22 January 2025
Revised 13 February 2025
Revised 5 March 2025

Aaron G. Fischer, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233

**Re: ISS Pilot Test Results Letter**
**141 3rd Street**
**Brooklyn, NY 11231**
**Brownfield Cleanup Program Site No. C224336**
**Langan Project No.: 170390001**

Dear Mr. Fischer:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C (Langan) prepared this In-situ Stabilization/Solidification (ISS) Pilot Test Results Letter on behalf of Third Street Owner LLC and 155 Third St., LLC to document the successful completion of the ISS pilot test at 141 3rd Street, Brooklyn New York (the site). This letter was revised based on comments provided by the New York State Department of Environmental Conservation (NYSDEC) and in accordance with the collaborative conference call with you on 7 February 2025. The site is enrolled in the NYSDEC Brownfield Cleanup Program (Site No. C224336) and is identified as Block 462, Lot 12 on the Brooklyn Borough Tax Map. A site location map is included as Figure 1.

The primary objective of the ISS is to permanently immobilize dense non-aqueous phase liquid (DNAPL)-impacted soil into a soil-cement matrix. The pilot test was performed to assess mixing procedures and parameters prior to full-scale implementation.

The pilot test was performed between 11 November 2024 and 3 January 2025 in accordance with the NYSDEC-approved Remedial Design Document (RDD) for ISS, contractor's Project Implementation Plan (PIP), Remedial Action Work Plan (RAWP) and Decision Document. This letter presents a summary of the ISS pilot test approach, field implementation and observations, quality control (QC) sample results, and proposed approach and notification for full-scale ISS implementation. Based on the successful ISS pilot test results, the contractor intends to remobilize on 24 February 2025 to begin full-scale implementation in accordance with the PIP and as detailed in the conclusions and recommendations section of this letter.

## ISS PILOT TEST APPROACH

Full-scale ISS will be implemented in the about 2,300-square-foot area underlying the proposed building footprint. The target treatment depth interval within the ISS area is elevation (el.) -18±[1] to el. - 23±. An about 5-foot and 3.5-foot buffer zone were added on top of and below the target treatment interval, respectively, creating a total treatment zone of 13.5 feet between el. -13± and el. -26.5±.

As depicted on Figure 2, two areas, herein referred to as the 'northern' and 'southern' pilot test groups comprise the ISS pilot test locations. Three, 10.6-foot-diameter, overlapping soil mix columns (denoted as ISS-15 through ISS-17 in the northern pilot test group, and ISS-32, ISS-33 and ISS-35 in the southern pilot test group) comprised the northern and southern pilot test groups. The ISS contractor, New Leaf, advanced and mixed all six ISS columns from grade to about 32 feet below grade surface (bgs) (approximately el. 5.5± to el. -26.5±).

New Leaf abandoned ISS columns ISS-12 and ISS-20, the first columns advanced as part of the northern pilot test group because of difficult mixing conditions. New Leaf will re-mix ISS columns ISS-12 and ISS-20 during the full-scale implementation. In response to mixing conditions and in accordance with notification provided to NYSDEC on 15 November 2024, the northern pilot test group was adjusted to ISS columns ISS-15 through ISS-17. Langan and New Leaf, in consultation with NYSDEC, added bentonite and a concrete curing retarder (SikaTard 400) to the pilot test mix.

During ISS pilot testing, the northern group was intended to be mixed a minimum of one pass through the treatment zone (one downward and one upward pass) while the southern group was intended to be mixed a minimum of two passes through the treatment zone (two downward and two upward passes) to compare remedial performance between the single and double pass approaches. As described herein, New Leaf amended the mixing plan and increased numbers of passes via incremental auger advancement and retraction to support advancement through cohesive soils; while maintaining an overall approach of mixing to the column termination and back to the surface for the "one pass" columns, and to the column termination, back to the top of the treatment zone, down to the column termination and back to the surface for the "two pass" columns.

## FIELD IMPLEMENTATION AND OBSERVATIONS

Prior to mixing, a pre-excavation was performed in the northern and southern pilot test areas; however, due to groundwater infiltration the pre-excavation was backfilled using the same excavated material to provide a stable working platform. New Leaf stabilized the backfilled material during the pilot test.

A Liebherr LRB 355-450 rig equipped with a 10.6-foot-diameter dual auger-style mixing tool was used to advance each ISS column from grade to about 32 feet bgs (el. 5.5± to el. -26.5±). New

[1] Elevations in this letter are in feet and referenced to the North American Vertical Datum of 1988 (NAVD88).

Leaf batch-mixed grout on-site using 6% Portland cement, 2% ground granulated furnace slag (GGBFS), 0.5% bentonite, SikaTard 400 retarder (<0.1%), and water at the following approximate proportions per ISS column:

- 18,400 pounds Portland cement,
- 6,200 pounds GGBFS,
- 1,600 pounds bentonite,
- 65 pounds retarder, and
- 4,400 gallons of water.

New Leaf mixed ISS columns by injecting the grout mixture through the drill stem and advancing the mixing tool to and from the terminal target treatment depth (el. -26.5±). ISS column construction logs are included as Attachment A, and soil column mixing logs from the auger rig are provided as Attachment B.

During the ISS pilot test, the following performance mixing parameters were documented:

- Mixing time per interval: 4-11 minutes per foot
- Injection Rate: 50 gallons per minute
- Reagent addition per interval: 760-950 lbs/ft
- Rotational speed: ranged between 16 to 18 rotations per minute
- Advance rate: ranged between 0.1 and 0.36 feet per minute

About 7± feet of clay was encountered in each ISS column. The mixing parameters were generally consistent across columns and in line with the operational parameters included in the PIP; however, advance rate decreased within the clay. Additionally, due to the cohesive properties of the clay, the auger tooling was advanced and retracted multiple times to mix the clay and advance to the target terminal depth. While the mixing parameters throughout the pilot test were relatively consistent between all columns, ISS-16 and ISS-17 were the first columns mixed after ISS-12 and ISS-20 were abandoned, and means and methods were adjusted following ISS-12 and ISS-20 and during completion of ISS-16 and ISS-17. The following summarizes the issues encountered and the means and methods adjustments made throughout the pilot test:

- As shown in the soil column mixing records, during ISS-12 and ISS-20 advancement, rotational speeds ranged from about 6 to 16 rpm. These columns were abandoned. To adjust for the lower rotational speeds encountered, the contractor added 0.5% bentonite to the batch for subsequent columns.
- During ISS-16 and ISS-17 mixing, New Leaf encountered mixing challenges (reduced rotational speeds) within the clay layer. To overcome these challenges, New Leaf found that by retracting and advancing intermittently, the rotational speeds were maintained to

effectively mix the columns. This method was developed during mixing of ISS-16 and ISS-17, and implemented on subsequent columns, as needed.

- ISS-15 and ISS-35 were advanced with more consistent retractions through the entire column, and two passes through the treatment zone on ISS-35. Fewer advancements/retractions were needed to mix columns ISS-32 and ISS-33, as rotational speeds were maintained through the column.

Obstructions preventing the auger mixing to the terminal depth were not identified. Once the mixing was complete, the material testing laboratory, Amaracon, collected cylinders of wet mix from within the treatment interval between el. -18.5 and el. -20.5 (about 20 to 26 feet bgs). Samples were collected within the treatment zone in accordance with the PIP. Sample collection depths will be varied through the treatment zone during the full-scale implementation. The QC samples were sent for laboratory analysis of unconfined compressive strength (UCS) and hydraulic conductivity (HC).

**ISS Coring**

On 17 December 2024, Aquifer Drilling and Testing, Inc. (ADT) used a Geoprobe 7288DT drill rig to advance core locations ISS-C1 (representative of the southern ISS pilot test group) and ISS-C2 (representative of the northern ISS pilot test group). The cores were advanced to about 35 feet bgs (el. -28±) at the locations shown on Figure 2. The cores achieved 100% recovery and were visually inspected for evidence of contamination, photographed, and evaluated for recovery and quality density. In core location ISS-C1, a faint petroleum-like odor was observed between about 1 and 5 feet bgs (el. 5.5± to 1.5±) and a bleb of DNAPL was observed at about 21 feet bgs (el. -14±) in recovered soil. A maximum photoionization detector (PID) reading of 317.6 parts per million was observed at about 13 feet bgs (el. - 6±) in core location ISS-C1. The cores achieved sufficient recovery and demonstrated a homogenous mix; however, softness was noted at the top of the extracted samples, potentially due to sloughing of soil during drill rod retraction. Therefore, additional coring via rock coring was scheduled after allowing the monolith additional time to cure. Representatives from NYSDEC were on site to observe the coring.

Between 2 and 3 January 2025, ADT used a CME LC45 rotary drill rig (4-inch diameter [PQ size]) to advance core locations ISS-C1-R1 (redrill of ISS core ISS-C1), ISS-C2-R1 (redrill of ISS core ISS-C2), and ISS-C1-R2 (redrill of ISS core ISS-C1-R1 due to insufficient recovery in one interval) to about 33 feet bgs (el. -26.5±) The cores were visually inspected for evidence of contamination, photographed, and evaluated for recovery and quality density. The following observations were recorded per core location:

- **ISS-C1-R1**: DNAPL staining and a maximum PID reading of 6.2 ppm at about 27.5 feet bgs (-21±). Recovery ranged from 73% to 100%, with the exception of 33% recovered monolith from about 16 to 21 feet bgs. A minimum of 55% of the recovered ISS cores were 6 inches long or greater in each core (excluding the recovery from 16 to 21 feet bgs).
    - Due to only 33% recovery from the 16 to 21 foot interval, the core was re-drilled (ISS-C1-R2).

- While there was evidence of staining in the core, there were no observations of unmixed source material. DNAPL staining was not saturated throughout the core, and was evident in parts of the core that broke during extraction. The recovered cores were well-mixed including where observations of staining were noted (see below photo) and field observations indicated staining was bound within the column.




DNAPL staining observed at about 27.5 feet bgs in ISS-C1-R1.

- **ISS-C1-R2**: A coal tar bleb was observed at about 29 feet bgs (el. -22.5±) and DNAPL staining was observed at about 31.5 to 32 feet bgs (el. -25±), respectively. A maximum PID reading of 0.0 ppm was recorded throughout the core. Recovery ranged from 83% to 100%, and a minimum of 69% of the recovered ISS cores were 6 inches long or greater in each core, with exception to 29% of recovered ISS cores 6 inches long or greater from about 31 to 33 feet bgs.

    - While there was evidence of a bleb and staining in the core, there were no observations of unmixed source material. The DNAPL bleb and staining were not saturating the core and were evident in parts of the core that broke during extraction. The recovered cores were well-mixed including where observations of staining were noted (see below photo).



DNAPL bleb observed at about 29 feet bgs (35-36 inch mark above/bottom core) in ISS-C1-R2.

- **ISS-C2-R1**: Evidence of impacts was not observed. No measurable PID readings were recorded throughout the core. Recovery ranged from 80% to 100%, and a minimum of 57% of the recovered ISS cores were 6 inches long or greater in each core, with the exception of 38% of recovered ISS cores 6 inches long or greater from about 1 to 6 feet bgs.

No significant distinction between homogenization was observed between cores representing columns that received a single versus a double mixing pass.

A representative from NYSDEC was on site to observe the coring and confirm acceptance of the results. The cores achieved sufficient recovery and homogenization, and observations of blebs and staining were isolated within discrete intervals fully incorporated into the ISS column and bound within the monolith. Based on field observations, the presence of staining and blebs were only observable in breaks in the recovered cores. Each core location was tremie-grouted to surface grade. Photographs of each core are included as Attachment C, and ISS core logs are provided as Attachment D.

## QC SAMPLE RESULTS

The performance criteria for the ISS pilot test as outlined in the RDD for ISS are listed below:

- To facilitate future development, the UCS criteria is 100 pounds per square inch (psi) or more to provide a factor of safety of 2 to achieve a field UCS of greater than 50 psi; and

- HC of $5 \times 10^{-7}$ centimeters per second (cm/s) or less to provide roughly a half an order of magnitude factor of safety to achieve a field HC of less than $1 \times 10^{-6}$ cm/s.

Samples were collected for 7-, 14-, 21-, 28- and 56-day breaks. ISS QC samples demonstrated that after 56 days of curing, the treatment area UCS ranged from 60 to 100 psi, and the average UCS of the ISS monolith was 88.3 psi. The HCs ranged from $1.9 \times 10^{-7}$ to $2.6 \times 10^{-6}$ cm/sec, and the average HC of the ISS monolith was $8.3 \times 10^{-7}$ cm/sec. A summary of the QC results is provided in the table below.

**Table 1: ISS UCS and Hydraulic Conductivity Results**

| ISS Cell | Sample Depth (feet bgs) | 7-day | | 14-day | | 21-day | | 28-day | | 56-day | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | UCS (psi) | HC (cm/sec) | UCS (psi) | HC (cm/sec) | UCS (psi) | HC (cm/sec) | UCS (psi) | HC (cm/sec) | UCS (psi) | HC (cm/sec) |
| ISS-15 | 24 to 26 | 40 | $1.3 \times 10^{-6}$ | **80** | **$8.6 \times 10^{-7}$** | **90** | **$4.6 \times 10^{-7}$** | **90** | **$4.7 \times 10^{-7}$** | **100** | **$4.2 \times 10^{-7}$** |
| ISS-16 | 20.39 to 22.39 | 30 | $3.6 \times 10^{-6}$ | **50** | $1.1 \times 10^{-6}$ | **60** | **$9.8 \times 10^{-7}$** | **70** | **$7.4 \times 10^{-7}$** | **70** | **$7.2 \times 10^{-7}$** |
| ISS-17 | 24 to 26 | 20 | $1.6 \times 10^{-6}$ | 30 | $3.0 \times 10^{-6}$ | 40 | $2.8 \times 10^{-6}$ | **50** | $2.7 \times 10^{-6}$ | **60** | $2.6 \times 10^{-6}$ |
| ISS-32 | 24 to 26 | 30 | **$8.8 \times 10^{-7}$** | **60** | **$7.5 \times 10^{-7}$** | **70** | **$6.0 \times 10^{-7}$** | **90** | **$5.5 \times 10^{-7}$** | **100** | **$5.3 \times 10^{-7}$** |
| ISS-33 | 24 to 26 | **50** | **$2.3 \times 10^{-7}$** | **80** | **$2.0 \times 10^{-7}$** | **90** | **$2.0 \times 10^{-7}$** | **100** | **$2.2 \times 10^{-7}$** | **100** | **$1.9 \times 10^{-7}$** |
| ISS-35 | 22.9 to 24.9 | 30 | $1.3 \times 10^{-6}$ | **60** | **$8.1 \times 10^{-7}$** | **80** | **$5.9 \times 10^{-7}$** | **90** | **$5.0 \times 10^{-7}$** | **100** | **$4.9 \times 10^{-7}$** |

NOTES:1) Results meeting or exceeding field performance criterion in bold.

The QC sample results indicate the average UCS and HC values of the monolith comply with the field performance criterion. All wet samples demonstrated the monolith has a minimum UCS of 50 psi, and five of the six wet samples demonstrated the monolith has a HC less than $1 \times 10^{-6}$ cm/s.

The outlier sample (ISS-17) did not achieve the performance criterion by Day 56 and will be re-mixed during full-scale implementation. During the drilling and mixing of ISS-17, New Leaf encountered challenges mixing with clay, which may have contributed to the HC value. The contractor subsequently adjusted the drilling method resulting in columns with acceptable HC results. Though the core through ISS-17 exhibited sufficient recovery and homogenization, the column will be remixed during full-scale implementation.

The field observations combined with the QC results show a homogenous mix meeting the field performance criterion. The ISS monolith therefore satisfies the design intent immobilizing soil contaminants into a soil-cement matrix. Copies of the ISS QC testing results are included as Attachment E.

## CONCLUSIONS AND RECOMMENDATIONS

The QC testing results in combination with ISS core observations demonstrate that the completed ISS pilot test areas meet the design intent and quality, and produced a low permeability monolith of acceptable strength. The reagent mix and advancement methods were adjusted during the pilot test to mix through the clay layer, and means and methods that were developed and resulted in satisfactory QA/QC results will be implemented during the full-scale ISS. The three columns (ISS-12, -17, and -20) that did not have passing QA/QC results will be remixed during full scape implementation.

During full-scale implementation, solidification and mixing will be evaluated from ground surface to el -26.5 during ISS QA/QC. To complete the full-scale ISS implementation, we recommend that the remainder of the ISS columns are completed using the same grout mixture and performance mixing parameters from the pilot test, and that each column receives a minimum of two passes through the treatment zone (el. -13± to el. -26.5±); more than two passes may needed within cohesive soils and will be determined and implemented in the field based on drilling parameters.

The daily field reports for full-scale ISS activities will include a table of the following parameters for each ISS column. The target ranges for these parameters are summarized as follows:

- Mixing time per interval: 5-10 min/ft
- Reagent addition per interval: 763 lbs/ft +/- 10%
- Injection pressure: 5-10 psi (50 psi maximum)
- Injection rate: 25-50 gallons per minute
- Rotational speed: 10-20 rpm; 30 rpm maximum
- Advancement rate: 0.2-0.4 ft/min; 1.75 ft/min maximum

As discussed during our 4 February 2025 conference call, better housekeeping will be maintained and active foaming for odor suppression will be conducted during full-scale implementation.

Please contact us with any questions at 212-479-5400.

Sincerely,
**Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.**

Gerald F. Nicholls, PE, CHMM
Associate Principal

cc: F. Dubinsky, M. Albert (Third Street Owner LLC and 155 Third St., LLC)
L. Gorton, S. Deyette (NYSDEC)
S. McLaughlin, S. Surani (NYSDOH)
P. McMahon, K. Nagotko (Langan)

Enclosures: Figure 1 – Site Location Map
Figure 2 – ISS Pilot Plan

Attachment A – ISS Column Construction Logs
Attachment B – Soil Column Mixing Logs
Attachment C – ISS Core Photograph Log
Attachment D – ISS Core Logs
Attachment E – QC Testing Results

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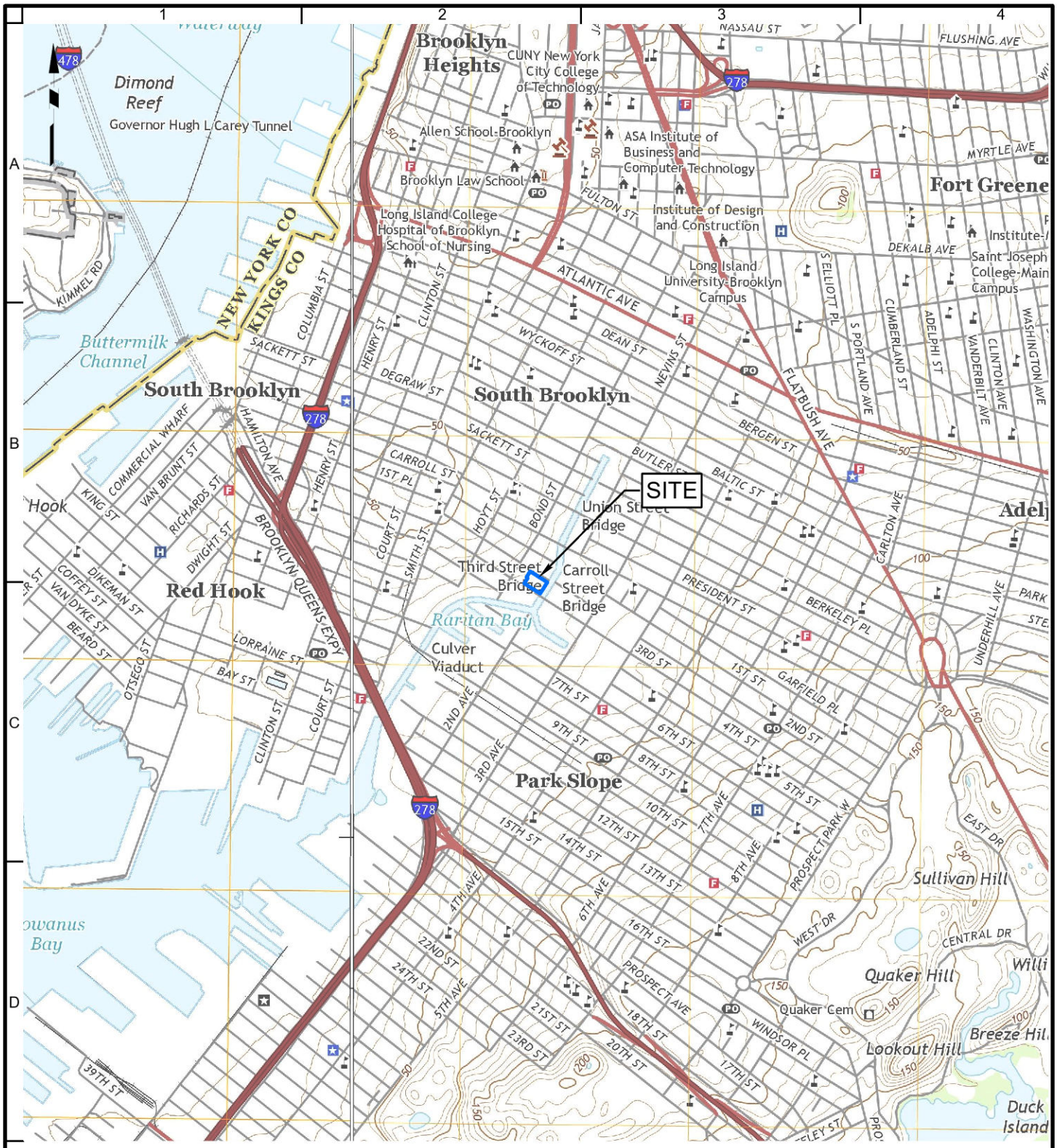


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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC

