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June 3, 2020

Project No. 544-20190
20-06-300

1.0 DESCRIPTION OF SITE AND PROPOSAL

1.1 Pioneertown Motel, LLC
P.O. Box 45
Pioneertown, California 92268

Project: Proposed Expansion Project
Pioneertown Motel
5240 Curtis Road
Pioneertown Area
San Bernardino, California

Subject: Percolation Testing for Onsite Sewage Disposal Feasibility

1.2. Location:

a) The project site is located at 5240 Curtis Road in the Pioneertown area of San Bernardino County, California. The location of the site and percolation test hole locations are indicated on the attached Test Hole Location Plan (Figure 1).

1.3 Proposed Development:

a) It is our understanding that the project will consist of constructing several new buildings on the existing Pioneertown Motel property.
b) It is proposed to install an on-site sewage disposal systems consisting of a septic tank and seepage pits to serve the proposed motel expansion project.

1.4 Description of Site and Surroundings:

a) The site is fairly level throughout with gentle surface gradients descending to the north at approximately ten horizontal to one vertical (10H:1V) and less. The site is at an approximate elevation of 4,030 feet above mean sea level (MSL).
b) There is a minor drainage swale to the north of and parallel to the motel property but no significant seasonal water courses were observed.
c) The southern portion of the property is currently occupied by the existing Pioneertown Motel facility. It is our understanding that the existing motel building utilize an on-site sewage disposal system consisting of a septic tank and seepage pits.
d) It is assumed that the existing residences and businesses within the vicinity of the project site are utilizing individual on-site sewage disposal systems consisting of septic tanks and leach lines or seepage pits.

e) There are no known existing wells on the site. Based on our review of CDWR (2016), the closest well is located approximately 0.5 miles southwest of the site.
f) There are no rock outcrops on the site. Bedrock was not encountered within our exploratory bores that extended to a depth of approximately 50 feet below existing.
g) Groundwater was not encountered within our exploratory bores. Information regarding the approximate depth to groundwater provided by the California Department of Water Resources (CDWR, 2020) online database indicates that the depth to groundwater is in excess of 50 feet below the existing ground surface in the vicinity of the site.
h) Site geologic features are generally favorable with respect to infiltration and are not expected to negatively affect sewage disposal in the area of the proposed seepage pits.
i) It appears that there will be sufficient area for the new sewage disposal system and the required expansion areas on the subject property.

2.0 EQUIPMENT

a) The test holes and exploratory bores were excavated using a truck mounted hollow stem auger rig (Mobile B-61) equipped with hollow-stem augers.
b) Tools used during testing consisted of an electronic water measuring device, a watch, and a water truck.

3.0 METHODOLOGY AND PROCEDURES

3.1 Locations were determined by sighting and pacing from the existing roadways and other prominent features.

3.2 The test results and soil conditions encountered within our exploratory bores indicated "Favorable" conditions. Percolation test rates were consistent with the sandy alluvial soil conditions observed. The surface gradients within the proposed disposal field area are less than 20 percent.

3.3 The soil encountered in our exploratory bores consisted primarily of fine to coarse grained clayey sand (SC).

3.4 Test procedures for seepage pits:

Seepage Pits:

a) Four (4) exploratory bore/test holes were excavated on the project site. The test holes were excavated to approximate depths of 20, 25 & 30 feet below existing grade.

b) The tests bores were cased with perforated pipe and gravel packed to prevent sedimentation during testing.

c) The percolation test hole were presoaked and based upon the rapid percolation rate, percolation testing was performed on May 8, 2020. Percolation testing was performed by filling the test holes with water and recording the drop in the water surface with time. Testing was performed in accordance with San Bernardino County DEHS procedures.

3.5 Seepage Pit Test Results

a) The following is a table of the results of the testing performed on the subject site.

Test Hole No.	Q gal/sq. ft/day
P-1	8.36
P-2	12.26
P-3	7.81
P-4	7.7

A gravel pack correction factor of 0.55 was applied to the percolation rates.

