



**TOWNSHIP of HOPEWELL**  
**MERCER COUNTY**

**201 WASHINGTON CROSSING – PENNINGTON ROAD**  
TITUSVILLE, NEW JERSEY 08560-1410

**PROJECT / APPLICATION**

BLOCK:

LOT:

ADDRESS:

PROJECT NAME:

**PLANS**

**SUPPLEMENTAL  
ENGINEERING  
MEMO  
AUGUST 2025**

**M E M O R A N D U M**

(via email)

TO: Hopewell Township Planning Board  
FROM: Mark Kataryniak, PE, PTOE, Township Redevelopment Engineer  
DATE: August 14, 2025  
SUBJECT: **Supplemental Engineering Review**  
Venue at Hopewell  
Preliminary & Final Major Subdivision and Site Plan  
61 & 137 Nursery Road, Scotch Road, Nursery Road  
Block 93, Lot 19, 20, 45.01, 46 & p/o 60

The following has been prepared in response to concerns raised during the ongoing planning board hearings regarding the Sunoco pipeline that runs within a dedicated easement through the subject property. The pipeline that runs through the subject property is a segment along the Twin Oaks Pipeline, which is approximately 105.5 miles in length, running from Twin Oaks Terminal in Aston, Pennsylvania to the Newark Terminal in Newark, New Jersey.

A sleeve on the pipeline, identified in documents related to the matter as a Type A Sleeve, located within Upper Makefield, Pennsylvania experienced a leak discovered on January 31, 2025, that resulted in action taken by the US Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), the federal agency maintaining jurisdiction over the subject pipeline.

In response to the concerns raised, I have reviewed a July 31, 2025, letter authored by Jason R. Tuvel, Esq., on behalf of applicant Lennar, responding to comments on the pipeline issue, and exhibits appended to the letter more specifically described as (copies also attached):

1. The pipeline easement, recorded in the Mercer County Clerk's office in Deed Book 1217, Page 70, recorded December 4, 1952. The purpose of the easement was to fix and establish the location of the 50-foot-wide right-of-way easement for the pipeline.
2. A May 2, 2025, Consent Order entered by the USDOT PHMSA In the Matter of Sunoco Pipeline LP, approving the April 30, 2025, Consent Agreement between PHMSA and Sunoco Pipeline LP ("Sunoco").
3. Document entitled, "General Guidelines for Third-Party Construction or Maintenance Activities", produced by Energy Transfer Company, dated 12/8/2023, and provided by the gas pipeline company for work in the vicinity of pipelines.

The pipeline easement document established the 50-foot-wide easement, as depicted on the applicant's plans, and details the purpose of the easement as "a right-of-way easement, with the right to locate, construct and lay a pipe line and maintain, operate, repair and remove said line over, upon, under and across certain lands situate in the Township of Hopewell (Book 1217 Page 70, 2<sup>nd</sup> paragraph)". The easement documents further stipulate, in multiple locations, that the remaining lands of the subject property are released from the right-of-way easement, and that the pipeline easement shall not "exclude said Grantor (Property owner granting the easement) from enjoying and occupying said lands (easement area) as Grantor has heretofore in any way that does not interfere with said Grantee's use of the right-of-way easement".

**Re: Supplemental Engineering Review**

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Preliminary & Final Major Subdivision and Site Plan

61 & 137 Nursery Road, Scotch Road, Nursery Road

Block 93, Lot 19, 20, 45.01, 46 & p/o 60

The Consent Order sets forth specific requirements, with established timelines for compliance (measured from the date of the Consent Order), to address the integrity risk on the entire length of the Twin Oaks Pipeline by completing specific Corrective Measures, summarized as:

- a. Operate under reduced pressure, stated as a 20% reduction in the highest operating pressure.
- b. Develop a Type A Sleeve Integrity Plan, evaluating the integrity of each Type A Sleeve on the pipeline; (90-days).
- c. Develop a Remedial Work Plan (RWP); (90-days).
- d. Prepare a Failure History Evaluation, undertaken by a third-party facilitator; (120-days).
- e. Conduct an evaluation of the pipeline's leak detection system, undertaken by a third-party facilitator; (120-days).
- f. Conduct a Ground Leakage Survey; (30-days).
- g. Conduct Mechanical and Metallurgical Testing w; (45-days).
- h. Prepare a Root Cause Failure Analysis; (120-days).
- i. Conduct an Emergency Response Plan and Training Review; (90 days).
- j. Review and assess the effectiveness of Sunoco's Public Awareness Program.

The Consent Order outlines a comprehensive protocol for the testing and evaluation of the integrity of the pipeline, and establishes clear requirements for the pipeline company, or a third-Party facilitator as noted, to address the integrity of the line and report to the PHMSA its findings. The Consent Order clearly states that the federal agency that maintains jurisdiction over the pipeline will remain as the jurisdiction evaluating the integrity of the pipeline.

The guidelines for third-party construction or maintenance activities establish specific restrictions and requirements for construction activities within the pipeline easement. The subject inclusionary development project, Venue at Hopewell, currently under review by the Planning Board, contains four locations along the pipeline easement where the applicant proposes construction over or under (for utilities) the pipeline easement. No other development is proposed that encroaches the pipeline easement throughout the balance of the project. The configuration of the road crossings and the proposed grading within the easement area is compliant with the guidelines issued. The applicant is further required to notify the pipeline company prior to conducting any construction activity within the easement and follow all safety requirements established by the pipeline company. I recommend that the Board condition any approval of this application on the requirement to conform to the requirements of the construction guidelines and notify the township prior to conducting any work within the easement area to allow for municipal inspection.

The proposed development plans depict development in compliance with the terms of the pipeline easement and the construction guidelines for work within the easement.

**Re: Supplemental Engineering Review**

Venue at Hopewell

Preliminary & Final Major Subdivision and Site Plan

61 & 137 Nursery Road, Scotch Road, Nursery Road

Block 93, Lot 19, 20, 45.01, 46 & p/o 60

The assessment of the integrity of the pipeline should be beyond the concerns and jurisdiction of the Planning Board, as it is under direct and ongoing oversight and jurisdiction of the US Department of Transportation. Further, the pipeline company is under a Consent Order to address the requirements of the Consent Order in a timely manner, which provides assurance that the matter is being promptly addressed. With the assistance of the Township Attorney, my office will follow and monitor the progress of the Consent Order as information becomes public and available.

In my opinion, the applicant's plans and protective measures for construction work within the pipeline easements are within established standards of practice and are satisfactory for the scope of the application. However, as noted above, I recommend that the Board condition any approval of this application on the requirement to conform to the requirements of the above referenced construction guidelines and notify the township prior to conducting any work within the easement area to allow for municipal inspection.



# PRIME TUVEL & MICELI

ATTORNEYS AT LAW

July 31, 2025

**VIA UPS & E-MAIL**

Francis P. Linnus, Esq.  
11 Clyde Road, Suite 201  
Franklin Township, New Jersey 08873

**RE: Venue At Hopewell  
Preliminary and Final Major Subdivision and Preliminary and Final Major Site  
Plan Inclusionary Development Application (“Application”)  
US Home, LLC dba Lennar (“Applicant”)  
Block 93, Lots 19, 20, 45.01, 46 & portion of 60 (the “Property”)**

Dear Mr. Linnus,

As you are aware, this office represents Applicant with respect to the above-described Application. Applicant’s Application is for a 600 unit inclusionary development that is part of the Township’s court approved Third Round Housing Element and Fair Share Plan. Please accept this letter and enclosed documents as part of Applicant’s Application file and in response to comments and questions raised at the Hopewell Township Planning Board’s (“Board”) July 24, 2025 hearing on the Application regarding the Twin Oaks (aka Sun Pipe/Sunoco) pipeline which traverses a portion of the Property.

First, as requested, enclosed herewith is a copy of the pipeline easement for the 50 foot pipeline easement, to Sun Pipe Line Company. The easement is recorded in the Mercer County Clerk’s office in Deed Book 1217, Page 70, recorded December 4, 1952. The purpose of the easement was to fix and establish the location of the 50 foot wide right-of-way easement and release all remaining land from said right-of-way easement. The easement does not in any way limit the use of the Property not subject to the easement.

Second, the Twin Oaks (aka Sun Pipe/Sunoco) pipeline is an interstate pipeline that transports petroleum products, including jet fuel, diesel, and gasoline, from Pennsylvania to New Jersey. On a local level, a portion of the 105.5-mile pipeline runs through various residential and commercial sections of Hopewell including the Capital Health property through to Denow Road. As such, it is regulated by the U.S. Department of Transportation (“USDOT”) Pipeline and Hazardous Materials Safety Administration

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ADDITIONAL OFFICES

Mount Laurel, NJ | Hoboken, NJ | Jersey City, NJ | Fort Washington, PA | New York, NY

("PHMSA") and subject to federal pipeline safety laws at 49 U.S.C. §60101 *et seq.* Accordingly, all matters pertaining to the pipeline maintenance and integrity are under federal jurisdiction.

Further illustrating the federal jurisdiction of the pipeline and their comprehensive response to the Bucks County discharge, we enclose herewith the recent May 2, 2025 Consent Order entered by the USDOT PHMSA In the Matter of Sunoco Pipeline LP, approving the April 30, 2025 Consent Agreement between PHMSA and Sunoco Pipeline LP ("Sunoco"), also enclosed herewith.

As you can see in the Consent Agreement, the Federal government, through their valid authority, is addressing the concerns expressed by the Board and public and is requiring Sunoco to investigate the integrity of the pipeline and repair and remediate as necessary. The Consent Agreement stems from a Notice of Proposed Safety Order issued to Sunoco on February 13, 2025 as a result of the Upper Makefield Township, Bucks County, Pennsylvania discharge ("Notice"). The Notice alleged that conditions exist on Respondent's pipeline system that pose a pipeline integrity risk and requires Sunoco to take certain corrective measures to remedy the alleged conditions and ensure that the public is protected from the alleged integrity risk.

The Consent Agreement requires that Sunoco address integrity risk on the pipeline and requires Sunoco to submit a Remedial Work Plan ("RWP") within ninety (90) days to specify tests, inspections, assessments, evaluations and remedial measures Sunoco will use to verify the integrity of the pipeline. The RWP must identify any pipe in the pipeline any characteristics similar to the factors contributing to the Bucks County discharge, determine if any similar conditions exist and address them. The RWP must further address other known integrity threats along the pipeline and describe methods to repair, replace, remediate or take other corrective measures of the pipeline.

In addition to the RWP, the Consent Agreement requires Sunoco to, within 120 days, evaluate the effectiveness and capability of Sunoco's leak detection system and determine appropriate amendments to improve the plans to address leak detection. Further, the Consent Order requires Sunoco to perform a ground instrument leakage survey or an excavation and evaluation along the pipeline within thirty (30) days and investigate and remediate all leaks discovered.

The Applicant respectfully submits that the attached easement allows the pipeline company to follow through on all required investigation work and any needed remediation work that is required without further authorization from the property owner or the Applicant.

Third, during the July 24, 2025 hearing it was questioned why Applicant's Environmental Impact Statement ("EIS") prepared by Envirotactics and dated June 2024 did not address the pipeline. The pipeline easement is shown in the maps, plans and surveys appended to the EIS and Envirotactics was aware of the pipeline when preparing the EIS. Additionally, as part of its due diligence, Applicant

Francis P. Linnus, Esq.

July 31, 2025

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performed soil testing in 62 locations on the Property, including in the vicinities to the north and south of the pipeline, at depths ranging from 2.5 feet to 5.5 feet (the pipeline has an estimated depth of 4 feet to the bottom of pipe). In conducting these soil explorations, Applicant's consultant did not encounter any visual or olfactory indications of a petroleum discharge in the test pits performed near the pipeline, or elsewhere on the Site that would require further investigation. See enclosed July 27, 2025 Subsurface Explorations letter prepared by Geo-Technology Associates, Inc.

Lastly, as explained at the hearing, the Applicant has and will coordinate with Sunoco/Energy Transfer and comply with all applicable local, State and Federal regulations as we design and implement the roadway and utility crossings required and planned for this inclusionary community. Enclosed herewith are the guidelines we received from Sunoco/Energy Transfer in our coordination on the project. Applicant's design will meet all the guideline requirements. In addition, the Applicant will share the pipeline crossing protocol applicable to its proposed work in the pipeline easement with the Board Engineer and would expect compliance with applicable regulations and guidelines for the crossings to be a condition of any approval, including the Applicant funding the Board or Township Engineer's onsite inspections as such crossing work proceeds.

Should you have any questions regarding the above or enclosed, please do not hesitate to contact us.

Very truly yours,

/s/ Jason R. Tuvel

Jason R. Tuvel, Esq.