Collectively known as Langan

| | |
|---|---|
| Project | 141 3rd STREET<br>BLOCK No. 462, LOT No. 12<br>BROOKLYN NEW YORK |
| Figure Title | SITE LOCATION MAP |
| Project No. | 170390001 |
| Date | 6/12/2024 |
| Scale | 1"=2,000' |
| Drawn By | MG |
| Submission Date | |
| Figure No. | 1 |

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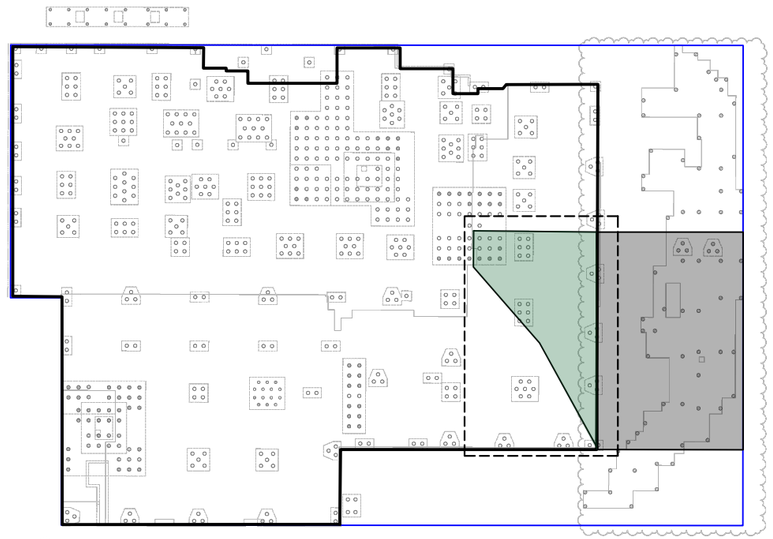
Path: \\langan.com\data\NY\data0\170390001\ArcGIS\APRX\170390001\170390001v4.aprx Date: 6/12/2024 User: mgeorgalas Time: 2:45 PM

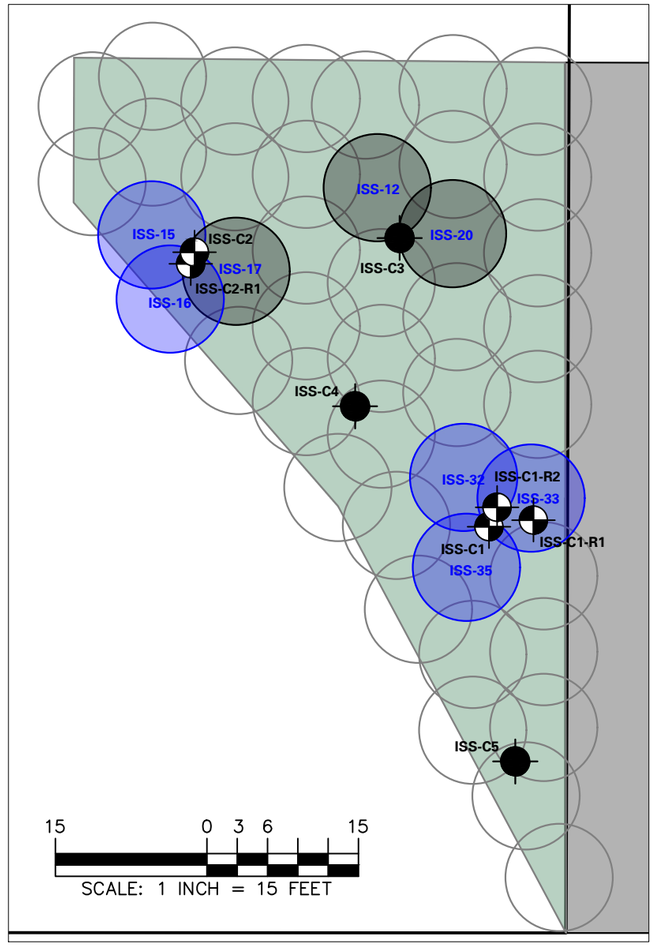
## SITE PLAN



60 0 20 40 60

SCALE: 1 INCH = 60 FEET

## APPROXIMATE ISS COLUMN AND CORE LOCATIONS




15 0 3 6 15

SCALE: 1 INCH = 15 FEET

**LEGEND:**

- APPROXIMATE SITE BOUNDARY
- PROPOSED BUILDING FOOTPRINT
- APPROXIMATE EXTENT OF ISS SUPPORT/LAYDOWN AREA
- APPROXIMATE EXTENT OF ISS IMPLEMENTATION AREA
- ISS-C1 — APPROXIMATE COMPLETED CORE LOCATION
- ISS-C3 — APPROXIMATE PROPOSED CORE LOCATION
- APPROXIMATE 10.6-FOOT-DIAMETER ISS PILOT COLUMN LOCATION
- APPROXIMATE PROPOSED FOR RE-MIXING 10.6-FOOT-DIAMETER ISS PILOT COLUMN LOCATION
- APPROXIMATE 10.6-FOOT-DIAMETER ISS COLUMN LOCATION

**NOTES:**

1. BASE MAP IS TAKEN FROM "OVERALL PILE PLAN", PREPARED BY DATTNER ARCHITECTS, DATED MARCH 12, 2024.
2. ISS = IN-SITU STABILIZATION / SOLIDIFICATION
3. EL = ELEVATION
4. GGBFS = GROUND GRANULATED BLAST FURNACE SLAG
5. LBS = POUNDS
6. GAL = GALLONS
7. THE ISS SUPPORT/LAYDOWN AREA IS SUBJECT TO CHANGE.
8. ELEVATIONS HEREIN ARE REFERENCED TO THE NAVD88 (NORTH AMERICAN VERTICAL DATUM OF 1988).
9. THE ISS TARGET TREATMENT INTERVAL IS FROM EL. -16± TO EL. -25±; HOWEVER, ISS IMPLEMENTATION WILL BE PERFORMED FROM GRADE (EL. 5.5±) TO EL. -26.5±.

## ISS PILOT TEST COLUMN MIXING DOSAGE TABLE

| | | | Portland Cement | | Water | | | GGBFS | | | Bentonite | | Retarder | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cell | Minimum No. of Passes | # Batches | Portland Cement per batch (lbs) | Total Portland Cement Used (lbs) | Water per batch (gal) | Washout Water (gal) | Total Water Used (gal) | Weight of GGBFS Added Per Batch (lbs) | Total GGBFS Used (lbs) | Tons of GGBFS Added | Weight of Bentonite Added Per Batch (lbs) | Total Bentonite Used (lbs) | Weight of Retarder Added Per Batch (lbs) | Total Retarder Used (lbs) |
| ISS-15 | 1 | 10 | 1,719.6 | 17,196.0 | 398.1 | 0 | 3,981.1 | 573.2 | 5,732.0 | 2.9 | 149.9 | 1,499.1 | 6 | 60 |
| ISS-16 | 1 | 11 | 1,719.6 | 18,915.6 | 398.1 | 0 | 4,379.2 | 573.2 | 6,305.2 | 3.2 | 149.9 | 1,649.1 | 6 | 66 |
| ISS-17 | 1 | 11 | 1,719.6 | 18,915.6 | 398.1 | 109.6 | 4,488.7 | 573.2 | 6,305.2 | 3.2 | 149.9 | 1,649.1 | 6 | 66 |
| ISS-32 | 2 | 11 | 1,719.6 | 18,915.6 | 398.1 | 132.1 | 4,511.3 | 573.2 | 6,305.2 | 3.2 | 149.9 | 1,649.1 | 6 | 66 |
| ISS-33 | 2 | 10 | 1,719.6 | 17,196.0 | 398.1 | 398.1 | 4,379.2 | 573.2 | 5,732.0 | 2.9 | 149.9 | 1,499.1 | 6 | 60 |
| ISS-35 | 2 | 11 | 1,719.6 | 18,915.6 | 398.1 | 134.5 | 4,513.6 | 573.2 | 6,305.2 | 3.2 | 149.9 | 1,649.1 | 6 | 66 |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Project: 141 3RD STREET
BLOCK No. 462, LOT No. 12
BROOKLYN NEW YORK

Figure Title: ISS PILOT PLAN

Project No. 170390001
Date 2/6/2025
Drawn By BN
Checked By KN

Figure No. 2

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# ATTACHMENT A

# ISS COLUMN CONSTRUCTION LOGS

# IN-SITU STABILIZATION COLUMN CONSTRUCTION RECORD

LANGAN

| | | | | | |
|---|---|---|---|---|---|
| Project: | 141 3rd Street (BCP Site ID C224336) | | | Date: | 11/20/2024 |
| Location: | 141 3rd Street, Brooklyn NY | Project No.: | 170390001 | Weather: | Cloudy |
| Contractor | New Leaf Development LLC | Equipment: | Liebherr LRB 335-450 | ISS No.: | 15 |

## INSTALLATION RECORD

07:55: Begin drilling with a 10.6-foot-diameter auger mixer and pumping grout.

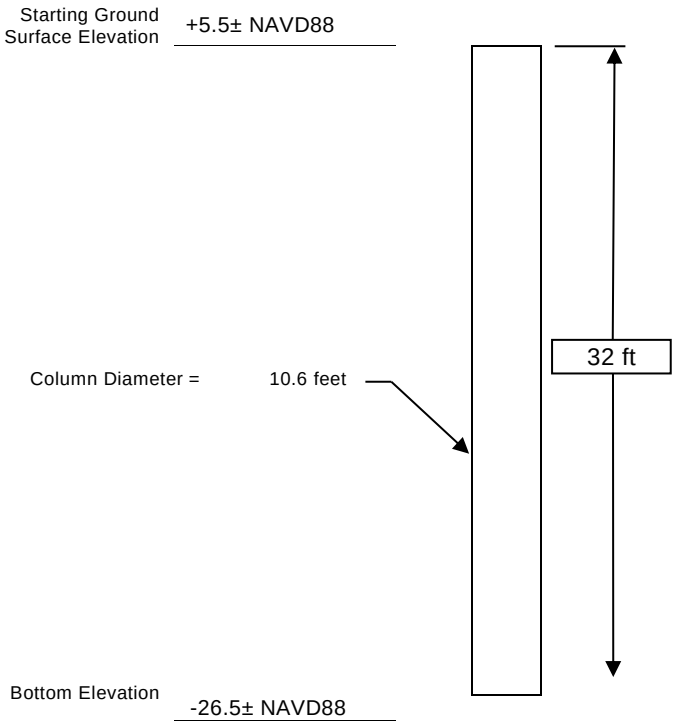
08:25: New Leaf advanced and retracted the auger mixer multiple times within the ISS column in order to advance through a clay layer and reach the target terminal treatment depth at 32 feet below ground surface (i.e., -26.5± NAVD88). Drill reaches bottom of the column, begin to retract to surface.

10:34: Drill reaches surface.

11:58: Drill begins decent for sample collection between -18.5± and -20.5± NAVD88.

12:35: Amaracon collects 10 samples within the treatment area between -18.5± and -20.5± NAVD88. Column treatment is completed.

## SOIL MIX COLUMN CONSTRUCTION




| Performance Mixing Parameters | |
|---|---|
| Mixing Time per Interval (min): | 160 |
| Reagent Additional Per Interval (gal/min): | 50 |
| Injection Pressure (psi): | N/A |
| Injection Rate (psi/min): | N/A |
| Rotational Speed (rpm): | 16 |
| Advance Rate (ft/min): | 0.28 |

| QC Sampling | |
|---|---|
| No. of Samples Collected: | 10 |
| Collection Depth (feet bgs): | 24 to 26 |
| Collection Depth (el NAVD88): | -18.5± to -20.5± |

| Grout Record | | Mix Notes |
|---|---|---|
| Date Grouted: | 11/20/24 | # Batch: 10 |
| Soil-mix design Strength (psi): | N/A | PC/Batch (kg): 780 |
| Grout Volume: | 22.6 cu yds/batch | Water/Batch (kg): 1,507 |
| w/c Ratio: | 1507-kg/780 | Washout Water (kg): 0 |
| | | Slag (kg): 260 |
| Target Grout (kg) | 26,150 | Bentonite (kg) 68 |
| Grout Consumed (kg): | 26,150 | Retarder (oz): 96 |

Remarks: Coordinates from project 0: N 98.75, E 191.97. ISS- 15 is in the northern pilot test group, which was intended to have a single pass performed through the treatment interval. Due to a clay unit, multiple passes were completed within the target treatment interval.

Langan Rep.: JN Stanley

# IN-SITU STABILIZATION COLUMN CONSTRUCTION RECORD

LANGAN

| | | | | | |
|---|---|---|---|---|---|
| Project: | 141 3rd Street (BCP Site ID C224336) | | | Date: | 11/18/2024 |
| Location: | 141 3rd Street, Brooklyn NY | Project No.: | 170390001 | Weather: | Sunny |
| Contractor | New Leaf Development LLC | Equipment: | Liebherr LRB 335-450 | ISS No.: | 16 |

## INSTALLATION RECORD

11:02: Begin drilling with a 10.6-foot-diameter auger mixer and pumping grout.

13:31: An about 7-thick-layer of clay was encountered between 18 to 25 feet below grade. New Leaf advanced and retracted the auger mixer multiple times within the ISS column in order to reach the target terminal treatment depth (i.e., -26.5± NAVD88).

14:55: Drill reaches bottom of the column at about 28 feet below ground surface (i.e., -26.5± NAVD88). New Leaf began retracting the auger towards the surface.

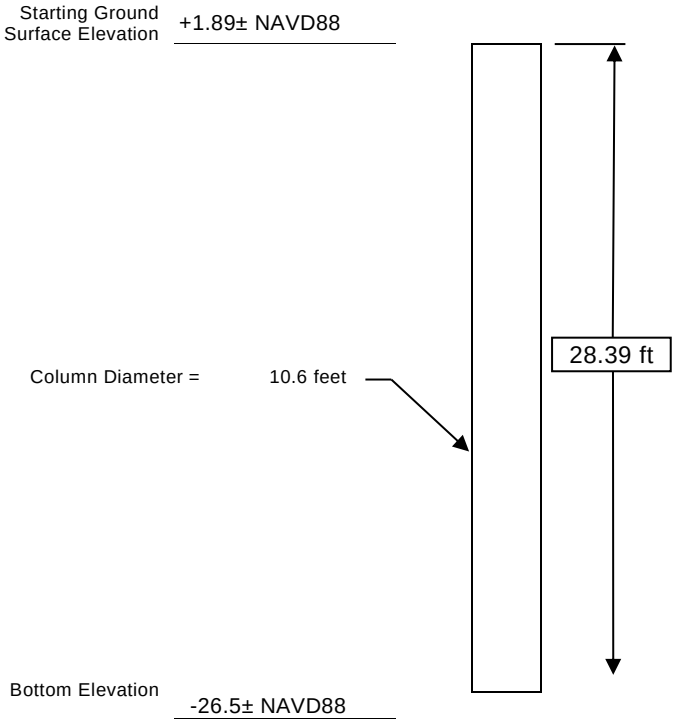
15:30: Drill reaches surface.

15:51: Drill begins decent for sample collection between -18.5± and -20.5± NAVD88.

16:58: Amaracon collects 10 samples within the treatment area between -18.5± and -20.5± NAVD88. Column treatment is completed.

.

## SOIL MIX COLUMN CONSTRUCTION




| Performance Mixing Parameters | |
|---|---|
| Mixing Time per Interval (min): | 270 |
| Reagent Additional Per Interval (gal/min): | 50 |
| Injection Pressure (psi): | N/A |
| Injection Rate (psi/min): | N/A |
| Rotational Speed (rpm): | 17 |
| Advance Rate (ft/min): | 0.10 |

| QC Sampling | |
|---|---|
| No. of Samples Collected: | 10 |
| Collection Depth (feet bgs): | 20.39 to 22.39 |
| Collection Depth (el): | -18.5± to -20.5± |

| Grout Record | | Mix Notes |
|---|---|---|
| Date Grouted: | 11/18/24 | # Batch: 11 |
| Soil-mix design Strength (psi): | N/A | PC/Batch (kg): 780 |
| Grout Volume: | 23.3 cu yds/batch | Water/Batch (kg): 1,507 |
| w/c Ratio: | 1507-kg/780 | Washout Water (kg): 0 |
| | | Slag (kg): 260 |
| Target Grout (kg) | 26,150 | Bentonite (kg): 68 |
| Grout Consumed (kg): | 28,765 | Retarder (oz): 96 |

Remarks: Coordinates from project 0: N 92.59 E 193.29. ISS-16 is in the northern pilot test group, which was intended to have a single pass performed through the treatment interval. Due to a clay unit, multiple passes were completed within the target treatment interval.

Langan Rep.: JN Stanley

# IN-SITU STABILIZATION COLUMN CONSTRUCTION RECORD

LANGAN

| | | | | | |
|---|---|---|---|---|---|
| Project: | 141 3rd Street (BCP Site ID C224336) | | | Date: | 11/19/2024 |
| Location: | 141 3rd Street, Brooklyn NY | Project No.: | 170390001 | Weather: | Sunny |
| Contractor | New Leaf Development LLC | Equipment: | Liebherr LRB 335-450 | ISS No.: | 17 |

## INSTALLATION RECORD

11:00: Begin drilling with a 10.6-foot-diameter auger mixer and pumping grout.

13:32: New Leaf advanced and retracted the auger mixer multiple times within the ISS column in order to advance through the clay unit and reach the target terminal treatment depth (i.e., -26.5± NAVD88). Drill reaches bottom of the column and begins to retract.

13:50: Drill reaches surface to finish single pass.

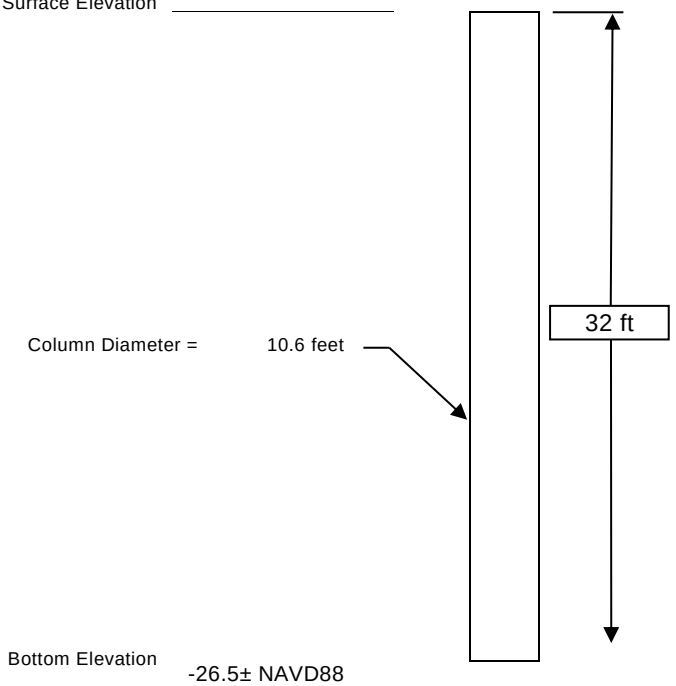
14:32: Drill begins decent for sample collection between -18.5± and -20.5± NAVD88.

15:53: Amaracon collects 10 samples within the treatment area between -18.5± and -20.5± NAVD88.Column treatment is completed.

.

## SOIL MIX COLUMN CONSTRUCTION

Starting Ground Surface Elevation: +5.5± NAVD88




Column Diameter = 10.6 feet

Bottom Elevation: -26.5± NAVD88

| Performance Mixing Parameters | |
|---|---|
| Mixing Time per Interval (min): | 170 |
| Reagent Additional Per Interval (gal/min): | 50 |
| Injection Pressure (psi): | N/A |
| Injection Rate (psi/min): | N/A |
| Rotational Speed (rpm): | 18 |
| Advance Rate (ft/min): | 0.19 |

| QC Sampling | |
|---|---|
| No. of Samples Collected: | 10 |
| Collection Depth (feet bgs): | 24 to 26 |
| Collection Depth (el): | -18.5± to -20.5± |

| Grout Record | | Mix Notes |
|---|---|---|
| Date Grouted: | 11/19/24 | # Batch: 11 |
| Soil-mix design Strength (psi): | N/A | PC/Batch (kg): 780 |
| Grout Volume: | 23.3 cu yds/batch | Water/Batch (kg): 1,507 |
| w/c Ratio: | 1507-kg/780 | Washout Water (kg): 414.75 |
| | | Slag (kg): 260 |
| Target Grout (kg) | 26,150 | Bentonite (kg) 68 |
| Grout Consumed (kg): | 28,765 | Retarder (oz): 96 |

Remarks: Coordinates from project 0: N 92.59 E 193.29. ISS- 17 is in the northern pilot test group, which was intended to have a single pass performed through the treatment interval. Due to the clay unit, multiple passes were completed within the target treatment interval.

Langan Rep.: JN Stanley

# IN-SITU STABILIZATION COLUMN CONSTRUCTION RECORD

LANGAN

| | | | | | |
|---|---|---|---|---|---|
| Project: | 141 3rd Street (BCP Site ID C224336) | | | Date: | 11/21/2024 |
| Location: | 141 3rd Street, Brooklyn NY | Project No.: | 170390001 | Weather: | Rain |
| Contractor | New Leaf Development LLC | Equipment: | Liebherr LRB 335-450 | ISS No.: | 32 |

## INSTALLATION RECORD

12:47: Begin drilling with a 10.6-foot-diameter auger mixer and pumping grout.

13:30: Drill reach 17 feet below ground surface.

13:52: Drill reach 20 feet below ground surface

14:15: New Leaf advanced and retracted the auger mixer multiple times within the ISS column in order to advance through the clay unit and reach the target terminal treatment depth (i.e., -26.5± NAVD88). New Leaf retracts auger towards the top of the treatment interval (-13± NAVD88) to complete a second pass.