4.0 DISCUSSION OF RESULTS

4.1 Testing indicates percolation rates ranging from 8.5 to 22.3 gallons per square foot per day as determined by San Bernardino County procedures.

4.2 Measurements were considered accurate and the consistency of the individual test results indicates accuracy. The rapid percolation rates are consistent with that expected for the sandy soil encountered throughout the depth of our bores.

5.0 DESIGN

5.1 Criteria:

a) Seepage pits may be designed using 4.0 gallons per square foot of seepage pit area per day that is the maximum allowable application rate in accordance with San Bernardino County guidelines.

6.0 SEE ATTACHED PLAN

7.0 GENERAL DISCUSSION AND CONCLUSIONS

7.1 Based on the data presented in the report and the plans supplied by the client, it is the judgment of this engineer that seepage pits may be used for the new on-site sewage disposal systems on this property.

7.2 Based on the data presented in the report and the tested information accumulated, it is the judgment of the engineer that the groundwater table should not encroach with the allowable limit set forth by County and State requirements, when the recommendations of this report are followed. Also, there will be sufficient area for future expansion.

7.3 A minimum of 150 feet shall be maintained between water supply wells and seepage pits. A minimum of 8 feet shall be maintained between buildings or structures. A minimum of 8 feet shall be maintained between seepage pits and private property lines. This also includes seepage pit expansion area. A maximum seepage pit depth of 30 feet is recommended.

8.0 GENERAL

The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between bore locations and extrapolation of the conditions throughout the sewage disposal system area. Should conditions encountered during grading (or excavation) appear different than that indicated in this report, this office should be notified.

This report is considered applicable for use by the client for the specific site and project described herein. The use of this report by other parties or for other projects is not authorized. The recommendations of this report are contingent upon monitoring of the grading operations by a representative of Sladden Engineering. All recommendations are considered tentative pending our review of the construction operations and additional tests, if indicated. If others are employed to perform any soil tests, this office should be notified prior to such tests in order to coordinate any required site visits by our representative and to assure indemnification of Sladden Engineering.

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this report, please contact the undersigned.

