

June 23, 2021

Land Development Consultants, Inc.  
3898 Maizeland Road  
Colorado Springs, CO 80909



**ENTECH**  
ENGINEERING, INC.

505 ELKTON DRIVE  
COLORADO SPRINGS, CO 80907  
PHONE (719) 531-5599  
FAX (719) 531-5238

Attn: Dan Kupferer

Re: OWTS – Wastewater Study  
Manley Subdivision Filing No. 2  
Curtis Road and Jones Road  
El Paso County, Colorado

Dear Mr. Kupferer:

## **GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION**

The project lies in the SW¼ of the SW¼ of Section 22, Township 13 South, Range 64 West of the 6<sup>th</sup> Principal Meridian in El Paso County, Colorado. The site is located northeast of the intersection of Curtis and Jones Roads, 3 miles southeast of Falcon, Colorado. The location of the site is as shown on the Vicinity Map, Figure 1.

The topography of the site is gradually to moderately sloping to the south-southeast. Minor drainage swales are located in the northern and southern portions of the property. Water was not observed in the drainages at the time of this investigation. The site boundaries are indicated on the USGS Map, Figure 2. Previous land uses have included undeveloped and rural residential/agricultural land. The site contains field grasses, weeds, and yuccas. An existing house with a water well and septic system is located on Lot 2 of the Manley Subdivision Filing No. 1. The house will remain and be replatted as Lot 1 of the Manley Subdivision Filing No. 2. An existing mobile home is located on proposed Lot 2, which will remain. Site photographs were taken and site mapping was completed on was June 16, 2021. Site photographs are included in appendix A. Test Borings and Test Pits were performed on April, 23, 2021.

Total acreage involved in the proposed second filing of the subdivision is 21.65-acres. Two rural residential lots are proposed as part of the subdivision. The proposed lot sizes range from 5.513-acres to 16.137-acres. The existing houses located on the lots will remain. The lots will be serviced by individual wells and on-site wastewater treatment systems. The Site Plan is presented in Figure 3.

## **SCOPE OF THE REPORT**

The scope of the report will include the following:

- A general geologic analysis utilizing published geologic data. Detailed site-specific mapping will be conducted to obtain general information in respect to major geographic and geologic features, geologic descriptions and their effects on the development of the property.
- The site will be evaluated for individual on-site wastewater treatment systems in accordance with El Paso County specifications.

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El Paso County, Colorado

## FIELD INVESTIGATION

Our field investigation consisted of the preparation of a geologic map of bedrock features and significant surficial deposits. The Natural Resource Conservation Service (NRCS), previously the Soil Conservation Service (SCS) survey was also reviewed to evaluate the site. The position of mappable units within the subject property are shown on the Geologic Map. Our mapping procedures involved both field reconnaissance and measurements, and aerial photo reconnaissance and interpretation. The same mapping procedures have also been utilized to produce the Geology/Engineering Geology Map which identified pertinent geologic conditions affecting development. The field mapping was performed by personnel of Entech Engineering, Inc. on June 16, 2021.

Two test pits were excavated on the site to determine general suitability of the soil characteristics for residential construction. The locations of the test pits are indicated on the Site Plan/Test Boring Location Map, Figure 3. The Test Pit Logs are presented in Appendix B. Results of this testing will be discussed later in this report.

Laboratory testing was also performed on some of the soils to classify and determine the soils engineering characteristics. Laboratory tests included grain-size analysis, ASTM D-422. Results of the laboratory testing are included in Appendix C.

## SOIL AND GEOLOGIC CONDITIONS

### Soil Survey

The Natural Resource Conservation Service (NRCS) (Reference 1, Figure 4), previously the Soil Conservation Service (Reference 2) has mapped three soil types on the site. Complete descriptions of the soil type are presented in Appendix D. In general, the soils consist of sandy loam to gravelly loamy sand. The soils are described as follows:

<u>Type</u>	<u>Description</u>
8	Blakeland loamy sand, 1-9% slopes
83	Stapleton sandy loam, 3-8% slopes
95	Truckton loamy sand, 1-9% slopes

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El Paso County, Colorado

The soils have generally been described to have moderately rapid to rapid permeabilities. The soils are described as well suited for use as home sites. Possible hazards with soils erosion are present on the site. The erosion potential can be controlled with vegetation. The soils have been described to have moderate erosion hazards (Reference 2).

### Soils

The soils encountered in the test borings consisted of silty sand. Bedrock was not encountered in the test pits. The upper sands were encountered at medium dense states and moderate moisture conditions. The samples of sand tested had 11 to 22 percent of the soil size particles passing the No. 200 sieve. The silty sand typically has low expansion potential.

### Groundwater

Groundwater was not encountered in the test pits which were excavated to depths of 8 feet. Groundwater is not anticipated to affect shallow foundations on the majority of the site. Fluctuations in groundwater conditions may occur due to variations in rainfall or other factors not readily apparent at this time. Isolated sand layers within the soil profile can carry water in the subsurface. Contractors should be cognizant of the potential for the occurrence of subsurface water features during construction.

### Geology

Approximately 18 miles west of the site is a major structural feature known as the Rampart Range Fault. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within a large structural feature known as the Denver Basin. Bedrock in the area is typically gently dipping in a northerly direction (Reference 3). The bedrock underlying the site consists of the Dawson Formation of Tertiary to Cretaceous Age. The Dawson Formation typically consists of coarse-grained arkosic sandstone with interbedded layers of claystone or siltstone. Overlying the Dawson Formation are younger deposits of sheetwash and alluvium.

The geology of the site was evaluated using the *Geologic Map of the Falcon Quadrangle*, by Morgan in 2012, (Reference 4, Figure 5). The Geology Map for the site is presented in Figure 6. Three mappable units were identified on this site which is described as follows:

- Qsw Sheetwash Deposits of Holocene to Late Pleistocene Age:** These materials consist of silty to clayey sands with some gravel. The material was deposited by the action of sheetwash derived from nearby deposits.
- Qb Broadway Alluvium (Alluvium Three) of Late Pleistocene Age:** These materials consist of middle stream terrace deposits. The materials typically consist of silty to clayey gravelly sands.
- Qg<sub>2</sub> Pediment Gravel Two of Middle Pleistocene Age:** These are stream terrace deposits that consist of reddish-brown silty sand and gravels and may contain some cobble and boulder-size materials. Much of the material contained in the Pediment Gravel Two has been derived from the Pikes Peak Granite to the west. The Pediment Gravel Two

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correlates to the Verdos Alluvium of Quaternary Age as mapped in US Geological Survey mappings (Reference 4).

The soils listed above were mapped from site-specific mapping, the *Geologic Map of the Falcon Quadrangle* distributed by the Colorado Geologic Survey in 2012 (Reference 4, Figure 5), and the *Geologic Map of the Pueblo 1° x 2° Quadrangle*, distributed by the US Geological Survey in 1978 (Reference 5). The test borings were used in evaluating the site and are included in Appendix B. The Geology Map prepared for the site is presented in Figure 6.

#### Drainage Areas

Minor drainage areas exist in the northeastern portion of Lot 1 and southern portion of Lot 2. No water was observed flowing in the drainages at the time of the investigation, however, these areas have the potential for seasonal shallow groundwater. These areas are indicated in the Geology/Engineering Geology Map (Figure 6) and are discussed below. Due to the size of the proposed lots these areas can be avoided or redirected around proposed structures or proposed soil treatment areas. The proposed building areas are not affected by these areas. The site does not lie within any floodplain zones according to the FEMA Map No. 08041CO568G dated December 7, 2018 (Figure 7, Reference 6). Exact locations of floodplain and specific drainage studies are beyond the scope of this report.

#### Potentially Seasonal Shallow Groundwater Area

In these areas, we would anticipate the potential for periodically high subsurface moisture conditions, frost heave potential and highly organic soils. These areas lie within defined minor drainages and can be avoided by the proposed development. Construction in any portions of these areas, if required, or immediately adjacent to these areas should follow these precautions.