Attorney for Applicant

Enclosures

cc: Katie Ronollo, Hopewell Township Planning Board Secretary (via overnight w/ encl. and email)  
Mark Kataryniak, P.E., Hopewell Township Planning Board Engineer (via e-mail)  
Steven P. Goodell, Esq., Hopewell Township Attorney (via e-mail)

## 1952 Pipeline Easement

THIS AGREEMENT made this twenty-first day of October A.D. 1952, by and between MABEL WITTE DAVIS, Widow, of the Township of Hopewell, County of Mercer, and State of New Jersey, party of the first part, and SUN PIPE LINE COMPANY, a corporation of the Commonwealth of Pennsylvania with its principal offices at 1608 Walnut Street, Philadelphia, Pennsylvania, party of the second part.

W I T N E S S E T H:

WHEREAS, on the fourth day of January, 1935, said party of the first part granted to Middlesex Pipe Line Company, a corporation of the State of New Jersey, a right-of-way easement, with the right to locate, construct and lay a pipe line and maintain, operate, repair and remove said line over, upon, under and across certain lands situate in the Township of Hopewell, County of Mercer and State of New Jersey, as by reference to said right-of-way agreement, recorded in the Clerk's Office of the County of Mercer in Book 731 of Deeds, page 161 &c., will more fully and at large appear, and

WHEREAS, said Middlesex Pipe Line Company has since been merged into Susquehanna Pipe Line Company and the name of said Susquehanna Pipe Line Company has since been changed to Sun Pipe Line Company, and

WHEREAS, by indenture bearing date the 12th day of November, 1946, and by indenture bearing date the 27th day of July, A.D., 1950, the party of the second part released and discharged certain lands from the right-of-way easement aforesaid, the said land so-released being more particularly described in the said indentures, and party of the first part has requested the release of the remaining land with the exception of a parcel fifty (50) feet wide crossing said property and used for pipe line purposes, and

WHEREAS, the parties hereto desire to fix and establish the location of the said fifty (50) feet wide right-of-way easement and to release the remaining lands of the party of the first part

from the said right-of-way easement:

NOW THEREFORE, in consideration of the premises and of the mutual advantages accruing or expected to accrue to the parties hereto by virtue of this agreement, the parties hereto for themselves and their respective heirs, executors, administrators, successors and assigns covenant and agree as follows:

1. The party of the first part agrees that the right-of-way easement heretofore granted, as aforesaid, shall be and continue in full force and effect with respect to the following lands of the party of the first part:

All that certain fifty (50) feet wide parcel of land lying and being in the Township of Hopewell, in the County of Mercer and the State of New Jersey, the center line thereof being more particularly described as follows:

"BEGINNING at a point in the center line of Scotch Road at the distance of fourteen hundred and ninety one (1491) feet measured N 4° E from the point of intersection of the center line of Scotch Road and the center line of Nursery Road; extending thence (1) N 87° 30' W the distance of seventy six and five tenths (76.5) feet to a point; (2) N 74° 6' W the distance of nine hundred and ninety eight (998) feet to a point; (3) S 89° 31' W the distance of one thousand two hundred and twelve (1,212) feet to a point on the west property line, which point is one thousand seven hundred and ninety (1,790) feet north of the southwest corner of the property of the party of the first part."

2. Party of the second part has released, quitclaimed and forever discharged and by these presents does release, quitclaim and forever discharge unto party of the first part and her heirs and assigns forever all that certain lot, tract or parcel of land and premises situate, lying and being in the Township of Hopewell, in the County of Mercer and State of New Jersey, as more fully described in the said right-of-way agreement of January 4, 1935, and not heretofore released, as aforesaid, excepting thereout and therefrom the premises more particularly described in Paragraph 1 hereof.

Together with the hereditaments and appurtenances thereto belonging; and all the right, title and interest of the said party of the second part of, in and to the same, to the intent that the lands hereby conveyed may be released and discharged from the said right-of-way easement.

To have and to hold the lands and premises hereby released and discharged to the said party of the first part her heirs and assigns, to her and their only proper use, benefit and behoof, forever, free, clear and discharged of and from all lien and claim under and by virtue of the aforesaid right-of-way easement.

3. All other terms and provisions of said right-of-way agreement dated January 4, 1935, except as modified and amended by this agreement, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed the day and year first above written.

Witness:

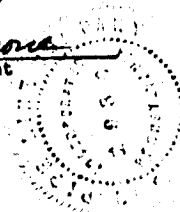
Monmouth Y. Mohley  
Monmouth Y. Mohley

Mabel Witte Davis (SEAL)  
Mabel Witte Davis

SUN PIPE LINE COMPANY

Attest: William F. D. O'Leary  
Secretary

By: [Signature]  
President



STATE OF NEW JERSEY :  
COUNTY OF MERCER :

On this third day of December 1952,  
before me, an Attorney at Law of New Jersey,  
Mabel Witte Davis to me known to be the person described in and  
who executed the foregoing instrument; and I having first made known  
to her the contents thereof, she did there-  
upon severally acknowledge that she signed, sealed and  
delivered the same as her free and voluntary act and deed  
for the uses and purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and  
official seal.

*Kenneth Y. Atchley*  
Kenneth Y. Atchley  
Attorney at Law of New Jersey.

COMMONWEALTH OF PENNSYLVANIA: ss  
COUNTY OF PHILADELPHIA :

BE IT REMEMBERED, that on this 21st day of October  
1952, before me, the subscriber, a Notary Public, of the Common-  
wealth of Pennsylvania, personally appeared William F. Leopold, Jr.,  
who, being by me duly sworn on this oath, says that he is the  
Secretary of SUN PIPE LINE COMPANY, the releasor named in the within  
Instrument; that B. K. Morse is the Vice-President  
of said corporation; that deponent well knows the corporate seal of  
said corporation; and the seal affixed to said Instrument is such  
corporate seal and was thereto affixed, and said Instrument signed  
and delivered by said Vice-President as and for his voluntary act  
and deed and as and for the voluntary act and deed of said corpora-  
tion, in presence of deponent, who thereupon subscribed his name  
thereto as witness.

Sworn and Subscribed before:  
me at Philadelphia :  
the date aforesaid. :

*William F. Leopold, Jr.*

*Mary M. Kelly*

NOTARY PUBLIC  
My Commission Expires January 17, 1955



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AGREEMENT

Presented by the Clerk of the  
County of Marion on this 4<sup>th</sup> day of  
December, 1952, to  
the Court for the purpose of  
settling the account of the  
County of Marion for the year  
1952.

340  
Kenneth W. Archibald  
2281 Washington Blvd

# 1935 Pipeline Agreements

731-160

THEODORE C. TEITSWORTH, AL )  
TO :  
MIDDLESEX PIPE LINE COMPANY, AL )

RECEIPT #6 1-16  
RIGHT-OF-WAY AGREEMENT  
NEW JERSEY

WHEREAS, THE MIDDLESEX PIPE LINE COMPANY INTENDS TO BUILD A PIPE LINE SYSTEM, THE UNDERSIGNED (HEREINAFTER CALLED GRANTOR), FOR AND IN CONSIDERATION OF THE SUM OF ONE DOLLAR AND OTHER CONSIDERATIONS IN HAND PAID, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, DO HEREBY GRANT TO MIDDLESEX PIPE LINE COMPANY, ITS SUCCESSORS AND ASSIGNS, (HEREINAFTER CALLED GRANTEE), A RIGHT-OF-WAY EASEMENT, WITH THE RIGHT TO LOCATE, CONSTRUCT AND LAY A PIPE LINE AND MAINTAIN, OPERATE, REPAIR AND REMOVE SAID LINE OVER, UPON, UNDER AND ACROSS THE FOLLOWING LANDS SITUATE IN -- BOROUGH HOPEWELL TOWNSHIP MERCER COUNTY, STATE OF NEW JERSEY, BOUNDED AND DESCRIBED AS FOLLOWS:

ON THE NORTH BY LANDS OF	WARREN VAN WAGNER	ON THE WEST BY
ON THE SOUTH BY LANDS OF	AIRPORT ROAD	LANDS OF
ON THE EAST BY LANDS OF	J. A. W. DAVIS	IDA CHASAN

IN CROSSING SAID LANDS GRANTEE SHALL LAY ITS PIPE LINE AT A DEPTH OF AT LEAST 2½ FT. IN A TRENCH NOT OVER 18 IN. WIDE, ALONG THE COURSE NOW SURVEYED AND STAKED OUT BY IT. THE SAID TRENCH SHALL BE DUG BY HAND THROUGH THE GRANTOR'S WOODLOT. THE ENTIRE TRENCH SHALL BE REFILLED TO THE NORMAL LEVEL OF THE ADJACENT SOIL UPON THE COMPLETION OF SAID LINE, AND ALSO, INsofar AS GRANTOR HAS THE RIGHT TO DO SO, UPON, ALONG OR UNDER THE ROADS, STREETS, HIGHWAYS, OR OTHER RIGHTS-OF-WAY, OVER, ADJOINING OR APPURTENANT TO SAID LANDS, WITH AT ALL TIMES ALL RIGHTS OF INGRESS, EGRESS AND REGRESS, TO, OVER, THROUGH AND FROM SAID LANDS NECESSARY OR CONVENIENT FOR THE FULL AND COMPLETE USE OF THE SAID RIGHT-OF-WAY EASEMENT FOR THE EXERCISE OF THE RIGHTS HEREIN MENTIONED, BUT SUCH USE SHALL NOT EXCLUDE SAID GRANTOR FROM ENJOYING AND OCCUPYING SAID LANDS AS GRANTOR HAS HERETOFORE IN ANY WAY THAT DOES NOT INTERFERE WITH SAID GRANTEE'S USE OF THE RIGHT-OF-WAY EASEMENT HEREIN GRANTED FOR THE PURPOSES AFORESAID, AND SAID GRANTEE TO PAY ANY DAMAGES WHICH MAY ARISE TO CROPS, FENCES, TREES OR BUILDINGS ON SAID LANDS FROM THE INSTALLATION AND SUBSEQUENT REPAIR, REPLACEMENT, MAINTENANCE OR LEAKAGE OF THE PIPE LINE OR LINES HEREIN PROVIDED FOR. IT IS HEREBY FURTHER AGREED THAT THE SAID GRANTEE, ITS SUCCESSORS AND ASSIGNS, IN THE USE OF THE RIGHT-OF-WAY EASEMENT HEREIN GRANTED, MAY AT ANY TIME LAY, MAINTAIN, OPERATE, REPAIR AND REMOVE SUCH ADDITIONAL LINES AS IT MAY DESIRE ALONGSIDE THE FIRST LINE LAID, UPON THE PAYMENT OF THE SAME AMOUNT FOR EACH SUCH ADDITIONAL LINE TO BE LAID AS THAT SHOWN IN GRANTOR'S RECEIPT BEARING EVEN DATE HERewith TO HAVE BEEN PAID FOR THE RIGHT-OF-WAY EASEMENT HEREIN GRANTED AND SUBJECT TO THE FURTHER PAYMENT OF DAMAGES AS PROVIDED HEREIN FOR THE INSTALLATION, SUBSEQUENT REPAIR, OR REPLACEMENT OF EACH ADDITIONAL LINE.

IN WITNESS WHEREOF, THE PARTIES HAVE HEREUNTO SET THEIR HANDS AND SEALS THIS  
TWENTY SEVENTH DAY OF DECEMBER A. D. 1934.

WITNESS:

EDGAR S. SMITH

THEO. C. TEITSWORTH (SEAL)

GRACE N. TEITSWORTH (SEAL)

MIDDLESEX PIPE LINE COMPANY

BY RUSSELL B. WEBSTER

PROP #7

140 RODS

STATE OF NEW JERSEY,  
COUNTY OF MERCER ) 1935.

BE IT REMEMBERED, THAT ON THIS 28TH DAY OF DECEMBER 1934, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC IN AND FOR THE STATE AND COUNTY AFORESAID, PERSONALLY APPEARED THEO. C. TEITSWORTH AND GRACE N. TEITSWORTH HIS WIFE, WHO I AM SATISFIED ARE THE GRANTORS NAMED IN THE ABOVE RIGHT-OF-WAY AGREEMENT; AND I HAVING MADE KNOWN UNTO THEM THE CONTENTS THEREOF, ACKNOWLEDGE THAT THEY SIGNED, SEALED AND DELIVERED THE SAME AS THEIR VOLUNTARY ACT AND DEED FOR THE USES AND PURPOSES THEREIN EXPRESSED.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL THIS 28TH DAY OF DECEMBER 1934.

SOPHIE DOZORETZ

----- (NOTARIAL SEAL)

REC BY *AM*  
COMP BY *W.P.*

#386 RECORDED FEBRUARY 2ND, 1935 AT 9:25 A. M.

