "N" % CORE RECOVERY		ESSU			Ŧ	GRAPHICS SAMPLE		•			NOTES	ON:
ā	10	" "	통회임	σ_Σ	ю́н	ш.	ELEV.	DEPTH	RAPHIC	DESCRIPTION	AND C	LASSIFICA	TION		LEVELS, RETURN.
器	直達	FIS	No in Mark	L033 IN G.P.M	PRESS. P. S. I.	HAN.	!	ō	1 9 8 8					CHARAC	TER OF
SS SS	1.0	1.0		- 6	<u> </u>	_				0.0 - 1.9 Ft. SAN	T) (QD)			DRILLI	NG, ETC.
	1.0	0.7										ah ammaa			advanced
	1.0	0.9			į		-	} .	1	0.0-0.8 Ft. Da (10YR6/6), fin	e- to coar	se-grained fill	. 1	. i.d. split	t. using 3" -spoon
	1.0	1.0] .		0.8-1.9 Ft. Pai medium-graine	le brown ((5YR5/2), fine	- to	solid-ste	and 4" o.d. m augers.
	1.0	1.0			İ		-	┨ .		┧┖───		4372 (014)			
	1.0	1.0					-	5_		1.9 - 3.2 Ft. Silty				╡	
	1.0			1			-			1.9-2.6 Ft. Mo coarse-grained	sand with	d (5K4/6) fine i scattered cla	- to sts	Borehole radiolog	ically sampled
	1.0	1.0				Ì	-	١.		and pebbles to					ma-logged by berline, Corp.
		1.0] .		2.6-3.2 Ft. Da (10YR4/2), fin	rk yellowi e- to med	sh brown ium-grained.	- 1		
	1.0	0.7					-] .		3.2 - 3.7 Ft. Sand Moderate yello	y CLAY	(CL-ML).	1	1	
22	2.0	0.9						10_		Moderate yello to medium-gra	wish brow ined.	n (10YR5/4),	fine-		
] ,		3.7 - 4.4 Ft. Clay	ey SAND	(SC).		Augered gamma-	and logged to 8.0
										Moderate yello to medium-gra	with prow	n (10YR5/4),	fine-	Ft.	
										4.4 - 5.0 Ft. Sand	y CLAY	(CL-ML).			
										Grayish brown Fine- to very c	(5YR3/2 oarse-gra	with pebbles ined sand	·		
									1 11	Fine- to very c component. M (5YR3/4).	ottled wit	h moderate b	rown		
										5.0 - 5.7 Ft. Clay	ey SAND	(SC).			
										5.0 - 5.7 Ft. Clay Moderate yello Fine- to mediu	wish brow	nì (10YR5/4). d.	1		
										<u> </u>					
	ĺ									5.7 - 6.7 Ft. Silty greenish gray (gray (N7), olive	5GY4/1)	mottled with	light		
										brown (5YR4/4	4).		- 1		
								}		6.7 - 8.2 Ft. <u>CLA</u> (N2).	Y (CL).	Grayish black			
								į		7.1-8.2 Ft. Lig	ht grav (N7) mottled w	ii b		
							-			moderate olive (N1).	brown (5	Y4/4), and bl	ck		
										1	D (SP)	Light olive			
								1		8.2 - 8.8 Ft. SAN gray (5Y5/2) n (5Y5/6) and m	ottled wi	th light olive	prown		
	1							1		(10R4/6).		INCHE DIOWE	1		
										8.8 - 11.0 Ft. CL (5R6/2) mottle	AY (CL).	Pale red	and l		
	1							İ		moderate brown	n (5YR4)	4).			
					:			1		Bottom of borehol	a at 11 0	P+			
					ļ					Borehole backfilled					
														Descript	
														classifics soils by	visual
														examina	HOD.
					: 										
	1				İ			İ							
SS :	SPL	IT S	POON; ST	= SHEI	BY TI	JBE: S	ITE	1	<u> </u>					HOLE NO.	
			P = PI					J	.F.K	ennedy Par	k (LO	DI)		10)93R

	G	FO	LOG	ור ח	RII	110)G	PROJE	CT			_		JOB NO.	1	ET NO.	HOLE NO.
SIT					1716		COORDINA	TÉC		F	USRAI	<u> </u>			138 1		1094R
••••		.Ker	nedy l	Park (LOD	Ιì	Took or it.	4169		N 1.8	99 E	379		ľ		rom Horizi tical	BEARING
8EG			MPLETED			-/	.4				NID MODEL		SIZE	OVERBURDEN		K (FT.)	TOTAL DEPTH
			1-24-8				; BNI	-	Mi	nutem	an Aug		4"	9.0			9.0
COR				CORE	BOXE		ESEL. TO	P CAS	ING G	GROUND	EL. DE	PTH/	EL. GROU	ND WATER	DEPTI	I/EL. TOP	OF ROCK
SAM).7/9	YO WEIGHT	/FALL	ICAS	9 SING LE	FT IN HO	F. DI	A . /! F	NGTH I	OGGED B	<u>. / </u>	i			/	
			bs/18 i	•			NO		, ==		LOGOLD D	••		R. Mig	ues		
Ш.					JATE					T		-				·	
SAMP DIAM.		用記	SAMPLE BLOWS "N* % CORE RECOVERY	PR	ESSU ESTS			Į	GRAPHICS SAMPLE	4			•			NOTES	ON:
	.0		톰치 음을	ω_Σ	ற் ∺	ш	ELEV.	DEPTH	RAPHIC	DE	SCRIPT	rion	AND C	Lassific <i>i</i>	HOITE		LEVELS, RETURN,
器	連	F S	요집%照	LOSS IN	ត្តិ	TIME MIN.		=	5	Ą						CHARAC	TER OF
SS	1.0	1.0	ш –	۵ ۱	<u> </u>					- 00	0 2 P+	QAN	n (sp)	Jark vallowie	h	DRILLI	ING, ETC.
	1.0	0.7					_				range (10 ravel; FI	YR6	6), fine-	Dark yellowis to coarse-gr	ained		e advanced using 3"
	1.0	1.0		!			=			₩			- GAND	(SC). Dusky		Hi.d. split	-spoon and 4" o.d.
	1.0	1.0								l b. b	rown (5Y	Ř2/2), fine- to	medium-gr	ained.	solid-ste	em augers.
	1.0	1.0					_				- 1.8 Ft. eddish br			M). Modera	te	<u>'</u>	
	1.0	1.0			ĺ			5		B) 6	oarse-gra	ined	with pebi	oles (to 1.5 in	1.).	 	
	1.0	1.0								1.8	- 2.0 Ft.	SAN	D (SP). I	fine- to		radiolog	ically sampled ima-logged by
	1.0	1.0					_			l 11				AND (SC-SN		TMA-E	berline, Corp.
	1.0	1.0			Í		-			, i	Aoderate nedium-g	brow	n (5YR4/	4), fine- to		Penetra water-b	ted
_					ĺ		-				- 4.3 Ft.					interval	
								ļ		i By	ellowish l nedium-g	prowi	1 (10YR2	/4), fine- to		Augered	land
								}	1	i 2	· · · · · · · · · · ·			T-MI)		gamma-	logged to 7.5
					ĺ					F	- 5.0 Ft. Brownish	black	(5YR2/1).			•
										5.0	- 5.3 Ft.	SAN VR6	D (SP). 1	Dark yellowis	sh		
										1 8	- •			_			
										E	Brownish	black	(SYR2)	L-ML).) mottled wi 4) and light	th	'	
						,					N7). Son	ne roo	ots and a	few rusty na	ils.		
						1				7.0	- 8.0 Ft.	SAN	D (SP).	Olive gray arse-grained	with		
									1 1	V	ery small	pebb	oles. Mot	tled with ligh moderate re	nt i		
											5YR4/6).		5/0), a nd	moderate re	`		
	1									8.0	- 9.0 Ft.	CLA	Y (CL).	Pale red ht brown (5)	VR5/6)		
						,				}	nd light	prowi	nish gray	(5YR6/1).	1100,00,		
										Bot	tom of bo	mhol	+ O N T	·			
	l				İ			ŀ		Bor	ehole bac 1/24/87.	kfilled	with soi	/grout mixt	ure,		,
Ì	1						i				,,					1	
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					ĺ											Descript	tion and
																classific	ation of
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		1		,	1]	1									
]								1	
_	<u> </u>	<u></u>	<u> </u>			<u> </u>	ITE	<u></u>						· · · · · · · · · · · · · · · · · · ·		HOLE NO	
			POON; S1 ; P = P1			, ,	416	J	.F.	Kenn	edy F	ar	k (LO	DI)			094R

	C	GE (DLOG	IC D	RII	1 10)G	PROJE	CT				JOB NO.		ET NO.	HOLE NO.
SIT							COORDIN	ATEC			FUSRAP		14501-			1113R
	_	.Ke	nnedy :	Park (LOI)I)	COOKDIA	NIES		,	N 1,930 E 330	n	ľ		ROM HORIZ	BEARING
BEC			OMPLETED			-7	· L		DRII		MAKE AND MODEL	SIZE	OVERBURDEN		K (FT.)	TOTAL DEPTH
			1-4-8			E.D.	I.			M	OBILE B-57	6.5"	16.0			16.0
COR				CORI	BOXE	•	ESEL. TO	P CAS	ING	G	ROUND EL. DEPTH	/EL. GROU	ND WATER	DEPTH	/EL. TOP	
CAN		2.8	/80 R WEIGHT	7.5011	los	8				Ţ	- 業 /		···	Щ,		
SALT.			k wellen	-	CA	SING LE	FT IN HO		X. /	LEN	IGTH LOGGED BY:		<u> </u>			
Ш					WATE	R	NO:	NE	T	П			D. Harn	ish	T	
SAMP. TYPE	SE	E CE	BLOWS "N" % CORE	PR	ESSL	IRE		_	8							
	" 8	ш	를 [™] 2 2 2	ω Σ		T	ELEV.	DEPTH	불	SAMPLE	DESCRIPTION	N AND C	LASSIFICA	TION	WATER	LEVELS,
Σς		호	85 2 U	LOSS IN G.P.M	I III CO	ALL NIN NIN NIN NIN NIN NIN NIN NIN NIN N			BRAPHICS	SA						RETURN, TER OF
	S J	<u>G</u> C	<u> </u>	9 ب	<u> </u>	FΣ			O							ING, ETC.
SS	2.0	1.7	3-4-3-1								0.0 - 6.0 Ft. SIL' (ML, SM-ML)	T. AND Si	ity SAND FII	L	Borehole	advanced
							ł				0.0-0.5 Ft. To				0-16 Ft.	using 3" i.d.
SS	2.0	1.7	HW-HW HW-5	1				•						w/sj.	and 6.5"	on sampler o.d.
								•			0.5-1.1 Ft. Sil				Borehole	
SS	2.0	1.3	4-4-2-2		ĺ		=				1.1-3.2 Ft. Sa fine-grained, s	mall piece:	of gravel,		and gam	ically sampled ma-logged by
	İ			İ				5_			loose, wet.				5.0 Ft.	perline, Corp. Radioactive
SS	2.0	1.7	2-2-9-6				-	-	H		3.2-4.0 Ft. Sil (10YR3/1).	t, very dai	rk gray to bla	:k Г	HP-210.	
	ļ							-		ŀ	4.0-4.5 Ft. Mi	xed sand,	gray, and silt	. 1	6-8 Ft.	Distinct odor; sets
SS	2.0	1.1	2-2-2-5				_	-	Ш		weak red.				off OVA	alarm.
	Ì							-			4.5-6.0 Ft. Sil	t, black, in	sterlayered wi	th]	
SS	2.0	1.5	6-11					10_			sand, white, ve layers, possible	cross bed	s. Reworked f	i1?	İ	
			9-9					-			6.0 - 8.4 Ft. SIL7 (FILL?) (ML,	Cand Silty	SAND	/2) C	}	
SS	2.0	1.8	3-5-14					-			fine-grained.	owij. Dark	gray (101ft4)	' '		
			13				ا	-			8.0-8.4 Ft. Sil	t, light gra	y (10YR7/1).	- //		
SS	2.0	2.0	5-20					-	•		8.4 - 11.0 Ft. Silt gray (10YR7/1	y SAND (SM). Light	—r	1	
			9-24					15_			¥					
								_			10.3-11.0 Ft. (10YR6/2) mo	Some light ttling.	brownish gra	, l]	
	ļ							!		$\ $	11.0 - 11.2 Ft. G Dark reddish b	ravelly CL	AY (GC).	 ₩		
									1	П	bark reddish b	rown (5Y)	23/3), Brunsw	ick		
										П	11.2 - 13.3 Ft. CI	LAY and S	AND (CL.			
										$\ \ $	SP). Clay is di	usky red ()	10R3/2), sand	is ed	İ	
										П	5-10 mm thick	layers.				
											13.3 - 16.0 Ft. Gr (SW, SP). Bro	avelly SA	ND and SANI	2	ļ	
											rounded, sand	is fine- to	coarse-graine	i.		
						ľ					14.7-14.8 Ft. (Clay.				•
								1			14.8-16.0 Ft. (ınd,]		
											coarse-grained.					
	l									П	Bottom of borehol	e at 16.0 F	t.	İ		
											Borehole backfilled	i with spoi	is, 11/4/87.			
	'															
				1												
				İ			ĺ								Description	on and
			I		l		-	1							classificat	ion of
						1		Ī		П					soils by v	
]											
																
