

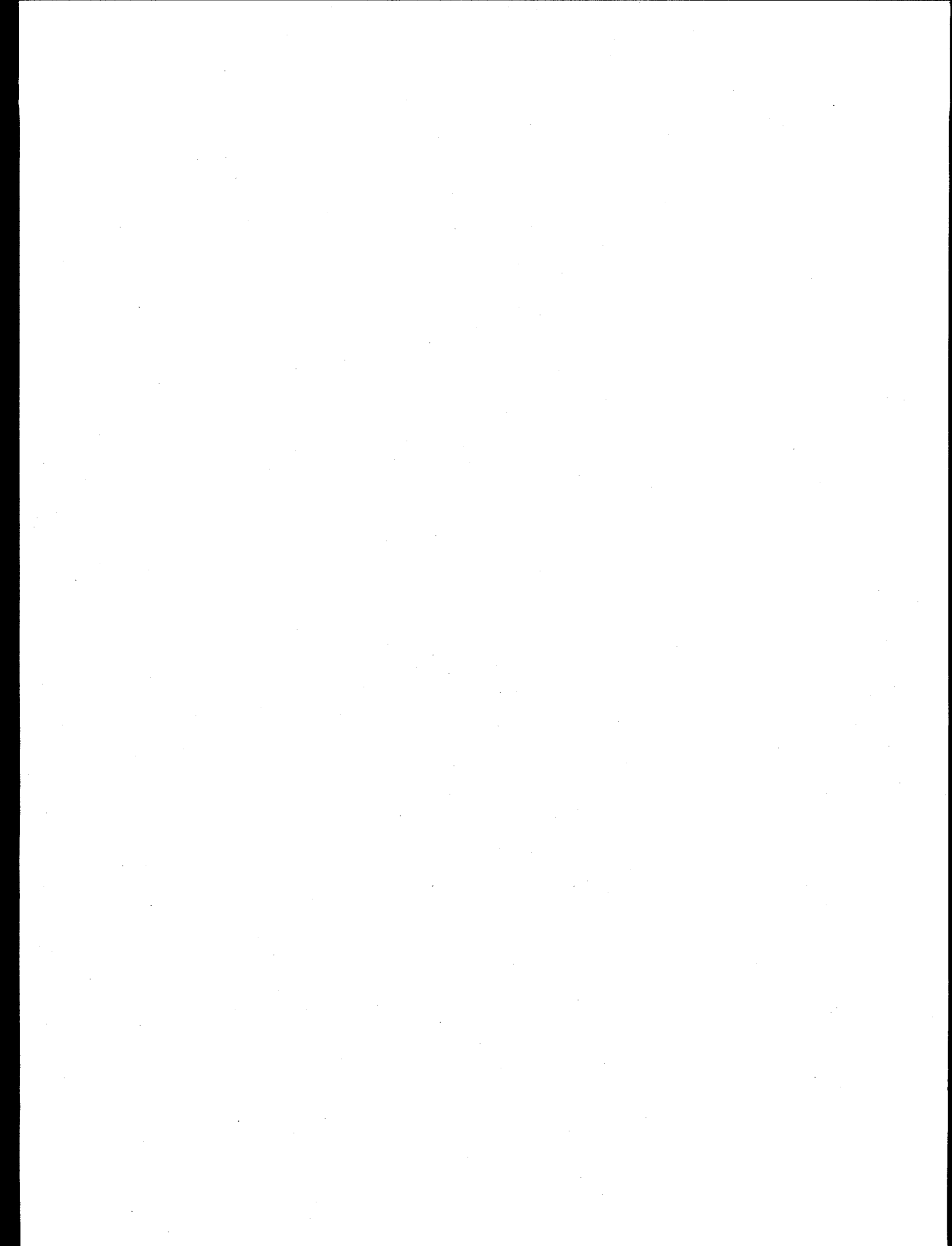
Particle Size Distribution Data From Existing Boreholes at the Immobilized Low-Activity Waste Site

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Summary

The U.S. Department of Energy's (DOE) Hanford Site has the most diverse and largest amount of radioactive tank waste in the United States. High-level radioactive waste (HLW) has been stored in large underground tanks since 1944. Vitrification and onsite disposal of the low-activity waste (LAW) fraction are embodied in the strategy described in the Tri-Party Agreement (Ecology et al. 1998). The low-activity waste will be disposed of in the Immobilized Low-Activity Waste site (ILAW), which will be located in 200 East Area.

This first ILAW borehole (299-E17-21) was drilled in April of 1998 as part of the geology characterization work for the Performance Assessment. Reidel and Horton (1999) issued a geologic data package that integrated the first ILAW borehole with the existing geologic information on the ILAW site.

This report provides particle size distribution data for samples near the ILAW site that were archived in the Hanford Geotechnical Sample Library. The data are to support the ILAW 2005 Performance Assessment.

Seventy-nine sediment samples were analyzed from four boreholes. Samples were collected from every ten feet in the boreholes. Eighty percent of the samples were classified as slightly gravelly sand. Fifteen percent were classified as gravelly sand, gravelly silty sand, or sandy gravel. These data indicate that the particle size of the sediment is consistent across the ILAW site and is dominated by sand in the upper part of the Hanford formation with more gravel rich units in the lower part.

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1.0 Introduction

The U.S. Department of Energy's (DOE) Hanford Site has the most diverse and largest amount of radioactive tank waste in the United States. High-level radioactive waste (HLW) has been stored in large underground tanks since 1944. Vitrification and onsite disposal of the low-activity waste (LAW) fraction are embodied in the strategy described in the Tri-Party Agreement (Ecology et al. 1998). The low-activity waste will be disposed of in the Immobilized Low-Activity Waste site (ILAW), which will be located in 200 East Area.

This first ILAW borehole (299-E17-21) as drilled in April of 1998. The geologic data, geophysical logging, hydrologic tests, and groundwater analyses were reported in Reidel et al. (1998). Reidel and Horton (1999) issued a geologic data package that integrated the first ILAW borehole with the existing geologic information on the ILAW site. A second borehole is planned for FY 2001 in the northeast corner of the site.

Many boreholes have been drilled on the Hanford Site in support of a variety of different projects. In some cases, samples from these boreholes were collected and archived in the Hanford Geotechnical Sample Library (HGSL) without having any tests or analyses performed on them. These samples can be a relatively inexpensive data source for other projects because the cost of drilling a borehole has been eliminated. This report provides particle size distribution data for samples near the ILAW in support of the ILAW 2005 Performance Assessment.

2.0 Samples

Seventy-nine sediment samples were obtained from the Hanford Geotechnical Sample Library for particle size distribution analysis. The samples were from wells 299-E17-12, 299-E17-20, 299-E24-18, and 299-E24-118 which lie on the east side of the ILAW site. The locations of the wells are shown on Figure 1. All samples are from the Hanford formation (Reidel and Horton 1999). Figure 2 shows generalized stratigraphic sections for wells 299-E17-12, 299-E17-20, and 299-E24-18 and indicates the depths from which samples were obtained. The stratigraphic sections were constructed from information on the geologist's logs. No such log is available for well 299-E24-118. A stratigraphic section is not shown for well 299-E24-118 because a geologist's log is not available.

With few exceptions, samples were collected and analyzed every 10 ft. Samples were obtained only from boreholes and portions of boreholes that were drilled by cable tool methods and sampled with a drive barrel so as to insure as natural particle size distribution as possible.

3.0 Methods

Samples were analyzed according to PNNL Technical Procedure SA-2, *Particle Size Analysis: Sieve Method* (PNL-MA-567). Approximately 500 g were used for most samples. Prior to analysis, samples were oven dried at about 105°C overnight. After drying, aggregates were broken before being placed in the stack of sieves. Sieve sizes used are shown in Table 1.

Sieves and samples were placed on a Rotap shaker and shaken for 20 minutes.

After analysis, data were entered into a spreadsheet and a particle size distribution curve was produced for each sample. Samples were classified and named according to Wentworth (1922) and Folk (1974) except that the modifier "silty" is used in place of "muddy" which includes both silt and clay size particles. Also, the number 270 sieve corresponds to 0.053 mm which is slightly smaller than the lower limit for very fine sand (0.065 mm) given in Folk (1974) and this study used the number 270 sieve to define the separation of very fine sand and silt. Table 2 and Figure 3 show the Folk (1974) and Wentworth (1922) sediment classification and nomenclature.

In a few instances, the cumulative percent of the sample passing successive sieves exceeded 100% because of laboratory environmental interference with the balance. In these instances, the percentages of gravel, sand, and silt + clay were normalized to 100% before plotting the results on ternary diagrams.

4.0 Results

The results of the analyses are summarized in Figures 4 through 7 and Tables 3 through 6. The complete data set is in Appendix A as both hard copy and in electronic form on disk. Appendix B contains historic particle size distribution data that are available in the Rocksax data base.

Eighty percent of the samples are slightly gravelly sand. Fifteen percent of the samples are gravelly sand, gravelly silty sand, or sandy gravels. These latter samples, containing more gravel than the slightly gravelly sands, generally came from depths corresponding to coarser units described on the geologist's logs.

The results show that the sediments in the upper 200 ft of each borehole consist of the sand-dominated facies of the Hanford formation. This is the most abundant facies in the southern part of the 200 East Area (Reidel and Horton 1999). The sand-dominated facies represents the transition between the main channel, gravel-dominated deposits and the silt-dominated slackwater deposits of the Pleistocene cataclysmic glacial floods. Below about 200 ft depth, the sediment tends to become slightly coarser

grained and consist of the gravel-dominated facies interbedded with sand-dominated facies sediments. The increase in silt content at 260 ft depth in well 299-E24-18 may reflect a 6-in.-thick silt unit noted by the geologist during well drilling operations.

5.0 References

Ecology - Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy. 1998. *Hanford Federal Facility Agreement and Consent Order*. Document No. 89-10, Rev. 5 (The Tri-Party Agreement), Olympia, Washington.

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PNL-MA-567. *Procedures for Ground-Water Investigations*. Pacific Northwest Laboratory, Richland, Washington.

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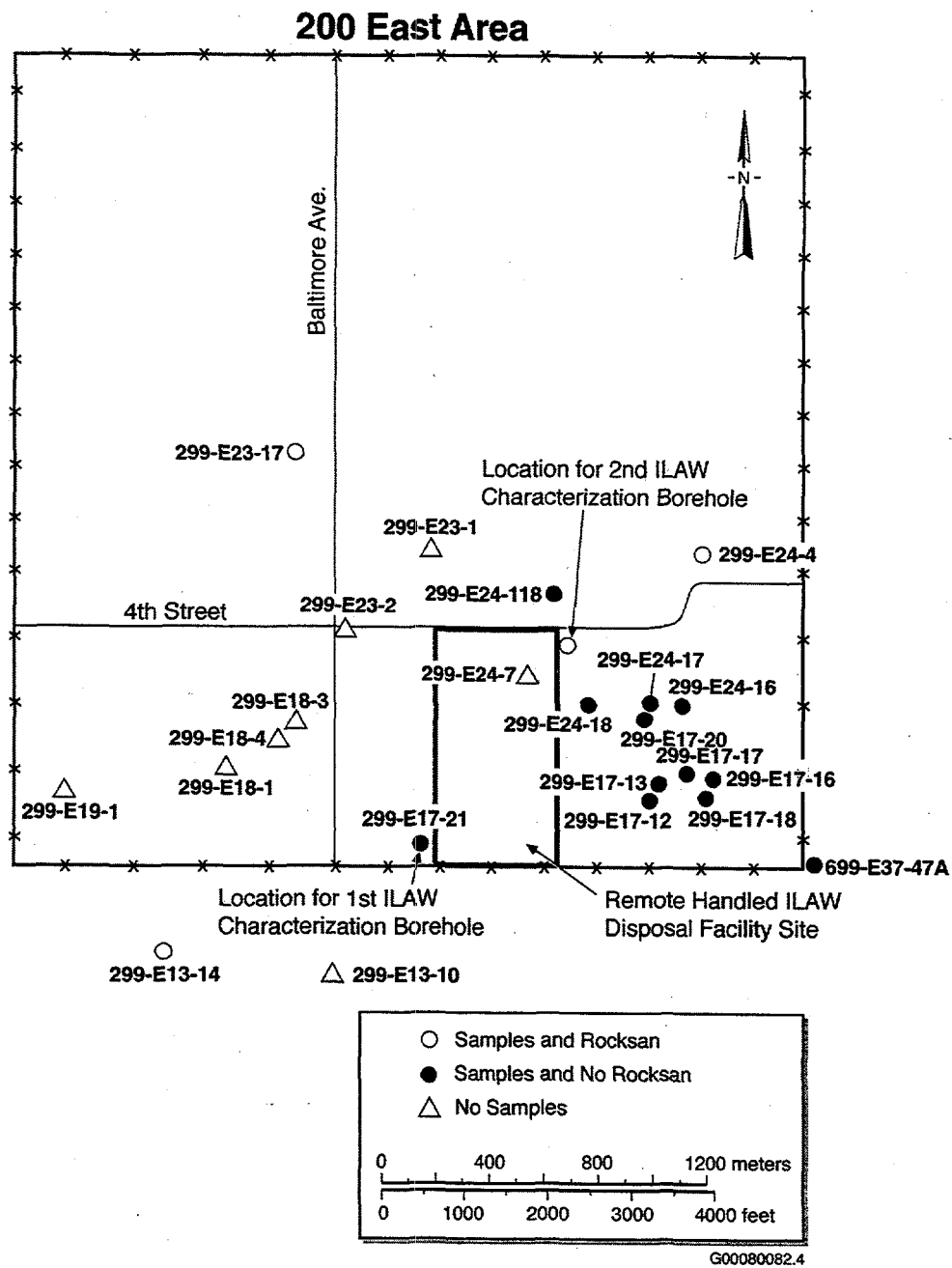
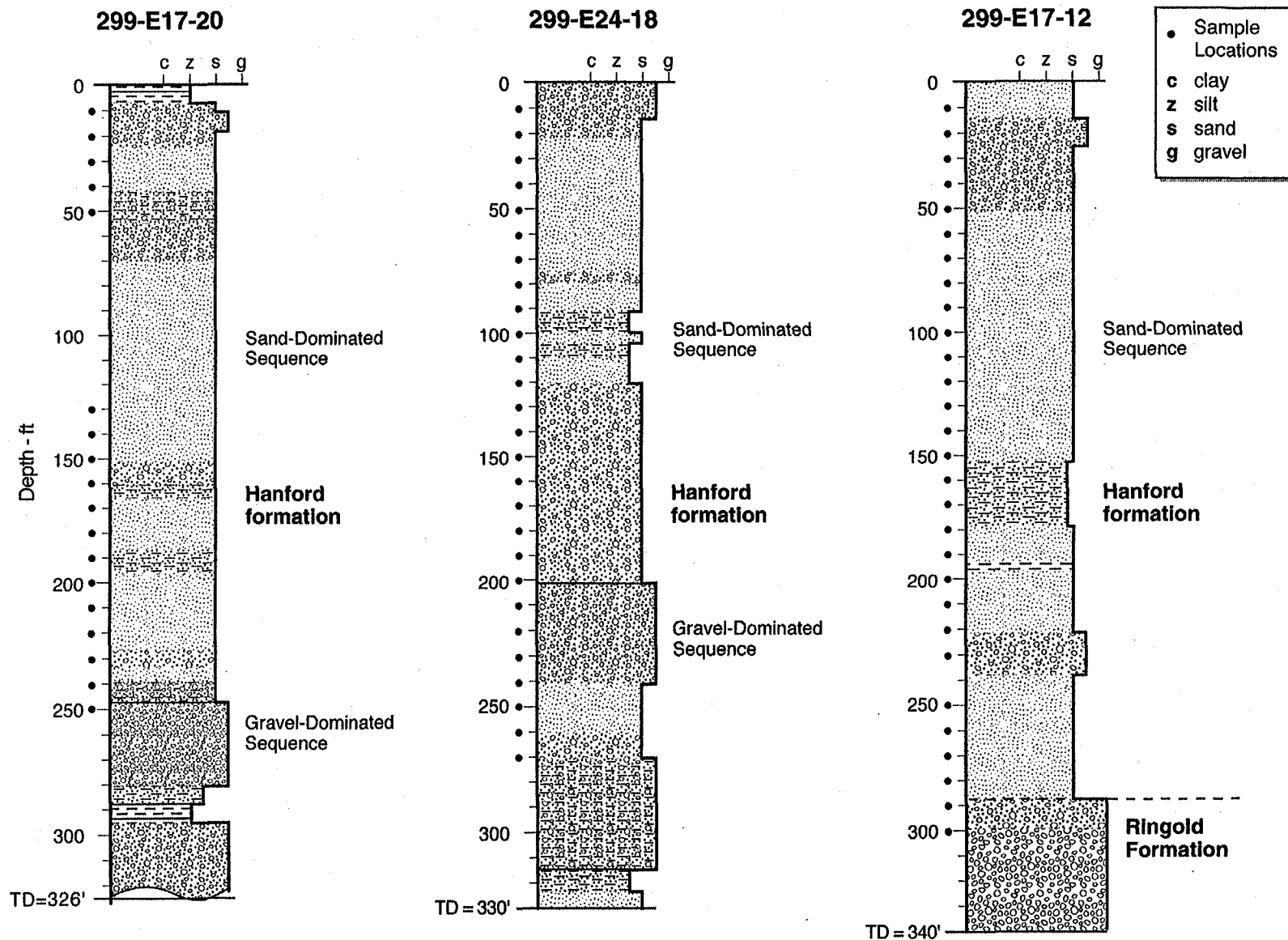
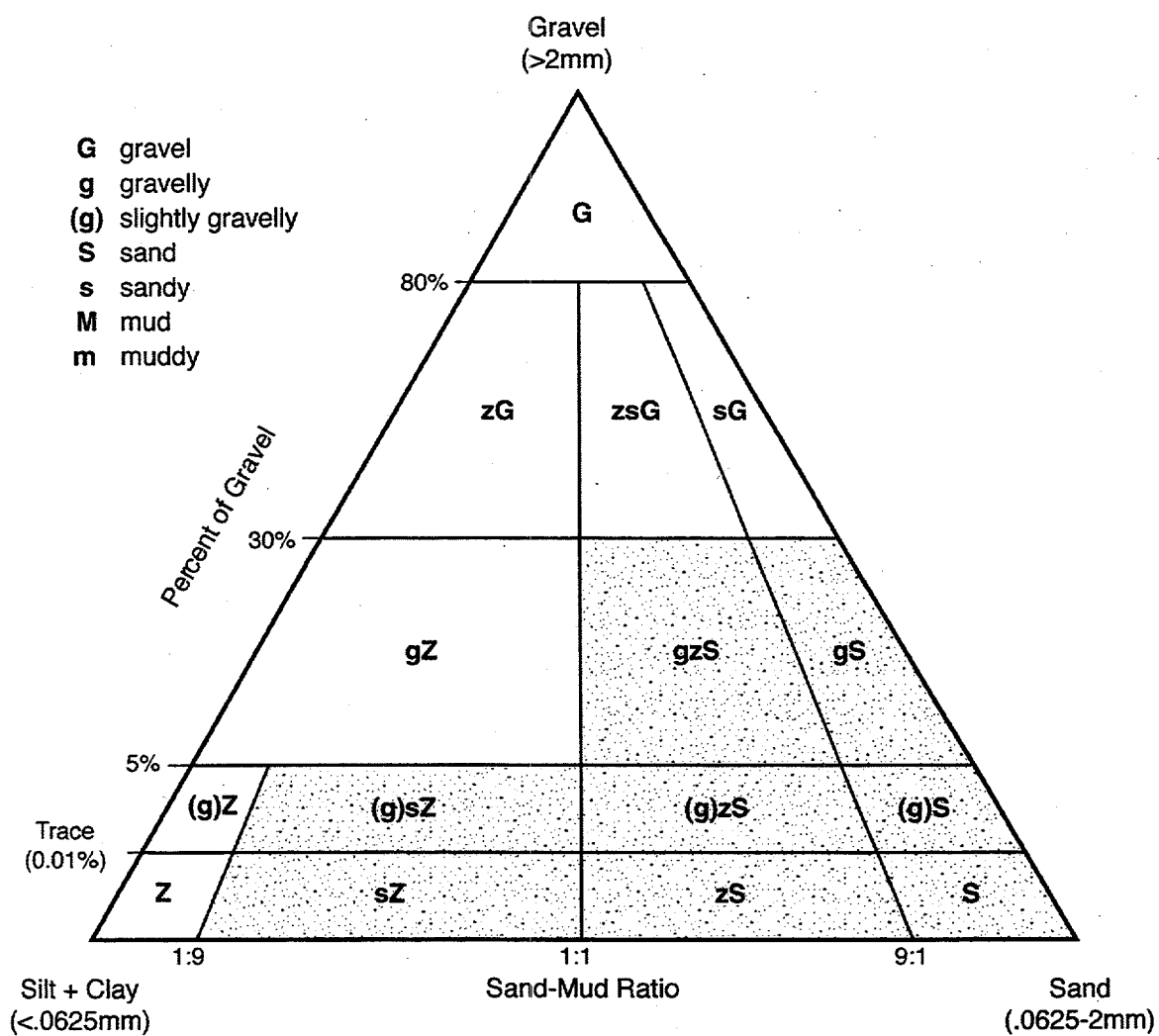


Figure 1. Location Map of Four Wells Near the Remote Handled ILAW Disposal Facility Site



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Figure 2. Sediment Classification and Nomenclature



G00080082.1

Figure 3. Sediment Classification and Nomenclature (after Folk 1974)

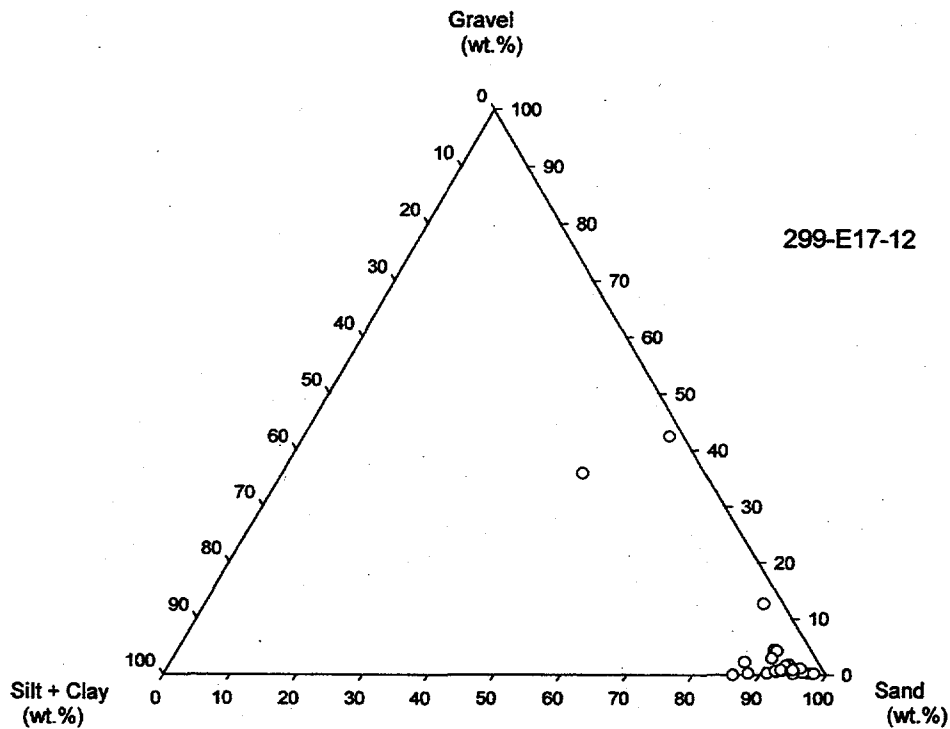


Figure 4. Ternary Plot of Gravel vs. Sand vs. Silt + Clay for Samples From Well 299-E17-12

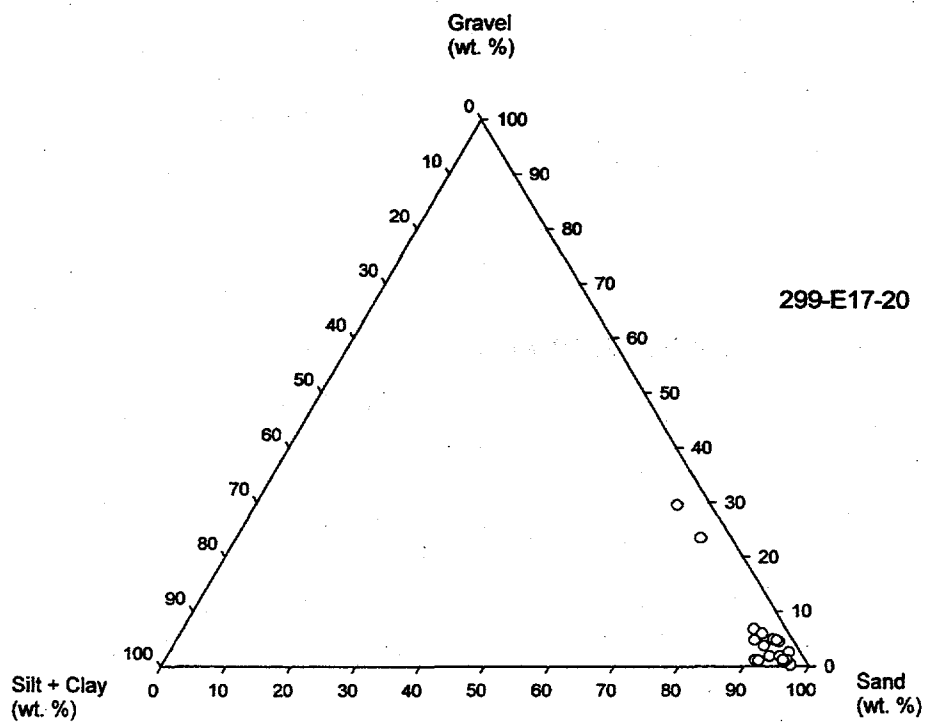


Figure 5. Ternary Plot of Gravel vs. Sand vs. Silt + Clay for Samples From Well 299-E17-20

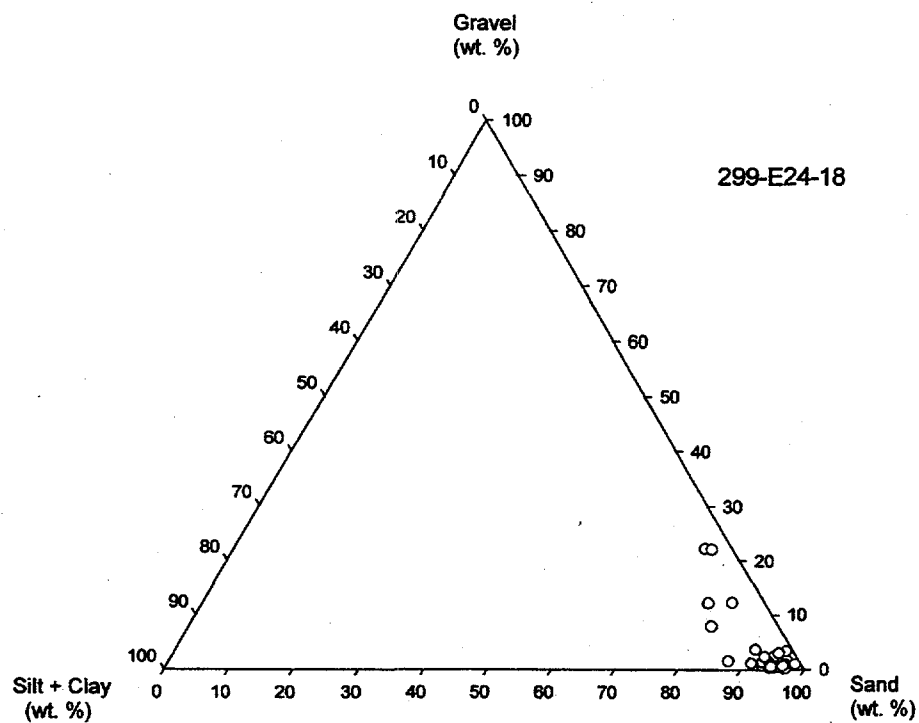


Figure 6. Ternary Plot of Gravel vs. Sand vs. Silt + Clay for Samples From Well 299-E24-18

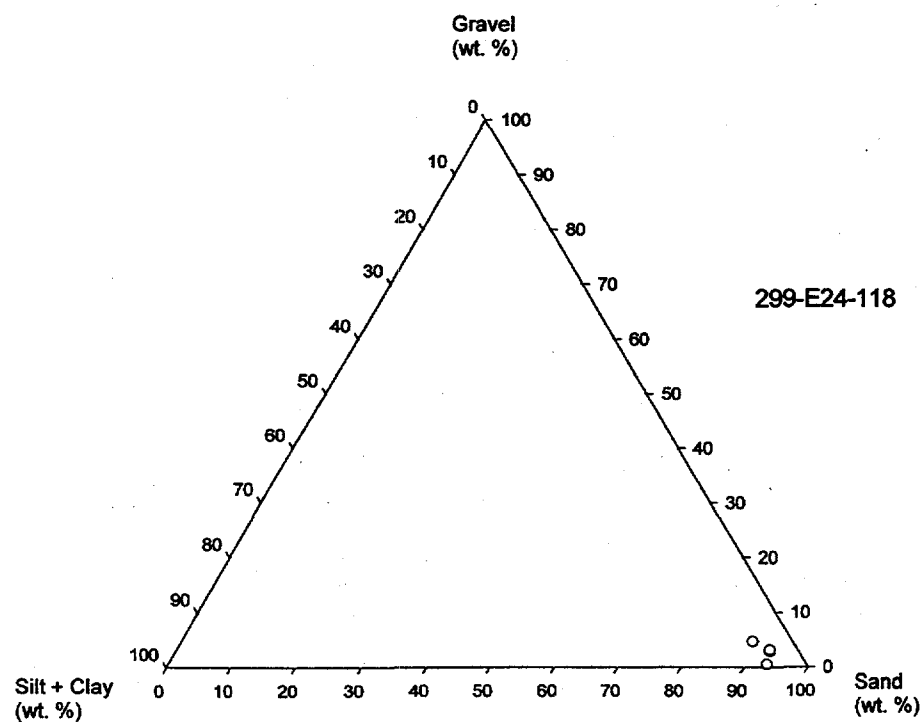


Figure 7. Ternary Plot of Gravel vs. Sand vs. Silt + Clay for Samples From Well 299-E24-118

Table 1. Sieve Sizes

Sieve Information	
Number	Sieve Opening (mm)
1.5 in.	38.1
3/4 in.	19
3/8 in.	9.5
#4	4.75
#10	2.0
#18	1.0
#35	0.5
#60	0.25
#140	0.105
#200	0.074
#270	0.053

Table 2. Grain Size Scale for Sediments

Grain Size (mm)	Sediment Size Class ^(a)
>256	Boulder
256 - 64	Cobble
64 - 4	Pebble
4 - 2	Granule
2 - 1	Very coarse sand
1 - 0.5	Coarse sand
0.5 - 0.25	Medium sand
0.25 - 0.125	Fine sand
0.125 - 0.0625	Very fine sand
0.0625 - 0.031	Coarse silt
0.031 - 0.0156	Medium silt
0.0156 - 0.0078	Fine silt
0.0078 - 0.0039	Very fine silt
<0.0039	Clay
(a) Wentworth Size Class (Wentworth 1922) as given in Folk (1974).	

Table 3. Summary Particle Size Distribution for Samples From Well 299-E17-12

Depth (ft)	Gravel (wt. %)	Sand (wt. %)	Silt + Clay (wt. %)	Lithology	Comments
8	4.5	90	5.5	Slightly gravelly sand	
20	1.5	93.5	5	Slightly gravelly sand	
30	0.6	92.3	7.1	Slightly gravelly sand	
40	0.2	97.5	2.3	Slightly gravelly sand	
50	4.3	90.5	5.2	Slightly gravelly sand	
60	0.4	96.4	3.2	Slightly gravelly sand	
70	0.2	98.1	1.7	Slightly gravelly sand	
80	1.2	95.6	3.2	Slightly gravelly sand	
90	1.9	93.6	4.5	Slightly gravelly sand	
100	0.3	91	8.7	Slightly gravelly sand	
110	1.7	92.8	6.5	Slightly gravelly sand	
120	0	86.1	13.9	Silty sand	
130	3	90.4	6.6	Slightly gravelly sand	
140	2.3	86.7	11	Slightly gravelly, silty sand	
150	0.7	93	6.3	Slightly gravelly sand	
160	1.6	93.9	4.5	Slightly gravelly sand	
170	0.6	94.9	4.5	Slightly gravelly sand	
180	0.3	88.2	11.5	Slightly gravelly, silty sand	
190	1.5	92.9	6.6	Slightly gravelly sand	
200	1.6	93.2	5.2	Slightly gravelly sand	
210	0.7	92	7.3	Slightly gravelly sand	
220	0.9	92.8	6.3	Slightly gravelly sand	
230	42.5	55.3	2.2	Sandy gravel	Normalized to 100%
250	0.7	94.5	4.8	Slightly gravelly sand	
260	0.2	95	4.8	Slightly gravelly sand	
270	0.9	94.6	4.5	Slightly gravelly sand	
280	12.2	83.7	3	Gravelly sand	
290	12.7	84.3	3	Gravelly sand	
300	36	45.4	18.6	Silty, sandy gravel	

Table 4. Summary Particle Size Distribution for Samples From Well 299-E17-20

Depth (ft)	Gravel (wt. %)	Sand (wt. %)	Silt + Clay (wt. %)	Lithology	Comments
10	4.8	89.3	5.9	Slightly gravelly sand	
20	1.4	95.3	3.3	Slightly gravelly sand	
30	1.8	93.1	5.1	Slightly gravelly sand	
40	0.3	97.0	2.7	Slightly gravelly sand	Normalized to 100%
50	4.9	92.1	3.0	Slightly gravelly sand	
130	2.5	95.7	1.8	Slightly gravelly sand	No samples between 50 and 130 ft
140	1.2	96.1	2.7	Slightly gravelly sand	
150	6.8	88.2	5.0	Gravelly sand	
160	1.1	91.2	7.7	Slightly gravelly sand	
170	0.8	95.8	3.4	Slightly gravelly sand	
180	1.8	94.7	3.5	Slightly gravelly sand	
190	1.0	91.8	7.2	Slightly gravelly sand	
200	3.7	91.3	5.0	Slightly gravelly sand	
210	6.0	89.9	4.1	Gravelly sand	
220	1.2	95.5	3.3	Slightly gravelly sand	
230	4.5	93.2	2.3	Slightly gravelly sand	
240	4.8	92.7	2.5	Slightly gravelly sand	
250	23.4	71.9	4.7	Gravelly sand	
260	29.6	65.3	5.1	Gravelly sand	

Table 5. Summary Particle Size Distribution for Samples From Well 299-E24-18

Depth (ft)	Gravel (wt. %)	Sand (wt. %)	Silt + Clay (wt. %)	Lithology	Comments
10	1.6	87.3	11.1	Slightly gravelly, silty sand	
20	1.8	96.4	1.8	Slightly gravelly sand	
30	0.2	96.9	2.9	Slightly gravelly sand	
40	1.4	93.6	5	Slightly gravelly sand	
50	3.4	95.5	1.1	Slightly gravelly sand	
60	0.5	96.1	3.4	Slightly gravelly sand	
70	1	96.5	2.5	Slightly gravelly sand	
80	1	98.1	0.9	Slightly gravelly sand	Normalized to 100%
90	0.8	93	6.2	Slightly gravelly sand	
100	2.4	94	3.6	Slightly gravelly sand	
110	0.4	94.8	4.8	Slightly gravelly sand	
120	3.1	94.5	2.4	Slightly gravelly sand	
130	0.4	94.3	5.3	Slightly gravelly sand	
140	3.7	90.5	5.8	Slightly gravelly sand	
150	1.2	91.1	7.7	Slightly gravelly sand	
160	1.4	92.7	5.9	Slightly gravelly sand	
170	1.4	93.8	4.8	Slightly gravelly sand	Normalized to 100%
180	0.8	94.6	4.6	Slightly gravelly sand	Normalized to 100%
190	2.4	92.6	5	Slightly gravelly sand	
200	0.6	95.9	3.5	Slightly gravelly sand	
210	12.3	82.6	5.1	Gravelly sand	
220	12.2	78.9	8.9	Gravelly sand	
230	22.2	73.5	4.3	Gravelly sand	
240	0.7	96.3	3	Slightly gravelly sand	Normalized to 100%
250	0.6	94.5	4.9	Slightly gravelly sand	
260	7.9	81.5	10.6	Gravelly, silty sand	
270	22.1	74.6	3.3	Gravelly sand	

Table 6. Summary Particle Size Distribution for Samples From Well 299-E24-118

Depth (ft)	Gravel (wt. %)	Sand (wt. %)	Silt + Clay (wt. %)	Lithology	Comments
9	2.9	92.6	4.5	Slightly gravelly sand	
18 - 19.5	4.7	89	6.3	Slightly gravelly sand	
28	0.5	93.3	6.2	Slightly gravelly sand	
40	3.1	92.5	4.4	Slightly gravelly sand	

Appendix A

Results of FY 2000 Sieve Analyses

Appendix A

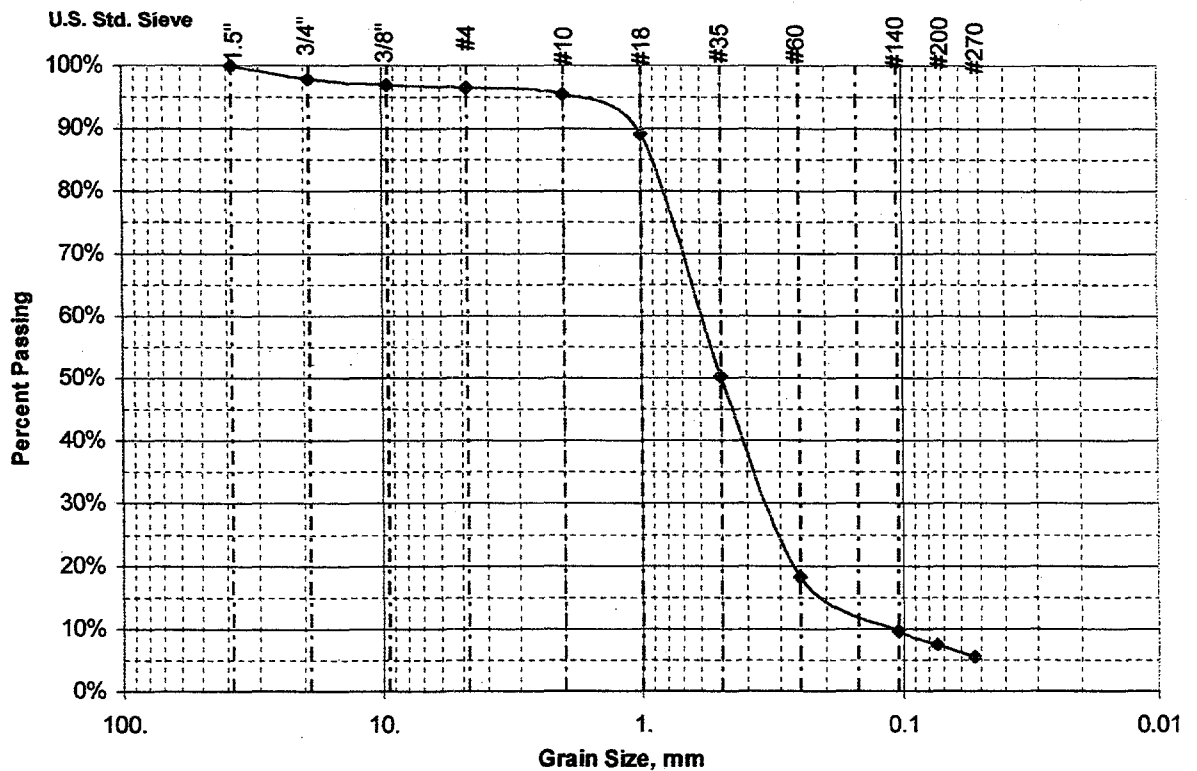
Results of FY 2000 Sieve Analyses

This appendix contains the particle size distribution data from each of the 79 samples analyzed in support of the Immobilized Low-Activity Waste 2005 performance assessment. The data are presented in tabular form and in a standard particle size distribution curve.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	8'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
525.87	1.5"	0.00	0.0	100.0	38.100	
	3/4"	11.08	2.1	97.9	19.000	
	3/8"	15.81	3.0	97.0	9.500	
	#4	18.37	3.5	96.5	4.750	
	#10	23.66	4.5	95.5	2.000	
	#18	56.98	10.8	89.2	1.000	
	#35	261.59	49.7	50.3	0.500	
	#60	429.38	81.7	18.3	0.250	
	#140	475.13	90.4	9.6	0.105	
	#200	487.03	92.6	7.4	0.074	
	#270	497.20	94.5	5.5	0.053	

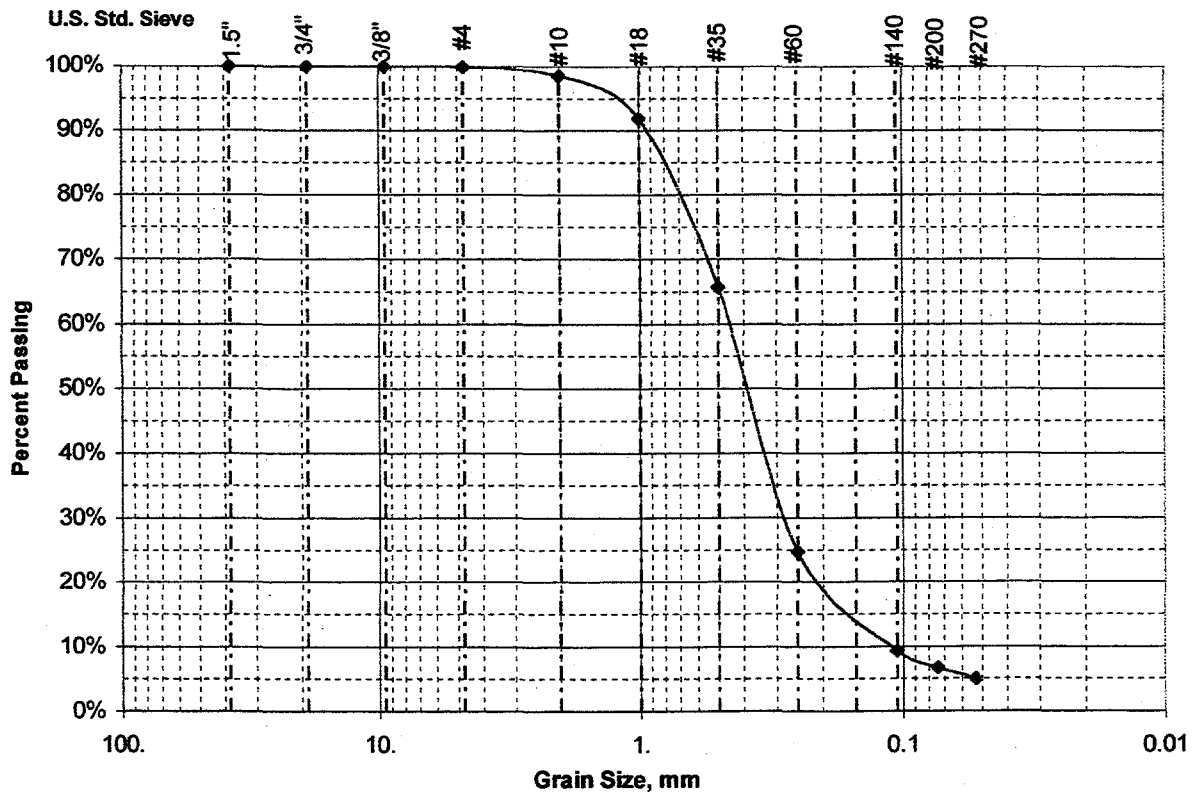


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	20'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
575.32	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.49	0.1	99.9	4.750	
	#10	8.37	1.5	98.5	2.000	
	#18	46.29	8.0	92.0	1.000	
	#35	196.98	34.2	65.8	0.500	
	#60	432.86	75.2	24.8	0.250	
	#140	521.30	90.6	9.4	0.105	
	#200	536.60	93.3	6.7	0.074	
	#270	546.57	95.0	5.0	0.053	