MABEL WITTE DAVIS, AL ) RECEIPT #7  
TO ) RIGHT-OF-WAY AGREEMENT NEW JERSEY  
MIDDLESEX PIPE LINE CO., AL )  
WHEREAS, THE MIDDLESEX PIPE LINE COMPANY INTENDS TO BUILD A PIPE LINE SYSTEM, THE UNDERSIGNED (HEREINAFTER CALLED GRANTOR), FOR AND IN CONSIDERATION OF THE SUM OF ONE DOLLAR AND OTHER CONSIDERATIONS IN HAND PAID, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, DO HEREBY GRANT TO MIDDLESEX PIPE LINE COMPANY, ITS SUCCESSORS AND ASSIGNS, (HEREINAFTER CALLED GRANTEE), A RIGHT-OF-WAY EASEMENT, WITH THE RIGHT TO LOCATE, CONSTRUCT AND LAY A PIPE LINE AND MAINTAIN, OPERATE, REPAIR AND REMOVE SAID LINE OVER, UPON, UNDER AND ACROSS THE FOLLOWING LANDS SITUATE IN BOROUGH HOPEWELL TOWNSHIP MERCER COUNTY, STATE OF NEW JERSEY, BOUNDED AND DESCRIBED AS FOLLOWS:

ON THE NORTH BY LANDS OF	VAN WAGGONER
ON THE EAST BY LANDS OF	SCOTCH ROAD
ON THE SOUTH BY LANDS OF	AIR PORT ROAD
ON THE WEST BY LANDS OF	THEODORE TEITSWORTH

AND ALSO, IN SO FAR AS GRANTOR HAS THE RIGHT TO DO SO, UPON, ALONG OR UNDER THE ROADS, STREETS, HIGHWAYS OR OTHER RIGHTS-OF-WAY, OVER, ADJOINING OR APPURTENANT TO SAID LANDS, WITH AT ALL TIMES ALL RIGHTS OF INGRESS, EGRESS AND REGRESS, TO, OVER, THROUGH AND FROM SAID LANDS NECESSARY OR CONVENIENT FOR THE FULL AND COMPLETE USE OF THE SAID RIGHT-OF-WAY EASEMENT FOR THE EXERCISE OF THE RIGHTS HEREIN MENTIONED, BUT SUCH USE SHALL NOT EXCLUDE SAID GRANTOR FROM ENJOYING AND OCCUPYING SAID LANDS AS GRANTOR HAS HERETOFORE IN ANY WAY THAT DOES NOT INTERFERE WITH SAID GRANTEE'S USE OF THE RIGHT-OF-WAY EASEMENT HEREIN GRANTED FOR THE PURPOSES AFORESAID, AND SAID GRANTEE TO PAY ANY DAMAGES WHICH MAY ARISE TO CROPS, FENCES, TREES OR BUILDINGS, ON SAID LANDS FROM THE INSTALLATION AND SUBSEQUENT REPAIR OR REPLACEMENT OF THE PIPE LINE OR LINES HEREIN PROVIDED FOR. IT IS HEREBY FURTHER AGREED THAT THE SAID GRANTEE, ITS SUCCESSORS AND ASSIGNS, IN THE USE OF THE RIGHT-OF-WAY EASEMENT HEREIN GRANTED, MAY AT ANY TIME LAY, MAINTAIN, OPERATE, REPAIR AND REMOVE SUCH ADDITIONAL LINES AS IT MAY DESIRE ALONGSIDE THE FIRST LINE LAID, UPON THE PAYMENT OF THE SAME AMOUNT FOR EACH SUCH ADDITIONAL LINE TO BE LAID AS THAT SHOWN IN GRANTOR'S RECEIPT BEARING EVEN DATE

731-162

HEREWITH TO HAVE BEEN PAID FOR THE RIGHT-OF-WAY EASEMENT HEREIN GRANTED AND SUBJECT TO THE FURTHER PAYMENT OF DAMAGES AS PROVIDED HEREIN FOR THE INSTALLATION, SUBSEQUENT REPAIR, OR REPLACEMENT OF EACH ADDITIONAL LINE.

IN WITNESS WHEREOF, THE PARTIES HAVE HEREUNTO SET THEIR HANDS AND SEALS THIS FOURTH DAY OF JANUARY A. D. 1935.

WITNESS:

RUSSELL B. WEBSTER

MABEL WITTE DAVIS (SEAL)

JOHN A. W. DAVIS (SEAL)

MIDDLESEX PIPE LINE COMPANY

BY RUSSEL B. WEBSTER ---

PROP. #8,

138 RODS.

STATE OF NEW JERSEY )  
COUNTY OF MERCER )

RE IT REMEMBERED THAT ON THIS 8TH DAY OF JANUARY 1935, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC IN AND FOR THE STATE AND COUNTY AFORESAID, PERSONALLY APPEARED JOHN A.W. DAVIS AND MABEL WITTE DAVIS HIS WIFE, WHO I AM SATISFIED ARE THE GRANTORS NAMED IN THE ABOVE RIGHT-OF-WAY AGREEMENT; AND I HAVING FIRST MADE KNOWN UNTO ME THE CONTENTS THEREOF, ACKNOWLEDGED THAT THEY SIGNED, SEALED AND DELIVERED THE SAME AS THEIR VOLUNTARY ACT AND DEED FOR THE USES AND PURPOSES THEREIN EXPRESSED.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL THIS EIGHTH DAY OF JANUARY 1935.

JESSIE COCHRANE

NOTARY PUBLIC OF N. J. (SEAL)

MY COMMISSION EXPIRES JULY 17, 1938.

#387

RECORDED FEBRUARY 2ND, 1935 AT 9:25 A. M.

RECEIPT #8 1-18  
RIGHT-OF-WAY AGREEMENT  
NEW JERSEY  
HENRY E. HALE, II, ATTY., AL )  
TO :  
MIDDLESEX PIPE LINE CO., AL ) WHEREAS, THE MIDDLESEX PIPE LINE COMPANY INTENDS  
TO BUILD A PIPE LINE SYSTEM, THE UNDERSIGNED  
(HEREINAFTER CALLED GRANTOR), FOR AND IN CONSIDERATION OF THE SUM OF ONE DOLLAR  
AND OTHER CONSIDERATIONS IN HAND PAID, RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED,  
DO HERERY GRANT TO MIDDLESEX PIPE LINE COMPANY, ITS SUCCESSORS AND ASSIGNS, (HEREIN-  
AFTER CALLED GRANTEE), A RIGHT-OF-WAY EASEMENT, WITH THE RIGHT TO LOCATE, CONSTRUCT  
AND LAY A PIPE LINE AND MAINTAIN, OPERATE, REPAIR AND REMOVE SAID LINE OVER, UPON, UNDER  
AND ACROSS THE FOLLOWING LANDS SITUATE IN - BOROUGH PRINCETON TOWNSHIP MERCER COUNTY,  
STATE OF NEW JERSEY, BOUNDED AND DESCRIBED AS FOLLOWS:  
ON THE NORTH BY LANDS OF HEIRS OF HENRY E. HOLE 1ST  
ON THE EAST BY LANDS OF R C MAXWELL  
ON THE SOUTH BY LANDS OF DELAWARE RARITAN CANAL  
ON THE WEST BY LANDS OF A. PARIS  
AND ALSO, INsofar AS GRANTOR HAS THE RIGHT TO DO SO, UPON, ALONG OR UNDER THE ROADS,  
STREETS, HIGHWAYS, OR OTHER RIGHTS-OF-WAY, OVER, ADJOINING OR APPURTENANT TO SAID

# 2025 USDOT Pipeline & Hazardous Materials Safety Administration Consent Order



U.S. Department  
of Transportation  
**Pipeline and Hazardous  
Materials Safety  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

May 2, 2025

**VIA ELECTRONIC MAIL TO: [tom.long@energytransfer.com](mailto:tom.long@energytransfer.com)**

Thomas Long  
Chief Executive Officer  
Energy Transfer LP  
8111 Westchester Drive  
Dallas, TX 75225

**CPF No. 4-2025-054-NOPSO**

Dear Mr. Long:

Enclosed please find a Consent Order incorporating the terms of the Consent Agreement between the Pipeline and Hazardous Materials Safety Administration (PHMSA) and Sunoco Pipeline, LP, which was executed on April 30, 2025. Service of the Consent Order and Consent Agreement by electronic mail is deemed effective upon the date of transmission and acknowledgement of receipt, or as otherwise provided under 49 CFR § 190.5.

Thank you for your cooperation in this matter.

Sincerely,  
**ALAN KRAMER  
MAYBERRY**  
Alan K. Mayberry  
Associate Administrator  
for Pipeline Safety

Digitally signed by ALAN  
KRAMER MAYBERRY  
Date: 2025.05.02  
13:41:32 -04'00'

Enclosure: Consent Order and Consent Agreement

cc: Bryan Lethcoe, Director, Southwest Region, Office of Pipeline Safety, PHMSA  
Greg McIlwain, Executive Vice President, Operations, Energy Transfer, LP,  
[gregory.mcilwain@energytransfer.com](mailto:gregory.mcilwain@energytransfer.com)  
Eric Amundsen, Senior Vice President, Operations, Energy Transfer, LP,

eric.amundsen@energytransfer.com  
Todd Stamm, Senior Vice President, Operations, Energy Transfer LP,  
todd.stamm@energytransfer.com  
Jennifer Street, Senior Vice President, Operations Services, Energy Transfer, LP,  
jennifer.street@energytransfer.com  
Keegan Pieper, Assistant General Counsel, Energy Transfer, LP,  
keegan.pieper@energytransfer.com  
Matthew Stork, Vice President, Technical Services, Energy Transfer, LP,  
matthew.stork@energytransfer.com  
Todd Nardozi, Director, DOT Compliance, Energy Transfer, LP,  
todd.nardozi@energytransfer.com  
Susie Sjulín, Director, DOT Compliance, Energy Transfer, LP,  
susie.sjulin@energytransfer.com  
Vince Murchison, Murchison O'Neill PLLC, vince.murchison@pipelinelegal.com  
Haley O'Neill, Murchison O'Neill PLLC, haley.oneill@pipelinelegal.com

CONFIRMATION OF RECEIPT REQUESTED



	)	
<b>In the Matter of</b>	)	
	)	
<b>Sunoco Pipeline LP,</b>	)	<b>CPF No. 4-2025-054-NOPSO</b>
<b>a subsidiary of Energy Transfer, LP,</b>	)	
	)	
<b>Respondent.</b>	)	
	)	

Enclosure: Consent Agreement

# 2025 USDOT Pipeline & Hazardous Materials Safety Administration Consent Agreement

**U.S. DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION  
OFFICE OF PIPELINE SAFETY  
WASHINGTON, D.C. 20590**

<hr/>	)	
<b>In the Matter of</b>	)	
	)	
<b>Sunoco Pipeline LP,</b>	)	<b>CPF No. 4-2025-054-NOPSO</b>
<b>a subsidiary of Energy Transfer, LP,</b>	)	
	)	
<b>Respondent.</b>	)	
<hr/>	)	

**CONSENT AGREEMENT**

On January 31, 2025, pursuant to Chapter 601 of title 49, United States Code, the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), initiated an investigation of Sunoco Pipeline, LP's (Sunoco or Respondent)<sup>1</sup> Twin Oaks Discharge Pipeline system (Twin Oaks Pipeline or Pipeline) in Upper Makefield Township, Bucks County, Pennsylvania. The Twin Oaks Pipeline is a 14-inch diameter pipeline that transports petroleum products, including jet fuel, diesel, and gasoline, from the Twin Oaks Terminal in Aston, Pennsylvania, to the Newark Terminal in Newark, New Jersey.

As a result of the investigation, the Director, Southwest Region, OPS (Director), issued to Respondent, by letter dated February 13, 2025, a Notice of Proposed Safety Order (Notice). In accordance with 49 CFR § 190.239, the Notice alleged that conditions exist on Respondent's pipeline system that pose a pipeline integrity risk to public safety, property, or the environment. The Notice also proposed that Sunoco take certain corrective measures to remedy the alleged conditions and ensure that the public, property, and the environment are protected from the alleged integrity risk.

On February 19, 2025, Sunoco responded to the Notice by submitting a written response and request for an informal consultation under 49 CFR § 190.239(b)(2). The first informal consultation was held on March 5, 2025. As a result of the informal consultation, PHMSA and Respondent (the Parties) agree that settlement of this proceeding by entry into this Consent Agreement (Agreement) is the most appropriate means of resolving the issues raised in the Notice, will avoid further administrative proceedings or litigation, and is in the public interest. Therefore, pursuant to 49 CFR §§ 190.219 and 190.239(b)(2), without adjudication of any issue of law or fact, and upon consent and agreement, the Parties agree to the following terms and conditions.

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<sup>1</sup> Sunoco is a subsidiary of Energy Transfer, LP.

## **I. General Provisions**

1. Respondent acknowledges that as the operator of the pipeline facilities subject to the Notice, Respondent and its referenced pipeline facilities are subject to the jurisdiction of the Federal pipeline safety laws, 49 U.S.C. § 60101, *et seq.*, and the regulations and administrative orders issued thereunder. For purposes of this Agreement, Respondent acknowledges that it received proper notice of PHMSA's action in this proceeding and that the Notice states claims upon which relief may be granted pursuant to 49 U.S.C. § 60101, *et seq.*, and the regulations and orders issued thereunder.