Respectfully submitted,
SLADDEN ENGINEERING

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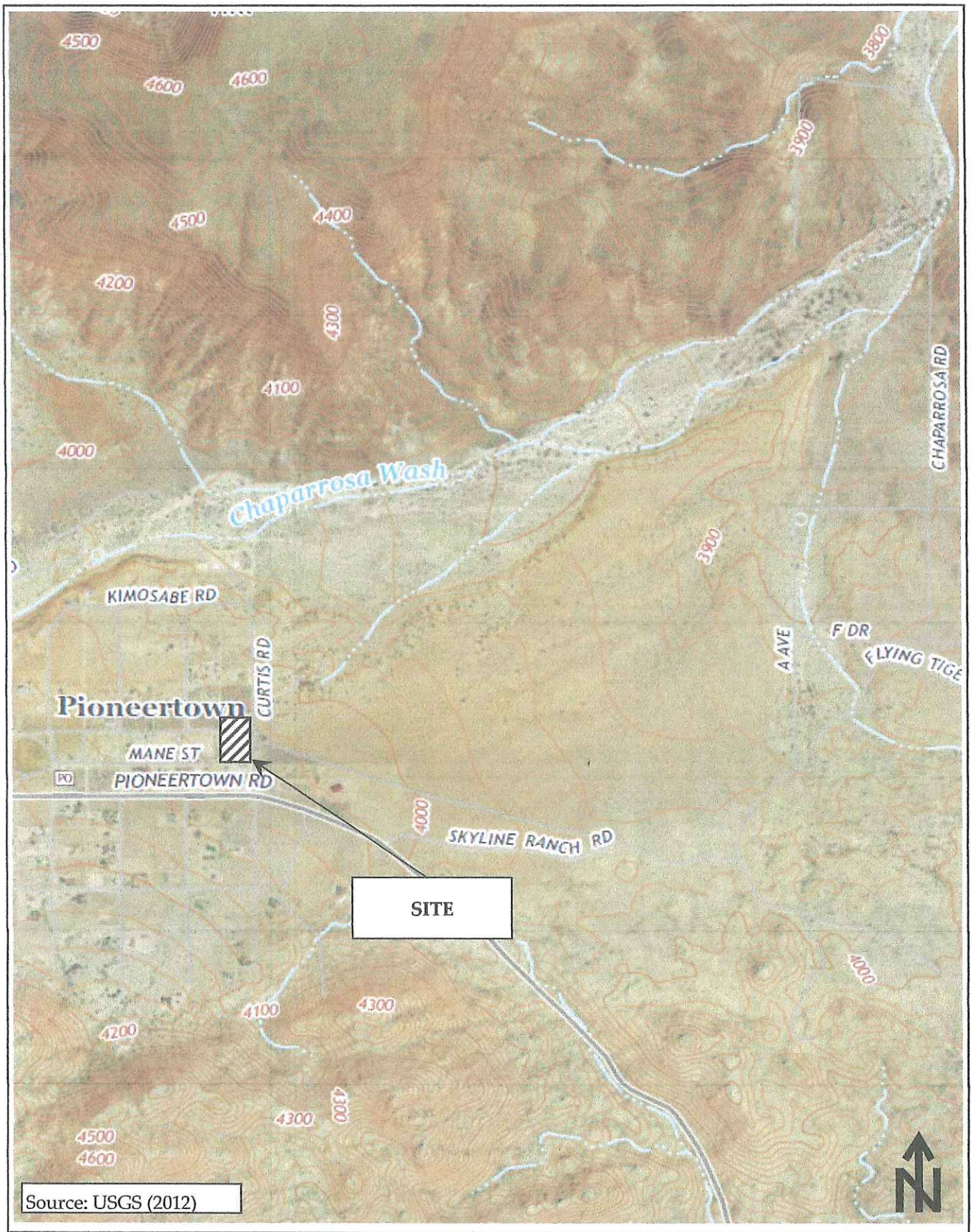
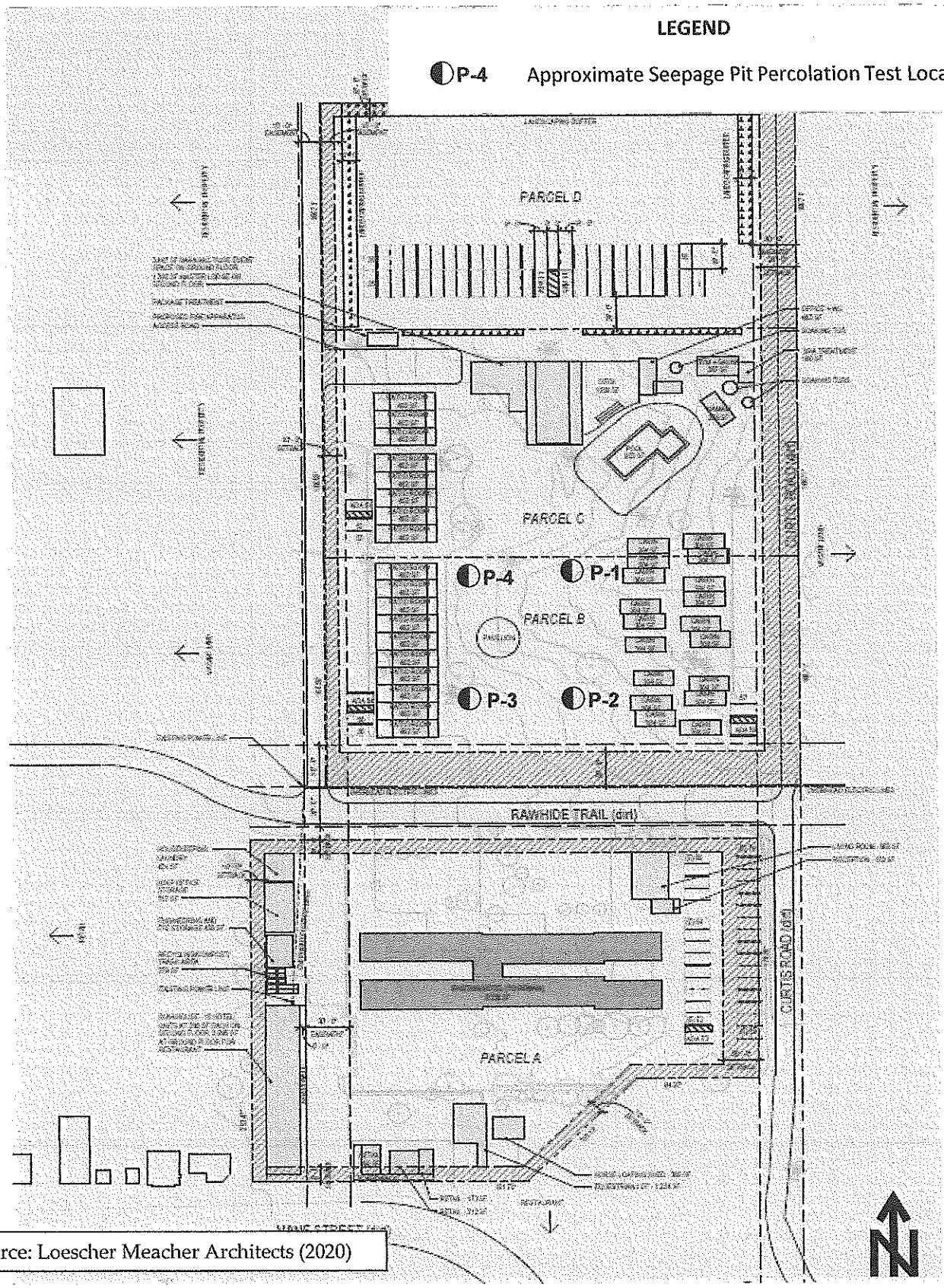