Mitigation: Foundations must have a minimum 30-inch depth for frost protection. In areas where high subsurface moisture conditions are anticipated periodically, subsurface perimeter drains are recommended to help prevent the intrusion of water into areas below grade. Typical drain details are presented in Figure 8. Any grading in these areas should be done to direct surface flow around construction to avoid areas of ponded water. All organic material would be completely removed prior to any fill placement. **Specific drainage studies are beyond the scope of this report.**

### **ON-SITE WASTEWATER TREATMENT**

The Natural Resource Conservation Service (Reference 1), previously the Soil Conservation Service (Reference 2) has been mapped with three soil descriptions. The Soil Survey Map (Reference 1) is presented in Figure 4, and the Soil Survey Descriptions (Reference 2) are presented in Appendix C. The soils are described as having moderate to rapid percolation rates. The existing septic system is located on Lot 1. Observations of the leach area indicated that the system is operating properly. Records for the existing septic systems located in the Manley Subdivision Filing No. 1 are included in Appendix E.

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Curtis Road and Jones Road  
El Paso County, Colorado

Soils encountered in the tactile test pits consisted of sandy loam. The limiting layers encountered in the test pits are the sandy loam, which corresponds with USDA Soil Types 2A, with an LTAR values of 0.50 gallons per day per square foot.

Signs of seasonally occurring groundwater were not observed in the test pits. Absorption fields must be maintained a minimum of 4 feet above groundwater, bedrock, or confining layers. Should groundwater or bedrock be encountered within 6 feet of the surface, designed systems will be required. Conventional systems are anticipated on the lots. Testing will be required on each lot to determine the site characteristics prior to construction.

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems (OWTS) and that contamination of surface and subsurface water resources should not occur provided the OWTS sites are evaluated and installed according to El Paso County and State Guidelines and properly maintained. Based on the testing performed designed systems are anticipated for the majority of the lots, depending on soils encountered. The Septic Suitability Map is presented in Figure 8. Potential house locations, water wells, and two septic sites for the new lots are indicated on Figure 8. Absorption fields must be located a minimum of 100 feet from any well, including those on adjacent properties. Absorption fields must also be located a minimum of 50 feet from any drainages, floodplains or ponded areas and 25 feet from dry gulches.

## CLOSURE

This report has been prepared for Land Development Consultants, Inc., for application to the proposed project in accordance with generally accepted geologic soil and engineering practices. No other warranty expressed or implied is made.

We trust that this report has provided you with all the information that you required. Should you require additional information, please do not hesitate to contact Entech Engineering, Inc.

Respectfully Submitted,

ENTECH ENGINEERING, INC.



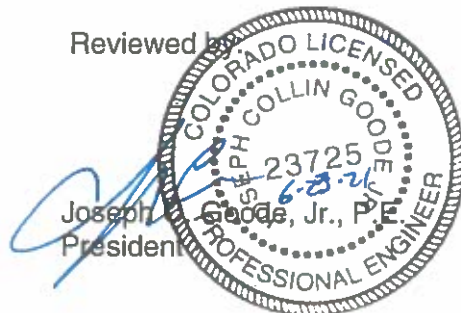
Logan L. Langford, P.G.  
Geologist

LLL

Encl.

Entech Job No. 210545  
AAprojects/2021/210545 wws

Reviewed by



Joseph C. Goode, Jr., P.E.  
President

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OWTS – Wastewater Study  
Manley Subdivision Filing No. 2  
Curtis Road and Jones Road  
El Paso County, Colorado

## BIBLIOGRAPHY

1. Natural Resource Conservation *Service*, September 13, 2019. *Web Soil Survey*. United States Department Agriculture, <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
2. United States Department of Agriculture Soil Conservation Service. June 1981. *Soil Survey of El Paso County Area, Colorado*.
3. Scott, Glen R.; Taylor Richard B.; Epis, Rudy C; and Wobus, Reinhard A. 1978. *Geologic Structure Map of the Pueblo 1° x 2° Quadrangle, South-Central Colorado*. Sheet 2. U.S. Geologic Survey. Map I-1022, Sheet 2.
4. Morgan, Matthew, L., and White, Jonathan, L., 2012. *Geologic Map of the Falcon Quadrangle, El Paso County, Colorado*. Colorado Geological Survey. Open-File Report 12-05.
5. Scott, Glen R.; Taylor Richard B.; Epis, Rudy C; and Wobus, Reinhard A. 1978. *Geologic Structure Map of the Pueblo 1° x 2° Quadrangle, South-Central Colorado*. Sheet 2. U.S. Geologic Survey. Map I-1022.
6. Federal Emergency Management Agency. December 7, 2018. *Flood Insurance Rate Maps for the City of Colorado Springs, Colorado*. Map Number 08041CO568G

## TABLE

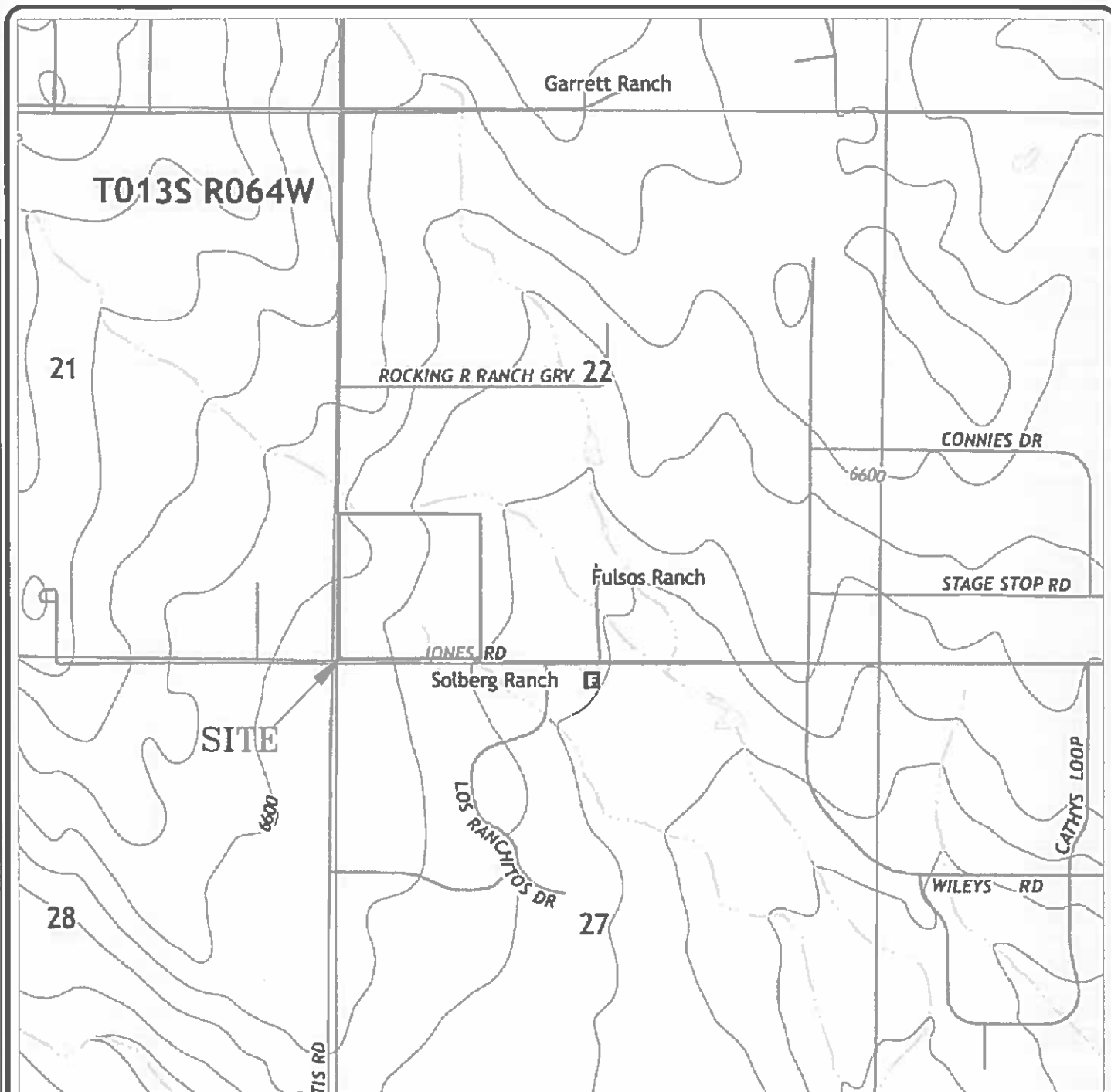
**Table 1: Summary Test Pit Results**

<b>Test Pit No.</b>	<b>Depth to Bedrock (ft.)</b>	<b>Depth to Groundwater (ft.)</b>	<b>USDA Soil Type</b>	<b>LTAR Value</b>
1	>8	>8	2A	0.50
2	>8	>8	2	0.60