14:24 – 15:15: Grout mixer gets clogged at 26 feet below ground surface. New Leaf works on addressing issue

15:18 – Resume drilling and reaches the top of the treatment interval (-13± NAVD88).

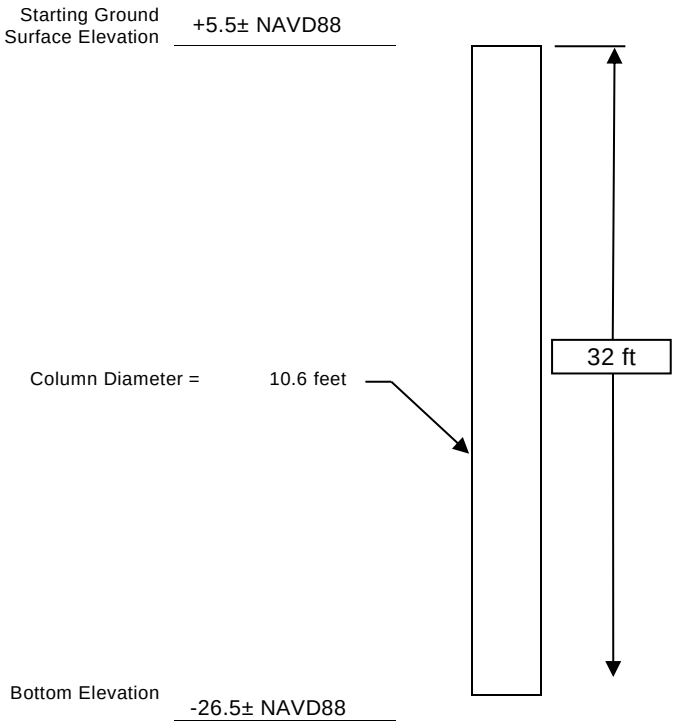
15:57: Drill reaches the bottom of the treatment interval (i.e., - 26.5± NAVD88) to complete second pass. Begin retracting auger towards the surface.

16:30: Mixing is completed.

16:47: Drill begins decent for sample collection between -18.5± and -20.5± NAVD88.

17:33: Amaracon collects 10 samples within the treatment area between -18.5± and -20.5± NAVD88. Column treatment is completed.

## SOIL MIX COLUMN CONSTRUCTION




| Performance Mixing Parameters | |
|---|---|
| Mixing Time per Interval (min): | 223 |
| Reagent Additional Per Interval (gal/min): | 50 |
| Injection Pressure (psi): | N/A |
| Injection Rate (psi/min): | N/A |
| Rotational Speed (rpm): | 16 |
| Advance Rate (ft/min): | 0.36 |

| QC Sampling | |
|---|---|
| No. of Samples Collected: | 10 |
| Collection Depth (feet bgs): | 24 to 26 |
| Collection Depth (el): | -18.5± to -20.5± |

| Grout Record | | Mix Notes |
|---|---|---|
| Date Grouted: | 11/21/24 | # Batch: 11 |
| Soil-mix design Strength (psi): | N/A | PC/Batch (kg): 780 |
| Grout Volume: | 23.3 cu yds/batch | Water/Batch (kg): 1,507 |
| w/c Ratio: | 1507-kg/780 | Washout Water (kg): 500 |
| | | Slag (kg): 260 |
| Target Grout (kg) | 26,150 | Bentonite (kg) 68 |
| Grout Consumed (kg): | 28.765 | Retarder (oz): 96 |

Remarks: Coordinates from project 0: N 74.47, E 222.33. ISS-32 is in the southern pilot test group, which was intended to have a double pass performed through the treatment interval. Due to the clay unit, multiple passes were completed within the target treatment interval, twice.

Langan Rep.: JN Stanley

# IN-SITU STABILIZATION COLUMN CONSTRUCTION RECORD

LANGAN

| | | | | | |
|---|---|---|---|---|---|
| Project: | 141 3rd Street (BCP Site ID C224336) | | | Date: | 11/22/2024 |
| Location: | 141 3rd Street, Brooklyn NY | Project No.: | 170390001 | Weather: | Rain |
| Contractor | New Leaf Development LLC | Equipment: | Liebherr LRB 335-450 | ISS No.: | 33 |

## INSTALLATION RECORD

11:25: Begin drilling with a 10.6-foot-diameter auger mixer and pumping grout.

11: 45: A clay unit is encountered around 12 feet below ground surface.

11:53: Drill reach 15 feet below ground surface.

12:06: Drill reaches 20 feet below ground surface.

14:15: New Leaf advanced and retracted the auger mixer multiple times within the ISS column in order to advance through the clay unit and reach the target terminal treatment depth (i.e., -26.5± NAVD88). New Leaf retracts auger towards the top of the treatment interval (-13± NAVD88) to complete a second pass.

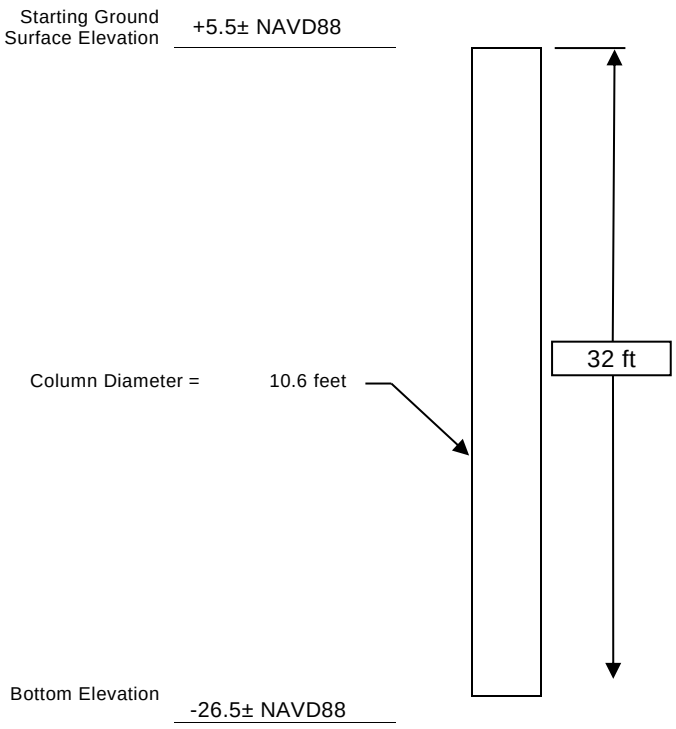
13:01: Drill reaches the top of the treatment interval (-13± NAVD88).

13:20: Drill reaches the bottom of the treatment interval (i.e., - 26.5± NAVD88) to complete second pass. Begin retracting auger towards the surface.

14:21: Drill begins decent for sample collection between -18.5± and -20.5± NAVD88.

15:03: Amaracon collects 10 samples within the treatment area between -18.5± and -20.5± NAVD88. Column treatment is completed.

## SOIL MIX COLUMN CONSTRUCTION




| Performance Mixing Parameters | |
|---|---|
| Mixing Time per Interval (min): | 127 |
| Reagent Additional Per Interval (gal/min): | 50 |
| Injection Pressure (psi): | N/A |
| Injection Rate (psi/min): | N/A |
| Rotational Speed (rpm): | 16 |
| Advance Rate (ft/min): | .25 ft/min |

| QC Sampling | |
|---|---|
| No. of Samples Collected: | 10 |
| Collection Depth (feet bgs): | 24 to 26 |
| Collection Depth (el): | -18.5± to -20.5± |

| Grout Record | | Mix Notes |
|---|---|---|
| Date Grouted: | 11/22/24 | # Batch: 10 |
| Soil-mix design Strength (psi): | N/A | PC/Batch (kg): 780 |
| Grout Volume: | 23.01 cu yds/batch | Water/Batch (kg): 1,507 |
| w/c Ratio: | 1507-kg/780 | Washout Water (kg): 1,507 |
| Target Grout (kg) | 26,150 | Bentonite (kg) 68 |
| | | Slag (kg): 260 |
| Grout Consumed (kg): | 26,150 | Retarder (oz): 96 |

Remarks: Coordinates from project 0: N 74.47, E 229.01. ISS-33 is in the southern pilot test group, which was intended to have a double pass performed through the treatment interval. Due to a clay unit, multiple passes were completed within the target treatment interval, twice

Langan Rep.: JN Stanley

# IN-SITU STABILIZATION COLUMN CONSTRUCTION RECORD

LANGAN

| | | | | | |
|---|---|---|---|---|---|
| Project: | 141 3rd Street (BCP Site ID C224336) | | | Date: | 11/20/2024 |
| Location: | 141 3rd Street, Brooklyn NY | Project No.: | 170390001 | Weather: | Cloudy |
| Contractor | New Leaf Development LLC | Equipment: | Liebherr LRB 335-450 | ISS No.: | 35 |

## INSTALLATION RECORD

13:15: Begin drilling with a 10.6-foot-diameter auger mixer and pumping grout.

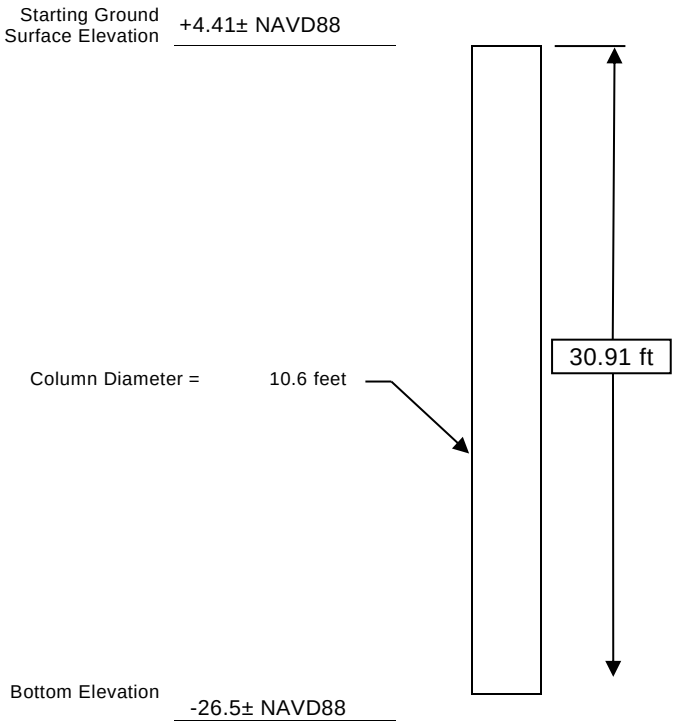
16:33: New Leaf advanced and retracted the auger mixer multiple times within the ISS column in order to advance through the clay unit and reach the target terminal treatment depth (i.e., -26.5± NAVD88). New Leaf retracts auger towards the top of the treatment interval (-13± NAVD88) to complete a second pass.

17:35: Drill reaches the bottom of the treatment interval (i.e., - 26.5± NAVD88) to complete second pass. Begin retracting auger towards the surface.

18:38: Drill begins decent for sample collection between -18.5± and -20.5± NAVD88.

19:07: Amaracon collects 10 samples within the treatment area between -18.5± and -20.5± NAVD88. Column treatment is completed.

## SOIL MIX COLUMN CONSTRUCTION




| Performance Mixing Parameters | |
|---|---|
| Mixing Time per Interval (min): | 335 |
| Reagent Additional Per Interval (gal/min): | 50 |
| Injection Pressure (psi): | N/A |
| Injection Rate (psi/min): | N/A |
| Rotational Speed (rpm): | 16 |
| Advance Rate (ft/min): | 0.17 |

| QC Sampling | |
|---|---|
| No. of Samples Collected: | 10 |
| Collection Depth (feet bgs): | 22.9 to 24.9 |
| Collection Depth (el): | -18.5± to -20.5± |

| Grout Record | | Mix Notes |
|---|---|---|
| Date Grouted: | 11/20/24 | # Batch: 11 |
| Soil-mix design Strength (psi): | N/A | PC/Batch (kg): 780 |
| Grout Volume: | 29.4 cu yds/batch | Water/Batch (kg): 1,507 |
| w/c Ratio: | 1507-kg/780 | Washout Water (kg): 509 |
| | | Slag (kg): 260 |
| Target Grout (kg) | 26,150 | Bentonite (kg) 68 |
| Grout Consumed (kg): | 28,765 | Retarder (oz): 96 |

Remarks: Coordinates from project 0: N 65.47, E 222.59. ISS-35 is in the southern pilot test group, which was intended to have a double pass performed through the treatment interval. Due to a clay unit, multiple passes were completed within the target treatment interval twice.

Langan Rep.: JN Stanley

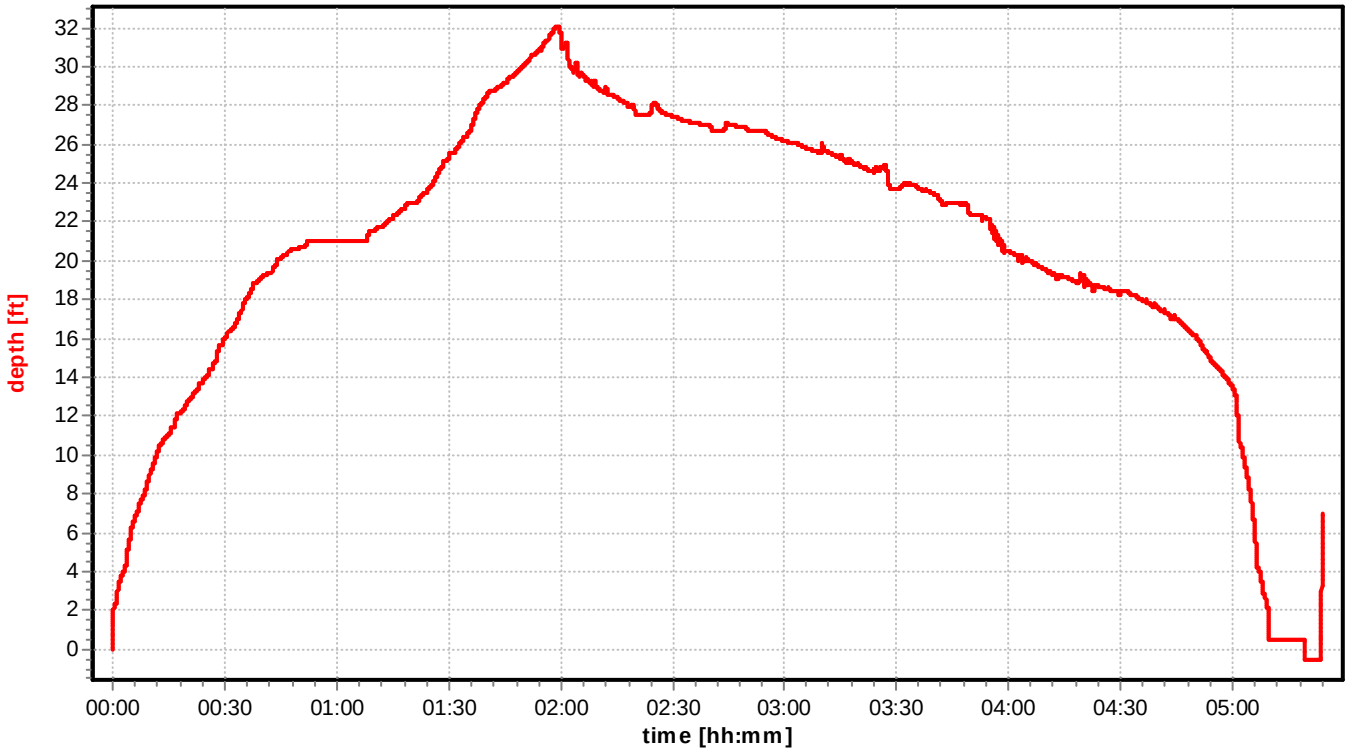
# ATTACHMENT B

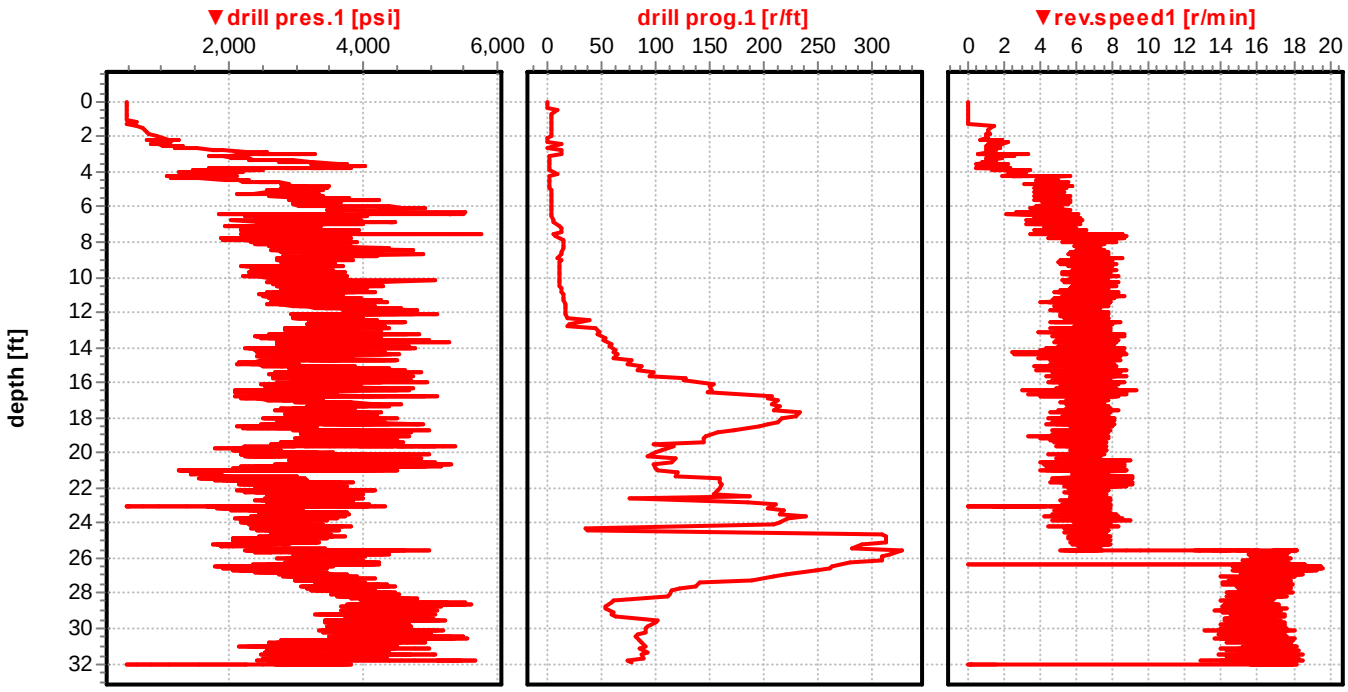
# SOIL COLUMN MIXING LOGS

# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/13 10:57:20 | pile number: | ISS 20 |
| stop time | 2024/11/13 16:21:29 | maximum depth: | 32.054 ft |
| duration | 5:24:09 | total concrete vol.: | |
| | | auger length: | 35.991 ft |