			OON; ST P = PI1				16	ı	FI	K.	ennedy Parl	V (1 OF	ווכ	- 1	HOLE NO.	13R
		1		,	V			∵ •			-inicuy Fall	~ lr∪l	J13	f	11	エンレ

G	ΈO	LOG	IC D	RIL	L LO	G	PROJE	T		271CD 4 D		JOB NO	1		HOLE NO.
SITE						COORDINA	TES			FUSRAP	· · · · · · · · · · · · · · · · · · ·		-138 1 ANGLE FRO		1085R
J.F	.Ker	nedy l	Park (LOD	I)				N	1,953 E 334		•	Verti		
BEGUN	- 1	MPLETED	1					DRIL			IZE O	VERBURDEN		(FT.)	TOTAL DEPTH
10-4-8				G.	Engel	; BNI		M	inu	teman Auger	4"	9.4			9.4
	5.0/6		CORE	BOXE	S SAMPL	ESEL. TO	P CAS	ING	GRO	UND EL. DEPTH/EL	L. GROUND	WATER	DEPTH/	EL. TOP	OF ROCK
SAMPLE H			/FALL	CAS		FT IN HO	LE: DI	A./L	ENG	TH LOGGED BY:			!	/	
		bs/30			•	NO						R. Mig	zues		
<u> </u>	. انا	*		JATE			l		П	<u> </u>					
SAMP. TYPE SAMP. ADV. LEN CORE			PR	ESSU EST:	RE 5]	Į	GRAPHICS	щ					NOTES	ON:
	H	돌하 요요	S E	s. I.	ш .	ELEV.	DEPTH	Œ	SAMPLE	DESCRIPTION A	AND CLA	45SIFIC			LEUELS, RETURN,
おいま	E R	82 25	LOSS IN G.P.M	PRESS. P.S.I.	ALK SIN SIN SIN SIN SIN SIN SIN SIN SIN SIN	•	ŏ	ĮŽ.	28				`	CHARAC	TER OF
8€ 817	RIO.	SAMPLE BLOWS "N" % CORE RECOVERY	7 0	<u>g</u> .				W/2	Ш			. 		DRILLI	NG, ETC.
35 1.0	0.6									0.0 - 4.5 Ft. Silty Sa Dusky brown (5Y moderate brown ((2/2) mot	tled with	L).	Borehole	advanced
SS 1.5	0.5					ł	! .			medium-grained s	(5YR4/4) sand com	. Fine- to ponent. S	ome	i.d. split	. using 3" -spoon
SS 2.0	0.9				·					humus.		_			and 4" o.d. m augers.
										1.0-2.5 Ft. Incressome pebbles.	easing san	d content	with		_
SS 1.0	1.0					-	S			2.5-4.5 Ft. Mottle	led with li	ght brown			
SS 1.0	0.6					-				(5YR6/4) and bro	ownish bl	ack (5YR2	2/1).	Borehole	was ically sampled
SS 1.0	0.9						·			4.5 - 5.5 Ft. Clayey brown (5YR5/2), Some stringers of	SAND (SC). Pale	rained	and gam	ıma-logged by berline, Corp.
SS 1.0	0.6						'			Some stringers of	dusky ye	llowish br	own	TWEE-D	bermie, ourp.
SS 0.9	0.9									(10YR6/2).	(Ct) M	-densée			:
33 0.5	0.5					_				5.5 - 9.4 Ft. CLAY brown (5YR4/4):	and light	brown (5)	YR6/4).		
										8.6-9.4 Ft. Grayi	rish red (1	OR4/2).	- 1		l to 7.5 Ft.
									$\ \ $					Gamma 7.5 Ft.	-scanned to
							1		11	Bottom of borehole a Borehole backfilled w	at 9.4 Ft. with spoil	s, 10/4/87	.		
İ											•				:
									Ш						
	1								Ш						
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				1					$\ \ $						
j						ļ								Descript	tion and
				1		1		1						classific	ation of visual
							1							examina	tion.
					1		1								
		<u> </u>	<u> </u>	<u> </u>	<u></u>	<u> </u>			Щ					1101 5 115	
SS = SPE		-			000,	SITE	ļ	l F	K	ennedy Park	(LOF	OI)		HOLE NO	085R
J - DEMI			Jiich j		J				•••		- ,	,			

1	C	GF(OLOG	ור ד)RII	110)G	PROJE	CT			JOB NO.	SHE	ET NO.	HOLE NO.
SIT					,,,,ır		COORDIN	ATES			FUSRAP	14501-			1096R
		F.Ke	nnedy	Park	(LOI)T)	COOKDIN	HIES		1	N 1,814 E 347	r		OM HORIZ	BEARING
BEG	UN	C	OMPLETE	DRIL	LER		_1		DRI		MAKE AND MODEL SIZE	OVERBURDEN	Vert	(FT.)	TOTAL DEPTH
			1-24-8		<u>G.</u>	Engel	; BNI		H	an	nmer & Tripod 4"	9.0			9.0
COR	E REC	COVER /	Y (FT./	%) COR	E BOXE		LESEL. TO	P CAS	ING	G	ROUND EL. DEPTH/EL. GROU	JND WATER	DEPTH	/EL. TOP	
SAM	PLE 1	HAMME	R WEIGH	T/FALL	ICA	9 SING LE	FT IN HO	IF. DI	IA /	L	NGTH LOGGED BY:		ــــــــــــــــــــــــــــــــــــــ	/	
	1	40 I	bs./18	in.			NO		,		LOGGED BY:	R. Migu	AC		
₩.	ساد	ပြု	= ,		WATE				T.,	П		IX. Migt	163	T	
SAMP. TYPE	SAMP. AD	SAMPLE REC	SAMPLE BLOWS "N" % CORE	LOSS IN G.P.M	PRESS. SE		ELEV.	OEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND C	Lassifica	TION	WATER	ON: LEVELS, RETURN, TER OF NG, ETC.
SS	1.0										0.0 - 1.7 Ft. SAND (SP). 1 yellowish brown (10YR5)	Moderate		<u> </u>	
SS	1.0			1	l						yellowish brown (10YR5) coarse-grained; FILL.	/4), fine- to		Borehole 0-9.0 Ft	advanced using 3"
SS	1.0			1							1.7 - 3.5 Ft. <u>Clayey SAND</u> yellowish brown (10YR5)	(SC). Dark	··	i.d. split sampler	-spoon and 4" o.d.
SS	1.0	1		1		l	_			1	_	•		solid-ste	m augers.
SS	1.0	1		1	l		-		777	1	1.7-2.3 Ft. Mottled with (5R4/6).	n moderate red	ſ]	
SS	1.0	† · · · · ·		1				5_			3.5 - 4.2 Ft. SAND (SP). 1	Dark yellowish	[Borehole	Was
SS	1.0			1			-	-	1//	1	3.5 - 4.2 Ft. SAND (SP). I brown (10 YR5/4), fine-coarse-grained with angu (to 2 in. in the flat direct	to very Har, flat fragn	ents	radiologi	cally sampled ma-logged by
SS	1.0			1				-	•		ነ		1)	TMA-E	erline, Corp.
SS	1.0						-	-			4.1-4.2 Ft. Grayish oran	- • • •	H-		
					<u> </u>			-			4.2 - 6.0 Ft. Clayer SAND Moderate yellowish brow to coarse-grained with ve	(SC). n (10YR5/4), ery small pebb	fine- les.		
											6.0 - 8.1 Ft. Pebbly SAND olive gray (5Y6/1), fine-coarse-grained with roun pebbles.	(SG). Light to very ded white (N9)	Augered gamma-l Ft.	and ogged to 8.0
											8.0-8.1 Ft. Pale reddish	•	4).		
											8.1 - 9.0 Ft. <u>CLAY</u> (CL). (10R4/2).	Grayish red			
											Bottom of borehole at 9.0 Ft Borehole backfilled with spo	t. ils, 11/24/87.			
Ì						Ì									
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													į		• 1
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						- 1	ľ						l		
								ļ							
ı		1				1		1	l						
														Description classificates oils by viexaminati	ion of sual
	SDI *	T +80/	DON; ST	T CUE!	DV 7::-	E- SI	TF								
			P = PI1					J.	F.1	Κe	ennedy Park (LOI	OI)		HOLE NO. 109	96R

	C	EΛ	LOGI	CD	DII I	10	c	PROJEC	ī			·	TOB NO		T NO.	HOLE NO.
		EU	LUG	CD	VIL	- 10					FUSRAP	<u></u>		-138 1		1065R
SITE		T Z		\1. <i>(</i>	7 A D	7\	COORDINA	TES		N 7 4	200 200	•		ANGLE FRO	í	BEARING
3EGU			nedy I			1)	<u> </u>		011		,700 £ 355		OVERBURDEN	Vert	(FT.)	TOTAL DEPTH
			-26-8		EK	E.D.	т	۲			ILE B-57	6.5"	22.0	, kocx	(11.)	22.0
					ROYE		ESEL. TO	P CASI		GROUN		EL. GROU		DEPTH	/EL. TOP	OF ROCK
JUNE		5.6/		, ,	DONE	11				GR CON	室 /	LL. GROOT		P	//	
AMP	_		WEIGHT	/FALL	CAS		FT IN HOL	E: D1/	\./L	ENGTH	LOGGED BY:					
			bs/30 i				N.						D. Har	nish		
ш	н -		-	ı	ATE	\$										
SAND DIAM.	김씨	뛢임	SAMPLE BLOWS "N" % CORE RECOVERY	PR	ESSU	RE		Ŧ	GRAPHICS	щ					NOTES	ON:
Ľ	SPP	_ æ	T . E .		• •	1	ELEV.	рертн	Ĭ	38NPLE _	DESCRIPTION	I AND C	_assific	ATION	WATER	LEVELS,
÷0	e z	귀믮	49.0 0	SN.T	RESS. 1.9.1	ALL ALL STR			\$	Ē						RETURN, CTER OF
ξŽ	ב אַ	E 8	。"≅" "≅	L033 IN G.P.H	F	FTE			ğ	[]						ING, ETC.
ŠS.	2.0	1.7	#-TO			-				0.	0 - 8.0 Ft. SAN	D FILL (S	3P).			, , , ,
	 		8-11					-			0.0-1.9 Ft. St	rong brown	n (7.5YR4/6	3),	0-22 Ft	e advanced , using 3" i.d.
ਰਦਾ	2.0	1.7	5-10			ĺ		-			fine-grained, k			•	split-sp	oon sampler o.d.
35	ا ت.ر	• • •	11-12	:				_			1.9-2.4 Ft. Me	edium-gra	ined, some g	ravel.	solid-st Borehol	em augers.
-								_		:	2.4-8.0 Ft. Sa fine-grained, in	nd, brown	(10YR5/3)	, ,_1,_4	radiolog	rically sampled
SS	2.0	1.6	6-10 8-8					5_		ĺ	fine-grained, ii fragments.	nirequent	necomposed	piani	TMA-E	nma-logged by berline, Corp.
					1		1	"-							ì	1
SS	2.0	1.8	4-5-7-7				ĺ	·			40 80 EL B-	(10V	04/9\			Ì
	ļ							-		;	6.0-8.0 Ft. Br	own (TOI)	na/s).			
38	2.0		3-6-9-9				-	٠		8.	0 - 14.0 Ft. SA	ND (SP).	Dark yellov	vish	1	ļ
								-			brown (10YR4 liquefies when	(4), verý i	ine-grained	•		
					1		<u> </u>	10_			ndaenes when	91142C11, 66			}	
SS	2.0	2.0	4-7-10 12				ļ	١.			10.0-12.0 Ft.	Dark yello	wish brown		1	
		ļ	ļ				ļ			:	(10YR4/3).					
SS	2.0	2.0	NA					1			12.0-14.0 Ft.	Olive hear	en (2 5VR4)	/ 4)		
	l							-		:	12.0-14.0 F t.	Onve brov	VII (2.0 1 104)	*).		
SS	2.0	2.0	4-5-5-7	1	Ì		-	1 -		1	4.0 - 21.0 Ft. S	AND (SP)	. Olive bro	wn	1	
								15_		:	(2.5Y4/4), well medium-grain	t, fine-grai	ned, some terbedded s	ilts.		
NA.	1	\	3-5-5-6		ļ	}	1	.	\			,				
22	2.0	2.0	3-5-5-6	1				· .								
					ŀ											
SS	2.0		7-12 14-14]											ļ	
]	14-14													
SS	2.0	1.8		1		1	}	20.							}	
	1		36				•	┤ '	ĺΠ	2	1.0 - 22.0 ft. SII	LT and SA	ND (ML, S	M).	1	
	┼	├	ļ	-{		<u> </u>		┥ ・	#1	╫┐	1.0 - 22.0 ft. SII Silt is light grabrown (5YR4)	ay (5Y7/1 /\$). BEDI	COCK RES	ddish DUUM. /	22.0 Ft	. Sampler
		1		1			1			11 /					refusal.	,
		1			ł					<u>E</u>	ottom of boreho	ole at 12.0	Ft. 50/06/	6 7		
	1		1						1	11 5	orehole backfille	eg mitu sp	ous, 10/20/	D1.	1	
			1						-							
			,				\ .			11					1	
	1			1												
	1		1	1.	1				1						}	
			1												Descri	otion and
			1	1		1	}			 					classifi	cation of
	1														examir	y visual nation.
	1														:	
	1		1													
	I									$\parallel \parallel$						
_			1	<u> </u>	-		SITE	1	ــــــــــــــــــــــــــــــــــــــ			,			HOLE N	0.
			SPOON; S I; P = P			000,	~.· <u>~</u>		I.F	.Ke	nnedy Pa	rk (LC	DI)		1 1	065R
-	- UEN	11.30	.,	. renex	, , , ,	*·			, , ,		<u>-</u>	1				