## FIGURES





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USGS TOPOGRAPHY MAP  
MANLEY SUBDIVISION, FILING NO. 2  
CURTIS ROAD & JONES ROAD  
EL PASO COUNTY, CO.  
FOR: LAND DEVELOPMENT CONSULTANTS, INC

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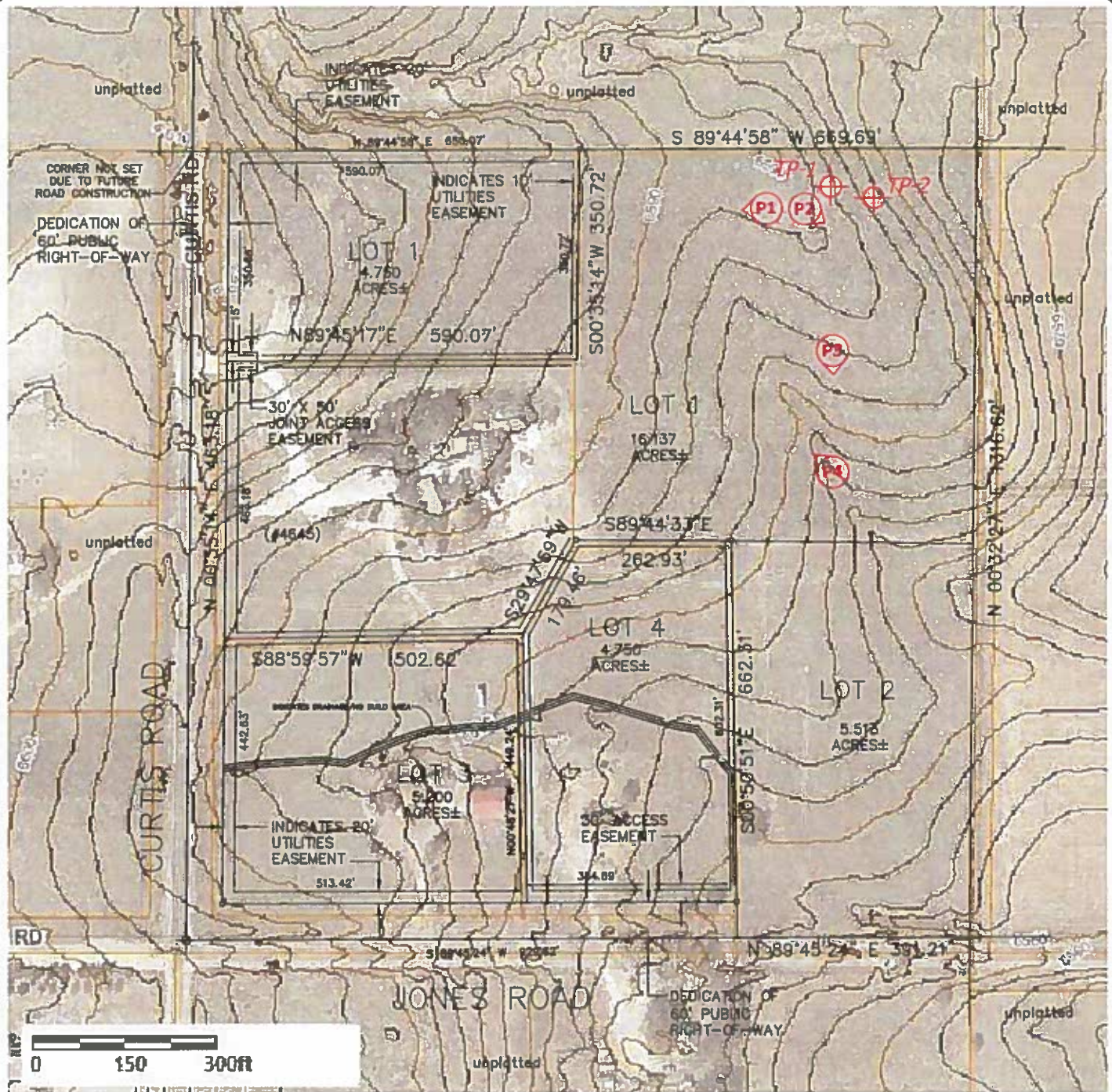
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6/14/21

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DATE:

JOB NO.:  
210545

FIG NO.:  
2



⊕ TP- APPROXIMATE TEST PIT LOCATION AND NUMBER

Ⓟ - APPROXIMATE PHOTOGRAPH LOCATION AND NUMBER



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SITE PLAN/TESTING LOCATION MAP  
MANLEY SUBDIVISION, FILING NO. 2  
CURTIS ROAD & JONES ROAD  
EL PASO COUNTY, CO.  
FOR: LAND DEVELOPMENT CONSULTANTS, INC.

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FIG NO.:  
3





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SOIL SURVEY MAP  
MANLEY SUBDIVISION, FILING NO. 2  
CURTIS ROAD & JONES ROAD  
EL PASO COUNTY, CO.  
FOR: LAND DEVELOPMENT CONSULTANTS, INC

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LLL

DATE:  
6/4/21

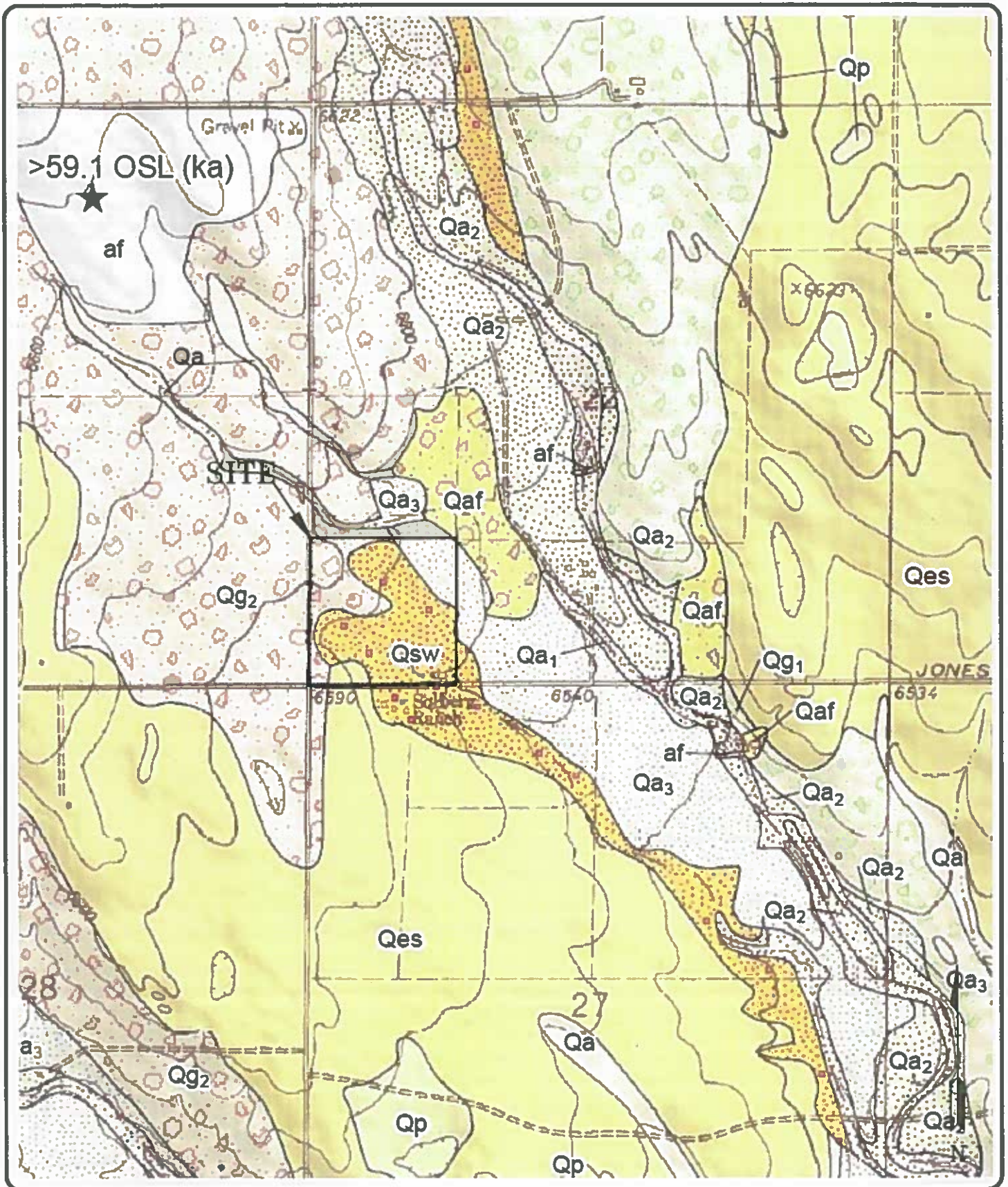
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210545

