

Job No. 191208

December 5, 2022

Pawel Posorski
7655 Dawnview Cf
Colorado Springs, CO 80920

Re: Wastewater Study
Ivilo Heights
El Paso County, Colorado

Dear Mr.Posorski:

As requested, personnel of RMG – Rocky Mountain Group has performed a preliminary investigation and site reconnaissance at the above referenced address. It is our understanding the parcels included in this study are:

- EPC Schedule No. 5206000107: the parcel, addressed as 6225 Vessey Road, which consists of 6.02 acres and is zoned "RR-5" – *Residential Rural*.

It is our understanding that the property is to be subdivided into two lots of approximately 3.01 acres each. Each new lot is to be developed with a new single-family residence, well, and on-site wastewater treatment system (OWTS). Both lots are to be accessed from Vessey Road.

This letter is to provide information for the on-site wastewater report per the On-Site Wastewater Treatment Systems (OWTS) Regulations of the El Paso County Board of Health pursuant to Chapter 8.

The following are also excluded from the scope of this report including (but not limited to) foundation recommendations, site grading/surface drainage recommendations, subsurface drainage recommendations, geologic, natural and environmental hazards such as landslides, unstable slopes, seismicity, snow avalanches, water flooding, corrosive soils, erosion, radon, wild fire protection, hazardous waste and natural resources.

Previous Studies and Field Investigation

Reports of previous geotechnical engineering/geologic investigations for this site were not available for our review. However, RMG completed a Soils and Geology Study for the proposed Ivilo Heights subdivision, Job No. 191208, dated December 5, 2022.

The findings, conclusions and recommendations contained in the Soils and Geology Study were considered during the preparation of this report.

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on October 3, 2022 and observed the test pit excavation on October 4, 2022. The purpose of the reconnaissance visit was to evaluate the site surface characteristics including landscape position, topography, vegetation, natural and cultural features, and current and historic land uses. Two test pits were performed on the site during our reconnaissance visit. A Test Pit Location Plan is presented in Figure 1.

The Black Forest fire burned the majority of trees on the southern and eastern portions of the site and around the previous residence. Deciduous trees remain near the northern and western portions of the site. Overall vegetation across the site primarily consists of native grasses, weeds, and other prairie-type vegetation. The drainage channel along the western boundary contains lush grasses and is devoid of trees.

The following conditions were observed with regard to the 6.02-acre parcel:

- A well currently **does** exist on the existing 6.02-acre site;
- No runoff or irrigation features anticipated to cause deleterious effects to treatment systems on the site were observed;
- No major waterways exist on the property. The entire site lies outside the designated floodway or floodplain;
- A minor drainageway exists near the western property boundary;
- Slopes greater than 20 percent **do not** exist on the site and,
- Significant man-made cuts **do not** exist on the site.

Treatment Areas

The United States Department of Agriculture (USDA) classified the soils as sandy loam. Limiting layers were encountered in both test pits at a depth of 5.5 and 6.5 feet due to the sandstone bedrock. The long term acceptance rates (LTAR) associated with the upper sand soils observed in the test pits is expected to be 1.0 (soil types R-0 and R-1) gallon per day per square foot. Signs of seasonal groundwater were not observed in the test pits.

Treatment areas at a minimum must achieve the following:

- The treatment areas must be 4 feet above groundwater or bedrock as defined by the Definitions 8.3.4 of the Regulations of the El Paso County Board of Health, Chapter 8, *OWTS Regulations*, effective July 7, 2018;
- Prior to construction of an OWTS, an OWTS design prepared per *the Regulations of the El Paso County Board of Health, Chapter 8, OWTS Regulations* will need to be completed. A scaled site plan and engineered design will also be required prior to obtaining a building permit;
- Comply with any physical setback requirements of Table 7-1 of the El Paso County Department of Health and Environment (EPCHDE);
- Treatment areas are to be located a minimum 100 feet from any well (existing or proposed), including those located on adjacent properties per Table 7-2 per the EPCHDE;
- Treatment areas must also be located a minimum 50 feet from any spring, lake, water course, irrigation ditch, stream or wetland, and 25 feet from dry gulches;