GEOLOGIC DRILL LOG	PROJECT		JOB NO. SHEE	T NO. HOLE NO.
		FUSRAP	14501-138 1	of 1 1038R
I I	RDINATES		ANGLE FR	OM HORIZBEARING
J.F.Kennedy Park (LODI) GUN COMPLETED DRILLER	harri	N 1,920 E 360 MAKE AND MODEL SIZE	Vert	
1-9-87 11-10-87 G. Engel; B	1	MAKE AND MODEL SIZE nuteman Auger 4"	OVERBURDEN ROCK	(FT.) TOTAL DEPTH
ORE RECOVERY (FT./%) CORE BOXES SAMPLES E	. TOP CASING	GROUND EL. DEPTH/EL. GRO		8.5
7.9/92 9		¥ /		/
1 •	N HOLE: DIA./LI	NGTH LOGGED BY:		,
N/A	NONE		R. Migues	
SAMP. ADU. LEN CORE SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLE REC. SAMPLES. TINS TINS TINS TINS TINS TINS TINS TINS	ဖ	•		
SAMPLE SESSE SAMPLE ABLOAN CORE RECORE SAMPLE SAMPLE CORE SAMPLE CORE SAMPLE	DEPTH	DESCRIPTION AND	A AAATTTAATTAL	NOTES ON:
S S S S S S S S S S S S S S S S S S S	DEPTH	DESCRIPTION AND	CLASSIFICATION	WATER LEVELS, WATER RETURN,
SAND DE SAND D		Ä		CHARACTER OF
\$ 1.0 1.0	<u> </u>	0.0 1.0 PA (7)	CAND /PILL)	DRILLING, ETC.
\$ 1.0 1.0		0.0 - 1.0 Ft. Clayey Silty Dark yellowish orange	(10YR6/6), fine- to	Borehole advanced
		medium-grained.		0-8.5 Ft. using 3" i.d. split-spoon
		0.2-0.5 ft. Dusky yello (10YR2/2), decreased	wish brown clay.	sampler and 4" o.d. solid-stem augers.
S 1.0 1.0		0.5-1.0 Ft. Pale yellow	vish brown	
S 1.0 0.7	5_	(10YR6/2), fine- to me	dium-grained.	
S 1.0 1.0		1.0 - 2.0 Ft. Clayey Silty Moderate brown (5YR)	SAND (SM).	Borehole was radiologically sampled
S 1.0 0.9		Moderate brown (5YR- medium-grained. Som	e pebbles.	and gamma-logged by TMA-Eberline, Corp.
S 1.0 1.0		1.2-2.0 Ft. Decreasing	clay content.	TMA-Boernne, Corp.
S 0.5 0.5		1.3-1.4 Ft. Black (N1)	specks.	
		2.0 - 3.7 Ft. SAND (SW) brown (10YR4/2), fine	. Dark yellowish - to medium-grained.	
		3.0-3.7 Ft. Pale brow	i i	
		3.7 - 4.0 Ft. Sandy CLA Moderate brown (5 YR: medium-grained sand.	((CL). 3/4), fine- to	
		4.0 - 6.4 Ft. Silty Sandy Dusky brown (5YR2/2	CLAY (CL-ML).	
		coarse-grained sand. 4.0-5.5 Ft. Some brick		
		5.5-5.8 Ft. Olive black	. *	
		1 ¥	· · · · /	
		5.8-6.4 Ft. Dark green		
		6.4 - 8.5 Ft. Sandy Silty Dark greenish gray, mo brown (5YR4/4) and n (5Y5/2). Fine- to coas	ottled with moderate noderate olive gray	
		Sand fraction decreasing 7.0-8.2 Ft. Decrease si	ng with depth.	
		fraction becomes coarse 8.2-8.5 Ft. Olive gray	er.	
			(
		Bottom of borehole at 8.5 Borehole backfilled with s		
				Description and classification of
				soils by visual
				examination.
3 = SPLIT SPOON; ST = SHELBY TUBE; SITE			<u> </u>	HOLE NO.
= DENNISON; P = PITCHER; O = OTHER	J.F.	Kennedy Park (LO	ODI)	1038R

	G	FO	LOG	ור ח	RII I	110	ا <u>ر</u>	PROJE	CT					JOB NO.		ET NO.	HOLE NO.
SIT			LOG				COORDINA	TEC		··	FUSRAP					OF 1	1092R
J. 11		. Ket	nedy l	Park (T.OD	T)	COOKDINA	1165		N 1	878 E 3	72		ľ		OM HORIZ	BEARING
BEG			MPLETED			*)	_l		DRILL		AND MODEL		IZE	OVERBURDEN		tical K (FT.)	TOTAL DEPTH
11-	23-	3711	1-23-8	7	G.	Engel	; BNI				man Auge	- 1	4"	11.0	100	× (r).,	11.0
COR	REC	OVER	(FT./X	CORE	BOXE	SSAMPL	ESEL. TO	P CAS	ING	GROUNI	EL. DEP			ND WATER	DEPTH	/EL. TOP	
		.9/9				10			i			<u></u>					
SAM			WEIGHT	-	CAS	ING LE			A./L	ENGTH	LOGGED BY:						
-			s./18				NO	NE	-		<u> </u>			R. Mig	ues		
Ę.	N N	C C	SAMPLE BLOWS "N" % CORE RECOVERY	PR	JATEF ESSU	RE			ရွ	_]							
댽	된ਲ	RE	7. KP		rests	}	ELEU.	Ŧ	BRAPHICS		ESCRIPTI	C.N.	AND C	ASSTETCA	TTON	NOTES	
	a z	Ž	£208	SZ.	S.H	Hzz		DEPTH	臣						112011		LEVELS, RETURN,
琵	[준]	£ 8	SE XE	LOSS IN P. H	PRESS.	E SE		ן "	8	Ŋ							TER OF ING, ETC.
SS	1.0	1.0		-	מם			-		0.0) - 1.6 Ft. S.	ND	(SP). 1	Dark vellowie	h	DRILL.	ING, EIC.
	1.0	0.8		-	ĺ						orange (10Y	R6/6	6), fine-	to coarse-gr	sined.	Borehol	e advanced It. using 3"
	1.0	1.0			ĺ		-		777	\neg	0.3-0.7 Ft.	^		(10VD#/	. 1	🖷 i.d. split	-spoon
_	1.0				ĺ					1		•			i).		and 4" o.d. em augers.
	1	1.0			ĺ		_	١.		$\exists $	0.7-1.6 Ft. (10YR6/2).	Late	. Aettown	n prown	l l		
	1.0	0.9						5_		1.6	3 - 3.3 Ft. <u>C</u>	376	SAND	(SC).			
	1.0	1.0					-			ΠÌ	Moderate br		(5YR4/	4), very fine-	· \$0	Borehol radiolog	e was ically sampled
	1.0	1.0						•					vellowisi	n brown (10)	'R6/2)	and gan	nna-logged by berline, Corp.
	1.0	1.0					-	·		ΠÌ	fine- to med	ium	-grained	•	,	□ 7.2-8.1	Ft. Saturated cky, but no
SS	1.0	1.0					=			3.9	3 - 5.3 Ft. <u>S</u>	lty S	Sandy C	LAY (FILL).		sign of t	ree water in
SS	2.0	1.2		1	l		<u> </u> 	٠. ا			3.3-3.4 Ft.	Ligh	t brown	(5YR6/4).		ine bore	noie.
								10_			3.4-5.3 Ft.	Dark	k reddish	brown (10R	3/4)	Augered	land
	-			1	ĺ		-			\mathbb{H}	in., mottled	with	dusky v	pebbles to 0 vellowish bro	wn	gamma- Ft.	logged to 7.5
										11	(10YR6/6). component.	Fine	e- to me	dium-graine	d sand		
											5.0 Ft. Alui	ninu	ım Foil s	crans			
				ŀ	ĺ									•	-la "		
							1				3 - 7.2 Ft. C (5YR2/1), To	call	y near b	lack (N1).	cr [
										7.3	- 8.1 Ft. S	ity (Clayey S	AND (SM).		İ	
											Moderate br gray (5YR4,	own 1), 1	(5YR4/ fine- to:	4) and brown medium-grai	nish ned.		
								İ	1 1	8.1	- 8.5 Ft. S.	AND	(SW).	Dark greenis	h	ļ	
					ĺ						gray (5GY4)	/1), :	fine- to	medium-grai	ned.		
										8.5	- 11.0 Ft. (5R6/2) mo	A.C	Y (CL).	Pale red			
							}				(N6) and mo (10YR5/4).	der	ate yello	edium light g wish brown	12,		
							ļ	}		╎┖	(1011074).			· · · · · · · · · · · · · · · · · · ·		İ	
										Bo	ttom of bore	hole	at 11.0	Ft.			-
					ł					150	rehole backfi spoils, 11/28			chanically m	ixed		
					l		l	1									
					ĺ		1	1									
					l											1	
							·									1	
ì																	
	1]													
]													
	1															classific	tion and ation of
																soils by	
	l						}										
SS	= SPL	IT SI	POON; \$1	= SHE	LBY TI	JBE: S	ITE								····	HOLE NO	
			P = P1					J	ı.F.	Ken	nedy Pa	ark	: (LO	DI)		1	092R