FIG NO.:  
4





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FALCON QUADRANGLE GEOLOGIC MAP  
MANLEY SUBDIVISION, FILING NO. 2  
CURTIS ROAD & JONES ROAD  
EL PASO COUNTY, CO.  
FOR: LAND DEVELOPMENT CONSULTANTS, INC

DRAWN:  
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6/14/21

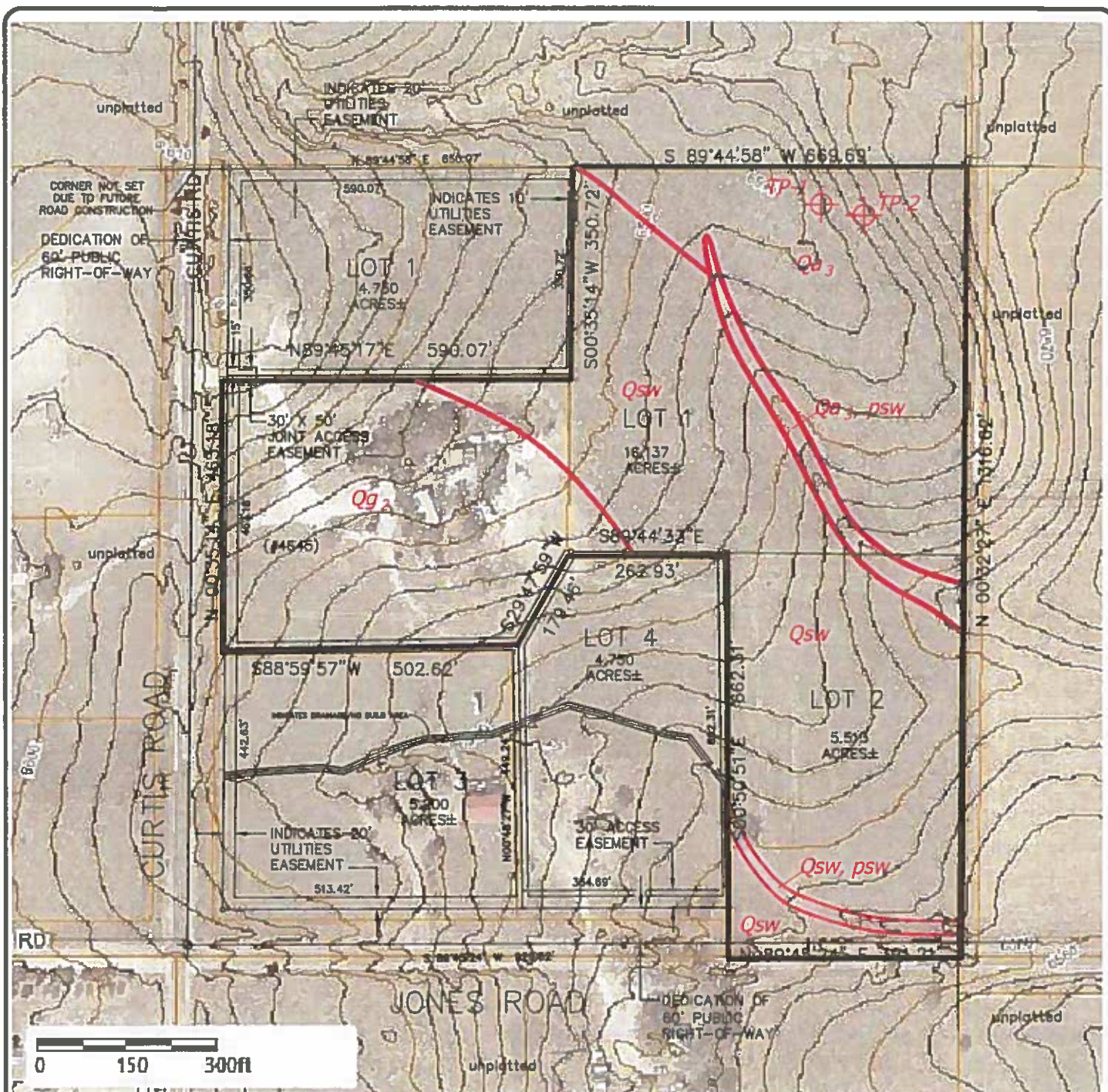
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210545

FIG NO:  
5





#### Legend:

- Qsw - Sheetwash Deposits of Holocene to late Pleistocene Age.  
silty to clayey sands deposited by the action of sheetwash and gravity
- Qa<sub>3</sub> - Alluvium Three of late Pleistocene Age  
Stream terrace deposited sands correlated to the Broadway Alluvium
- Qg<sub>2</sub> - Piedmont Gravel Two of middle Pleistocene Age.  
Red brown sandy stream terrace deposits
- psw - potentially shallow groundwater area



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GEOLOGY/ENGINEERING GEOLOGY MAP  
MANLEY SUBDIVISION, FILING NO. 2  
CURTIS ROAD & JONES ROAD  
EL PASO COUNTY, CO.  
FOR: LAND DEVELOPMENT CONSULTANTS, INC.

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FIG NO.:  
6





08041C0568G  
eff. 12/7/2018



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FEMA FLOODPLAIN MAP  
MANLEY SUBDIVISION, FILING NO. 2  
CURTIS ROAD & JONES ROAD  
EL PASO COUNTY, CO.  
FOR: LAND DEVELOPMENT CONSULTANTS, INC

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6/4/21

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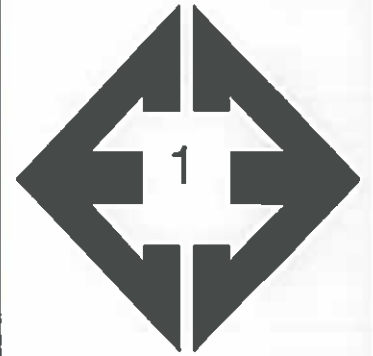
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FIG NO.:  
7



## **APPENDIX A: Photographs**



**Looking west from the  
northeastern portion of  
the property.**

June 16, 2021



**Looking southeast  
from the northeastern  
portion of the property.**

June 16, 2021



**Looking south from  
the central portion of  
the property.**

June 16, 2021



**Looking northwest  
along minor drainage  
swale in the east  
central portion of the  
property.**

June 16, 2021

**APPENDIX B: Test Pit Logs**

TEST PIT NO. 1  
 DATE EXCAVATED 5/4/2021  
 Job # 210545

TEST PIT NO. 2  
 DATE EXCAVATED 5/4/2021  
 CLIENT NANCY MANLEY  
 LOCATION MANLEY SUBDIVISION

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type	REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil, sandy clay loam, brown, moist	1						topsoil, sandy clay loam, brown, moist	1					
sandy loam, fine to coarse grained, pale brown, moist	2			ma		2A	sandy loam, fine to coarse grained, pale brown, moist	2			ma		2A
	3							3					
	4							4					
	5							5					
sandy loam, fine to very coarse grained, pale brown, moist	6			gr	m	2		6					
	7							7					
	8							8					
	9							9					
	10							10					

Soil Structure Shape

granular - gr  
 platy - pl  
 blocky - bl  
 prismatic - pr  
 single grain - sg  
 massive - ma

Soil Structure Grade

weak - w  
 moderate - m  
 strong - s  
 loose - l



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**ENGINEERING, INC.**

505 ELKTON DRIVE  
 COLORADO SPRINGS, COLORADO 80907

**TEST PIT LOG**

DRAWN:  
jhr

DATE:  
5/4/2021

CHECKED:  
LLL

DATE:  
5/13/21

JOB NO.  
210545

FIG NO.