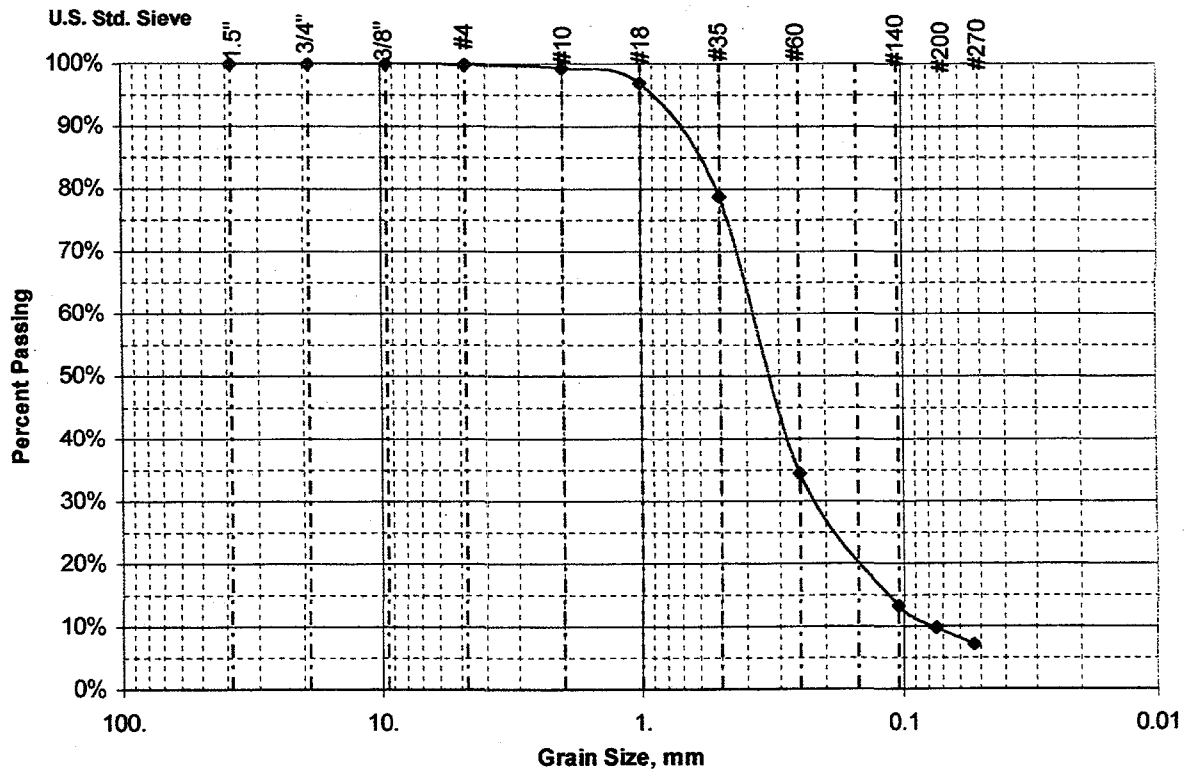


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	30'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
586.43	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.41	0.1	99.9	4.750	
	#10	3.55	0.6	99.4	2.000	
	#18	18.16	3.1	96.9	1.000	
	#35	124.40	21.2	78.8	0.500	
	#60	384.36	65.5	34.5	0.250	
	#140	508.61	86.7	13.3	0.105	
	#200	528.94	90.2	9.8	0.074	
	#270	544.82	92.9	7.1	0.053	

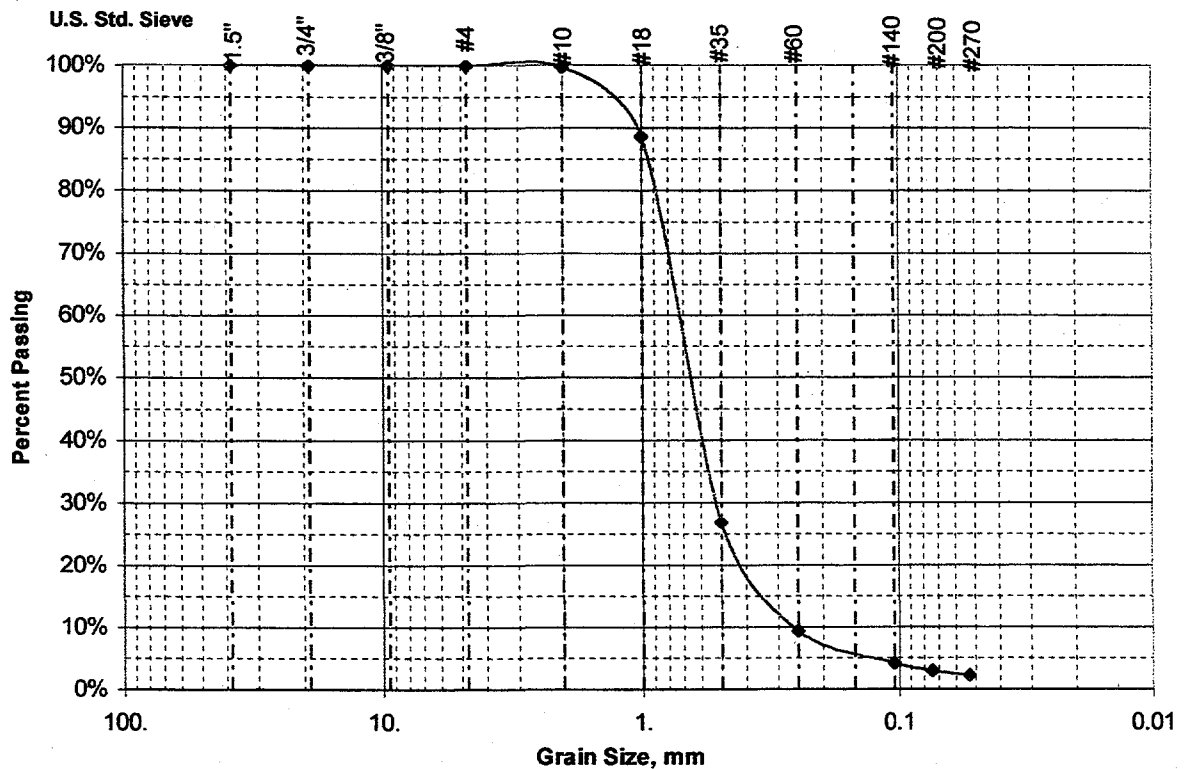


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	40'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
711.76	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.47	0.2	99.8	2.000	
	#18	80.82	11.4	88.6	1.000	
	#35	521.06	73.2	26.8	0.500	
	#60	644.94	90.6	9.4	0.250	
	#140	682.21	95.8	4.2	0.105	
	#200	690.75	97.0	3.0	0.074	
	#270	695.61	97.7	2.3	0.053	

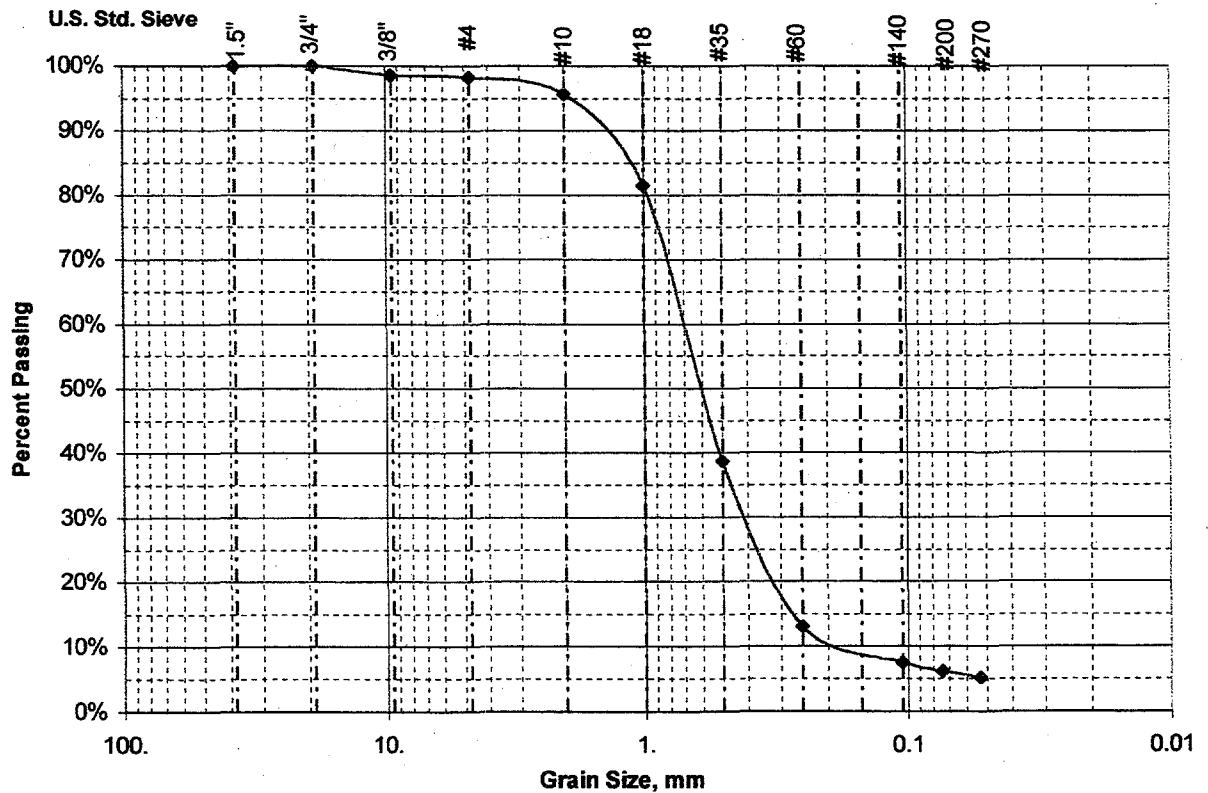


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	50'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
687.94	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	9.35	1.4	98.6	9.500	
	#4	11.53	1.7	98.3	4.750	
	#10	29.26	4.3	95.7	2.000	
	#18	126.60	18.4	81.6	1.000	
	#35	421.36	61.2	38.8	0.500	
	#60	597.40	86.8	13.2	0.250	
	#140	635.59	92.4	7.6	0.105	
	#200	645.43	93.8	6.2	0.074	
	#270	652.10	94.8	5.2	0.053	

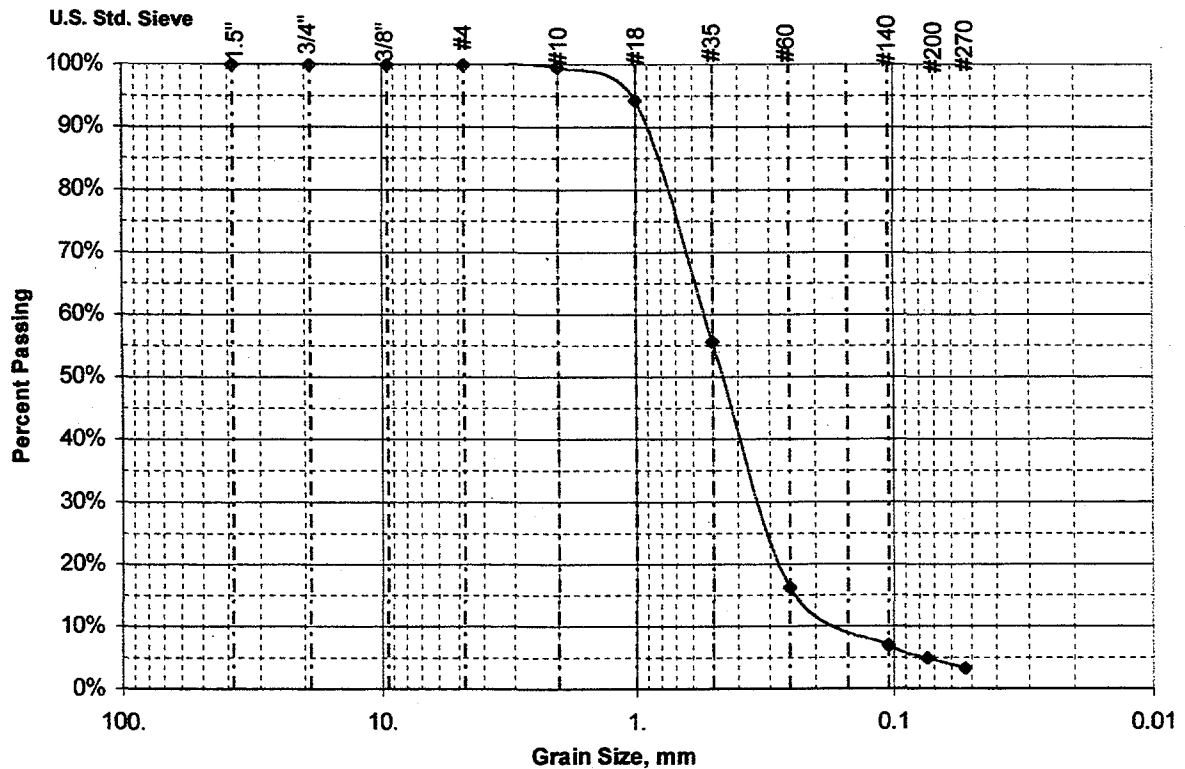


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	60'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
638.22	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	2.43	0.4	99.6	2.000	
	#18	36.25	5.7	94.3	1.000	
	#35	283.19	44.4	55.6	0.500	
	#60	534.59	83.8	16.2	0.250	
	#140	594.19	93.1	6.9	0.105	
	#200	607.26	95.1	4.9	0.074	
	#270	617.67	96.8	3.2	0.053	

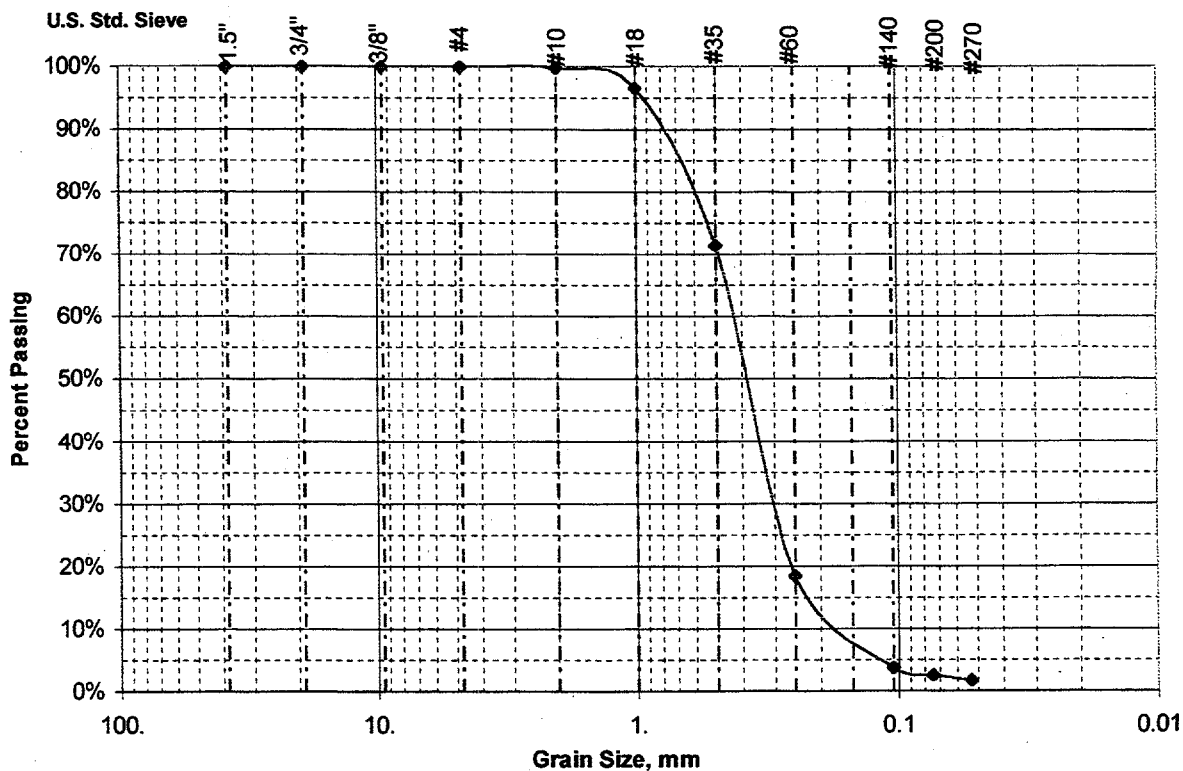


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	70'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
631.30	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.38	0.2	99.8	2.000	
	#18	21.02	3.3	96.7	1.000	
	#35	180.20	28.5	71.5	0.500	
	#60	514.96	81.6	18.4	0.250	
	#140	607.26	96.2	3.8	0.105	
	#200	615.39	97.5	2.5	0.074	
	#270	620.45	98.3	1.7	0.053	

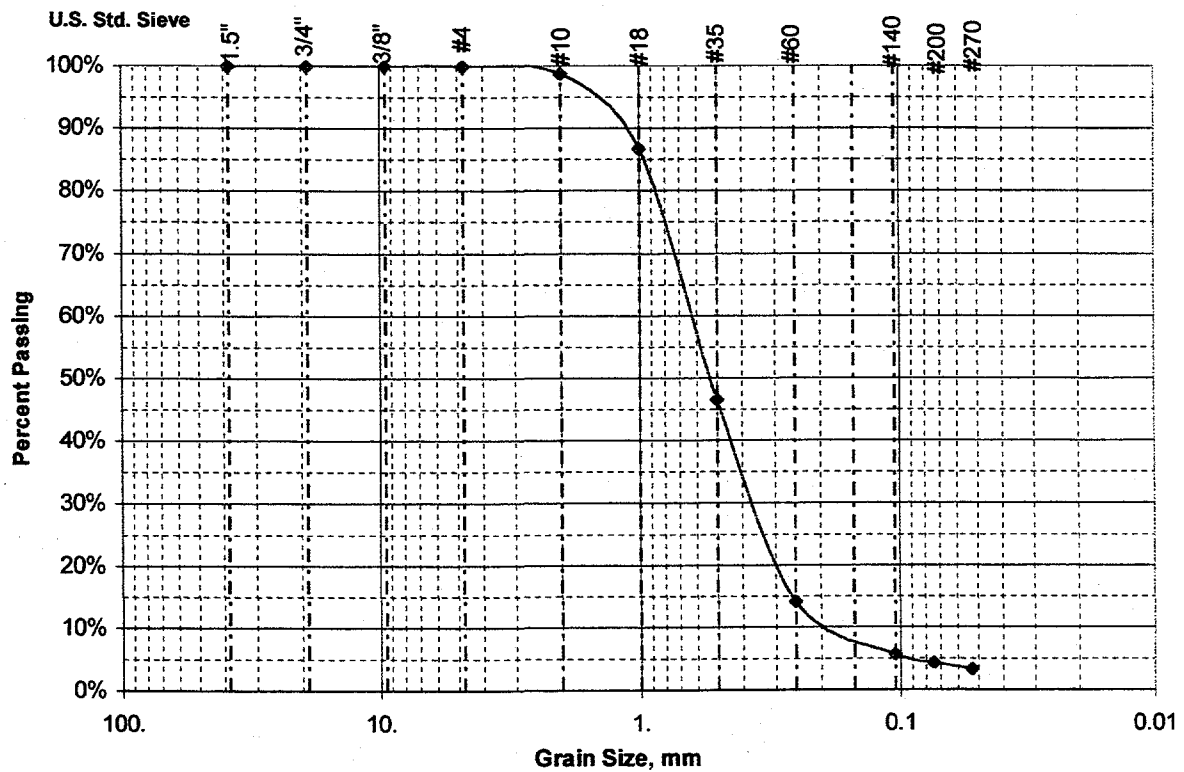


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	80'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
665.27	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	8.14	1.2	98.8	2.000	
	#18	87.94	13.2	86.8	1.000	
	#35	355.72	53.5	46.5	0.500	
	#60	571.26	85.9	14.1	0.250	
	#140	627.24	94.3	5.7	0.105	
	#200	636.60	95.7	4.3	0.074	
	#270	643.92	96.8	3.2	0.053	

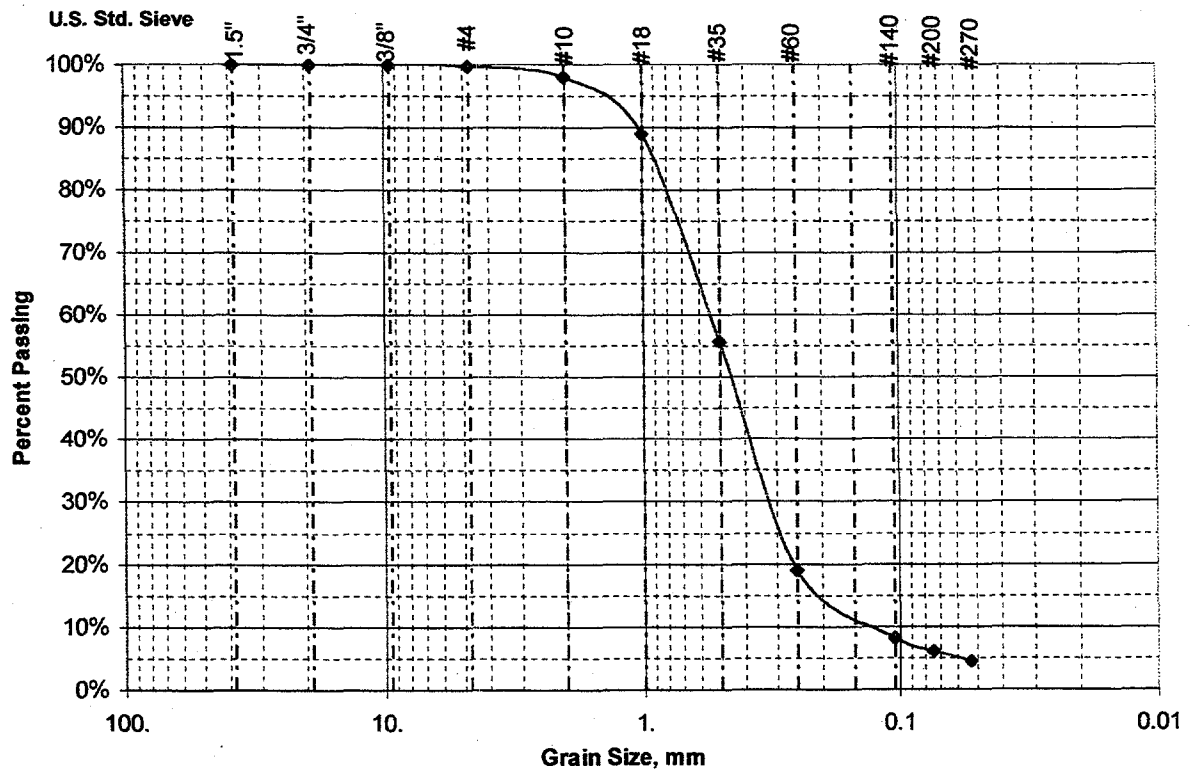


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	90'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
300.19	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.75	0.2	99.8	4.750	
	#10	5.81	1.9	98.1	2.000	
	#18	33.05	11.0	89.0	1.000	
	#35	133.05	44.3	55.7	0.500	
	#60	242.94	80.9	19.1	0.250	
	#140	275.32	91.7	8.3	0.105	
	#200	281.74	93.9	6.1	0.074	
	#270	286.72	95.5	4.5	0.053	

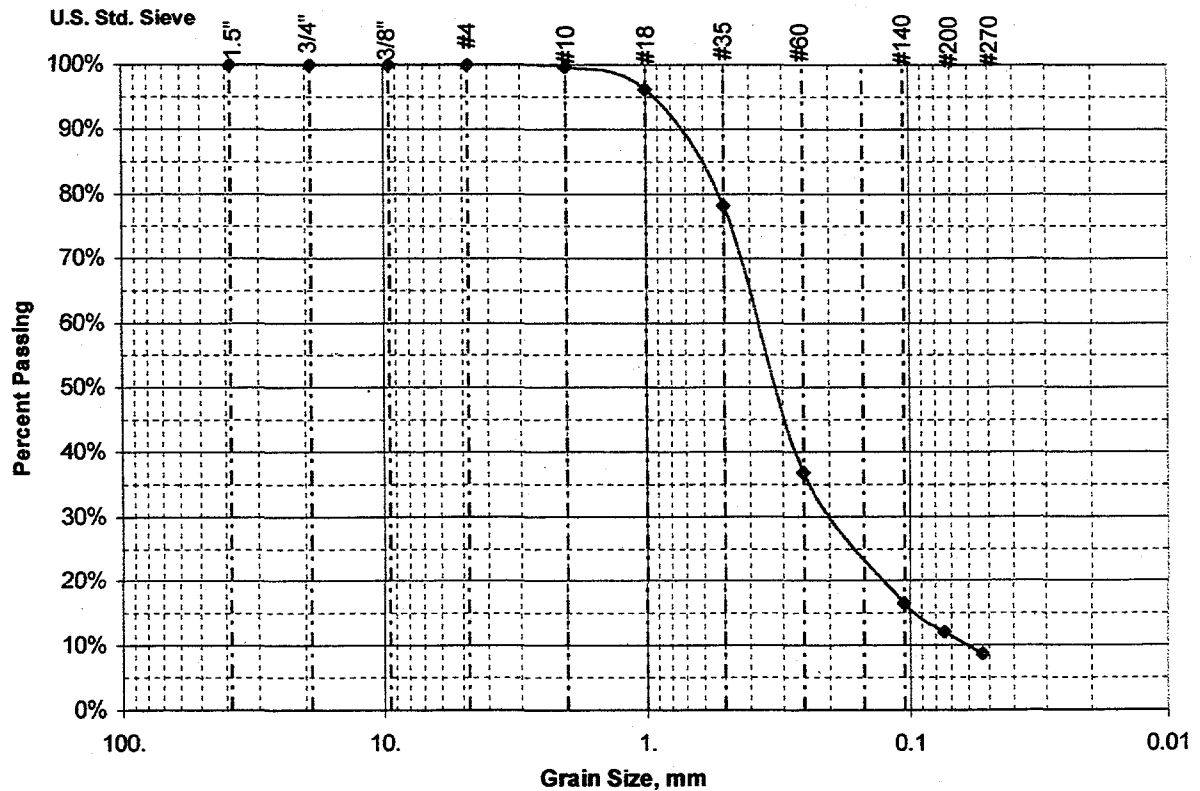


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	100'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
642.14	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	2.13	0.3	99.7	2.000	
	#18	23.96	3.7	96.3	1.000	
	#35	139.24	21.7	78.3	0.500	
	#60	405.45	63.1	36.9	0.250	
	#140	535.89	83.5	16.5	0.105	
	#200	564.74	87.9	12.1	0.074	
	#270	586.20	91.3	8.7	0.053	

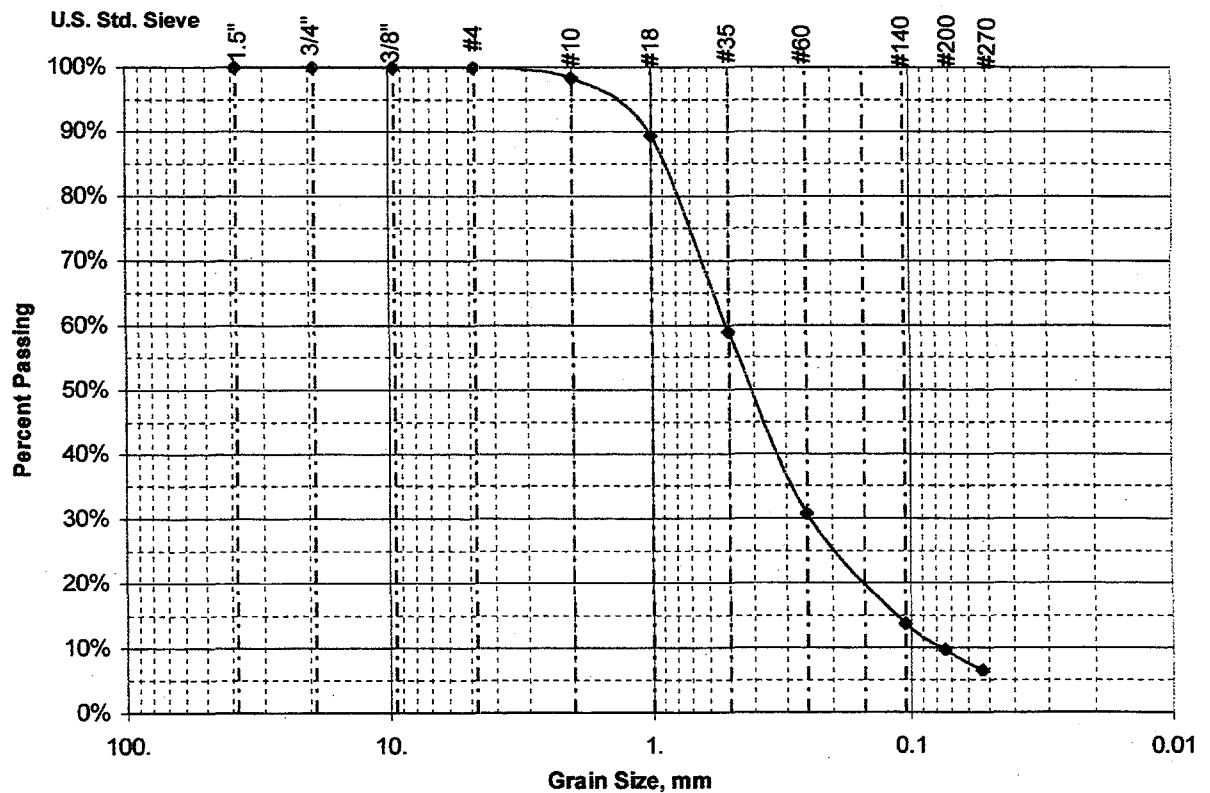


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	110'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
643.80	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	10.69	1.7	98.3	2.000	
	#18	67.98	10.6	89.4	1.000	
	#35	264.35	41.1	58.9	0.500	
	#60	445.82	69.2	30.8	0.250	
	#140	554.80	86.2	13.8	0.105	
	#200	581.28	90.3	9.7	0.074	
	#270	601.96	93.5	6.5	0.053	

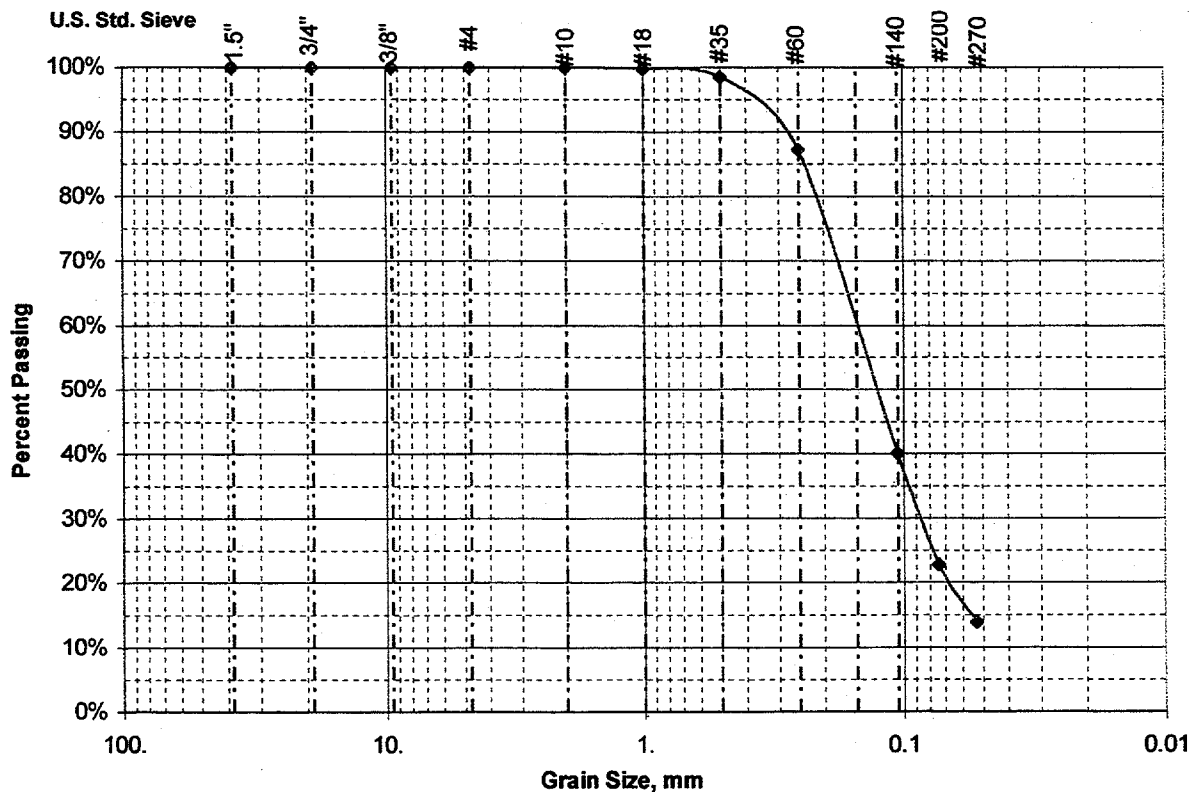


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	120'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
451.70	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	0.02	0.0	100.0	2.000	
	#18	0.69	0.2	99.8	1.000	
	#35	6.64	1.5	98.5	0.500	
	#60	57.38	12.7	87.3	0.250	
	#140	270.44	59.9	40.1	0.105	
	#200	348.67	77.2	22.8	0.074	
	#270	389.05	86.1	13.9	0.053	

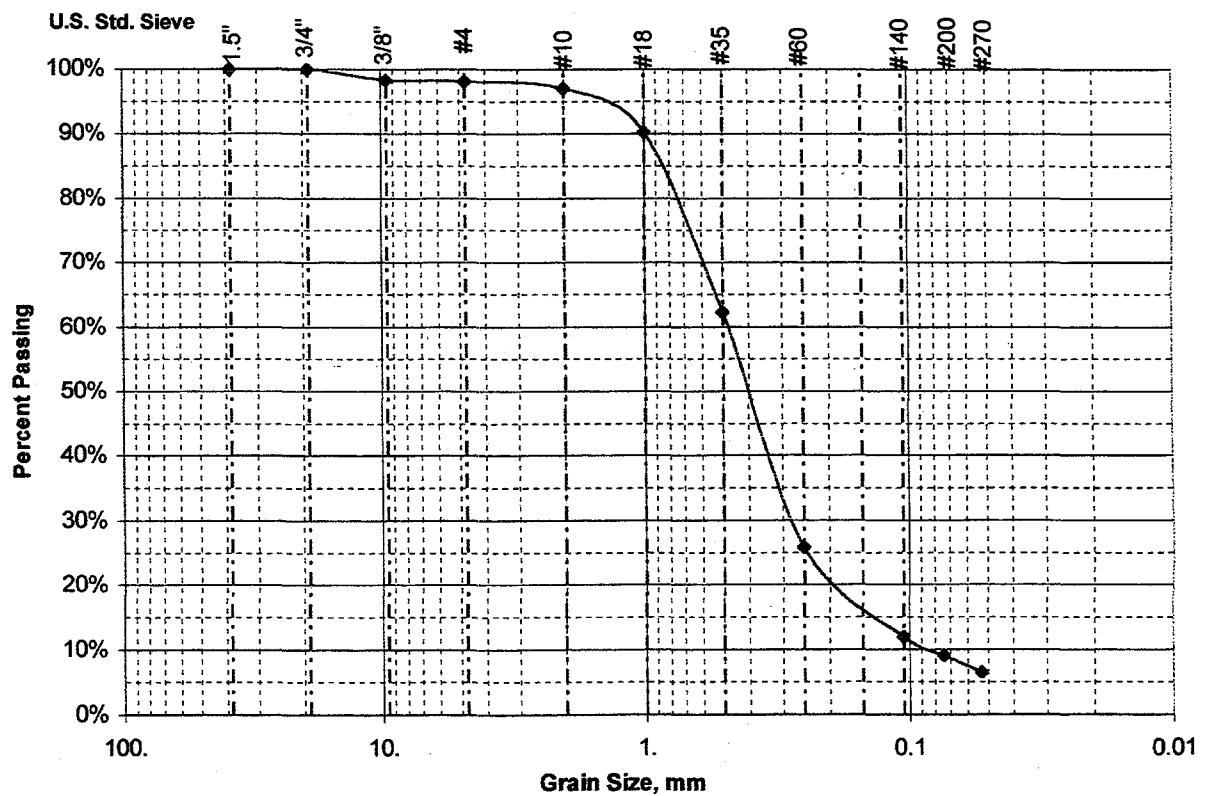


Comments: Sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	130'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
660.27	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	10.89	1.6	98.4	9.500	
	#4	12.30	1.9	98.1	4.750	
	#10	19.83	3.0	97.0	2.000	
	#18	63.81	9.7	90.3	1.000	
	#35	248.78	37.7	62.3	0.500	
	#60	489.69	74.2	25.8	0.250	
	#140	581.69	88.1	11.9	0.105	
	#200	600.31	90.9	9.1	0.074	
	#270	617.00	93.4	6.6	0.053	

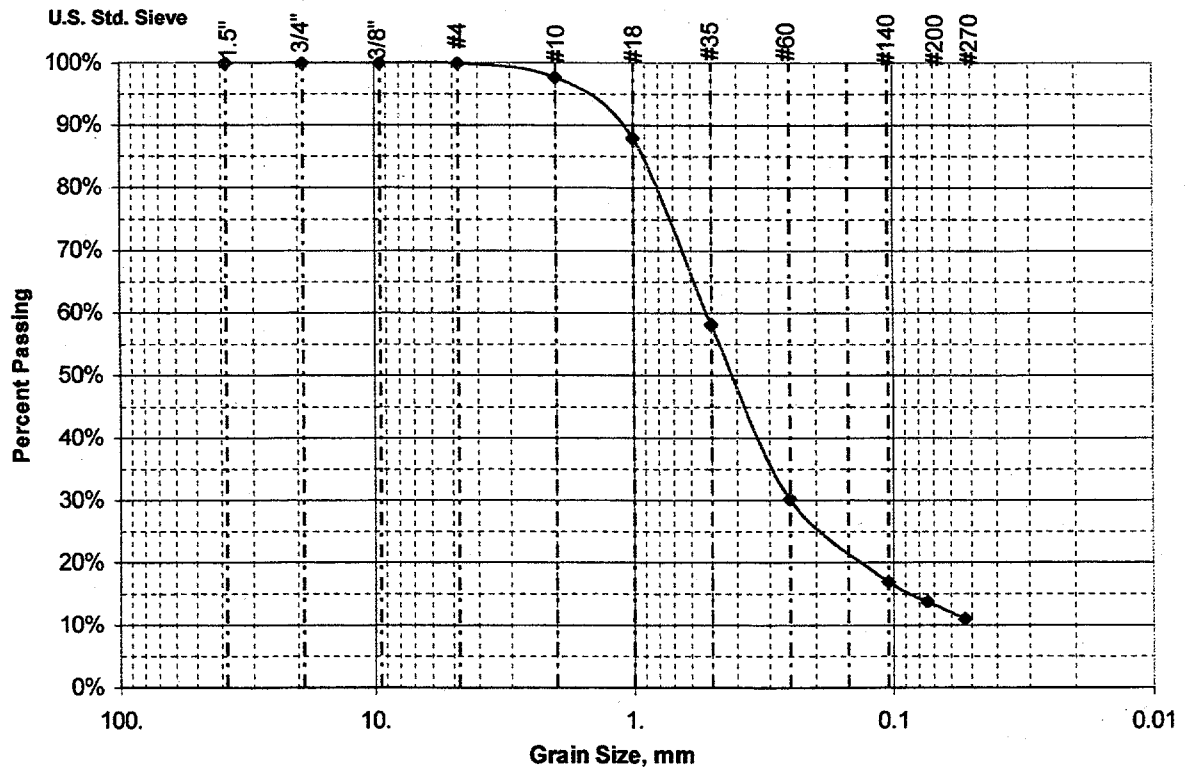


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	140'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
586.92	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	13.23	2.3	97.7	2.000	
	#18	70.31	12.0	88.0	1.000	
	#35	245.20	41.8	58.2	0.500	
	#60	409.55	69.8	30.2	0.250	
	#140	486.84	82.9	17.1	0.105	
	#200	506.17	86.2	13.8	0.074	
	#270	522.55	89.0	11.0	0.053	