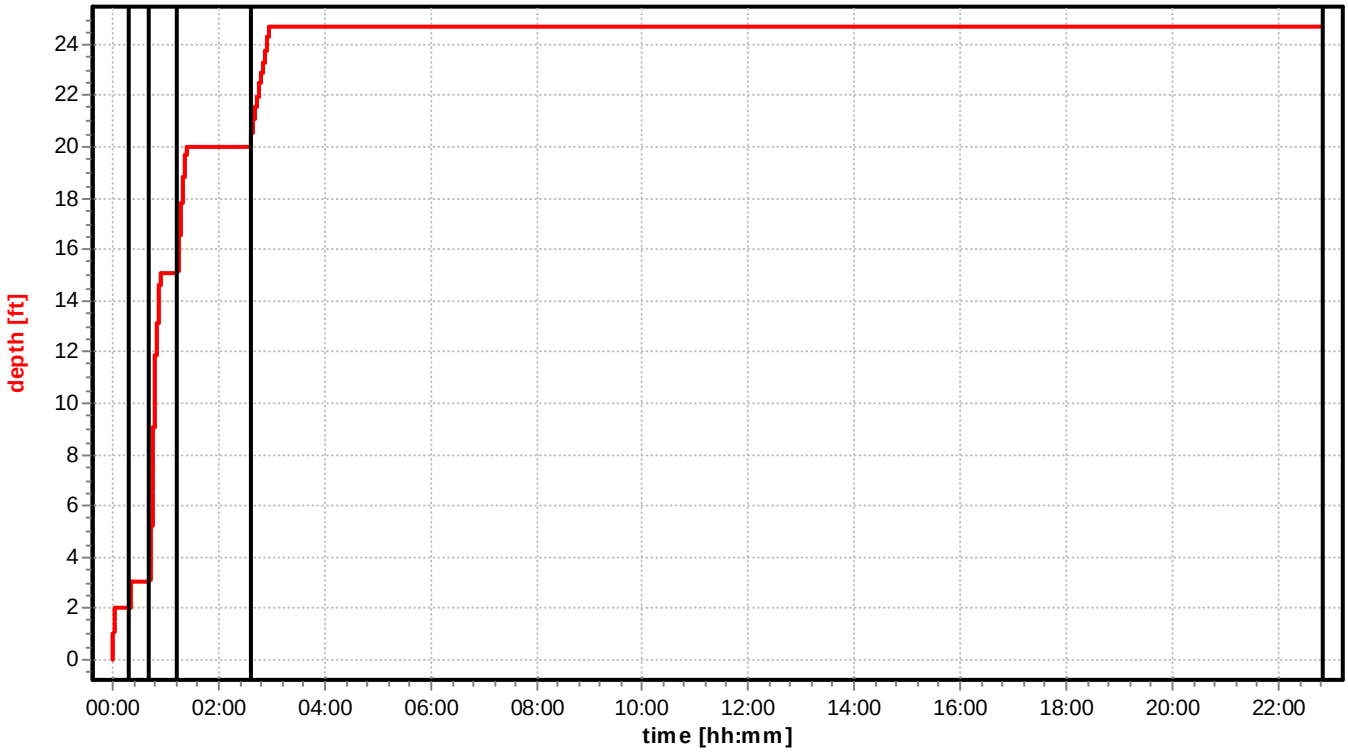


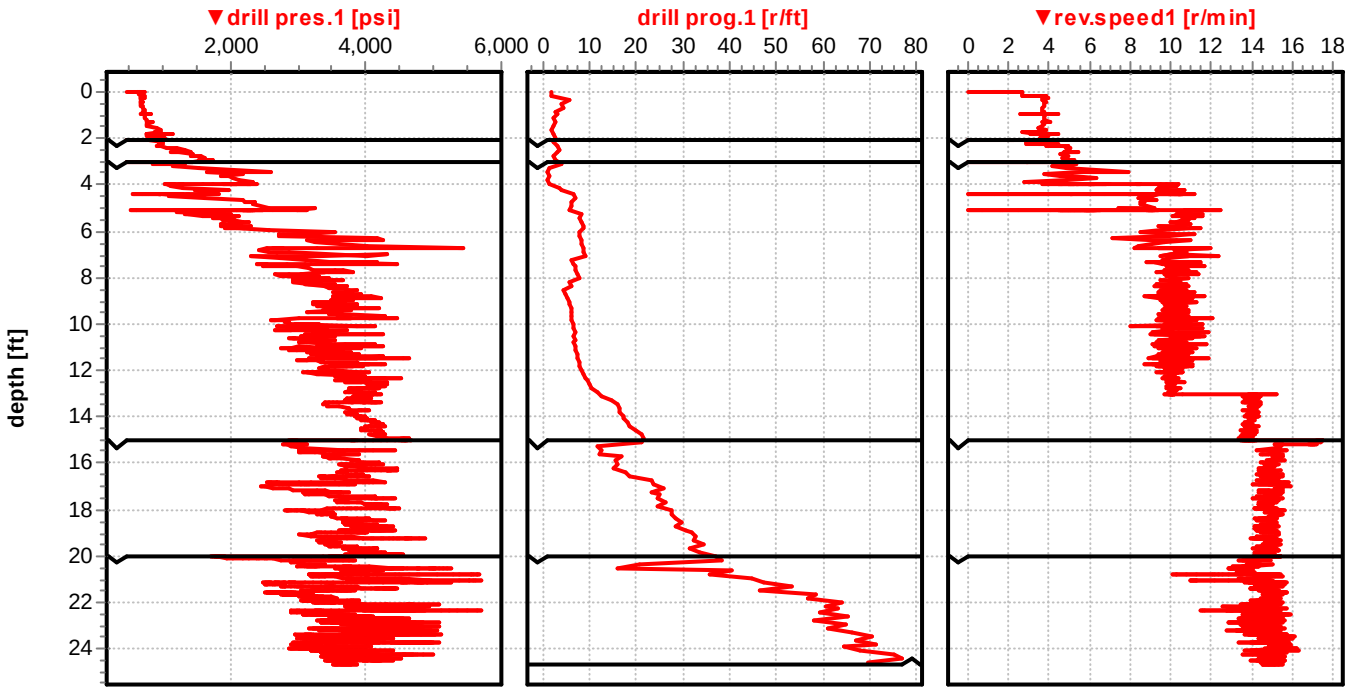



# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/14 09:42:50 | pile number: | ISS12 |
| stop time | 2024/11/15 08:33:05 | maximum depth: | 24.672 ft |
| duration | 22:50:15 | total concrete vol.: | |
| | | auger length: | 35.991 ft |

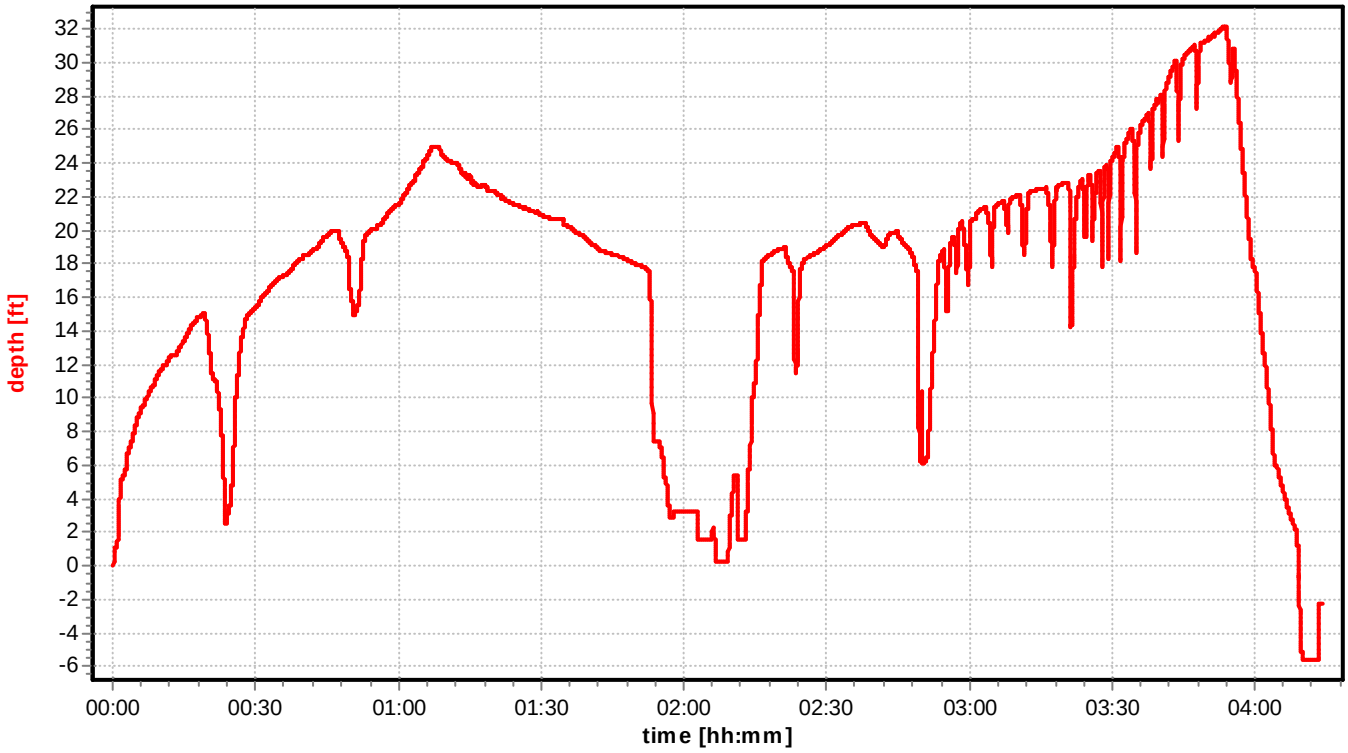


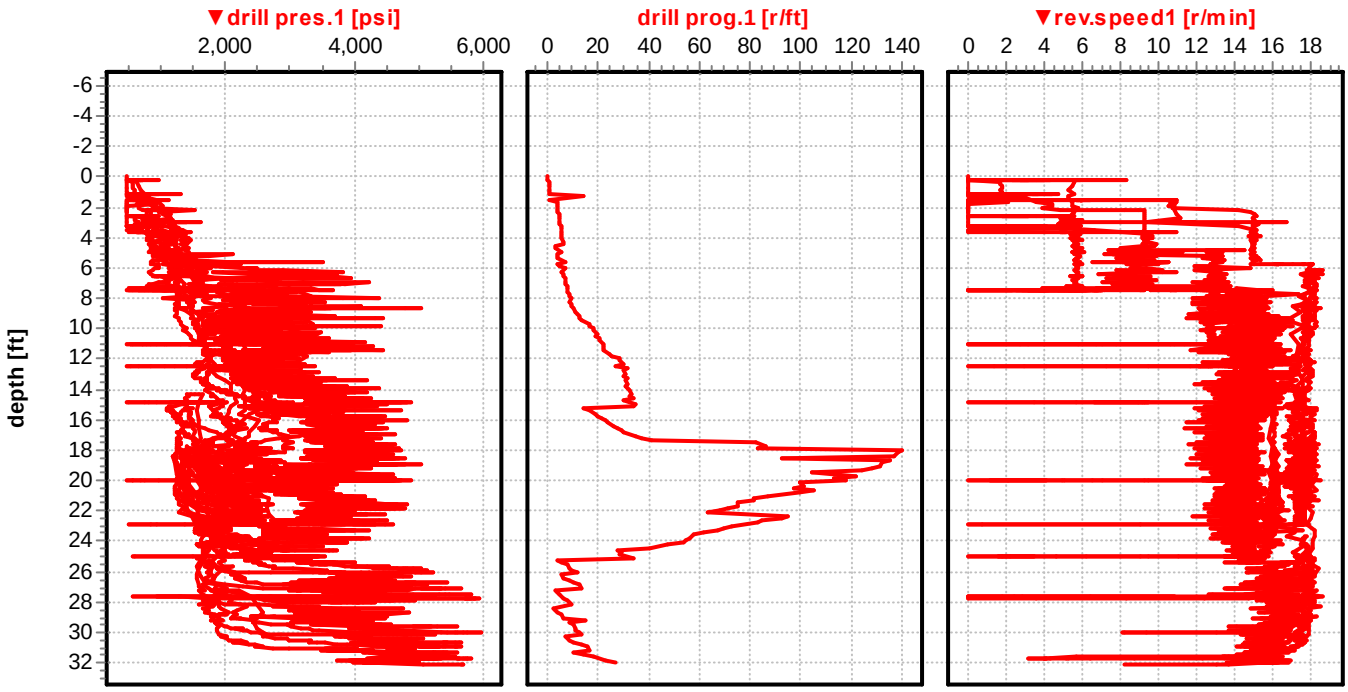



# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/18 11:01:00 | pile number: | ISS16 |
| stop time | 2024/11/18 15:15:15 | maximum depth: | 32.119 ft |
| duration | 4:14:15 | total concrete vol.: | |
| | | auger length: | 35.991 ft |

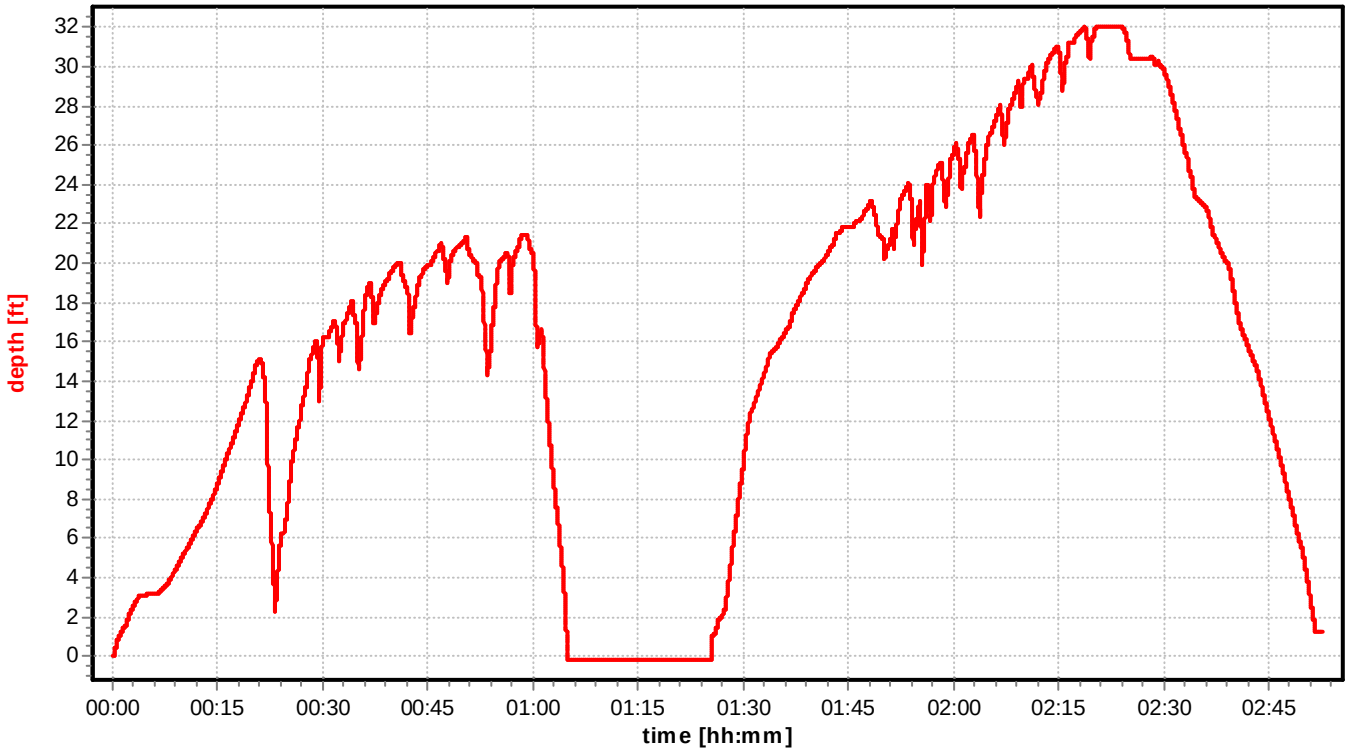


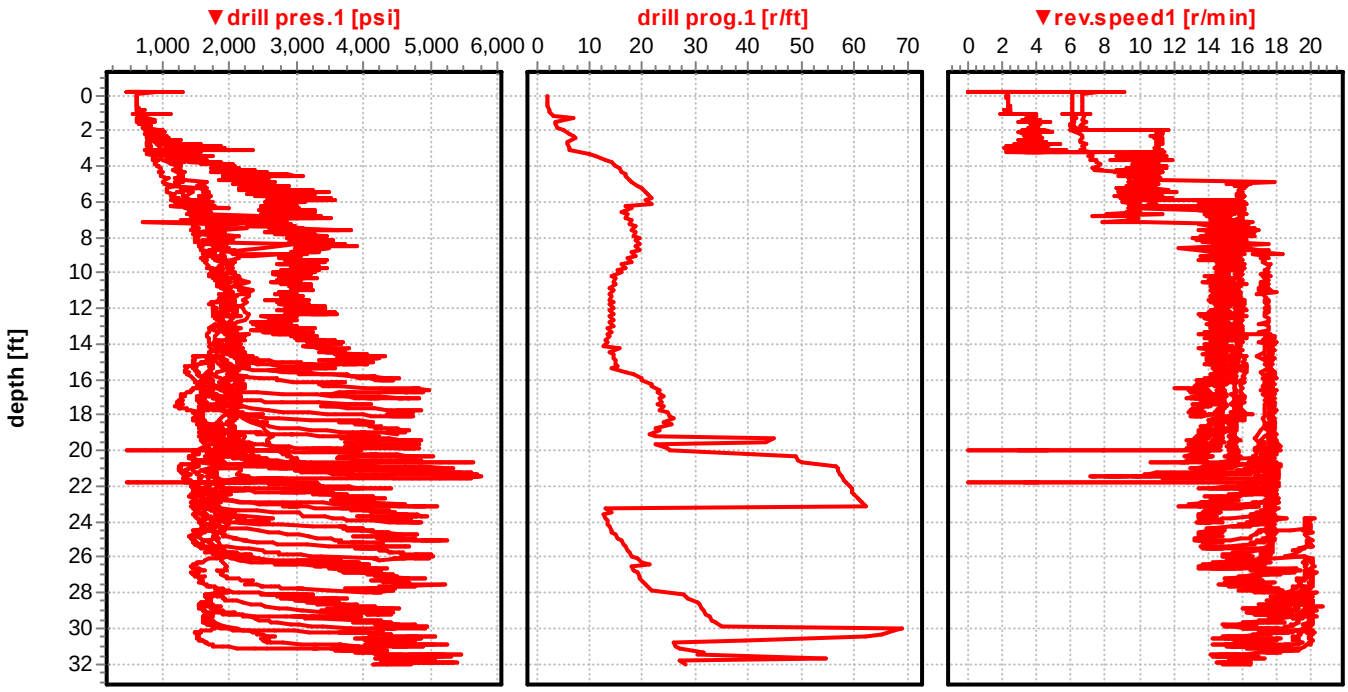



# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/19 10:59:54 | pile number: | ISS17 |
| stop time | 2024/11/19 13:52:35 | maximum depth: | 32.054 ft |
| duration | 2:52:41 | total concrete vol.: | |
| | | auger length: | 35.991 ft |

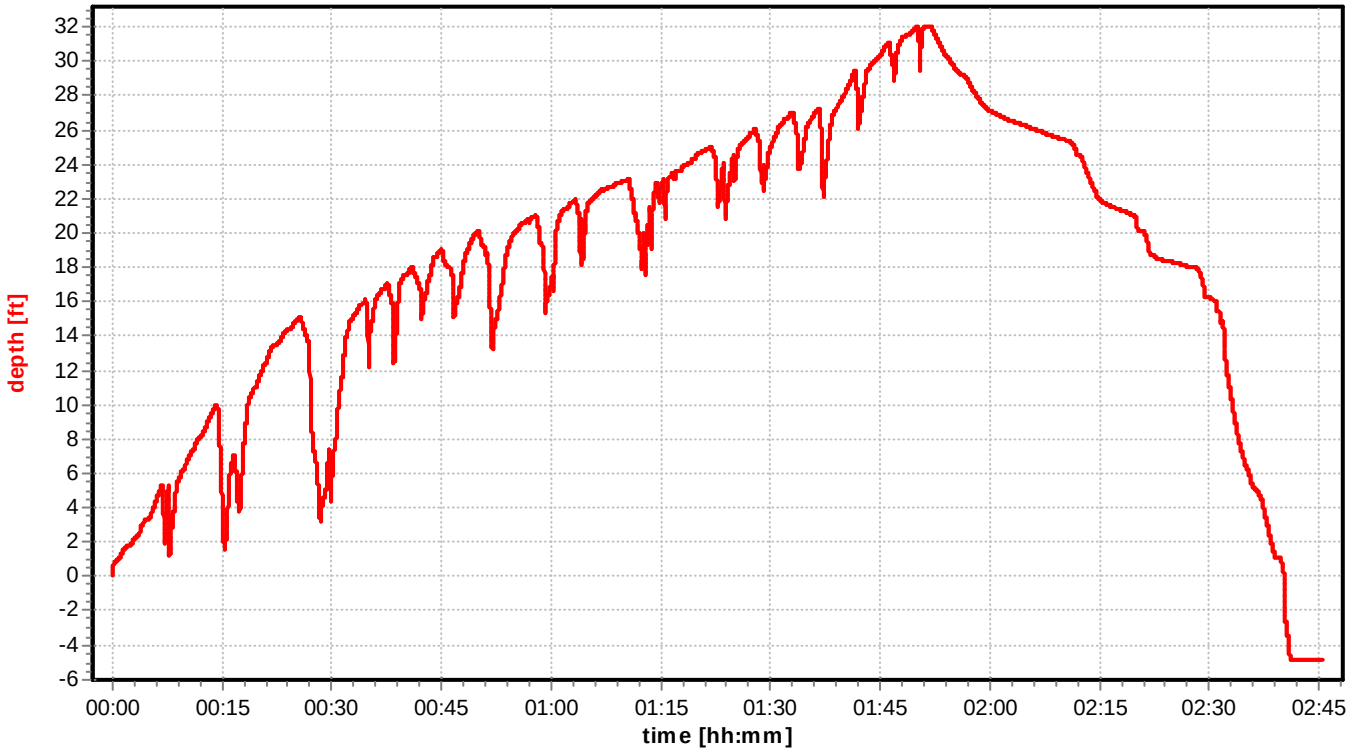


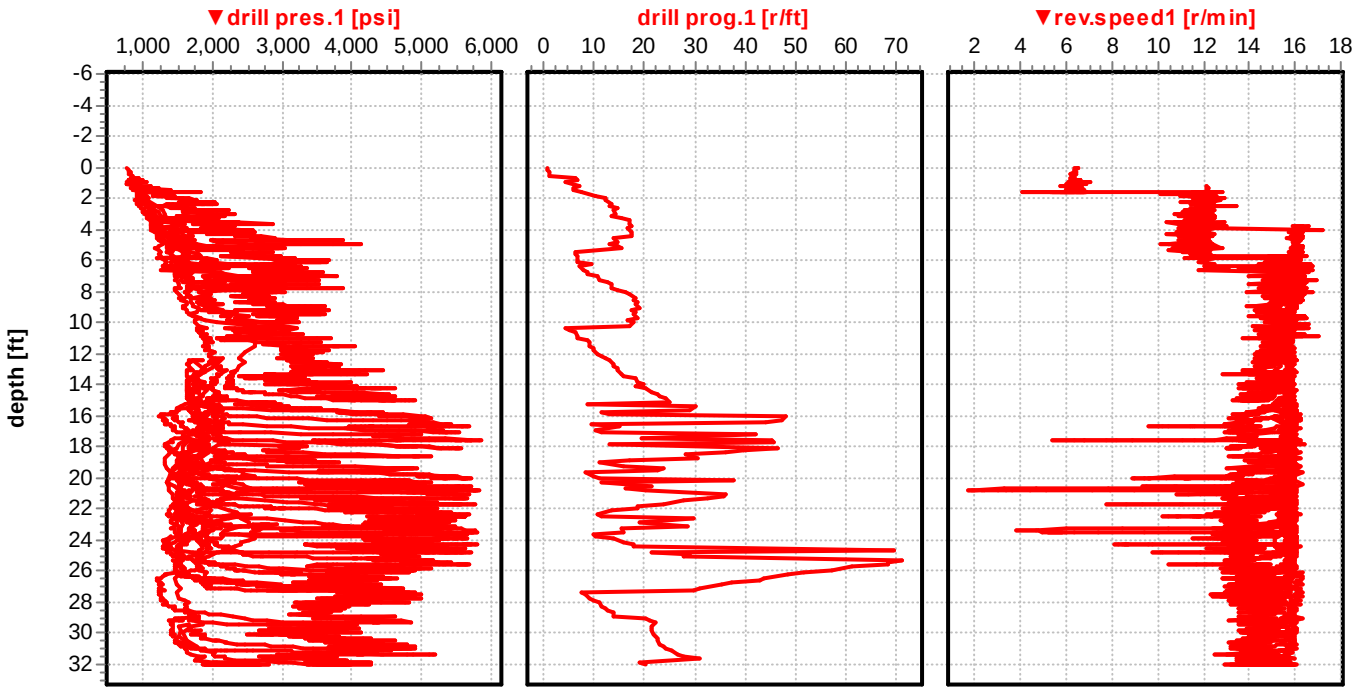



# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/20 07:55:06 | pile number: | ISS15 |
| stop time | 2024/11/20 10:40:37 | maximum depth: | 32.021 ft |
| duration | 2:45:31 | total concrete vol.: | |
| | | auger length: | 35.991 ft |