S-1

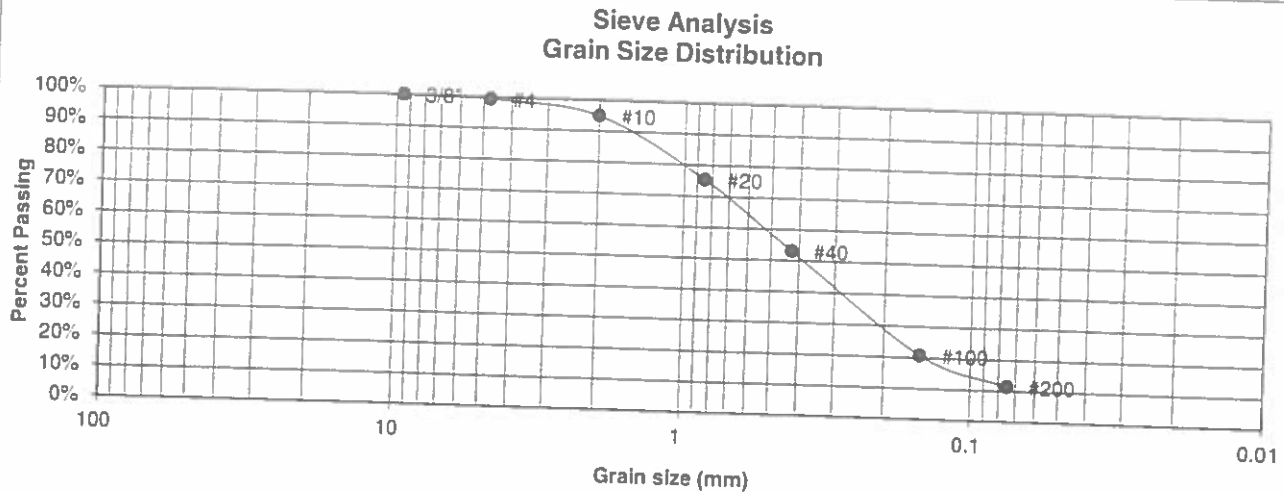
## **APPENDIX C: Laboratory Test Results**

BORING NO. TP-1  
 DEPTH(ft) 2  
 CLIENT NANCY MANLEY  
 PROJECT MANLEY SUBDIVISION

UNIFIED CLASSIFICATION  
 AASHTO CLASSIFICATION

SM-SW

TEST BY BL  
 JOB NO. 210545



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.4%
10	94.9%
20	75.4%
40	53.1%
100	20.7%
200	11.4%

Atterberg  
Limits  
 Plastic Limit  
 Liquid Limit  
 Plastic Index

Swell  
 Moisture at start  
 Moisture at finish  
 Moisture increase  
 Initial dry density (pcf)  
 Swell (psf)



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 COLORADO SPRINGS COLORADO 80907

### LABORATORY TEST RESULTS

DRAWN

DATE

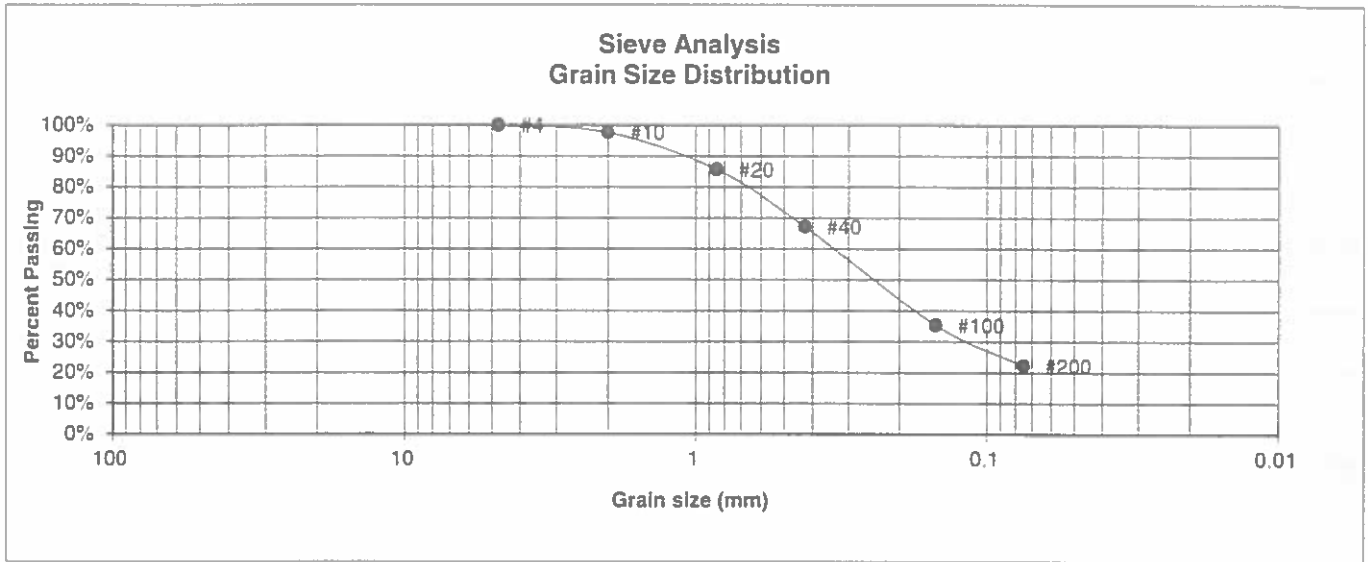
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*2/12/10*

JOB NO.:  
 210545

FIG NO.:  
 C-1

BORING NO.	TP-2	UNIFIED CLASSIFICATION	SM	TEST BY	BL
DEPTH(ft)	2	AASHTO CLASSIFICATION		JOB NO.	210545
CLIENT	NANCY MANLEY				
PROJECT	MANLEY SUBDIVISION				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	97.7%
20	85.7%
40	67.2%
100	35.4%
200	22.3%

**Atterberg  
Limits**  
Plastic Limit  
Liquid Limit  
Plastic Index

**Swell**  
Moisture at start  
Moisture at finish  
Moisture increase  
Initial dry density (pcf)  
Swell (psf)



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COLORADO SPRINGS, COLORADO 80907

### LABORATORY TEST RESULTS

DRAWN

DATE

CHECKED

DATE

JOB NO.  
210545

FIG NO.

6-2



## **APPENDIX D: Soil Survey Descriptions**

## El Paso County Area, Colorado

### 8—Blakeland loamy sand, 1 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 369v  
*Elevation:* 4,600 to 5,800 feet  
*Mean annual precipitation:* 14 to 16 inches  
*Mean annual air temperature:* 46 to 48 degrees F  
*Frost-free period:* 125 to 145 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Blakeland and similar soils:* 98 percent  
*Minor components:* 2 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Blakeland

##### Setting

*Landform:* Hills, flats  
*Landform position (three-dimensional):* Side slope, tal  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from sedimentary rock and/or  
eolian deposits derived from sedimentary rock

##### Typical profile

*A - 0 to 11 inches:* loamy sand  
*AC - 11 to 27 inches:* loamy sand  
*C - 27 to 60 inches:* sand

##### Properties and qualities

*Slope:* 1 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat excessively drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* High to  
very high (5.95 to 19.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Available water capacity:* Low (about 4.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3e  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* A  
*Ecological site:* R049XB210CO - Sandy Foothill  
*Hydric soil rating:* No

### Minor Components

#### Pleasant

*Percent of map unit:* 1 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### Other soils

*Percent of map unit:* 1 percent

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: El Paso County Area, Colorado

Survey Area Data: Version 18, Jun 5, 2020

## El Paso County Area, Colorado

### 83—Stapleton sandy loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 369z  
*Elevation:* 6,500 to 7,300 feet  
*Mean annual precipitation:* 14 to 16 inches  
*Mean annual air temperature:* 46 to 48 degrees F  
*Frost-free period:* 125 to 145 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Stapleton and similar soils:* 97 percent  
*Minor components:* 3 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Stapleton

##### Setting

*Landform:* Hills  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy alluvium derived from arkose

##### Typical profile

*A - 0 to 11 inches:* sandy loam  
*Bw - 11 to 17 inches:* gravelly sandy loam  
*C - 17 to 60 inches:* gravelly loamy sand

##### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* High  
(2.00 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Low (about 4.7 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* R049XB215CO - Gravelly Foothill  
*Hydric soil rating:* No

### Minor Components

#### Pleasant

*Percent of map unit:* 1 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### Other soils

*Percent of map unit:* 1 percent

*Hydric soil rating:* No

#### Fluvaquentic haplaquolls

*Percent of map unit:* 1 percent

*Landform:* Swales

*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: El Paso County Area, Colorado