								PROJE	CT				JOB NO	lour	ET NO	14015 40
	G	EC	LOG	IC D	RIL	L LO)G	T NOSE			FUSRAP		1	-138 1	ET NO.	HOLE NO.
SITE							COORDIN	ATES			FUSKAI		14501	ANGLE FR		1082R
	J.F	.Kei	nedy	Park (LOD	(I)				N	1,955 E 378	2		Vert		DEAKING
3EGU			MPLETED				.1		DRIL		AKE AND MODEL	SIZE	OVERBURDE	' 	(FT.)	TOTAL DEPTH
11-	2-8	7 1	1-2-8	7	G.	Engel	; BNI				iteman Auger	4"	11.6			11.6
					BOXE	SSAMPL	ESEL. TO	P CAS	ING			/EL. GROU		DEPTH	/EL. TOP	
		1.6/				9	1				量:				/	
SAMP	LE H	AMME	WEIGH	T/FALL	CA:	ING LE	FT IN HO	LE: D	IA./I	ENG	TH LOGGED BY:					
	1	40 I	bs/30	in			NO	NE					R. Mi	gues		
ш.	-1	ပ်၊ •	SAMPLE BLOWS "N" % CORE		WATE				-	П	·····					
DIAM.	힟쭕		ᄪᆂᄥ	PF	RESSU TEST:			I	GRAPHICS	щ					NOTES	ON:
Ö	្សីដ	m CC	토 이 있을	m E	ын		ELEV.	DEPTH	\(\(\)	耳	DESCRIPTION	4 AND C	LASSIFIC	MOITA	WATER	LEVELS,
윤	무급	트	89 2	LOSS LOSS IN G.P.A	80	HAN.			₹	SAMPL		•				RETURN, CTER OF
器器	SAMP, ADV.	촃		7 6	PRES P. S.	FΈ	l		9	Π						ING, ETC.
SS	1.0	0.4		1		ļ —	 	1	2/21		0.0 - 0.2 Ft. San Dusky yellow	dy silty Cl	AY (CL-)	(L). 1	 	
SS	1.0	0.6		1					-{ -		Dusky yeilow medium-grain	brown (10) ed sand fra	YR2/2). Fi action.	ne- to	0-11.6	e advanced It. using 3"
SS		0.7		-	1	l			4 :						i.d. split	-spoon and 4" o.d.
								İ			0.2 - 4.0 Ft. Silt brown (5YR5/	6), fine-	o contre-gra	ined.	solid-st	em augers.
				_[_]			1.4-2.0 Ft. In	creasing cl	ay fraction.	_		
SS	2.0	1.0									Dusky yellowi	sh brown (10YR2/2).	- [
-								•	7		2.0-4.0 Ft. M	ottled with	brownish l	lack	Borehol	
SS	1.0	0.8					1 -]	1		(5YR2/1) and				and gan	rically sampled una-logged by
SS	1.0	1.0		1							4.0 - 6.6 Ft. SAI (5YR4/1), find	YU (SP).] to very	co arse-gra ii brownish gr	ay red.	TMA-E	berline, Corp.
SS	1.7	1.2		4				1			4.7-6.6 Ft. M			- 1		
				1							6.6 - 11.6 Ft. Sil		· · · · · · · · · · · · · · · · · · ·	<u>-).</u>		
SS	1.0	1.0		┥		}	-	1		-	Light brown (yellowish brow	5YR5/4) n	ottled with	dusky [1.	
SS		0.9				1		1			yellowish brow	m (10YR2	/2).	ł		i to 8.0 Ft. -scanned to
33	0.5	0.9		4						A	7.0-8.0 Ft. G	rayish red	(5YR4/2).	- 1	7.5 Ft.	
- 1								1			7.0-11.6 Ft. I	ecreasing	silt content	.		
	į					1					7.5-9.6 Ft. D	usky yellov	wish brown	Ì		
- 1										П	(10YR2/2) pa	tches.				
ļ									1	Ш	Bottom of boreho	Ja at 11 6	E) L			
				İ						П	Borehole backfille	ed with spo	rii. oils, 11/2/85	7.		
		1		1					1	П						
				1					1	Ш						
		}								П						
1										Ш						
										П						
							}			Ш						
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			1													
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				1				-		11						
									1							tion and
								-							classific	visual
l															examina	
		1	1													
		1														
SS =	\$PL	IT S	POON; S	T = SHE	LBY T	UBE: S	SITE	•							HOLE NO	
			; P = P						J.F.	K	ennedy Par	rk (LO	DI)		1	082R

GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET NO. HOLE NO.
	FUSRAP	14501-138 1 of 1 1005R
J.F.Kennedy Park (LODI)	PRDINATES	ANGLE FROM HORIZBEARING
BEGUN COMPLETED DRILLER	N 1,799 E 382 DRILL MAKE AND MODEL SIZE	Vertical OVERBURDEN ROCK (FT.) TOTAL DEPTH
9-15-87 9-15-87 G. Engel; Bl		11.4
CORE RECOVERY (FT./%) CORE BOXES SAMPLESEL		1
9.0/79 11		/
· · · · · · · · · · · · · · · · · · ·	IN HOLE: DIA./LENGTH LOGGED BY:	
	NONE	R. Migues
SAMP. TYPE SAMP. ADU. CARE REC. CORE	EV. HEAD DESCRIPTION AND C	WATER RETURN,
종등 위기 (등) 사람 이 마음 등을 보고보는	- 6 1	CHARACTER OF DRILLING, ETC.
SS 1.0 0.6	0.0 - 1.6 Ft. Sandy Silty C	
SS 0.7 0.7	0.0 - 1.6 Ft. Sandy Silty C Very dusky red (10R2/2 brown (5YR4/4), mixed medium-grained sand.) and moderate Borehole advanced 0-11.4 Ft. using 3"
SS 0.6 0.0 SS 0.6 0.5		
SS 1.1 0.5	1.6 - 2.0 Ft. Silty SAND (1.6 - 2.0 Ft. Silt	SM). Blackish laugers.
SS 2.0 1.4	sand with pebbles up to	1.5 in. gamma-logged and sampled for
	5 2.0 - 3.6 Ft. Sandy Silty C	LAY (CL-ML). I radiological
SS 2.4 2.0	Moderate brown (5YR4) medium-grained sand as clay matrix.	nd silty sand with a TMA-Eberline, Corp.
	2.0-2.3 Ft. Blackish red	(5R2/2).
SS 0.4 0.4 SS 1.6 1.6	3.6 - 5.0 Ft. Silty SAND yellowish brown (10YR4	SM). Dark /2). Fine- to
	coarse-grained. 5.0 - 9.8 Ft. Silty Clayey S	SAND (SC).
SS 0.5 0.5 SS 0.5 0.5	Dark yellowish brown, fi	ne- to
	7.3-8.0 Ft. Silty clay.	
	8.0-8.5 Ft. Decreased components brown.	ay content.
	8.5-9.8 Ft. Silty sand. fine- to very coarse-gra	Moderate brown, ined.
	9.8 - 11.4 Ft. CLAY & Cla (CL-ML).	yey SILT
	9.8-11.3 Ft. Dark yellor (10YR5/4) clay.	wish brown
	11.3-11.4 Ft. Clayey sil (5YR4/4).	t. Moderate brown
	Bottom of borehole at 11.4 Borehole backfilled with sp	
	Dotenoie packing with sp	лю, э/10/01.
		Description and classification of
		soils by visual examination.
S3 = 3" SPLIT SPOON; ST = SHELBY TUBESTIE	IE Vannada Daula (1.0	HOLE NO.
D = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LO	DI) 1005R

GEO! OG	IC DRILL LO	PROJEC		JOB NO. SHEE	T NO. HOLE NO.										
ITE			FUSRAP	14501-138 1											
	Park (LODI)	COORDINATES	N 1 925 T 202	.	M HORIZBEARING										
	DRILLER	10	N 1,825 E 382 ORILL MAKE AND MODEL SIZ	Verti E OVERBURDEN ROCK											
8-31-87 8-31-8				4" 14.0	(FT.) TOTAL DEPTH										
	%) CORE BOXES SAMPLE	SEL. TOP CASI			EL. TOP OF ROCK										
9.1/65	11		! 	/31/87											
SAMPLE HANNER WEIGH	T/FALL CASING LEF		A./LENGTH LOGGED BY:												
N/A		NONE		R. Migues											
SAMP. ADU. SAMP. ADU. LEN CORE SAMPLE REC. CORE REC. SAMPLE BLOWS "N" ZORE ZORE ZORE ZORE ZORE ZORE ZORE ZORE	WATER PRESSURE		g												
	TESTS	ELEU. F	SAMPHICS SAMPHICS DESCRIPTION WOLLDANSSED	ND CLASSIFICATION	NOTES ON: WATER LEVELS,										
	S S S S E E	ELEV.			WATER RETURN,										
SAMP. 17P. SAMP. ADU LEN CORE SAMPLE REC. CORE REC. SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE	LOSS LOSS IN PRESS. P.S.I.	-	8 N		CHARACTER OF DRILLING, ETC.										
SS 1.9 0.8			0.0 - 5.0 Ft. Silty Sar	ndv CLAY	DRILLING, EIC.										
			(CL-ML). Dark br	rown, mottled with	Borehole advanced 0-14 Ft. using 3"										
SS 3.1 1.0	-	4		and specials.	split-spoon sampler and 4" o.d. solid-stem										
					augers.										
					Borehole gamma-logged and										
		± 5_			sampled for radiological										
SS 0.9 0.9	1	-3	5.0 - 5.3 Ft. Silty SA fine- to medium-gr	ND (SM). Brown,	contamination by TMA-Eberline, Corp. Saturated at 5.0 Ft.										
SS 4.5 3.0		1 1	5.3 - 6.2 Ft. Silty Sar		Saturated at 5.0 Ft.										
		1	Dark brown mottle	d with dark gray.											
		-	6.2 - 10.7 Ft. Silty S	AND (SM). brown (10R4/6), fine- to											
		1	medium-grained.	orown (10R4/6), fine- to											
]	1 -	10.7 - 11.8 Ft. Silty (TLAY (CL-ML)											
SS 0.5 0.5]] -	Moderate yellowish	brown (10YR5/4).											
SS 0.2 0.2 SS 0.9 0.9	1		11.2-11.8 Ft. Incre	easing sand content.											
SS 0.4 0.4	7		coarse-grained with	wn (10YR4/2). Fine- to h small pebbles (<0.25											
			in.).												
			11.8 - 12.3 Ft. SAND brown (5YR4/4). F	(SC). Moderate											
1 1 1			with pebbles (<0.2)	ine- to coarse-grained ine, including some of											
			12.3 - 14.0 Ft. Silty C												
			Brownish gray (5Y)	R4/1).											
			12.5-13.6 Ft. Incre	eased sand component.											
			Same color.	· · · · · · · · · · · · · · · · · · ·											
			Bottom of borehole at	14.0 Ft.											
			Borehole backfilled wi	th grout, 8/31/87.											
		.													
		}													
	Description and														
				•	classification of soils by visual										
					examination.										
S = SPLIT SPOON; S			E Kannadu Darla	(I ODI)	HOLE NO.										
= DENNISON; P = P	TICHEK; U = DINEK	J.	.F.Kennedy Park ((Ŀしロリ	1002R										

GE	OLOGI	C DR		ıG	PROJE	СТ	\$ 1	ET NO. HOLE NO.						
SITE	-0-0-0			COORDINA	ITES		FUSRAP 14501-138 1	OF 1 1004R OM HORIZBEARING						
J.F.K	Kennedy I	ark (LC	ODI)				N 1,795 E 390 Veri	1						
BEGUN	COMPLETED	I .				DRILL		(FT.) TOTAL DEPTH						
	9-14-87		Engel	; BNI.		Mi	nuteman Auger 4" 4.6	4.6						
	ERY (FT./% 2/73) ICORE BI	JAES SAMPL	ESEL. 10	P CAS	ING	GROUND EL. DEPTH∕EL. GROUND WATER DEPTH	/EL. TOP OF ROCK						
	MER WEIGHT,	/FALL	CASING LE	FT IN HO	E: DI	A./Li	NGTH LOGGED BY:							
	N/A			NOI			R. Migues							
	CORE REC. SAMPLE BLOWS "N" % CORE RECOVERY	WA1 PRES				6								
DIAM. OIAM. CORE	M = KE	TES	TS	ELEV.	Ŧ	GRAPHICS	DECORPORATION AND OLACOPEROATECH	NOTES ON:						
0 0 Z	m £800	SZ S	비뿌ァ	LLLV.	DEPTH	Ė	DESCRIPTION AND CLASSIFICATION	WATER LEVELS, WATER RETURN,						
SAMP.	일 의 기 % 분	LOSS IN G.P.M	TIME IN MIN.		u	GR.	7	CHARACTER OF DRILLING, ETC.						
SS 1.0 1	1.0	- 1	п.				0.0 - 2.0 Ft. Sandy Silty CLAY (CL-ML). Dusky brown (5YR2/2). fine- to							
\$\$ 1.0 0	0.6				•		(CL-ML). Dusky brown (5YR2/2). fine- to medium-grained sand component.	Borehole advanced 0-4.6 Ft. using 3"						
SS 0.6 0	0.6				-		2.0 - 2.6 Ft. Silty SAND (SM). Moderate	split-spoon sampler and 4" o.d. solid-stem						
					-	₩	brown (5YR4/4). Fine- to medium-grained.	augers. Borehole						
					-	₩		gamma-logged and sampled for						
					_		2.6 - 4.6 Ft. No sample taken; sampler refusal. Auger to 4.6 Ft. for gamma-log.	radiological contamination by						
		1					P. A	TMA-Eberline, Corp.						
							Bottom of borehole at 4.6 Ft. Borehole backfilled with spoils, 9/2/87.							
1 1														
		ĺ												
				ļ										
		.												
		-												
	Description and classification of													
					i			soils by visual examination.						
		-												
S3 = 3" SPI				TE	,		(1-D-1-(1-OD))	HOLE NO.						
D = DENNISC	ON; P = PIT	CHER; 0	= OTHER		J.	<u>.r.</u> ł	Kennedy Park (LODI)	1004R						