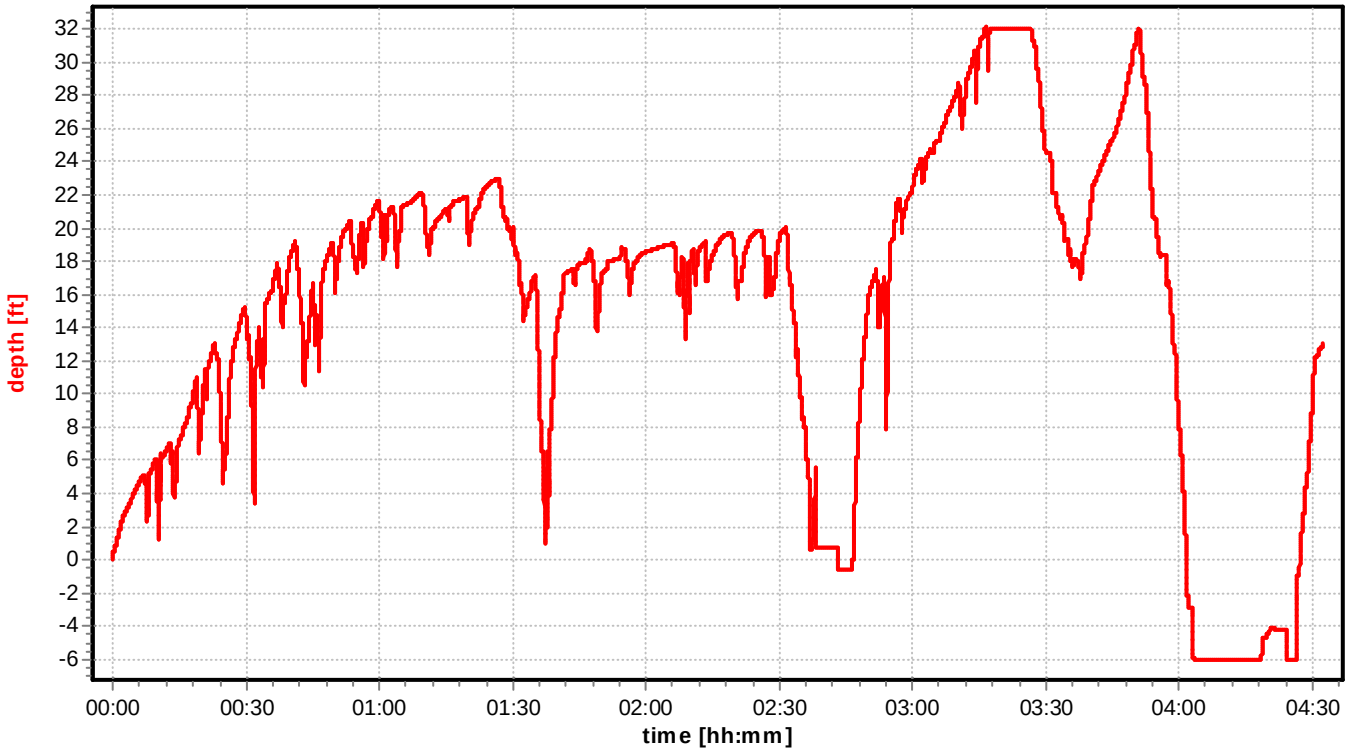


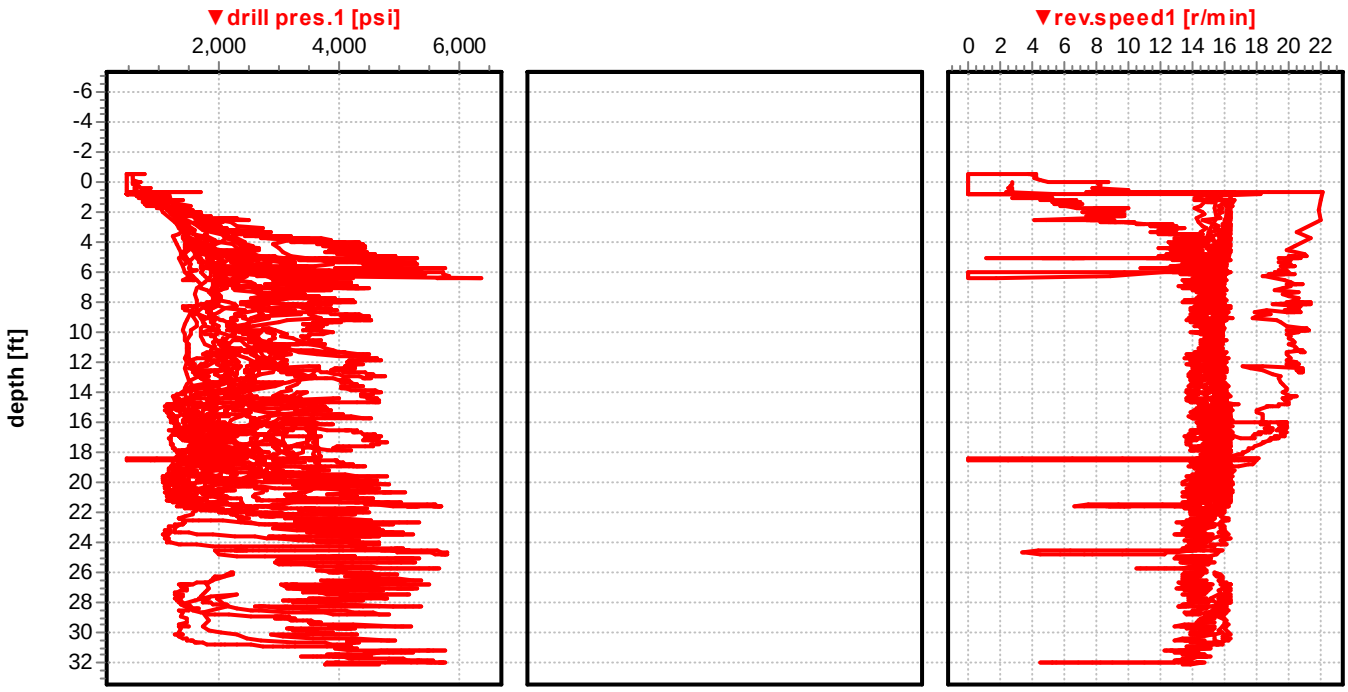



# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/20 13:15:37 | pile number: | ISS35 |
| stop time | 2024/11/20 17:48:05 | maximum depth: | 32.152 ft |
| duration | 4:32:28 | total concrete vol.: | |
| | | auger length: | 35.991 ft |

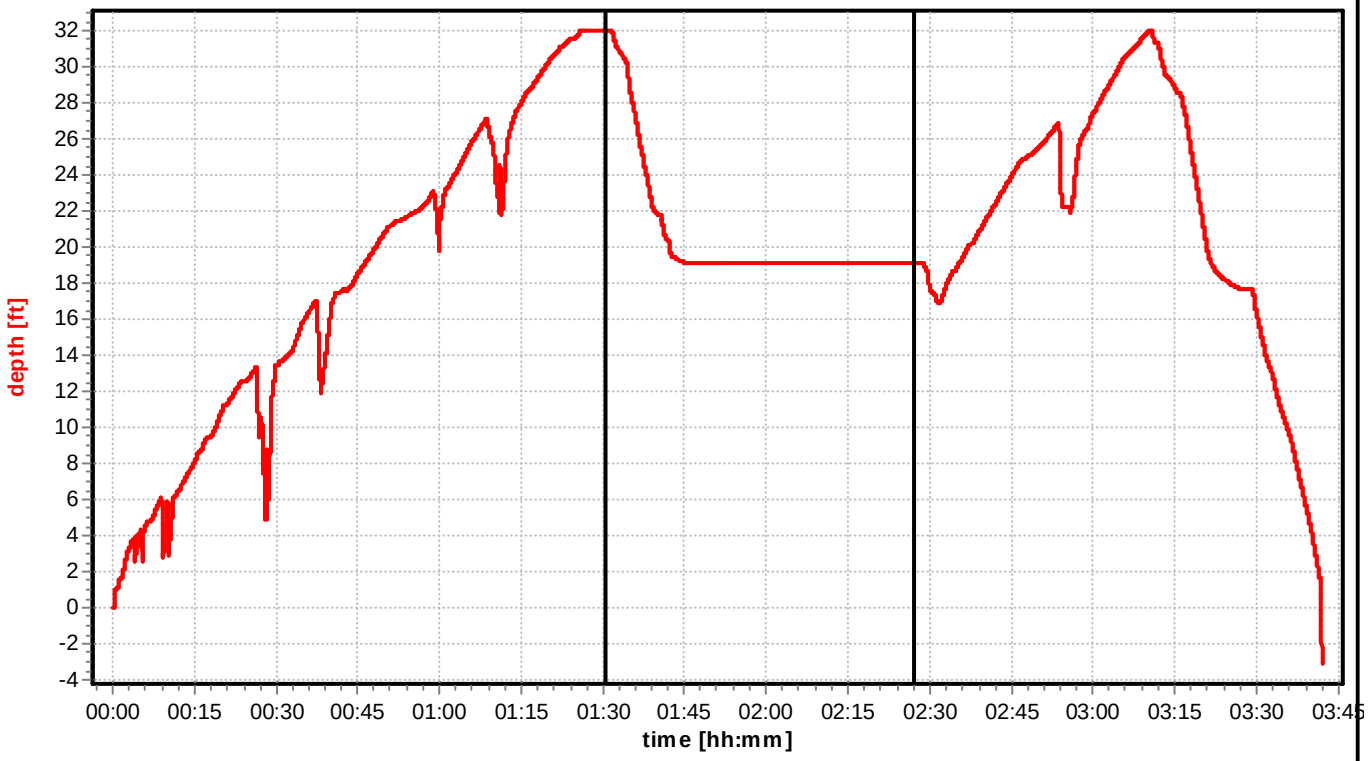


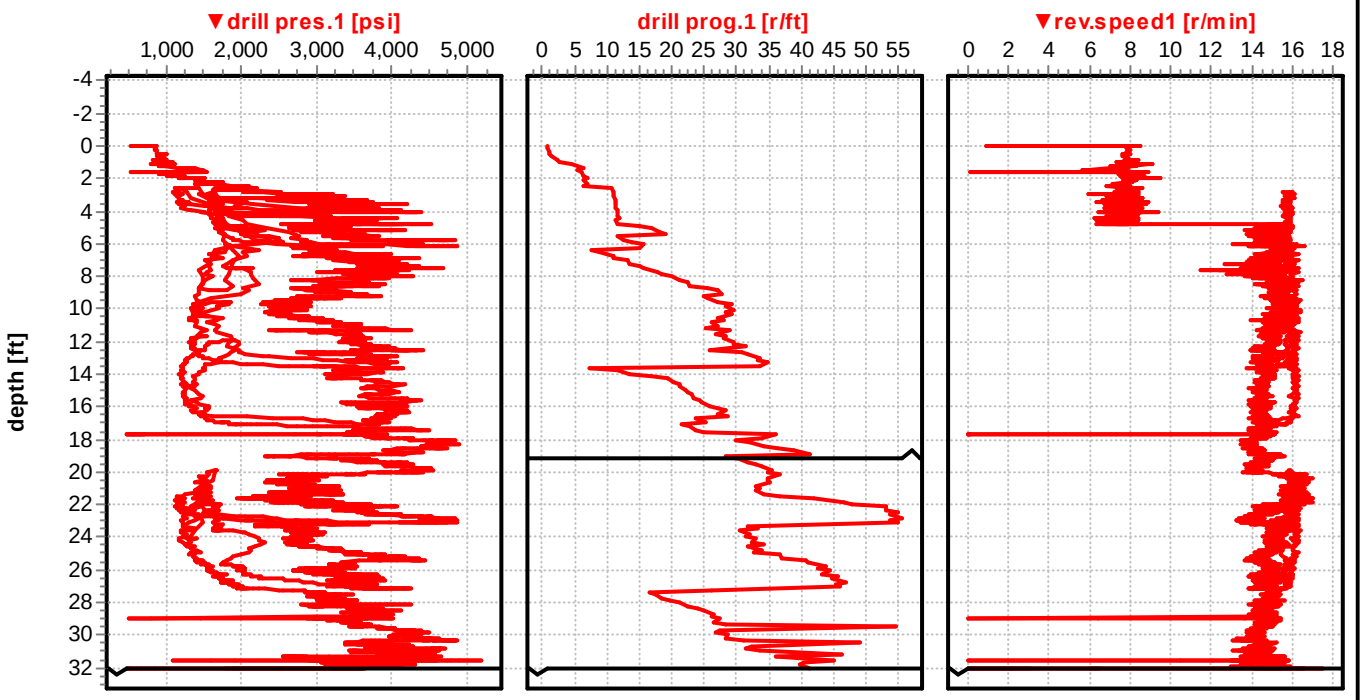



# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | | | |
|---|---|---|---|
| start time | 2024/11/21 12:47:08 | pile number: | ISS32 |
| stop time | 2024/11/21 16:29:19 | maximum depth: | 32.054 ft |
| duration | 3:42:11 | total concrete vol.: | |
| | | auger length: | 35.991 ft |



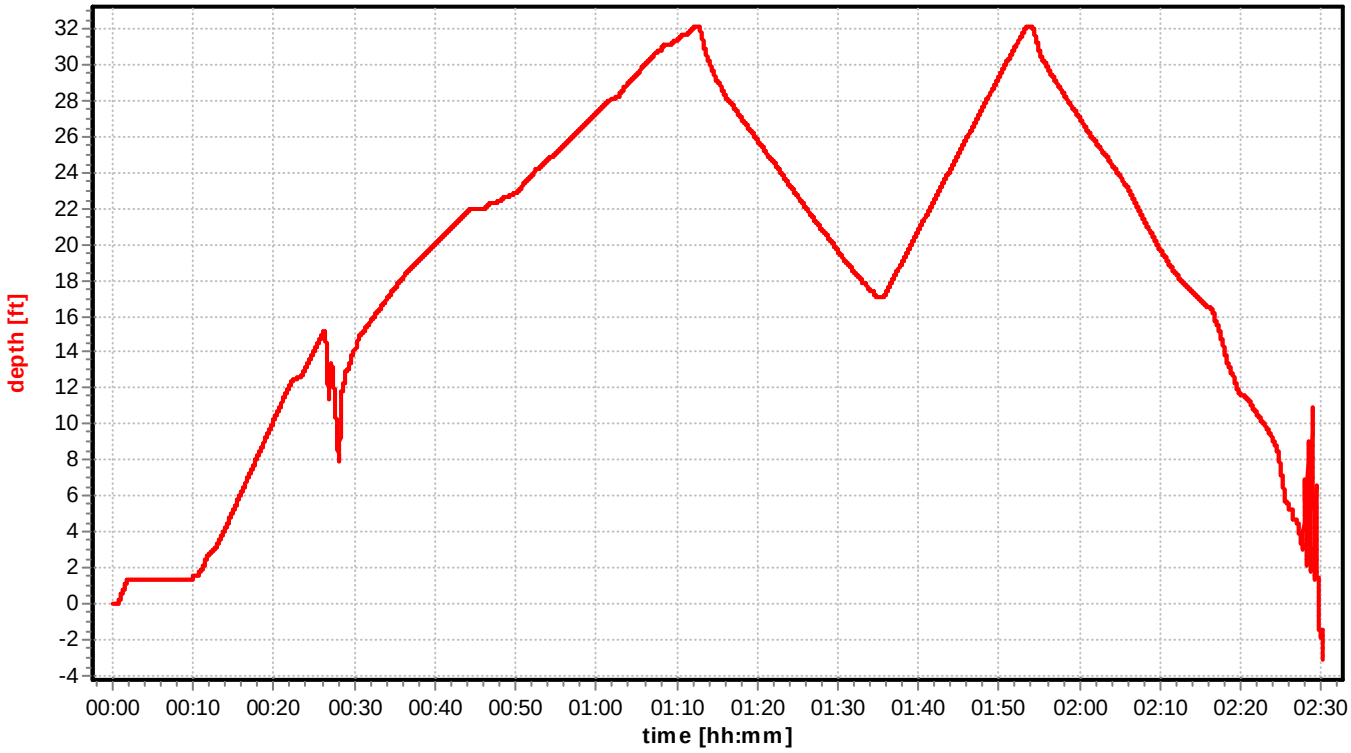



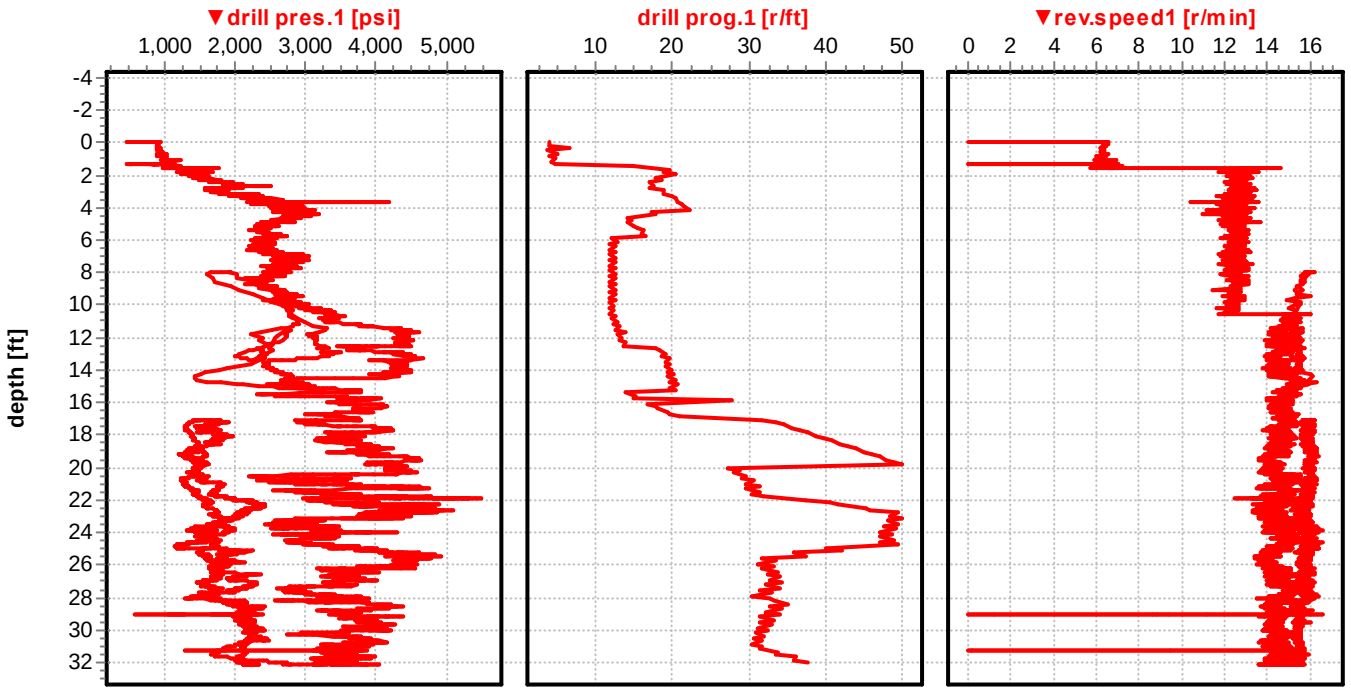
# soil mixing

| | |
|---|---|
| job site: | 155 3rt st |
| machine ID: | 111692 |

| | |
|---|---|
| start time | 2024/11/22 11:26:32 |
| stop time | 2024/11/22 13:56:43 |
| duration | 2:30:11 |

| | |
|---|---|
| pile number: | ISS33 |
| maximum depth: | 32.119 ft |
| total concrete vol.: | |
| auger length: | 35.991 ft |



# ATTACHMENT C

# ISS CORE PHOTOGRAPH LOG



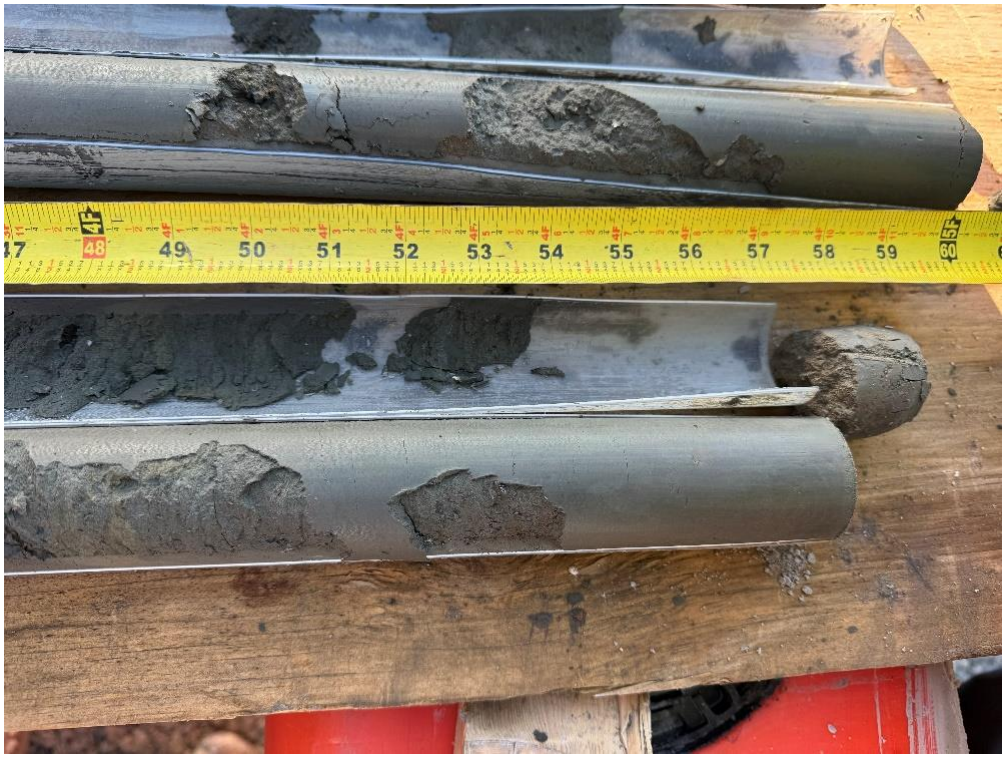
**Photograph 1**: General view of representative recovered monolith from core location ISS-C1 (12/17/2024).