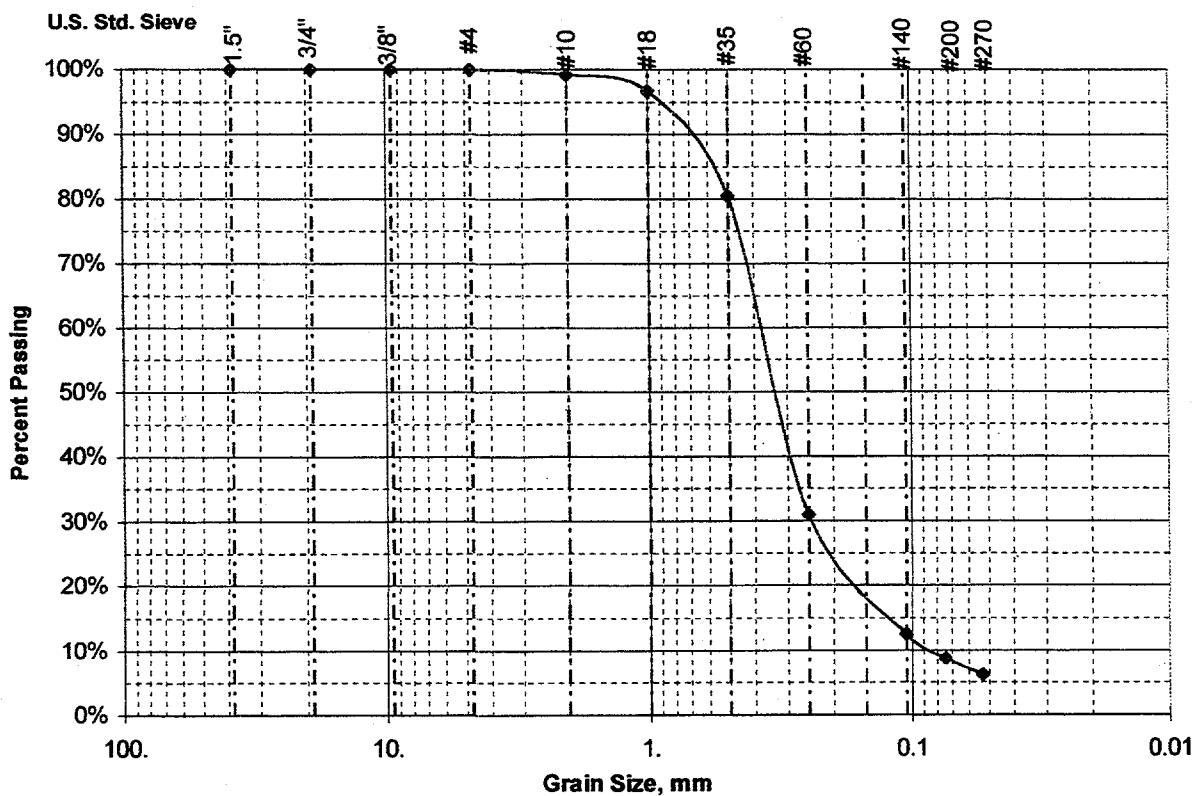


Comments: gravelly, silty sand

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	150'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
506.72	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	3.78	0.7	99.3	2.000	
	#18	16.54	3.3	96.7	1.000	
	#35	98.34	19.4	80.6	0.500	
	#60	349.86	69.0	31.0	0.250	
	#140	443.08	87.4	12.6	0.105	
	#200	462.13	91.2	8.8	0.074	
	#270	475.02	93.7	6.3	0.053	

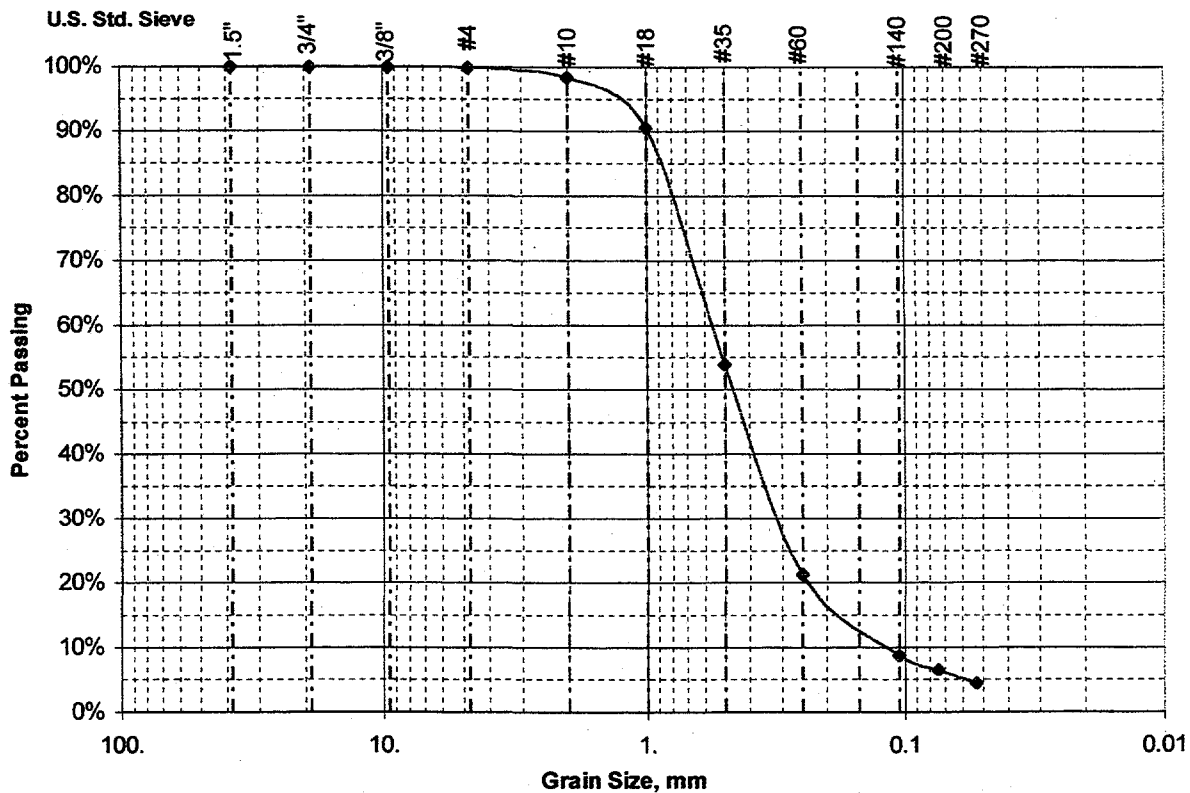


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	160'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
505.15	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.42	0.1	99.9	4.750	
	#10	8.01	1.6	98.4	2.000	
	#18	47.17	9.3	90.7	1.000	
	#35	232.61	46.0	54.0	0.500	
	#60	397.38	78.7	21.3	0.250	
	#140	460.70	91.2	8.8	0.105	
	#200	472.34	93.5	6.5	0.074	
	#270	482.49	95.5	4.5	0.053	

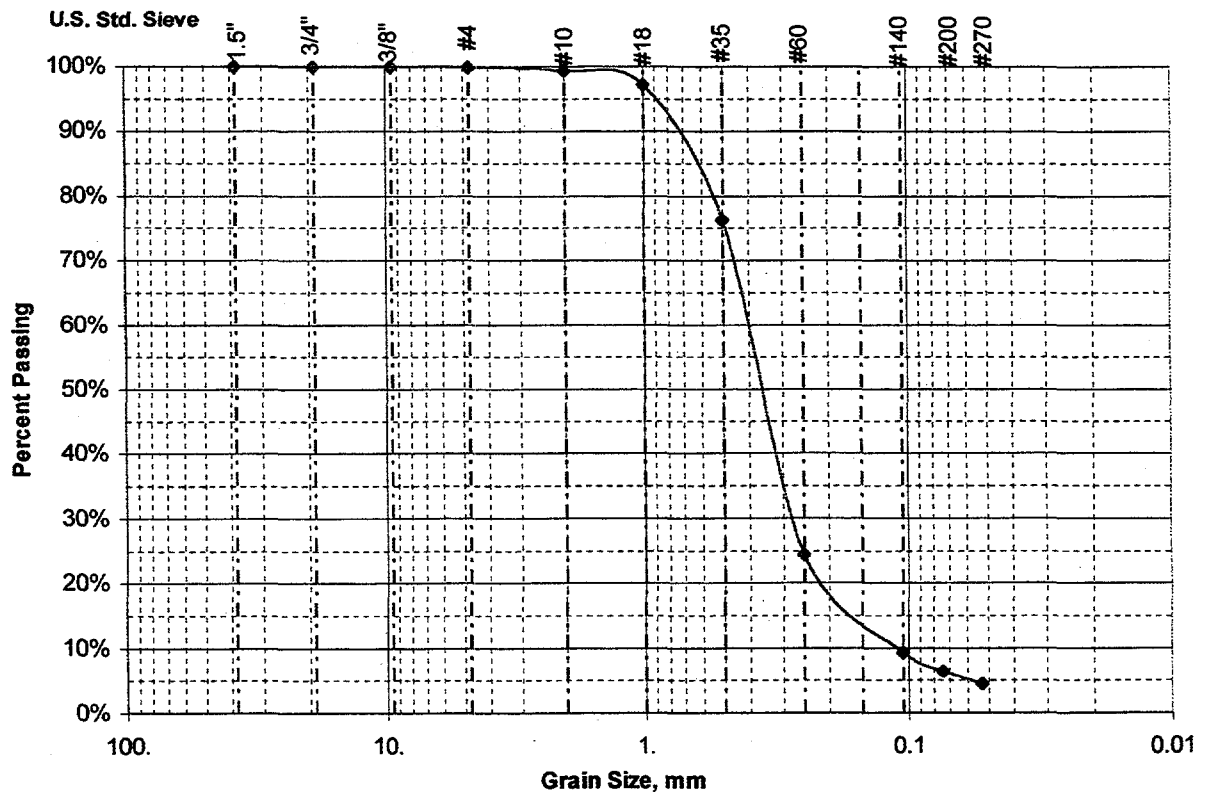


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	170'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
456.99	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.34	0.1	99.9	4.750	
	#10	2.70	0.6	99.4	2.000	
	#18	12.42	2.7	97.3	1.000	
	#35	108.08	23.7	76.3	0.500	
	#60	345.43	75.6	24.4	0.250	
	#140	414.12	90.6	9.4	0.105	
	#200	427.91	93.6	6.4	0.074	
	#270	436.47	95.5	4.5	0.053	

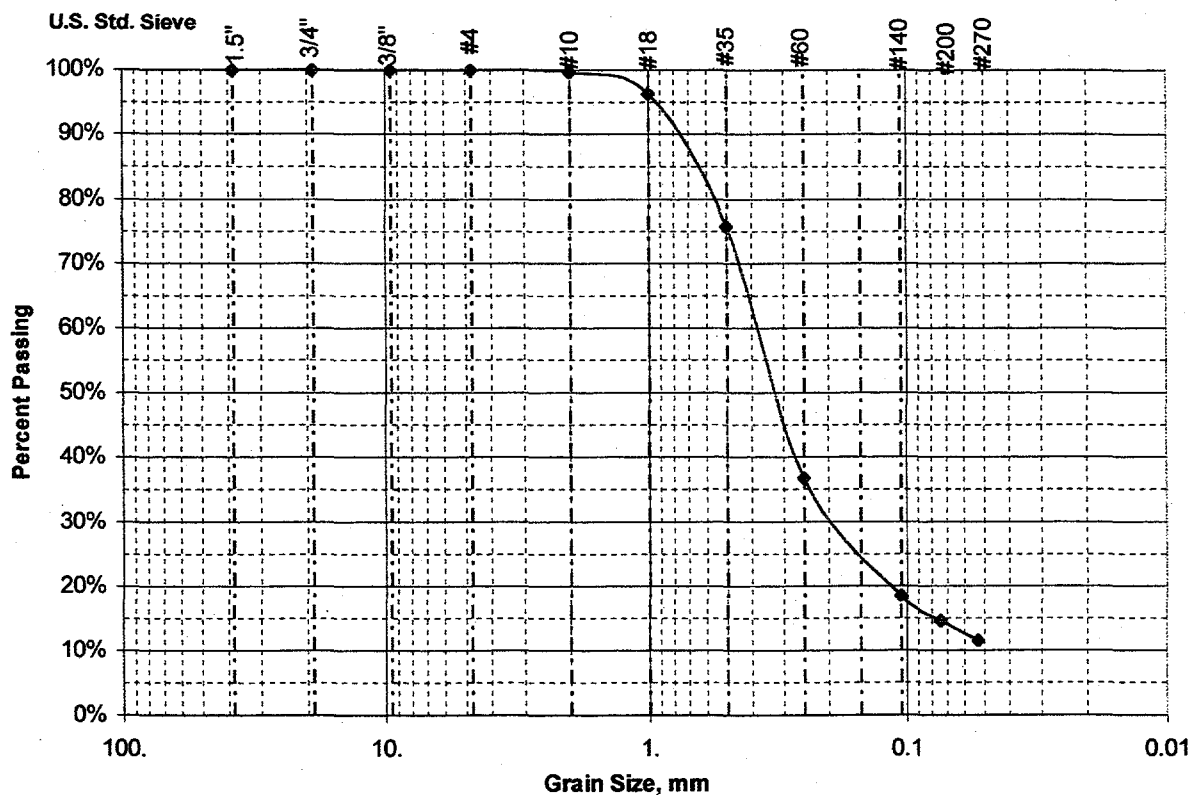


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	180'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
499.32	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.51	0.3	99.7	2.000	
	#18	18.25	3.7	96.3	1.000	
	#35	120.84	24.2	75.8	0.500	
	#60	315.74	63.2	36.8	0.250	
	#140	406.77	81.5	18.5	0.105	
	#200	426.41	85.4	14.6	0.074	
	#270	441.71	88.5	11.5	0.053	

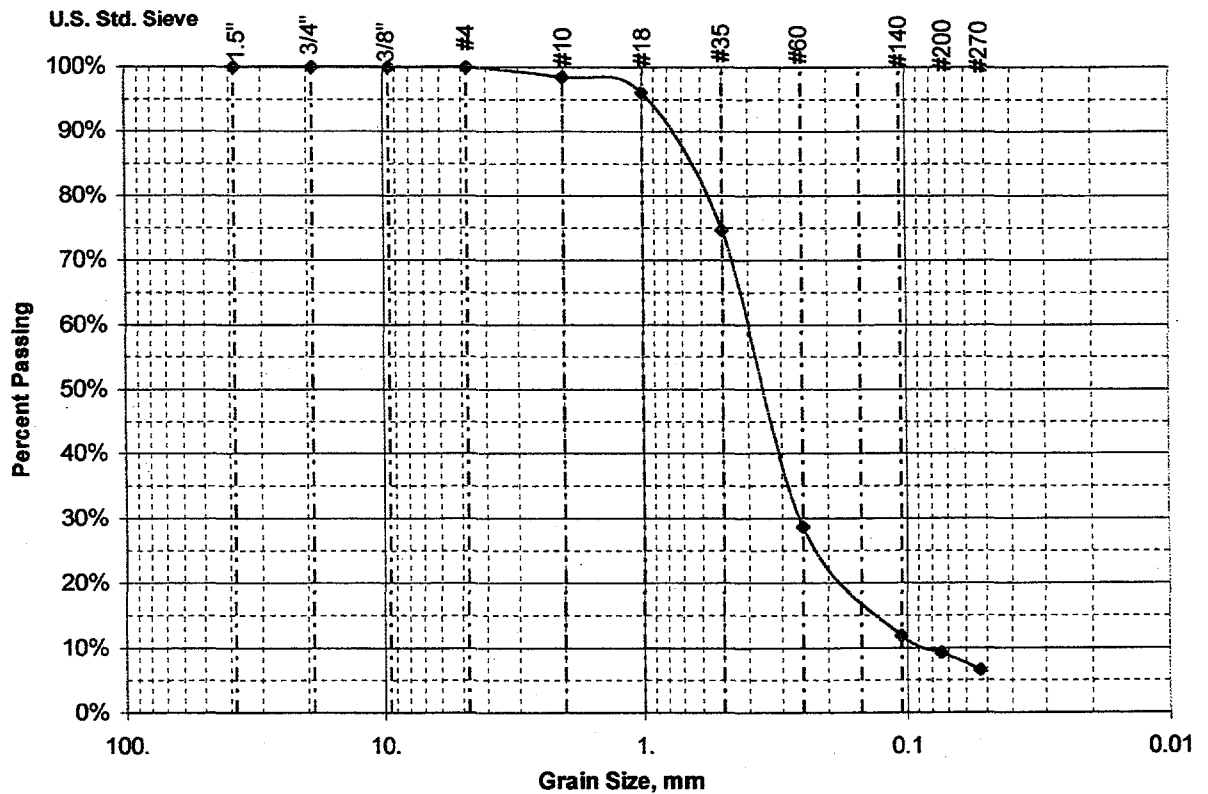


Comments: Slightly gravelly, silty sand

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	190'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
459.53	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	6.95	1.5	98.5	2.000	
	#18	17.76	3.9	96.1	1.000	
	#35	116.13	25.3	74.7	0.500	
	#60	327.46	71.3	28.7	0.250	
	#140	404.61	88.0	12.0	0.105	
	#200	416.87	90.7	9.3	0.074	
	#270	429.32	93.4	6.6	0.053	

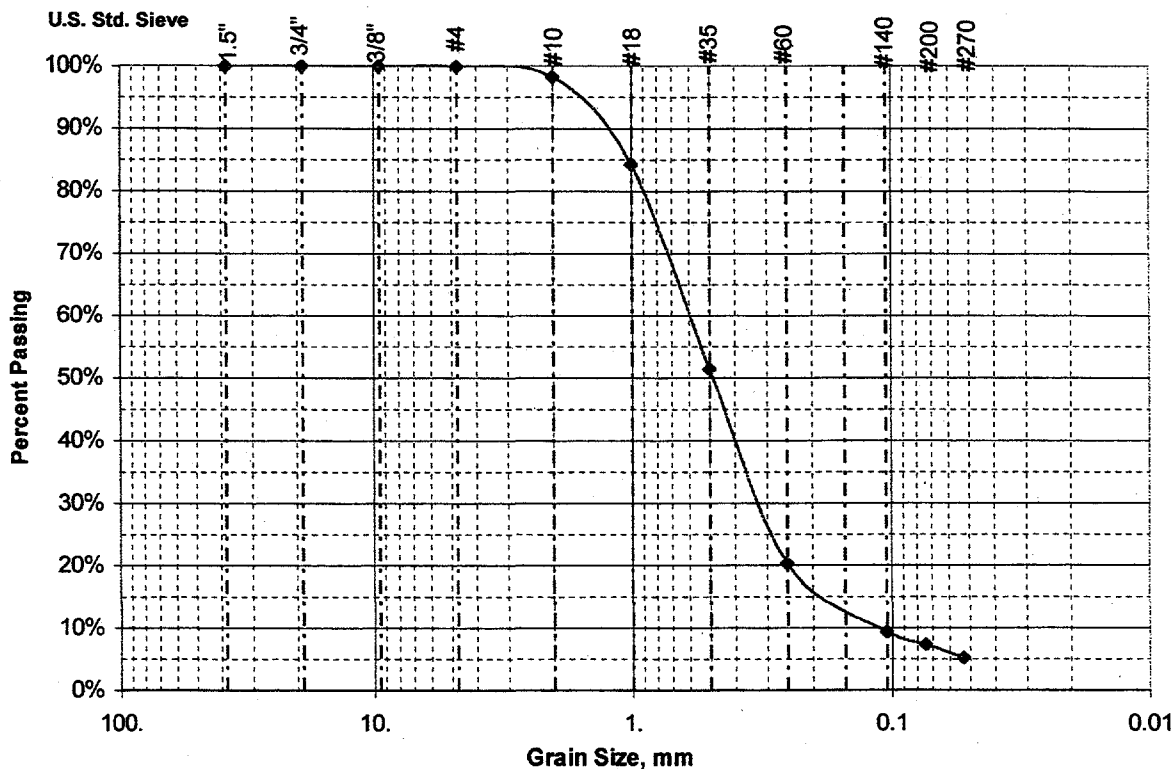


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	200'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
526.04	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	8.52	1.6	98.4	2.000	
	#18	82.52	15.7	84.3	1.000	
	#35	255.35	48.5	51.5	0.500	
	#60	419.53	79.8	20.2	0.250	
	#140	476.68	90.6	9.4	0.105	
	#200	487.55	92.7	7.3	0.074	
	#270	498.68	94.8	5.2	0.053	

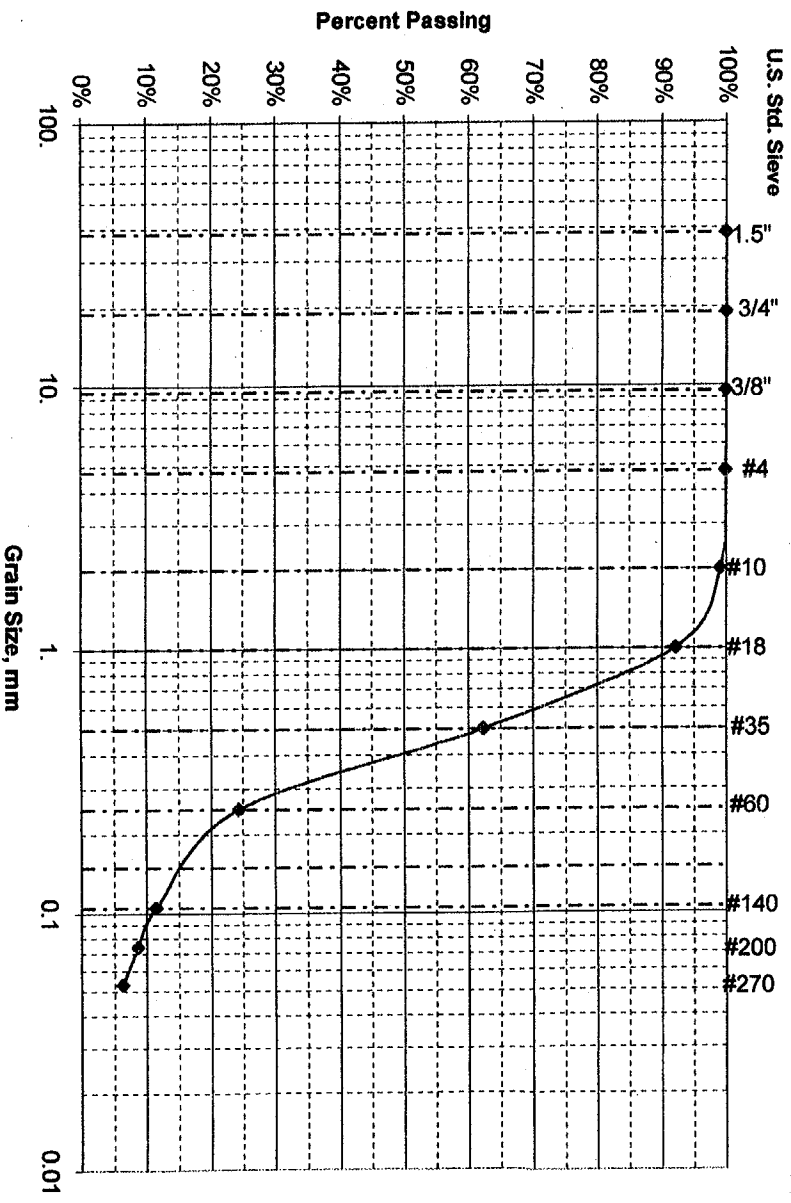


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	220'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
666.67	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.81	0.1	99.9	4.750	
	#10	6.18	0.9	99.1	2.000	
	#18	52.16	7.8	92.2	1.000	
	#35	251.33	37.7	62.3	0.500	
	#60	504.23	75.6	24.4	0.250	
	#140	590.17	88.5	11.5	0.105	
	#200	608.84	91.3	8.7	0.074	
	#270	624.48	93.7	6.3	0.053	

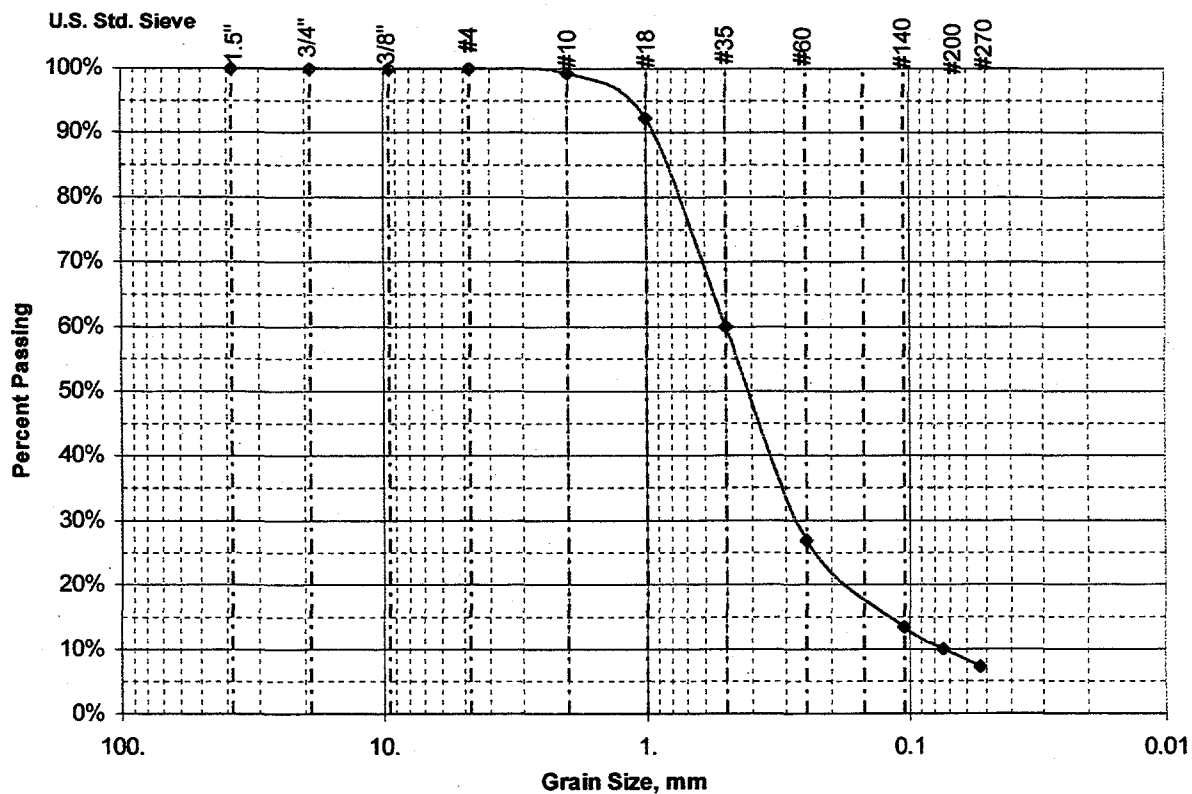


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	210'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
664.30	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	4.91	0.7	99.3	2.000	
	#18	51.25	7.7	92.3	1.000	
	#35	265.15	39.9	60.1	0.500	
	#60	485.27	73.0	27.0	0.250	
	#140	574.24	86.4	13.6	0.105	
	#200	597.77	90.0	10.0	0.074	
	#270	616.13	92.7	7.3	0.053	

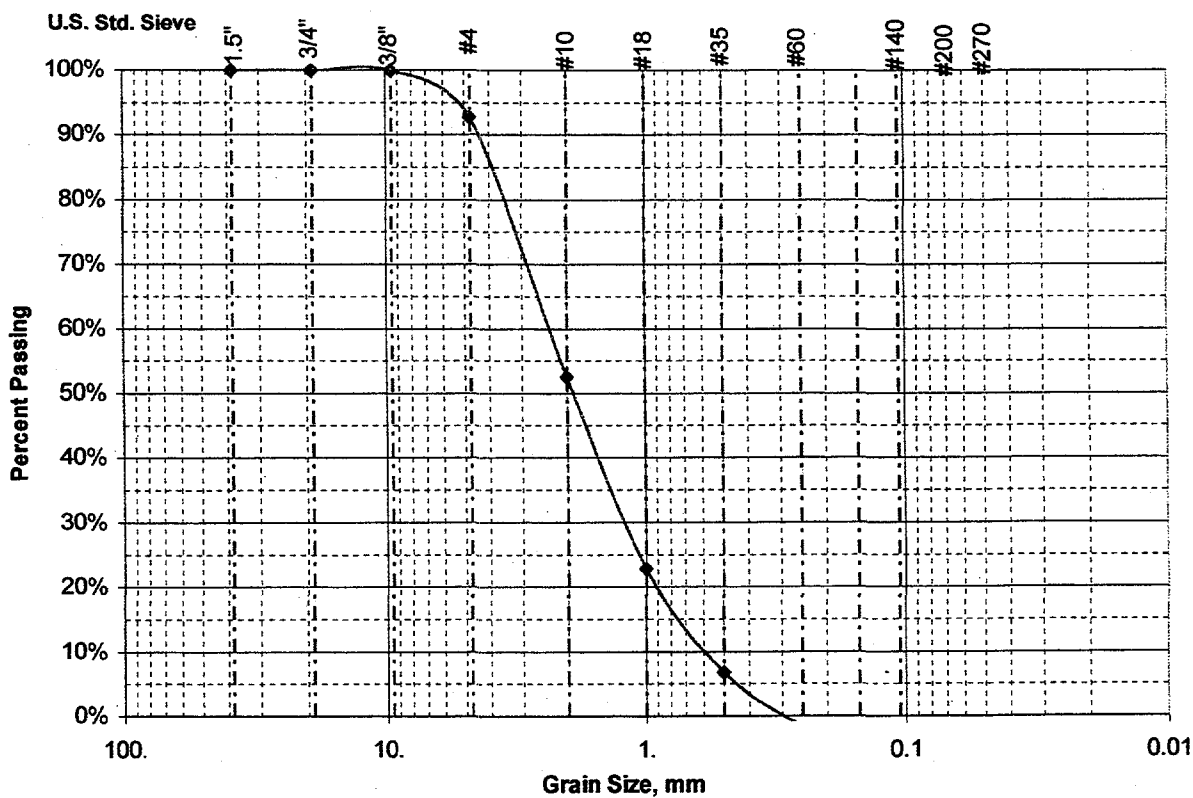


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	230'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
506.43	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	36.41	7.2	92.8	4.750	
	#10	240.07	47.4	52.6	2.000	
	#18	390.39	77.1	22.9	1.000	
	#35	471.84	93.2	6.8	0.500	
	#60	514.09	101.5	-1.5	0.250	
	#140	539.30	106.5	-6.5	0.105	
	#200	546.17	107.8	-7.8	0.074	
	#270	551.59	108.9	-8.9	0.053	

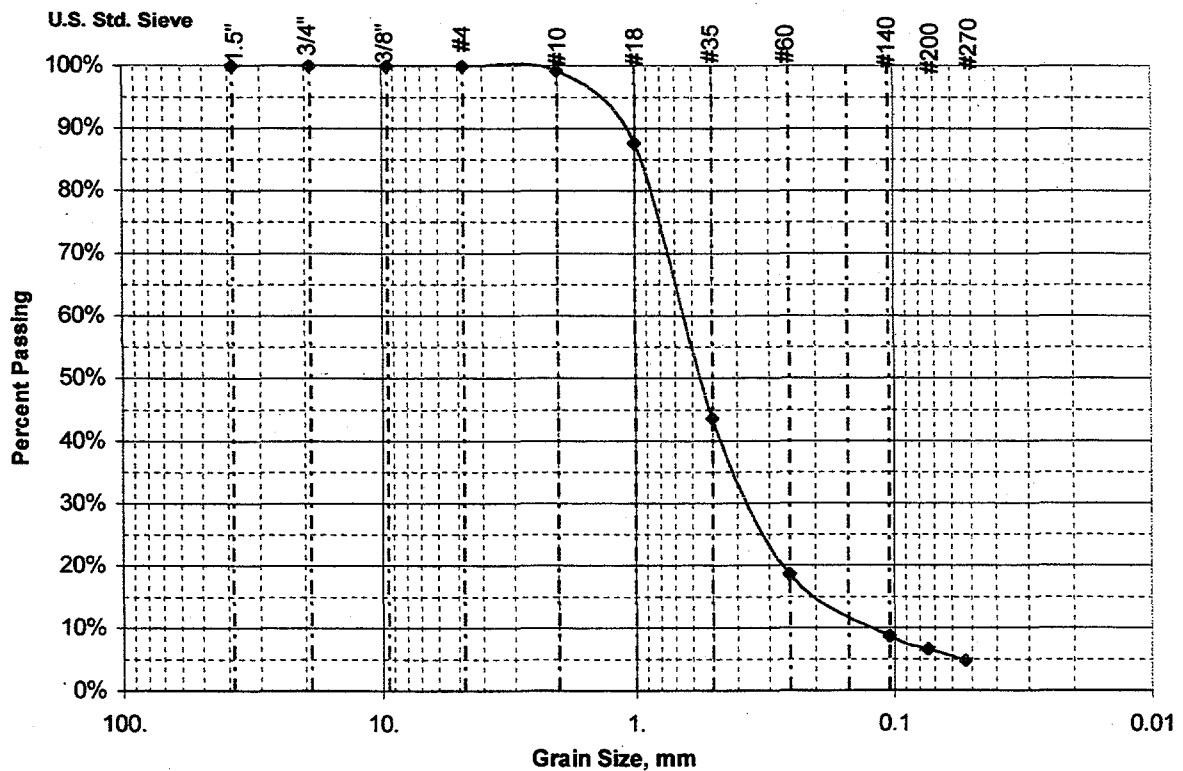


Comments: Sandy gravel.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	250'	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
502.17	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	3.48	0.7	99.3	2.000	
	#18	62.07	12.4	87.6	1.000	
	#35	282.95	56.3	43.7	0.500	
	#60	408.76	81.4	18.6	0.250	
	#140	458.82	91.4	8.6	0.105	
	#200	469.14	93.4	6.6	0.074	
	#270	478.00	95.2	4.8	0.053	

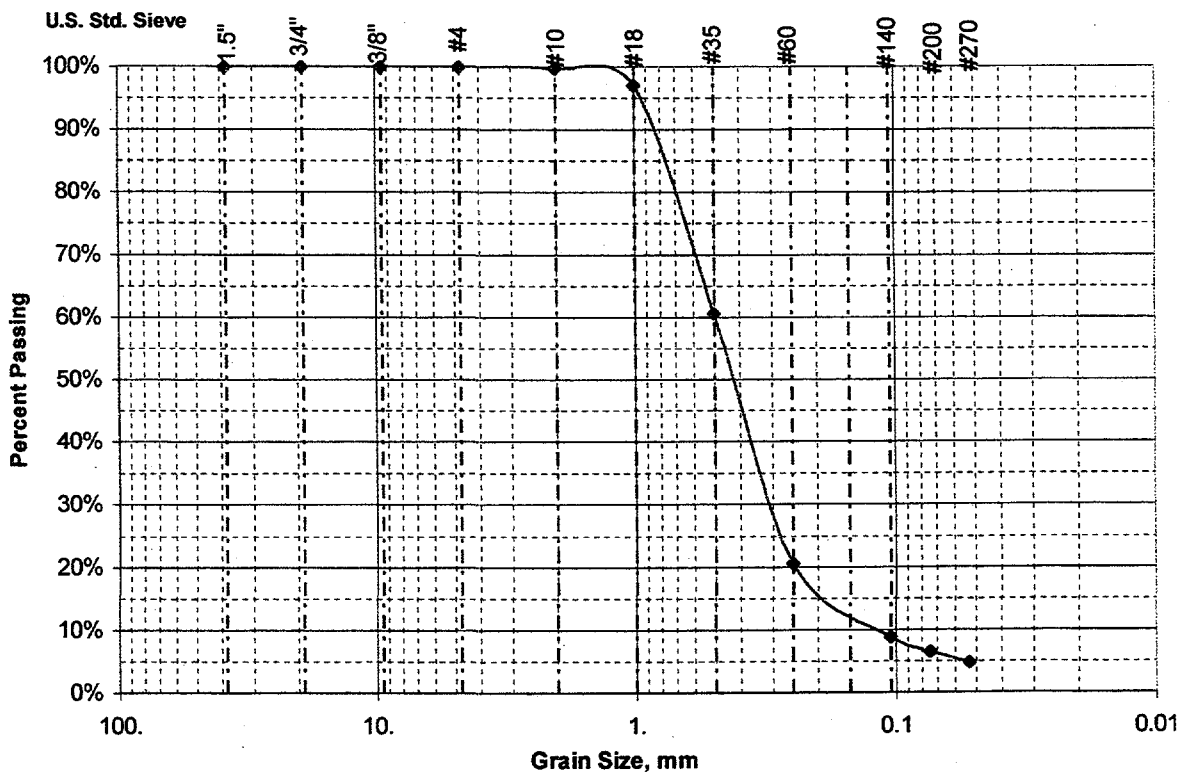


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	260'	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
575.12	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.06	0.2	99.8	2.000	
	#18	17.08	3.0	97.0	1.000	
	#35	226.69	39.4	60.6	0.500	
	#60	456.71	79.4	20.6	0.250	
	#140	524.20	91.1	8.9	0.105	
	#200	537.54	93.5	6.5	0.074	
	#270	547.47	95.2	4.8	0.053	

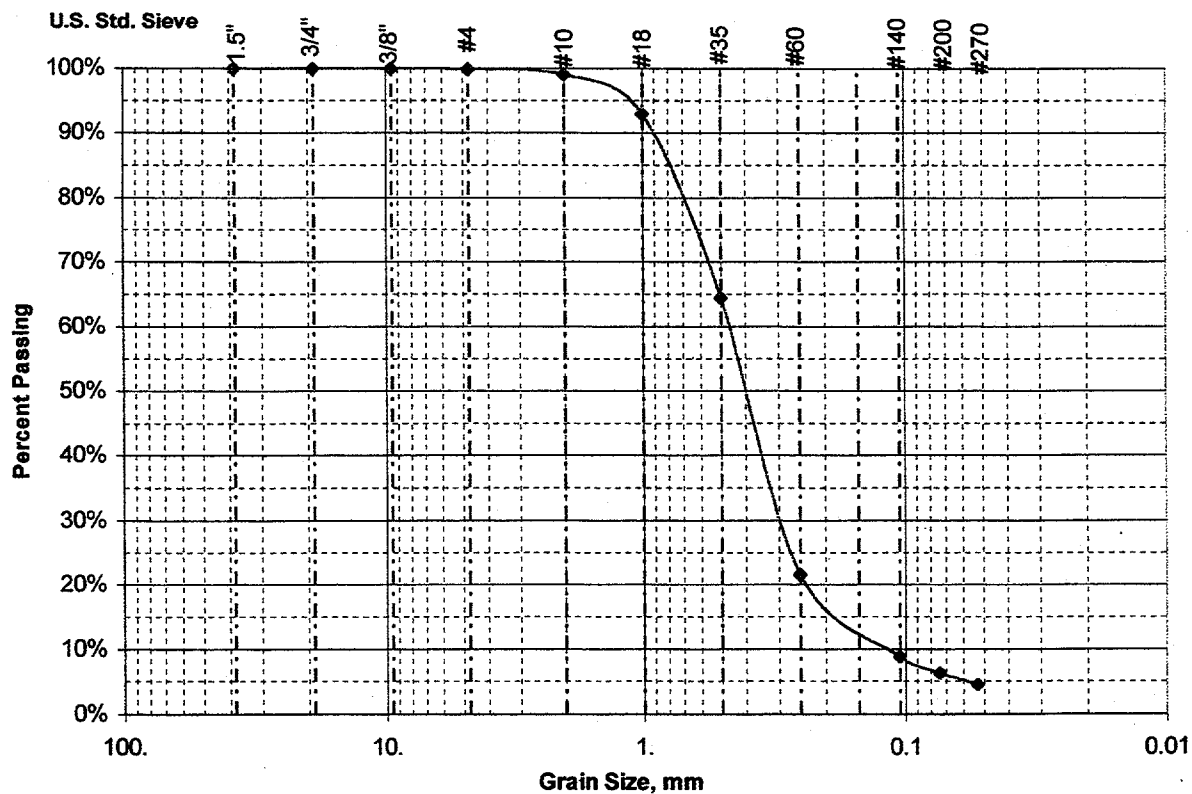


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	270'	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
489.15	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.63	0.1	99.9	4.750	
	#10	4.44	0.9	99.1	2.000	
	#18	34.21	7.0	93.0	1.000	
	#35	173.50	35.5	64.5	0.500	
	#60	383.72	78.4	21.6	0.250	
	#140	445.68	91.1	8.9	0.105	
	#200	458.17	93.7	6.3	0.074	
	#270	466.98	95.5	4.5	0.053	

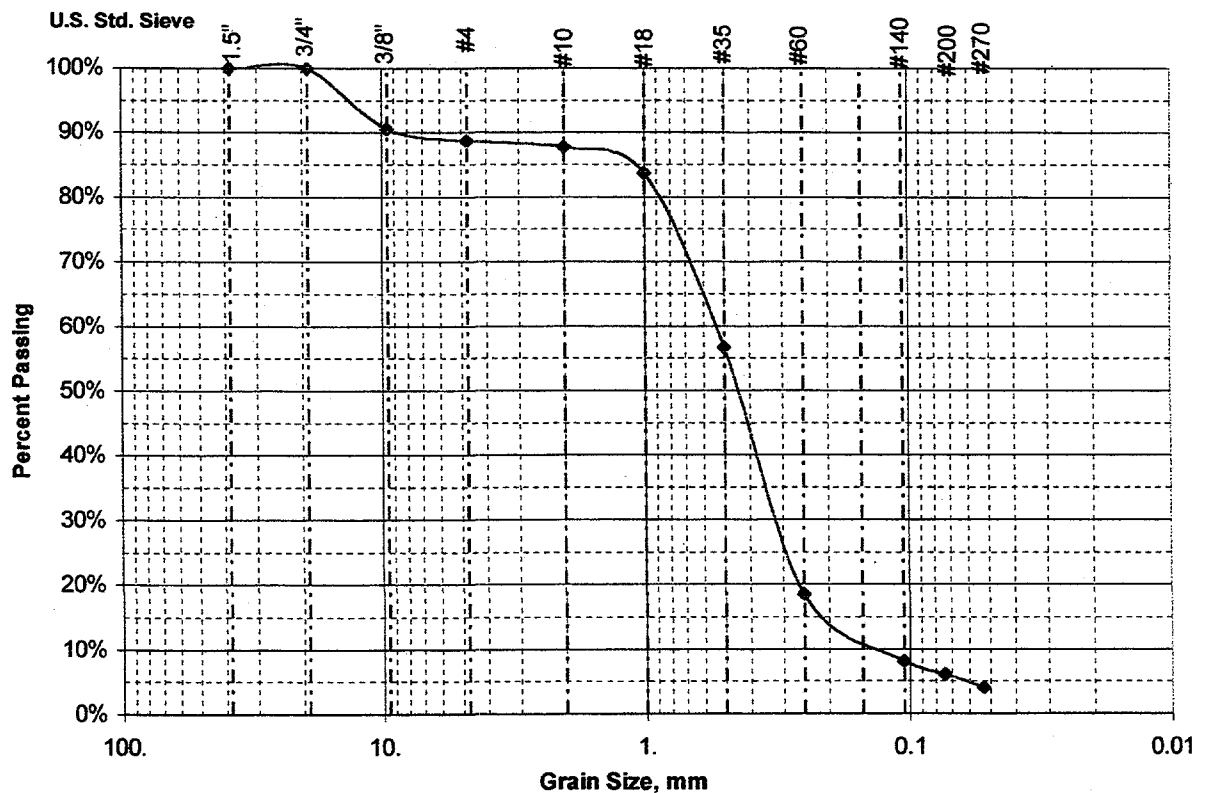


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	280'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
558.17	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	52.48	9.4	90.6	9.500	
	#4	62.52	11.2	88.8	4.750	
	#10	68.08	12.2	87.8	2.000	
	#18	90.64	16.2	83.8	1.000	
	#35	241.70	43.3	56.7	0.500	
	#60	454.88	81.5	18.5	0.250	
	#140	512.67	91.8	8.2	0.105	
	#200	524.21	93.9	6.1	0.074	
	#270	535.47	95.9	4.1	0.053	