		EA	100	ור ה	יום		·C	PROJE	CT			JOB NO.	SHE	ET NO.	HOLE NO.
		EU	LOG	יר ט	KIL	L LU					FUSRAP	14501-			1089R
SIT		17 -		 1	· ^~		COORDINA	TES		_		A		OM HORIZ	BEARING
3EG			nedy 1			1)	J		npri		1,890 E 398 AKE AND MODEL SIZE		Vert		
	_	. 1	l-16-8			Engel	; BNI				AKE AND MODEL SIZE	OVERBURDEN 9.0	ROCK	(FT.)	TOTAL DEPTH
							ESEL. TO	P CAS	ING	GR	OUND EL. DEPTH/EL.	ROUND WATER	DEPTH.	/EL. TOP	
		3.3/9				11	1				¥ /			/	• • • • • • • • • • • • • • • • • • • •
SAM			MEIGHT	-	CAS	SING LE	FT IN HO	LE: DI	A./L	EN	TH LOGGED BY:				
	14	10 II	os/1 8 i	n.			NO	NE		-		R. Migu	ıes		
Ü.	길쁘		SAMPLE BLOWS "N" % CORE RECOVERY	PR	JATEI ESSU	RE			9		•			-	
Ę	본ਲ	E W	7. 8.		EST:	5	ELEV.	Ŧ	GRAPHICS	SAMPLE	DESCRIPTION AND	CI ASSTETCA	TTON	NOTES	
- - -	nΖ	L L	£300	SZ.	စ္တမ	₩zż		DEPTH	1	ä	DECORAL FROM PARE	OCHOOL AON			LEVELS, RETURN,
£₹	[[[FO	SINE	L089 IN 9. P. F	PRESS.	E SE			8	7				1	TER OF ING, ETC.
\$ \$\$	1.0	1.0			11.0			ļ			0.0 - 1.9 Ft. Sandy Silt (CL-ML). Dark yell	y CLAY			
SS	1.0	1.0									(CL-ML). Dark yell (10YR4/2). FILL.	owish brown		Borehold 0-9.0 Ft	e advanced Lusing 3"
38	1.0	1.0					=				0.7-0.8 Ft. Sand son	e. vellowish grav	Ę	i.d. split	-spoon and 4" o.d.
SS	1.0	1.0					=				(5Y8/1).		Ė		em augers.
SS	1.0	0.8] =				1.2-1.3 Ft. Light br decreased silt conten	own (5YR5/6); t.	F	1	
	1.0	1.0					-	5		-	1.3-1.9 Ft. Dusky y		ŧ	Borehol	• Was
	1.0	0.5	-				-				(10YR2/2).		1	radiolog	ically sampled ima-logged by
	1.0	1.0									1.9 - 2.3 Ft. CLAY (C) brown (5YR4/4).	.). Moderate		TMA-E	berline, Corp.
	1.0	1.0					-		122	1	7			1	
	1.0						-				2.3 - 2.7 Ft. <u>SAND</u> (SF brown (10YR4/2), fi	ne- to coarse-grain	ined.	1	
										$\ $	2.7 - 3.0 Ft. CLAY (C)). Pale brown	-:-1-	Augered	13
										$\ \ $	(5YR5/2) mottled w (5YR7/2).	en grayish orange	pink	gamma-	scanned to
											3.0 - 3.6 Ft. Sandy CL	AY (CL-ML).		8.5 Pt.	
	ļ									Ш	Moderate brown (5Y coarse-grained sand	K4/4), line- to component.	- 1		
										П	3.6 - 4.0 Ft. SAND (SF brown (10YR4/2), fi). Dark yellowisi	<u> </u>		
	ľ									$\ \ $					
										Ш	4.0 - 5.0 Ft. CLAY (C) yellowish brown (10)	l). Moderate (R5/4) layered wi	ith		
	4.0 - 5.0 Ft. CLAY (CL). Moderate yellowish brown (10YR5/4) layered with <1" streaks of grayish orange pink (5YR7/2), brownish black (5YR2/1), and														
							ļ			П	brownish gray (5YR	(/1).			
										П	5.0 - 5.5 Ft. Sandy CL Dusky brown (5YR2	AY (CL-ML).			
					ļ t						coarse-grained sand	component.			
											5.5 - 7.7 Ft. Clayer SA gray (5Y4/1), fine-	ND (SC). Olive	ined.		
		Ì									5.9-6.2 Ft. Increase				
İ]					1				7.7 - 8.4 Ft. SAND (S				
							1				(N5), fine- to very c	parse-grained.			
				1							8.4 - 9.0 Ft. <u>CLAY</u> (C) (10R4/2).	.). Grayish red			
]	1						(10101/2).				
							,			П	Bottom of borehole at 9				
1										П	Borehole backfilled with	в вроця, 11/17/87	•		
	Description and														
			l											classific	visual
														examina	ition.
										$\ $					
				<u> </u>		1	SITE	L	ل	Ц				HOLE NO	
			POON; S1 ; P = P1			000,		j	l.F.	K	ennedy Park (LODI)			089R

	G	FC	LOG	IC D	RII	110	G	PROJE	CT					JOB NO.	- 1	ET NO.	HOLE NO.
SIT							COORDIN	ATES			FUSR/	AP			138 1	OF 1	1068R
		.Keı	nnedy l	Park (LOD	(I)				N 1	,661 l	E 412	<u>.</u>		Veri	- 1	DENTING
BEG	UN	CC	MPLETED	DRILL					DRILL		AND MOD		SIZE	OVERBURDEN			TOTAL DEPTH
			0-27-8			E.D.			7	10B	LE B-		6.5"	14.0			14.0
COR	E REC	OVER' OV		() CORE	BOXE	S SAMPL	ESEL. TO	P CAS	ING	GROUN	D EL.	DEPTH/	EL. GROU	ND WATER	DEPTH	/EL. TOP	OF ROCK
SAM	PLE H		R WEIGHT	/FALL	CAS	1 -	FT IN HO	LE: DI	A./L	ENGTH	LOGGED	BY:				/	
		<u>40 l</u>	bs/30	in			N.	A						David Ha	rnish		i
표.	ЭШ	ပ္ပုံ	5; >	PR	JATEF ESSU				S								
DIAM.	문뜻	RAN			[EST		ELEU.	F	BRAPHICS	SAMPLE	neerote	STIME	I AND C	LASSIFICA	TTON	NOTES	
0.0	a z	۳	ES OU	SZ.	SS H	Ψzż		ОЕРТН	효		JEGUR ZI	1201	. 4.15	LAJOZI IO	11 1011		RETURN,
SAN CONTRACTOR	SAMP. ADU.	ξÖ	SAMPLE BLOWS "N" % CORE RECOVERY	LOS G.P.	PRESS. P.S.I.	HENE HENE			GR.	N.							TER OF ING, ETC.
	2.0	0.9	5		<u>u.u.</u>		-	-		0	- 8.0 ft. S	AND	SP.SW)	FILL, gravelly rained.	/ <u>,</u> ;	Drilled v	with hollow
			15					'	-	\ \	cobbly, 1	mediun	n to line g	rained.		stem au ID/6.5"	OD.
S2	2.0	1.1	50/0				-	1 '		† [0 - 0.4 ft	t, orga	nic topsoi	l, dark brown	,	Hole geo	ock at 1.5 ft.
			1				_			41						Analytic	y Eberline
S2	2.0	1.0	3 5				-	<u>'</u>		†	4/6), fin	e grain	ed cobble	sh brown (10° s of cement a se.	nd	through	ft., drilled gravel
			6					5-									
S2	2.0	1.2	1 3							1	reddish	it. str brown	ong brown (5YR 4/4	n (7.5YR 5/6), some grave	l'.		
			ĭ														
3 medium grained. / 8 ft																ncountered at	
2 3 80 - 14 0 ft. SAND (SP-SM) brown														8 1t.			
S2 2.0 1.6 1 (7.5 YR 5/4), fine to medium grained, wet.																	
\$ 1																	
S2	2.0	1.8	3 2							7							lled with 3
			4										14 ft. sa	nd after 12 - mple pulled.			
BOTTOM OF HOLE														14.0 ft.		1	
			9														
6 6																	
			6														
			"													1	
						-											
										1						ŀ	,
										1							
	1																
										1							
		i														1	
	1					1											
	1					1											
55	SPI	IT SI	POON; ST	= SHE	BY TI	IBF - S	ITE	_	لــــا							HOLE NO	•
			; P = PI			,,,		J	.F.	Ken	nedy	Par	k (LO	DI)		10	068R

	G	EC	LOG	IC D	RIL	LLO	G	PROJEC	T .					JOB NO		ET NO.	HOLE NO.
TITE							COORDINA	ITES			FUSR/	AP.			-138 1	OF 1	1066R
	J.F	.Keı	nedy l	Park (LOD	I)				N 1.	845 I	E 414	1			tical	BEAKING
3EG	JN	CC	MPLETED	DRILL				į			AND MOD		SIZE	OVERBURDEN		K (FT.)	TOTAL DEPTH
)-27 <u>-8</u>			E.D.			M	OBI	LE B-		6.5*	22.0			22.0
CORE				(S) CORE	BOXE		ESEL. TO	P CASI	ING G	ROUND	EL.	DEPTH/	EL. GROU	ND WATER	DEPT	I/EL. TOP	OF ROCK
SAME		2.1/	S WEIGHT	/FALL	ICA:	8	FT IN HO	F: DI	A . / L E	NGTH	II OGGED	BY.		· -	1	/	
			bs/30				NA NA		,			•••		D. Har	nish		
Щ.	3	<u>نا</u> .	. .		JATE					1							· · · · · · · · · · · · · · · · · · ·
SAND DIAME	58	REC	SAMPLE BLOWS "N" % CORE RECOVERY	PR	ESSU			E	GRAPHICS SAMOLE	1_						NOTES	
Ģ	100		돌리임증	თ_ⴀ	ñ.Η	W	ELEV.	ОЕРТН	RAPHIC		ESCRIF	PTION	AND C	LASSIFIC	ATION		LEVELS, RETURN,
器	巴第一	침없	œ김×ñ	LOSS IN G.P.	PRESS. P. S. I.	ANIE ANIE SI		۵		Ĭ			•			CHARAC	CTER OF
SS	2.0	1.5	8-12	- 6	<u>a</u> a			ļ		0.0	- 5 2 Ft	शा:1	r and SAN	D FILL (M	¥.	DRILL	ING, ETC.
		-	14-12							0.0	SM).	• 944		(14)	 ,	Borehol	e advanced using 3" i.d.
SS	2.0	1.3	5-5-8-6			•		.			0.0-2.0 I	Ft. Sil	t, several	colors mixed eddish brow	l:	split-sp and 6.5	oon sampler
						·	,	.			gravel.		ii, biack, i	ecount blow	n, some	solid-st	em augers.
SS	2.0	2.0	4-5-3-5					-	:		2.0-2.9 I yellowish			brown and		radiolog	ically sampled ima-logged by
							_	5_			•			doub become		TMA-E	berline, Corp. Ft. Elevated
SS	2.0	20	5-7-8-10				_			\dashv	black, fir	ne- an	d medium	dark brown grained.	and /	reading HP-210	with
22		2.0	D-1-0-10							5.2	- 5.8 Ft (5YR6/1	. Silta l), wet	SAND (S	M). Gray		HF-210	•
SS 2.0 1.3 2-5-7-6 5.8 - 10.0 Ft. CLAY (CL). 5.8-6.8 Ft. Weak red (10R5/4).																	
								ļ ·			5.8-6.8 1	Pt. W	eak red (1	0R5/4).			
SS	2.0		2-2-4-4				-	10_		\sqcap	6.8-9.0 l brown (2	Ft. Lie	tht gray a	nd light yell	owish	И	
											•		•	y (2R5/1).	ĺ		
SS	2.0	2.0	7-7-13 13							10.	.0 - 13.8	Ft. SI	LT and S	AND (ML. S	SP).		
SS	2.0	2.0	7-8-8-7				-		Ш		Weak re	d (10R ined, ir	15/2); sand iterbedded reases do	l is very l with 7 - 1	5 mm	d	
								15_		13.	8 - 14.2	Ft. G	ravelly SA	ND (SW).			
								'		1	COSISE-S	rained	rown (5Y) , rounded	gravel.		16-18 F Sand he	t. No sample.
										14.	{7.5YR4	/4), m	AND (SP) edium-gr	sined abund	ant	auger.	
											gravelly			ided to suba	ngular,		
								20_									
				}			_								·		Auger
										Bo Bo	ttom of i	boreho ackfille	le at 22.0 d with spo	Ft. pils, 10/27/8	7.	refusal.	
						1											
						1	['	
				1													
					İ												tion and
																soils by	
																examin	stion.
		1			1												
3 S :	= SPL	IT S	POON; ST	= SHE	LBY T	UBE: S	ITE	1		<u> </u>						HOLE NO	
			; P = P1					j	.F.I	<u> Ken</u>	nedy	Par	k (LO	DI)		1	066R