- Other setbacks include the treatment area to be located a minimum 10 feet from property lines, dry gulches, cut banks and fill areas (from the crest);
- The new lots shall be laid out to ensure that the proposed OWTS does not fall within any restricted areas, (e.g. utility easements, right of ways). Based on the test pit observations, the parcel has a minimum of two locations for the OWTS;
- It is not recommended that the existing septic system be utilized for new construction. The existing system was constructed in 1975. The average life span of a septic system is generally 20 to 30 years. It is unlikely the existing septic system will meet the current criteria for a Transfer of Title Inspection per 8.4 (O).6 per EPCHDE;
- If an existing system is to be removed, the resulting debris (e.g. tank, components, and/or contaminated soil) should be disposed of properly;
- New treatment areas are not to be located within the existing septic field areas unless the existing system has been properly disposed of.

The City-County Health Department, permit and sewage disposal inspection forms are included in Appendix A.

Contamination of surface and subsurface water resources should not occur if the treatment areas are evaluated and installed according to El Paso County Health Department and State Guidelines in conjunction with proper maintenance.

DOCUMENT REVIEW

RMG has reviewed the above referenced site plan, identified the soil conditions anticipated to be encountered during construction of the proposed OWTS for the Ivilo Heights subdivision which included a review of documented Natural Resource Conservation Service - NRCS data provided by websoilsurvey.nrcs.usda.gov. The Soil Survey Descriptions are presented below. A review of FEMA Map No. 08041C0315G, effective December 7, 2018 indicates that the proposed treatment areas are not located within an identified floodplain.

SOIL EVALUATION

Personnel of RMG performed a soil evaluation to include two 8-foot deep test pits, on October 4, 2022 (Test Pit TP-1 and TP-2), utilizing the visual and tactile method for the evaluation of the site soils. The test pits were excavated in areas that appeared most likely to be used for residential construction. The Test Pit Logs are presented in Figure 2. A Septic Suitability map is presented in Figure 3.

The soil conditions as indicated by the NRCS data are anticipated to consist of Elbeth sandy loam, 8 to 15 percent slopes. Properties of the complex include well drained soils, depth of the water table is anticipated to be greater than 80 inches, runoff is anticipated to be medium, frequency of flooding and ponding is none, and landforms include hills. A USDA Soil Survey Map and USDA Full Map Unit Descriptions are presented in Figures 4 and 5.

Groundwater was not encountered in the test pits. However, bedrock was encountered in both the test pits performed by RMG.

An OWTS is proposed for both lots within the Ivilo Heights subdivision and should conform to the recommendations of a future OWTS site evaluation, performed in accordance with the applicable health department codes prior to construction. This report may require additional test pits in the vicinity of the proposed treatment field. A minimum separation of 4 feet shall be maintained from groundwater and bedrock to the infiltrative surface.

Redoximorphic features indicating the fluctuation of groundwater or higher ground water levels were not observed in the test pits.

CONCLUSIONS

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems within the cited limitations. There are no foreseeable or stated construction related issues or land use changes proposed at this time. The new lots are suitable for an individual OWTS.

LIMITATIONS

The information provided in this report is based upon the subsurface conditions observed in the profile pit excavations and accepted engineering procedures. The subsurface conditions encountered in the excavation for the treatment area may vary from those encountered in the test pit excavations. Therefore, depth to limiting or restrictive conditions, bedrock, and groundwater may be different from the results reported in this letter.

An OWTS site evaluation will need to be performed in accordance with the applicable health department codes prior to construction.

I hope this provides the information you have requested. Should you have questions, please feel free to contact our office.