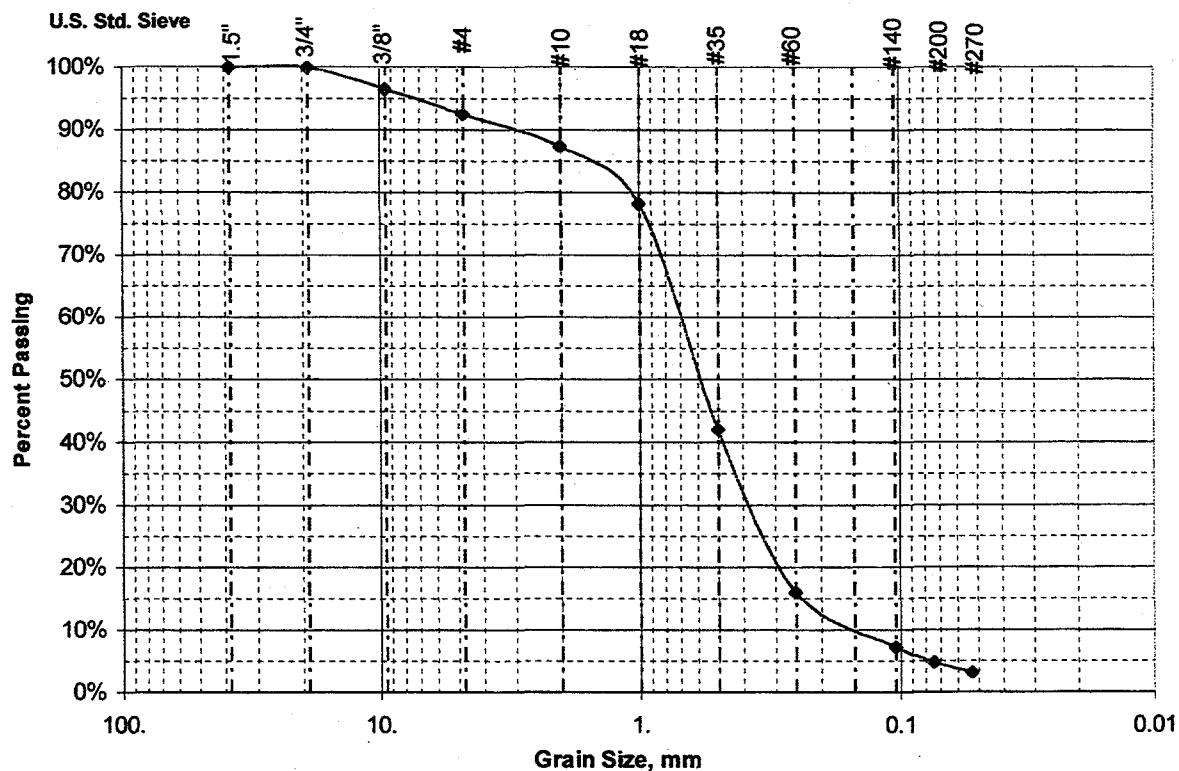


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-12	DEPTH	290	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
497.84	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	17.48	3.5	96.5	9.500	
	#4	37.25	7.5	92.5	4.750	
	#10	63.18	12.7	87.3	2.000	
	#18	107.99	21.7	78.3	1.000	
	#35	288.84	58.0	42.0	0.500	
	#60	418.17	84.0	16.0	0.250	
	#140	462.01	92.8	7.2	0.105	
	#200	473.82	95.2	4.8	0.074	
	#270	482.81	97.0	3.0	0.053	

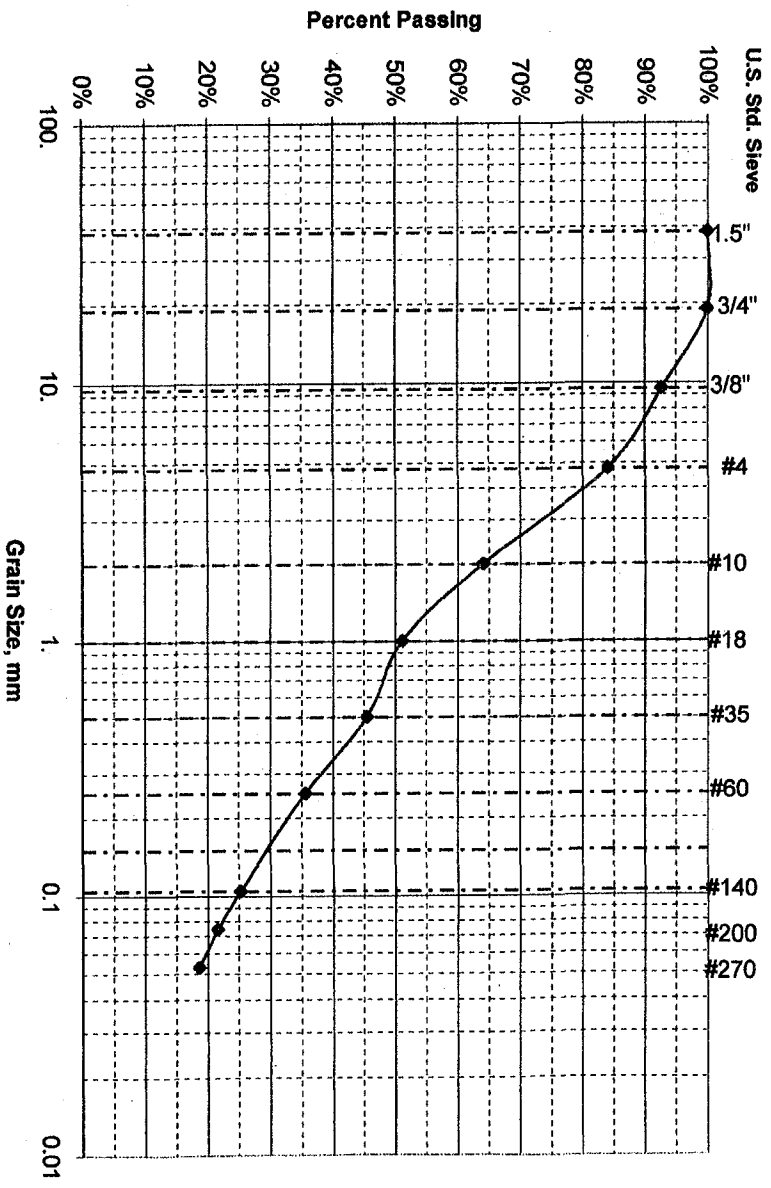


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E-17-12	DEPTH	300'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
679.69	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	49.17	7.2	92.8	9.500	
	#4	108.11	15.9	84.1	4.750	
	#10	244.46	36.0	64.0	2.000	
	#18	332.45	48.9	51.1	1.000	
	#35	370.28	54.5	45.5	0.500	
	#60	437.32	64.3	35.7	0.250	
	#140	508.14	74.8	25.2	0.105	
	#200	532.73	78.4	21.6	0.074	
	#270	553.13	81.4	18.6	0.053	

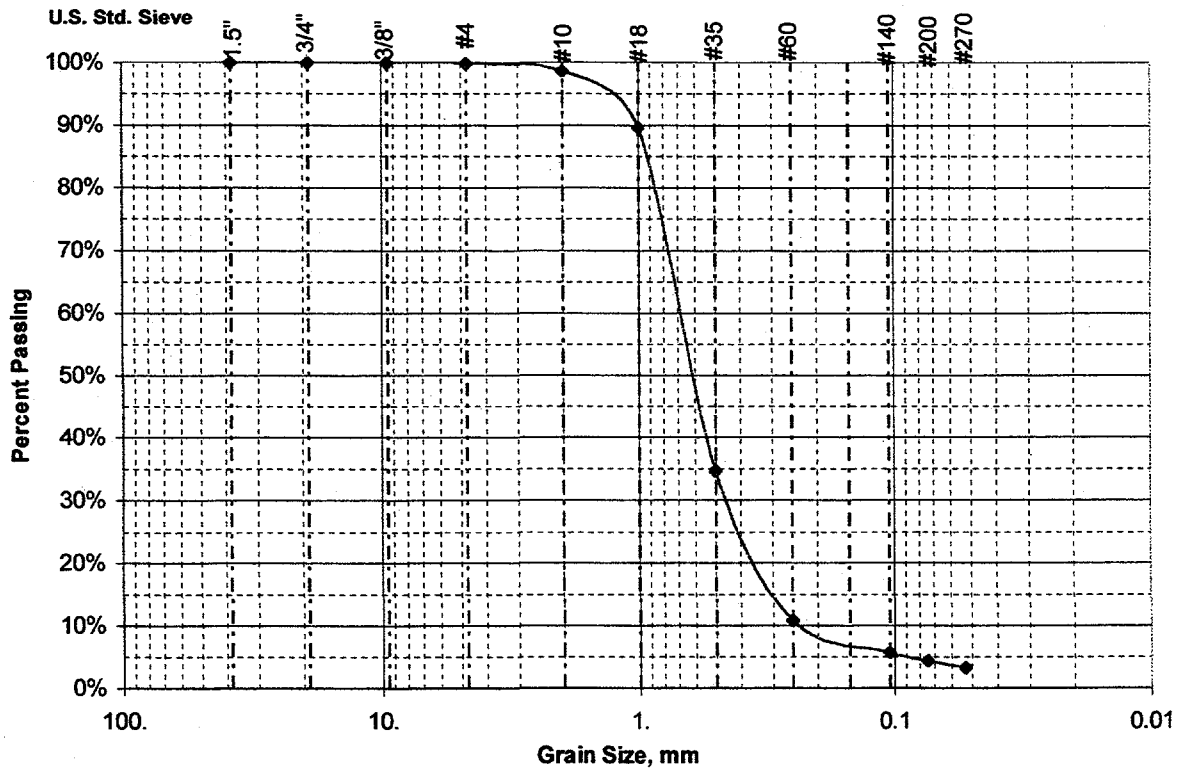


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	20'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
571.43	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.84	0.1	99.9	4.750	
	#10	7.36	1.3	98.7	2.000	
	#18	59.06	10.3	89.7	1.000	
	#35	372.74	65.2	34.8	0.500	
	#60	509.70	89.2	10.8	0.250	
	#140	538.79	94.3	5.7	0.105	
	#200	546.47	95.6	4.4	0.074	
	#270	552.83	96.7	3.3	0.053	

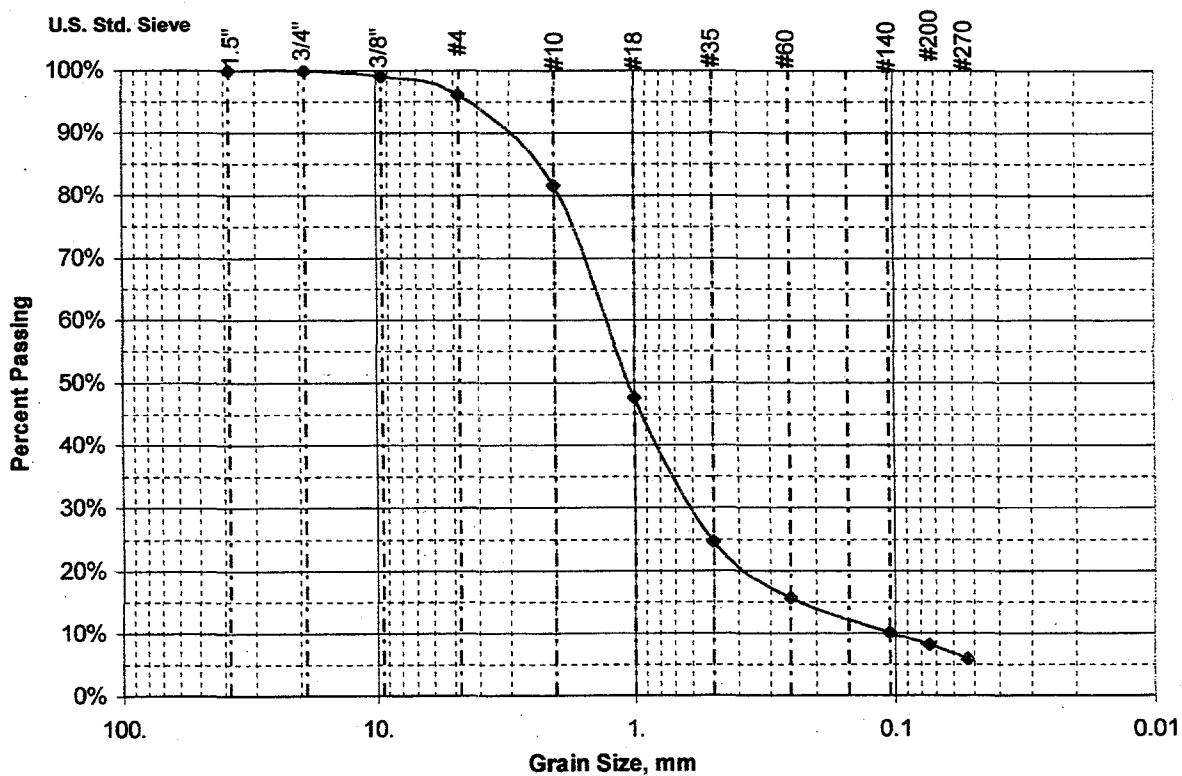


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	10'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
611.93	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	5.62	0.9	99.1	9.500	
	#4	23.75	3.9	96.1	4.750	
	#10	112.15	18.3	81.7	2.000	
	#18	320.32	52.3	47.7	1.000	
	#35	460.88	75.3	24.7	0.500	
	#60	516.05	84.3	15.7	0.250	
	#140	550.01	89.9	10.1	0.105	
	#200	562.36	91.9	8.1	0.074	
	#270	575.98	94.1	5.9	0.053	

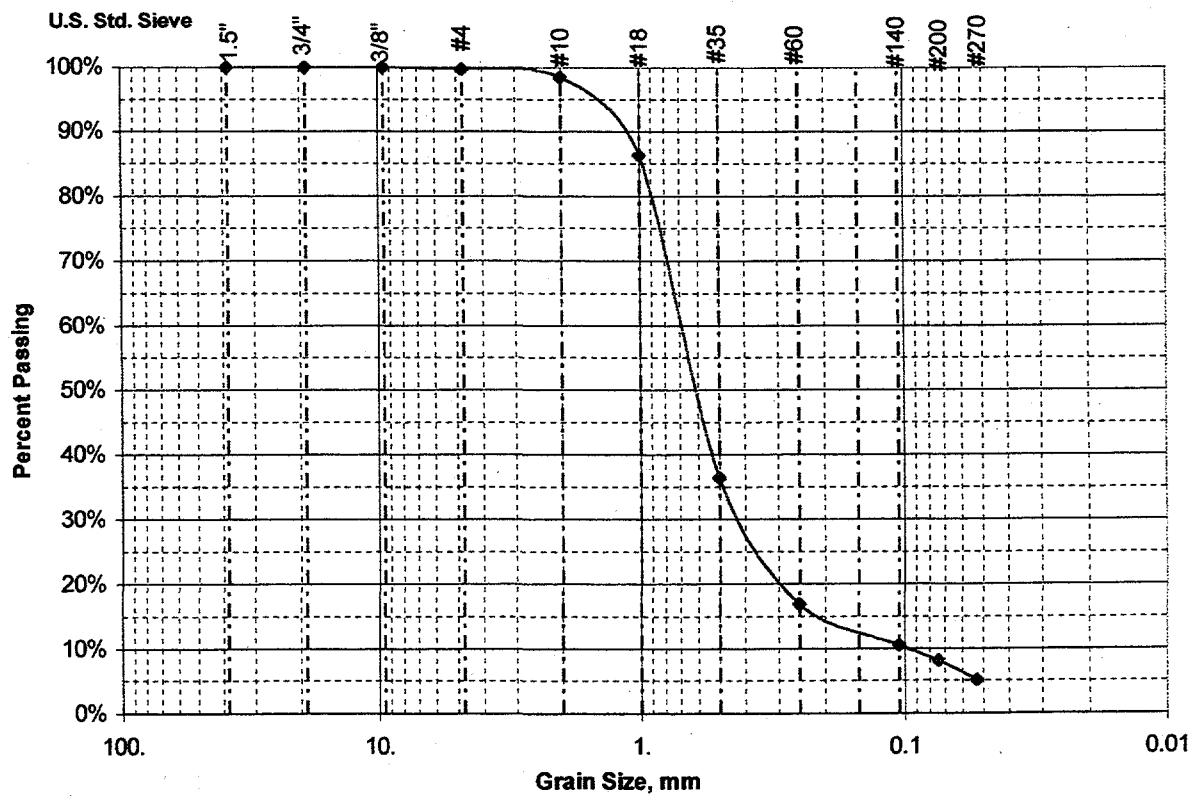


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	30'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
473.00	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	1.35	0.3	99.7	4.750	
	#10	7.07	1.5	98.5	2.000	
	#18	64.31	13.6	86.4	1.000	
	#35	300.33	63.5	36.5	0.500	
	#60	392.62	83.0	17.0	0.250	
	#140	423.06	89.4	10.6	0.105	
	#200	434.12	91.8	8.2	0.074	
	#270	448.94	94.9	5.1	0.053	

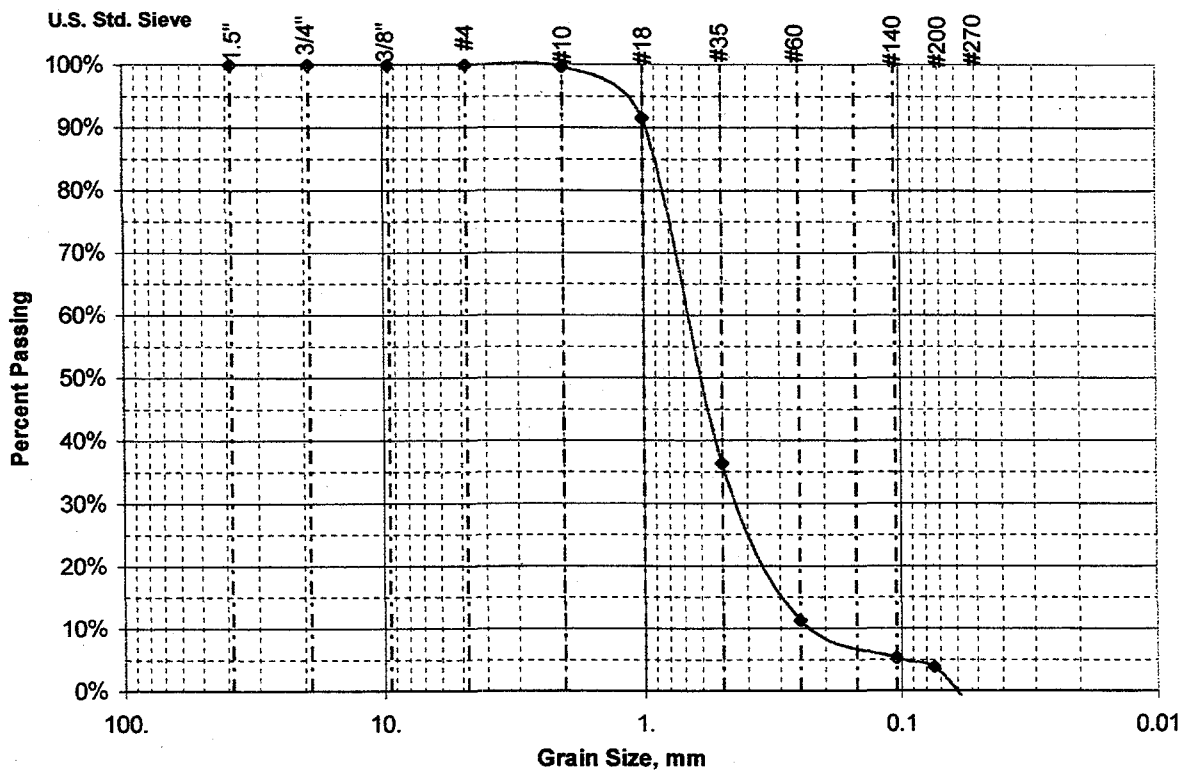


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	40'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
528.30	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.86	0.4	99.6	2.000	
	#18	44.91	8.5	91.5	1.000	
	#35	336.78	63.7	36.3	0.500	
	#60	468.63	88.7	11.3	0.250	
	#140	500.18	94.7	5.3	0.105	
	#200	507.66	96.1	3.9	0.074	
	#270	543.41	102.9	-2.9	0.053	

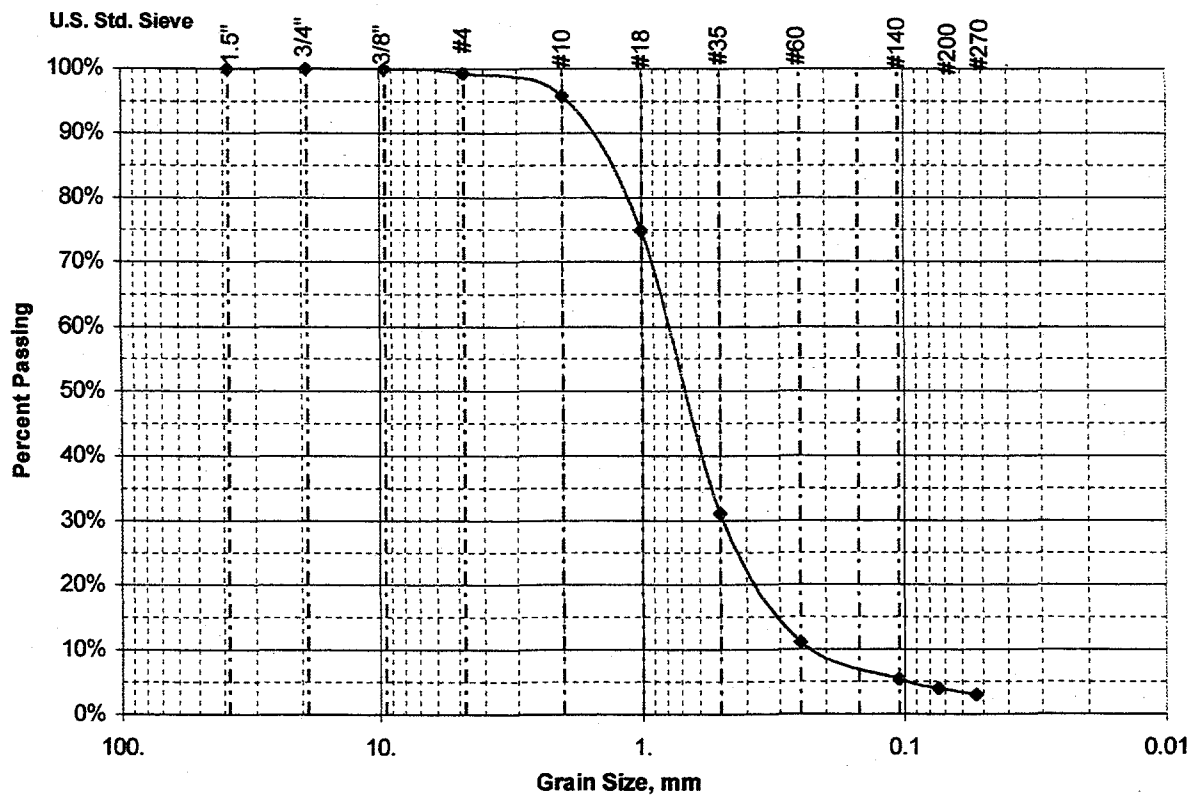


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	50'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
489.88	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	3.20	0.7	99.3	4.750	
	#10	20.40	4.2	95.8	2.000	
	#18	122.82	25.1	74.9	1.000	
	#35	337.11	68.8	31.2	0.500	
	#60	435.45	88.9	11.1	0.250	
	#140	463.47	94.6	5.4	0.105	
	#200	470.29	96.0	4.0	0.074	
	#270	475.00	97.0	3.0	0.053	

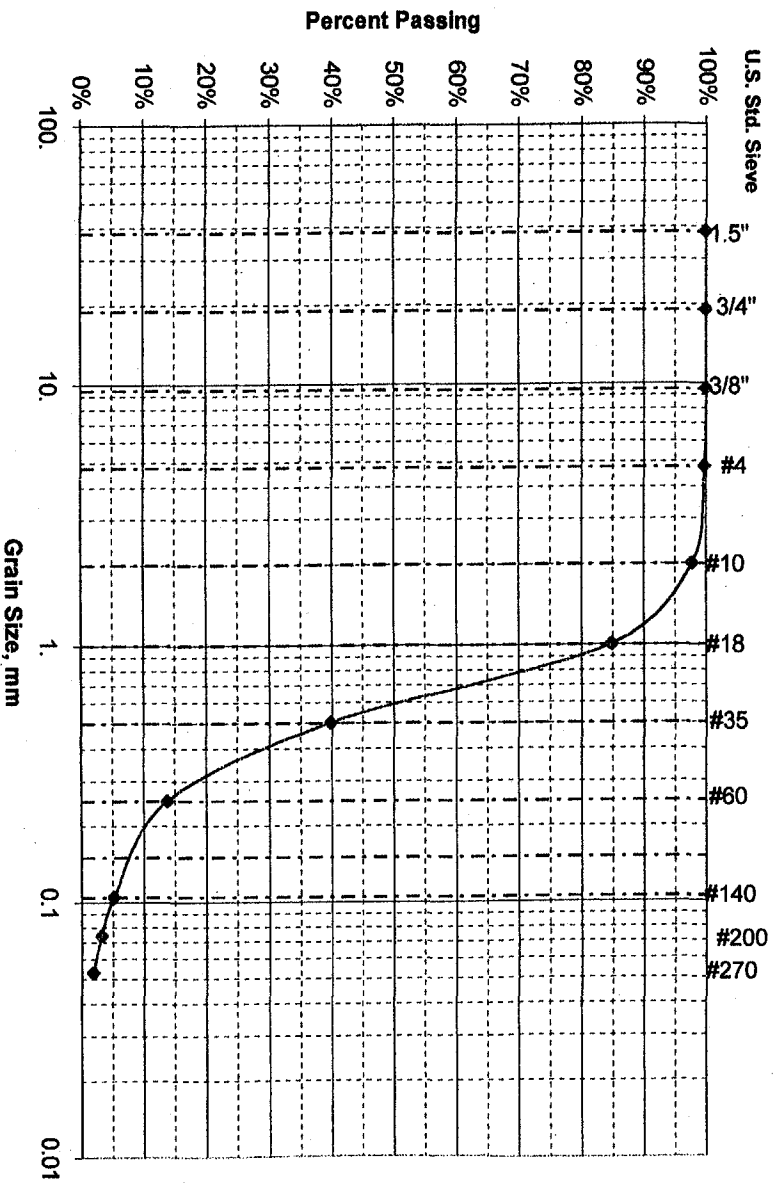


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	130'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
517.30	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	1.60	0.3	99.7	4.750	
	#10	11.49	2.2	97.8	2.000	
	#18	78.41	15.2	84.8	1.000	
	#35	311.29	60.2	39.8	0.500	
	#60	446.28	86.3	13.7	0.250	
	#140	490.64	94.8	5.2	0.105	
	#200	500.78	96.8	3.2	0.074	
	#270	507.85	98.2	1.8	0.053	

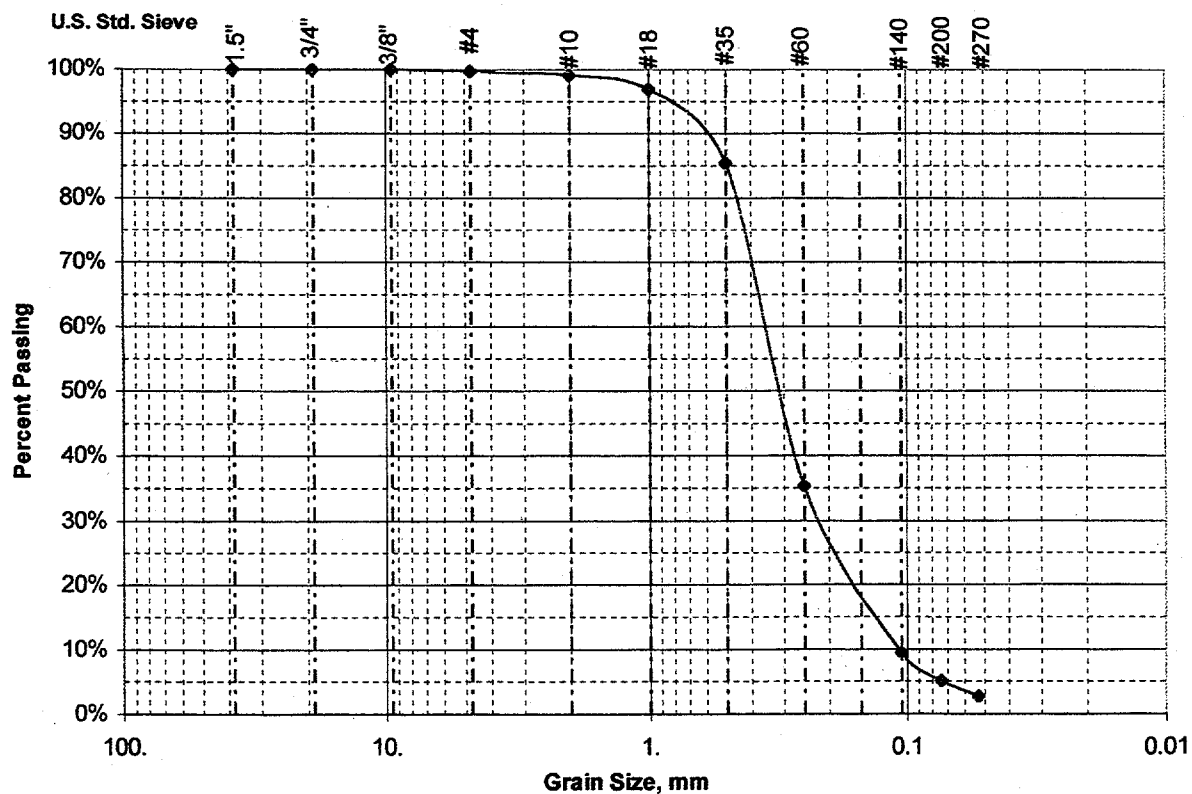


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	140'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
444.32	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	1.12	0.3	99.7	4.750	
	#10	4.12	0.9	99.1	2.000	
	#18	13.45	3.0	97.0	1.000	
	#35	64.28	14.5	85.5	0.500	
	#60	287.01	64.6	35.4	0.250	
	#140	402.29	90.5	9.5	0.105	
	#200	421.59	94.9	5.1	0.074	
	#270	432.26	97.3	2.7	0.053	

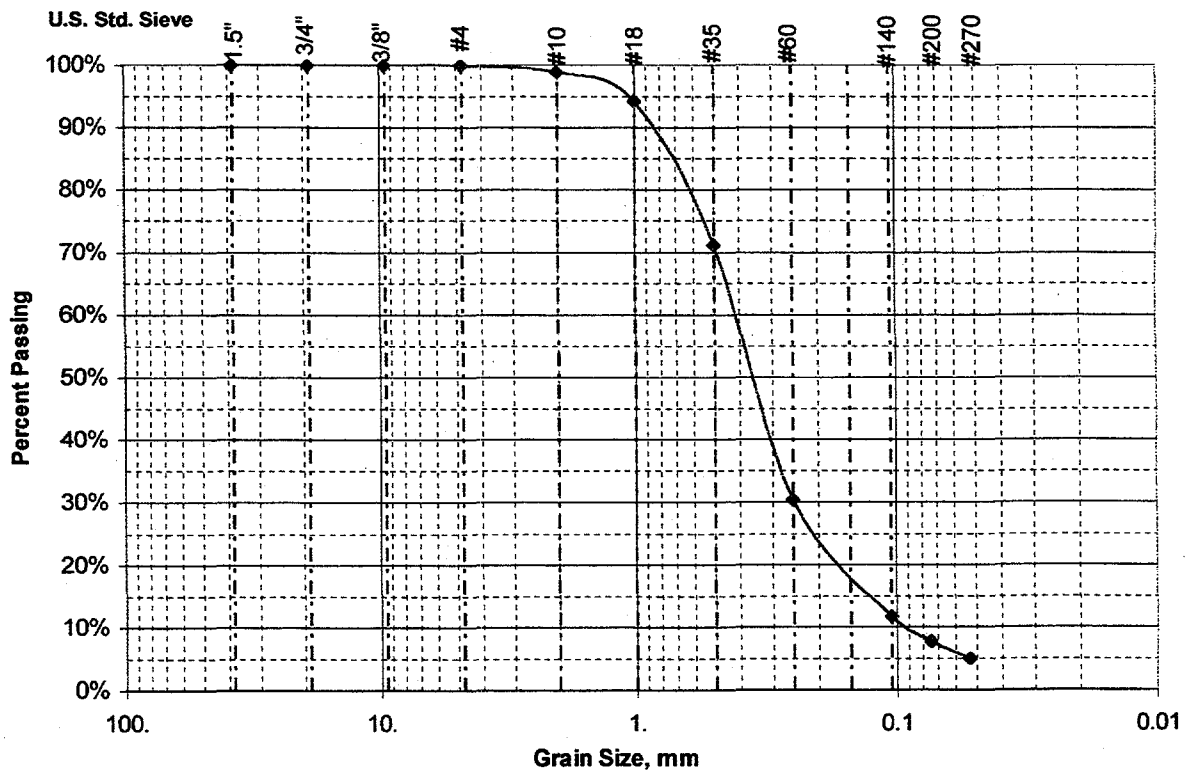


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	150'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
384.28	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.18	0.0	100.0	4.750	
	#10	4.04	1.1	98.9	2.000	
	#18	21.80	5.7	94.3	1.000	
	#35	110.69	28.8	71.2	0.500	
	#60	267.32	69.6	30.4	0.250	
	#140	339.42	88.3	11.7	0.105	
	#200	354.45	92.2	7.8	0.074	
	#270	365.16	95.0	5.0	0.053	

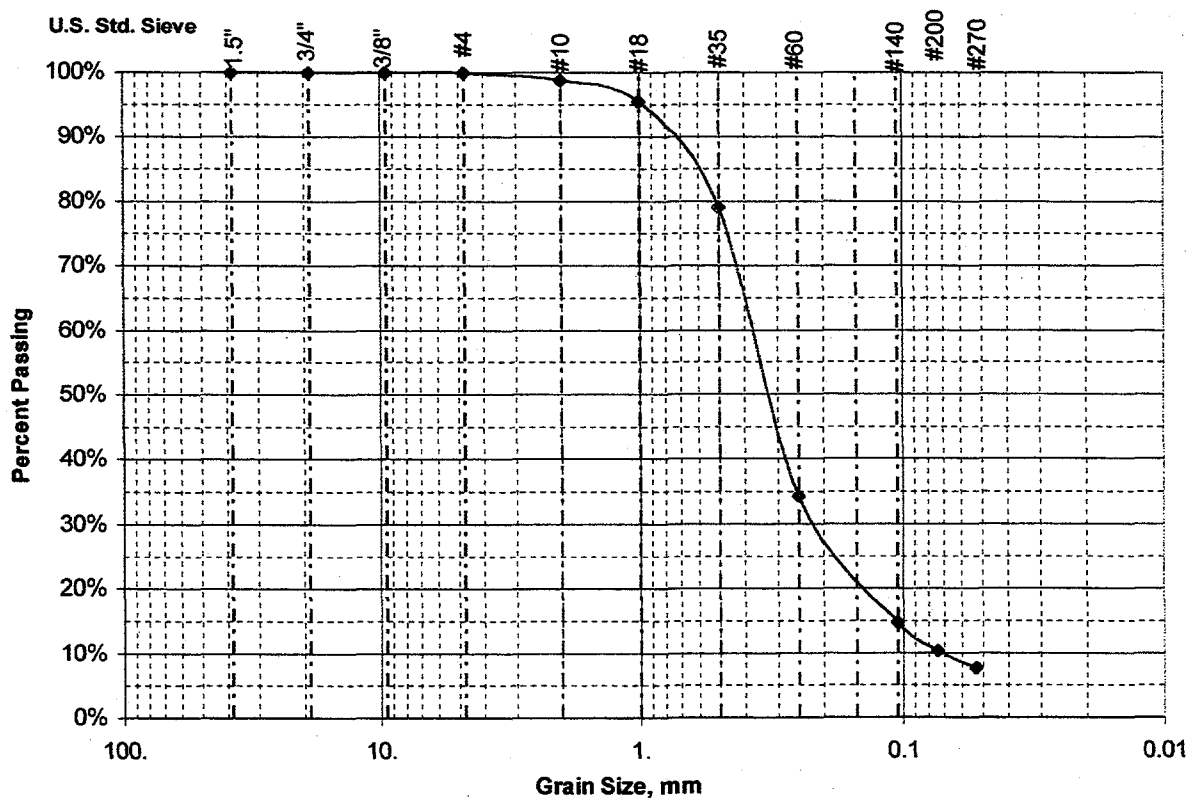


Comments: gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	160'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
484.23	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	5.50	1.1	98.9	2.000	
	#18	22.01	4.5	95.5	1.000	
	#35	101.11	20.9	79.1	0.500	
	#60	318.24	65.7	34.3	0.250	
	#140	412.81	85.3	14.7	0.105	
	#200	434.11	89.6	10.4	0.074	
	#270	446.82	92.3	7.7	0.053	

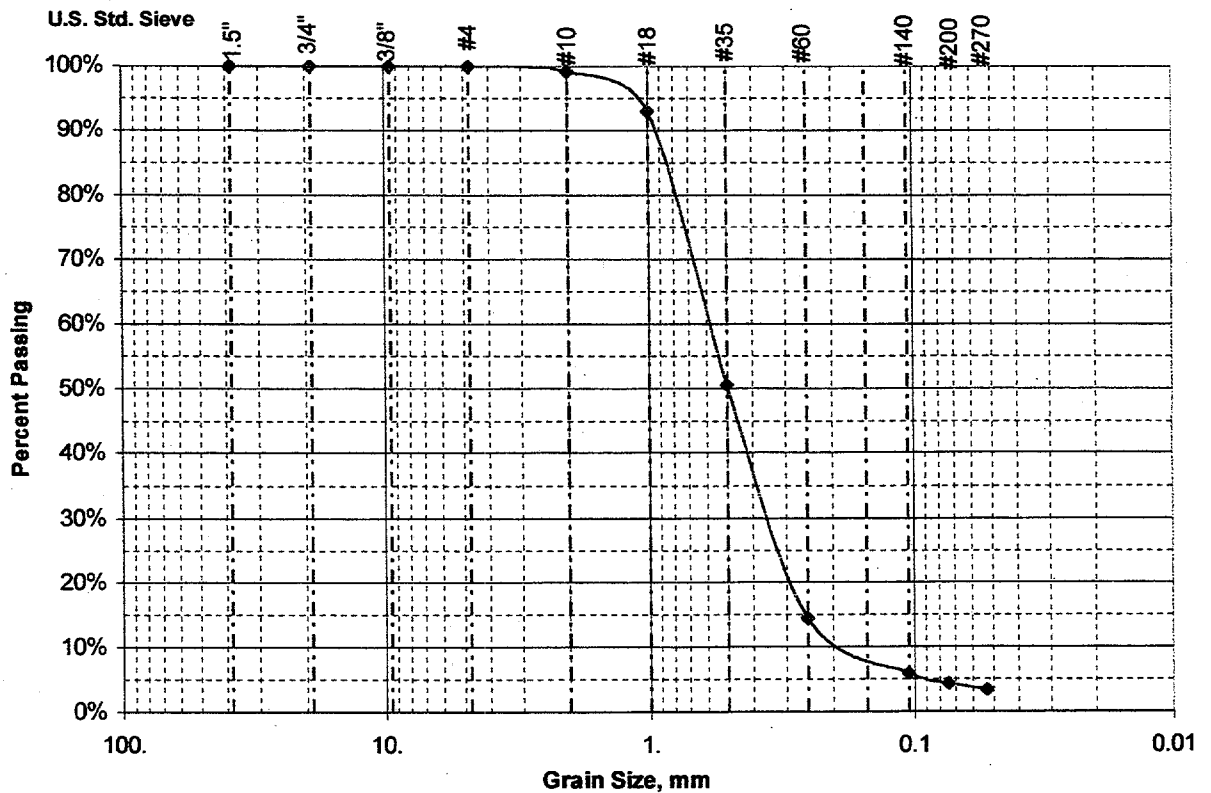


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	170'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
514.85	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	4.04	0.8	99.2	2.000	
	#18	36.23	7.0	93.0	1.000	
	#35	254.53	49.4	50.6	0.500	
	#60	440.41	85.5	14.5	0.250	
	#140	484.49	94.1	5.9	0.105	
	#200	492.43	95.6	4.4	0.074	
	#270	497.55	96.6	3.4	0.053	