Sladden Engineering	SITE LOCATION MAP		FIGURE 1
	Project Number:	544-20190	
	Report Number:	20-06-300	
	Date:	June 3, 2020	



Source: Loescher Meacher Architects (2020)

Sladden Engineering	TEST LOCATION PLAN	FIGURE 2
	Project Number: 544-20190	
	Report Number: 20-06-300	
	Date: June 3, 2020	

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BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	5/7/2020
Elevation:	4030 Ft (MSL)	Boring No:	P-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); dark yellowish brown, slightly moist, fine to course grained with gravel (Fill/Disturbed).
							4		
							6		
							8		
							10		
							12		
							14		
							16		Clayey Sand (SC); dark yellowish brown, slightly moist, fine to course grained with gravel (Qo).
							18		
							20		
							22		
							24		
							26		
							28		
							30		Terminated at ~ 30.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered. Borehole Cased for Percolation Testing.
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PIONEERTOWN MOTEL EXPANSION
5240 CURTIS ROAD, PIONEERTOWN AREA

Project No:	544-20190	Page	1
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SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	5/7/2020
Elevation:	4030 Ft (MSL)	Boring No:	P-2

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); dark yellowish brown, slightly moist, fine to course grained with gravel (Fill/Disturbed).
							4		
							6		
							8		
							10		
							12		Clayey Sand (SC); dark yellowish brown, slightly moist, fine to course grained with gravel (Qo).
							14		
							16		
							18		
							20		Terminated at ~ 20.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered. Borehole Cased for Percolation Testing.
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PIONEERTOWN MOTEL EXPANSION
5240 CURTIS ROAD, PIONEERTOWN AREA

Project No:	544-20190	Page	2
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SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	5/7/2020
Elevation:	4030 Ft (MSL)	Boring No:	P-3

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
							0–2		Silty Sand (SM); dark yellowish brown, slightly moist, fine to course grained with gravel (Fill/Disturbed).
							2–24		Clayey Sand (SC); dark yellowish brown, slightly moist, fine to course grained with gravel (Qo).
							24–50		Terminated at ~ 25.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered. Borehole Cased for Percolation Testing.