Survey Area Data: Version 18, Jun 5, 2020

## El Paso County Area, Colorado

### 95—Truckton loamy sand, 1 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 36bd  
*Elevation:* 6,000 to 7,000 feet  
*Mean annual precipitation:* 14 to 16 inches  
*Mean annual air temperature:* 46 to 50 degrees F  
*Frost-free period:* 125 to 145 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Truckton and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Truckton

##### Setting

*Landform:* Hills, flats  
*Landform position (three-dimensional):* Side slope, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Arkosic alluvium derived from sedimentary rock and/or arkosic residuum weathered from sedimentary rock

##### Typical profile

*A - 0 to 8 inches:* loamy sand  
*Bt - 8 to 24 inches:* sandy loam  
*C - 24 to 60 inches:* coarse sandy loam

##### Properties and qualities

*Slope:* 1 to 9 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 6.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water capacity:* Low (about 5.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 4e  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* A  
*Ecological site:* R049XB210CO - Sandy Foothill  
*Hydric soil rating:* No

### Minor Components

#### Other soils

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### Pleasant

*Percent of map unit:* 1 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: El Paso County Area, Colorado

Survey Area Data: Version 18, Jun 5, 2020

## **APPENDIX E: El Paso County Health Department Septic Records**



EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM INSPECTION FORM

Permit # 9777  
Date 1/12/96

P

APPROVED: YES ☒ NO ☐

#4322005003

ENVIRONMENTALIST Larry Schaad

Address 14810 Jones Road

Owner Jerry & Nancy Manley

Legal Description SW4, SW4 Sec 22-13-64

Residence ☒ # of bedrooms 3; Commercial ☐; System Installer Firebaugh

SEPTIC TANK:

Commercial ☒; Noncommercial ☐; L ☐ W ☐ WD ☐

Construction Material Precast Concrete, capacity 1250 gallons.

DISPOSAL FIELD:

Rock Systems:

Trench: depth ☐ width ☐ total length ☐ sq. feet ☐

Bed: depth ☐ length ☐ width ☐ sq. feet ☐

Rock type ☐ depth ☐ under PVC ☐ over PVC ☐

Seepage Pits: # of pits ☐ total # of rings ☐ working depth(s) ☐

size of pit(s) L X W ☐ lining material ☐ total sq. feet ☐

Rockless Systems:

Chamber: Type Bio diffusers, number of chambers 19, bed ☐ trench ☒

sq. ft./section 19, reduction allowed 50%, sq. ft. required 331

total sq. ft. installed 684 with reduction, depth of installation 30-45"

Engineer Design Y or (N), Designing Engineer ☐

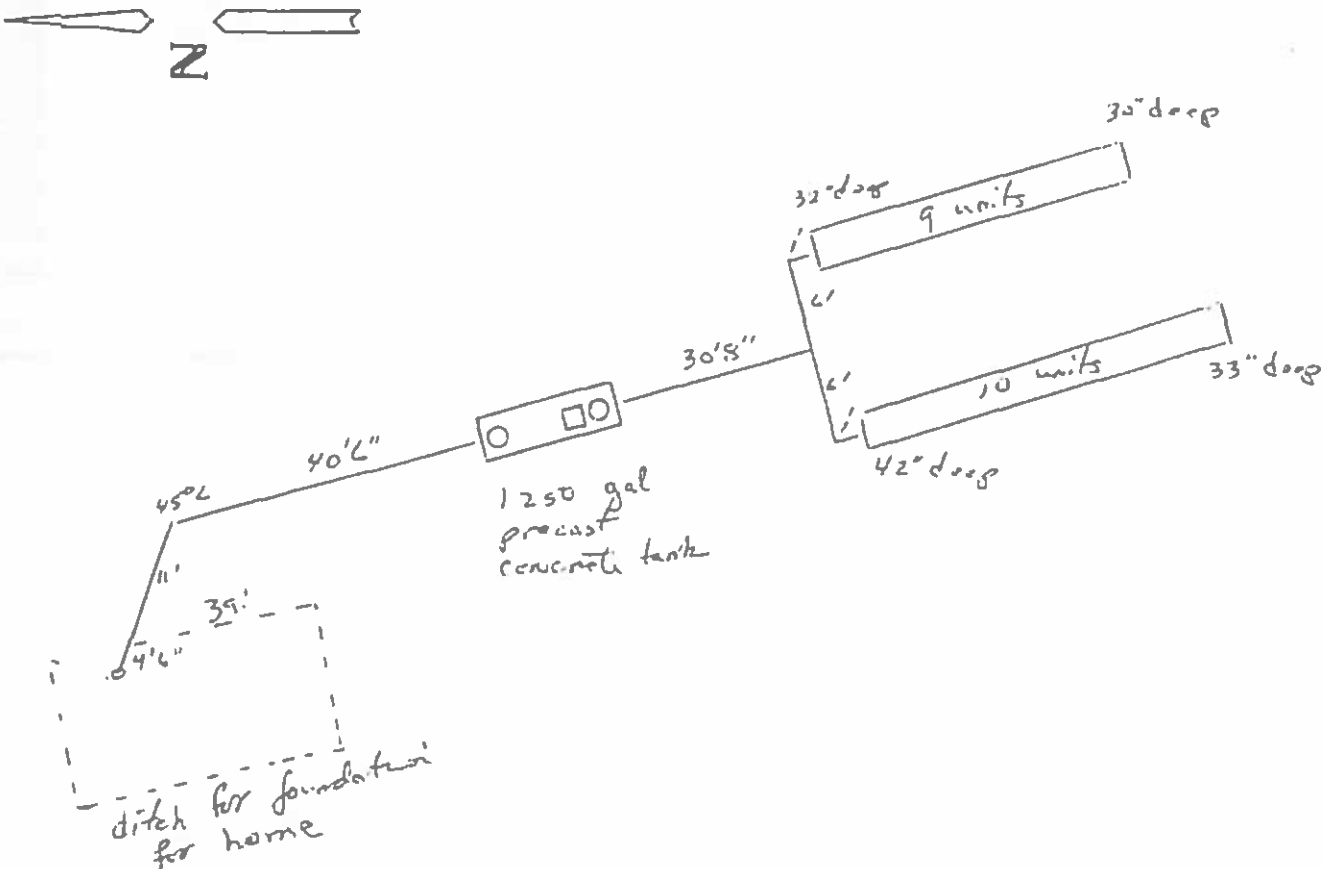
Approval letter provided? Y or N ☐

Well 50 feet from tank (Y) or N 100 feet from leach field (Y) or N

Well installed at time of septic system inspection (Y) or N Public Water ☐

\*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

NOTES: Well at 4645 Curt's several hundred feet to north.  
Pipes 50/2 35  
Chambers set in trenches 3 1/2-4' wide with 3/4" rock ~1" deep on sides of ch



Across 40 EL PASO COUNTY • DEPARTMENT OF HEALTH AND ENVIRONMENT  
301 South Union Blvd. • Colorado Springs, Colorado • 578-3125

Water Supply WELL

**PERMIT**

Permit 9777

TO CONSTRUCT, ALTER, REPAIR OR MODIFY ANY INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Receipt No. 15/9/96

Issued to JERRY AND NANCY MANLEY

Date 1-03-96

Address of Property 14810 JONES ROAD, SWA, SEC: 22-13-64

DAUGHTER: SHARON EAXTER  
Phone 633 2356

(Permit valid at this address only)

Sewage-Disposal System work to be performed by FIREBAUGH LIC: 22

Phone 596-1469

This Permit is issued in accordance with 25-10-106 Colorado Revised Statutes 1973, as amended. PERMIT EXPIRES upon completion of installation of sewage-disposal system or at the end of twelve (12) months from date of issue-whichever occurs first-(unless work is in progress). This permit is revokable if all stated requirements are not met.

**-THIS PERMIT DOES NOT DENOTE APPROVAL OF ZONING AND ACREAGE REQUIREMENTS-**

PERMIT FEE (NOT REFUNDABLE)

1-03-97

DATE OF EXPIRATION

DIRECTOR, DEPARTMENT OF HEALTH AND ENVIRONMENT

Jerry Schoed 575-8638

ENVIRONMENTALIST

NOTE: LEAVE ENTIRE SEWAGE-DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION. 48 HOUR ADVANCE NOTICE REQUIRED.