!	(GE(OLOG	ic r	RII	110)G	PROJE	СТ		T		JOB NO		SHEET NO.	HOLE NO.
SIT							COORDIN	ATES			FUSRAP				1 OF 1	1067R
		7.Ke	nnedy	Park	(LOI	OI)	330,10	IN IES		1	N 1,761 E 415				FROM HORIZ	BEARING
BEG		1	OMPLETE		LER		— I	***	DRIL			IZE	OVERBURDEN		ROCK (FT.)	TOTAL DEPT
10-	-27-	871	0-27-8	37 *\ con	E BOY	E.D.	.I.]	M	OBILE B-57	6.5"	12.0			12.0
uon.	- 720	9.5/	79	A) ICOK	E BUXE	S SAMP	ESEL. TO	OP CAS	ING	GF	ROUND EL. DEPTH/EL	L. GROUN	D WATER	DE	PTH/EL. TOP	OF ROCK
SAM	PLE H	IAMME	R WEIGH	T/FALL	CA		FT IN HO	LE: D	IA./L	.EN	IGTH LOGGED BY:				/	
_	1	40	lbs/30	in			N		_				D. Har	nish		
SAMP. TYPE AND DIAM.	일삤		SAMPLE BLOWS "N" % CORE	PF	WATE: RESSL	IRE			S	П						
TIO	₹Ö	E 1	7. 8.	<u> </u>	TEST	T	ELEV.	Ŧ	GRAPHICS	SAMPLE	DESCRIPTION &	AND CL	ARRIETO		NOTES	
₽ <u>₽</u> ₽	σ. Z.	급	E300	LOSS	SSH	ALL THE		DEPTH	μŪ	H	DESCRIPTION P	MND CL	HOSIFIC	41 TO	1	LEVELS, RETURN,
Q Q	SI	A S		7.9	PRESS. P. S. I.	F.4E		-	B	n					CHARAC	TER OF NG, ETC.
SS	2.0	1.5	8-5-5-7	1				 			0.0 - 5.2 Ft. SAND Brown and yellow	FILL (S	P, SW).		DRILLI	NG, EIC.
		•						'			Brown and yellow coarse-grained, so	vish bròw ome grav	n, finé- to el.		Borehole 0-12 Ft.	advanced using 3" i.d.
SS	2.0	0.5	19-5-7 8	1				•			0.0-1.5 Ft. Brown	n (7.5YF	15/4),		split-spo	on sampler
											fine-grained.				solid-ste	m augers.
SS	2.0	1.6	16-6 9-12]							1.5-2.5 Ft. Coars		_		radiologi and gam	cally sampled ma-logged by
		ĺ	J 12				_	5_		₽	2.5-5.2 Ft. Dark: (10YR4/4), coarse	yellowisl e-grained	h brown H.		TMA-E	erline, Corp.
SS	2.0	2.0	17-10 9-15	1				-			5.2 - 6.9 Ft. Silty S/	AND (SN	(). Dark		<i>-</i> /	
							_	-			yellowish brown () medium-grained,	10YR4/4 wet.	IJ,		Д	
SS 2.0 1.4 4-10 12-12 6.9 - 12.0 Ft. SILT. CLAY, and SAND (ML, CL, SP). Reddish brown (2.5 YR4/4) and weak red (10R5/2), sand is very																
	SS 2.0 1.5 4-5-6-9 10 10 and weak red (10tts/2), sand is very fine-grained. Bedding is 5 - 15 mm layers.															
SS	2.0 1.5 4-5-6-9 10 and weak red [10R5/2], sand is very fine-grained. Bedding is 5 - 15 mm layers. 7.5-7.6 Ft. Gravelly sand, medium-grained.															
	7.5-7.6 Ft. Gravelly sand, medium-grained.															
	7.5-7.6 Ft. Gravelly sand, medium-grained. 10.7-12.0 Ft. Red (10R5/6), medium-grained, thin interbedded sand.															
	10.7-12.0 Ft. Red (10R5/6), medium-grained, thin interbedded sand.															
	Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 10/27/87.															
					Ì											
					1			İ		ĺ						
		1					İ									:
					j		İ									
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				j	- 1	1										1
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				-			Ì			ĺ						
				l			- 1	- 1		l						
								1							Descriptio	
			-												classificati	sual
				İ	Ì										examination	on.
								ĺ								
\perp	\perp															
; = ;	SPLI1	SPC	ON; ST	= SHELE	Y TUB	E; SIT	E		P #/	,		(1.0-			HOLE NO.	
- V	ERN 15	NON;	P = PIT	LHEK; () = OT	HER		J.I	r.K	.e	nnedy Park (LOD	l)		106	57R

								PROJE	CT		•			los vo	laur	FF 114	lua: a
	G	EO	LOG	IC D	RIL	L LO)G	PROSE	. .		YOU TOWN	A TD		JOB NO	-	ET NO.	HOLE NO.
SITE							COORDINA	TEC			FUSR	AP			-138 1		1083R
		Ker	nedy l	Park (TOD	T\		1153		27 4	0.50	T 416				OM HORIZ	BEARING
BEG			MPLETED			1)					,952			T	Ver		
			1-3-87	1		E1	. Dair		1		E AND MO		SIZE	OVERBURDEN	ROCI	((FT.)	TOTAL DEPTH
					G.	Lugei	; BNI		M		man A		4"	1.5			9.8
COM		.1/		CORE	BUAE.	2	.53 55. 10	P CAS	ING	GROUN	ID EL.	DEPTH/	EL. GROU	ND WATER	DEPTH	/EL. TOP	OF ROCK
CAME			WEIGHT	ZEALL	ica:	1 —	ET THE US	F. D.				X /	 			/	
SPER				-		DING LE	FT IN HO		IA./L	.ENGI H	LOGGE	BY:					
-	14	10 II	os/ 30	IR .			NO	NE		-,				R. Mis	gues		
g.	2 1		\$, ≻		JATE! ESSU			ĺ									
≱ૅ	문	EM	귀는 [문문		EST		l	Į	P	Щ						NOTES	ON:
್ತಾದಿ	- 0	Щ.,	품 취임용	S E	9.	ш	ELEV.	DEPTH	E	SAMPLE	DESCRI	PTION	AND C	LASSIFIC	ATION		LEVELS,
늉	뒤교	토론	80 20	LOSS IN G.P.M	SES.	E SE	<u> </u>		GRAPHICS	28							RETURN, CTER OF
8₫	8 7	<u> </u>	SAMPLE BLOWS "N" % CORE RECOVERY	و لـ	PRES P. S.	⊢Σ			0								NG, ETC.
SS	1.0	0.6					_			., O.	0 - 0.5 1	t. Sano	y Silty C	LAY (CL-M	L). ,	1	
ŜS	0.5	0.5							<i>\(\)</i>	1	Blackis coarse-	h red (5 grained	R2/2), fir sand.	ie- to	1		e advanced using 3"
								١.	- 4//	Пμ					لسب	i.d. split	-spoon
						·	,			"	brown	(5YR3/	mottled	(SC). Gray with light t	NOMU RU	solid-ste	and 4" o.d. m augers.
i							:				(5YR5	/6), fine	to coars	e-grained.		Borehole	e was ically sampled
:								_ '			1.0-2.0	Ft. Gr	ayish red	(5R4/2).		and gan	ima-logged by
						1	1	5-	-111	\prod	2.0-4.7	Ft. Lie	ht brown	(5YR5/6).	ſ	1.MA-E	berline, Corp. Ft. Very slow
						1	1		-							drilling	Ft. Very slow with
		1					-	١.	لببا	⇈┪*	brown	(5YR5/	(1), fine-gr	ML). Pale ained sand.	1	consider resistan	
							-			1				nent is coars	ening	4	
							1	'			with de		ia compo			Some m	oisture noted
						-		·	-	6.	5 - 7.6 F	t. SAN	D (SP).	Light olive		at 5.5 F	τ.
							-			1	gray (5	Y5/2) n	ixed with	Light olive brownish g ium-grained	ray	4	to 8.0 Ft.
	1 :										increas	ing with	depth to	coarse-grained	ied.	Gamma	-scanned to
							ļ				6 - 9.8 E	t. CLA	Y (CL).	Gravish red		7.5 Ft.	
											(5YR4	(2).	_ (/-	Grayish red	- {		
							Ī		i	<u> </u>				·		1	
							İ			B	ottom of orehole l	borehol	e at 9.8 F	t. pils, 11/3/87		1	
						!	ŀ		1	"				, 22,0,01	•		
•																	
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1		-					1			11							
	1]	1		1							1	
							1									Descript	ion and
																classifica	stion of
										[]						soils by	
										11							
												•				1.	
L	<u> </u>	<u> </u>				<u> </u>	<u> </u>	<u> </u>	<u> </u>	Ш				····			
SS =	SPL	IT SF	POON; ST	= SHE	BY TU	JBE; S	ITE	_			_	-				HOLE NO	
D =	DENN	I SON ;	P = PI	TCHER;	0 = 0	THER		J	ı.F.	Ken	ınedy	Par	k (LO	UI)		1)83R