2. Respondent agrees, for purposes of this Agreement, to address integrity risk on the Twin Oaks Pipeline by completing the actions specified in Section II of this Agreement (Corrective Measures) and to abide by the terms of this Agreement.

3. After Respondent returns this signed Agreement to PHMSA, the Agency's representative will present it to the Associate Administrator for Pipeline Safety, recommending that the Associate Administrator adopt the terms of this Agreement by issuing an administrative order (Consent Order) incorporating the terms of this Agreement. The terms of this Agreement constitute an offer of settlement until accepted by the Associate Administrator. Once accepted, the Associate Administrator will issue a Consent Order incorporating the terms of this Agreement.

4. Respondent consents to the issuance of the Consent Order, and hereby waives any further procedural requirements with respect to its issuance. Respondent waives all rights to contest the adequacy of notice, or the validity of the Consent Order or this Agreement, including all rights to administrative or judicial hearings or appeals, except for the Dispute Resolution provisions set forth herein.

5. This Agreement shall apply to and be binding upon PHMSA and Respondent, its officers, directors, and employees, and its successors and assigns, or other entities or persons otherwise bound by law. Respondent agrees to provide a copy of this Agreement and any incorporated work plans and schedules to all of Respondent's officers, employees, and agents whose duties might reasonably include compliance with this Agreement.

6. For all transfers of ownership or operating responsibility of Respondent's pipeline system referenced herein, Respondent will provide a copy of this Agreement to the prospective transferee at least 30 days prior to such transfer. Respondent will provide written notice of the transfer to the Director no later than 60 days after the transfer occurs.

7. This Agreement constitutes the final, complete and exclusive agreement and understanding between the Parties with respect to the settlement embodied in this Agreement. The Parties acknowledge that there are no representations, agreements or understandings relating to settlement other than those expressly contained in this Agreement.

8. Nothing in this Agreement affects or relieves Respondent of its responsibility to comply with all applicable requirements of the Federal pipeline safety laws, 49 U.S.C. § 60101,

*et seq.*, and the regulations and orders issued thereunder. Nothing in this Agreement alters PHMSA's right of access, entry, inspection, and information gathering or PHMSA's authority to bring enforcement actions against Respondent pursuant to the Federal pipeline safety laws, the regulations and orders issued thereunder, or any other provision of Federal law.

9. This Agreement does not waive or modify any Federal, State, or local laws or regulations that are applicable to Respondent's Twin Oaks pipeline. This Agreement is not a permit, or a modification of any permit, under any Federal, State, or local laws or regulations. Respondent remains responsible for achieving and maintaining compliance with all applicable Federal, State, and local laws, regulations and permits.

10. This Agreement does not create rights in, or grant any cause of action to, any third party not a party to this Agreement. The U.S. Department of Transportation is not liable for any injuries or damages to persons or property arising from acts or omissions of Respondent or its officers, employees, or agents carrying out the work required by this Agreement. The U.S. Department of Transportation, its officers, employees, agents, and representatives shall not be liable for any cause of action arising from any acts or omissions of Respondent or its contractors in carrying out any work required by this Agreement.

11. This Agreement does not constitute a finding of violation of any Federal law or regulation and may not be used in any civil or administrative proceeding of any kind as evidence or proof of any fact, fault, or liability, or as evidence of the violation of any law, rule, regulation, or requirement, except in a proceeding to enforce the provisions of this Agreement.

## **II. Corrective Measures:**

For the purposes of this Agreement:

*"Affected Pipeline"* refers to the entire Twin Oaks Pipeline, which is approximately 105.5 miles in length from the Twin Oaks Terminal in Aston, Pennsylvania, to the Newark Terminal in Newark, New Jersey.

*"Failure"* refers to the failure of the *Affected Pipeline* in Upper Makefield Township, Bucks County, Pennsylvania, discovered on January 31, 2025.

12. Upon issuance of the Consent Order, Respondent agrees to perform the Corrective Measures set forth below.

13. **Operating Pressure Restriction.** Sunoco must implement and maintain a twenty percent (20%) pressure reduction in the highest actual operating pressure along the entire length of the *Affected Pipeline*, such that the operating pressure does not exceed eighty percent (80%) of the highest actual operating pressure in effect within the 60-days prior to the discovery of the Failure on January 31, 2025. Specifically, the pressure may not exceed the currently restricted pressure of 880 pounds per square inch (psi).

- a. This pressure restriction is to remain in effect until written approval to increase the pressure or return the pipeline to its pre-Failure operating pressure is obtained from the

Director.

- b. Within 15 days of receipt of the Consent Order, Sunoco must provide the Director the actual operating pressures of each pump station and each main line pressure regulating station on the *Affected Pipeline* at the time of the Failure discovered on January 31, 2025, and the reduced pressure restriction set points at these same locations.
- c. This pressure restriction requires any relevant remote or local alarm limits, software programming set-points or control points, and mechanical over-pressure devices to be adjusted accordingly.
- d. When determining the pressure restriction set-points, Sunoco must consider any in-line inspection (ILI) features or anomalies present in the *Affected Pipeline* to provide for continued safe operation while further corrective actions are completed.
- e. Sunoco must review the pressure restriction monthly by analyzing the operating pressure data, considering any ILI features or anomalies present in the *Affected Pipeline*. Sunoco must immediately reduce the operating pressure to maintain the safe operations of the *Affected Pipeline*, if warranted by the monthly review. Further, Sunoco must submit the results of the monthly review to the Director including, at a minimum, the current discharge set-points (including any additional pressure reductions), and any pressure exceedance at discharge set-points.

14. **Type A Sleeve Integrity Plan.** Within 90 days of receipt of the Consent Order, Sunoco must provide to the Director for approval a plan to evaluate the integrity of each Type A sleeve on the *Affected Pipeline*. For each Type A sleeve, this must include the most accurate information available regarding, at a minimum, the year of installation, a summary of the basis for the original application (i.e., remediated condition), and identification of any scheduled follow-up actions. The plan must also provide for the removal of each Type A sleeve on the *Affected Pipeline* whose integrity cannot be reasonably assured. The plan must be part of the Remedial Work Plan developed in Item 15 below. For any sleeve not removed, the plan must provide a technical justification for the Type A Sleeve remaining on the *Affected Pipeline* and describe the additional pipeline integrity management measures to be implemented to ensure the safety and integrity of the *Affected Pipeline* in light of any integrity risk related to the sleeve.

15. **Remedial Work Plan (RWP).** Within 90 days of receipt of the Consent Order, Sunoco must submit a Remedial Work Plan (RWP) to the Director for prior approval. The initial RWP will be updated as needed to incorporate new and relevant information obtained during the failure investigation and remedial activities undertaken pursuant to the Consent Order, and/or to incorporate reasonable and technically supported modifications required by the Director. Sunoco will submit any plan revisions to the Director for approval.

- a. The Director may approve the RWP incrementally without approving the entire RWP.
- b. Upon approval by the Director, the RWP becomes incorporated by reference into the Consent Order.
- c. Sunoco will implement the RWP as it is approved by the Director, including any revisions to the plan.
- d. The RWP must specify the tests, inspections, assessments, evaluations, and remedial

measures Respondent will use to verify the integrity of the *Affected Pipeline*. It must address all known or suspected factors and causes of the Failure discovered on January 31, 2025. Sunoco must consider the risks and consequences of another failure to develop a prioritized schedule for RWP-related work along the *Affected Pipeline*.

- e. The RWP must include a procedure or process to:
- i. Identify pipe in the *Affected Pipeline* with characteristics similar to the contributing factors identified for the Failure discovered on January 31, 2025.
  - ii. Gather all data necessary to review the failure history (in service and pressure test failures) of the *Affected Pipeline* and to prepare a written report containing all the available information such as the locations, dates, and causes of leaks and failures.
  - iii. Integrate the results of the metallurgical testing, root cause failure analysis, and other corrective actions required by the Consent Order with all relevant pre-existing operational and assessment data for the *Affected Pipeline*. Pre-existing operational data includes, but is not limited to, design, construction, operations, maintenance, testing, repairs, prior metallurgical analyses, and any third-party consultation information. Pre-existing assessment data includes, but is not limited to, ILI tool runs, hydrostatic pressure testing, direct assessments, close interval surveys, and DCVG/ACVG surveys.
  - iv. Determine if conditions similar to those contributing to the Failure discovered on January 31, 2025, are likely to exist elsewhere on the *Affected Pipeline*.
  - v. Conduct additional field tests, inspections, assessments, and evaluations to determine whether, and to what extent, the conditions associated with the Failure discovered on January 31, 2025, and other failures from the failure history (see (e)(ii) above) on the *Affected Pipeline*. At a minimum, this process must consider all failure causes and specify the use of one or more of the following:
    - 1) ILI tools that are technically appropriate for assessing the pipeline system based on the cause of the Failure discovered on January 31, 2025, and that can reliably detect and identify anomalies,
    - 2) Hydrostatic pressure testing,
    - 3) Stress corrosion cracking surveys; and
    - 4) Other tests, inspections, assessments, and evaluations appropriate for the failure causes.

Note: Sunoco may use the results of previous tests, inspections, assessments, and evaluations if approved by the Director, provided the results of the tests, inspections, assessments, and evaluations are analyzed with regard to the factors known or suspected to have caused the Failure discovered on January 31, 2025.

- vi. Describe the inspection and repair criteria Sunoco will use to prioritize, excavate, evaluate, and repair anomalies, imperfections, and other identified integrity threats. Include a description of how any defects will be graded and a schedule for repairs or replacement.

- vii. Based on the known history and condition of the *Affected Pipeline*, describe the methods Sunoco will use to repair, replace, or take other corrective measures to remediate the conditions associated with the pipeline Failure discovered on January 31, 2025, and to address other known integrity threats along the *Affected Pipeline*. The repair, replacement, or other corrective measures must meet the criteria specified in (e)(vi) above.
- f. Include a proposed schedule for completion of the RWP.

**16. Failure History Evaluation.** Within 120 days of receipt of the Consent Order, Sunoco must complete an investigation to determine to the extent possible when the Failure discovered on January 31, 2025 began. This investigation must include a comprehensive analysis of any odor complaints, SCADA, leak detection, surveillance, and other monitoring systems on the *Affected Pipeline*. A final report of this investigation will be provided to the Director and the conclusions of such will provide structure to the subsequent evaluation of the effectiveness and capability of the current leak detection system employed on the *Affected Pipeline* (Item 17).

**17. Evaluation of the Leak Detection System.** Within 120 days of the completion of Item 16, Sunoco must complete an evaluation of the effectiveness and capability of Sunoco's leak detection system on the *Affected Pipeline*, including main lines, stub lines, and delivery lines with particular focus on the conditions surrounding the Failure discovered on January 31, 2025 and those identified via the completion of Item 16. At a minimum, Sunoco's evaluation must consider the following factors; length and size of the pipeline, type of product carried, the swiftness of leak detection, limitations on detectable quantities, location of nearest response personnel, and leak history. This evaluation must also consider maximum operating pressure (MOP), normal operating pressures, flow rates (or throughput), and impacts from any pressure cycles or operational changes. For mainline segments that could affect high consequence areas (HCAs), Sunoco's evaluation must consider the pipeline's proximity to the HCA and risk assessment results.

- a. Based on the collective findings of Items 16 and 17, evaluate potential corrective measures to improve the effectiveness of Sunoco's leak detection system where possible on the *Affected Pipeline*. Sunoco must consider the latest advancements in technology that present the potential to improve the capability of its leak detection system on the *Affected Pipeline* to detect the type of leak for the Failure discovered on January 31, 2025. To the extent any corrective measures are identified that would demonstrably result in improving the capability of the leak detection system to detect leaks that could potentially affect public safety, property, or the environment, similar to leaks with characteristics common to the Failure discovered on January 31, 2025, Sunoco will implement such corrective measures.
- b. Evaluate Sunoco's written plans and procedures for inspection and maintenance that address leak detection, right-of-way inspection and repairs and determine the extent to which the written plans contribute to the prevention of hazardous leaks. Based on the findings, determine appropriate amendments to improve the extent to which the plans contribute to the elimination of hazardous leaks.



- c. Evaluate the effectiveness of Sunoco's ROW inspection program as it pertains to leak detection. This evaluation must consider any geographic regions or features (i.e., HCAs and other sensitive areas) that may require specific or additional means of patrol. Based on the findings, determine corrective measures to improve the effectiveness of Sunoco's ROW inspection program relative to leak detection.
- d. Implement continuing long-term periodic testing and integrity verification measures to ensure the ongoing safe operation of the *Affected Pipeline* considering the results of the analyses, inspections, evaluations, and corrective measures undertaken pursuant to the Order.