Completion Notes:

PIONEERTOWN MOTEL EXPANSION
5240 CURTIS ROAD, PIONEERTOWN AREA

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SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	5/7/2020
Elevation:	4030 Ft (MSL)	Boring No:	P-4

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); dark yellowish brown, slightly moist, fine to course grained with gravel (Fill/Disturbed).
							4		
							6		
							8		
							10		Clayey Sand (SC); dark yellowish brown, slightly moist, fine to course grained with gravel (Qo).
							12		
							14		
							16		
							18		
							20		Terminated at ~ 20.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered. Borehole Cased for Percolation Testing.
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PIONEERTOWN MOTEL EXPANSION
5240 CURTIS ROAD, PIONEERTOWN AREA

Project No: 544-20190
Report No: 20-06-300

SEEPAGE PIT PERCOLATION DATA SHEET

Project: Pioneertown Motel
Test Hole: P-1
Depth of Test Hole: 30.0 feet
Check for Sandy Soil Criteria Tested by: Robert F.
Actual Percolation Tested by: Robert F.

Job No: 544-20190
Date Excavated: 5/7/2020
Soil Classification: SC
Date: 5/8/2020
Date:

Reading Number	Time of Reading	Time Interval Minutes	Total Depth of Hole (ft)	Initial Water Level (ft)	Final Water Level (ft)	Difference Water Level (ft)
A	8:00 8:30	30	30.0	30.0	7.1	22.9
B	8:30 9:00	30	30.0	30.0	7.1	22.9
1.	9:00 9:30	30	30.0	30.0	20.4	9.6
2.	9:30 10:00	30	30.0	30.0	23.8	6.2
3.	10:00 10:30	30	30.0	30.0	25.2	4.8
4.	10:30 11:00	30	30.0	30.0	26.1	3.9
5.	11:00 11:30	30	30.0	30.0	26.3	3.7
6.	11:30 12:00	30	30.0	30.0	26.3	3.7
7.	12:00 12:30	30	30.0	26.5	22.9	3.6
8.	12:30 1:00	30	30.0	26.0	22.6	3.4
9.						
10.						
11.						
12.						

SEEPAGE PIT PERCOLATION DATA SHEET

Project: Pioneertown Motel
Test Hole: P-2
Depth of Test Hole: 20.0 feet
Check for Sandy Soil Criteria Tested by: Angel F.
Actual Percolation Tested by: Angel F.

Job No: 544-20190
Date Excavated: 5/7/2020
Soil Classification: SC
Date: 5/8/2020
Date:

Reading Number	Time of Reading	Time Interval Minutes	Total Depth of Hole (ft)	Initial Water Level (ft)	Final Water Level (ft)	Difference Water Level (ft)
A	8:00 8:30	30	20.0	20.0	9.7	10.3
B	8:30 9:00	30	20.0	20.0	14.6	5.4
1.	9:00 9:30	30	20.0	20.0	16.9	3.1
2.	9:30 10:00	30	20.0	20.0	16.9	3.1
3.	10:00 10:30	30	20.0	20.0	17.2	2.8
4.	10:30 11:00	30	20.0	20.0	17.0	3.0
5.	11:00 11:30	30	20.0	20.0	17.1	2.9
6.	11:30 12:00	30	20.0	20.0	17.2	2.8
7.	12:00 12:30	30	20.0	16.2	13.7	2.5
8.	12:30 1:00	30	20.0	16.3	13.7	2.6
9.						
10.						
11.						
12.						

SEEPAGE PIT PERCOLATION DATA SHEET

Project: Pioneertown Motel
Test Hole: P-3
Depth of Test Hole: 25.0 feet
Check for Sandy Soil Criteria Tested by: Angel F.
Actual Percolation Tested by: Angel F.