SEPTIC TANK:  1250	TRENCH SYSTEM: total square feet <u>331</u>		BED SYSTEM:  total square feet _____	SEEPAGE PIT SYSTEM:  total square feet _____
	_____ ft. of trench	_____ inches wide		
_____ gallons	_____ ft. of trench	_____ inches wide	total square feet _____	rings or _____ diam.x _____ w/d

**NOTES:**

INSTALL LEACH FIELD IN AREA AND DEPTH (36 INCHES) OF PERC. TEST. STRONGLY RECOMMEND AN INCREASE OF 60 PER CENT IN LEACH FIELD AREA (OR NOT TAKING THE REDUCTION IF CHAMBERS ARE USED) IF CLOTHES WASHER AND GARBAGE DISPOSAL WILL BE INSTALLED IN HOME. BE SURE TO MAINTAIN MINIMUM DISTANCES FROM WATER COURSES.

PERMIT 6491 IS VOID.

The Health Office shall assume no responsibility in case of failure or inadequacy of a sewage-disposal system, beyond consulting in good faith with the property owner or representative. Free access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

New

APPLICATION FOR A PERMIT TO CONSTRUCT, REMODEL, OR INSTALL A SEWAGE DISPOSAL SYSTEM

NAME OF OWNER JERRY AND Nancy MANLEY HOME PHONE 719-683-2173 WORK PHONE 634-1129  
ADDRESS OF PROPERTY 14810 Jones Rd. 4645 N. Curtis Rd. Peyton, CO 80831 DATE 5-6-92  
LEGAL DESCRIPTION OF PROPERTY SW $\frac{1}{4}$ , SW $\frac{1}{4}$ , SEC 22-13-64  
TAX SCHEDULE NUMBER 43220-00-009 SYSTEM CONTRACTOR D&B Trenching PHONE 683-2400  
OWNER'S ADDRESS IF DIFFERENT  
TYPE OF HOUSE CONSTRUCTION Mobile Home SOURCE AND TYPE OF WATER SUPPLY Well  
SIZE OF LOT 40 acres MAXIMUM POTENTIAL NUMBER OF BEDROOMS 3 EASEMENT (yes or no) No  
PERCOLATION TEST RESULTS ATTACHED (yes or no) yes

A plot plan and accompanying information are essential; it may be drawn on the back of this application or be attached. Please include by measured distance the location of wells including neighbors' wells, springs, water supply lines, cisterns, buildings, proposed structures, property lines, property dimensions, subsoil drains, tiles, ponds, water courses, streams, and dry gulches. Please show the location of the proposed septic system by directions and distances from actual and/or proposed dwellings, structures, or fixed reference objects. Give complete directions to the property from major highways. (ANSWER QUESTIONS ON BACK OF FORM).

Applicant acknowledges that the completeness of the application is conditional upon such further mandatory and additional tests and reports as may be required by the department to be made and furnished by the applicant for purposes of evaluation of the application; and issuance of the permit is subject to such terms and conditions as deemed necessary to ensure compliance with rules and regulations adopted under Article 10, Title 25, C.R.S. 1973 as amended. The undersigned hereby certifies that all statements made, information and reports submitted by the applicant are or will be represented to be true and correct to the best of my knowledge and belief and are designed to be relied on by the El Paso County Health Dept. in evaluating the same for purposes of issuing the permit applied for herein. I further understand that any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and in legal action for perjury as provided by law.

Permit # 9777  
1/5/96  
1-3-96  
9777

SIGNATURE

Jerry L. Manley

Nancy M. Manley

HEALTH DEPARTMENT USE ONLY

1250 gal

331 ft<sup>2</sup>

Scanned  
1-3-96

15250 Jones Rd

Install leach field in area and depth (36') of percolation test. Strongly recommend an increase of 60% in leach field area (or not taking the reduction if chambers are used) if a clothes washer and garbage disposal will be installed in home. Be sure to maintain minimum distances from water courses.

ANSWER THE FOLLOWING ITEMS AND/OR INCLUDE ON PLOT PLAN.

SEE ATTACHED

PROPERTY LINES \_\_\_\_\_  
PROPERTY DIMENSIONS \_\_\_\_\_  
LOCATION OF PROPOSED SEPTIC SYSTEM \_\_\_\_\_  
LOCATION OF WELL \_\_\_\_\_  
LOCATION OF ADJACENT WELLS \_\_\_\_\_  
BUILDINGS \_\_\_\_\_  
PROPOSED BUILDINGS \_\_\_\_\_  
WATER SUPPLY LINE \_\_\_\_\_  
CISTERNS \_\_\_\_\_  
SPRINGS \_\_\_\_\_  
LAKES \_\_\_\_\_  
PONDS \_\_\_\_\_  
WATER COURSES \_\_\_\_\_  
STREAMS \_\_\_\_\_  
DRY GULCHES \_\_\_\_\_  
SUBSOIL DRAINS \_\_\_\_\_

DIRECTIONS TO PROPERTY FROM MAIN HIGHWAYS:

Hwy. 94 east from Peterson Road to Curtis Road (mile marker 8)  
Turn left to go north on Curtis Rd. , approximately 4 miles to  
the North-East corner of Curtis and Jones Roads.

Hwy. 24 east from Peterson Rd. to Garrett Rd. turn right  
and stay on pavement to Dead End (Stop Sign) on Garrett and Curtis  
Roads about 5-6 miles. Turn south on Curtis Rd. (right) and  
travel just over 1 mile to the North-East corner of Curtis and Jones R

El Paso County, CO

Public Health

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#4322005004

## ON-SITE WASTEWATER SYSTEM INSPECTION FORM

PERMIT # ON0033065

DATE 9/04/2013

APPROVED YES ☒ NO ☐ Environmental Health Specialist: Neil Maves  
 Address: 14920 ~~4645~~ Jones Rd Peyton, CO 80831 Owner: Jocelyn Strebig  
 Residence ☒ #Bedrooms 3 Commercial ☐ System Installer: Triple T Excavation  
 SEPTIC TANK: Construction Material Concrete Capacity Gallon 1250

## DISPOSAL FIELD:

Trench: Depth (Range) \_\_\_\_\_ Width \_\_\_\_\_ Total Length \_\_\_\_\_ Sq. Ft. \_\_\_\_\_  
 Bed: Depth (Range) \_\_\_\_\_ Width \_\_\_\_\_ Total Length \_\_\_\_\_ Sq. Ft. \_\_\_\_\_  
 Depth of Rock \_\_\_\_\_ Under PVC \_\_\_\_\_ Type of cover on Rock \_\_\_\_\_  
 DRYWELLS: # of Pits \_\_\_\_\_ Rings (Pit 1) \_\_\_\_\_ Rings (Pit 2) \_\_\_\_\_ Working Depth #1 \_\_\_\_\_ #2 \_\_\_\_\_  
 Size (L x W) #1 \_\_\_\_\_ #2 \_\_\_\_\_ Total Sq. Ft. \_\_\_\_\_

## ROCKLESS SYSTEMS:

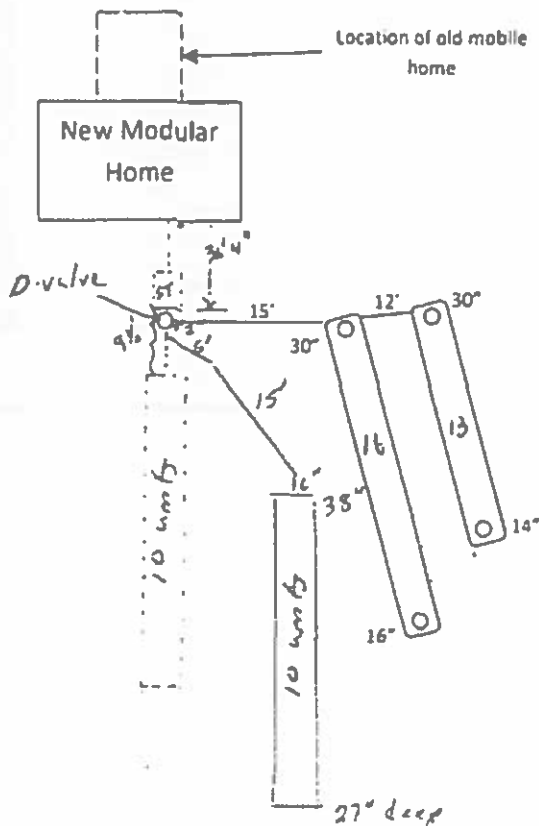
Standard Chamber: Type Quick 4 Plus STD #Chambers 29 Sq. Ft./Chamber 11.55 Bed \_\_\_\_\_ Trench ☒  
 High Profile Units: Type \_\_\_\_\_ #Chambers \_\_\_\_\_ Sq. Ft./Chamber \_\_\_\_\_ Bed \_\_\_\_\_ Trench \_\_\_\_\_  
 Reduction Allowed \_\_\_\_\_ % Sq. Ft. Required 286 Depth (Range) 14" - 30"  
 Sq. Ft. Installed 335 Equivalent Sq. Ft. Installed with Reduction \_\_\_\_\_

Engineer Design: ☐ N ☐ Engineering Firm \_\_\_\_\_ Approval Letter Provided: ☐ Y ☐ N ☐

Well installed at time of septic inspection: ☒ Y ☐ N ☐ Public Water: ☐ Y ☒ N ☐

\* Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

Notes: Well is at the 4645 N. Curtis address, several hundred feet to the NW of house.