Cordially,

Reviewed by,

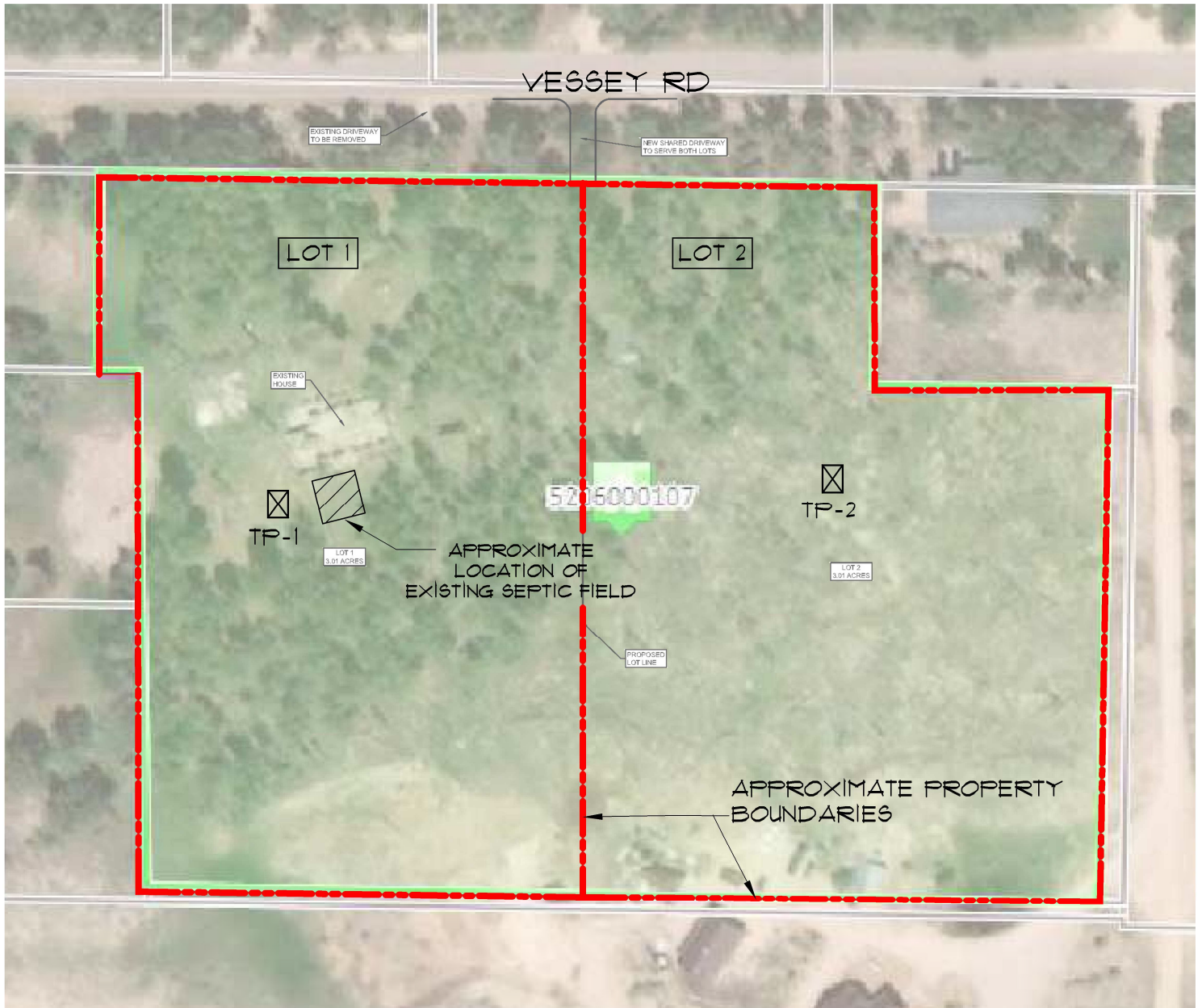
RMG – Rocky Mountain Group

RMG – Rocky Mountain Group



Kelli Zigler
Sr. Project Geologist

Tony Munger, P.E.
Sr. Geotechnical Project Manager



NOT TO SCALE



DENOTES APPROXIMATE LOCATION OF TEST PITS

Architecture
Structural
Geotechnical



Engineers / Architects

SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918

(719) 548-0600 ~ WWW.RMBENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

Materials Testing
Forensics
Civil / Planning

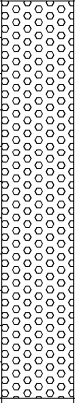
TEST PIT LOCATION MAP


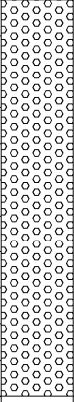
MLO HEIGHTS
VESSEY ROAD
EL PASO COUNTY, CO
PAWEL POSORSKI

JOB No. 191208

FIG No. 1

DATE 12-5-2022

TEST PIT TP-1			
DATE OBSERVED: 10/4/22			
SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 5.5 FT SANDY CLAY LOAM (STRONG)	2ft 4ft		4
	6ft 8ft		

TEST PIT TP-2			
DATE OBSERVED: 10/4/22			
SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 1 FT LOAMY SAND (SINGLE GRAIN)			1
1 - 6.5 FT SANDY CLAY (STRONG)	2ft 4ft		4
	6ft 8ft		