18. **Third-Party Facilitator.** Items 16 and 17 must each be facilitated by separate personnel from a third-party with relevant expertise approved by the Director. Any documentation from the third-party facilitators must be included in each required submission to the Director.

19. **Instrumented Leakage Survey.** Within 30 days after the Consent Order is issued, Sunoco must perform a ground instrument leakage survey or an excavation and evaluation of the remaining Type A sleeve locations on the *Affected Pipeline*. Sunoco must investigate all leak indications and remedy all leaks discovered. Sunoco must submit documentation of this survey to the Director within 45 days after the Consent Order is issued.

20. **Mechanical and Metallurgical Testing.** Within 45 days after the Consent Order is issued, Sunoco must complete mechanical and metallurgical testing and failure analysis of the failed pipe, including an analysis of soil samples and any foreign materials. Mechanical and metallurgical testing must be conducted by an independent third-party acceptable to the Director and must document the decision-making process and all factors contributing to the Failure. Respondent must complete the testing and analysis as follows:

- a. Document the chain-of-custody when handling and transporting the failed pipe section and other evidence from the Failure site.
- b. Within 10 days of receipt of the Consent Order, develop and submit the testing protocol and the proposed testing laboratory to the Director for prior approval.
- c. Prior to beginning the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing to allow for an OPS representative to witness the testing.
- d. Ensure the testing laboratory distributes all reports whether draft or final in their entirety to the Director at the same time they are made available to Respondent.

21. **Root Cause Failure Analysis.** Within 120 days after the Consent Order is issued, complete a root cause failure analysis (RCFA) and submit a final report of this RCFA to the Director. The RCFA must be supplemented or facilitated by an independent third-party acceptable to the Director and must document the decision-making process and all factors contributing to the Failure. The final report must include findings, and any lessons learned and whether the findings and lessons learned are applicable to other locations within the *Affected Pipeline* system.

22. **Emergency Response Plan and Training Review.** Within 90 days of receipt of the Consent Order, Sunoco must review and assess the effectiveness of its emergency response plan with regards to the Failure. Sunoco must include in the review and assessment the on- scene response and support, coordination, and communication with emergency responders and public officials. Sunoco must also include a review and assessment of the effectiveness of its emergency training program. Sunoco must amend its emergency response plan and emergency training, if necessary, to reflect the results of this review. The documentation of this *Emergency Response Plan and Training Review* must be available for inspection by OPS or provided to the Director, if requested.

23. **Public Awareness Program Review.** Sunoco must review and assess the effectiveness of its Public Awareness program with regards to the Failure. Sunoco must amend its Public Awareness Program, if necessary, to reflect the results of this review. The documentation of this *Public Awareness Plan Program Review* must be available for inspection by OPS or provided to the Director, if requested.

24. **Extensions of Time.** The Director may grant an extension of time for compliance with any of the terms of the Agreement upon a written request timely submitted demonstrating good cause for the extension. The Director shall respond in writing to any such request.

### **III. Review and Approval Process:**

25. With respect to any submission under Section II (Corrective Measures) of this Agreement that requires the approval of the Director, the Director may: (a) approve, in whole or in part, the submission; (b) approve the submission on specified, reasonable conditions; (c) disapprove, in whole or in part, the submission; or (d) any combination of the foregoing. If the Director approves, approves in part, or approves with conditions, Respondent will take all actions as approved by the Director, subject to Respondent's right to invoke the dispute resolution procedures in Section IV with respect to any conditions the Director identifies. If the Director disapproves all or any portion of the submission, the Director will provide Respondent a written notice of the deficiencies. Respondent will correct all deficiencies within the time specified by the Director and resubmit the submission for approval.

### **IV. Dispute Resolution:**

26. The Director and Respondent will informally attempt to resolve any disputes arising under this Agreement, including any decision of the Director under the terms of Section II (Corrective Measures). If Respondent and the Director are unable to informally resolve the dispute within 15 business days after the dispute is first raised, in writing, to the Director, Respondent may submit a written request for a determination resolving the dispute from the Associate Administrator for Pipeline Safety. Such request must be made in writing and provided to the Director, counsel for the Southwest Region, and to the Associate Administrator, no later than 10 business days following the 15-day deadline for informal resolution referenced in this paragraph. Along with its request, Respondent must provide the Associate Administrator with all information Respondent believes is relevant to the dispute. Decisions of the Associate Administrator under this paragraph will constitute final agency action and be subject to judicial

review. The existence of a dispute and PHMSA's consideration of matters placed in dispute will not excuse, toll, or suspend any term or timeframe for completion of any work to be performed under this Agreement during the pendency of the dispute resolution process, except as agreed by Respondent and the Director or the Associate Administrator in writing.

**V. Enforcement:**

27. This Agreement is subject to all enforcement authorities available to PHMSA under 49 U.S.C. § 60101, *et seq.*, and 49 CFR Part 190, including administrative civil penalties under 49 U.S.C. § 60122, of up to \$272,926 per violation for each day the violation continues and referral of the case to the Attorney General for judicial enforcement, if PHMSA determines that Respondent is not complying with the terms of this Agreement in accordance with the determinations made by the Director, or in accordance with decisions of the Associate Administrator if resolved pursuant to the Dispute Resolution process herein. The maximum civil penalty amounts are adjusted annually for inflation. *See* 49 CFR § 190.223. All work plans and associated schedules set forth or referenced in Section II are automatically incorporated into this Agreement and are enforceable in the same manner.

**VI. Effective Date:**

28. The term "Effective Date," as used herein, is the date on which the Consent Order is executed by the Associate Administrator incorporating the terms of this Agreement. The Director shall consider the actions that Respondent performed after the Failure and prior to the Effective Date of this Agreement in determining whether Respondent has satisfied the terms and conditions in Section II (Corrective Measures) of this Agreement.

**VII. Recordkeeping and Information Disclosure:**

29. Unless otherwise required in this Agreement, Respondent agrees to maintain records demonstrating compliance with all requirements of this Agreement for a period of at least five (5) years following completion of all work to be performed, unless a longer period of time is required pursuant to 49 CFR parts 190-199. For any reports, plans, or other deliverables required to be submitted to PHMSA pursuant to this Agreement, Respondent may assert a claim of business confidentiality or other protections applicable to the release of information by PHMSA, covering part or all of the information required to be submitted to PHMSA pursuant to this Agreement in accordance with 49 CFR Part 7. Respondent must mark the claim of confidentiality in writing on each page, and include a statement specifying the grounds for each claim of confidentiality. PHMSA determines release of any information submitted pursuant to this Agreement in accordance with 49 CFR Part 7, the Freedom of Information Act, 5 U.S.C. § 552, DOT and PHMSA policies, and other applicable regulations and Executive Orders.

**VIII. Modification:**

30. The terms of this Agreement may be modified by mutual agreement of the Parties. Such modifications must be in writing and signed by both parties.

**IX. Termination:**

31. This Agreement will remain in effect until the Corrective Measures in Section II are satisfied, as determined by the Director. The Agreement shall not terminate until the Director confirms, in writing, that the Agreement is terminated in accordance with this paragraph. Nothing in this Agreement prevents Respondent from completing any of the obligations earlier than the deadlines provided for in this Agreement.

**X. Ratification:**

32. The Parties' undersigned representatives certify that they are fully authorized to enter into the terms and conditions of this Agreement and to execute and legally bind such party to this document.

33. The Parties hereby agree to all findings, conditions, and terms of this Agreement.

[Signature Lines on Following Page]

**For Sunoco Pipeline LP:**

A handwritten signature in dark ink, appearing to read 'Todd Stamm', written over a horizontal line.

Todd Stamm, Senior Vice President - Operations

4.30.25  
Date

**For PHMSA:**

Bryan Lethcoe, Director, Southwest Region, Office of Pipeline Safety

April 30, 2025  
Date

# GTA July 2025 Subsurface Investigations Letter

# GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND  
ENVIRONMENTAL CONSULTANTS

*A Practicing Geoprofessional Business Association Member Firm*



July 27, 2025

US Home Corporation (dba Lennar)  
2465 Kuser Road, Floor 3  
Hamilton, New Jersey 08690

Attn: Mitch Newman

Re: Subsurface Explorations  
**The Venue**  
Hopewell Township, Mercer County, New Jersey

Dear Mitch:

Geo-Technology Associates, Inc. (GTA) has reviewed the Consent Order incorporating the terms of the Consent Agreement between the Pipeline and Hazardous Materials Safety Administration (PHMSA) and Sunoco Pipeline, LP, which was executed on April 30, 2025. We submit the following documentation regarding prior subsurface explorations we performed at The Venue (the "Site") on behalf of Lennar.

## Site Description

The Venue is a planned residential development on the Deer Valley Tract at Nursery and Scotch Roads in Hopewell Township. The preliminary and final major subdivision and site plan application for The Venue includes 600 residential units, made up of 480 market-rate, age-restricted units and 120 affordable units.

## Twin Oaks Pipeline

The Twin Oaks Pipeline is a 14-inch diameter pipeline that transports petroleum products, including jet fuel, diesel, and gasoline, from the Twin Oaks Terminal in Aston, Pennsylvania, to the Newark Terminal in Newark, New Jersey. The pipeline, which traverses the Site in a general west-to-east orientation within a 50-foot wide easement, is the subject of the above-referenced Consent Agreement. The Consent Agreement stems from a failure of the pipeline in Upper Makefield Township, Bucks County, Pennsylvania, discovered on January 31, 2025.

14 Worlds Fair Drive, Suite A, Somerset, NJ 08873 (732) 271-9301 Fax (732) 271-9306

◆ Abingdon, MD ◆ Baltimore, MD ◆ Laurel, MD ◆ Frederick, MD ◆ Waldorf, MD ◆ New Castle, DE ◆ Georgetown, DE  
◆ Somerset, NJ ◆ NYC Metro ◆ Pittsburgh Metro ◆ Quakertown, PA ◆ Scranton/Wilkes-Barre, PA ◆ York, PA  
◆ Northeastern, OH ◆ Sterling, VA ◆ Nashville, TN ◆ Charlotte, NC ◆ Raleigh, NC ◆ Orlando, FL

Visit us on the web at [www.gtaeng.com](http://www.gtaeng.com)

### **Subsurface Explorations**

In August 2019, as part of a feasibility study for the planned residential development, GTA performed 62 test pit explorations across the Site, north and south of the pipeline easement. Using a CAT 308C track-mounted excavator, the explorations extended to depths ranging from approximately 2½ to 5½ feet below the existing ground surface. The exploration locations were selected by GTA and located in the field using a hand-held GPS unit. The locations of the test pits performed for this study are shown on the attached Test Pit Location Plan and should be considered approximate. Detailed descriptions of the subsurface conditions encountered in the test pits are indicated on the attached Logs of Test Pits. The ground surface elevations indicated on the exploration logs were obtained either by interpolating between topographic contours shown on the plan provided to us or from information available on Google Earth and should be considered approximate.

In general, the test pits GTA performed for the study encountered an approximately 8 to 12-inch thick layer of topsoil at the ground surface, averaging approximately 10 inches. The natural soils encountered beneath the topsoil appear to confirm the geologic mapping. The general subsurface profile consisted of predominantly silt or lean clay residual soils with varying amounts of sand, which graded into silty gravel and highly-weathered shale rock. The surface of weathered shale was encountered at depths ranging from approximately 2 feet to 4½ feet below the ground surface. The test pits were terminated due to refusal in weathered shale bedrock at depths ranging from about 2½ to 5½ feet below the ground surface. Groundwater was not encountered upon completion of the test pits performed for this study.

GTA did not encounter visual or olfactory indications of a petroleum discharge in the test pits performed for this study near the pipeline, or elsewhere on the Site.

Should you have any questions or require additional information, please contact the undersigned.