**Photograph 2**: Close up view of representative recovered monolith from the treatment interval of core location ISS-C1 (12/17/2024).




**Photograph 3**: General view of representative recovered monolith from core location ISS-C2 (12/17/2024).




**Photograph 4**: Close up view of representative recovered monolith from the treatment interval of core location ISS-C2 (12/17/2024).




**Photograph 5**: General view of representative recovered monolith from core location ISS-C2-R1 (1/2/2025).



**Photograph 6**: Close up view of representative recovered monolith from the treatment interval of core location ISS-C2-R1 (1/2/2025).



**Photograph 7**: General view of representative recovered monolith from core location ISS-C1-R1 (1/2/2025).




**Photograph 8**: Close up view of representative recovered monolith from the treatment interval of core location ISS-C1-R1 (1/2/2025).



**Photograph 9**: General view of representative recovered monolith from core location ISS-C1-R2 (1/3/2025).



**Photograph 10**: Close up view of representative recovered monolith from the treatment interval of core location ISS-C1-R2 (1/3/2025).

# ATTACHMENT D

# ISS CORE LOGS

# LANGAN

Log of Boring **ISS-C1** Sheet 1 of 2

| | |
|---|---|
| Project: 141 3rd Street | Project No.: 170390002 |
| Location: Brooklyn, New York | Elevation and Datum: EL + 6.77 NAVD88 |
| Drilling Company: Aquifer Drilling and Testing | Date Started: 12/17/2024 — Date Finished: 12/17/2024 |
| Drilling Equipment: Geoprobe 7822DT | Completion Depth: 35.0 ft — Rock Depth: Not Encountered |
| Size and Type of Bit: 2.25-inch OD x 2-inch ID | Number of Samples: Disturbed 7 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): N/A — Casing Depth (ft): N/A | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A |
| Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | Drilling Foreman: Dave Moon |
| Sampler: Macrocore | Field Engineer: Gabriella DeGennaro |
| Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | |

| Material Symbol | Color Code | Elev. (ft) +6.8 | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gray ISS mixture (dry) [SOIL MIX] | 0 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 1 | | | | | 0.0 | Faint petroleum-like odor |
| | | | | | | | | | 0.0 | |
| | | | | 2 | | | | | 0.0 | |
| | | | | | M-1 | Macrocore | 60/60 | | 0.0 | |
| | | | | 3 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 4 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 5 | | | | | 0.0 | |
| | | | Gray ISS mixture (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | 6 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 7 | | | | | 0.0 | |
| | | | | | M-2 | Macrocore | 50/60 | | 0.0 | |
| | | | | 8 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 9 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | Gray ISS mixture (wet) [SOIL MIX] | 10 | | | | | 0.0 | Softer material, matrix still homogeneous |
| | | | | | M-3A | | | | 0.0 | |
| | | | | 11 | | | | | 146.8 | |
| | | | Gray ISS mixture (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | 12 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | | M-3B | Macrocore | 60/60 | | 317.6 | |
| | | | | 13 | | | | | 25.5 | |
| | | | | | | | | | 18.3 | |
| | | | | 14 | | | | | 22.2 | |
| | | | Gray ISS mixture (moist) [SOIL MIX] | | | | | | 0.0 | Monolith stuck in liner, rod used to jam out the material creating softer material |
| | | | | 15 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 16 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 17 | | | | | 0.0 | |
| | | | | | M-4 | Macrocore | 54/60 | | 0.0 | |
| | | | | 18 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 19 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 20 | | | | | | |

# LANGAN

Log of Boring **ISS-C1** Sheet 2 of 2

| Project | Project No. |
|---|---|
| 141 3rd Street | 170390002 |
| **Location** | **Elevation and Datum** |
| Brooklyn, New York | Approx. el. 6.8 (NAVD 88) |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | -13.2 | Gray ISS mixture (wet) [SOIL MIX] | 20 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 21 | M-5A | Macrocore | 60/60 | | 0.0 | NAPL bleb observed |
| | | | | | | | | | 0.0 | |
| | | | | 22 | | | | | 0.0 | |
| | | | Gray ISS mixture (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | 23 | | | | | 1.5 | |
| | | | | | M-5B | | | | 2.1 | |
| | | | | 24 | | | | | 1.7 | |
| | | | | | | | | | 1.5 | |
| | | | Gray ISS mixture (moist) [SOIL MIX] | 25 | | | | | 1.7 | |
| | | | | | | | | | 0.4 | |
| | | | | 26 | M-6A | | | | 0.4 | |
| | | | | | | | | | 2.3 | |
| | | | | 27 | | Macrocore | 60/60 | | 1.5 | |
| | | | Gray ISS mixture (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | 28 | | | | | 0.0 | |
| | | | | | M-6B | | | | 0.0 | |
| | | | | 29 | | | | | | |
| | | | | | | | | | 0.0 | |
| | | | Gray ISS mixture (moist) [SOIL MIX] | 30 | | | | | 1.6 | |
| | | | | | | | | | 1.5 | |
| | | | | 31 | | | | | 1.5 | |
| | | | | | | | | | 1.3 | |
| | | | | 32 | M-7 | | | | 1.2 | |
| | | | | | | Macrocore | 60/60 | | 1.3 | |
| | | | | 33 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 34 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | -28.2 | | 35 | | | | | | The borehole was restored by tremie-grouting from the base of the borehole to surface grade. |
| | | | End of Boring at 35.0ft. | | | | | | | |
| | | | | 36 | | | | | | |
| | | | | | | | | | | |
| | | | | 37 | | | | | | |
| | | | | | | | | | | |
| | | | | 38 | | | | | | |
| | | | | | | | | | | |
| | | | | 39 | | | | | | |
| | | | | | | | | | | |
| | | | | 40 | | | | | | |
| | | | | | | | | | | |
| | | | | 41 | | | | | | |
| | | | | | | | | | | |
| | | | | 42 | | | | | | |
| | | | | | | | | | | |
| | | | | 43 | | | | | | |
| | | | | | | | | | | |
| | | | | 44 | | | | | | |
| | | | | | | | | | | |
| | | | | 45 | | | | | | |

# LANGAN

Log of Boring **ISS-C2** Sheet 1 of 2

| | |
|---|---|
| Project: 141 3rd Street | Project No.: 170390002 |
| Location: Brooklyn, New York | Elevation and Datum: EL + 6.93 NAVD88 |
| Drilling Company: Aquifer Drilling and Testing | Date Started: 12/17/2024 — Date Finished: 12/17/2024 |
| Drilling Equipment: Geoprobe 7822DT | Completion Depth: 35.0 ft — Rock Depth: Not Encountered |
| Size and Type of Bit: 2.25-inch OD x 2-inch ID | Number of Samples: Disturbed 7 — Undisturbed 0 — Core 0 |
| Casing Diameter (in): N/A — Casing Depth (ft): N/A | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ⧩ N/A |
| Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | Drilling Foreman: Dave Moon |
| Sampler: Macrocore | Field Engineer: Andrew Ashley |
| Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | +6.9 | Reddish brown fine SAND, some silt [FILL] | 0 | | | | | 0.0 | |
| | | | | | M-1A | | | | 0.0 | |
| | | +5.6 | Brown ISS mixture (dry) [SOIL MIX] | 1 | | | | | 0.0 | |
| | | | | 2 | | | | | 0.0 | |
| | | | | | M-1B | Macrocore | 38/60 | | 0.0 | |
| | | | | 3 | | | | | 0.0 | |
| | | | | 4 | | | | | | |
| | | +1.9 | Gray ISS mixture (dry) [SOIL MIX] | 5 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 6 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 7 | | | | | 0.0 | Lenses of soft material, matrix still homogenous |
| | | | | | M-2 | Macrocore | 60/60 | | 0.0 | |
| | | | | 8 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 9 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | Gray ISS mixture (moist) [SOIL MIX] | 10 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 11 | | | | | 3.1 | |
| | | | | | | | | | 1.8 | |
| | | | | 12 | | | | | 1.8 | |
| | | | | | M-3 | Macrocore | 60/60 | | 1.9 | |
| | | | | 13 | | | | | 2.0 | |
| | | | | | | | | | 1.9 | |
| | | | | 14 | | | | | 1.8 | |
| | | | | | | | | | 1.8 | |
| | | | Gray ISS mixture (dry) [SOIL MIX] | 15 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 16 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 17 | | | | | 0.0 | |
| | | | | | M-4 | Macrocore | 47/60 | | 0.0 | |
| | | | | 18 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 19 | | | | | 0.0 | |
| | | | | 20 | | | | | | |

# LANGAN

Log of Boring **ISS-C2** Sheet 2 of 2

| Project | Project No. |
|---|---|
| 141 3rd Street | 170390002 |
| **Location** | **Elevation and Datum** |
| Brooklyn, New York | Approx. el. 6.9 (NAVD 88) |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | -13.1 | Gray ISS mixture (dry) [SOIL MIX] | 20–25 | M-5 | Macrocore | 36/60 | | 0.0 | 14 inches of softer material in the beginning of the run, material hardens at 36 inches |
| | | | Gray ISS mixture (dry) [SOIL MIX] | 25–30 | M-6 | Macrocore | 53/60 | | 0.0 | 16 inches of softer material in the beginning of the run, material hardens at 20 inches |
| | | | Gray ISS mixture (dry) [SOIL MIX] | 30–35 | M-7 | Macrocore | 60/60 | | 0.0 | |
| | | -28.1 | End of Boring at 35.0ft. | 35 | | | | | | The borehole was restored by tremie-grouting from the base of the borehole to surface grade. |

Template: Langan - Env; Strip: Langan - Env; Printed on 01/10/2025

# LANGAN

Log of Boring **ISS-C1-R1** Sheet 1 of 2

| | |
|---|---|
| Project: 141 3rd Street | Project No.: 170390001 |
| Location: Brooklyn, New York | Elevation and Datum: EL + 6.73 NAVD88 |
| Drilling Company: Aquifer Drilling and Testing | Date Started: 1/2/2025 — Date Finished: 1/2/2025 |
| Drilling Equipment: CME LC45 Rotary Drill Rig | Completion Depth: 33.0 ft — Rock Depth: Not Encountered |
| Size and Type of Bit: 4-inch PQ | Number of Samples: Disturbed 1 — Undisturbed 0 — Core 7 |
| Casing Diameter (in): N/A — Casing Depth (ft): N/A | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A |
| Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | Drilling Foreman: Tony Palomeque |
| Sampler: Hand Auger; Rock Core Barrel | Field Engineer: Ellie Seery |
| Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | +6.7 | Grayish brown fine SAND, some silt (wet) [FILL] | 0 | HA | HA | 12/12 | | 0.0 | |
| | | +5.7 | Grayish brown SOIL MIX CORE; 73% core recovery with 72% of core pieces greater than 6-inches long [SOIL MIX] | 1 | C-1 | RC | 44/60 | | 0.0 | |
| | | | | 2 | | | | | 0.0 | |
| | | | | 3 | | | | | 0.0 | |
| | | | | 4 | | | | | 0.0 | |
| | | | | 5 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 100% core recovery with 82% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 6 | C-2 | RC | 60/60 | | 0.0 | |
| | | | | 7 | | | | | 0.0 | |
| | | | | 8 | | | | | 0.0 | |
| | | | | 9 | | | | | 0.0 | |
| | | | | 10 | | | | | 0.0 | |
| | | | Brownish gray SOIL MIX CORE; 100% core recovery with 55% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 11 | C-3 | RC | 60/60 | | 0.0 | |
| | | | | 12 | | | | | 0.0 | |
| | | | | 13 | | | | | 0.0 | |
| | | | | 14 | | | | | 0.0 | |
| | | | | 15 | | | | | 0.0 | |
| | | | | 16 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 33% core recovery with 0% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 17 | C-4 | RC | 20/60 | | 0.0 | |
| | | | | 18 | | | | | 0.0 | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

LANGAN

Log of Boring **ISS-C1-R1**

Sheet 2 of 2

| Project | Project No. |
|---|---|
| 141 3rd Street | 170390001 |
| **Location** | **Elevation and Datum** |
| Brooklyn, New York | Approx. el. 6.7 (NAVD 88) |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | -13.3 | | 20 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | Brownish gray SOIL MIX CORE; 87% core recovery with 69% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 21 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 22 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 23 | | | | | 0.0 | |
| | | | | | C-5 | RC | 52/60 | | 0.0 | |
| | | | | 24 | | | | | 0.0 | |
| | | | | | | | | | | |
| | | | | 25 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 26 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 100% core recovery with 77% of core pieces greater than 6-inches long (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | 27 | | | | | 0.0 | |
| | | | | | | | | | 5.2 | Approximately 6 inches of NAPL staining observed |
| | | | | 28 | | | | | 6.2 | |
| | | | | | C-6 | RC | 60/60 | | 0.0 | |
| | | | | 29 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 30 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 31 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 75% core recovery with 78% of core pieces greater than 6-inches long (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | | C-7 | RC | 18/24 | | 0.0 | |
| | | -26.3 | | 32 | | | | | | |
| | | | End of Boring at 33.0ft. | | | | | | | The borehole was restored by tremie-grouting from the base of the borehole to surface grade. |
| | | | | 33 | | | | | | |
| | | | | 34 | | | | | | |
| | | | | 35 | | | | | | |
| | | | | 36 | | | | | | |
| | | | | 37 | | | | | | |
| | | | | 38 | | | | | | |
| | | | | 39 | | | | | | |
| | | | | 40 | | | | | | |
| | | | | 41 | | | | | | |
| | | | | 42 | | | | | | |
| | | | | 43 | | | | | | |
| | | | | 44 | | | | | | |
| | | | | 45 | | | | | | |

# LANGAN

Log of Boring **ISS-C1-R2** Sheet 1 of 2

| | |
|---|---|
| Project: 141 3rd Street | Project No.: 170390001 |
| Location: Brooklyn, New York | Elevation and Datum: EL + 6.73 NAVD88 |
| Drilling Company: Aquifer Drilling and Testing | Date Started: 1/3/2025 — Date Finished: 1/3/2025 |
| Drilling Equipment: CME LC45 Rotary Drill Rig | Completion Depth: 33.0 ft — Rock Depth: Not Encountered |
| Size and Type of Bit: 4-inch PQ | Number of Samples: Disturbed 1 — Undisturbed 0 — Core 7 |
| Casing Diameter (in): N/A — Casing Depth (ft): N/A | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A |
| Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | Drilling Foreman: Tony Palomaque |
| Sampler: Hand Auger; Rock Core Barrel | Field Engineer: Ellie Seery |
| Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | +6.7 | Grayish brown fine SAND, some silt (wet) [FILL] | 0 | HA | HA | 12/12 | | 0.0 | |
| | | +5.7 | Gray SOIL MIX CORE; 87% core recovery with 69% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 1 | | | | | 0.0 | |
| | | | | 2 | | | | | 0.0 | |
| | | | | 3 | C-1 | RC | 52/60 | | 0.0 | |
| | | | | 4 | | | | | 0.0 | |
| | | | | 5 | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 100% core recovery with 95% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 6 | | | | | 0.0 | |
| | | | | 7 | | | | | 0.0 | |
| | | | | 8 | C-2 | RC | 60/60 | | 0.0 | |
| | | | | 9 | | | | | 0.0 | |
| | | | | 10 | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 100% core recovery with 80% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 11 | | | | | 0.0 | |
| | | | | 12 | | | | | 0.0 | |
| | | | | 13 | C-3 | RC | 60/60 | | 0.0 | |
| | | | | 14 | | | | | 0.0 | |
| | | | | 15 | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 93% core recovery with 71% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 16 | | | | | 0.0 | |
| | | | | 17 | | | | | 0.0 | |
| | | | | 18 | C-4 | RC | 56/60 | | 0.0 | |
| | | | | 19 | | | | | 0.0 | |
| | | | | 20 | | | | | 0.0 | |

# LANGAN

Log of Boring **ISS-C1-R2** Sheet 2 of 2

| Project | Project No. |
|---|---|
| 141 3rd Street | 170390001 |
| **Location** | **Elevation and Datum** |
| Brooklyn, New York | Approx. el. 6.7 (NAVD 88) |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | -13.3 | | 20 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 83% core recovery with 72% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 21 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 22 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 23 | C-5 | RC | 50/60 | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 24 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 25 | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 88% core recovery with 79% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 26 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 27 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 28 | | | | | 0.0 | |
| | | | | | C-6 | RC | 53/60 | | 0.0 | |
| | | | | 29 | | | | | 0.0 | NAPL bleb observed |
| | | | | | | | | | 0.0 | |
| | | | | 30 | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 88% core recovery with 29% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 31 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | Approximately 7 inches of NAPL staining observed |
| | | | | 32 | C-7 | RC | 21/24 | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | -26.3 | End of Boring at 33.0ft. | 33 | | | | | | The borehole was restored by tremie-grouting from the base of the borehole to surface grade. |
| | | | | 34 | | | | | | |
| | | | | 35 | | | | | | |
| | | | | 36 | | | | | | |
| | | | | 37 | | | | | | |
| | | | | 38 | | | | | | |
| | | | | 39 | | | | | | |
| | | | | 40 | | | | | | |
| | | | | 41 | | | | | | |
| | | | | 42 | | | | | | |
| | | | | 43 | | | | | | |
| | | | | 44 | | | | | | |
| | | | | 45 | | | | | | |

# LANGAN

Log of Boring **ISS-C2-R1** Sheet 1 of 2

| | |
|---|---|
| Project: 141 3rd Street | Project No.: 170390001 |
| Location: Brooklyn, New York | Elevation and Datum: EL + 6.91 NAVD88 |
| Drilling Company: Aquifer Drilling and Testing | Date Started: 1/2/2025 — Date Finished: 1/2/2025 |
| Drilling Equipment: CME LC45 Rotary Drill Rig | Completion Depth: 33.0 ft — Rock Depth: Not Encountered |
| Size and Type of Bit: 4-inch PQ | Number of Samples: Disturbed 1 — Undisturbed 0 — Core 7 |
| Casing Diameter (in): N/A — Casing Depth (ft): N/A | Water Level (ft.): First ▽ N/A — Completion ▼ N/A — 24 HR. ▼ N/A |
| Casing Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | Drilling Foreman: Tony Palomaque |
| Sampler: Not Applicable | Field Engineer: Ellie Seery |
| Sampler Hammer: N/A — Weight (lbs): N/A — Drop (in): N/A | |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | +6.9 | Grayish brown fine SAND, some silt (wet) [FILL] | 0 | HA | HA | 12/12 | | 0.0 | |
| | | +5.9 | Brown SOIL MIX CORE; 80% core recovery with 38% of core pieces greater than 6-inches long(dry) [SOIL MIX] | 1 | | | | | 0.0 | |
| | | | | 2 | | | | | 0.0 | |
| | | | | 3 | C-1 | RC | 48/60 | | 0.0 | |
| | | | | 4 | | | | | 0.0 | |
| | | | | 5 | | | | | 0.0 | |
| | | | Brown SOIL MIX CORE; 100% core recovery with 57% of core pieces greater than 6-inches long(dry) [SOIL MIX] | 6 | | | | | 0.0 | |
| | | | | 7 | | | | | 0.0 | |
| | | | | 8 | C-2 | RC | 60/60 | | 0.0 | |
| | | | | 9 | | | | | 0.0 | |
| | | | | 10 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 100% core recovery with 68% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 11 | | | | | 0.0 | |
| | | | | 12 | | | | | 0.0 | |
| | | | | 13 | C-3 | RC | 60/60 | | 0.0 | |
| | | | | 14 | | | | | 0.0 | |
| | | | | 15 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 100% core recovery with 68% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 16 | | | | | 0.0 | |
| | | | | 17 | | | | | 0.0 | |
| | | | | 18 | C-4 | RC | 60/60 | | 0.0 | |
| | | | | 19 | | | | | 0.0 | |
| | | | | 20 | | | | | 0.0 | |

LANGAN

Log of Boring **ISS-C2-R1**



| Project | Project No. |
|---|---|
| 141 3rd Street | 170390001 |
| **Location** | **Elevation and Datum** |
| Brooklyn, New York | Approx. el. 6.9 (NAVD 88) |

| Material Symbol | Color Code | Elev. (ft) | Sample Description | Depth Scale | Sample Data: Number | Type | Recov. (in) | Penetr-resist BL/6in | PID Reading (ppm) | Remarks (Drilling Fluid, Casing Depth, Fluid Loss, Drilling Resistance, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | -13.1 | | 20 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 100% core recovery with 75% of core pieces greater than 6-inches long (dry) [SOIL MIX] | 21 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 22 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 23 | | | | | 0.0 | |
| | | | | | C-5 | RC | 60/60 | | 0.0 | |
| | | | | 24 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 25 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 26 | | | | | 0.0 | |
| | | | Grayish brown SOIL MIX CORE; 97% core recovery with 71% of core pieces greater than 6-inches long (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | 27 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 28 | | | | | 0.0 | |
| | | | | | C-6 | RC | 58/60 | | 0.0 | |
| | | | | 29 | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 30 | | | | | 0.0 | |
| | | | | | | | | | | |
| | | | | 31 | | | | | 0.0 | |
| | | | Gray SOIL MIX CORE; 100% core recovery with 100% of core pieces greater than 6-inches long (dry) [SOIL MIX] | | | | | | 0.0 | |
| | | | | | | | | | 0.0 | |
| | | | | 32 | C-7 | RC | 24/24 | | 0.0 | |
| | | -26.1 | | | | | | | | |
| | | | End of Boring at 33.0ft. | 33 | | | | | | The borehole was restored by tremie-grouting from the base of the borehole to surface grade. |
| | | | | 34 | | | | | | |
| | | | | 35 | | | | | | |
| | | | | 36 | | | | | | |
| | | | | 37 | | | | | | |
| | | | | 38 | | | | | | |
| | | | | 39 | | | | | | |
| | | | | 40 | | | | | | |
| | | | | 41 | | | | | | |
| | | | | 42 | | | | | | |
| | | | | 43 | | | | | | |
| | | | | 44 | | | | | | |
| | | | | 45 | | | | | | |

# ATTACHMENT E

# QC TESTING RESULTS

AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/20/2024
**Sample Date:** 11/20/2024
**Field Inspector:** Juan Cardona
**ACI#:** 1535378
**Lab Technician:** JJ Lawlor
**ACI#:** 1366152
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

Draft

**Time in:** 10:00 AM **Weather:** Cloudy **Contractor:** New Leaf Development LL

**Time out:** 8:00 PM **Temperature:** 57 **Supplier:** Self-mix **Total Yd:** 9

**Location of pour:** Pile ISS 15

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | 11:45AM | N/A | N/A | 57 & 72 | N/A | 1 | 90-100 |

Air meter used: N/A

Field Comments: 2 piles were done on this day.
(10) samples were taken per pile as per clients request.