SOIL DESCRIPTIONS



LOAMY SAND



SANDY CLAY LOAM

TEST PIT LOGS

MILO HEIGHTS
VESSEY ROAD
EL PASO COUNTY, CO
PAWEL POSORSKI

JOB No. 191208

FIG No. 2

DATE 12-5-2022

SHEET 1 of 1

Architecture
Structural
Geotechnical

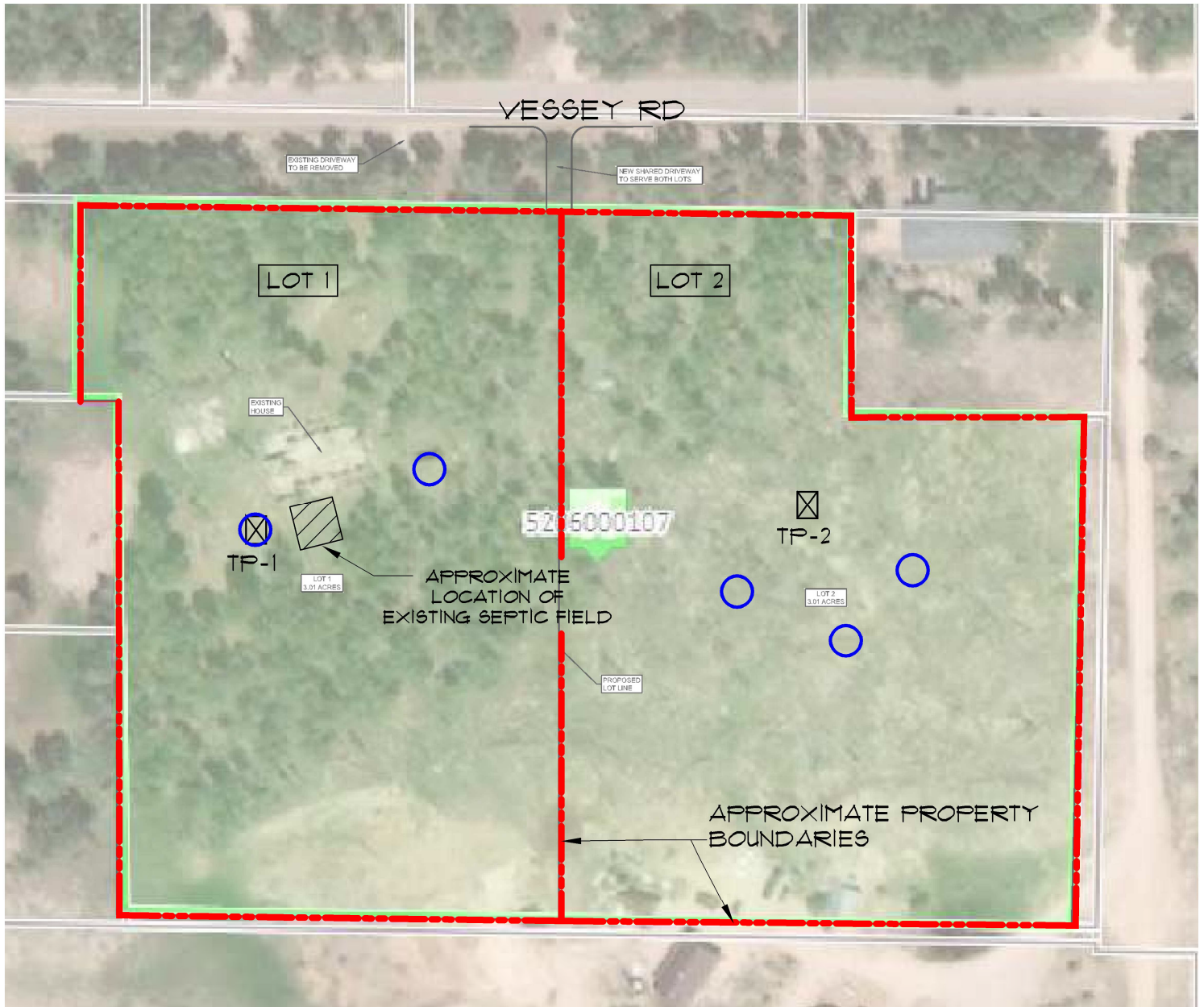


Engineers / Architects

SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
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SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

Materials Testing
Forensics
Civil / Planning



NOTE: The septic locations are for illustration only. If the El Paso County Health Department physical setback requirements are met for each lot, there are no restrictions on the placement of the individual OWTs



NOT TO SCALE



DENOTES PRIMARY AND ALTERNATE SEPTIC LOCATIONS

Architecture
Structural
Geotechnical



Engineers / Architects

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SEPTIC SUITABILITY MAP

MLO HEIGHTS
VESSEY ROAD
EL PASO COUNTY, CO
PAWEL POSORSKI

JOB No. 191208

FIG No. 3

DATE 12-5-2022