Sincerely,

**GEO-TECHNOLOGY ASSOCIATES, INC.**



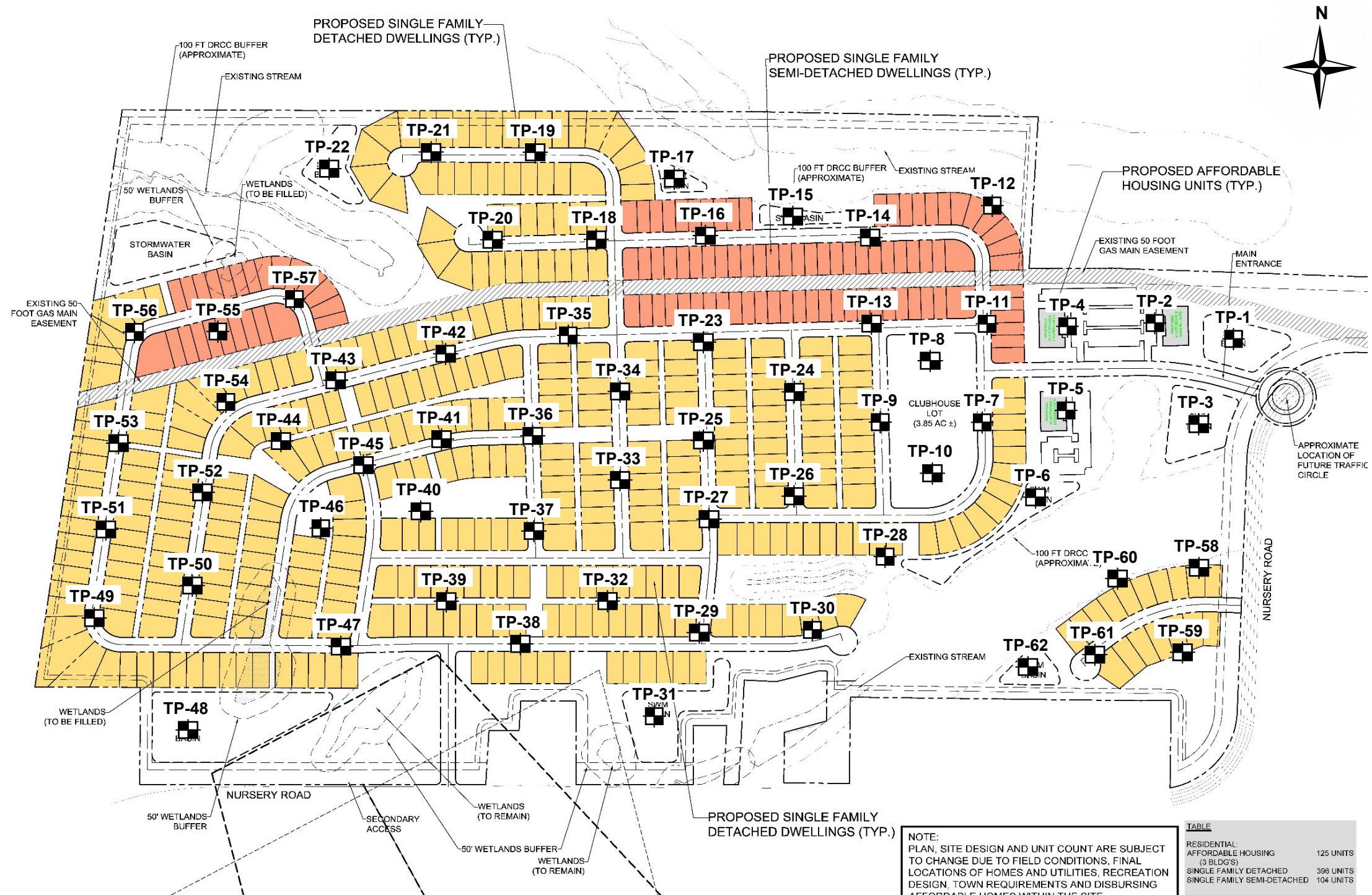
Gary Rakow  
Vice President

**Attachments:**

*Test Pit Location Plan*

*Test Pit Exploration Logs*





\*Base plan provided by Bowman Consulting titled "Conceptual Site Plan - 625 Units" dated July 23, 2019.

**LEGEND:**

**TP-X**

Indicates the numbers and approximate locations of test pits performed for this study.

NOTE:  
PLAN, SITE DESIGN AND UNIT COUNT ARE SUBJECT  
TO CHANGE DUE TO FIELD CONDITIONS. FINAL  
LOCATIONS OF HOMES AND UTILITIES, RECREATION  
DESIGN, TOWN REQUIREMENTS AND DISBURSING  
APPROPRIATELY WITHIN THE SITE.

TABLE	
RESIDENTIAL AFFORDABLE HOUSING (3 BLDGS)	125 UNITS
SINGLE FAMILY DETACHED	398 UNITS
SINGLE FAMILY SEMI-DETACHED	104 UNITS

**TEST PIT LOCATION PLAN**



14 Worlds Fair Drive, Suite A  
Somerset, New Jersey 08873  
(732) 271-9301  
fax (732) 271-9306

**GEO-TECHNOLOGY ASSOCIATES, INC.**

**DEER VALLEY**

Hopewell Township,  
Mercer County, New Jersey

Prepared For: Lennar Corporation

DESIGN BY: *	DRAWN BY: DP	REVIEWED BY: AMT
SCALE: NTS	DATE: AUG. 2019	PROJECT #: 31191153

**Figure 2**

# LOG OF TEST PIT NO. TP-1

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **215 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
214.2	0			10 In. of Topsoil	- Infiltration rate = 18 in/hr at 1-1/2 Ft.
	0.8	GM		Red-brown (5YR 5/3), moist, Silty GRAVEL with sand	
	1.6				
	2.4				
211.5	3.2				
		HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
211.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



**GEO-TECHNOLOGY ASSOCIATES, INC.**

14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-1**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-2

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **217 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
216.2	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
	1.6				
	2.4				
214.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
213.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-2**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-3

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **200 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
199.0	0			12 In. of Topsoil	- Infiltration rate = 3 in/hr at 1-1/2 Ft.
	0.8	GM		Red-brown (5YR 5/3), moist, Silty GRAVEL with sand	
	1.6				
	2.4				
196.5	3.2				
196.0	4	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-3**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-4





Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **215 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
214.0    212.5  211.8 211.3	0			12 In. of Topsoil	
	0.8	CL		Red-brown, moist, Lean CLAY	
	1.6				
	2.4	GM		Red-brown, moist, Silty GRAVEL with sand	
	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 3-3/4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-4**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-5

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **201 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
200.3	0			8 In. of Topsoil	- NMC = 23.8%
	0.8	CL		Dark yellow-brown, moist, Lean CLAY	
198.5	1.6				
	2.4	ML		Red-brown, moist, Sandy SILT	
197.0	3.2				
196.5	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-5**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-6

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **191 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
190.2	0.8	CL		Dark yellow-brown (10 YR 4/6) and red-brown (5YR 5/3), moist, Lean CLAY	
189.5	1.6	ML		Red-brown (5YR 5/3), moist, Sandy SILT with gravel	
	2.4				
188.0	3.2	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
187.5				Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

- Infiltration rate =  
.25 in/hr at 2 Ft.

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-6**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-7

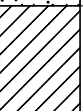


Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **197 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
196.2	0.8	CL		Red-brown, moist, Lean Clay	
195.0	2.4	GM		Red-brown, moist, Silty GRAVEL with sand	
194.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
193.3	4			Test pit complete at 3-3/4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-7**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-8

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
207.2	0			10 In. of Topsoil	
	0.8	ML		Red-brown, moist, Sandy SILT	
	1.6				
	2.4				
205.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
204.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
204.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-8**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-9

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **207 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
206.3	0			8 In. of Topsoil	
	0.8	ML		Red-brown, moist, Sandy SILT	
	1.6				
	2.4			- with gravel at 2-1/2 Ft.	
204.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
203.5	4			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-9**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-10

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/1/2019**  
 DATE COMPLETED: **8/1/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **194 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
193.2	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
	1.6				
191.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
191.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



**GEO-TECHNOLOGY  
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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-10**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-11

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **213 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
212.0	0			12 In. of Topsoil	
	0.8	CL		Dark yellow-brown, moist, Sandy Lean CLAY	
	1.6				
	2.4				
210.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
209.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
209.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



**GEO-TECHNOLOGY  
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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-11**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-12

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **201 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
200.2	0.8	ML		Red-brown, moist, Sandy SILT with gravel	
	1.6				
198.5	2.4	GM		Red-brown, moist, Silty GRAVEL with sand	
198.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
197.5				Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



**GEO-TECHNOLOGY  
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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-12**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-13

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **209 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
208.2	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
	1.6				
207.0	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
206.3				Test pit complete at 2-3/4 Ft. due to refusal on weathered rock.	
	3.2				
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



**GEO-TECHNOLOGY  
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14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-13**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-14





Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **201 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
200.2	0			10 In. of Topsoil	
	0.8	ML		Red-brown, moist, Sandy SILT	
	1.6				
	2.4				
198.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
197.3	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
196.5	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



**GEO-TECHNOLOGY  
 ASSOCIATES, INC.**

14 Worlds Fair Drive, Suite A  
 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-14**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-15

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **196 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
195.2	0			10 In. of Topsoil	- Infiltration rate = 6.75 in/hr at 1-1/2 Ft. - NMC = 11.9%
	0.8	GP		Red-brown (5YR 5/3), moist, Poorly-graded GRAVEL with sand	
193.0	3.2	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
192.5	4			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-15**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-16

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **199 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			12 In. of Topsoil	
198.0	0.8	CL		Dark yellow-brown, moist, Sandy Lean CLAY	
	1.6				
	2.4				
196.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
195.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
195.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-16**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-17

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **190 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
189.2	0.8	GM		Red-brown (5YR 5/3), moist, Silty GRAVEL with sand	- Infiltration rate = 0.75 in/hr at 1 Ft.
	1.6				
187.8	2.4	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
187.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-17**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-18

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **200 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
199.2	0.8	CL		Dark yellow-brown, moist, Sandy Lean CLAY	
	1.6				
197.5	2.4	ML		Red-brown, moist, Sandy SILT with gravel	
	3.2				
196.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
196.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-18**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-19

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **193 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
192.2	0.8	CL		Dark yellow-brown and red-brown, moist, Sandy Lean CLAY	
	1.6				
191.0	2.4	ML		Red-brown, moist, Sandy SILT with gravel	
	3.2				
189.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
189.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-19**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-20

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **197 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
196.3	0			8 In. of Topsoil	
	0.8	CL		Dark yellow-brown, moist, Sandy Lean CLAY	
	1.6				
	2.4				
194.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
193.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
193.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-20**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-21

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **194 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
193.2	0.8	CL		Dark yellow-brown, moist, Sandy Lean CLAY	
	1.6				
191.5	2.4	GM		Red-brown, moist, Silty GRAVEL with sand	
	3.2				
190.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
190.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-21**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-22

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **185 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
184.2	0			10 In. of Topsoil	- Infiltration rate = 0.25 in/hr at 1 Ft.
	0.8	ML		Red-brown (5YR 5/3), moist, Sandy SILT with gravel	
	1.6				
	2.4	GM		Red-brown (5YR 5/3), moist, Silty GRAVEL with sand	
182.8					
182.3		HW		Red-brown (5YR 5/), moist, Highly-weathered ROCK (Shale)	
182.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-22**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-23

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
207.2	0.8	CL		Dark yellow-brown and red-brown, moist, Sandy Lean CLAY	
	1.6				
	2.4				
205.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
204.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
204.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-23**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-24

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
207.2	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
	1.6				
205.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
205.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-24**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-25

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **206 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			12 In. of Topsoil	
205.0	0.8	CL		Dark yellow-brown and red-brown, moist, Sandy Lean CLAY	
204.5	1.6	ML		Red-brown, moist, Sandy SILT with gravel	
203.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
203.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-25**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-26

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **194 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
193.2	0			10 In. of Topsoil	
	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
191.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
190.5	4			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
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**LOG OF TEST PIT NO. TP-26**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-27

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **204 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
203.2	0.8	ML		Red-brown, moist, Sandy SILT	
	1.6				
202.0	2.4	GM		Red-brown, moist, Silty GRAVEL with sand	
201.5		HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
201.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-27**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-28

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/2/2019**  
 DATE COMPLETED: **8/2/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **181 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **GS**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
180.3	0			8 In. of Topsoil	
	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
178.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
178.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
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**LOG OF TEST PIT NO. TP-28**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-29

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **195 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			12 In. of Topsoil	
194.0	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
193.2	1.6	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	2.4				
	3.2				
191.3	4			Test pit complete at 3-3/4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
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**LOG OF TEST PIT NO. TP-29**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-30

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **178 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
177.0	0			12 In. of Topsoil	
	0.8	ML		Red-brown, moist, Sandy SILT	
175.0	3.2	GM		Red-brown, moist, Silty GRAVEL with sand	
	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
173.8	4.8			Test pit complete at 4-1/4 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-30**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-31

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **180 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
179.0	0			12 In. of Topsoil	- Infiltration rate = 0.5 in/hr at 1-1/2 Ft.
	0.8	GM		Red-brown (5YR 5/3), moist, Silty GRAVEL with sand	
177.3	2.4	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
	3.2				
176.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-31**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-32

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **180 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
179.0	0			12 In. of Topsoil	
	0.8	GM		Red-brown, moist, Silty GRAVEL with sand	
	1.6				
177.8	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	3.2				
	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
176.0	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-32**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-33

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
207.0	0			12 In. of Topsoil	- NMC = 19.3%
	0.8	ML		Red-brown, moist, SILT with sand	
	1.6				
	2.4				
204.5	3.2				
204.0	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-33**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-34