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 82611 | 11/20/2024 | 11/27/2024 | 7 | 3.00 | 7.07 | 290 | Type 3 | 40 | |
| 2 | 82612 | 11/20/2024 | 12/4/2024 | 14 | 3.00 | 7.07 | 540 | Type 2 | 80 | |
| 3 | 82613 | 11/20/2024 | 12/11/2024 | 21 | 3.00 | 7.07 | 610 | Type 3 | 90 | |
| 4 | 82614 | 11/20/2024 | 12/18/2024 | 28 | 3.00 | 7.07 | 660 | Type 2 | 90 | Yes |
| 5 | 82615 | 11/20/2024 | 1/15/2025 | 56 | 3.00 | 7.07 | 680 | Type 3 | 100 | Yes |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Break Procedure: (C 1231)**

| Lab Comments |
|---|
| 7 day hydraulic conductivity - 1.3x10e-6 cm/s |
| 14 day hydraulic conductivity - 8.6x10e-7 cm/s |
| 21 day hydraulic conductivity - 4.6x10e-7 cm/s |
| 28 day hydraulic conductivity - 4.7x10e-7 cm/s |
| 56 day hydraulic conductivity - 4.2x10e-7 cm/s |
| Max 5 x 10e-7 cm/s |

Respectfully Submitted: _____

Client Signature: _____

PE Signature: _____

Amaracon Testing and Inspections, LLC accepts no liability for work executed by others after the date above.

AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |

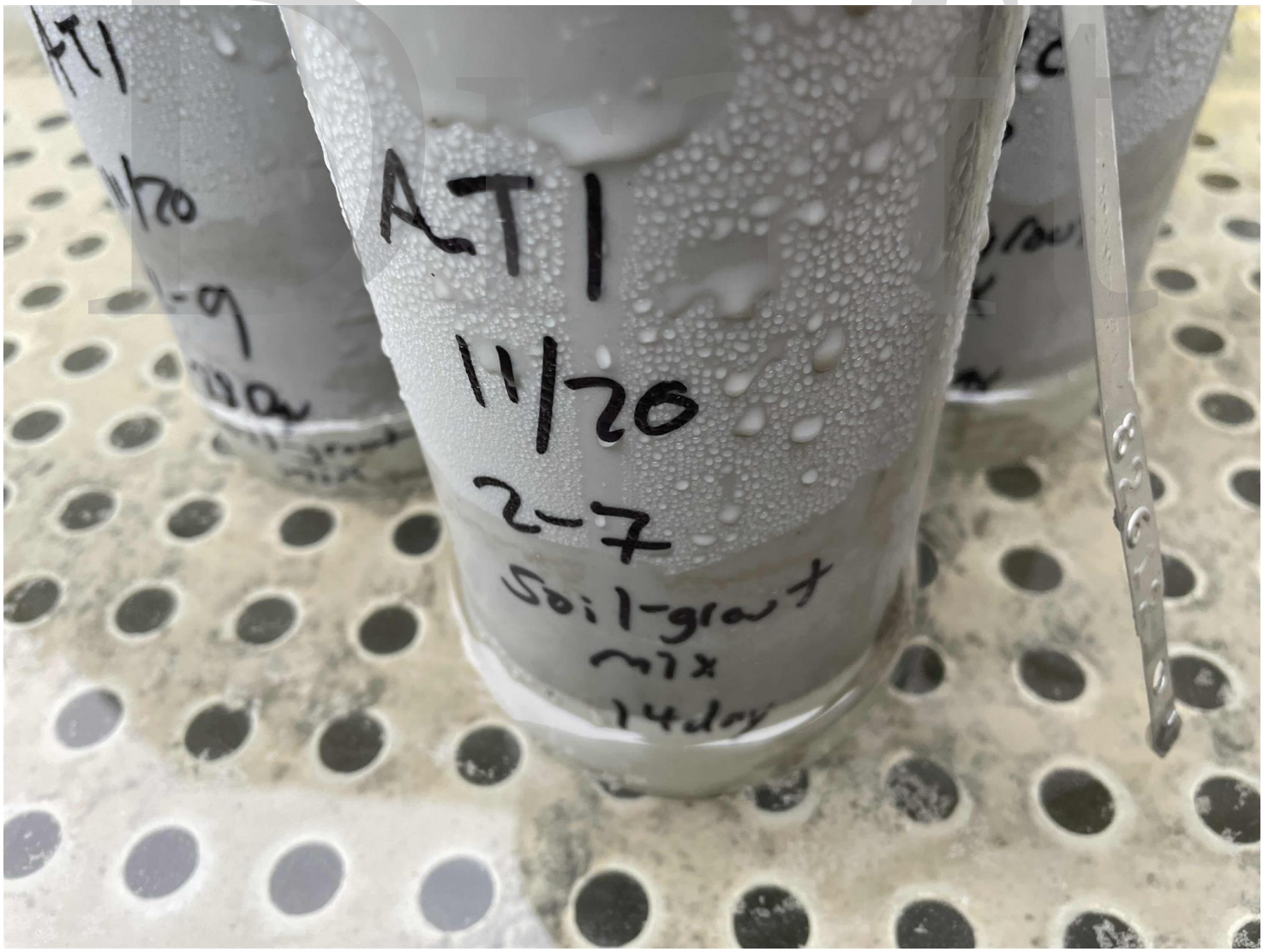


Draft

AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

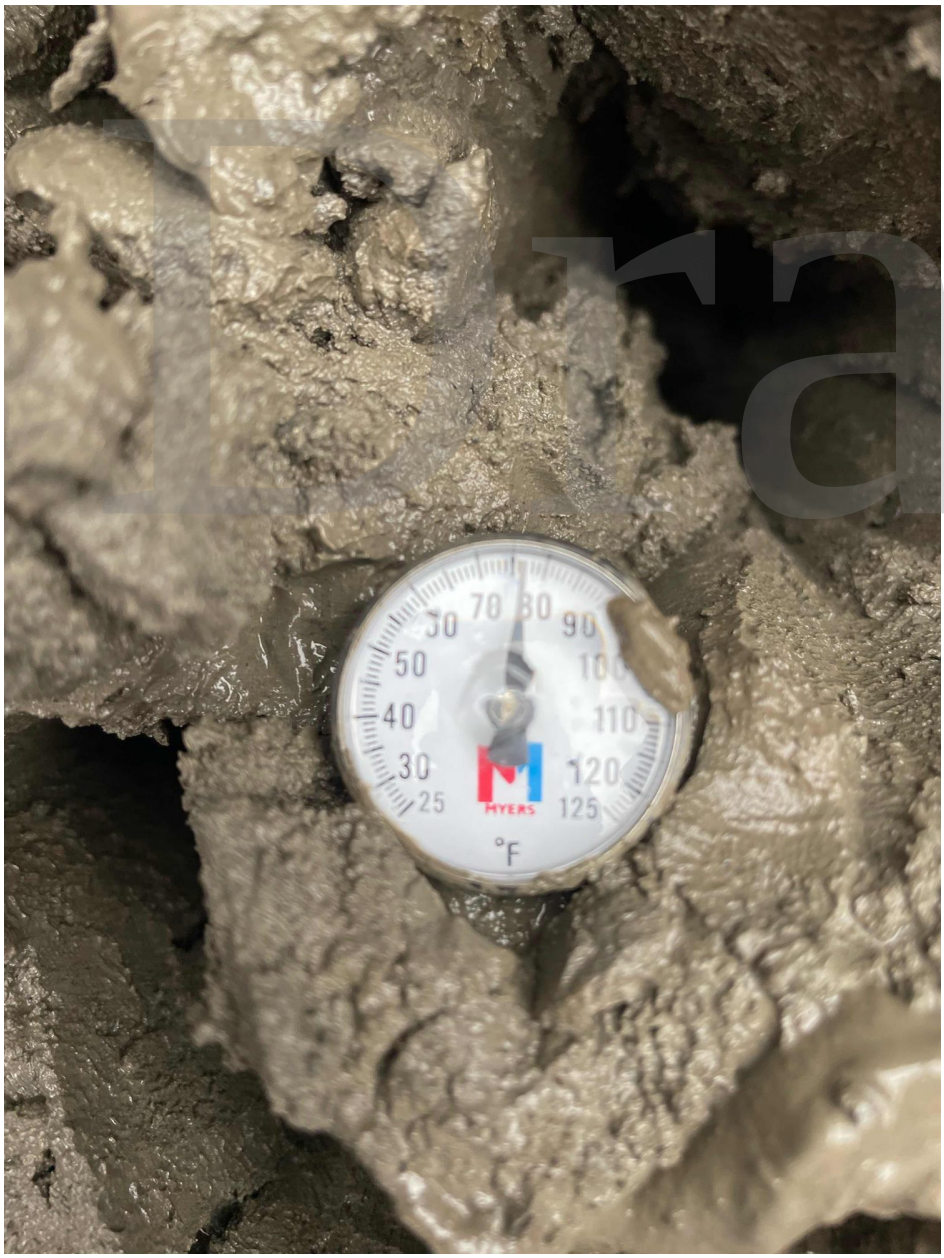
| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |



AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |

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AMARACON
TESTING & INSPECTIONS LLC
*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |




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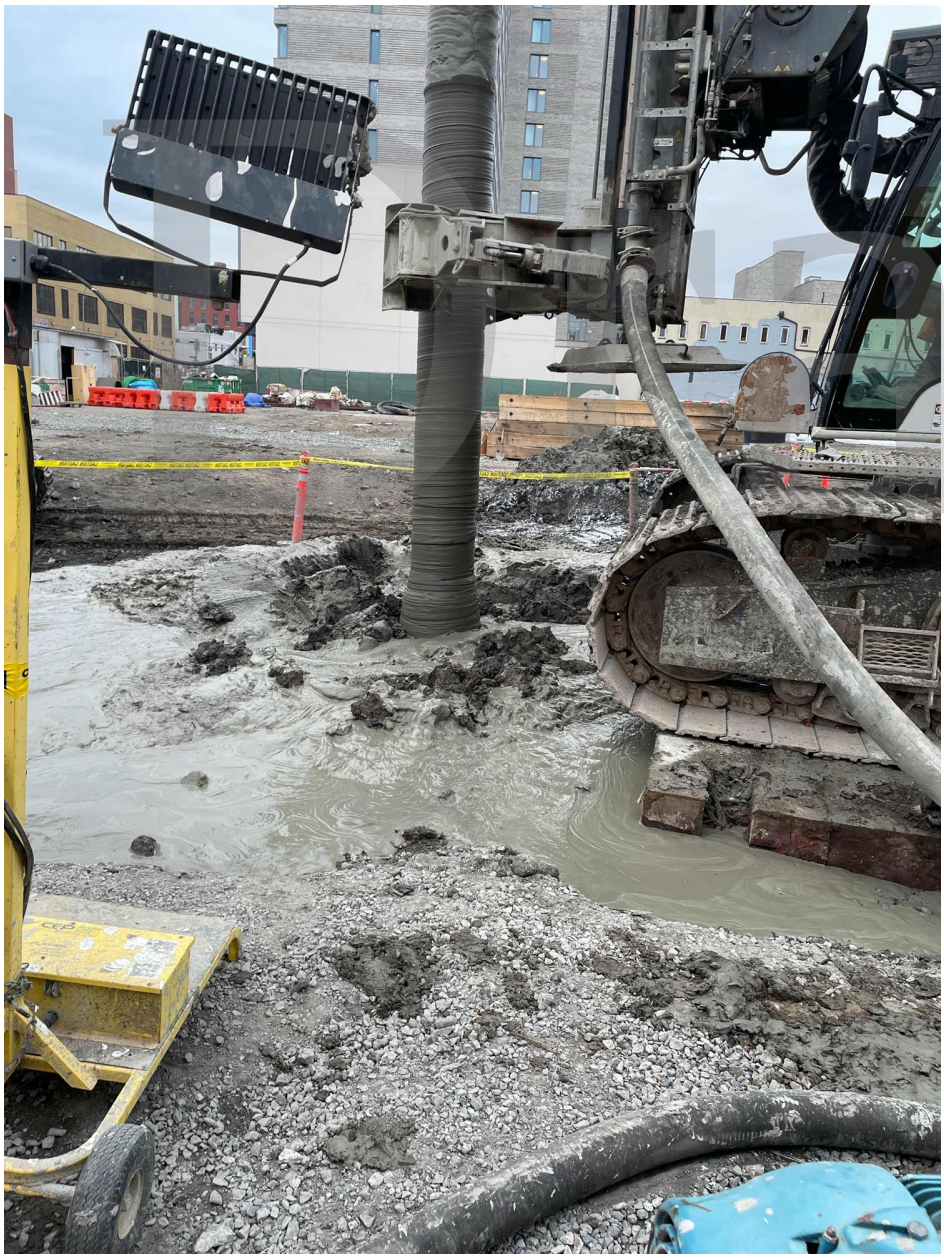
AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |



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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |




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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |




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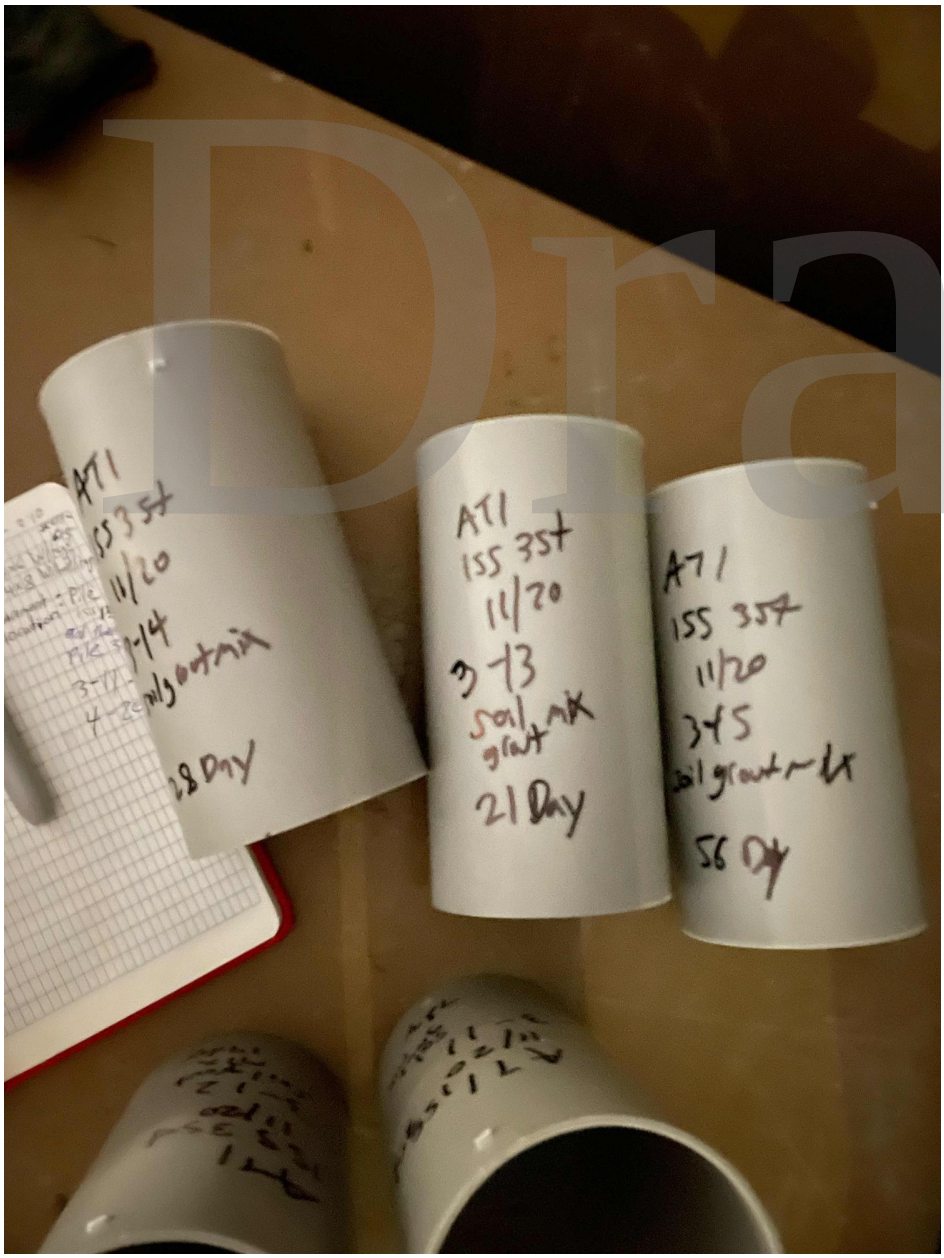
AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |

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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/20/2024 | | |




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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/18/2024
**Sample Date:** 11/18/2024
**Field Inspector:** Carlos Tirado
**ACI#:** 2281104
**Lab Technician:** JJ Lawlor
**ACI#:** 1366152
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

Draft

**Time in:** 10:30 AM **Weather:** Sunny **Contractor:** New Leaf Development LL

**Time out:** 6:00 PM **Temperature:** N/a **Supplier:** N/a **Total Yd:** 1

**Location of pour:** ISS #16

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/a | N/a | N/a | N/a | N/a | N/a | N/a | N/a | N/a | 1 | 100 |

Air meter used: N/a

Field Comments: 10 samples were taken 5 UCS and 5 Hydraulic conductivity

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105767 | 11/18/2024 | 11/25/2024 | 7 | 4.00 | 12.56 | 350 | Type 3 | 30 | |
| 2 | 105768 | 11/18/2024 | 12/2/2024 | 14 | 4.00 | 12.56 | 600 | Type 3 | 50 | |
| 3 | 105769 | 11/18/2024 | 12/9/2024 | 21 | 4.00 | 12.56 | 790 | Type 3 | 60 | |
| 4 | 105770 | 11/18/2024 | 12/16/2024 | 28 | 4.00 | 12.56 | 870 | Type 3 | 70 | No |
| 5 | 105771 | 11/18/2024 | 1/13/2025 | 56 | 4.00 | 12.56 | 920 | Type 3 | 70 | No |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Break Procedure: (C 1231)**

| Lab Comments |
|---|
| 7 day hydraulic conductivity - 3.6x10e-6 cm/s |
| 14 day hydraulic conductivity - 1.1x10e-6 cm/s |
| 21 day hydraulic conductivity - 9.8x10e-7 cm/s |
| 28 day hydraulic conductivity - 7.4x10e-7 cm/s |
| 56 day hydraulic conductivity - 7.2x10e-7 cm/s |
| Max 5x10e-7 cm/s |

Respectfully Submitted: C.T

Client Signature: N/A

PE Signature: _____

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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/18/2024
**Sample Date:** 11/18/2024
**Field Inspector:** Carlos Tirado
**ACI#:** 2281104
**Lab Technician:**
**ACI#:**
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

**Time in:** 10:30 AM **Weather:** N/a **Contractor:** New Leaf Development LL

**Time out:** 6:00 PM **Temperature:** N/a **Supplier:** N/a **Total Yd:** 1

**Location of pour:** 1 set of samples PER Column

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/a | N/a | N/a | N/a | N/a | M/a | N/a | N/a | N/a | 1 | Hydraulic conductivity |