28 - Elbeth sandy loam, 8 to 15 percent slopes



NOT TO SCALE

Architecture
Structural
Geotechnical



Engineers / Architects

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COLORADO SPRINGS, CO 80918

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Materials Testing
Forensics
Civil / Planning

USDA SOIL SURVEY MAP

MLO HEIGHTS
VESSEY ROAD
EL PASO COUNTY, COLORADO
PAWEL POSORSKI

JOB No. 191208

FIG No. 4

DATE 12-5-2022

APPENDIX A

The City-County Health Department, permit and sewage disposal inspection

#52060-00-107

CITY-COUNTY HEALTH DEPARTMENT
COLORADO SPRINGS, COLORADO

Black Forest 6.4 acres/well post
4068
P File 2215

SEWAGE DISPOSAL INSPECTION FORM

APPROVAL: V.A. & F.H.A.
YES NO

DATE OF INSP. 3 Sep. '75
ENVIRONMENTALIST G. Harris

LOCATION (STREET NUMBER) 6225 Vessey Rd. OCCUPANT Glen Bert Jones

LEGAL DESCRIPTION _____

CONTRACTOR (occupant) NO. OF BEDROOMS 5 bdrms.

TYPE OF CONSTRUCTION Brick House

SYSTEM INSTALLED BY (occupant) & Jack Ford

PRIMARY TREATMENT

COMMERCIAL MFG. Pre-cast S.T. SIZE 1500 gals.