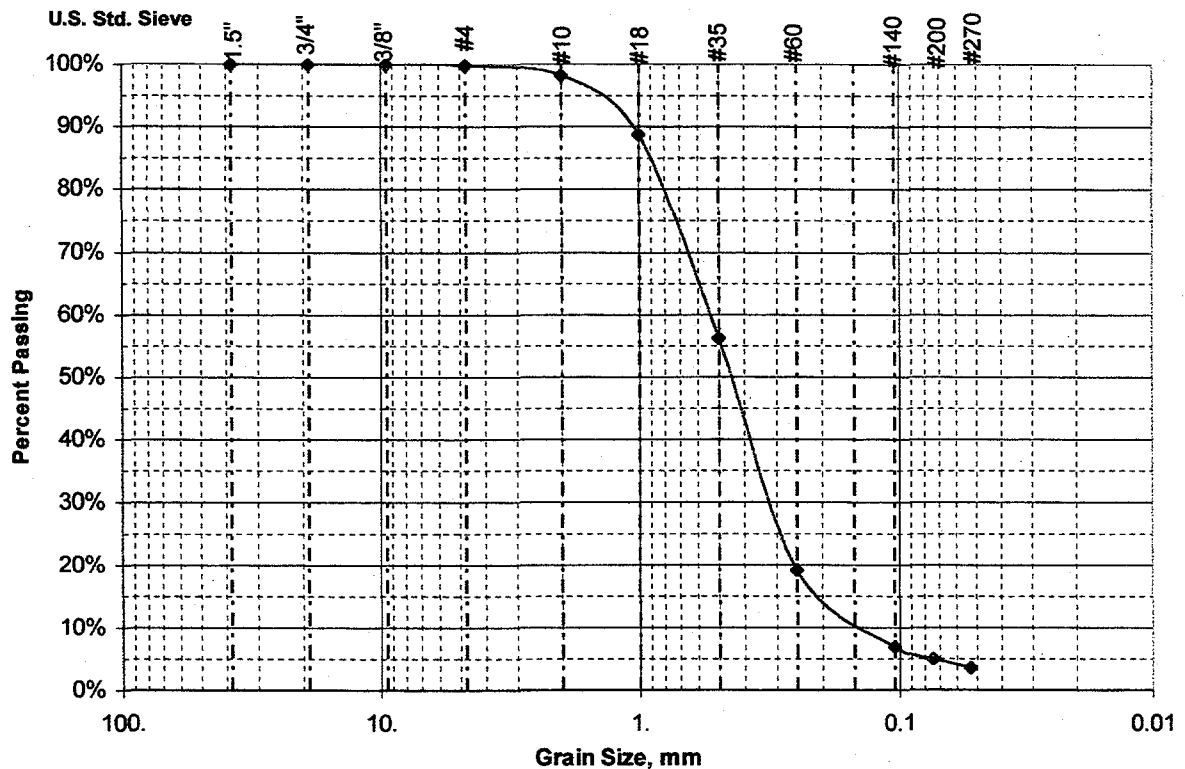


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	180'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
433.02	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.33	0.1	99.9	4.750	
	#10	7.54	1.7	98.3	2.000	
	#18	48.67	11.2	88.8	1.000	
	#35	189.64	43.8	56.2	0.500	
	#60	349.98	80.8	19.2	0.250	
	#140	402.91	93.0	7.0	0.105	
	#200	411.36	95.0	5.0	0.074	
	#270	417.77	96.5	3.5	0.053	

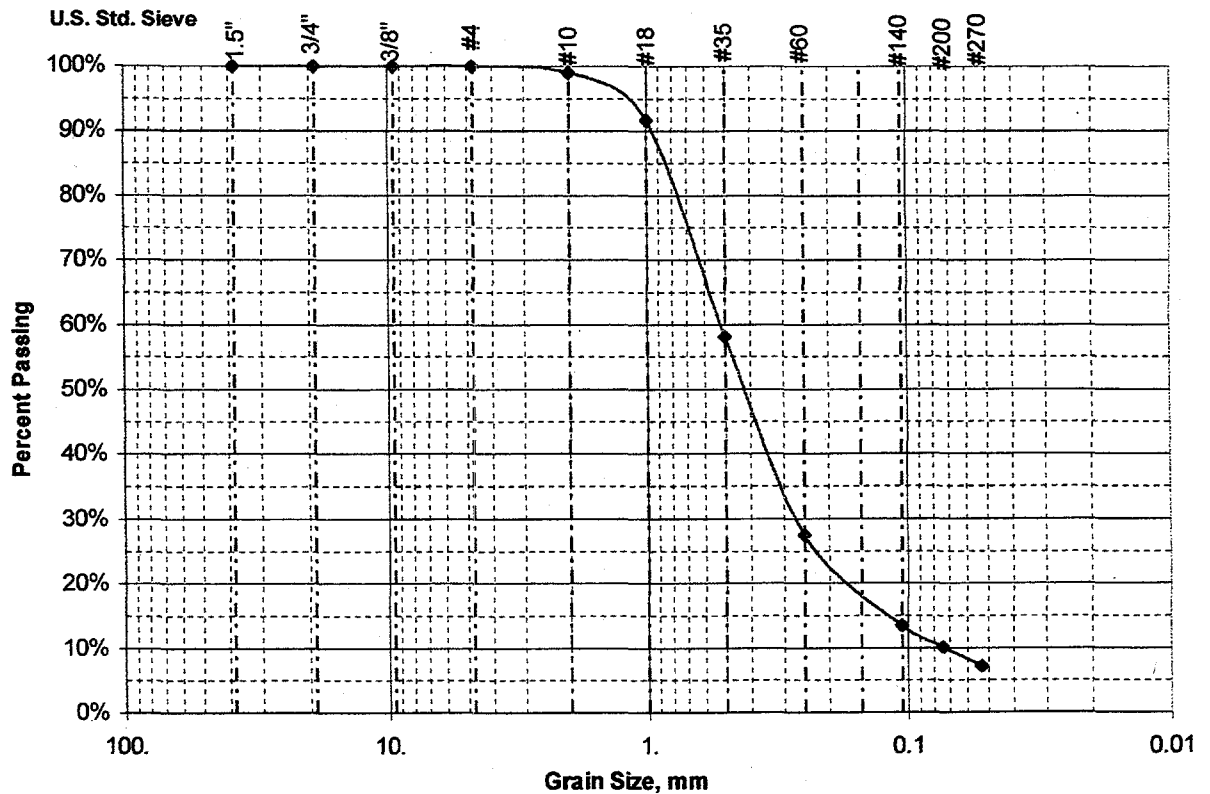


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	190'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
417.50	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	4.06	1.0	99.0	2.000	
	#18	34.73	8.3	91.7	1.000	
	#35	174.48	41.8	58.2	0.500	
	#60	302.62	72.5	27.5	0.250	
	#140	361.12	86.5	13.5	0.105	
	#200	375.22	89.9	10.1	0.074	
	#270	387.52	92.8	7.2	0.053	

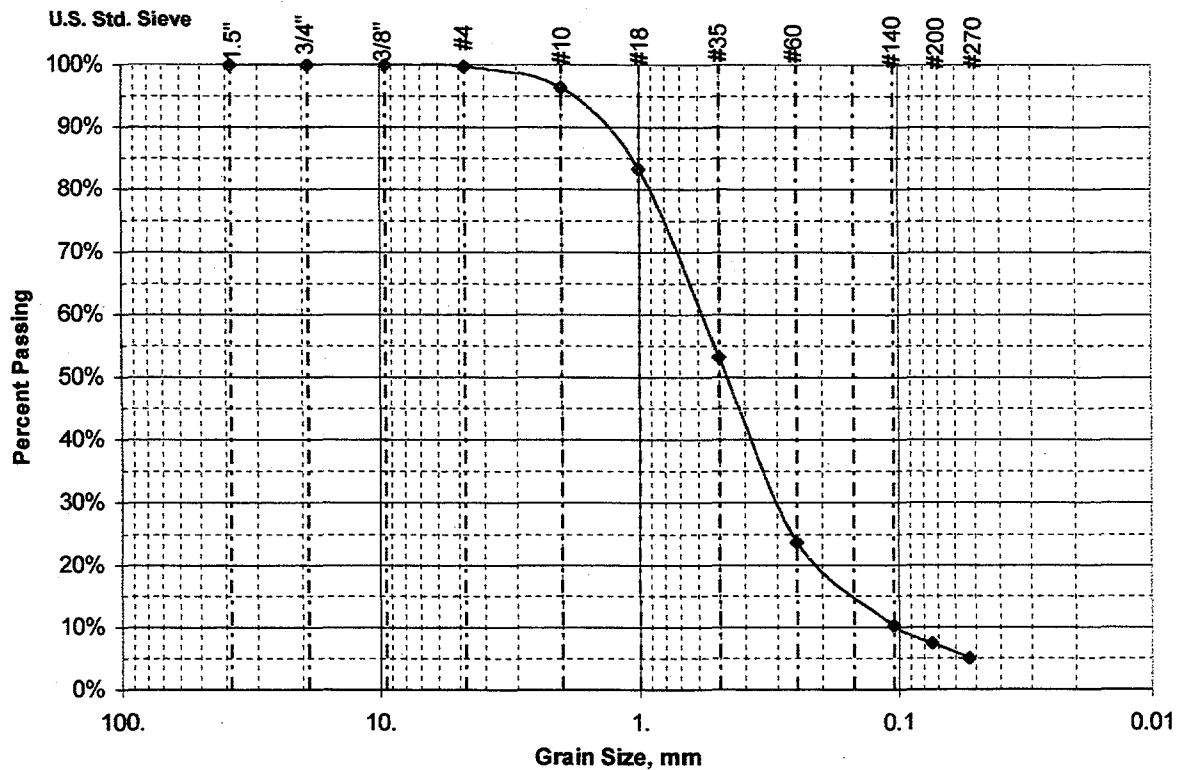


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	200'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
370.28	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.81	0.2	99.8	4.750	
	#10	13.11	3.5	96.5	2.000	
	#18	61.29	16.6	83.4	1.000	
	#35	172.97	46.7	53.3	0.500	
	#60	282.49	76.3	23.7	0.250	
	#140	332.38	89.8	10.2	0.105	
	#200	342.74	92.6	7.4	0.074	
	#270	351.72	95.0	5.0	0.053	

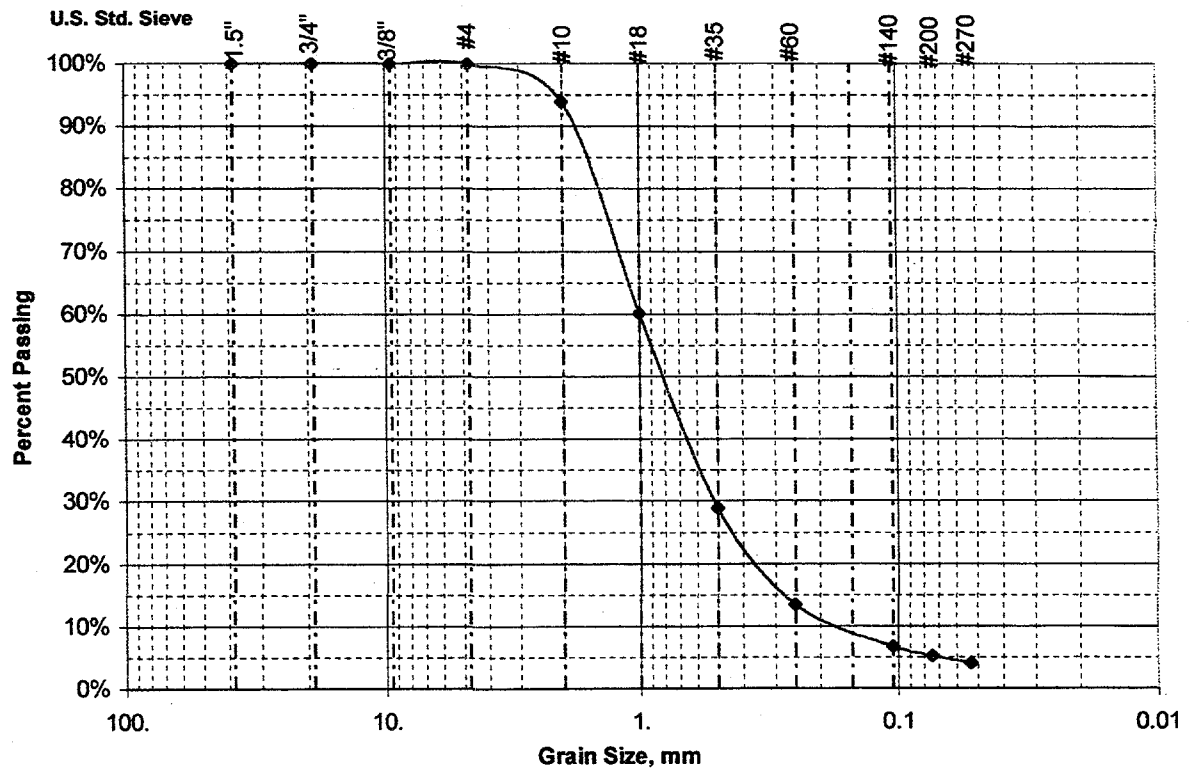


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	210'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
518.46	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	31.16	6.0	94.0	2.000	
	#18	206.23	39.8	60.2	1.000	
	#35	368.30	71.0	29.0	0.500	
	#60	448.86	86.6	13.4	0.250	
	#140	483.68	93.3	6.7	0.105	
	#200	491.56	94.8	5.2	0.074	
	#270	497.33	95.9	4.1	0.053	

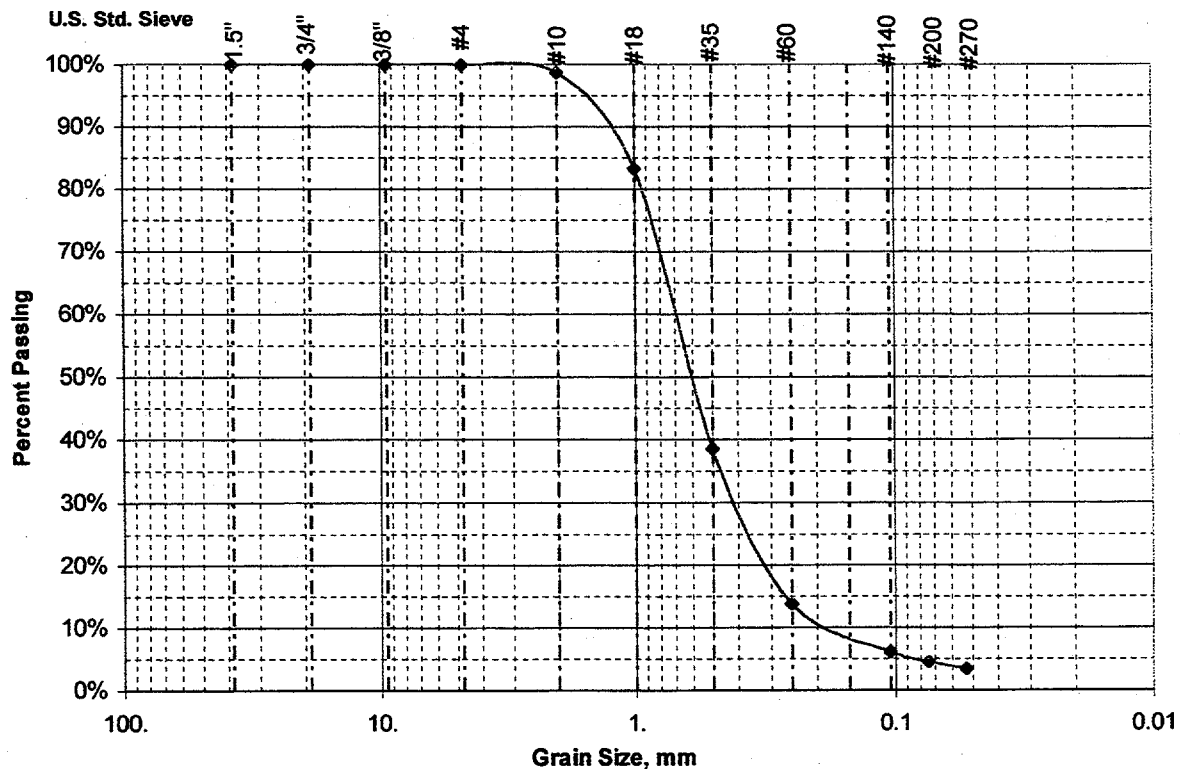


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	220'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
400.62	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	4.94	1.2	98.8	2.000	
	#18	66.86	16.7	83.3	1.000	
	#35	245.89	61.4	38.6	0.500	
	#60	345.68	86.3	13.7	0.250	
	#140	376.20	93.9	6.1	0.105	
	#200	382.65	95.5	4.5	0.074	
	#270	387.34	96.7	3.3	0.053	

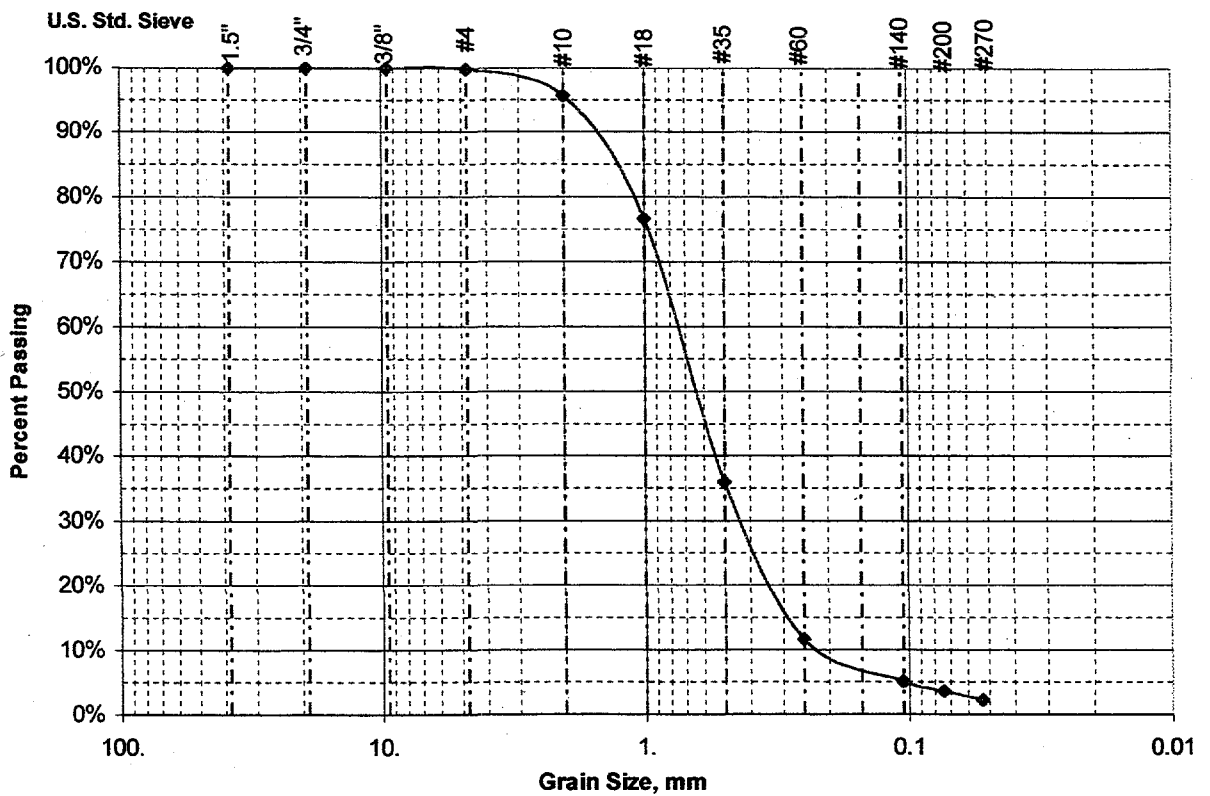


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	230'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
370.78	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.87	0.2	99.8	4.750	
	#10	16.02	4.3	95.7	2.000	
	#18	86.47	23.3	76.7	1.000	
	#35	237.38	64.0	36.0	0.500	
	#60	327.80	88.4	11.6	0.250	
	#140	351.71	94.9	5.1	0.105	
	#200	357.23	96.3	3.7	0.074	
	#270	362.29	97.7	2.3	0.053	

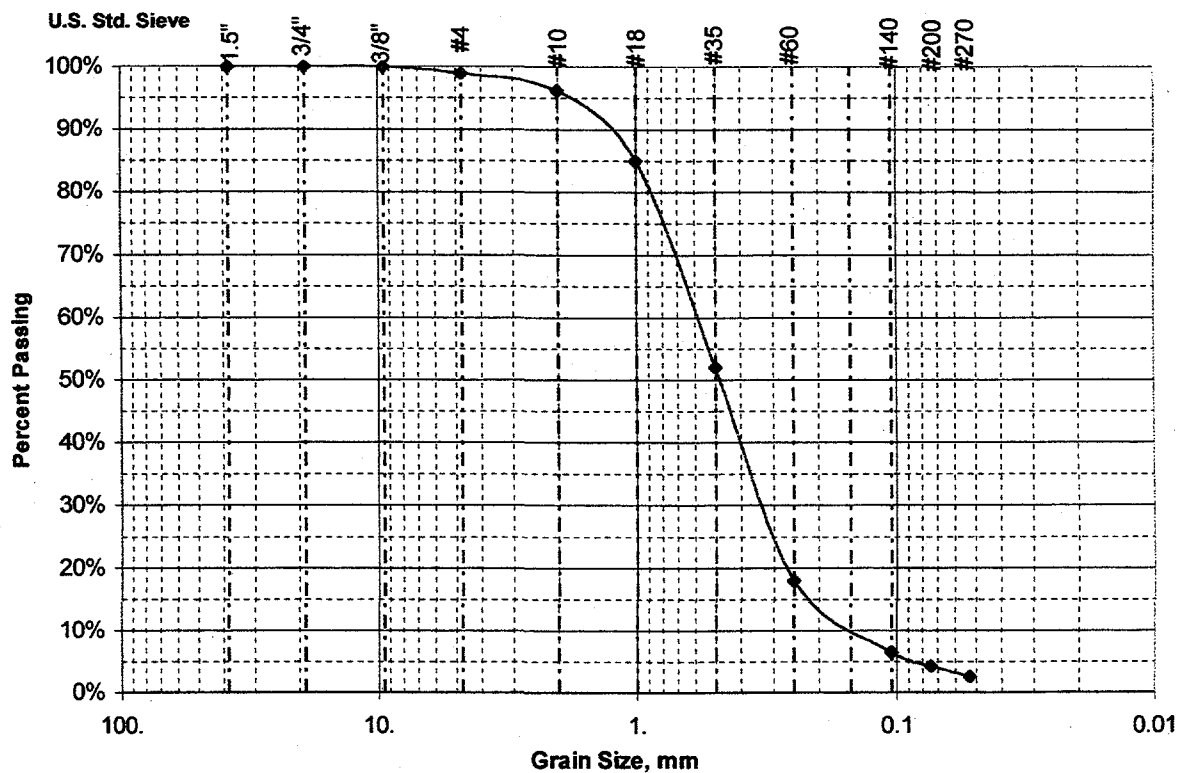


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	240'	SAMPLE#		WELL ID#	
						DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
429.00	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	4.45	1.0	99.0	4.750	
	#10	16.30	3.8	96.2	2.000	
	#18	64.25	15.0	85.0	1.000	
	#35	205.84	48.0	52.0	0.500	
	#60	351.82	82.0	18.0	0.250	
	#140	401.01	93.5	6.5	0.105	
	#200	410.79	95.8	4.2	0.074	
	#270	418.19	97.5	2.5	0.053	

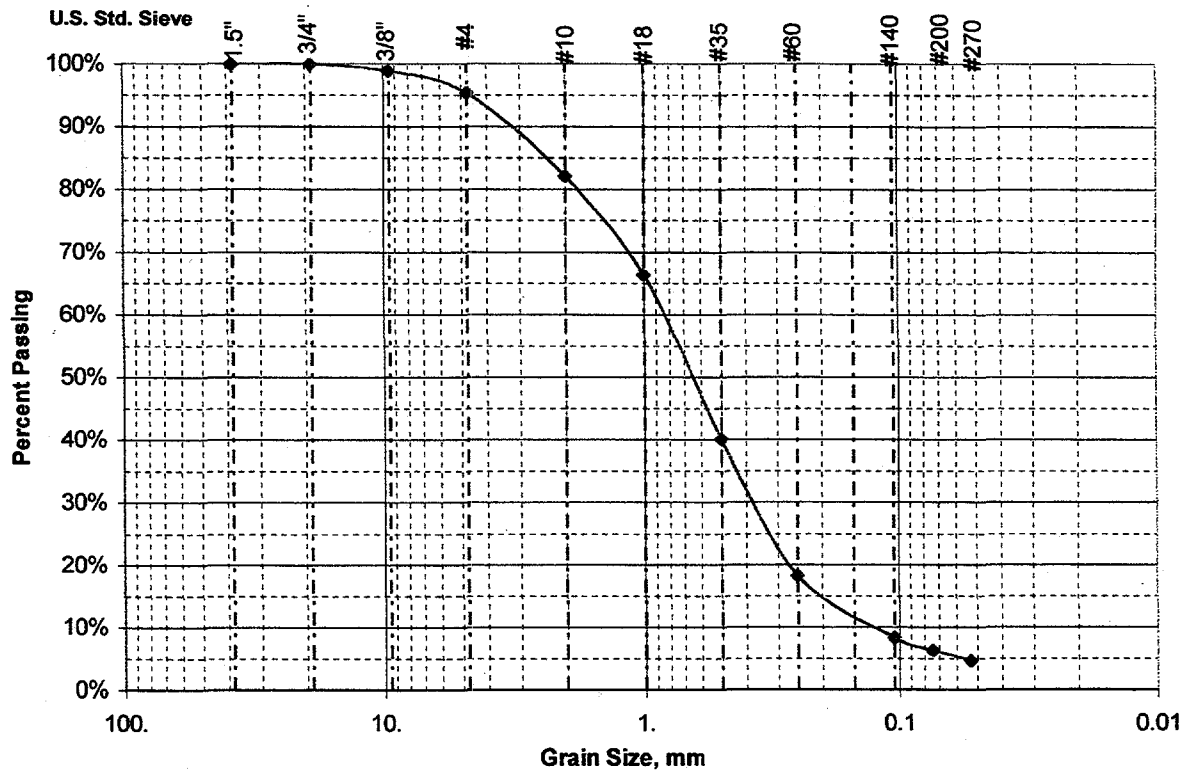


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	250'	SAMPLE#		WELL ID#	
						DATE	08/24/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
427.74	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	4.24	1.0	99.0	9.500	
	#4	19.67	4.6	95.4	4.750	
	#10	76.20	17.8	82.2	2.000	
	#18	143.63	33.6	66.4	1.000	
	#35	255.91	59.8	40.2	0.500	
	#60	349.73	81.8	18.2	0.250	
	#140	391.99	91.6	8.4	0.105	
	#200	400.95	93.7	6.3	0.074	
	#270	407.66	95.3	4.7	0.053	

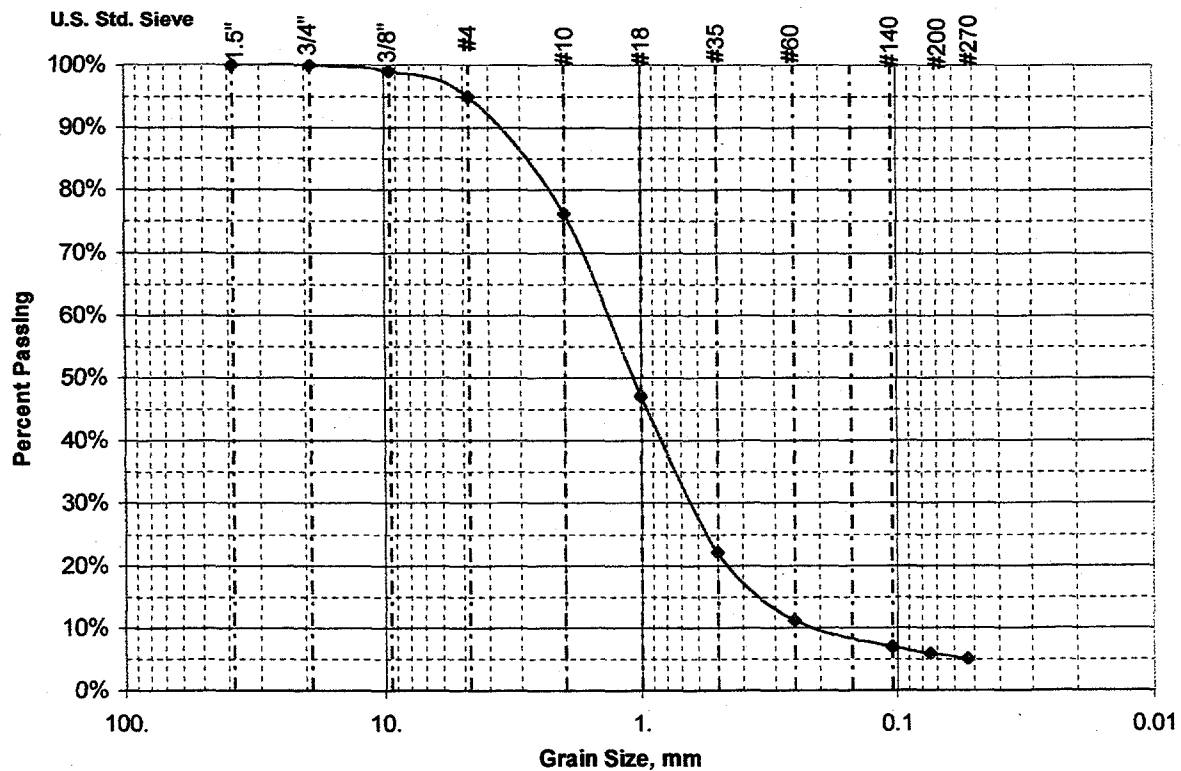


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E17-20	DEPTH	260'	SAMPLE#		WELL ID#	
				PHONE		DATE	08/22/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
400.06	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	3.58	0.9	99.1	9.500	
	#4	20.03	5.0	95.0	4.750	
	#10	95.00	23.7	76.3	2.000	
	#18	211.64	52.9	47.1	1.000	
	#35	311.54	77.9	22.1	0.500	
	#60	355.05	88.7	11.3	0.250	
	#140	372.10	93.0	7.0	0.105	
	#200	376.43	94.1	5.9	0.074	
	#270	379.74	94.9	5.1	0.053	

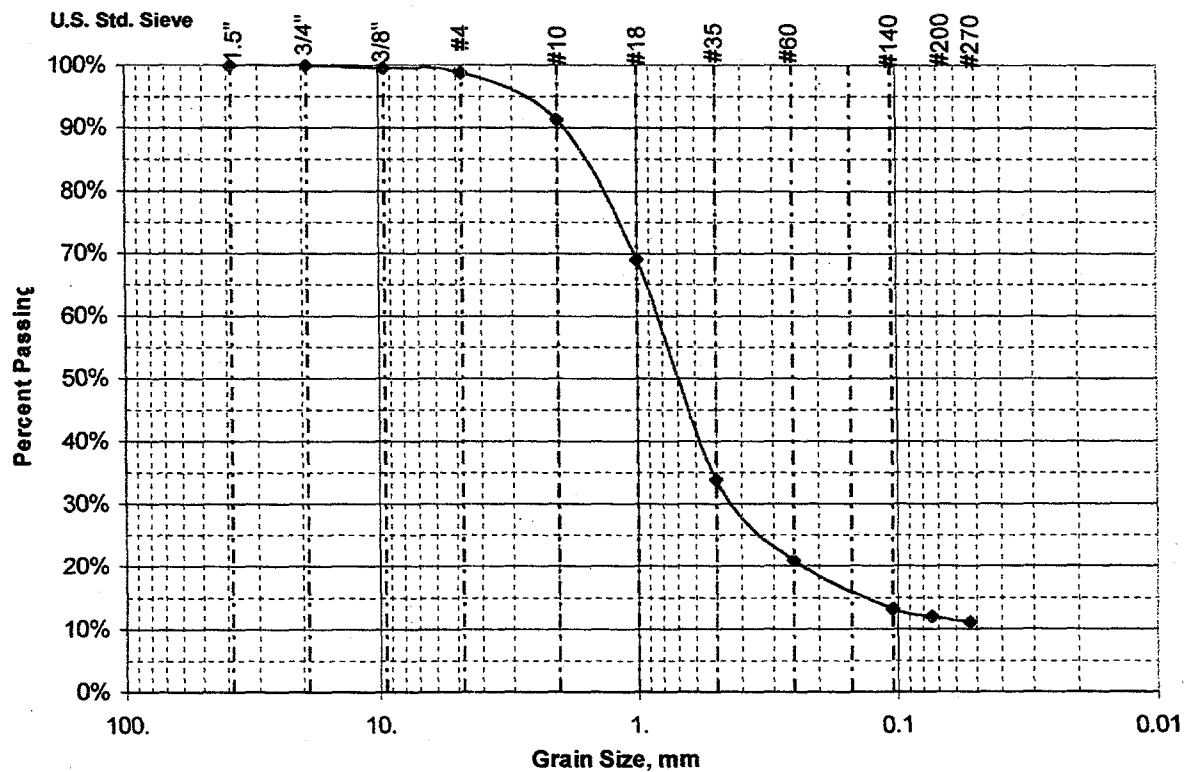


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	10'	SAMPLE#		WELL ID#	
						DATE	07/06/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
602.01	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	2.38	0.4	99.6	9.500	
	#4	6.93	1.2	98.8	4.750	
	#10	52.25	8.7	91.3	2.000	
	#18	186.40	31.0	69.0	1.000	
	#35	397.98	66.1	33.9	0.500	
	#60	475.98	79.1	20.9	0.250	
	#140	522.23	86.7	13.3	0.105	
	#200	529.53	88.0	12.0	0.074	
	#270	535.07	88.9	11.1	0.053	

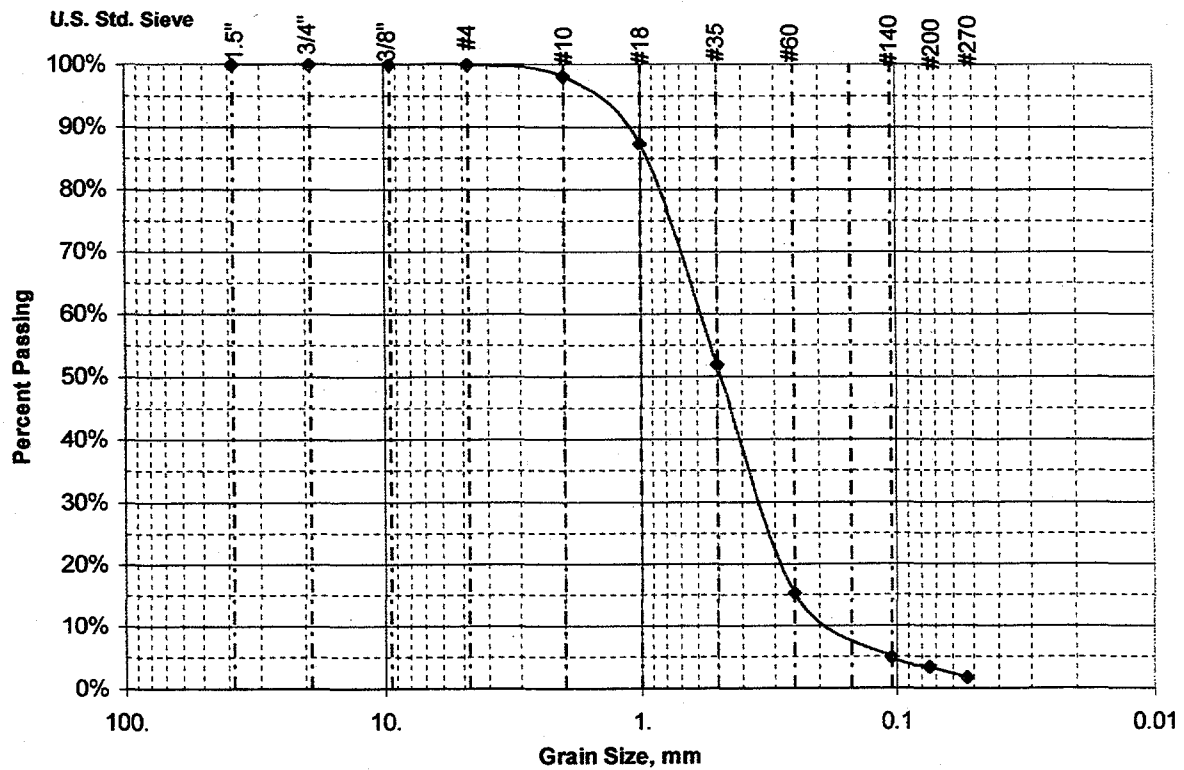


Comments: Slightly gravelly, silty sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	20'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
569.75	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	10.48	1.8	98.2	2.000	
	#18	71.80	12.6	87.4	1.000	
	#35	274.32	48.1	51.9	0.500	
	#60	482.42	84.7	15.3	0.250	
	#140	541.62	95.1	4.9	0.105	
	#200	550.46	96.6	3.4	0.074	
	#270	559.73	98.2	1.8	0.053	

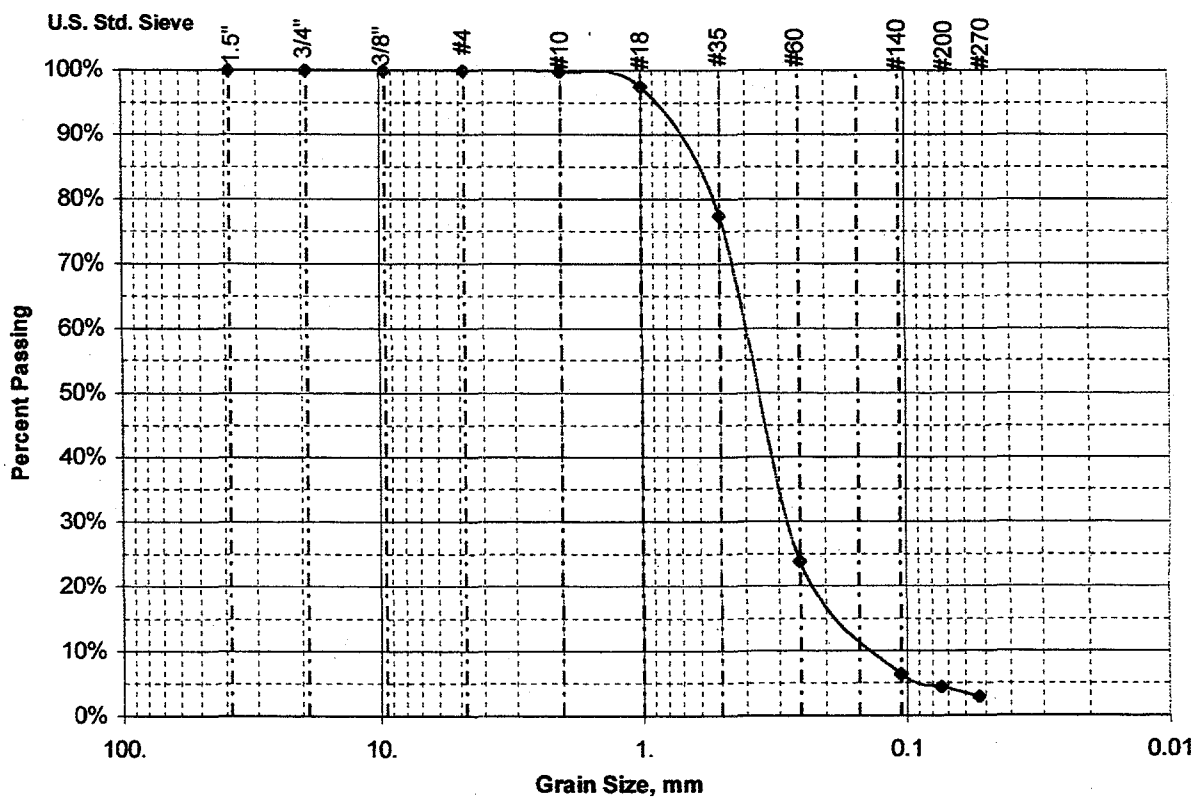


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	30'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
511.25	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	0.86	0.2	99.8	2.000	
	#18	12.75	2.5	97.5	1.000	
	#35	114.72	22.4	77.6	0.500	
	#60	389.36	76.2	23.8	0.250	
	#140	478.60	93.6	6.4	0.105	
	#200	488.55	95.6	4.4	0.074	
	#270	496.54	97.1	2.9	0.053	

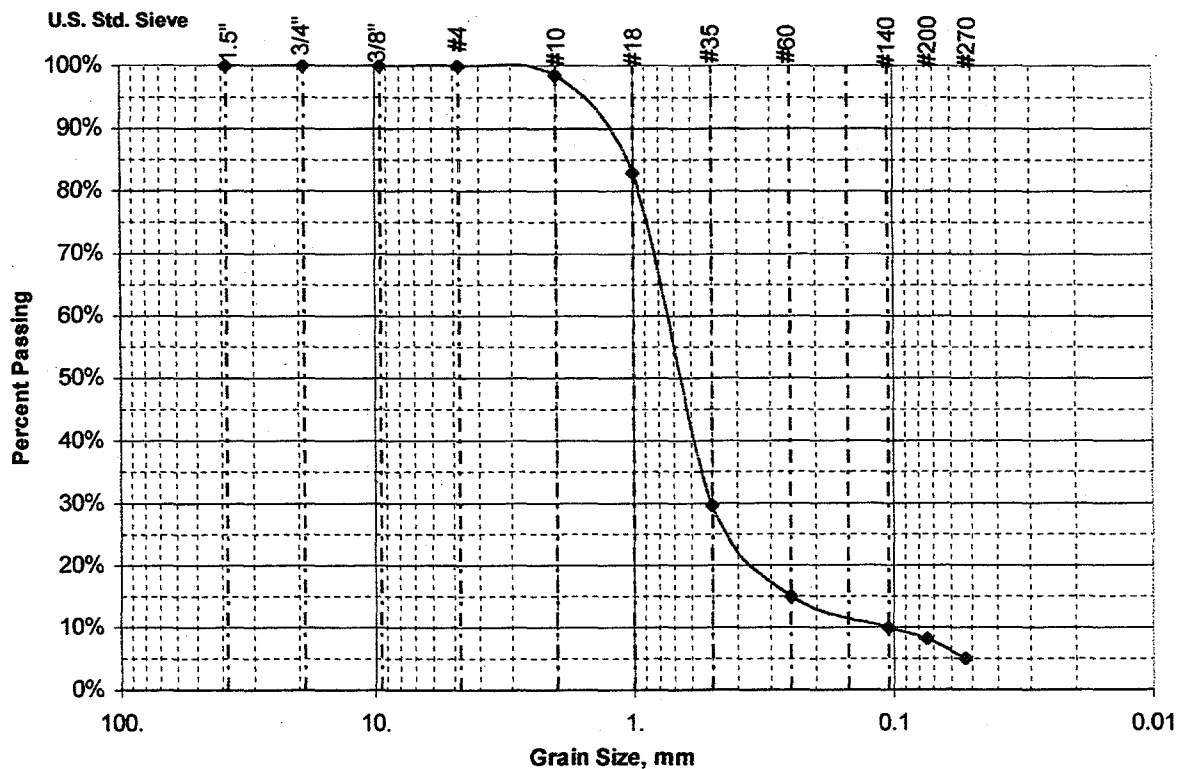


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	40'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
192.80	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	2.79	1.4	98.6	2.000	
	#18	32.86	17.0	83.0	1.000	
	#35	135.52	70.3	29.7	0.500	
	#60	163.94	85.0	15.0	0.250	
	#140	173.60	90.0	10.0	0.105	
	#200	177.00	91.8	8.2	0.074	
	#270	183.21	95.0	5.0	0.053	