Job No: 544-20190
Date Excavated: 5/7/2020
Soil Classification: SC
Date: 5/8/2020
Date:

Reading Number	Time of Reading	Time Interval Minutes	Total Depth of Hole (ft)	Initial Water Level (ft)	Final Water Level (ft)	Difference Water Level (ft)
A	8:05 8:35	30	25.0	25.0	15.6	9.4
B	8:35 9:05	30	25.0	25.0	19.1	5.9
1.	9:05 9:35	30	25.0	25.0	21.9	3.1
2.	9:35 10:05	30	25.0	25.0	22.0	3.0
3.	10:05 10:35	30	25.0	25.0	22.1	2.9
4.	10:35 11:05	30	25.0	25.0	22.1	2.9
5.	11:05 11:35	30	25.0	25.0	22.0	3.0
6.	11:35 12:05	30	25.0	25.0	22.1	2.9
7.	12:05 12:35	30	25.0	21.0	18.4	2.6
8.	12:35 1:05	30	25.0	21.2	18.5	2.7
9.						
10.						
11.						
12.						

SEEPAGE PIT PERCOLATION DATA SHEET

Project: Pioneertown Motel
Test Hole: P-4
Depth of Test Hole: 20.0 feet
Check for Sandy Soil Criteria Tested by: Robert F.
Actual Percolation Tested by: Robert F.

Job No: 544-20190
Date Excavated: 5/7/2020
Soil Classification: SC
Date: 5/8/2020
Date:

Reading Number	Time of Reading	Time Interval Minutes	Total Depth of Hole (ft)	Initial Water Level (ft)	Final Water Level (ft)	Difference Water Level (ft)
A	8:05 8:35	30	20.0	20.0	15.6	13.7
B	8:35 9:05	30	20.0	20.0	19.1	13.0
1.	9:05 9:35	30	20.0	20.0	21.9	3.6
2.	9:35 10:05	30	20.0	20.0	22.0	2.7
3.	10:05 10:35	30	20.0	20.0	22.1	2.3
4.	10:35 11:05	30	20.0	20.0	22.1	2.0
5.	11:05 11:35	30	20.0	20.0	22.0	2.1
6.	11:35 12:05	30	20.0	20.0	22.1	2.1
7.	12:05 12:35	30	20.0	16.1	14.2	1.9
8.	12:35 1:05	30	20.0	16.3	14.3	2.0
9.						
10.						
11.						
12.						

Seepage Pit Application Rate Calculator

Job No. 544-20190 Job Name: Pioneertown Motel Report No. 20-06-300

Test Hole: P-1 GPC N/A Final Rate 15.2 gal./sq. ft./day

Reading No.	Db (ft) Hole Depth	Di (ft) Depth	Df (ft) Depth	F (ft) Drop	Wet Depth Lavg (ft)	Time T (hr)	D -Hole Dia. (ft)	Q gal./sq. ft./day	Pit mpi
A	30	0	7.1	7.1	26.45	0.50	0.75	3.6	49.7
B	30	0	7.1	7.1	26.45	0.50	0.75	3.6	49.7
1	30	0	20.4	20.4	19.8	0.50	0.75	13.9	12.9
2	30	0	23.8	23.8	18.1	0.50	0.75	17.8	10.1
3	30	0	25.2	25.2	17.4	0.50	0.75	19.6	9.2
4	30	0	26.1	26.1	16.95	0.50	0.75	20.8	8.7
5	30	0	26.3	26.3	16.85	0.50	0.75	21.1	8.5
6	30	0	26.3	26.3	16.85	0.50	0.75	21.1	8.5
7	30	4	22.9	18.9	16.55	0.50	0.75	15.4	11.7
8	30	4	22.6	18.6	16.7	0.50	0.75	15.0	12.0
9									
10									
11									
12									
13									
14									