NON. COMMERCIAL _____ SIZE _____

TYPE OF MATERIAL _____ NO. COMPARTMENTS two

WIDTH _____ LENGTH _____ GALLONS _____ DEPTH (TOTAL) _____ LIQ. CAP. _____

SECONDARY TREATMENT

DISPOSAL FIELD Leach Lines SOIL SW PERC. TEST 5 min./in minimum used

TOTAL LENGTH OF TILE LINES 210' NUMBER OF LINES 4 DISTANCE BETWEEN LINES 14'+

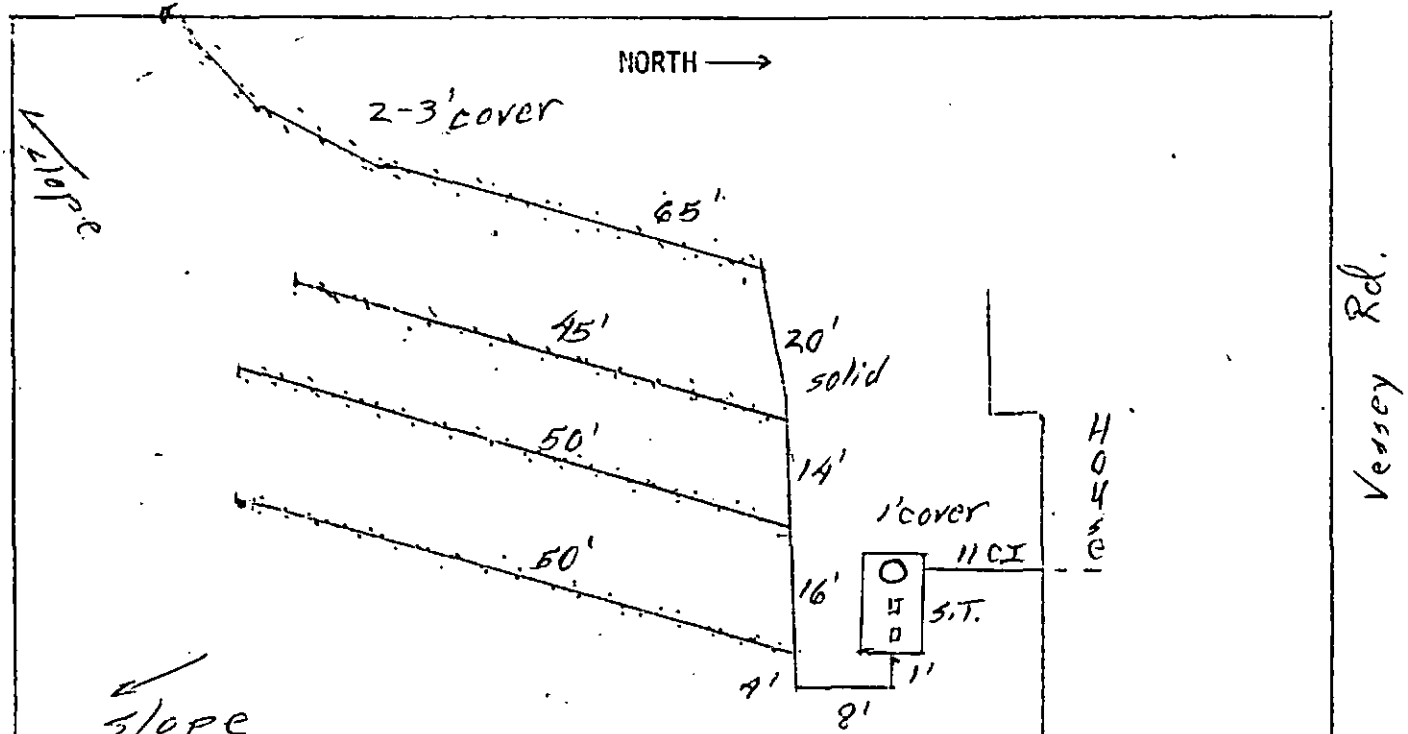
ABSORB. AREA 630' TYPE OF TILE plastic TRENCH DEPTH 3-4' TRENCH WIDTH 3' GRADE < 4"/100'