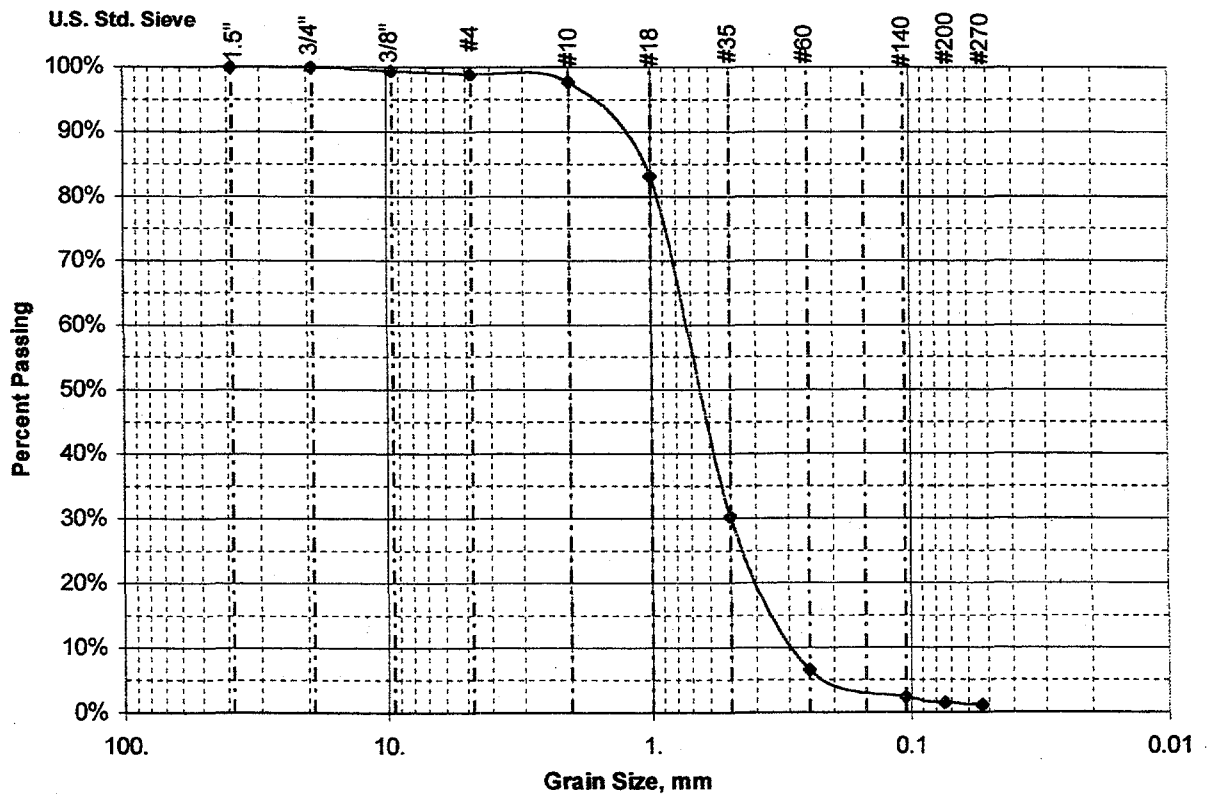


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	50'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
197.60	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	1.22	0.6	99.4	9.500	
	#4	2.16	1.1	98.9	4.750	
	#10	4.50	2.3	97.7	2.000	
	#18	33.18	16.8	83.2	1.000	
	#35	137.79	69.7	30.3	0.500	
	#60	184.48	93.4	6.6	0.250	
	#140	192.91	97.6	2.4	0.105	
	#200	194.65	98.5	1.5	0.074	
	#270	195.48	98.9	1.1	0.053	

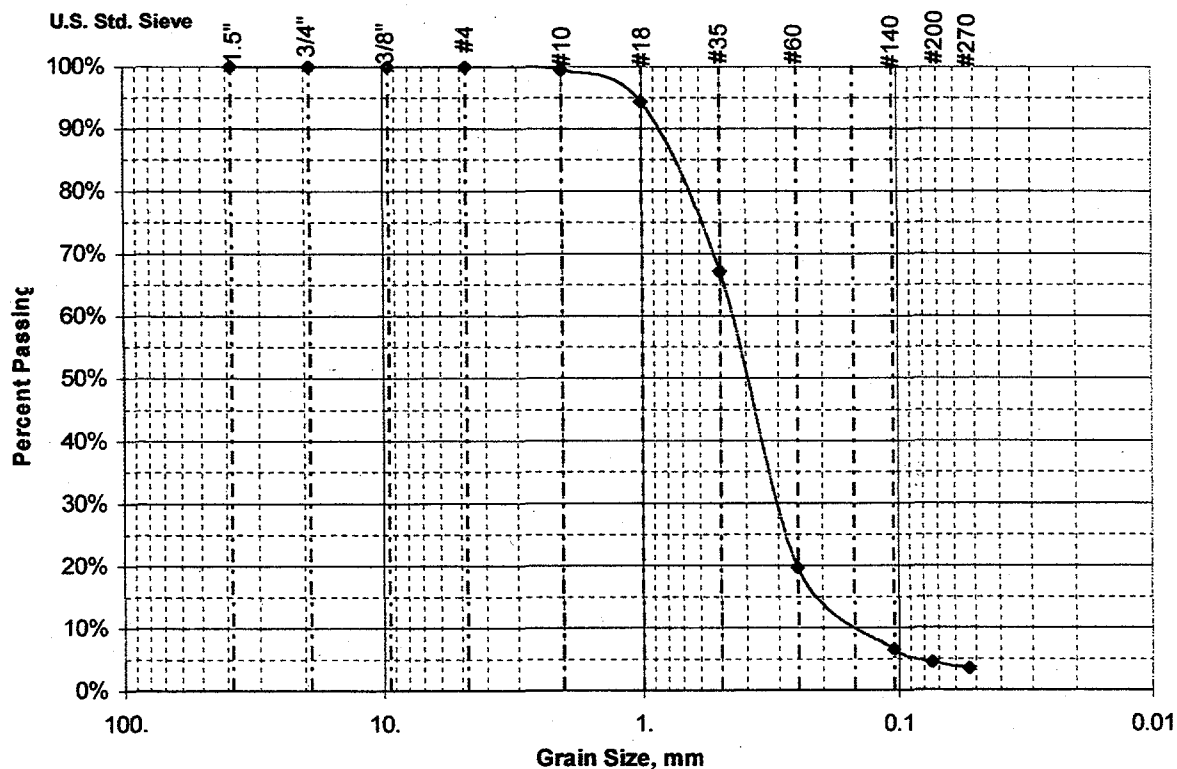


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	60'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
199.07	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	0.96	0.5	99.5	2.000	
	#18	11.26	5.7	94.3	1.000	
	#35	65.38	32.8	67.2	0.500	
	#60	159.91	80.3	19.7	0.250	
	#140	186.15	93.5	6.5	0.105	
	#200	190.04	95.5	4.5	0.074	
	#270	192.25	96.6	3.4	0.053	

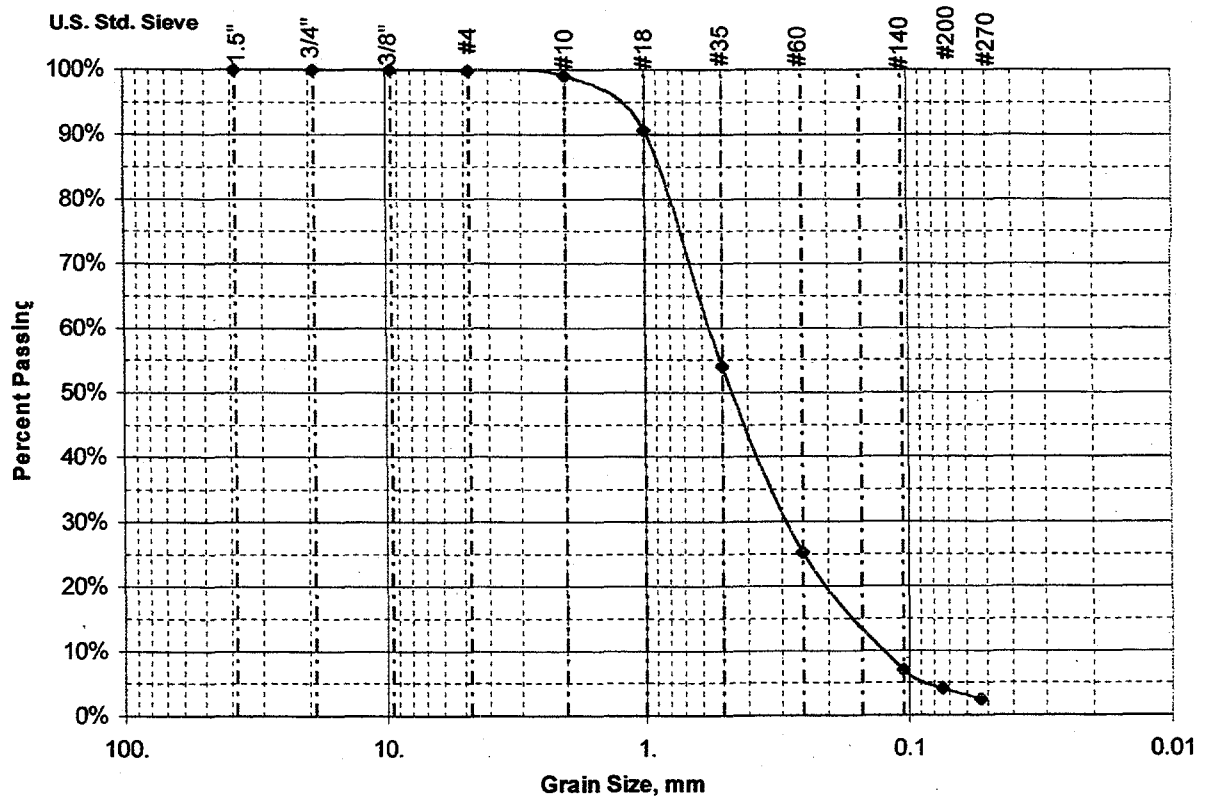


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	70'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
493.04	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.25	0.1	99.9	4.750	
	#10	4.54	0.9	99.1	2.000	
	#18	45.52	9.2	90.8	1.000	
	#35	226.63	46.0	54.0	0.500	
	#60	368.80	74.8	25.2	0.250	
	#140	458.42	93.0	7.0	0.105	
	#200	472.72	95.9	4.1	0.074	
	#270	480.77	97.5	2.5	0.053	

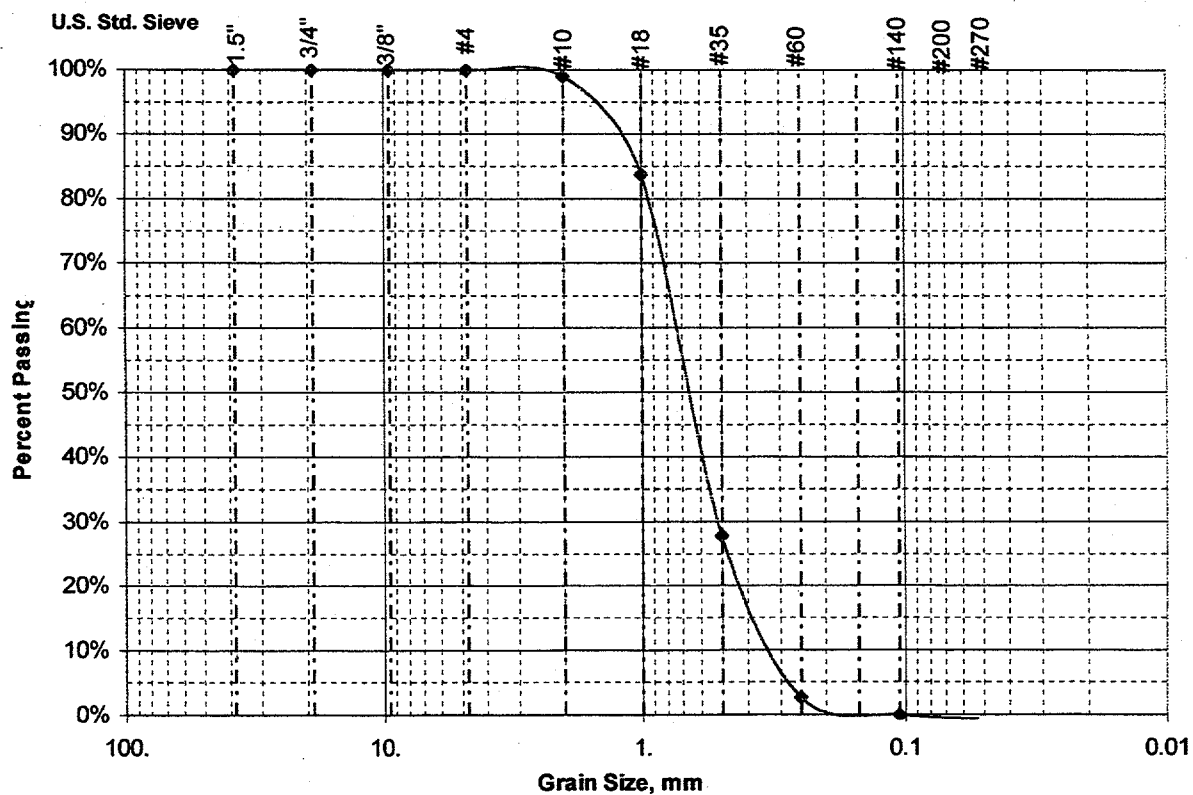


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	80'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
480.08	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	4.76	1.0	99.0	2.000	
	#18	77.81	16.2	83.8	1.000	
	#35	346.60	72.2	27.8	0.500	
	#60	467.49	97.4	2.6	0.250	
	#140	480.06	100.0	0.0	0.105	
	#200	482.02	100.4	-0.4	0.074	
	#270	482.75	100.6	-0.6	0.053	

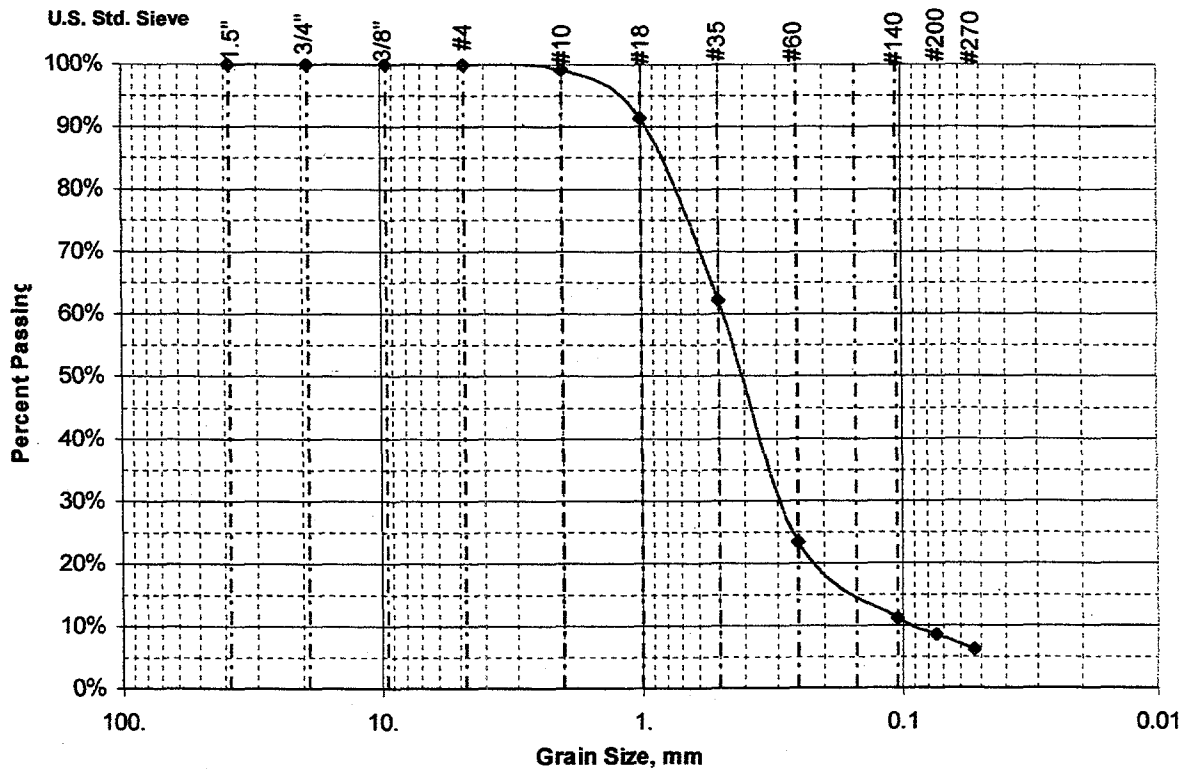


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	90'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
657.18	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	5.33	0.8	99.2	2.000	
	#18	56.03	8.5	91.5	1.000	
	#35	247.56	37.7	62.3	0.500	
	#60	502.99	76.5	23.5	0.250	
	#140	583.77	88.8	11.2	0.105	
	#200	601.11	91.5	8.5	0.074	
	#270	616.16	93.8	6.2	0.053	

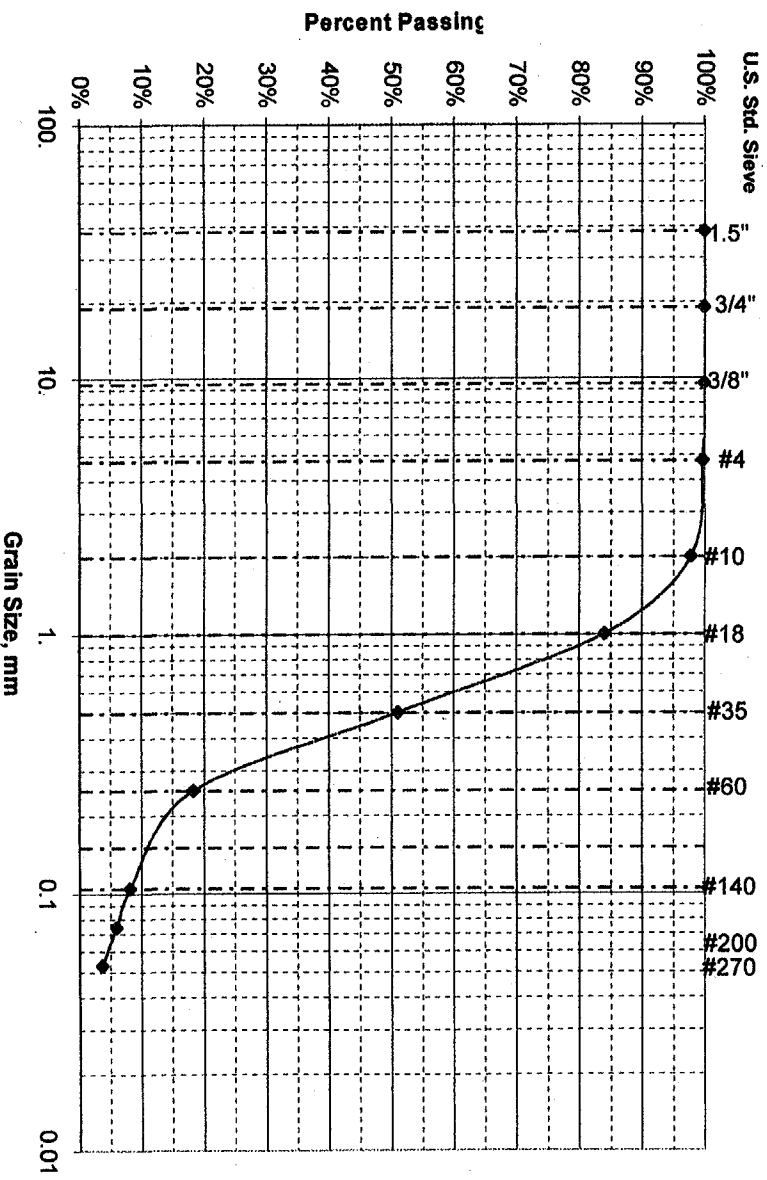


Comments:

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	100'	SAMPLE#		WELL ID#	
						DATE	07/06/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
191.61	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.45	0.2	99.8	4.750	
	#10	4.15	2.2	97.8	2.000	
	#18	30.62	16.0	84.0	1.000	
	#35	93.84	49.0	51.0	0.500	
	#60	156.60	81.7	18.3	0.250	
	#140	175.98	91.8	8.2	0.105	
	#200	180.39	94.1	5.9	0.074	
	#270	184.65	96.4	3.6	0.053	

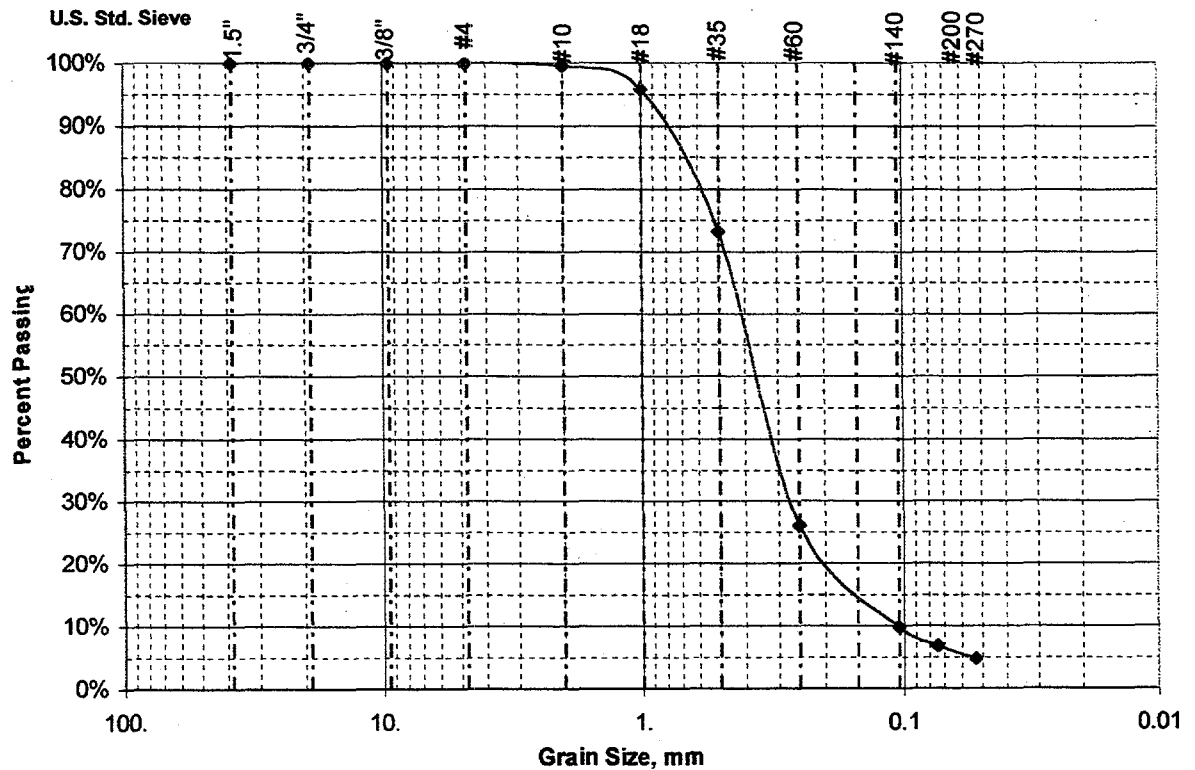


Comments: Slightly gravely sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	110'	SAMPLE#		WELL ID#	
						DATE	07/06/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
548.28	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	2.14	0.4	99.6	2.000	
	#18	22.16	4.0	96.0	1.000	
	#35	146.74	26.8	73.2	0.500	
	#60	405.09	73.9	26.1	0.250	
	#140	495.00	90.3	9.7	0.105	
	#200	510.79	93.2	6.8	0.074	
	#270	522.17	95.2	4.8	0.053	

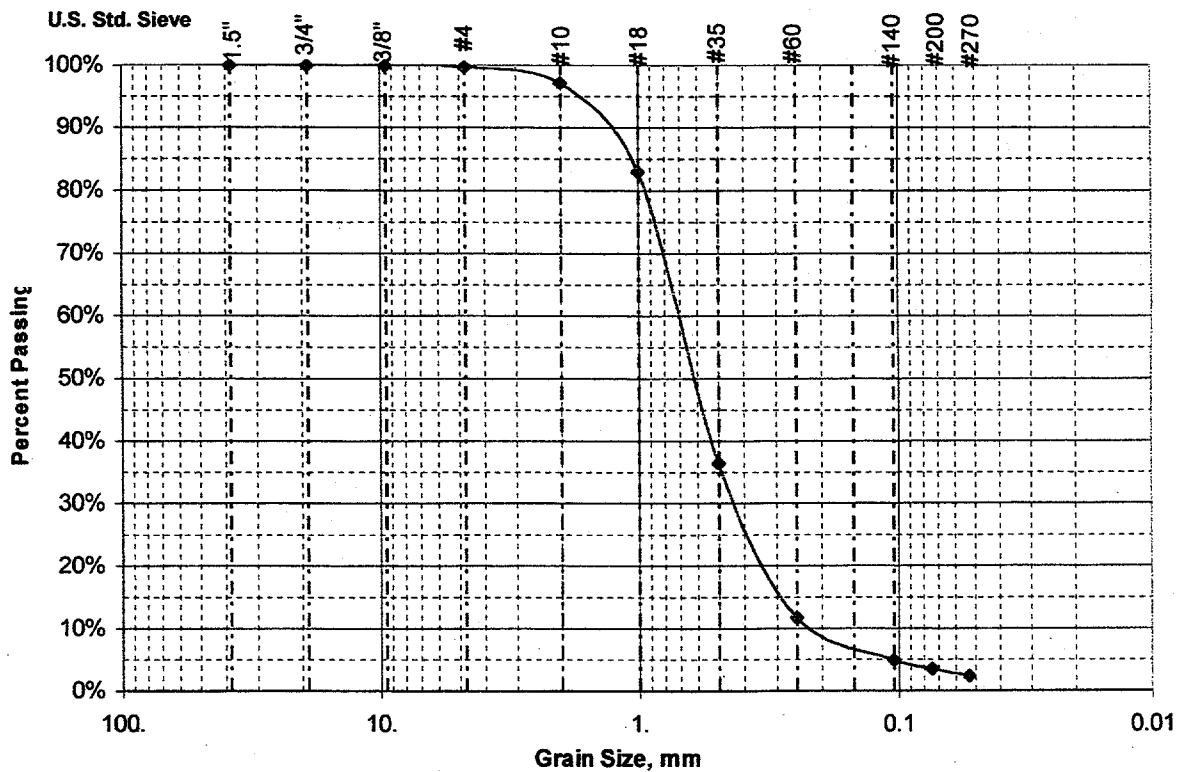


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	120'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
678.96	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	1.70	0.3	99.7	4.750	
	#10	19.00	2.8	97.2	2.000	
	#18	115.01	16.9	83.1	1.000	
	#35	431.77	63.6	36.4	0.500	
	#60	599.78	88.3	11.7	0.250	
	#140	645.99	95.1	4.9	0.105	
	#200	655.16	96.5	3.5	0.074	
	#270	662.92	97.6	2.4	0.053	

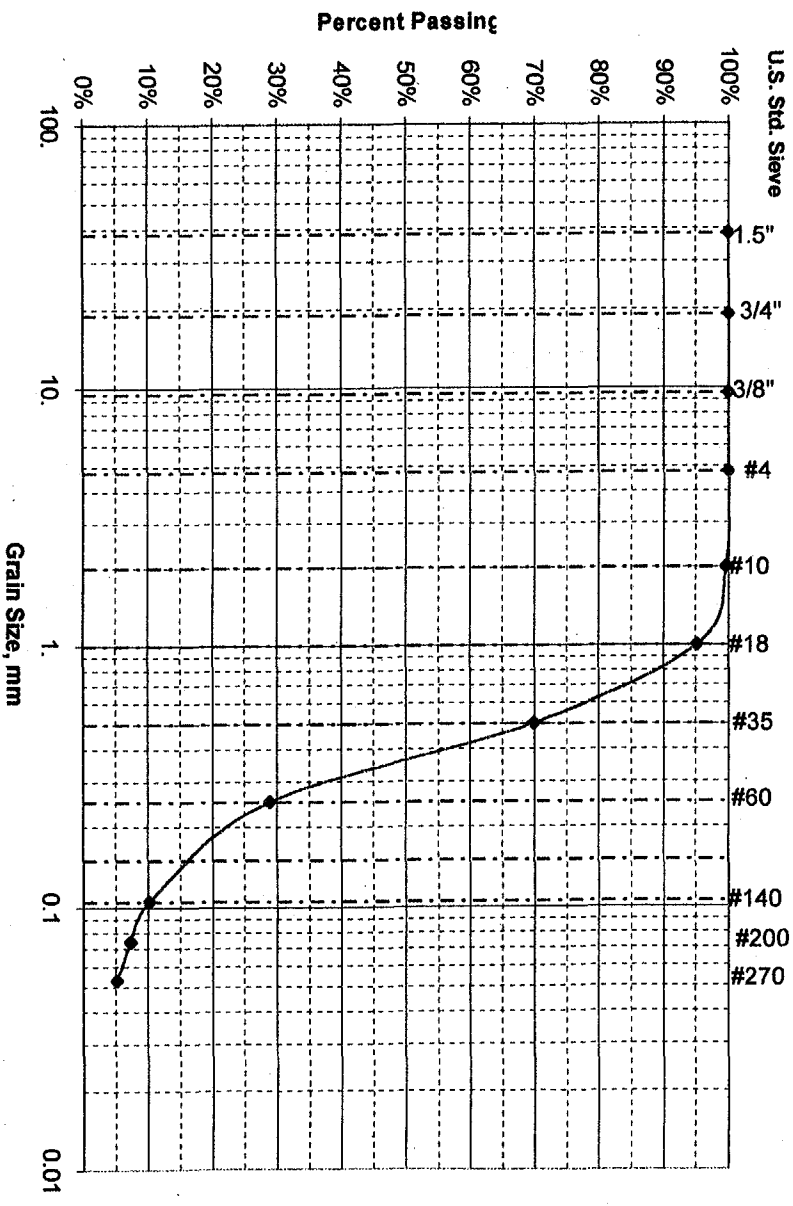


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	130'	SAMPLE #		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
507.47	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.92	0.4	99.6	2.000	
	#18	23.90	4.7	95.3	1.000	
	#35	152.43	30.0	70.0	0.500	
	#60	361.08	71.2	28.8	0.250	
	#140	455.71	89.8	10.2	0.105	
	#200	470.25	92.7	7.3	0.074	
	#270	480.71	94.7	5.3	0.053	

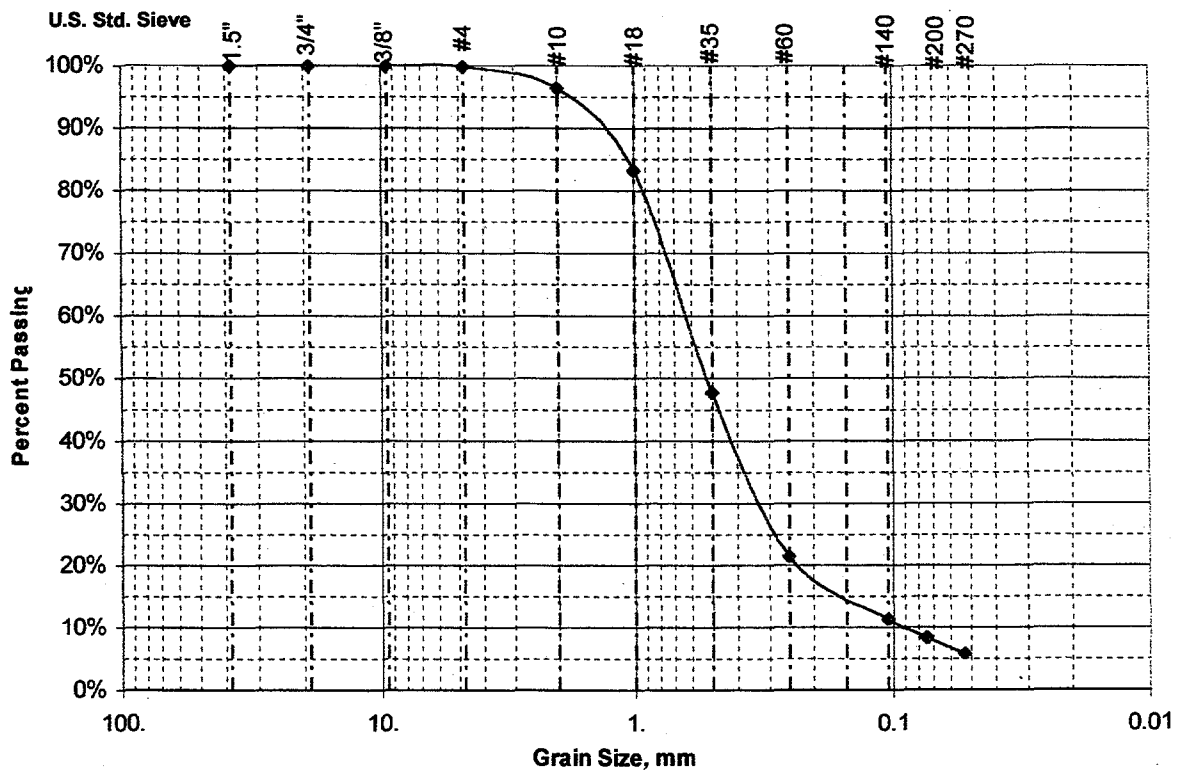


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	140'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
571.36	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.33	0.1	99.9	4.750	
	#10	20.64	3.6	96.4	2.000	
	#18	95.35	16.7	83.3	1.000	
	#35	298.69	52.3	47.7	0.500	
	#60	449.30	78.6	21.4	0.250	
	#140	506.69	88.7	11.3	0.105	
	#200	523.62	91.6	8.4	0.074	
	#270	537.96	94.2	5.8	0.053	

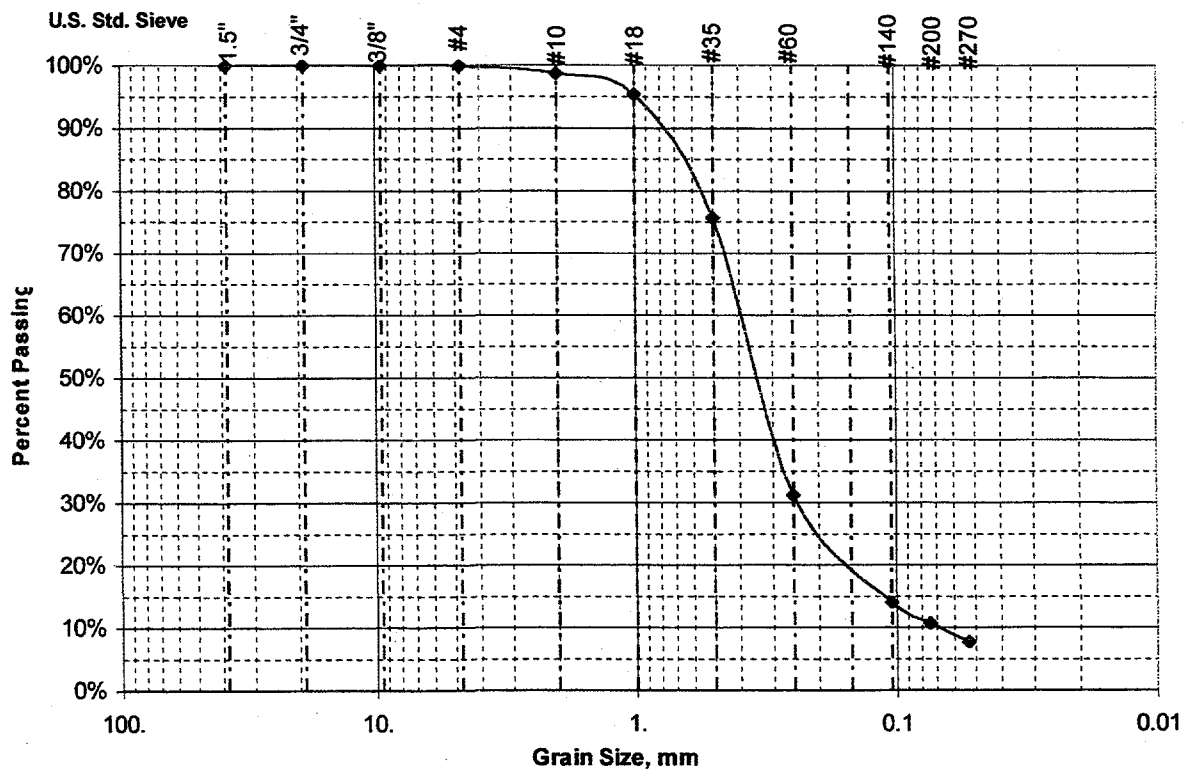


Comments: Slightly gravally sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	150'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
592.47	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	7.06	1.2	98.8	2.000	
	#18	27.02	4.6	95.4	1.000	
	#35	143.72	24.3	75.7	0.500	
	#60	407.41	68.8	31.2	0.250	
	#140	509.04	85.9	14.1	0.105	
	#200	529.31	89.3	10.7	0.074	
	#270	546.56	92.3	7.7	0.053	

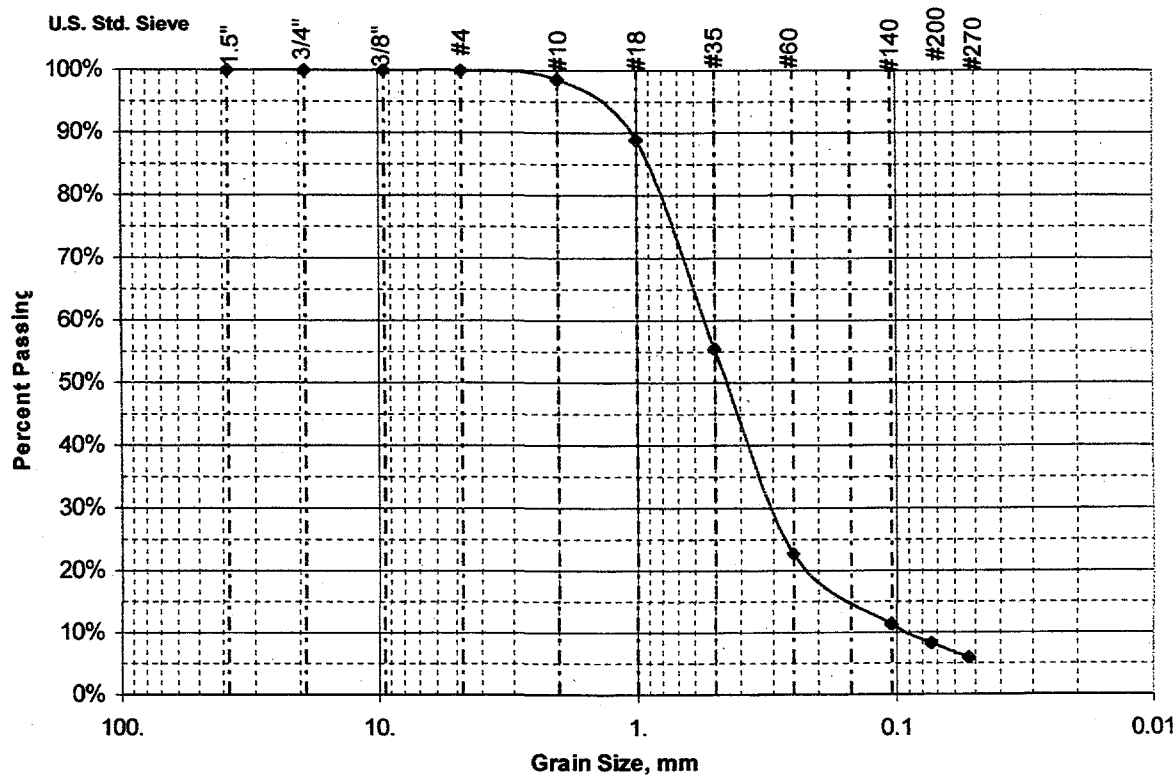


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	160'	SAMPLE#		WELL ID#	
						DATE	08/01/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
339.66	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	4.69	1.4	98.6	2.000	
	#18	37.62	11.1	88.9	1.000	
	#35	151.32	44.6	55.4	0.500	
	#60	262.43	77.3	22.7	0.250	
	#140	301.10	88.6	11.4	0.105	
	#200	311.54	91.7	8.3	0.074	
	#270	319.72	94.1	5.9	0.053	

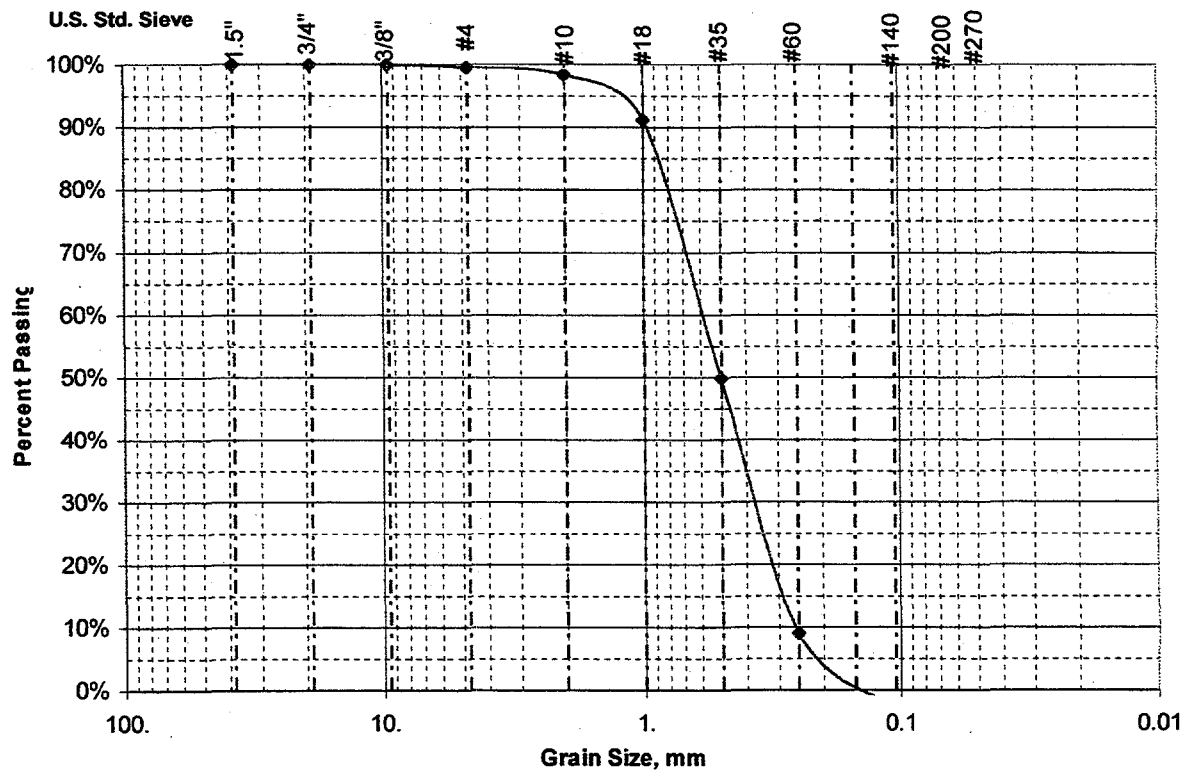


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	170'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
437.33	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	1.67	0.4	99.6	4.750	
	#10	6.87	1.6	98.4	2.000	
	#18	38.23	8.7	91.3	1.000	
	#35	218.91	50.1	49.9	0.500	
	#60	397.79	91.0	9.0	0.250	
	#140	449.45	102.8	-2.8	0.105	
	#200	461.44	105.5	-5.5	0.074	
	#270	471.02	107.7	-7.7	0.053	