Attn: JOCELYN STREBIG  
14920 JONES RD  
PEYTON CO 80831

Notify Environmental Health of any change of ownership, type of business activity, business name, or billing address by calling (719) 578-3199. Failure to notify Environmental Health may result in late penalties, Permit/License denial or revocation, and business closure. PERMITS/LICENSES TO OPERATE AND ANNUAL FEE PAYMENTS ARE NOT TRANSFERABLE. Permits become void on change of ownership. New owners must apply and pay for a new Permit(s)/License(s) prior to beginning operation.



EL PASO COUNTY PUBLIC HEALTH  
ENVIRONMENTAL HEALTH DIVISION  
1675 W. GARDEN OF THE GODS ROAD, SUITE 2044  
COLORADO SPRINGS, CO 80907  
PHONE: (719) 578-3199 FAX: (719) 578-3188  
www.elpasocountyhealth.org

## MAJOR REPAIR PERMIT - OWTS

Valid From 8/28/2013 To 8/28/2014

PERMITEE:

JOCELYN STREBIG  
14920 JONES RD  
PEYTON, CO 80831

Onsite ID: ON0033085

Tax Schedule #: 4322003004

Permit Issue Date: 08/28/2013

Dwelling Type: RESIDENTIAL

# of Bedrooms (if Res): 3

Proposed Use (if Comm):

Designed Gallons/Day:

Water Source: PRIVATE WELL

OWNER NAME:

JOCELYN STREBIG

### System Installation Requirements:

1. Install STA in area of percolation test that was performed on April 29, 1992 with a maximum cover over chambers of 36 inches.
2. If existing system is completely abandoned, then an absorption area of 571 sq ft is required.
3. If the existing system continues to be used, then an absorption area of 286 sq ft is required on the new side along with a diverter valve and no reduction will be given.
4. A trench system is preferred but if a bed system is installed, it shall not exceed a maximum width of 12 ft.

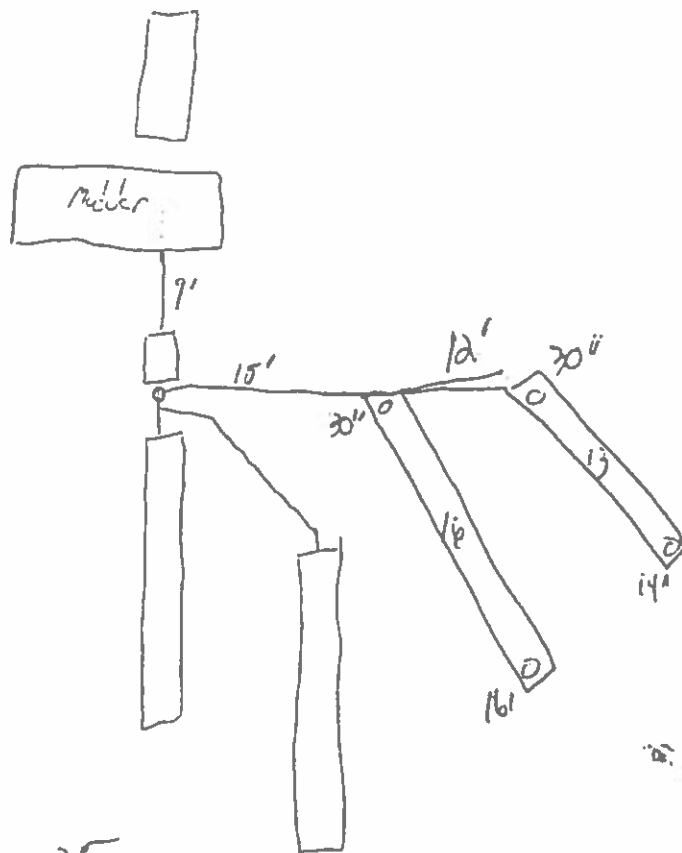
Septic Tank Capacity Required: 1250 (Gallons)      Soil Treatment Area Required: 286 (SQ. Feet)

The Health Officer shall assume no responsibility in case of failure or inadequacy of an Onsite Wastewater Treatment System, beyond consulting in good faith with the property owner or representative. Access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with the requirements of this Law (permit).

Installer inspection request line: Call (719) 575-8699 before 8:30 a.m. of the day that the inspection is requested  
Weekends & Holidays excluded.

This permit is issued in accordance with 25-10-106 Colorado Revised Statutes. The PERMIT EXPIRES upon completion/installation of the Onsite Wastewater Treatment System, or at the end of twelve (12) months from date of issue, whichever occurs first. If both a Building Permit and an Onsite Wastewater Treatment System Permit are issued for the same property and construction has not commenced prior to the expiration date of the Building Permit, the Onsite Wastewater Permit shall expire at the same time as the Building Permit. This permit is revocable if all stated requirements are not met. Onsite Wastewater Treatment Systems to be installed by an El Paso County Licensed System Contractor or the property owner.

 8/28/13  
Authorized By: Environmental Health Specialist



335

29.  
Quick 4 Plus SDD  
11.55

El Paso County, CO



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Environmental Health Division

1675 W. Garden of the Gods Rd., Suite 2044  
 Colorado Springs, CO 80907  
 (719) 578-3199 phone  
 (719) 575-3188 fax  
 www.elpasocountyhealth.org

### APPLICATION FOR AN ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT

☐ NEW PERMIT ☒ MAJOR REPAIR PERMIT ☐ MINOR REPAIR PERMIT

Owner JOCELYN STREBIG Daytime Phone 683-8805  
 Contractor TRIPLE T EXC. Daytime Phone 749-2881  
 Property Address 15260 JONES RD. 14920  
 Owners Mailing Address SAME  
 Email Address tridetexcavating@yahoo.com Fax # 749-2881  
 Tax Schedule # 4322005004 Lot Size 4.75 ACRES  
 Site Located Inside City Limits ☐ Yes ☒ No Primary Contact ☐ Owner ☒ Contractor  
 Proposed Use: ☒ Single Family ☐ Multi-Family ☐ Commercial  
 Water Supply: ☒ Well ☐ Cistern ☐ Municipal Number of Bedrooms 3  
☐            ☐            ☒ triple T exc.

#### CURRENT FEES AS APPROVED BY THE EL PASO COUNTY BOARD OF HEALTH

New Permit: \$440.00 (EPCPH Charge) + \$147.00 (EPC Planning Dept. Surcharge) + \$23.00 (CDPHE Surcharge) = \$610.00

Major Repair Permit: \$494.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) = \$517.00

Minor Repair Permit: \$188.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) = \$211.00

- All Payments are due at the time of application submittal; by cash, check or major credit card (Visa / MC)
- This permit will expire one year from the date of issuance

I certify that the information provided on this application is in compliance with Section 8.3, Chapter 8 of the On-site Wastewater System (OWS) Regulations of the El Paso County Board of Health. I also authorize the assigned representative of El Paso County Public Health to enter onto this property in order to obtain information necessary for the issuance of a permit.

Applicants Signature: Vance SantDate: 8/26/13Site Insp. Date: 8/27/13Perc. Rate: 7Permit # DN0032005

E.H.S. Review Notes: \_\_\_\_\_

Date to: E.P.C. Development Services N/AFlood Plain and Enumerations N/A

Permit Requirements: \_\_\_\_\_

Min. Septic Tank Capacity 1290Min. Absorption Area 286E.H. Specialist Neil MayDate 8/28/13☒ Approved ☐ Denied

NM  
 AS