TYPE FILTER MATERIAL 30 lens, mixed DEPTH 12" UNDER TILE 6" OVER TILE 2"

LEACHING PITS (NO.) _____ SOIL _____ PERC. TEST _____ LINING MATERIAL _____

CAPACITY SQ. FT. _____ DIA. _____ WORKING DEPTH _____

DISPOSAL BED LENGTH _____ WIDTH _____ DEPTH _____ TOTAL SQ. FT. _____



Acres _____
Water Supply _____

EL PASO COUNTY . CITY-COUNTY HEALTH DEPARTMENT
501 North Foote Avenue . Colorado Springs, Colorado - 471-3700

74 83

PERMIT

Receipt No. _____

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

Issued To Glen Bert Jones 473-1165 Date January 14, 1975

Address of Property 5225 Vassey Road, Black Forest
(Permit valid at this address only)

Builder - Contractor - Owner Address Same Phone 473-1165 prev. home

473-1099

Sewage-Disposal System work to be performed by Same Phone _____

This Permit is issued in accordance with Regulation XII and Article 2 of Chapter 66, Colorado Revised Statutes 1963, as amended by the addition of a new Section 66-2-16. (H.B. 1205, 7-1-65). PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of six (6) months from date of issue - whichever occurs first - (unless work is in progress).

- This Permit does not denote approval of zoning and acreage requirements. -

Permit Fee NO Fee Extended to XXXX
June 14, 1975 Sept 14, 1975 \$50.00
DAB

Charles E. Harding, M.D., M.P.H.
Director, City-County Health Department
120401
Environmentalist

NOTE: LEAVE ENTIRE SEWAGE-DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION.

24-HOUR ADVANCE NOTICE REQUIRED

Septic tank 1500 gals. Field 313 Feet of trench _____ inches wide
OR. Field 209 Feet of trench 3' inches wide
Seepage bed _____ ft. long _____ ft. wide. Seepage pit _____ sq. ft. _____ diam. _____ w/d

The Health Officer 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 times for the purpose of making such inspections as are necessary to determine compliance with requirements of this regulation.



TESTING AND ENGINEERING SERVICES, INC.

3049 DELTA DRIVE

COLORADO SPRINGS, COLORADO 80910

(303) 392-6056

#5206000107

09/03/1975

6225 VESSEY RD

SOIL PERCOLATION DATA SHEET

Date Accepted: January 12, 1975 Date Test Performed: January 12, 1975

Client: Mr. Charles Roberts *Previous owner before house completed* Address: 312 Enchanted Circle West

City: Colorado Springs, State: Colorado Zip Code: 80917

Telephone: 597-6592 Observer: Milt G. Schreiber

Location of Test: 1/2 mile West on Vessey Road - Black Forest

PERCOLATION RATE MEASUREMENT RESULTS

TRIAL NO.	DEPTH START (Inches)	TIME START	DEPTH FINISH (Inches)	TIME FINISH	TOTAL DROP (Inches)	TOTAL DROP TIME	MINUTES / 1" DROP
	13"	10:50	20"	11:00	7"	10 min.	0.7

*S.T. 1500 gal.
625' = 313' 8/29"
02209' 8/36"*

BORING AND SOIL CLASSIFICATION RESULTS

TRIAL NO.	DEPTH	SOIL CLASSIFICATION GROUP SYMBOL (S)	SOIL DESCRIPTION	DEPTH TO GROUND WATER
1	0-10'	SW	Well graded sand.	Unknown

Depth to Impervious formation: Unknown Saturation time: 30 minutes

Distance from nearest well: Unknown Depth of nearest well: Unknown

MINIMUM SEWAGE-DISPOSAL SYSTEM REQUIREMENTS

SUBSURFACE ABSORPTION FIELD ¹		SEEPAGE PITS ²	
MINIMUM REQUIRED AREA:		MINIMUM WALL AREA REQUIRED:	
125	SQ. FT./BEDROOM	N/A	SQ. FT./BEDROOM

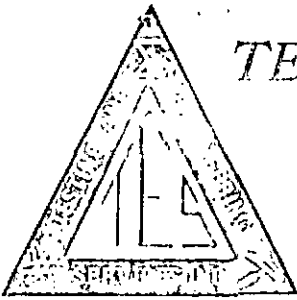
Request visual inspection of open trenches. Please notify.

accepted as seen Aug. '75

1. FHA Minimum Property Standards: 1103 - 7
Public Health Service Publication No. 526

2. FHA Minimum Property Standards: 1103 - 8

Keith Martin, P.E.