Seepage Pit Application Rate Calculator

Job No. 544-20190 Job Name: Pioneertown Motel Report No. 20-06-300

Test Hole: P-2 GPC N/A Final Rate 22.3 gal./sq. ft./day

Reading No.	Db (ft) Hole Depth	Di (ft) Depth	Df (ft) Depth	F (ft) Drop	Wet Depth Lavg (ft)	Time T (hr)	D -Hole Dia. (ft)	Q gal./sq. ft./day	Pit mpi
A	20	0	15.6	15.6	12.2	0.50	0.75	17.3	10.4
B	20	0	19.1	19.1	10.45	0.50	0.75	24.7	7.3
1	20	0	21.9	21.9	9.05	0.50	0.75	32.7	5.5
2	20	0	22	22	9	0.50	0.75	33.0	5.5
3	20	0	22.1	22.1	8.95	0.50	0.75	33.3	5.4
4	20	0	22.1	22.1	8.95	0.50	0.75	33.3	5.4
5	20	0	22	22	9	0.50	0.75	33.0	5.5
6	20	0	22.1	22.1	8.95	0.50	0.75	33.3	5.4
7	20	4	18.4	14.4	8.8	0.50	0.75	22.1	8.1
8	20	4	18.5	14.5	8.75	0.50	0.75	22.4	8.0
9									
10									
11									
12									
13									
14									

Seepage Pit Application Rate Calculator

Job No. 544-20190 Job Name: Pioneertown Motel Report No. 20-06-300

Test Hole: P-3 GPC N/A Final Rate 14.2 gal./sq. ft./day

Reading No.	Db (ft) Hole Depth	Di (ft) Depth	Df (ft) Depth	F (ft) Drop	Wet Depth Lavg (ft)	Time T (hr)	D -Hole Dia. (ft)	Q gal./sq. ft./day	Pit mpi
A	25	0	15.6	15.6	17.2	0.50	0.75	12.2	14.7
B	25	0	19.1	19.1	15.45	0.50	0.75	16.7	10.8
1	25	0	21.9	21.9	14.05	0.50	0.75	21.0	8.6
2	25	0	22	22	14	0.50	0.75	21.2	8.5
3	25	0	22.1	22.1	13.95	0.50	0.75	21.4	8.4
4	25	0	22.1	22.1	13.95	0.50	0.75	21.4	8.4
5	25	0	22	22	14	0.50	0.75	21.2	8.5
6	25	0	22.1	22.1	13.95	0.50	0.75	21.4	8.4
7	25	4	18.4	14.4	13.8	0.50	0.75	14.1	12.8
8	25	4	18.5	14.5	13.75	0.50	0.75	14.2	12.6
9									
10									
11									
12									
13									
14									

Seepage Pit Application Rate Calculator

Job No. 544-20190 Job Name: Pioneertown Motel Report No. 20-06-300

Test Hole: P-4 GPC 12.7 Final Rate 8.5 gal./sq. ft./day

Reading No.	Db (ft) Hole Depth	Di (ft) Depth	Df (ft) Depth	F (ft) Drop	Wet Depth Lavg (ft)	Time T (hr)	D -Hole Dia. (ft)	Q gal./sq. ft./day	Pit mpi
A	20	0	15.6	15.6	12.2	0.50	0.75	17.3	10.4
B	20	0	19.1	19.1	10.45	0.50	0.75	24.7	7.3
1	20	0	21.9	21.9	9.05	0.50	0.75	32.7	5.5
2	20	0	22	22	9	0.50	0.75	33.0	5.5
3	20	0	22.1	22.1	8.95	0.50	0.75	33.3	5.4
4	20	0	22.1	22.1	8.95	0.50	0.75	33.3	5.4
5	20	0	22	22	9	0.50	0.75	33.0	5.5
6	20	0	22.1	22.1	8.95	0.50	0.75	33.3	5.4
7	20	4	14.2	10.2	10.9	0.50	0.75	12.6	14.2
8	20	4	14.3	10.3	10.85	0.50	0.75	12.8	14.0
9									
10									
11									
12									
13									
14									

Db = total depth of test hole
Di = initial depth of water from ground surface
Df = final depth of water from ground surface
F = calculated value = Df - Di
Lavg = calculated value = Db - (Di + Df)/2
T = time in hour(s) between readings
D = hole diameter in feet
Final Rate = average of last 3 readings X GPC
GPC = Gravel Pack Correction Factor