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
PROJECT LOCATION: **Hopewell Township, New Jersey**  
CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
DATE COMPLETED: **8/5/2019**  
CONTRACTOR: **Heritage Contracting Company, Inc.**  
EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
GROUND SURFACE ELEVATION: **208 Ft.**  
DATUM: **Google Earth**  
LOGGED BY: **DSP**  
CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
207.3	0			8 In. of Topsoil	
	0.8	CL		Red-brown, moist, Lean CLAY with sand	
205.0	3.2	HW		Red-gray, moist, Highly-weathered ROCK (Shale)	
	4				
203.5	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-34**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-35

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			12 In. of Topsoil	
207.0	0.8	CL		Red-brown, moist, Lean CLAY with sand	
	1.6				
	2.4				
205.0	3.2	HW		Red-gray, moist, Highly-weathered ROCK (Shale)	- NMC = 16.9%
204.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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 Somerset, NJ 08873

**LOG OF TEST PIT NO. TP-35**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-36

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **204 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
203.2	0			10 In. of Topsoil	
	0.8	ML		Red-brown, moist, Sandy SILT	
	1.6				
	2.4			- Gray-brown at 2 Ft.	
	3.2				
200.3	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4.8				
198.5	5.6			Test pit complete at 5-1/2 Ft. due to refusal on weathered rock.	
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-36**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-37

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
207.2	0			10 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL	
205.0	1.6				
	2.4				
	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-37**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-38

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **200 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
199.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
197.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	3.2				
196.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-38**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-39

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **202 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
201.2	0			10 In. of Topsoil	
	0.8	ML		Brown, moist, Sandy SILT	
199.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 4-1/4 Ft. due to refusal on weathered rock.	
197.8	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-39**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-40

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **205 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
204.2	0			10 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
	2.4				
201.5	3.2				
201.0	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
				Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-40**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-41

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **200 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
199.2	0			10 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
197.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
196.0	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-41**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-42

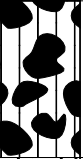

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **198 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
197.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	
195.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
194.5	3.2			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-42**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-43

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **195 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
194.2	0			10 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
191.2	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-43**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-44

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **192 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
191.0	0			12 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
189.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4				
187.5	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-44**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-45

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **199 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
198.0   <					

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-45**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-46

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **198 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
197.0	0			12 In. of Topsoil	- NMC = 13.5%
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
195.0	2.4				
194.5	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-46**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-47

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **182 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
181.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
	2.4				
179.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
178.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-47**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-48

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **151 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			12 In. of Topsoil	- Infiltration rate = 0.75 in/hr at 1-1/2 Ft. - NMC = 17.7%
150.0	0.8	GM		Brown (10YR 5/3), moist, Silty GRAVEL with sand	
149.0	1.6	ML		Brown (10YR 5/3), moist, Sandy SILT	
148.0	2.4				
	3.2	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK (Shale)	
146.5	4				
	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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14 Worlds Fair Drive, Suite A  
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**LOG OF TEST PIT NO. TP-48**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-49

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/5/2019**  
 DATE COMPLETED: **8/5/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **166 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
165.0	0			12 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
162.5	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4.8			Test pit complete at 5 Ft. due to refusal on weathered rock.	
161.0	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-49**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-50

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **180 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
179.2	0			10 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
177.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
176.0	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-50**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-51

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **190 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
189.2	0			10 In. of Topsoil	
	0.8	ML		Brown, moist, Sandy SILT	
187.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	3.2				
186.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-51**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-52

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **190 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
189.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
	2.4				
187.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	4				
185.5	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-52**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-53

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **181 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			11 In. of Topsoil	
180.1	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
178.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
	3.2				
177.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-53**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-54

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **186 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
185.2	0.8	ML		Brown, moist, Sandy SILT	
184.0	1.6				
	2.4	GM		Red-brown, moist, Silty GRAVEL	
	3.2				
	4				
181.5	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-54**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-55


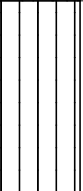


Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **190 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
189.2	0			10 In. of Topsoil	
	0.8	ML		Brown, moist, Sandy SILT	
	1.6				
	2.4				
187.0	3.2	GM		Brown-gray, moist, Silty GRAVEL with sand	
186.0	4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
185.8				Test pit complete at 4-1/4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-55**

Sheet 1 of 1



# LOG OF TEST PIT NO. TP-56

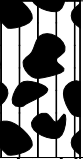

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **185 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
184.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
182.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK	
	3.2				
181.5	4			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-56**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-57

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **190 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
189.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	- NMC = 11.6%
	1.6				
188.0	2.4	HW		Red-brown, moist, Highly-weathered ROCK	
	3.2				
186.0	4			Test pit complete at 4 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-57**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-58

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **205 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
204.2	0.8	ML		Brown, moist, Sandy SILT	
	1.6				
202.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK	
	3.2				
201.5				Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-58**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-59

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **208 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
	0			11 In. of Topsoil	
207.1	0.8	GM		Brown, moist, Silty GRAVEL with sand	- NMC = 12.5%
	1.6				
205.5	2.4	HW		Red-brown, moist, Highly-weathered ROCK (Shale)	
205.0	3.2			Test pit complete at 3 Ft. due to refusal on weathered rock.	
	4				
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-59**

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# LOG OF TEST PIT NO. TP-60




Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **194 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
193.2	0			10 In. of Topsoil	
	0.8	GM		Brown, moist, Silty GRAVEL with sand	
191.3	1.6				
	2.4				
190.5	3.2	HW		Red-brown, moist, Highly-weathered ROCK	
	4			Test pit complete at 3-1/2 Ft. due to refusal on weathered rock.	
	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-60**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-61

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **204 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0			10 In. of Topsoil	
203.2	0.8	GM		Brown, moist, Silty GRAVEL with sand	
	1.6				
	2.4				
201.0	3.2	HW		Red-brown, moist, Highly-weathered ROCK	
	4				
199.5	4.8			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-61**

Sheet 1 of 1

# LOG OF TEST PIT NO. TP-62

Sheet 1 of 1

PROJECT: **Deer Valley Site**  
 PROJECT LOCATION: **Hopewell Township, New Jersey**  
 CLIENT: **Lennar Corporation**

PROJECT NO.: **31191132**

DATE STARTED: **8/6/2019**  
 DATE COMPLETED: **8/6/2019**  
 CONTRACTOR: **Heritage Contracting Company, Inc.**  
 EQUIPMENT: **CAT 308C**

GROUNDWATER ENCOUNTERED: **N/E**  
 GROUND SURFACE ELEVATION: **195 Ft.**  
 DATUM: **Google Earth**  
 LOGGED BY: **DSP**  
 CHECKED BY: **AMT**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL		
				DESCRIPTION	REMARKS
194.2	0			10 In. of Topsoil	- Infiltration rate = 0 in/hr at 1-1/2 Ft.
	0.8	GM		Brown (10YR 5/3), moist, Silty GRAVEL with sand	
192.5	2.4	HW		Red-brown (5YR 5/3), moist, Highly-weathered ROCK	
	4			Test pit complete at 4-1/2 Ft. due to refusal on weathered rock.	
190.5	4.8				
	5.6				
	6.4				
	7.2				
	8				
	8.8				
	9.6				
	10.4				
	11.2				
	12				

NOTES: **Location and elevation are approximate.**  
**Backfilled on completion.**



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**LOG OF TEST PIT NO. TP-62**

Sheet 1 of 1

# Energy Transfer/Sunoco Construction Guidelines



## **GENERAL GUIDELINES FOR THIRD-PARTY CONSTRUCTION OR MAINTENANCE ACTIVITIES**

Energy Transfer and its affiliates and related companies (“ET”) are dedicated to the highest safety standards in the continued operation of their pipelines and facilities. Of utmost importance to ET is the continued safety of the public and its pipeline and facilities during construction and other activities on, across, over or under its right-of-way. ET is therefore pleased to provide these general guidelines (“Guidelines”) for third-party construction, blasting, installation or modification of pipelines, underground utilities, roads, streets, driveways, ditches, drainage canals or any other type of temporary or permanent structure or obstruction or any other encroachment on, over, across or paralleling ET’s right-of-way (hereinafter referred to as “Crossing” or “Crossings”).

These Guidelines are intended to be consistent with State Code and are further based upon industry standards and practice. These Guidelines are merely guidelines and upon notification to ET of a proposed Crossing, as required by State Code, each proposed Crossing and its corresponding finalized plans and profile drawings will be evaluated by ET and the third-party requesting such Crossing, pending final approval.

### **1. Notification**

- a. The party requesting such Crossing shall use its best efforts to provide ET with its finalized plans and profile drawings at least thirty days (30) days prior to any related construction or maintenance activity. The Pipeline Facility shall include, but is not limited to, rights-of- way, fee properties, easements, pipelines, meter and regulator buildings and valve sites (“ET Pipeline Facility” or “Facilities”). No equipment shall enter onto ET’s Pipeline Facility unless an ET representative is on location.
- b. No excavation shall occur in the vicinity of ET’s Pipeline Facilities until:
  - 1) In accordance with the State approved Notification Centers, ET shall be notified at least 48 hours in advance of any construction or maintenance activity. You must contact the State approved Notification Center at 811. Before commencing any Crossing at or near ET’s Pipeline Facility you must also contact ET’s Field Representative(s) listed below;
  - 2) An ET representative will be on site to monitor the excavation activities.

### **2. Drawings for Proposed Construction or Maintenance**

Any proposed construction or maintenance activity in the vicinity of ET’s Pipeline Facilities will require submittal of final plans and profile drawings for prior review and approval by ET. One (1) copy of these drawings must be submitted to ET’s Encroachment Department via e-mail [encroachments@energytransfer.com](mailto:encroachments@energytransfer.com). All plans and drawings must show in detail, all of ET’s

Pipeline Facilities, its corresponding right-of-way and any other landmarks that will assist ET in determining the location of the proposed Crossing and the effects of the proposed construction or maintenance activity on ET's Pipeline Facilities.

**3. Encroachment Agreement**

In certain instances, due to the type of Crossing required and the probable impact upon ET's Facilities, an encroachment agreement may be necessary for proposed construction or maintenance within ET's Pipeline Facility. ET shall be responsible for preparing such encroachment agreement and shall bear the cost and expense in such preparation. Such encroachment agreement shall outline the responsibilities, conditions and liabilities of the parties and must be fully executed and in ET's possession prior to commencing any construction activity.

**4. Insurance Coverage**

In certain instances, due to the type of Crossing required and the probable impact upon ET's Facilities, ET may require evidence of comprehensive general liability insurance coverage prior to any construction or maintenance activity in the vicinity of its Facilities. In the event ET requires evidence of comprehensive general liability insurance, ET and/or its affiliates and related companies, whichever the case may be, shall be named as additional insured.

**5. Crossing Pipelines with Equipment**

To protect ET's pipelines or related Facilities from additional external loading, ET may perform a field survey and an engineering study to determine the effects of any proposed activity over its pipelines or related Facilities. Mats, timber, air-bridges, or other protective materials deemed necessary and appropriate by ET may be required and placed over ET's pipelines or related Facilities for the duration of any loading. When utilizing an air-bridge refer to Energy Transfer's approved design. Air-bridge design provided upon request.

**6. Excavation, Cuts, or Fill near ET's Pipeline Facility**

- a. An ET representative will be on location prior to and during construction activity within ET's Pipeline Facility.
- b. No heavy equipment of any type will be permitted to work directly over ET's pipelines or related Facilities.
- c. All excavation within eighteen inches (18") of any pipeline will be performed by hand. At the discretion of ET's onsite representative, excavators may be required to hand dig beginning at a distance greater than eighteen inches (18").
- d. All excavations within ET's Pipeline Facility shall be backfilled with a minimum of eight inches (8") lifts of backfill material, where pipeline padding is reduced ensure backfill is clean and free from rock, trash, concrete, rubbish, or hazardous material. Soil backfill must be compacted to the satisfaction of the ET onsite inspector so that settling does not occur.
- e. No grade cuts will be permitted within ET's Pipeline Facility. ET's representative will be on location. An engineering study may be performed to ensure that the lateral stability of ET's pipelines or related Facilities are not affected.

- f. No fill shall be permitted within ET's Pipeline Facility. No more than twenty-four inches (24") of earthen fill material (pipeline cover not to exceed seven feet (7')), free from any rocks, trash, concrete, rubbish, rebar, hazardous materials, etc., will be permitted within ET's Pipeline Facility.
- g. Earthen cover over ET's pipelines shall be thirty-six inches (36") or no less than what was originally there prior to any construction. In the event that ET determines that a lesser cover will not increase the risk to the public or increase the risk of a break, leak, rupture or other damage to ET's pipelines or related Facilities.
- h. No trash or debris shall be placed in any excavation or left in or on ET's Pipeline Facility.
- i. The creation of storm water outfalls or other water management controls which would make the pipeline right-of-way more susceptible to erosion are not allowed.