TESTING AND ENGINEERING SERVICES, INC.

3049 DELTA DRIVE

COLORADO SPRINGS, COLORADO 80910

(303) 392-6056

SOIL PERCOLATION DATA SHEET

Date Accepted: January 12, 1973 Date Test Performed: January 12, 1973

Client: Mr. Charles Roberts Address: 312 Enchanted Circle West

City: Colorado Springs, State: Colorado Zip Code: 80917

Telephone: 597-6592 Observer: Milt G. Schreiber

Location of Test: 1/2 Mile West on Vessey Road-Black Forest

PERCOLATION RATE MEASUREMENT RESULTS

TRIAL NO.	DEPTH START (Inches)	TIME START	DEPTH FINISH (Inches)	TIME FINISH	TOTAL DROP (Inches)	TOTAL DROP TIME	MINUTES/DROP
1	13"	10:50	20"	11:00	7"	10 Min	0.7

BORING AND SOIL CLASSIFICATION RESULTS

TRIAL NO.	DEPTH	SOIL CLASSIFICATION GROUP & MOUL(S)	SOIL DESCRIPTION	DEPTH TO GROUND WATER
1	0-10'	SW	Well graded sand	UNK

Depth to impervious formation: UNK Saturation time: 30 Min.

Distance from nearest well: UNK Depth of nearest well: UNK

MINIMUM SEWAGE-DISPOSAL SYSTEM REQUIREMENTS

SUBSURFACE ABSORPTION FIELD ¹	SEWAGE PITS ²
MINIMUM REQUIRED AREA:	MINIMUM WALL AREA REQUIRED
85 sq. ft./BEDROOM	75 sq. ft./BEDROOM

not accepted for installation 3rd Sep '75

1. FHA Minimum Property Standards: 1103-7 Public Health Service Publication No. 526

2. FHA Minimum Property Standards: 1103-B

Keith Martin
Keith Martin, P.E.

Across _____

EL PASO COUNTY . CITY-COUNTY HEALTH DEPARTMENT
501 North Foote Avenue . Colorado Springs, Colorado - 471-3700

NO. 0231P
Receipt No. 4930

Water Supply _____

PERMIT

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

Issued To Mr. Charles Roberto Date January 13, 1973

Address of Property 6225 Vosey Road, Black 1/4 mile west on Vosey Road, Black 1/4 mile
(Permit valid at this address only)

Builder - Contractor - Owner Address Same as above Phone _____

Sewage-Disposal System work to be performed by Al Gieger Phone _____

This Permit is issued in accordance with Regulation XII and Article 2 of Chapter 66, Colorado Revised Statutes 1963, as amended by the addition of a new Section 66-2-16, (H.B. 1205, 7-1-65). PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of six (6) months from date of issue - whichever occurs first - (unless work is in progress).

- This Permit does not denote approval of zoning and acreage requirements. -

Permit Fee \$25.00 Hal J. Dawlott, M.D., M.P.H.
Date of Expiration July 18, 1973 Director, City-County Health Department
Environmentalist

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

Septic tank 1500 gals. Field 213 Feet of trench 36 inches wide
OR- Field 142 Feet of trench 36 inches wide
Seepage bed _____ ft. long _____ ft. wide. Seepage pit _____ sq. ft. _____ diam. _____ w/d

The Health Officer 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 times for the purpose of making such inspections as are necessary to determine compliance with requirements of this regulation.