•	GE(DLOG	IC D	RIL	L LC	G	PROJEC	CT	FUSRAP		J08 NO.	1	ET NO.	HOLE NO.
SITE						COORDIN	ATES		PUSKAF			-138 1 ANGLE FR	OF 1	1076R
		nnedy) <u> </u>	<u> </u>			N 1,909 E 4	24		Vert		
3EGUN	ı	OMPLETED		.ER		_	Ì		L MAKE AND MODEL	SIZE	OVERBURDEN		((FT.)	TOTAL DEPTH
		0-29-8		BOYE	E.D.		2.010	N	GROUND EL. DEPT	6.5"	26.0			26.0
	16.8		LUKE	BUAE	S SAMPL	ESEL. IC	P CASI	NG	GROUND EL. DEPT	TH/EL. GROU! /	ND WATER	DEPTH	/EL. TOP	OF ROCK
		R WEIGHT	/FALL	CAS		FT IN HO	LE: DI	A . /I	ENGTH LOGGED BY:	/	···		/	
	140	lbs/30	in			N.		, 6	LOGGED ST.		D. Har	nich		
<u> </u>	ப		1	JATE						•	D. IIAI	41511	<u> </u>	
SAMP. TYP SAMP. ADV	PLE RE	SAMPLE BLOWS "N" % CORE RECOVERY	LOSS IN G. P. M.	EST: EST: EST:		ELEV.	DEPTH	GRAPHICS	DESCRIPTION	DN AND C	Lassific	NOITA	WATER	LEVELS, RETURN,
कुर ह	기죖		77.9	E	Ε.Ε.Ε.		_	9						TER OF NG, ETC.
SS 2.0	1.5	1-1-3-1	4	Lan La	 -				0.0 - 5.1 Ft. SA	ND PILL (S	SP).			
							-		0.0-1.0 Ft.]	•	•	opsoil.	0-26 Ft.	advanced using 3" i.d.
SS 2.0	1.7	5-5-4-4					-		1.0-5.1 Ft.		• • •		split-spe	on sampler
		1			'	·	-		(10YR5/6), i	ine-grained.			solid-ste	m augers.
SS 2.0	1.6	2-2-4-2					5_		2.0-2.7 Ft. 3 some gravel.	Sand, black,	fine-grained	•	radiologi	cally sampled ma-logged by berline, Corp.
						-	1		5.1 - 14.0 Ft. C	ZLAY (CL).			1 5	ocimic, ocip.
SS 2.0	2.0	7-10 10-10] :						5.1-9.3 Ft. (5YR7/2), ye	White and pi	inkish gray vn iron-oxid	e stain		
SS 2.0	2.0						-		toward top.					
35 3.0	•													
SS 2.0	2.0	6-12	-				10_	9.3-14.0 Ft. finely interbe	Weak red (:	10R5/3) and	gray,		•	
		15-17					-			Juucu			1	
SS 2.0	2.0		1											
		21-27												
SS 2.0	2.0	12-14				_	-		14.0 - 19.0 Ft.	CLAY SILT	P and SAND		-	
		15-27					15_		(CL, ML, SM (2.5YR6/0); fraction incre	i). Weak red sand is very	(10R5/3) as fine-grained	nd gray		
SS 2.0	2.0						·-		fraction incre interbedded	eases downw with 5-10 m	ard. Finely m layers.	,		
		14-18			•		-		16.0-18.0 Ft.	. Sand, satu	rated, liquef	ied.	İ	
_	-						-		17.0-19.0 Ft.				18.0 Ft.	Sampler
						-	-		19.0 - 26.0 Ft.	SAND and	SANDY		refusal.	
							20_	-	GRAVEL (S	P, GS).				
- 1			, i				_	•	19.0-22.0 Ft.	. Sandy grav	vel.			
		ļ					-	•						-
							-	7-					ł	
							١.	•					ł	
		j					25_	•		0	•		ļ	
						_		*	24.5-25.0 Ft.	. Sandy grav	vel.			
		}							Bottom of borel Borehole backfil	nole at 26.0 lled with spo	Ft. ils, 10/29/87		26.0 Ft. refusal.	Auger
			.							-	•			
		İ											Descript	
													classifica	risual
							1						examina	tion.
20 = 20	I IT F	POON; ST	L cue	DY 71	ipe. Is	ITE	<u> </u>	<u> </u>					HOLE NO.	
		; P = PI			,,,		J	.F.I	Kennedy Pa	rk (LO	DI)			76R

	G	FC	LOG	וכ ח	RII	110	ام.	PROJE	CT			_		JOB NO			HOLE NO.
SITE					1716						FUSRA	<u> </u>			-138		1112R
31.1		K _o ,	nedy l	Darb /	TAR	\T\	COORDINA	ILES		at e	012 E	136				FROM HORIZ	BEARING
3EGL			MPLETED			1)	<u></u>		ND I I		823 E		SIZE	OVERBURDEN		rtical	TOTAL DEPTH
11.	-3-8	- 1	1-3-87			E.D.	I.				ILE B57		6.5"	10.0	IK.	CK (FT.)	10.0
					BOXE		ESEL. TO	CAS	ING	GROUN			EL. GROU		DEP	TH/EL. TOP	
		.4/				5]]	E /				/	
SAM			WEIGHT		CAS	ING LE			A./L	ENGTH	LOGGED B	Y:			··· • · · · ·		
-			bs/30				NOI	NE .						D. Har	nish		
n.	سادا	ပ္ပါ္ပ	BLOWS "N" X CORE RECOVERY	PR	JATEF ESSU			, , ,	8								
T.	딤띥		규근 KB	1	TESTS		ELEV.	Ε	l iii	븹 .						NOTES	
۵,	6 7	3 0	雑記の覧	ω_E	ЮH	<u>u</u>	ELEV.	ОЕРТН	BRAPHICS		ESCRIP	I TUN	AND C	LASSIFIC	ATION	1	LEVELS, RETURN,
瑟		對於		LOSS IN G.P.	ည်တ	TIME IN MIN.		•	N. C.	F						CHARAC	TER OF
88	2.0	18	3-8-8-7	- 6	<u>a</u> a	<u> </u>			L	<u> </u>	1054	0		201300		DRILLI	NG, ETC.
	2.0	1.0	0-0-0-1							0.0	FILL (GA	A-ML	, SP).	and SAND		Borehole	advanced
66			3-3-6-4							•	0.0-1.2 F	t. Gr	avelly SIL	T, dark bro	WID.	split-spe	using 3" i.d. on sampler
33	2.0	1.2	3-3-0-4							; ;	(10YR3/3 (10YR4/1), mix silt;	ked with d dusky re-	lark gray d Brunswick		and 6.5"	o.d. m augers.
											sandstone	grav	el.			Borehole	was ically sampled
SS	2.0	1.8	3-1-5-8								1.2-4.0 Ft	Sar	nd, yellow	ish brown some small		and gam	ma-logged by berline, Corp.
								5_		#	rounded a	Tavel	, silty in p	laces.			berime, Corp.
SS	2.0	1.3	7-9-13 17					,		4.0) - 4.7 Ft.	Silty	SAND (I	'ILL?) (SM) 4),		Ή	
			••					•		1	medium-	graine	(2.5 1 R4/ d, wet.	4),		1	
SS	2.0	1.3			l					4.	- 5.8 Ft.	SAN	D (SP).	Gray			Groundwater
			12								gravelly a	U), me t base	edium- to e (rounded	Gray coarse-grain i).	ned,	observed	1.
							-	10 .		<u> </u>	- 10.0 Ft	. CL	AY and S	LT (CL-MI		⁴ H	
											Finely int	erbed	ided.	•	•]]	
				:						[5.8-6.9 F	t. Re	ddish brov	vn (2.5YR4/	4).		
											6.9-8.0 Ft	t. Gr	ay (2.5YR	.5/0).			
			*								8.0-10.0 E	Et. C	lay is gray	, silt is dush	y,	11	
									1	$\ \cdot\ _{L^{2}}$	sand; bed	ded w	ith 3-5 m	ry fine-grain m layers.	iea		
														n.		1	
					,					B	ttom of borehole bac	kfille	d with apo	rt. ils, 11/3/87	•		
			j		•												
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i																1	
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					ł											soils by	visual tion.
			,														
_										Ш							
			POON; ST			, ,	ITE			.,		_		5 1)		HOLE NO	
) =	DENN	ISON	P = PI	TCHER;	0 = 0	THER		J	ŀF.	Ken	nedy l	Yar	k (LO	(וע		1.3	l12R

	G	EC	LOG	IC D	RIL	L LO	G	PROJEC	CT		ELICD AD		JOB NO.	1	EET NO.	HOLE NO.
SITE							COORDINA	ATES			FUSRAP		14501-		I OF 1	1111R BEARING
	J.F	.Ke	nnedy]	Park (LOD	I)				ľ	1,875 E 426				rtical	
BEGL			MPLETED		.ER			ŀ				SIZE	OVERBURDEN		CK (FT.)	TOTAL DEPTH
			1-3-8		BOVE	E.D.	I. ESEL. TO			M	OBILE B57	6.5"	10.0			10.0
LUKE		5.3/		LUKE	BUXE	S SAMPL	ESEL. IO	P CASI	ING	GR	OUND EL. DEPTH/ 量 /	EL. GROU	ND WATER	DEPT	H/EL. TOP	OF ROCK
SAHF			R WEIGHT	/FALL	CAS		FT IN HO	LE: DI	A./L	EN	GTH LOGGED BY:				/	
1			bs/30				NO	NE -					D. Har	nish		
Ö.Σ.	う	ပ္ထုံး	SAMPLE BLOWS "N" % CORE RECOVERY	PR	JATE		-		97	П		_				
겉	문ਲ	2 3	7. KP		EST	3	ELEV.	Ŧ	불		DESCRIPTION	AND C	ARRIETO	STION	NOTES	
 	ız		E S 00	SZ.	85H	Yzż		DEPTH	BRAPHICS	SAMPLE	DEJORIFIZOR	AND C	LH991F10	- 1		LEVELS, RETURN,
AND DIAM.	준의	ES		P. P.	E.	H H		"	8	7						CTER OF ING, ETC.
SS	2.0	1.7	O-YY								0.0 - 4.2 ft. SILT.	Gravelly	SILT. SAND			
			7-8								FILL (ML, GM	•			0-10 Ft.	e advanced . using 3" i.d.
SS	2.0	1.2	4-2-2-2								0.0-0.4 Ft. San fine-grained, so	nd, reddisl me grave	h brown (5Y) l.	R4/4),	split-speand 6.5"	oon sampler o.d.
ļ								-			0.4-0.8 Ft. Şan	id, gray (7.5YR5/0),		Borehol	
SS	2.0	2.0	1-5-15	l			-	-		4	medium-graine	d, dry loo	se.		radiolog	ically sampled nma-logged by berline, Corp.
i .			19				-	5_	╫		0.8-2.0 Ft. Silt reddish brown	, mixed d and brown	ark brown, h n, some grave	olack, el.	HTMA-E	berline, Corp.
SS	2.0	1.4							$\{ \cdot \}$		2.0-4.2 Ft. Gr	avelly silt.	brown (10Y	'R4/3)	5.9-10.0	Ft. Wet.
			7-10				_	-			with yellowish l gravel is broken	brown iroi i basalt, c	n-oxide ŝtair oal.	1,	/ /	
SS	2.0		4-5-6-7	•					11		4.2 - 5.0 Ft. SILT	(OL). B	lack		11	
į								-	╢		(10YR2/1), org	anic.][]	
							-	10.			5.0 - 6.7 Ft. SAN ML). Light gra	D and SII y to gray	T (SM, SP, (10YR6/1),	fine-	Ъ	
											to medium-grai	ined, infre	quent grave	l,		
											5.1-5.8 Ft. Yel	llowish br	own (10YR5	/6),	#	
					:					П	some silt.	<u></u>	,		<u> </u>	
İ										П	6.7 - 10.0 Ft. SIL. Reddish gray (1 yellowish brown	T and CL 10YR6/1)	AY (ML-CL with some	,).	11	
											yellowish brown 3-5 mm thick.	n iron-oxi	de stain, bed	ls are		
															1	
									1		Bottom of borehole Borehole backfilled	e at 10.0 l	Ft. pils, 11/3/87.			
								İ		$\ $						
1 .										$\ \ $						
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			1			<u> </u>	1	1	<u> </u>	Ш				 -	UOLE NO	
			POON; ST ; P = P1			,	ITE	J	.F.	K	ennedy Pari	k (LO	DI)		HOLE NO	i11R