## 7. Aboveground Appurtenances, Structures and Obstructions

- a. No aboveground appurtenances, structures, or obstructions of a temporary or permanent nature shall be located within ET's Pipeline Facility that, in any way, interfere with operating, maintaining, accessing, inspecting, repairing, modifying, replacing or relocating such Facilities. The appurtenances, structures and obstructions include, but are not limited to the following: buildings, structures, signage, utility poles, steel towers, guy wires, other structures supporting aerial lines, satellite dishes, manholes, catch basins, septic systems, utility pedestals, transformers, fire hydrant, large spoils of earthen materials, decks, pools, boats, RV's, trailers and storage of hazardous or non-hazardous materials.
- b. No foreign towers (Wind Turbine and Communication Towers) are permitted within 1500 feet (1500') of ET's Pipeline Facilities. Refer any requests to the Right-of-Way Representative/Encroachments Group.
- c. No solar array facilities (including cables, grounding equipment, and other associated equipment) are permitted within 50' of ET's Pipeline Facilities, or within 300' of ET's cathodic protection groundbeds. AC and DC power crossings per Proposed Pipe and Utility Lines below. See "Solar Facilities in Proximity to Pipelines" for required CP/AC testing and monitoring requirements. Fill out and return "Solar Facility Project Data Request".

## 8. Proposed Pipe and Utility Lines

- a. General Guidelines:
  - 1. For the safety of the public and to lessen the risk of a break, leak, rupture or other damage to ET's Pipeline Facility and in furtherance of the state code, ET's Pipeline Facility shall be positively located by ET before any Crossings are constructed or installed near ET's Pipeline Facility.
  - 2. Plan and profile drawings are required for all foreign utility Crossings.
  - 3. For open trench Crossings, ET requires a minimum clearance of twenty-four inches (24") be maintained between the bottom of ET's pipeline or related Facilities and any foreign line or facilities.

4. For conventional and horizontal directionally drilled (HDD) bore Crossings, ET requires a minimum clearance of thirty-six inches (36") below ET's pipeline/facilities.
  5. For horizontal directionally drilled (HDD) bore Crossings that are large diameter, twelve inches (12") or greater, a minimum of sixty inches (60") of clearance below ET's Pipeline Facilities and across the entire width of ET's right-of-way is required.
  6. Excavate ET Facilities at the point of the proposed Crossing on the approach side to verify the auger head, boring and installation process will not damage ET's Pipeline Facilities.
  7. All foreign lines shall cross ET's Pipeline Facility at ninety degrees (90°) or at an angle of not less than forty-five degrees (45°). Longitudinal occupancy of ET's Pipeline Facility will not be permitted.
  8. Buried utility lines must be identified with permanent aboveground markers where lines enter and exit ET's right-of-way. Installation and maintenance of the markers shall be the responsibility of the foreign line owner.
  9. No manholes, valves or other appurtenances will be permitted within ET's Pipeline Facility.
  10. No vertical or horizontal bends allowed within ET's Pipeline Facility.
  11. ET's Pipeline Facility is cathodically protected. All other cathodically protected facilities that enter, or cross ET's Pipeline Facility must have test leads installed. Any inquiries for cooperative testing should be directed to the attention of ET's Field Representative on location. Any utility Crossings that may be negatively affected by ET cathodic protection will need to be designed accordingly (i.e. coated, cased, etc.)
  12. ET may require excavation of its Facilities to perform corrosion related tasks before and during foreign line Crossings as required.
  13. All underground utilities (other than residential telephone, cable TV and 24-volt DC power lines) may require plastic identification tape installed no closer than eighteen inches (18") above the line.
- b. Water or Forced Sewer Lines
1. All water and sewer lines shall be either (1) ductile iron or steel casing (coated to protect it from ET's cathodic protection) or (2) steel encased in plastic schedule 80 PVC for a minimum of 5-feet on either side of any ET's pipelines or related Facilities or (3) standard PVC pipe.
  2. Forced sewer lines shall have no piping connections located within 5-feet of any ET's pipelines or related Facilities or placed within ET's pipeline easement.

c. Communication, Power or Combustible Material Lines

1. When open trench Crossing with underground fiber optic cables, telephone and television cables (other than residential telephone and cable TV) crossing under ET's Pipeline Facility shall be installed in rigid non-metallic conduit with bags of concrete-mix placed directly above and below the conduit across ET's right-of-way or similar company approved method. Place warning burial tape the width of ET's right-of-way at least 18 inches (18") directly above communication cables. Bags of concrete-mix and burial tape are not required when installing via HDD or conventional bore.
2. When open trench Crossing with underground electric cables except 24-volt DC power lines (including single residential service drops) crossing under ET's facilities shall be installed in nonmetallic conduit with bags of concrete-mix placed directly above and below the conduit across ET's right-of-way or similar company approved method. Place red warning burial tape the width of ET's right-of-way at least 18 inches directly above the cable. A minimum of sixty inches (60") is required if over 600 volts.
3. When underground electric cable over 10 kV is crossing ET Facilities it shall be a shielded cable installed within ridged non-metallic casing. Bags of concrete-mix or a similar ET approved method, must be placed directly above and below the casing across the width of ET's right-of-way. Place red warning burial tape the width of ET's right-of-way at least 18 inches directly above the cable. ET requires a minimum clearance of sixty inches (60") below ET's Pipeline Facilities. Bags of concrete-mix and burial tape are not required when installing via HDD or conventional bore.
4. Overhead and underground crossings exceeding 160 kV and any power lines that will be constructed parallel to and outside of ET's right-of-way within 300 feet of ET's Pipeline Facilities, are not allowed by ET.
5. All overhead power/communication lines must cross ET Facilities with a minimum vertical overhead clearance of twenty-five feet (25') to grade at full load and maximum temperature.
6. ET recommends that all underground residential telephone, cable TV and 24-volt DC power lines be encased in plastic conduit for the full width of the right-of-way.

ci. Exclusive Easement Construction

1. When constructing a directional drill across ET's easement a minimum separation of ten (10) feet must be maintained between the outside diameter of the bottom of ET's pipeline and the top of any of your facilities within ET's exclusive easement area.
2. When constructing a conventional bore across ET's easement a minimum separation of three (3) feet must be maintained between the outside diameter of the bottom of ET's pipeline and the top of any of your facilities within ET's exclusive easement area.

9. **Proposed Roads, Streets, Driveways, Access Ways and Parking Lots**

- a. Load stress will be calculated by ET to determine if any protection of the pipeline is required for roadways, streets, driveways, access ways, etc., planned to cross ET's Pipeline Facility. In the event it is determined by ET that the roadways, streets, driveways, access ways, etc., will increase a risk to the public or increase a risk of a break, leak, rupture or other damage to ET's Pipeline Facility, ET may require, at the sole cost and expense of the party requesting such Crossing, the installation of protective material or pipeline adjustment as may be deemed necessary by ET to protect the public or ET's Pipeline Facility.
- b. The preferred minimum earth cover over ET's Pipeline Facility is forty-eight inches (48") at all roadways, streets, driveways, access ways, etc., including adjacent ditch lines. In the event that ET determines that a lesser cover will not increase a risk to the public or increase a risk of a break, leak, rupture or other damage to the pipeline or related Facilities, ET may allow a lesser earth cover, in a minimum amount as determined solely within the discretion of ET. In the event the required amount of cover is not obtainable as reflected in finalized plan and profile drawings, ET may require the installation of protective material at no expense to ET. Cover shall be measured from the top of ET's pipeline to the surface of the road.
- c. Roads and streets crossing over ET's Pipeline Facility shall cross at an angle of not less than forty-five degrees (45°), or as near as possible thereto. Crossings should be over straight pipe and at locations free of any crossovers. Longitudinal occupancy of the right- of-way will not be permitted.
- d. No parking areas or the like will be allowed on, over or across ET's Pipeline Facilities.
- e. Permanent pipeline marker(s), provided by ET, will be installed at all road Crossings.

10. **Disposal Systems**

No aerobic septic systems, septic tanks, liquid disposal systems, or hazardous waste disposal systems will be allowed on ET's Pipeline Facility or within twenty-five (25) feet of ET's Pipeline Facility. This will include, but is not limited to, affluent from sewage disposal systems, the discharge of any hydrocarbon substance, the discharge or disposal of any regulated waste, or any other discharge that may prove damaging or corrosive to ET's Pipeline Facility.

11. **Impoundment of Water**

- a. In order to provide for the adequate maintenance and operation of ET's Pipeline Facility, the impoundment of water on ET's Pipeline Facility will not be allowed.

- b. Temporary soil erosion and sediment control devices and storm water detention basins/traps will not be permitted on ET's Pipeline Facility.

**12. Blasting & Seismic Activity**

- a. To the extent it impacts the lateral stability or otherwise endangers or interferes with the efficiency, safety, or convenient operation of ET's Pipeline Facility, no explosive detonations will be permitted within 300-feet of ET's Pipeline Facility without: (1) prior blast plan impact analysis and written approval from ET and (2) ET's representative on site during blasting. To determine if the detonation stresses will be detrimental to the safety of ET's Pipeline Facility, information required to complete ET's "Blasting Data Sheet" must be submitted to ET for evaluation and approval no less than 30 days prior to the proposed date of blasting activity. The contractor performing the blasting will be required to verify by signature the proposed blasting plan.
- b. No "Non-Explosive" seismic testing or construction equipment with steady state vibrator, intermittent vibrator, or thumper sources shall be conducted within 150 feet of ET's Pipeline Facility without prior written approval.

**13. Landscaping & Irrigation Systems**

- a. Landscaping shall not be permitted within ET's Pipeline Facility.
- b. Irrigation heads and valves shall not be permitted within ET's Pipeline Facility.
- c. Irrigation systems shall not be directly installed longitudinally over ET's Pipeline Facility and shall not be buried deeper than 12-inches, regardless of location, from the surface of the ground within ET's Pipeline Facility.

**14. Pipeline Markers**

The party request such Crossing will ensure that all temporary and permanent pipeline markers installed by ET are always protected and maintained during construction or Crossing related activity. Any permanent markers damaged or removed will be replaced by ET at the sole expense of the party requesting such Crossing. No work will be allowed to commence until, in the opinion of ET, sufficient pipeline markers are in place. Unauthorized damage or removal of pipeline markers is punishable by Federal law.

**15. Right of Ingress and Egress**

- a. The party requesting such Crossing shall have the right to install fences on, over and across the Facilities, provided, however, that ET shall have the unrestricted right of ingress and egress to its Facilities at all times. ET prohibits any fencing which obstructs access or line of sight for patrol/inspection or identification markers.
- b. ET, at its sole option and discretion, may require the party requesting such Crossing to install, at its sole cost and expense and for ET's benefit, a walk gate at least three (3) feet in width for residential lots or gate at least twelve (12) feet in width for rural areas at each



fence Crossing. ET shall provide a lock for such gate(s). Said gate(s) shall be installed as to provide ET with ingress and egress access to its pipeline or related facilities and to minimize vehicular and equipment travel over ET's pipeline or Facilities.

- c. The party requesting such Crossing shall be responsible for keeping the enclosed portion of ET's pipeline or related Facilities free of any debris or trash.
- d. ET's pipeline or related Facilities shall be positively located by ET before any fences are constructed or installed near ET's Pipeline Facilities. Post hole excavations for fencing placed near ET's Pipeline Facilities shall not be greater than a depth of eighteen inches (18") below the undisturbed grade level nor closer than five feet (5') horizontally from ET's pipeline or related Facilities.

**16. Statement Regarding Existing Rights**

**NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO CONVEY, WAIVE, OR SUBORDINATE ANY OF ET'S EXISTING RIGHTS WHATSOEVER. SHOULD A CONFLICT EXIST WITH THE LANGUAGE CONTAINED IN ANY ET ENCROACHMENT AGREEMENT, EASEMENT, OR PETITION IN CONDEMNATION AND THESE GUIDELINES, ET'S ENCROACHMENT AGREEMENT, EASEMENT, OR PETITION IN CONDEMNATION SHALL CONTROL AND BE DECISIVE OF THE ISSUE.**

**17. Statements Regarding Guidelines for Construction and Maintenance**

Certain construction and maintenance activities may be reviewed and approved by ET at one point in time, but not immediately installed or performed. Therefore, all construction and maintenance activities are subject to the Guidelines in affect at the time the work takes place. In addition, the guidelines described in this document represent those industry standards that ET believes meet the minimum acceptable standards regarding third-party construction and maintenance activities in the vicinity of ET's Pipeline Facility. Therefore, after review of the final plan and profile drawings, ET may, in the event that ET determines the construction and maintenance activities will increase a risk to the public or increase a risk of a break, leak, rupture or other damage to ET's Pipeline Facility, require fortifications in furtherance of state codes. The party requesting such Crossing agrees to alter, modify or halt any construction activity, which in the sole opinion of ET's, will increase the risk to the public or increase the risk of a break, leak, rupture or other damage to ET's Pipeline Facility.

All written correspondences and your final design plans are to be addressed to:

**Energy Transfer Company**  
**[encroachments@energytransfer.com](mailto:encroachments@energytransfer.com)**  
**Attention: Encroachment Department**

[END]