Air meter used: N/a

Field Comments: 10 samples were taken 5 UCS and 5 Hydraulic conductivity

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105772 | 11/18/2024 | | 7 | | | | | | |
| 2 | 105773 | 11/18/2024 | | 14 | | | | | | |
| 3 | 105774 | 11/18/2024 | | 21 | | | | | | |
| 4 | 105775 | 11/18/2024 | | 28 | | | | | | |
| 5 | 105776 | 11/18/2024 | | 56 | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Break Procedure: (C 1231)**

**Lab Comments**

Respectfully Submitted: C.T

Client Signature: N/A

PE Signature:

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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/19/2024
**Sample Date:** 11/19/2024
**Field Inspector:** Juan Cardona
**ACI#:** 1535378
**Lab Technician:** Christy Sanders
**ACI#:** 1306764
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

Draft

**Time in:** 4:00 PM **Weather:** Sunny **Contractor:** New Leaf Development LL

**Time out:** 5:00 PM **Temperature:** 50 **Supplier:** Self mix. Soil/grout mix **Total Yd:** 9

**Location of pour:** Pile ISS 17

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | 4 PM | N/A | N/A | 71 | N/A | 1 | 90-100 |

Air meter used: N/A

Field Comments: 10 samples were made.
(5) 3 x 6 cylinders & (5) 4 x 8 cylinders

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 82606 | 11/19/2024 | 11/26/2024 | 7 | 3.00 | 7.07 | 170 | Type 3 | 20 | |
| 2 | 82607 | 11/19/2024 | 12/3/2024 | 14 | 3.00 | 7.07 | 240 | Type 3 | 30 | |
| 3 | 82608 | 11/19/2024 | 12/10/2024 | 21 | 3.00 | 7.07 | 310 | Type 3 | 40 | |
| 4 | 82609 | 11/19/2024 | 12/17/2024 | 28 | 3.00 | 7.07 | 380 | Type 3 | 50 | No |
| 5 | 82610 | 11/19/2024 | 1/14/2025 | 56 | 3.00 | 7.07 | 450 | Type 3 | 60 | No |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Break Procedure: (C 1231)**

| Lab Comments |
|---|
| 7 day hydraulic conductivity - 1.6x10e-6 |
| 14 day hydraulic conductivity - 3.0x10e-6 |
| 21 day hydraulic conductivity - 2.8x10e-6 |
| 28 day hydraulic conductivity - 2.7x10e-6 |
| 56 day hydraulic conductivity - 2.5x10e-6 |
| Max - 5x10e-7 |

Respectfully Submitted: _____

Client Signature: _____

PE Signature: _____

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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | Concrete Sampling | Juan Cardona |




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AMARACON
TESTING & INSPECTIONS LLC
*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |



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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | Concrete Sampling | Juan Cardona |




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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |



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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | Concrete Sampling | Juan Cardona |



AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |




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TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |



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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |




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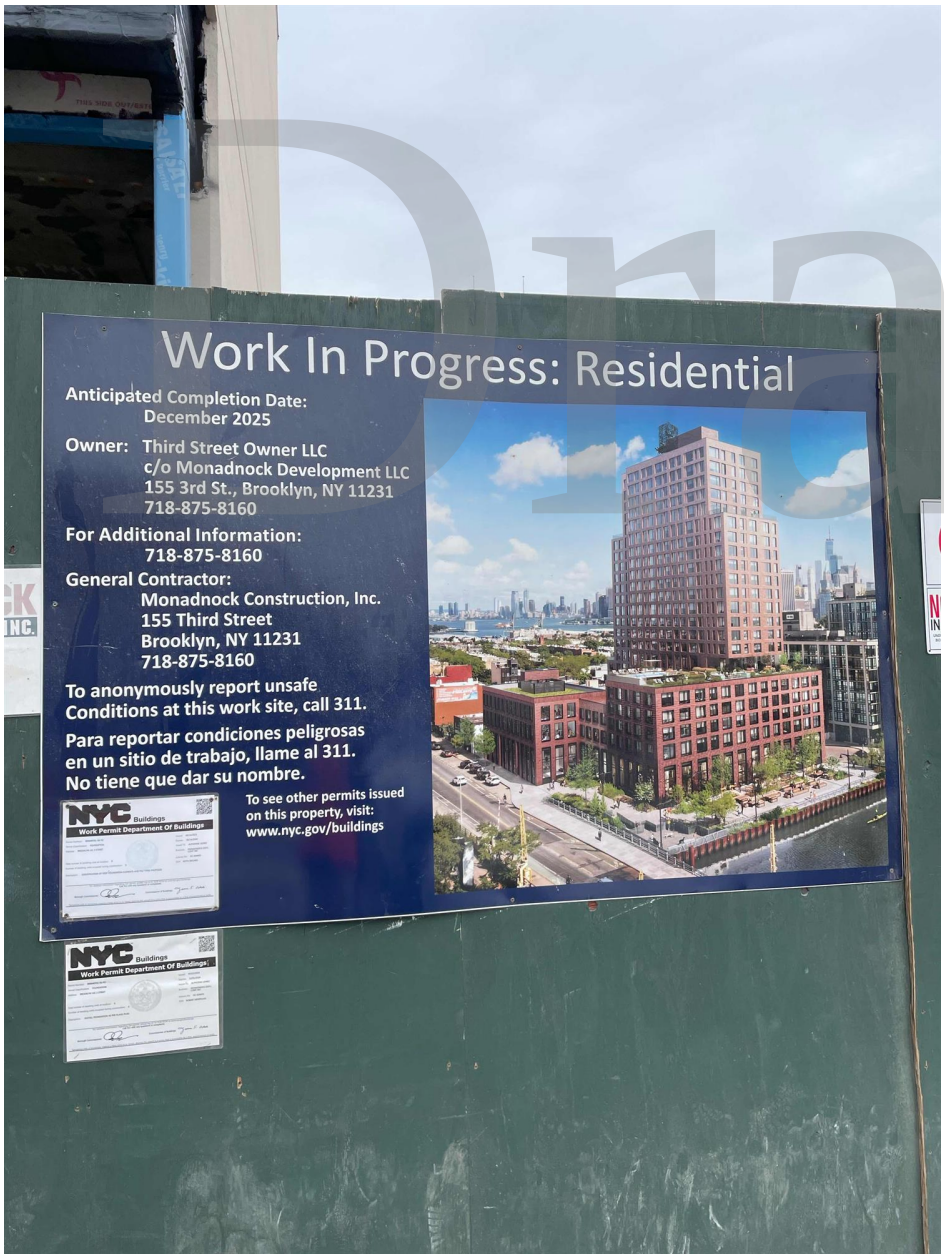
AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |




Draft

AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/19/2024 | | |



Draft

AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/21/2024
**Sample Date:** 11/21/2024
**Field Inspector:** Eugene Cruickshank
**ACI#:** 2277705
**Lab Technician:** JJ Lawlor
**ACI#:** 1366152
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

Draft

**Time in:** 2:00 PM **Weather:** Rainy/cold **Contractor:** New Leaf

**Time out:** 6:00 PM **Temperature:** 44 **Supplier:** N/A **Total Yd:** 0

**Location of pour:** ISS #32

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | 5:29PM | N/A | N/A | 62 | N/A | 1 | 90-100 |

Air meter used: N/A

Field Comments: Samples taken from drilling returns of concrete mix at Hudaulic conductivity and UCS(strength). 10

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | G1 | 11/21/2024 | 11/29/2024 | 8 | 3.00 | 7.07 | 240 | Type 5 | 30 | |
| 2 | G2 | 11/21/2024 | 12/5/2024 | 14 | 3.00 | 7.07 | 390 | Type 4 | 60 | |
| 3 | G3 | 11/21/2024 | 12/12/2024 | 21 | 3.00 | 7.07 | 460 | Type 3 | 70 | |
| 4 | G4 | 11/21/2024 | 12/19/2024 | 28 | 3.00 | 7.07 | 610 | Type 3 | 90 | Yes |
| 5 | G5 | 11/21/2024 | 1/16/2025 | 56 | 3.00 | 7.07 | 710 | Type 3 | 100 | Yes |
| 6 | G6 | 11/21/2024 | | 7 | | | | | | |
| 7 | G7 | 11/21/2024 | | 14 | | | | | | |
| 8 | G8 | 11/21/2024 | | 21 | | | | | | |
| 9 | G9 | 11/21/2024 | | 28 | | | | | | |
| 10 | G10 | 11/21/2024 | | 56 | | | | | | |

**Break Procedure: (C 1231)**

| Lab Comments |
|---|
| 7 day hydraulic conductivity - 8.8x10e-7 cm/s |
| 14 day hydraulic conductivity - 7.5x10e-7 cm/s |
| 21 day hydraulic conductivity - 6.0x10e-7 cm/s |
| 28 day hydraulic conductivity - 5.5x10e-7 cm/s |
| 56 day hydraulic conductivity - 5.3x10e-7 cm/s |
| Max - 5x10e-7 cm/s |

Respectfully Submitted: _____

Client Signature: N/A _____

PE Signature: _____

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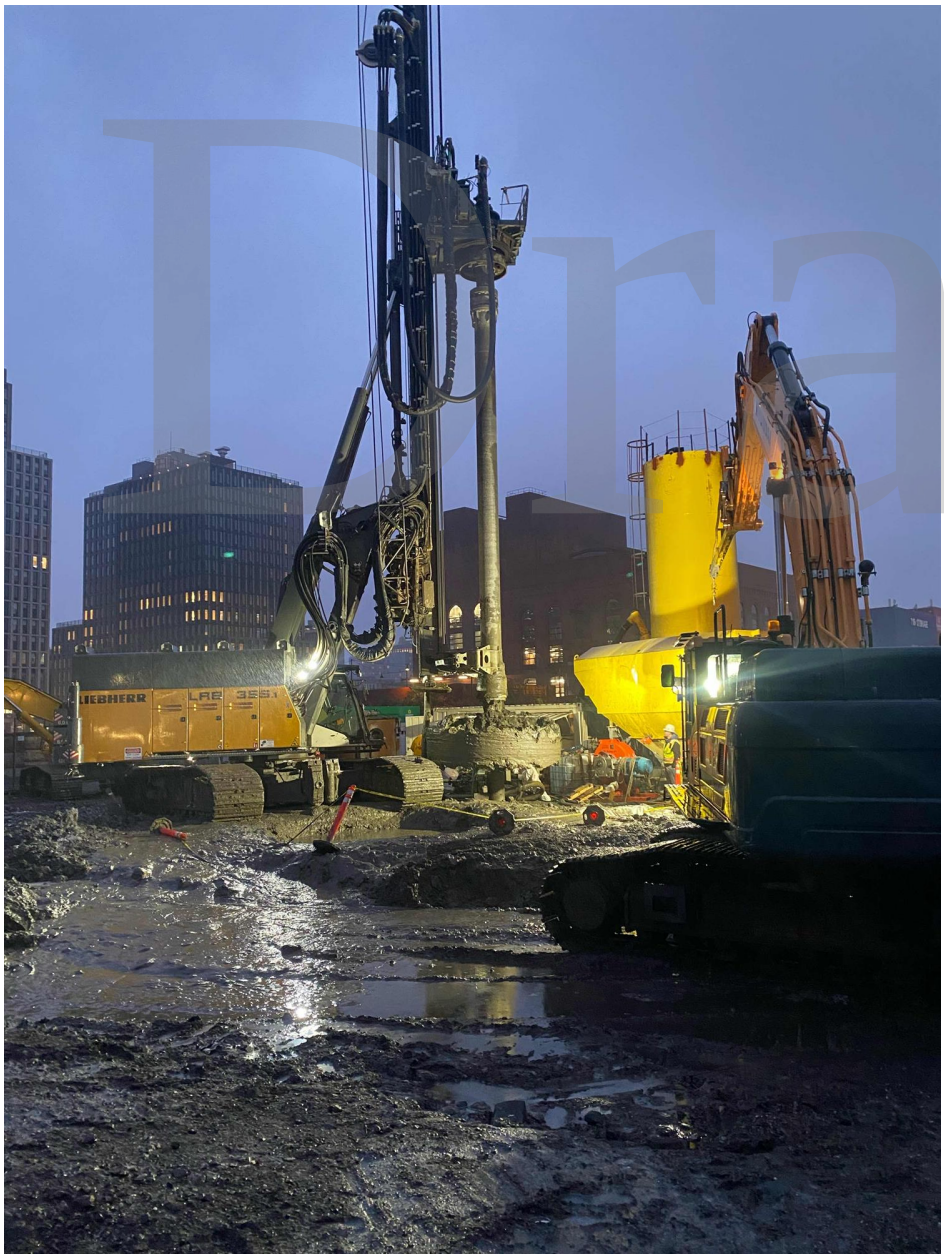
AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Eugene Cruickshank |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/21/2024 | | |

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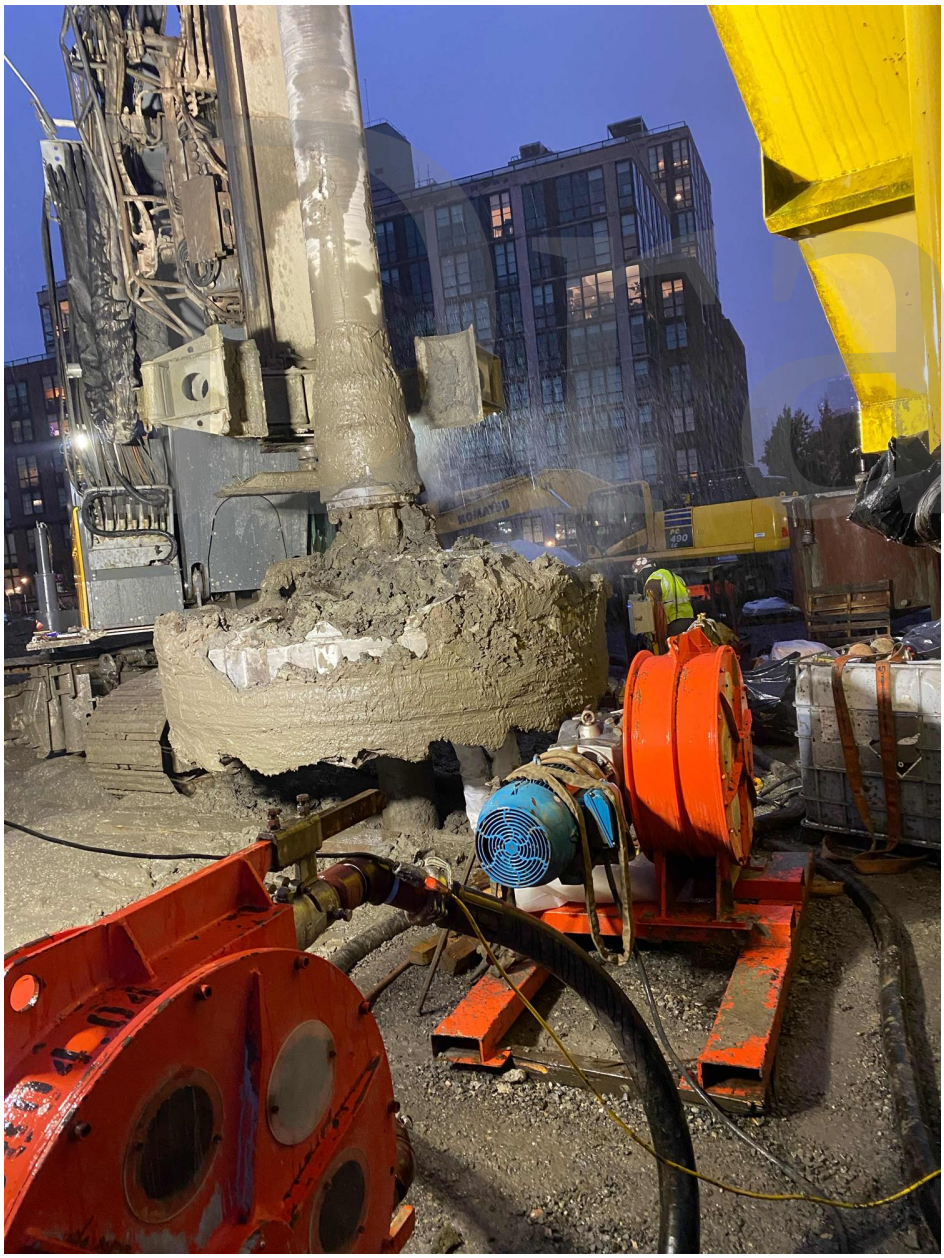
|---|---|---|---|---|
| | | | Concrete Sampling | Eugene Cruickshank |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/21/2024 | | |



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TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/22/2024
**Sample Date:** 11/22/2024
**Field Inspector:** Juan Cardona
**ACI#:** 1535378
**Lab Technician:** JJ Lawlor
**ACI#:** 1366152
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

**Time in:** 10:00 AM **Weather:** Drizzle **Contractor:** New Leaf Development LL

**Time out:** 5:00 PM **Temperature:** 41 **Supplier:** Self-mix **Total Yd:** 9

**Location of pour:** Pile ISS #33

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | 3:15 PM | N/A | N/A | 65 | N/A | 1 | 90-100 |

Air meter used: N/A

Field Comments: 10 samples were taken in total. Five 4 x 8 and five 3 x 6.

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 82621 | 11/22/2024 | 11/29/2024 | 7 | 3.00 | 7.07 | 360 | Type 3 | 50 | |
| 2 | 82622 | 11/22/2024 | 12/6/2024 | 14 | 3.00 | 7.07 | 590 | Type 3 | 80 | |
| 3 | 82623 | 11/22/2024 | 12/13/2024 | 21 | 3.00 | 7.07 | 670 | Type 3 | 90 | |
| 4 | 82624 | 11/22/2024 | 12/20/2024 | 28 | 3.00 | 7.07 | 700 | Type 3 | 100 | Yes |
| 5 | 82625 | 11/22/2024 | 1/17/2025 | 56 | 3.00 | 7.07 | 710 | Type 3 | 100 | Yes |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

**Break Procedure: (C 1231)**

**Lab Comments**
7 day hydraulic conductivity results - 2.3 x 10e-7 cm/s
14 day hydraulic conductivity results - 2.0 x 10e-7 cm/s
21 day hydraulic conductivity results - 2.0 x 10e-7 cm/s
28 day hydraulic conductivity results - 2.2 x 10e-7 cm/s
56 day hydraulic conductivity results - 1.9 x 10e-7 cm/s
Max 5 x 10e-7 cm/s

Respectfully Submitted: _____

Client Signature: _____

PE Signature: _____

STATE OF NEW YORK · CONNIE A. ZAMBIANCHI · 092403 · LICENSED PROFESSIONAL ENGINEER

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AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/22/2024 | | |



AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/22/2024 | | |



AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/22/2024 | | |



AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

| Client | Project | Date | Type | Inspector |
|---|---|---|---|---|
| | | | Concrete Sampling | Juan Cardona |
| New Leaf Development LLC | d Avenue, Brooklyn - Concrete | 11/22/2024 | | |



AMARACON
TESTING & INSPECTIONS LLC

*"Raising the Quality Standard"*

**Client:** New Leaf Development LLC
287 Prospect Avenue
Brooklyn, NY-11215

**Date:** 11/20/2024
**Sample Date:** 11/20/2024
**Field Inspector:** Juan Cardona
**ACI#:** 1535378
**Lab Technician:** JJ Lawlor
**ACI#:** 1366152
**NYC DOB License #:** 104

**Project:** 155 Third Avenue, Brooklyn, NY 11215

# *Concrete Field Testing*

***(ASTM C 31, C172)***

Draft

**Time in:** 10:00 AM **Weather:** Cloudy **Contractor:** New Leaf Development LL

**Time out:** 8:00 PM **Temperature:** 57 **Supplier:** Self-mix **Total Yd:** 9

**Location of pour:** Pile ISS 35

| Truck No. | Ticket No. | Batch Time | Disch. Time | Samp. Time | % Air (C 231) | Slump, in (C 143) | Temp, °F (C 1064) | Unit Wt. lb/ft³ (C 138) | Field Set # | Design Strength, psi |
|---|---|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | 6:11PM | N/A | N/A | 72 | N/A | 2 | 90-100 |

Air meter used: N/A

Field Comments: Second set - pile 35. Additional samples taken for permeability

**COMPRESSIVE STRENGTH OF CONCRETE CYLINDERS (ASTM C 39) (4" D x 8" H)**

| Field # | Seal # | Date Cast | Date Tested | Age, Days | Avg. Diameter, in | Cross-Sect. Area, in² | Total Load lbs | Fracture Type | Strength, psi | Complies |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 82616 | 11/20/2024 | 11/27/2024 | 7 | 3.00 | 7.07 | 190 | Type 3 | 30 | |
| 2 | 82617 | 11/20/2024 | 12/4/2024 | 14 | 3.00 | 7.07 | 410 | Type 3 | 60 | |
| 3 | 82618 | 11/20/2024 | 12/11/2024 | 21 | 3.00 | 7.07 | 580 | Type 3 | 80 | |
| 4 | 82619 | 11/20/2024 | 12/18/2024 | 28 | 3.00 | 7.07 | 620 | Type 3 | 90 | Yes |
| 5 | 82620 | 11/20/2024 | 1/15/2025 | 56 | 3.00 | 7.07 | 700 | Type 3 | 100 | Yes |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

**Break Procedure: (C 1231)**

| Lab Comments |
|---|
| 7 day hydraulic conductivity - 1.3x10^-6 cm/s |
| 14 day hydraulic conductivity - 8.1x10^-7 cm/s |
| 21 day hydraulic conductivity - 5.9x10e-7 cm/s |
| 28 day hydraulic conductivity - 5.0x10e-7 cm/s |
| 56 day hydraulic conductivity - 4.9x10e-7 cm/s |
| Max 5 x 10e-7 cm/s |

Respectfully Submitted: _____

Client Signature: _____

PE Signature: _____

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