GEOLOGIC DRILL LOG	PROJECT JOB NO	.												
		-138 1 OF 1 1039R												
SITE COORDIN		ANGLE FROM HORIZBEARING												
J.F.Kennedy Park (LODI) BEGUN COMPLETED DRILLER	N 1,718 E 428 PRILL MAKE AND MODEL SIZE OVERBURDEN	Vertical												
11-13-8711-13-87 G. Engel; BNI	Minuteman Auger 4" 12.7	12.7												
CORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TO	P CASING GROUND EL. DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK												
11.8/92 13	¥ /	/ /												
· 1	LE: DIA./LENGTH LOGGED BY:													
N/A NO	NE R. Mi	gues												
SAMP. TYPE SAMP. ADU. LEN CORE CORE REC. CORE REC. CORE REC. SAMPLE RECOUERY IN RECOURRY IN BANDLE RECOUERY IN BANDLE RECOUERY IN BANDLE RECOUERY IN IN IN IN IN IN IN IN IN IN IN IN IN I	97													
TESTS ELEV.	I I I DESCRIPTION AND CLASSIFIC	NOTES ON: CATION WATER LEVELS,												
	DEPTH SAME NOITH SERVICES OF THE SAME OF T	WATER RETURN,												
SAMP. DI SAMPLE CORE FORMELE CORE FORME NO C	5 8 9	CHARACTER OF DRILLING, ETC.												
SS 1.0 0.7	0.0 - 0.2 Ft. Silty Sandy CLAY (CL-M	(L).												
SS 1.0 0.8	Dusky yellow brown (10YR2/2), fine medium-grained sand.	Borehole advanced 0-12.7 Ft. using 3"												
SS 1.0 0.9	0.2 - 12.7 Ft. Silty SAND (FILL).	i.d. split spoon sampler and 4" o.d.												
SS 1.0 1.0	Moderate brown (5YR4/4), fine- to medium-grained.	solid stem augers.												
SS 0.7 0.6														
SS 1.0 1.0	1.4-1.7 Ft. Coarsening with depth t coarse-grained.	·												
SS 10 08 Borehole was 2.0-4.1 Ft. Dark vellowish orange radiologically sampled														
(10 YR6/6). S 1.0 1.0 S 1.0 1.0 S 1.0 1.0 A.1-4.7 Ft. Light brown (5 YR5/6). Augered to 9.0 Ft. Gamma-logged by TMA-Eberline, Corp. Augered to 9.0 Ft. Gamma-logged to 8.5														
Gamma-logged to 8.5 4.7-4.9 Ft. Dark yellowish brown ft.														
4.7-4.9 Ft. Dark yellowish brown (10YR4/2).														
SS 1.0 1.0 10 (10YR4/2). SS 1.0 1.0 10 4.9-6.0 Ft. Dark yellowish orange.														
	6.0-9.0 Ft. Light brown.													
SS 1.0 1.0														
SS 1.0 1.0	(10YR6/4).	,												
SS 1.0 1.0 9.0-12.7 Ft. Moderate yellowish brown (10YR6/4). Bottom of borehole at 12.7 Ft. Borehole backfilled with sand, 11/13/87.														
		<u> </u>												
		1												
		•												
		·												
		Description and												
		classification of soils by visual												
		examination.												
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE	LE Kammada, Danie (LODI)	HOLE NO.												
D = DENNISON; P = PITCHER; O = OTHER	J.F.Kennedy Park (LODI)	1039R												

1	(GE(DLOG	ic d	RII	110)G	PROJE	СТ			JOB NO.	- 1	EET NO.	HOLE NO.
SIT							COORDIN	ATES			FUSRAP	14501-1			1088R
		-Ke	nnedy	Park	(LOI	OI)		20		1	N 1,838 E 439	AN		ROM HORIZ	BEARING
BEC			OMPLETED 1-16-8			T	****		!	L	MAKE AND MODEL SIZE	OVERBURDEN		K (FT.)	TOTAL DEPTH
					E BOXE	SSAMPL	BNI	P CAS	ING	lin	uteman Auger 4"	11.0	brazi	1 (F) TOO	11.0
L		8.6/	78	- 1		13					ቜ /	ND WATER	DEPT	H/EL. TOP	OF ROCK
SAM			R WEIGH bs/18		CA	SING LE	FT IN HO		[A./L	.EN	IGTH LOGGED BY:		1	<u>-</u>	
Ä.					WATE	R	NO	NE.	T	П		R. Migu	25	7	
SAMP. TYPE	AMP. AD.	MPLE RE	SAMPLE BLOWS "N" % CORE	LOSS IN G.P.M	SESST S.I.S.		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND C	LASSIFICAT	ION	WATER	ON: LEVELS, RETURN, TER OF
SS	1.0	0.5	<u> </u>	۵ ا	5.	Ε			Ø	U					NG, ETC.
	1.0	0.8		1			-				0.0 - 1.0 Ft. Silty Sandy Cl Dusky brown (5YR2/2).	LAY (CL-ML). Fine- to		Borehole	advanced
	1.0	1.0			1						medium-grained sand commottling with moderate r (10R4/6). Humus.	mponent. Som	e	0-11.0 F	t. using 3" -spoon
SS	1.0	1.0		1		.		-			L ·			sampler :	and 4" o.d. m augers.
SS	1.0	0.7		Ì	ļ		-	•			1.0 - 4.3 Ft. Sandy Silty CI Grayish brown (5YR3/2)			_	
SS	1.0	1.0		1	ļ		-	5 _		ŀ	1.7-2.2 Ft. Light brown	• • •	l	Borehole	was
	1.0	0.6					-	-			2.2-4.3 Ft. Dark yellowis mottled with moderate by	nown (5VP4/4)	₹4/2)	radiologi	cally sampled
	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0														
SS								-		I	yellowish prown (luyk4/	2), fine- to			
SS	1.0 1.0 1.0 yellowish brown (10 YR4/2), fine- to														
_	1.0	0.4					4	-			Brownish black (5YR2/1) coarse-grained sand comp	, fine- to			to 8.0 Ft.
											5.4-5.5 Ft. Olive gray (5	Y4/1) fine- to		7.0 Ft.	=
							ĺ				coarse-grained sand string 5.5-5.9 Ft. Olive black (5	•		Ì	
											5.9-6.4 Ft. Grayish black				
							İ				6.4-6.5 Ft. Grayish olive	• •	ľ		
											6.5 - 7.2 Ft. SAND (SP). M (N5), with grains of dusky light gray (N7). Fine- to coarse-grained.	ledium grav	nd		
											7.2 - 11.0 Ft. CLAY (CL). (5R6/2) alternately layere bands of grayish red (10R gray (5YR4/1).	ed with thin (~	1") nish		
											9.0-9.8 Ft. Mottled with yellowish brown (10YR5/4 brown (5Y5/6) and mediu	() and light alig	/e		
											Bottom of borehole at 11.0 F Borehole backfilled with spoil	t. is, 11/17/87.			•
														ı	
														Descriptio classificati soils by vi- examination	on of sual
			OON; ST P = PIT				E .	J.	F.K	∟ (e	nnedy Park (LOD)))		HOLE NO.	38R

GEOLOGIC DRILL LOG	PROJECT	JOB NO. SHEET NO. HOLE NO.												
SITE COORDIN	FUSRAP	14501-138 1 of 1 1183R												
LODI Fire Station No. 2	N 1,763 E 451	ANGLE FROM HORIZBEARING												
BEGUN COMPLETED DRILLER		Vertical VERBURDEN ROCK (FT.) TOTAL DEPTH												
12-1-87 12-1-87 E.D.I.	MOBILE B-57 6.5"	10.0												
CORE RECOVERY (FT./%) CORE BOXES SAMPLES EL. TO	P CASING GROUND EL. DEPTH/EL. GROUND													
4.8/48 5	\ \\\\\\\\\\\\\\	/												
SAMPLE HAMMER WEIGHT/FALL CASING LEFT IN HO														
	NE	D. Harnish												
SAMP DIAM. SAMPLE REC. SAMPLE														
TESTS ELEV.	I DESCRIPTION AND CLA	NOTES ON:												
O O O O O O O O O O O O O O O O O O O	DESCRIPTION AND CLA	SSIFICATION WATER LEVELS, WATER RETURN,												
SAMP DI CORE DE CORE D		CHARACTER OF												
	0.0 - 6.0 Ft. GRAVEL, Silty S	DRILLING, ETC.												
SS 1.5 1.8 11-10-8	Gravelly SILT FILL (GP, S	M, GM-ML). 0-10 Ft. with 3 in.												
SS 2.0 0.2 7-8-10	0.0-0.5 Ft. Gravel, broken	basalt; road i.d. split-spoon sampler and 6.5 in.												
9 9	base.	o.d. hollow stem auger.												
SS 2.0 0.3 15-23	0.5-2.0 Ft. Silty SAND, str (7.5YR4/6), fine-grained wi	ith some round radiologically sampled												
22-13	gravel, lóosé.	and gamma-logged by TMA-Eberline, Corp.												
	2.0-4.0 Ft. Gravelly SILT, topsoil with New Brunswick	dark brown 2.0-6.0 Ft. Poor												
SS 2.0 1.3 8-10 14-17	gravel, damp, soft.	supplimented with												
	4.0-6.0 Ft. Silty SAND, pir (7.5YR6/2) and dark brown	nkish gray fromauger.												
SS 2.0 1.7 6-16 25-30	some broken basalt gravel.	(101110),0),												
10 6.0 - 10.0 Ft. SILT (ML). Dark brown (7.5Y4/2) and weak red, faint laminations becoming more distinct at 7.4 Ft.														
	becoming more distinct at 7	.4 Ft.												
	8.0-8.4 Ft. Weak red.	{												
	8.4-10.0 Ft. Dark gray (10	YR4/1).												
	B													
	Bottom of borehole at 10.0 Ft.' borehole backfilled with spoils,	W 12/1/87.												
		•												
		į												
		 												
		1												
		Identification and												
		classification of samples by visual												
		examination.												
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE D = DENNISON; P = PITCHER; D = OTHER	LODI Fire Station No. 2	HOLE NO. 1183R												

		EC	100	IC D	DII			PROJE	CT			JOB	NO.	SHEET	NO.	HOLE NO.
21.5		EU	LOG		KIL	L LU					FUSRAP	145	01-138			1182R
SIT	Ė	D.,	ook St.	(I OI	\ T\		COORDINA	ATES			1 1 070 Tr 463				- 1	BEARING
BEG	UN		MPLETED				<u> </u>		DRII		N 1,870 E 462 NAKE AND MODEL SIZ	ZE IO VERBUR		Vertic		TOTAL DEPTH
ĺ		1	2-1-87	1		E.D.	I.					L L		NOUN (,	10.0
					BOXE		ESEL. TO	P CAS	ING	GR	OUND EL. DEPTH/EL.	5.5" 10 GROUND WATER	i pi	EPTH/E	L. TOP	OF ROCK
		.9/				5										
SAM			WEIGHT		CAS	SING LE	FT IN HO		A./	LEN	GTH LOGGED BY:					
311	14	UID	s./ 30	in.	JATE		NO	NE	1	TT		D. 1	Iarnish	1	•	447.7
ŽŽ.	김뿐	Ë.	ᇎᆔᆇ	PR	ESSU EST:	RE		_	8							0 114
H	48	<u> </u>	투 이었음	ωE		T	ELEV.	DEPTH	Į		DESCRIPTION AN	ND CLASSIF	ICATI		OTES	LEVELS,
90	호지	교문	\$3 U	LOSS IN G.P.M	3. I	HAN.			BRAPHICS	SAMPLE						RETURN, TER OF
S C	띯디	ğ B	SAMPLE " " " CORE " RECOUERY	7.9	PRESS. P.S.I.	ELE			9	N				1 -		NG, ETC.
SS	2.0	1.5	25-27 23-12				<u> </u>	<u> </u>		N	0.0 - 4.2 Ft. GRAVEL FILL (GP, ML-GM	L and Gravelly	SILT			advanced with 3 in.
			20 12			l				N	0.0-0.5 Ft. Gravel			li	d. split	
SS	2.0	1.8	9-7-6-6							Ŋ		-		10	o.d. holl	ow stem
:							·		1	N	0.5-4.1 Ft. Gravell (10YR3/3), sandy,	gravel is basal	t and Ne	w E	uger. Borehole	
SS	2.0	1.7	2-1-3-5				-	·	\blacksquare	N	Brunswick sandstor and pinkish brown	ne, small pebb silt.	les of Dia	Дε	ind gam	ically sampled ma-logged by
į							-	5-	╫	N	4.1 - 5.2 Ft. SILT (M some iron-oxide, m	AL). Dark gray	with	'Α''	IMA-E	berline, Corp.
SS	2.0	1.1	12-12				_	_	Ш	N	_ \			/		
			12-12	ĺ					$\parallel \parallel$	N	5.2 - 6.5 Ft. Sandy Sl Light brownish gra iron-oxide mottling	SILT (ML-SM) ay (2.5Y6/2) w	ith	-11		
SS	2.0	1.8							-	N	1	-				
i			12						+	N	6.5 - 10.0 Ft. <u>SILT</u> (M (5R6/2), laminated	ML). Pale red d on scale of 5-	20 mm.	ļ		
-	 						-	10	Ш	1	thicker beds downw medium stiff.	ward, some cla	y (?) bed	ls, r		
1							•				8.0-10.0 ft. Weak	red some iron	-oride	-11		
										$\ $	stained beds.	rea, some non	-Oxide			
											Pottom of hombolo at	. 10.0 &				
								1			Bottom of borehole at Borehole backfilled wi	t 10.0 ft. ith spoils, 12/1	/87.			
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			POON; \$1 ; P = P1			, L	ITE			E	Brook St. (LOI	DI)			OLE NO 1.	i82R