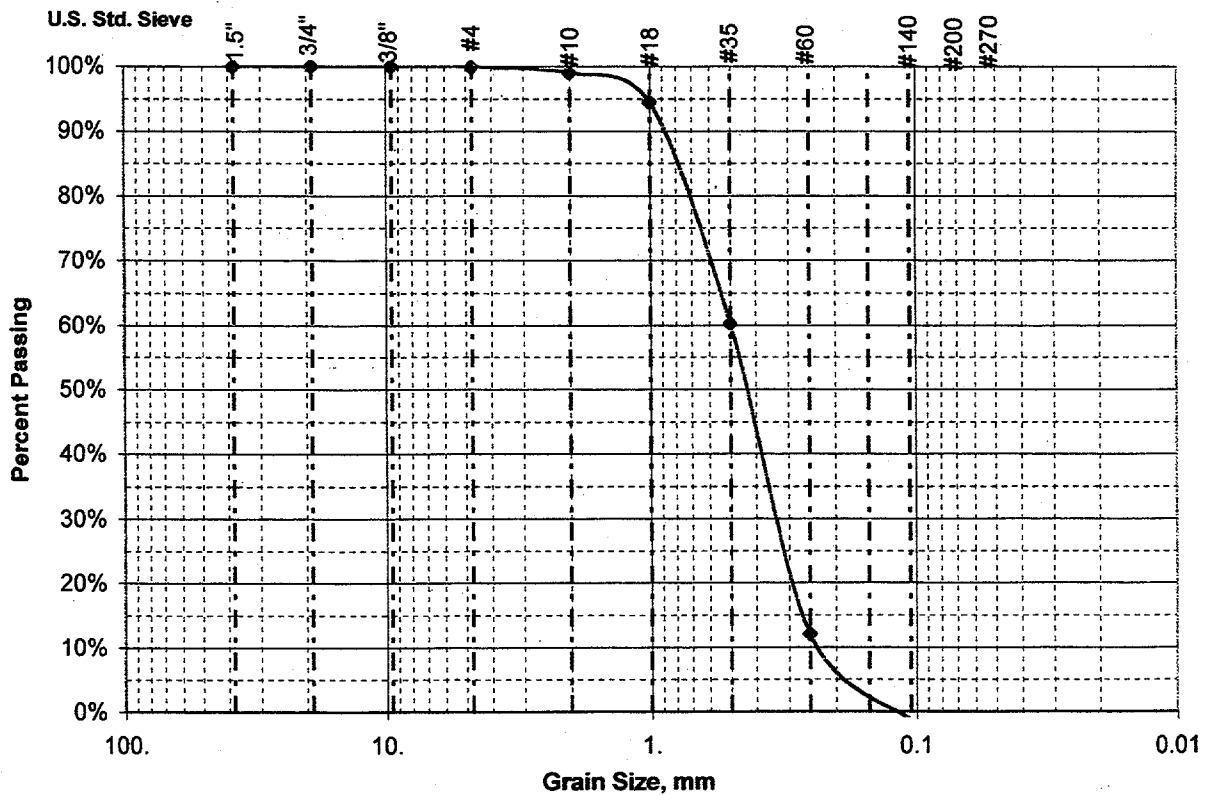


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	180'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
427.30	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.60	0.1	99.9	4.750	
	#10	4.36	1.0	99.0	2.000	
	#18	23.62	5.5	94.5	1.000	
	#35	170.01	39.8	60.2	0.500	
	#60	375.68	87.9	12.1	0.250	
	#140	432.47	101.2	-1.2	0.105	
	#200	444.61	104.1	-4.1	0.074	
	#270	454.56	106.4	-6.4	0.053	

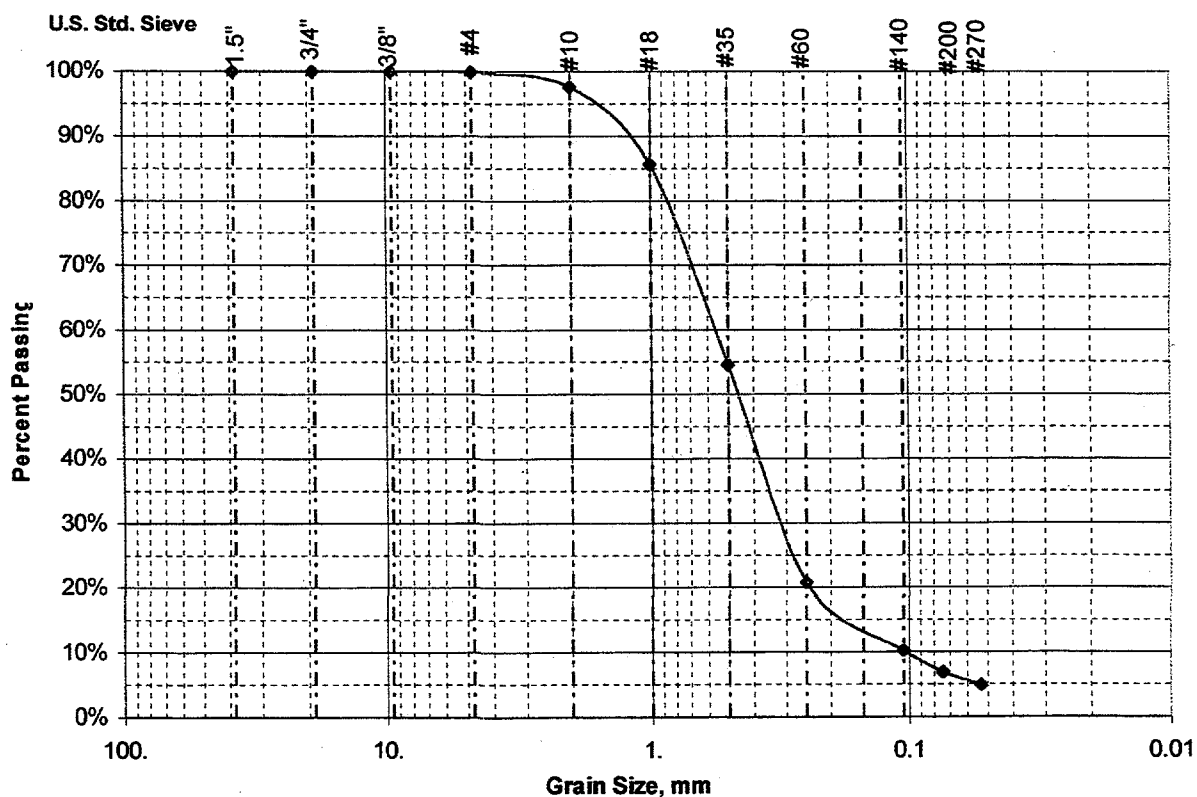


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	190'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
583.84	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.70	0.1	99.9	4.750	
	#10	13.61	2.3	97.7	2.000	
	#18	83.51	14.3	85.7	1.000	
	#35	264.60	45.3	54.7	0.500	
	#60	462.23	79.2	20.8	0.250	
	#140	523.80	89.7	10.3	0.105	
	#200	543.33	93.1	6.9	0.074	
	#270	554.91	95.0	5.0	0.053	

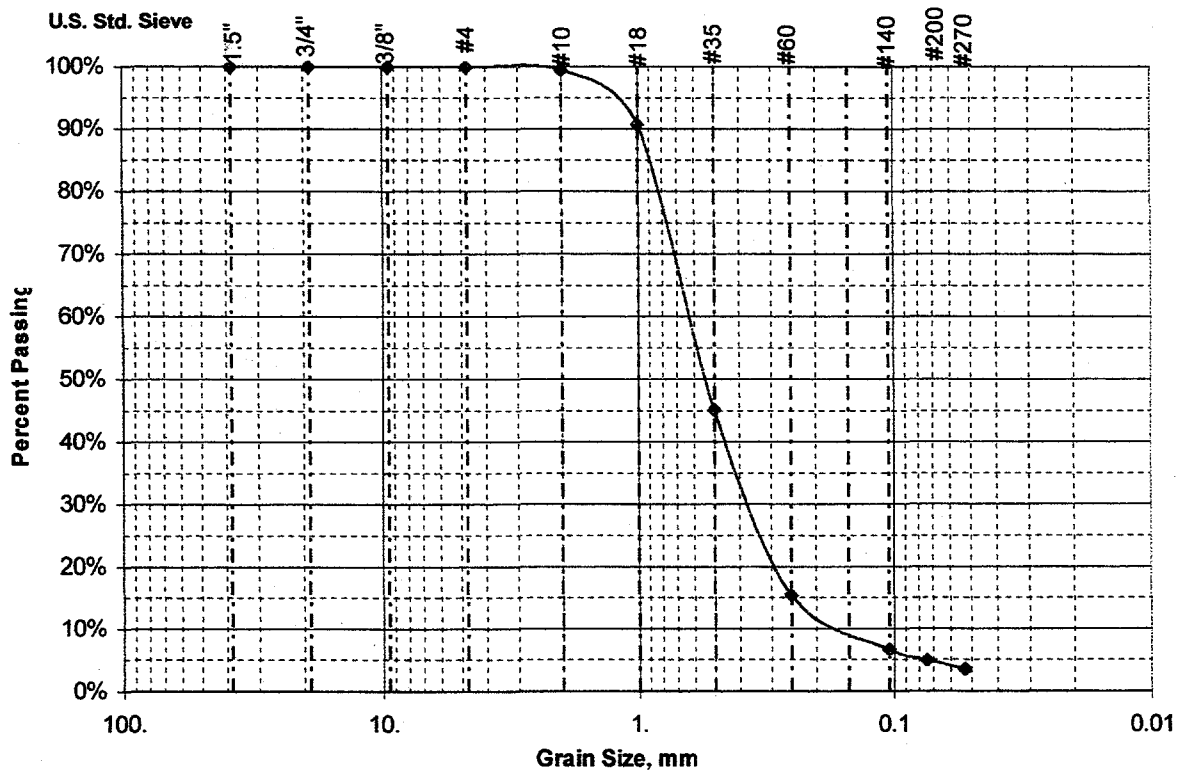


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	200'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
560.67	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	3.10	0.6	99.4	2.000	
	#18	52.10	9.3	90.7	1.000	
	#35	307.20	54.8	45.2	0.500	
	#60	474.42	84.6	15.4	0.250	
	#140	523.45	93.4	6.6	0.105	
	#200	533.37	95.1	4.9	0.074	
	#270	541.06	96.5	3.5	0.053	

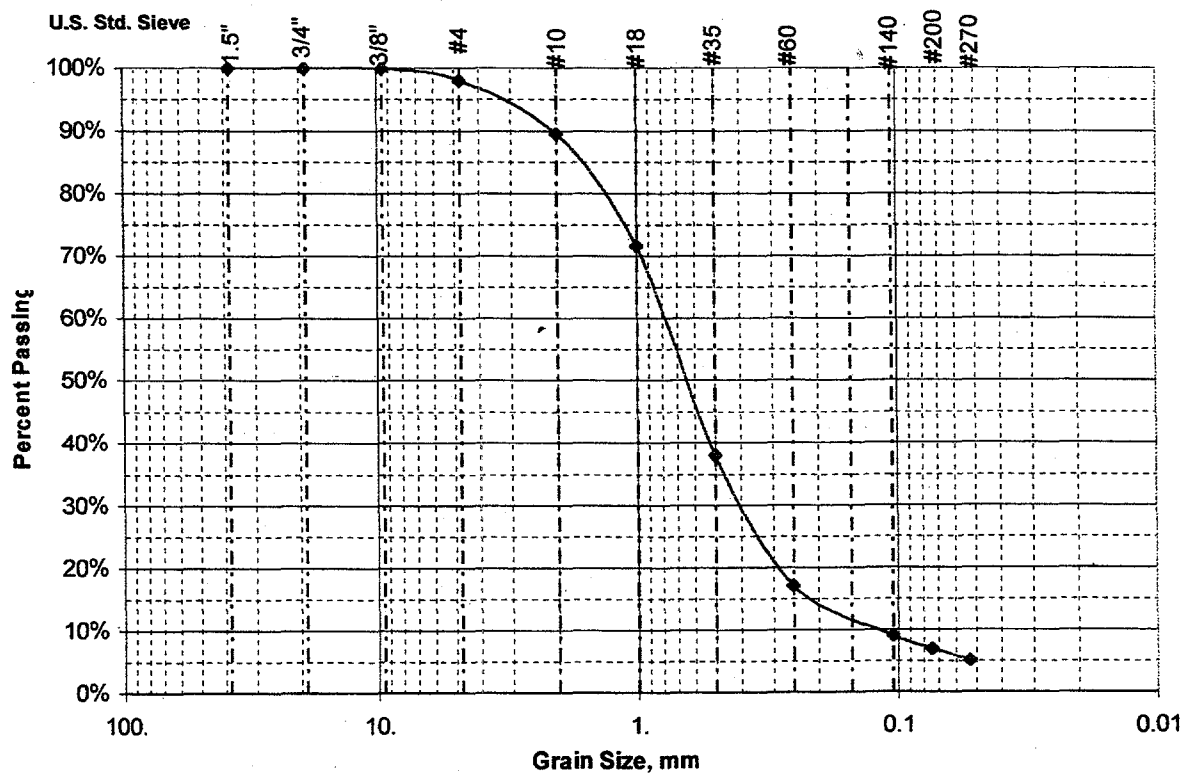


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	210'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
626.50	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	12.18	1.9	98.1	4.750	
	#10	64.93	10.4	89.6	2.000	
	#18	177.26	28.3	71.7	1.000	
	#35	388.25	62.0	38.0	0.500	
	#60	519.10	82.9	17.1	0.250	
	#140	569.83	91.0	9.0	0.105	
	#200	583.25	93.1	6.9	0.074	
	#270	594.74	94.9	5.1	0.053	

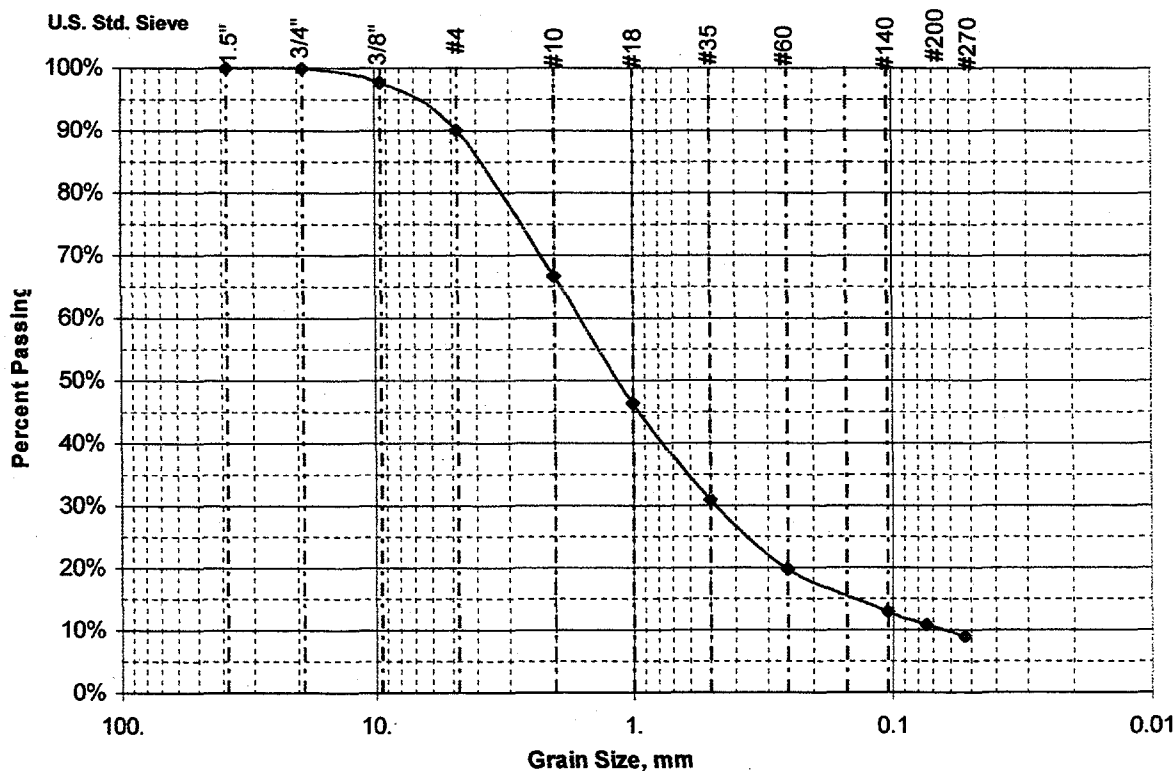


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	220'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
671.65	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	15.34	2.3	97.7	9.500	
	#4	66.36	9.9	90.1	4.750	
	#10	223.17	33.2	66.8	2.000	
	#18	360.31	53.6	46.4	1.000	
	#35	464.26	69.1	30.9	0.500	
	#60	538.54	80.2	19.8	0.250	
	#140	584.43	87.0	13.0	0.105	
	#200	599.38	89.2	10.8	0.074	
	#270	611.58	91.1	8.9	0.053	

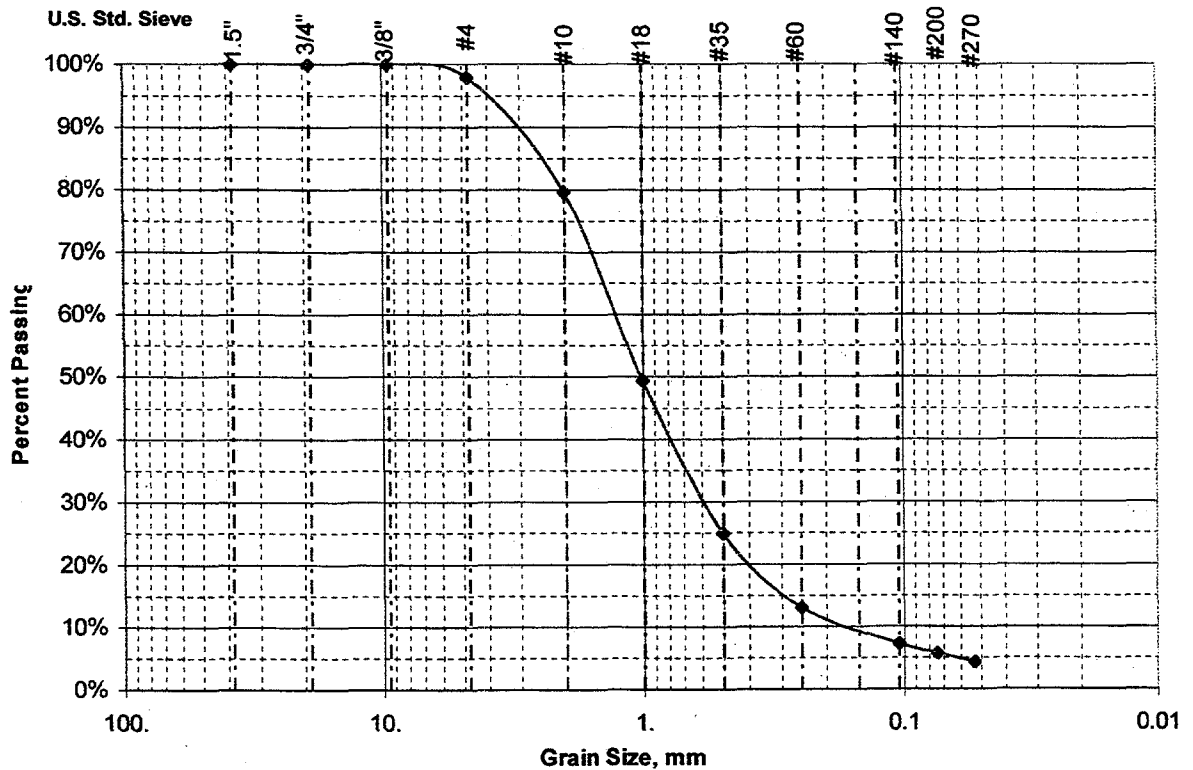


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	230'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
442.94	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	8.97	2.0	98.0	4.750	
	#10	89.68	20.2	79.8	2.000	
	#18	224.16	50.6	49.4	1.000	
	#35	332.86	75.1	24.9	0.500	
	#60	385.24	87.0	13.0	0.250	
	#140	410.90	92.8	7.2	0.105	
	#200	417.56	94.3	5.7	0.074	
	#270	423.96	95.7	4.3	0.053	

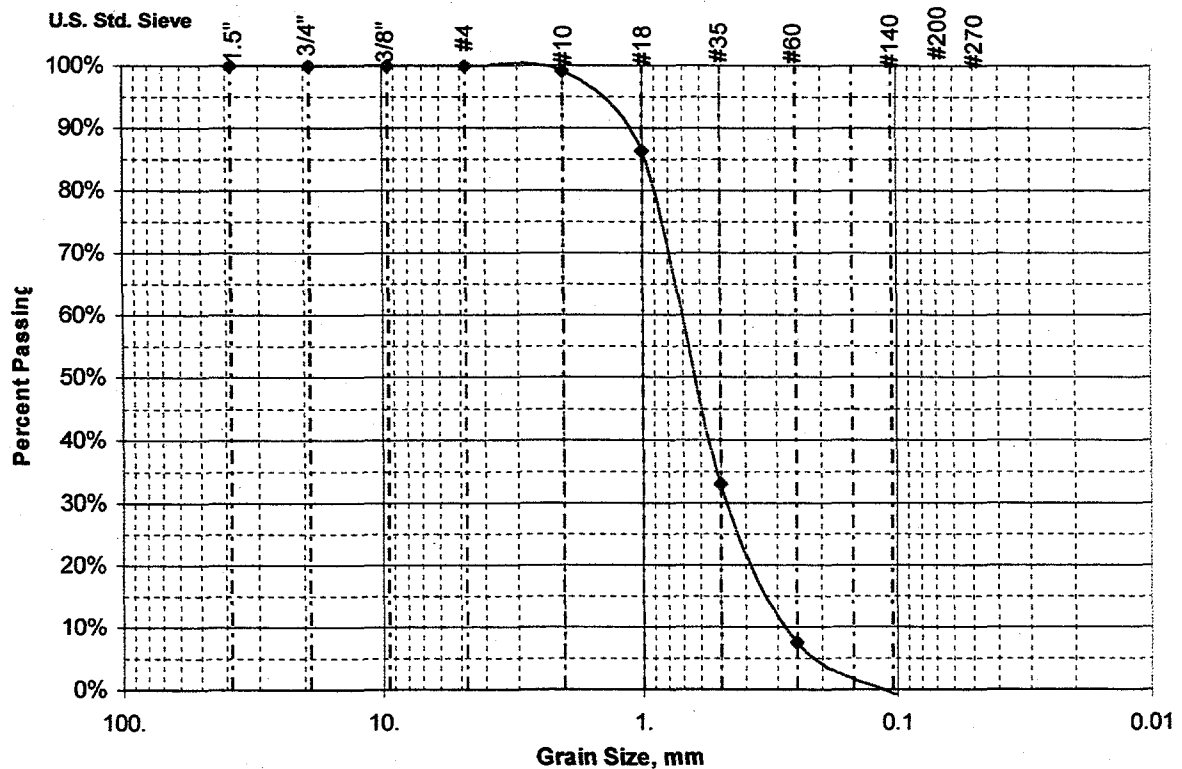


Comments: Gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	240'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
367.63	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	2.94	0.8	99.2	2.000	
	#18	50.39	13.7	86.3	1.000	
	#35	246.14	67.0	33.0	0.500	
	#60	339.98	92.5	7.5	0.250	
	#140	369.91	100.6	-0.6	0.105	
	#200	376.84	102.5	-2.5	0.074	
	#270	382.41	104.0	-4.0	0.053	

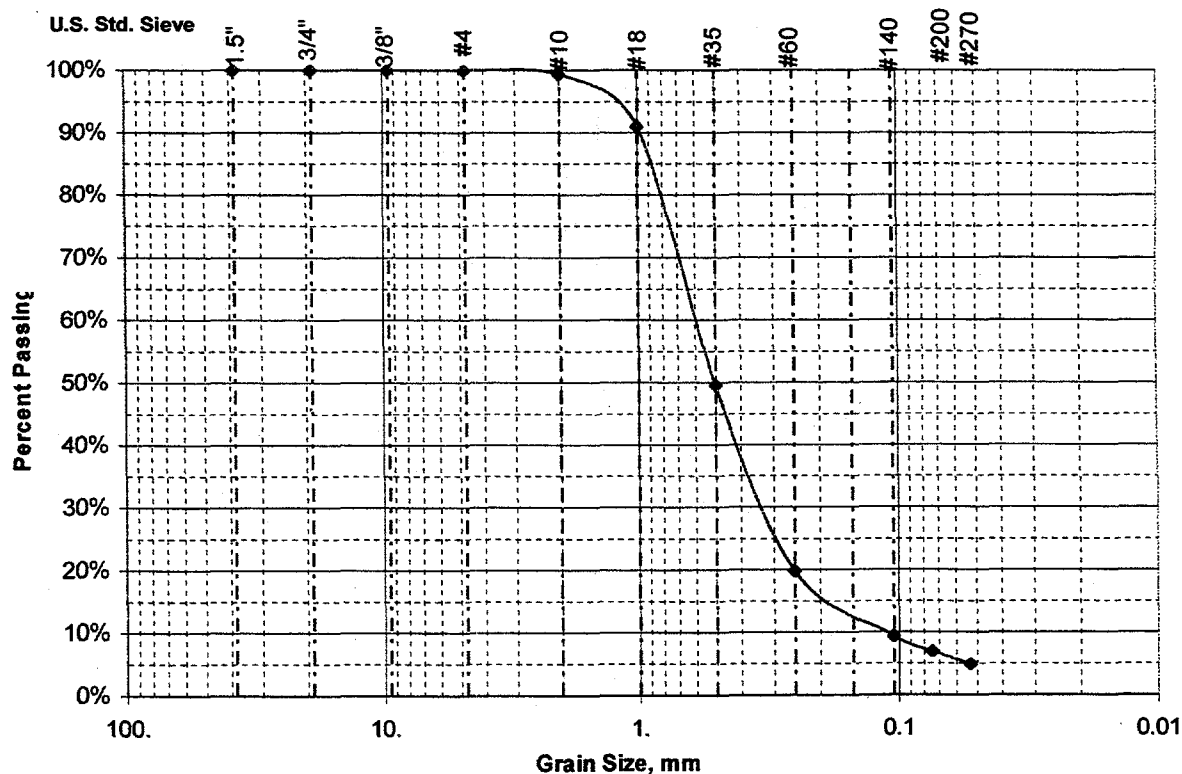


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	250'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
419.33	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	2.43	0.6	99.4	2.000	
	#18	37.55	9.0	91.0	1.000	
	#35	211.24	50.4	49.6	0.500	
	#60	336.67	80.3	19.7	0.250	
	#140	380.04	90.6	9.4	0.105	
	#200	390.31	93.1	6.9	0.074	
	#270	398.88	95.1	4.9	0.053	

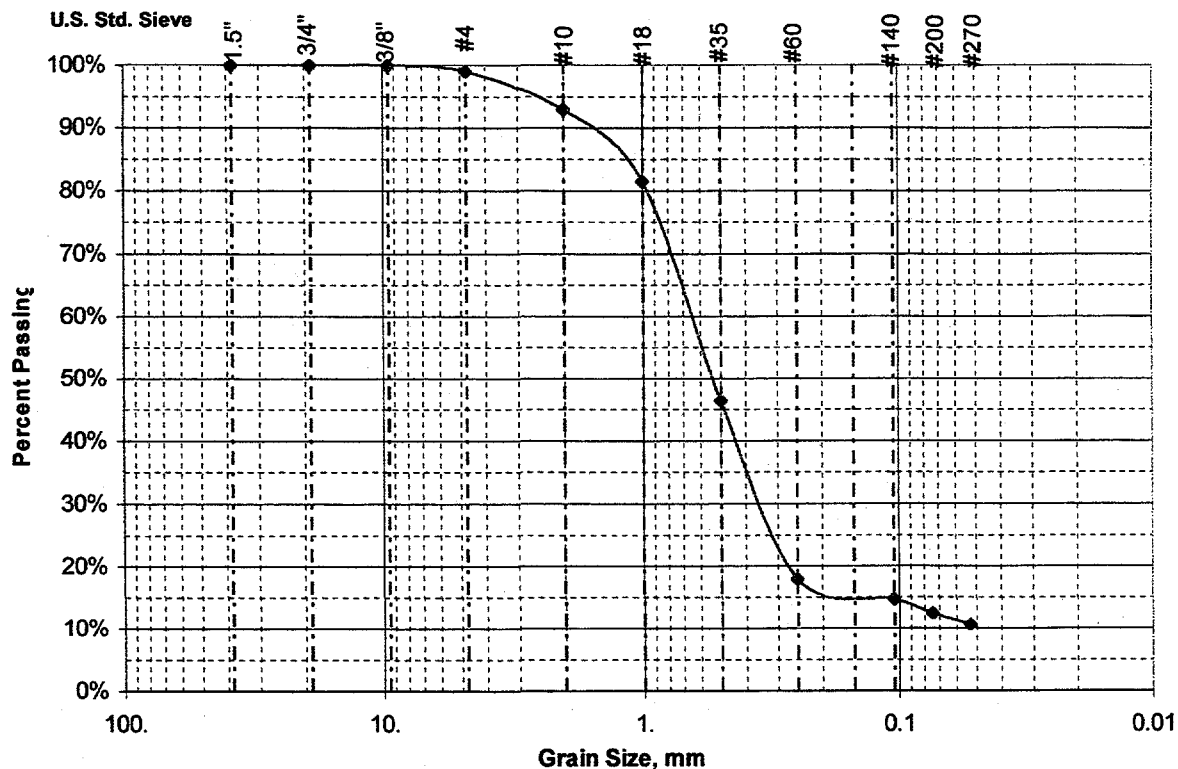


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	260'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
509.11	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	4.71	0.9	99.1	4.750	
	#10	35.56	7.0	93.0	2.000	
	#18	93.97	18.5	81.5	1.000	
	#35	272.57	53.5	46.5	0.500	
	#60	417.92	82.1	17.9	0.250	
	#140	434.27	85.3	14.7	0.105	
	#200	445.79	87.6	12.4	0.074	
	#270	454.95	89.4	10.6	0.053	

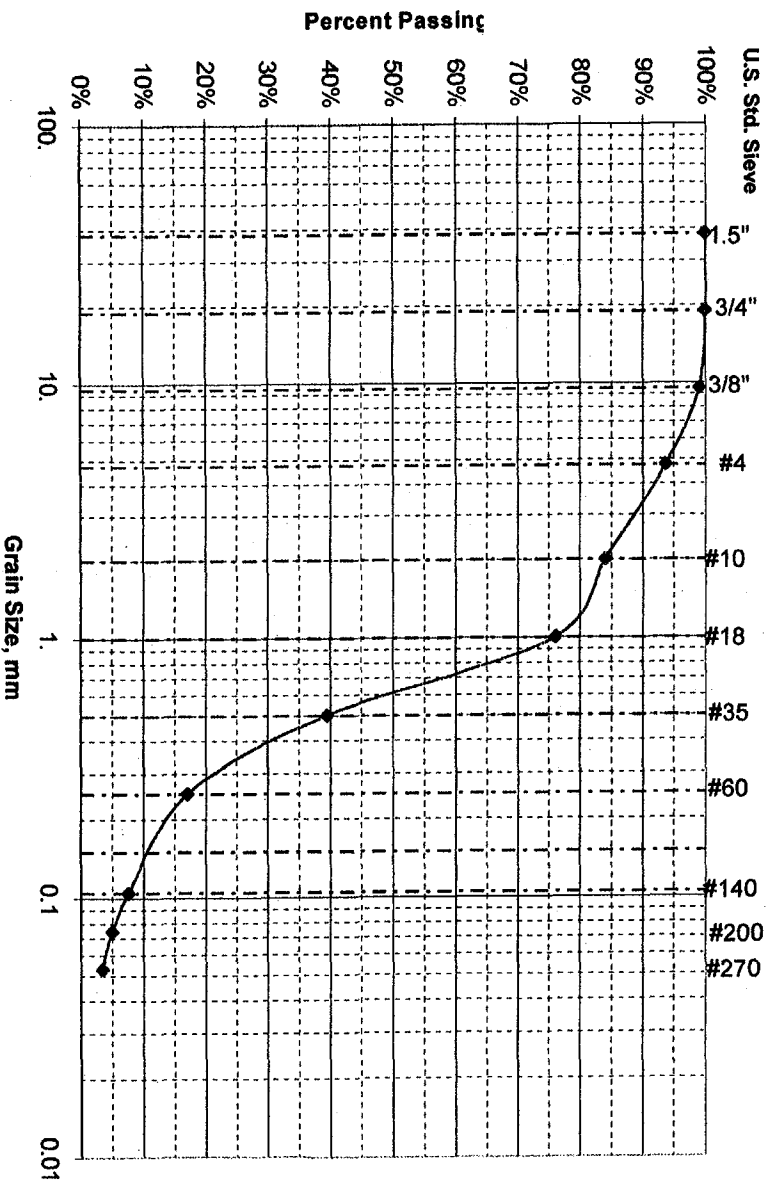


Comments: gravelly, silty sand

SIEVE ANALYSIS

WELL NAME	299-E24-18	DEPTH	270'	SAMPLE#		WELL ID#	
						DATE	07/25/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
293.39	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	2.65	0.9	99.1	9.500	
	#4	18.33	6.2	93.8	4.750	
	#10	46.67	15.9	84.1	2.000	
	#18	70.03	23.9	76.1	1.000	
	#35	177.67	60.6	39.4	0.500	
	#60	243.50	83.0	17.0	0.250	
	#140	271.39	92.5	7.5	0.105	
	#200	278.63	95.0	5.0	0.074	
	#270	283.58	96.7	3.3	0.053	

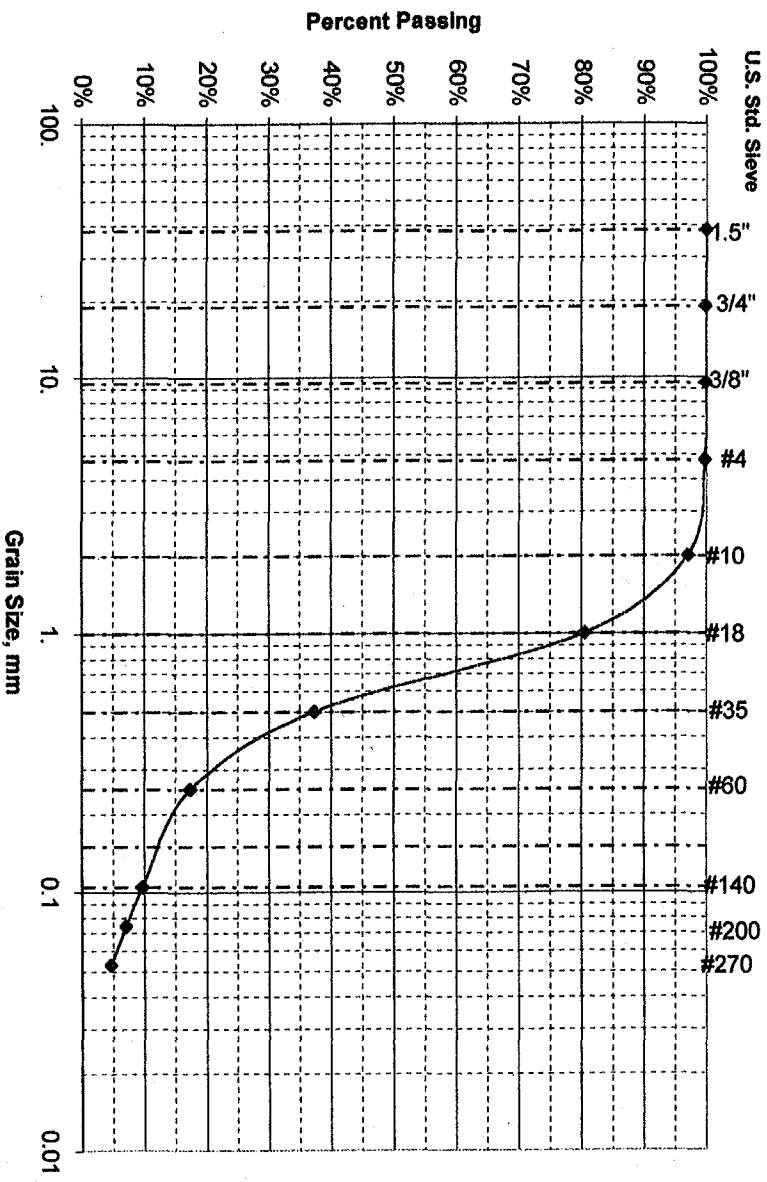


Comments: gravely sand

SIEVE ANALYSIS

WELL NAME	299-E24-118	DEPTH	9'	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
539.02	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	1.19	0.2	99.8	4.750	
	#10	15.38	2.9	97.1	2.000	
	#18	105.20	19.5	80.5	1.000	
	#35	337.73	62.7	37.3	0.500	
	#60	445.10	82.6	17.4	0.250	
	#140	486.94	90.3	9.7	0.105	
	#200	500.89	92.9	7.1	0.074	
	#270	514.53	95.5	4.5	0.053	

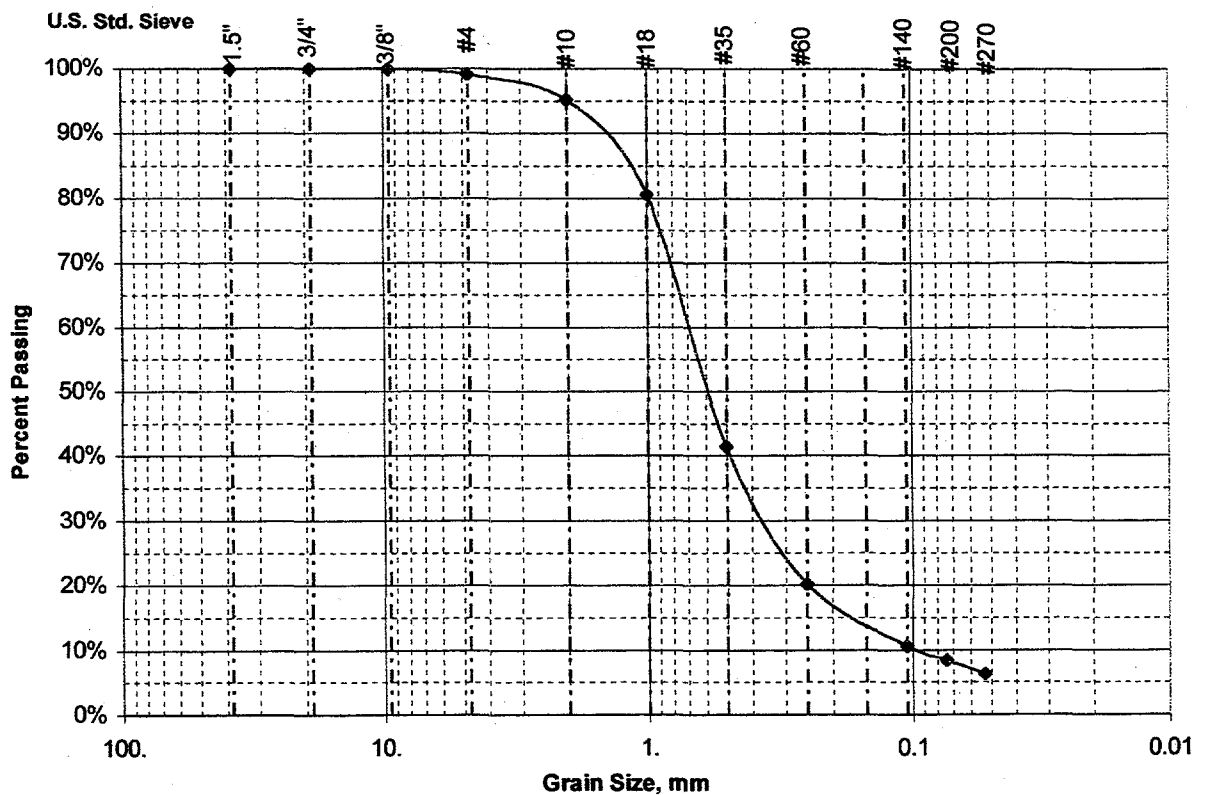


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E24-118	DEPTH	18-19.5	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
286.20	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	2.44	0.9	99.1	4.750	
	#10	13.46	4.7	95.3	2.000	
	#18	55.21	19.3	80.7	1.000	
	#35	167.55	58.5	41.5	0.500	
	#60	228.29	79.8	20.2	0.250	
	#140	255.67	89.3	10.7	0.105	
	#200	261.86	91.5	8.5	0.074	
	#270	268.12	93.7	6.3	0.053	

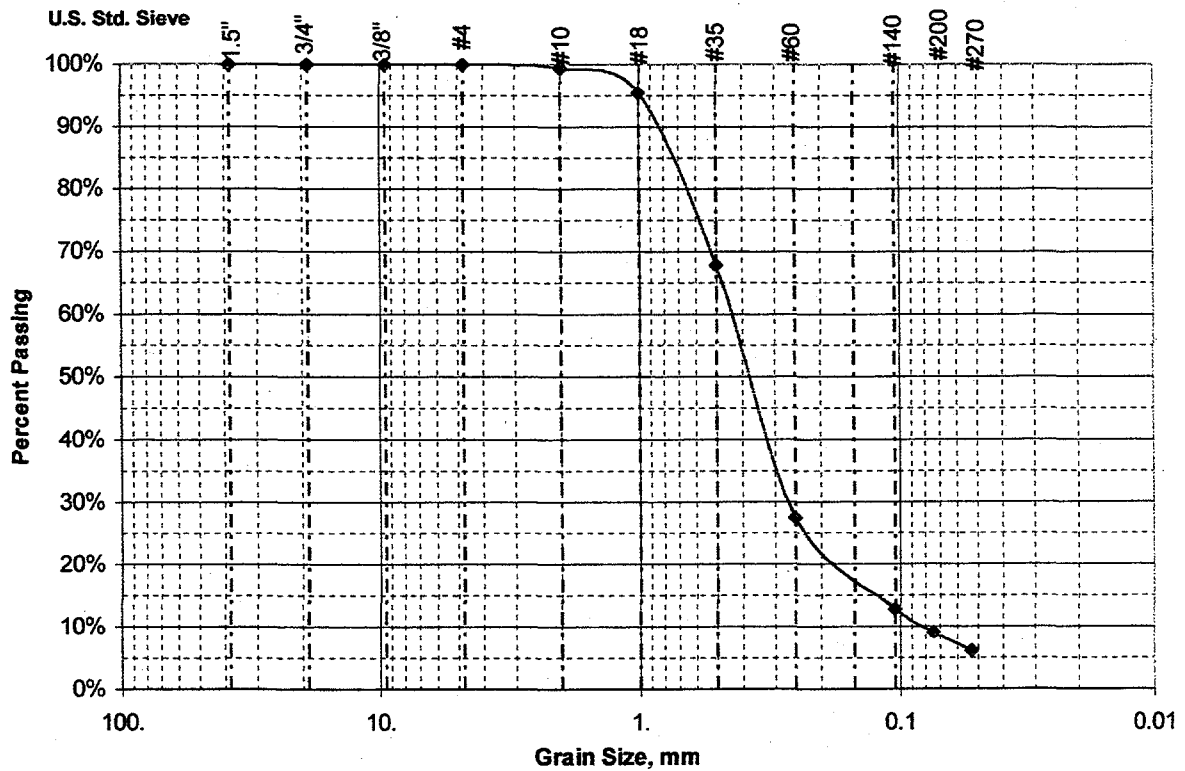


Comments: Slightly gravelly sand

SIEVE ANALYSIS

WELL NAME	299-E24-118	DEPTH	28'	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
247.34	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	1.30	0.5	99.5	2.000	
	#18	11.21	4.5	95.5	1.000	
	#35	79.44	32.1	67.9	0.500	
	#60	179.26	72.5	27.5	0.250	
	#140	215.55	87.1	12.9	0.105	
	#200	224.94	90.9	9.1	0.074	
	#270	232.12	93.8	6.2	0.053	

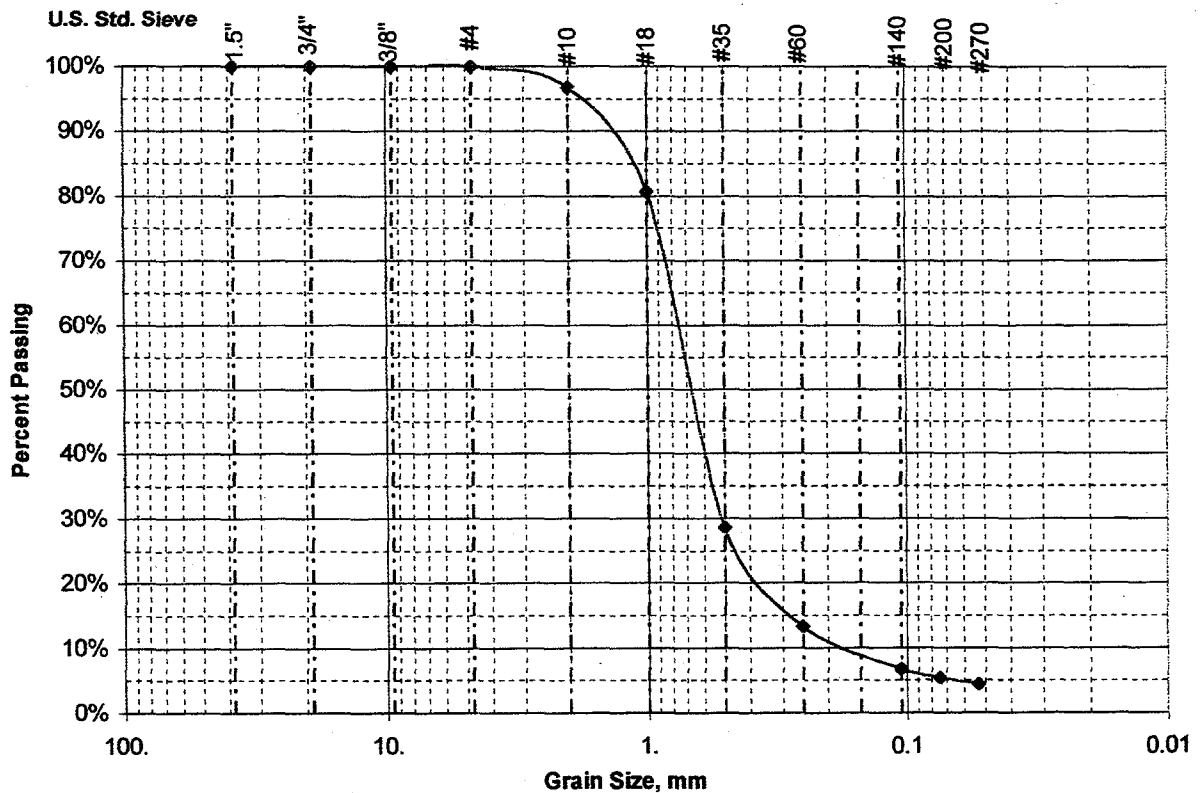


Comments: Slightly gravelly sand.

SIEVE ANALYSIS

WELL NAME	299-E24-118	DEPTH	40'	SAMPLE#		WELL ID#	
						DATE	08/23/00

SAMPLE WT (g)	SIEVE SIZE IN.	CUMULATIVE WEIGHT(g)	% WEIGHT RETAINED	% PASSING	Grain Size (mm)	COMMENTS
281.82	1.5"	0.00	0.0	100.0	38.100	
	3/4"	0.00	0.0	100.0	19.000	
	3/8"	0.00	0.0	100.0	9.500	
	#4	0.00	0.0	100.0	4.750	
	#10	8.81	3.1	96.9	2.000	
	#18	54.16	19.2	80.8	1.000	
	#35	201.10	71.4	28.6	0.500	
	#60	244.34	86.7	13.3	0.250	
	#140	262.60	93.2	6.8	0.105	
	#200	266.57	94.6	5.4	0.074	
	#270	269.31	95.6	4.4	0.053	



Comments: Slightly gravelly sand.

Appendix B

Sieve Results in Rocksan Database

Appendix B

Sieve Results in Rocksan Database

This appendix contains existing particle size distribution data from the Rocksan database. The Rocksan database was a database of particle size distribution and calcium carbonate content for literally thousands of samples. The database was initiated by Rockwell Hanford Operations, and then maintained by Westinghouse Hanford Company. The database is no longer maintained but is on file at PNNL. All data included in this appendix were obtained from samples collected either by core or by drive barrel as indicated on the geologist's or driller's log. If the sampling method was in question, the data were not included.

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E18-1	205	Sand	0.15	90.41	9.45	0.02	0.13	0.82	14.05	52.62	15.81	7.11	2.99	6.46
299-E18-1	210	Sand	1.2	90.87	7.93	0.24	0.96	5.05	33.72	34.49	12.42	5.19	2.11	5.82
299-E18-1	215	slightly gravelly Sand	8.1	83.66	8.24	2.87	5.23	12.87	30.98	23.41	10.38	6.02	1.96	6.28
299-E18-1	220	gravelly Sand	22.61	72.52	4.86	9.76	12.85	19.77	29.99	13.38	6.09	3.29	1.31	3.54
299-E18-1	225	muddy sandy Gravel	40.2	48.36	11.43	26.97	13.23	11.19	10.23	10.55	9.03	7.36	3.74	7.7
299-E18-1	230	muddy sandy Gravel	39.16	51.31	9.52	26.19	12.97	10.27	12.72	12.06	10.9	5.36	2.78	6.74
299-E18-1	235	muddy sandy Gravel	36.24	52.76	11.01	22.92	13.32	10.02	15.23	11.32	8.73	7.46	3.05	7.96
299-E18-1	240	muddy sandy Gravel	44.93	43.02	12.06	31.36	13.57	10.8	8.55	7.62	8.69	7.36	3.73	8.33
299-E18-1	245	muddy sandy Gravel	48.69	41.8	9.52	32.96	15.73	10.51	9.07	8.96	7.01	6.25	1.94	7.58
299-E18-1	250	muddy sandy Gravel	56.08	37.06	6.86	41.12	14.96	8.98	8.45	7.63	8.17	3.83	1.77	5.09
299-E18-1	255	muddy sandy Gravel	36.06	52.58	11.37	22.28	13.78	12.18	10.09	11.7	10.56	8.05	3.92	7.45
299-E18-1	260	muddy sandy Gravel	38.89	51.6	9.52	22.98	15.91	12.7	10.45	12.04	10.86	5.55	2.29	7.22
299-E18-1	265	muddy sandy Gravel	36.07	52.11	11.83	20.46	15.61	11.74	11.88	11.6	9.17	7.72	3.72	8.11
299-E18-1	270	muddy sandy Gravel	32.59	57.13	10.27	18.03	14.56	12.79	11.68	14.53	12.43	5.7	4.1	6.18
299-E18-1	275	muddy sandy Gravel	42.99	45.85	11.17	28.58	14.41	10.84	8.71	10.35	8.45	7.5	2.85	8.31
299-E18-1	280	muddy sandy Gravel	31.65	60.52	7.83	16.74	14.91	11.59	19.45	13.92	10.8	4.76	2.11	5.72
299-E18-1	285	slightly muddy gravelly Sand	28.01	63.2	8.79	16.55	11.46	11.07	21.28	15.29	8.94	6.62	3.14	5.65
299-E18-1	290	muddy sandy Gravel	40.74	49.77	9.47	26.49	14.25	10.57	10.05	12.13	11.02	6	3.4	6.07
299-E18-1	295	muddy sandy Gravel	51.74	40.07	8.17	28.36	23.38	14.16	9.58	5.85	5.88	4.6	1.96	6.21
299-E18-1	300	muddy sandy Gravel	48.37	42.84	8.79	33.43	14.94	10.24	7.33	7.95	12.23	5.09	3.22	5.58
299-E18-1	305	muddy sandy Gravel	35.37	52.74	11.89	20.35	15.02	11.07	8.05	9	15.76	8.86	2.68	9.21
299-E18-1	310	muddy sandy Gravel	31.06	57.32	11.62	15.82	15.24	10.61	10.97	15.19	10.84	9.71	5.12	6.5
299-E18-1	315	slightly muddy gravelly Sand	27.16	64.39	8.44	15.45	11.71	8.15	9.43	27.53	13.56	5.72	2.37	6.07
299-E18-1	320	slightly muddy gravelly Sand	23.94	66.39	9.68	14.9	9.04	5.39	4.64	16.73	31.82	7.81	3.44	6.24
299-E18-1	325	muddy sandy Gravel	34.28	58.53	7.2	23.5	10.78	7.31	5.52	23.49	15.17	7.04	1.74	5.46
299-E18-1	330	muddy sandy Gravel	49.19	44.52	6.27	32.59	16.6	8.46	5.2	10.38	14.62	5.86	1.84	4.44
299-E18-3	5	slightly muddy Sand	2.04	84.05	13.92	0.59	1.45	3.36	7.72	10.97	31.38	30.62	6.96	6.96
299-E18-3	10	slightly muddy gravelly Sand	14.59	76.26	9.16	7.41	7.18	14.34	23.27	18.51	10.81	9.33	3.86	5.3
299-E18-3	15	Sand	1.94	96.35	1.7	0.45	1.49	13.53	59.26	19.26	2.98	1.32	0.47	1.24
299-E18-3	20	Sand	1.48	95.93	2.58	0.31	1.17	13.18	45.47	28.87	6.2	2.21	0.74	1.84
299-E18-3	25	Sand	2.09	90.85	7.06	0.7	1.39	10.93	36.08	18.61	14.1	11.13	2.64	4.41
299-E18-3	30	Sand	1.27	90.47	8.26	0.27	1	5.3	41.75	25.05	10.86	7.51	2.76	5.49
299-E18-3	35	Sand	1.06	94.26	4.68	0	1.06	5.48	20.99	38.27	23.67	5.85	1.41	3.27
299-E18-3	40	Sand	0.97	93.28	5.76	0.21	0.76	9.23	47.49	21.86	10.35	4.35	1.78	3.98
299-E18-3	45	Sand	0.62	94.37	5.01	0.11	0.51	4.67	53.12	25.49	7.3	3.79	1.52	3.49
299-E18-3	50	Sand	1.01	94.34	4.66	0.23	0.78	7.41	53.34	24.81	5.67	3.11	1.14	3.52

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E18-1	5	muddy Sand	3.92	55.85	40.24	1.55	2.37	3.62	5.75	6.61	18.59	21.28	10.71	29.53
299-E18-1	10	slightly gravelly Sand	6.29	88.07	5.64	1.84	4.45	20.62	32.26	21.49	9.09	4.61	1.7	3.94
299-E18-1	15	Sand	3.86	91.89	4.25	0.24	3.62	20.3	42.84	19.09	6.5	3.16	1.01	3.24
299-E18-1	20	Sand	2.93	92.56	4.5	0.3	2.63	14.28	40.47	26.4	7.67	3.74	1.1	3.39
299-E18-1	25	Sand	1.64	93.27	5.08	0.08	1.56	7.98	27.28	40.76	13.09	4.16	1.46	3.62
299-E18-1	30	Sand	1.43	94.45	4.11	0.1	1.33	8.31	32.7	35.67	13.64	4.13	1.2	2.92
299-E18-1	35	Sand	0.37	94.45	5.18	0.02	0.35	1.95	13.86	37.35	32.41	8.88	1.83	3.35
299-E18-1	40	Sand	1.59	91.06	7.35	0.26	1.33	13.81	43.93	21.5	7.02	4.8	1.59	5.76
299-E18-1	45	Sand	1.54	91.04	7.43	1.08	0.46	5.67	50.95	22.62	7.25	4.55	1.61	5.81
299-E18-1	50	Sand	3.64	93.87	2.48	0.81	2.83	21.3	51.59	15.17	3.79	2.02	0.68	1.8
299-E18-1	55	Sand	3.38	92.98	3.64	0.59	2.79	18.15	49.3	18.54	4.75	2.24	0.93	2.72
299-E18-1	60	Sand	0.65	97.47	1.89	0.06	0.59	7.88	42.91	35.88	8.71	2.09	0.63	1.26
299-E18-1	65	Sand	0.67	97.36	1.97	0.02	0.65	7.88	44.48	36.64	6.39	1.97	0.63	1.35
299-E18-1	70	Sand	2.36	91.18	6.46	0.33	2.03	10.27	39.63	30.03	7.26	3.99	1.46	5
299-E18-1	75	Sand	2.3	96.32	1.38	0.34	1.96	11.75	49.67	28.84	4.44	1.62	0.52	0.86
299-E18-1	80	Sand	0.57	90.83	8.59	0.05	0.52	4.36	24.43	37.59	17.9	6.55	2.37	6.22
299-E18-1	85	Sand	4.19	92.97	2.84	0.22	3.97	16.06	41.37	28.04	5.1	2.4	0.76	2.08
299-E18-1	90	Sand	2.13	92.56	5.31	0.22	1.91	8.38	36.08	33.71	10.53	3.86	1.43	3.88
299-E18-1	95	Sand	1.35	93.62	5.03	0.11	1.24	6.05	17.59	34.94	27.68	7.36	1.73	3.29
299-E18-1	100	Sand	1.98	94.19	3.82	0.19	1.79	10.46	34	35.2	10.97	3.56	1.09	2.73
299-E18-1	105	Sand	2.13	94.06	3.81	0.08	2.05	4.46	14.37	33.78	34.73	6.72	1.39	2.42
299-E18-1	110	Sand	0.68	92.28	7.04	0.13	0.55	3.03	9.86	26.08	40.46	12.85	2.65	4.4
299-E18-1	115	Sand	1.13	91.73	7.14	0.16	0.97	6.42	27.28	36.64	13.96	7.43	2.14	5
299-E18-1	120	Sand	2.44	88.19	9.37	0.06	2.38	11.11	35.21	22.41	13.21	6.25	2.35	7.02
299-E18-1	125	Sand	2.62	94.52	2.86	0.35	2.27	10.2	33.38	36.24	10.96	3.74	1.08	1.78
299-E18-1	130	Sand	1.18	93.21	5.6	0.03	1.15	6.08	21.54	37.74	21.5	6.35	1.77	3.84
299-E18-1	135	slightly gravelly Sand	6.02	88.03	5.95	0.98	5.04	13.72	28.88	28.3	12.74	4.39	1.63	4.32
299-E18-1	140	Sand	0.9	92.65	6.44	0.04	0.86	4.39	24.98	44.49	13.75	5.04	1.66	4.79
299-E18-1	145	Sand	0.13	92.84	7.03	0.02	0.11	0.21	5.92	57.23	22.89	6.59	2.22	4.82
299-E18-1	150	Sand	0.18	95.85	3.98	0	0.18	0.27	0.37	22.27	64.95	7.99	1.43	2.55
299-E18-1	155	Sand	0.25	92.13	7.62	0.02	0.23	1.09	5.67	12.78	58.39	14.2	2.79	4.83
299-E18-1	160	Sand	0.36	94.3	5.35	0.05	0.31	3.52	20.41	41.2	22.91	6.26	1.74	3.61
299-E18-1	165	Sand	0.27	97.34	2.38	0	0.27	1.82	21.34	47.19	22.88	4.11	0.84	1.55
299-E18-1	170	Sand	2.25	94.15	3.61	0.06	2.19	9.28	26.61	42.83	11.91	3.52	1.02	2.59
299-E18-1	175	Sand	1.4	93.93	4.67	0.04	1.36	6.71	28.12	40.85	14.02	4.23	1.48	3.19
299-E18-1	180	Sand	0.74	95.17	4.1	0.17	0.57	2.6	18.23	48.68	20.89	4.77	1.27	2.83
299-E18-1	187	Sand	0.37	90.56	9.07	0	0.37	5.59	46.49	20.97	7.58	9.93	5.06	4.02
299-E18-1	190	Sand	0.28	93.67	6.06	0.03	0.25	4.37	37.86	35.6	10.56	5.28	2.42	3.64
299-E18-1	195	Sand	0.79	92.16	7.05	0.07	0.72	3.63	31.55	36.74	14.79	5.45	2.06	5
299-E18-1	200	slightly muddy Sand	0.71	84.01	15.28	0.03	0.68	2.57	11.25	27.28	21.52	21.39	4.58	10.7

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E18-3	55	Sand	1.08	95.57	3.34	0.27	0.81	4.74	29.72	40.83	16.8	3.48	1.08	2.26
299-E18-3	58	slightly muddy Sand	0.2	84.34	15.46	0	0.2	0.42	3.51	12.56	32.09	35.76	7.29	8.17
299-E18-3	60	Sand	0.67	92.78	6.54	0.04	0.63	7.98	36.64	32.63	10.38	5.15	1.73	4.81
299-E18-3	62	gravelly muddy Sand	12.89	60.89	26.22	0.71	12.18	9.27	18.47	9.09	2.83	21.23	12.63	13.59
299-E18-3	65	Sand	0.9	96.08	3.02	0.12	0.78	10.49	55.21	23.48	4.65	2.25	0.9	2.12
299-E18-3	70	Sand	1.15	95.02	3.84	0.16	0.99	10.01	45.85	29.98	6.38	2.8	0.93	2.9
299-E18-3	75	Sand	1.53	93.55	4.92	0.64	0.89	10.43	52.26	21.21	6.3	3.35	1.38	3.54
299-E18-3	80	Sand	0.75	93.85	5.4	0.22	0.53	4.75	26.98	39.89	17.44	4.79	1.58	3.82
299-E18-3	84	muddy Sand	0.97	78.31	20.72	0.03	0.94	6.5	7.09	16.94	24.59	23.19	9.59	11.12
299-E18-3	85	Sand	1.73	94.68	3.6	0.11	1.62	13.01	44.01	29.32	5.77	2.57	0.96	2.65
299-E18-3	90	Sand	1.82	94.14	4.04	0.34	1.48	7.84	31.18	38.98	12.37	3.77	1.29	2.74
299-E18-3	95	Sand	0.88	90.58	8.54	0.1	0.78	4.79	18.79	33.11	24.62	9.27	2.6	5.93
299-E18-3	97	muddy Sand	0.23	65.34	34.42	0.1	0.13	0.23	0.4	1.23	5.27	58.21	15.18	19.25
299-E18-3	100	Sand	1.82	90.93	7.25	1.05	0.77	5.74	33.68	31.54	14.18	5.79	2.19	5.06
299-E18-3	105	Sand	0.3	90.1	9.61	0	0.3	2.11	11.27	27.18	36.37	13.17	3.5	6.12
299-E18-3	110	Sand	1.51	94.74	3.75	0.22	1.29	10.66	40.66	32.21	8.2	3.01	1.14	2.61
299-E18-3	115	Sand	0.85	93.66	5.5	0.04	0.81	6.04	26.58	41.31	14.96	4.77	1.42	4.08
299-E18-3	120	Sand	0.91	95.82	3.27	0	0.91	9.49	50.18	26.19	7.4	2.56	0.95	2.32
299-E18-3	125	Sand	3.45	90.66	5.88	0.49	2.96	13.07	34.33	29.5	9.46	4.3	1.58	4.3
299-E18-3	130	Sand	0.24	92.82	6.94	0	0.24	3.19	17.99	36.42	27.24	7.98	2.03	4.91
299-E18-3	135	slightly gravelly Sand	5.02	91.17	3.81	0.9	4.12	21.73	32.08	25.04	9.18	3.14	0.94	2.87
299-E18-3	140	Sand	0.75	96.25	3	0	0.75	8.72	42.91	34.49	7.53	2.6	0.93	2.07
299-E18-3	145	Sand	0.04	93.64	6.33	0.04	0	0.83	11.16	51.82	23.64	6.19	1.69	4.64
299-E18-3	150	Sand	0.2	92.59	7.21	0	0.2	0.53	3.89	47.54	33.46	7.17	2.21	5
299-E18-3	155	Sand	0.07	93.54	6.38	0	0.07	0.15	0.37	18.8	64.65	9.57	2.11	4.27
299-E18-3	160	Sand	0.24	92.76	7	0	0.24	2.26	11.64	37.72	33.39	7.75	2.06	4.94
299-E18-3	165	Sand	0.53	93.49	5.99	0	0.53	2.38	16.73	43.85	24.45	6.08	1.81	4.18
299-E18-3	170	Sand	0.17	92.16	7.68	0	0.17	1.13	7.06	35.97	38.82	9.18	2.58	5.09
299-E18-3	175	Sand	1.12	92.53	6.36	0.07	1.05	8.12	26.24	42.09	11.32	4.76	1.56	4.8
299-E18-3	180	Sand	0.9	91.16	7.94	0.09	0.81	4.62	25.71	36.44	18.01	6.38	2.3	5.64
299-E18-3	185	Sand	1.07	90.19	8.76	0.04	1.03	3.85	20.19	35.29	22.87	7.99	2.67	6.08
299-E18-3	190	Sand	0.2	95.49	4.32	0	0.2	4.07	41.53	36.63	9.51	3.75	1.34	2.99
299-E18-3	195	muddy Sand	0.15	67.99	31.85	0.02	0.13	0.24	0.11	0.2	5.69	61.75	15.47	16.38
299-E18-3	200	Sand	0.6	92.13	7.27	0.02	0.58	4.36	26.94	38.68	15.91	6.24	2.14	5.14
299-E18-3	205	Sand	1.79	92.76	5.45	0.33	1.46	6.32	34.24	36.52	10.68	5	1.44	4.01
299-E18-3	210	Sand	0.29	94.23	5.48	0.02	0.27	1.75	14.24	44.33	27.86	6.05	1.61	3.87
299-E18-3	215	Sand	0.32	96.06	3.62	0	0.32	5.2	41.81	37.29	8.65	3.11	1.07	2.55
299-E18-3	220	Sand	0.18	90.36	9.47	0	0.18	5	38.92	25	7.91	13.53	3.98	5.49
299-E18-3	222	muddy Sand	0.06	68.7	31.24	0	0.06	0.75	5.6	7.35	5.18	49.82	15.73	15.51
299-E18-3	225	Sand	0.49	93.88	5.64	0	0.49	3.18	23.67	49.58	13.03	4.42	1.63	4.01

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E18-3	230	Sand	0.96	91.39	7.66	0.07	0.89	8.24	20.23	38.97	17.58	6.37	2.13	5.53
299-E18-3	235	gravelly Sand	29.1	66.7	4.2	22.02	7.08	11.77	29.61	17.01	5.7	2.61	1.06	3.14
299-E18-3	240	muddy sandy Gravel	44.88	47.12	8.01	32	12.88	11.82	13	9.03	8.9	4.37	1.92	6.09
299-E18-3	245	muddy sandy Gravel	32.25	56.85	10.9	13.31	18.94	14.15	12.81	10.91	11.93	7.05	5.01	5.89
299-E18-3	250	muddy sandy Gravel	48.74	41.31	9.96	31.29	17.45	11.25	9.21	7.99	6.82	6.04	2.52	7.44
299-E18-3	255	muddy sandy Gravel	36.69	56.11	7.19	16.01	20.68	13.95	11.81	11.79	11.31	7.25	5.09	2.11
299-E18-3	260	muddy sandy Gravel	48.96	40.07	10.96	30.9	18.06	11.18	8.07	7.68	7.2	5.94	4.02	6.94
299-E18-3	265	muddy sandy Gravel	39.26	47.85	12.89	20.8	18.46	12.36	10.18	9.41	7.34	8.56	3.96	8.92
299-E18-3	270	muddy sandy Gravel	43.25	46.29	10.45	24.35	18.9	12.81	10.21	9.46	8.92	4.89	3.93	6.52
299-E18-3	275	muddy sandy Gravel	39.08	52.06	8.85	23.05	16.03	11.66	13.85	10.19	9	7.36	7.68	1.18
299-E18-3	280	sandy Gravel	43.03	52.66	4.31	25.64	17.39	12.22	14.72	10.41	8.68	6.63	3.29	1.02
299-E18-3	285	muddy sandy Gravel	40.45	50.57	8.98	22.6	17.85	11.38	11.76	10.16	9.03	8.24	6.64	2.34
299-E18-3	290	muddy sandy Gravel	43.92	49.88	6.21	28.54	15.38	10.37	12.63	9.28	9.6	8	5.34	0.87
299-E18-3	295	muddy sandy Gravel	46.03	44.03	9.93	28.08	17.95	12.17	8.9	9.05	8.23	5.68	2.22	7.71
299-E18-3	300	muddy sandy Gravel	45.34	43.76	10.91	31.28	14.06	10.17	8.11	8.97	8.74	7.77	6.43	4.48
299-E18-3	305	muddy sandy Gravel	58.38	33.85	7.77	43.12	15.26	8.28	6.43	5.92	8.13	5.09	1.66	6.12
299-E18-3	310	muddy sandy Gravel	44.22	46.47	9.3	29.75	14.47	10.9	10.36	8.87	10.96	5.38	5.47	3.83
299-E18-3	315	muddy sandy Gravel	44.66	46.72	8.62	27.49	17.17	9.9	9.24	11.64	9.7	6.24	1.4	7.22
299-E18-3	320	muddy sandy Gravel	47.02	45.71	7.28	32.8	14.22	9.79	7.95	11.74	11.42	4.81	1.76	5.52
299-E18-3	325	muddy sandy Gravel	43.95	47.97	8.07	25.21	18.74	12.44	7.39	11.35	10.51	6.28	4.22	3.85
299-E18-3	330	slightly muddy gravelly Sand	24.99	66.56	8.44	9.57	15.42	12.82	9.51	17.7	20.17	6.36	4.27	4.18
299-E18-4	5	Sand	2.93	90.74	6.34	1.64	1.29	9.1	46.43	17.79	9.81	7.61	2.55	3.79
299-E18-4	10	gravelly Sand	15.2	81.79	3	3.69	11.51	20.48	34.4	18.06	5.71	3.14	1.02	1.99
299-E18-4	15	gravelly Sand	12.62	85.05	2.32	3.79	8.83	25.64	38.1	15.62	3.97	1.72	0.56	1.76
299-E18-4	20	Sand	2.02	93.81	4.17	0.56	1.46	10.99	43.35	30.56	6.13	2.78	0.98	3.19
299-E18-4	25	Sand	1.75	94.76	3.49	0.32	1.43	9.7	36.47	34.87	10.68	3.04	1.03	2.46
299-E18-4	30	Sand	2.75	89.81	7.44	0.4	2.35	5.61	16.09	36	22.95	9.16	2.14	5.31
299-E18-4	35	Sand	0.39	95.06	4.55	0	0.39	4.71	53.39	28.05	7.01	1.9	0.88	3.67
299-E18-4	40	slightly muddy Sand	0.81	87.88	11.31	0.11	0.7	4.93	19.22	35.48	18.82	9.43	5.38	5.92
299-E18-4	45	slightly muddy Sand	1.58	80.99	17.44	0.09	1.49	13.81	34.49	10.86	8.53	13.3	5.29	12.15
299-E18-4	50	Sand	2.2	94.02	3.79	0.35	1.85	16	50.71	18.99	5.51	2.81	1.07	2.72
299-E18-4	55	Sand	4.68	91.72	3.6	1.39	3.29	26.13	38.14	20.63	5.03	1.79	0.85	2.75
299-E18-4	60	Sand	1.83	89.2	8.97	0.22	1.61	9.42	27.19	29.66	14.46	8.47	2.74	6.23
299-E18-4	65	Sand	1.24	95.13	3.62	0.16	1.08	11.92	57.06	18	5.51	2.64	0.98	2.64
299-E18-4	70	Sand	1.71	97.43	0.87	0.33	1.38	13.23	60.29	19.6	3.04	1.27	0.47	0.4
299-E18-4	75	Sand	0.84	98.07	1.1	0.1	0.74	8.38	45.25	38.68	4.69	1.07	0.31	0.79
299-E18-4	80	Sand	0.87	94.98	4.15	0	0.87	5.46	31.28	40.68	13.78	3.78	1.12	3.03
299-E18-4	85	slightly muddy Sand	1.17	86.16	12.66	0.28	0.89	2.35	9.3	32.15	30.9	11.46	3.77	8.9
299-E18-4	90	Sand	4.42	87.95	7.64	0.62	3.8	15.98	29.63	22.93	13.65	5.76	1.98	5.66

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E18-4	95	Sand	2.66	88.16	9.18	0.71	1.95	6.47	19.91	31.47	22.17	8.14	2.95	6.23
299-E18-4	100	Sand	3.05	89.31	7.63	0.68	2.37	12.38	33.18	23.78	12.4	7.57	2.67	4.96
299-E18-4	105	Sand	1.46	94.93	3.6	0	1.46	6.08	21.55	41.16	21.45	4.69	1.06	2.55
299-E18-4	110	Sand	2.02	93.08	4.9	0.18	1.84	10.35	38.5	29.27	10.98	3.98	1.33	3.57
299-E18-4	115	Sand	0.67	96.11	3.22	0	0.67	4.5	26.88	41.51	19.16	4.06	1.01	2.2
299-E18-4	120	Sand	0.75	96.1	3.14	0	0.75	8.54	45.35	31.96	7.74	2.51	0.75	2.39
299-E18-4	125	Sand	1.8	93	5.2	0.23	1.57	5.25	28.52	44.13	11.44	3.66	1.31	3.89
299-E18-4	130	Sand	0.61	90.98	8.41	0	0.61	4.17	12.17	40.68	24.24	9.72	2.65	5.76
299-E18-4	135	slightly muddy Sand	0.61	81.81	17.58	0.09	0.52	1.56	5.63	17.52	33.4	23.7	6.12	11.46
299-E18-4	140	Sand	1	95.5	3.5	0.02	0.98	6.76	38.01	39.35	8.5	2.88	1	2.5
299-E18-4	145	Sand	0.32	96.68	2.99	0	0.32	0.49	15.96	59.23	17.59	3.41	0.95	2.04
299-E18-4	150	Sand	0.57	89.57	9.87	0.06	0.51	3.53	19.98	36.42	22.12	7.52	3.45	6.41
299-E18-4	155	Sand	0.07	93.54	6.38	0	0.07	0.15	0.37	18.8	64.65	9.57	2.11	4.27
299-E18-4	160	Sand	1.26	94.54	4.21	0.05	1.21	7.55	32.82	35.34	14.8	4.03	1.28	2.93
299-E18-4	165	slightly muddy Sand	0.71	89.17	10.12	0.06	0.65	3.62	19.53	35.66	21.86	8.5	3.06	7.06
299-E18-4	170	Sand	1.03	89.94	9.02	0.03	1	2	8.33	41	29.55	9.06	2.45	6.57
299-E18-4	175	Sand	1.45	90.55	7.99	0	1.45	9.19	31.34	30.24	13.35	6.43	2.16	5.83
299-E18-4	180	Sand	1.8	93.07	5.14	0.4	1.4	6.17	30.54	38.1	13.57	4.69	1.66	3.48
299-E18-4	185	slightly muddy Sand	1.26	88.41	10.33	0.16	1.1	5.2	23.57	35.02	16.35	8.27	2.58	7.75
299-E18-4	190	Sand	0.89	94	5.12	0.02	0.87	5.35	39.5	35.1	9.88	4.17	1.52	3.59
299-E18-4	195	Sand	0.67	93.3	6.04	0.05	0.62	1.33	10.33	53.76	21.79	6.09	1.68	4.36
299-E18-4	200	Sand	0.65	94.84	4.52	0	0.65	3.84	31.2	42.14	13.55	4.11	1.38	3.14
299-E18-4	205	Sand	1.93	93.53	4.54	0.23	1.7	5.58	32.49	40.41	11.24	3.81	1.32	3.22
299-E18-4	210	Sand	2.23	92.29	5.47	0.97	1.26	4.49	25.08	43.59	14.14	4.99	1.5	3.97
299-E18-4	215	Sand	0.74	94.81	4.44	0.02	0.72	5.95	41.56	33.73	10	3.57	1.22	3.22
299-E18-4	221	slightly muddy Sand	0.67	89.31	10.01	0.05	0.62	3.91	35.46	21.32	10.08	18.54	4.87	5.14
299-E18-4	225	Sand	1.66	92.12	6.21	0.51	1.15	3.88	21.63	45.97	15.31	5.33	1.74	4.47
299-E18-4	230	Sand	0.51	94.35	5.14	0.08	0.43	1.1	13.36	53.2	21.74	4.95	1.55	3.59
299-E18-4	233	sandy Gravel	49.68	45.97	4.35	41.24	8.44	8.92	16.98	12.42	5.26	2.39	0.97	3.38
299-E18-4	240	muddy sandy Gravel	43.19	47.28	9.53	22.06	21.13	17.42	10.88	7.27	6.47	5.24	1.97	7.56
299-E18-4	245	muddy sandy Gravel	57.45	33.87	8.68	42.96	14.49	9.31	6.33	6.6	6.86	4.77	2.91	5.77
299-E18-4	250	muddy sandy Gravel	44.46	43.64	11.9	29.34	15.12	10.31	9.49	8.85	7.77	7.22	2.93	8.97
299-E18-4	255	muddy sandy Gravel	50.16	42.11	7.74	26.23	23.93	14.12	8.88	7.36	7.43	4.32	1.56	6.18
299-E18-4	260	muddy sandy Gravel	39.96	47.78	12.26	21.23	18.73	12.46	10.08	9.89	8.5	6.85	4.18	8.08
299-E18-4	265	muddy sandy Gravel	37.44	52.27	10.29	20.15	17.29	12.7	14.62	10.31	9.83	4.81	2.65	7.64
299-E18-4	270	muddy sandy Gravel	30.39	56.18	13.42	11.39	19	13.84	14.04	11.04	8.62	8.64	5.01	8.41
299-E18-4	275	muddy sandy Gravel	35.54	55.22	9.23	16.89	18.65	14.32	14.2	10.87	10.61	5.22	4.21	5.02
299-E18-4	280	muddy sandy Gravel	30.98	55.38	13.64	16.05	14.93	10.3	13.66	12.07	10.54	8.81	3.74	9.9
299-E18-4	285	muddy sandy Gravel	39.56	50.49	9.94	23.69	15.87	11.15	12.91	10.47	10.3	5.66	4.28	5.66
299-E18-4	290	muddy sandy Gravel	46.12	42.56	11.32	33.1	13.02	9.87	8.32	9.11	7.96	7.3	3.8	7.52

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E18-4	295	muddy sandy Gravel	51.85	39.9	8.26	35.83	16.02	9.88	8.72	7.84	8.95	4.51	2.16	6.1
299-E18-4	300	muddy sandy Gravel	45.52	43.56	10.91	31.35	14.17	10.03	8.28	9.72	7.94	7.59	3.35	7.56
299-E18-4	305	muddy sandy Gravel	44.94	46.51	8.56	32.34	12.6	9.57	10.27	10.94	10.66	5.07	3.17	5.39
299-E18-4	310	muddy sandy Gravel	37.95	52.28	9.77	27.04	10.91	8	15.69	12.49	9.15	6.95	2.7	7.07
299-E18-4	315	muddy sandy Gravel	30.76	58.34	10.88	15.19	15.57	12.02	11.06	14.5	14.05	6.71	4.27	6.61
299-E18-4	320	muddy sandy Gravel	33.91	54.1	11.99	19.25	14.66	10.8	8.15	11.77	14.45	8.93	4.39	7.6
299-E18-4	325	muddy sandy Gravel	42.75	49.06	8.19	26.45	16.3	11.1	9.33	10.69	12.91	5.03	2.27	5.93
299-E18-4	330	slightly muddy gravelly Sand	24.2	62.46	13.33	10.09	14.11	11.81	9.45	14.04	19.17	7.99	3.18	10.15
299-E19-1	5	slightly gravelly slightly muddy Sand	5.24	77.99	16.77	1.23	4.01	15.91	20.53	9.93	16.4	15.23	8.88	7.89
299-E19-1	10	slightly muddy gravelly Sand	22.95	68.21	8.83	21.22	1.74	13.61	32.59	8.83	7.02	6.15	3.55	5.29
299-E19-1	15	slightly muddy Sand	3.09	83.13	13.78	1.73	1.36	9.21	30.35	23.05	11.5	9.02	6.18	7.6
299-E19-1	20	slightly muddy Sand	2.91	79.12	17.97	1.78	1.14	6.18	17.47	22.09	18.47	14.91	8.38	9.59
299-E19-1	25	slightly muddy Sand	2.41	82.78	14.81	1.96	0.44	5.89	22.53	23.54	17.72	13.1	6.84	7.97
299-E19-1	30	slightly muddy Sand	1.13	84.63	14.25	0.69	0.44	4.94	17.94	25.38	23.06	13.31	6.44	7.81
299-E19-1	35	slightly muddy Sand	2.72	84.41	12.87	0.13	2.59	10.22	24.06	23.16	16.24	10.74	5.56	7.31
299-E19-1	40	slightly muddy Sand	3.01	86.1	10.89	0.66	2.35	11.25	26.59	24.61	14.8	8.84	4.51	6.38
299-E19-1	45	slightly muddy Sand	1.26	87.23	11.5	0	1.26	9.1	28.32	28.19	13.72	7.9	4.3	7.21
299-E19-1	50	slightly muddy Sand	2.09	86.23	11.68	0.18	1.91	12.29	28.83	26	11.92	7.19	4.18	7.5
299-E19-1	55	slightly gravelly Sand	7.82	84.92	7.25	5.73	2.1	12.4	29.64	27.04	11.01	4.83	2.61	4.64
299-E19-1	60	Sand	2.78	89.73	7.49	0.57	2.21	13.48	37.23	24.47	9.49	5.06	2.64	4.85
299-E19-1	65	slightly muddy Sand	2.51	87.01	10.48	0.25	2.26	8.16	25.66	32.31	14.74	6.15	3.45	7.03
299-E19-1	70	slightly muddy Sand	0.91	86.1	12.99	0.18	0.73	7.55	26.65	29	15.17	7.73	4.53	8.46
299-E19-1	75	slightly muddy Sand	2	85.72	12.28	0.37	1.62	6.73	25.69	31.11	15.09	7.11	4.05	8.23
299-E19-1	80	slightly muddy Sand	0.83	86.22	12.95	0	0.83	8.27	30.45	25.9	13.53	8.08	5	7.95
299-E19-1	85	slightly muddy Sand	2.24	86.3	11.46	0.42	1.82	8.81	25.93	31.94	13.77	5.87	3.84	7.62
299-E19-1	90	slightly muddy Sand	1.13	84.6	14.27	0.14	0.99	5.23	24.72	28.81	14.97	10.88	5.58	8.69
299-E19-1	95	slightly muddy Sand	1.72	85.95	12.33	0.13	1.59	9.01	27.1	28.56	12.79	8.48	4.57	7.75
299-E19-1	100	slightly muddy Sand	0.87	85.83	13.3	0.31	0.56	4.7	23.89	31.68	16.34	9.22	4.76	8.54
299-E19-1	105	slightly muddy Sand	1.4	85.39	13.21	0.43	0.97	5.54	25.5	31.28	14.91	8.16	4.87	8.34
299-E19-1	110	slightly muddy Sand	1.1	87.37	11.53	0.25	0.86	6.19	25.94	32.07	15.7	7.48	4.17	7.36
299-E19-1	115	slightly muddy Sand	0.87	85.46	13.68	0	0.87	6.56	24.69	28.16	16.52	9.53	5.69	7.98
299-E19-1	120	slightly muddy Sand	1.51	86.13	12.37	0.06	1.44	9.67	27.06	27.81	14.25	7.34	4.52	7.85
299-E19-1	125	slightly muddy Sand	0.81	85.31	13.88	0.13	0.69	5	20.88	31.81	18.69	8.94	5	8.88
299-E19-1	130	slightly muddy Sand	0.68	86.56	12.77	0.12	0.55	5.77	24.31	30.14	16.51	9.82	4.73	8.04
299-E19-1	135	slightly muddy Sand	1.36	85.5	13.14	0	1.36	7.69	22.46	26.34	17.9	11.1	4.9	8.24
299-E19-1	140	slightly muddy Sand	1.35	86.68	11.97	0	1.35	8.32	22.99	29.34	17.17	8.86	4.26	7.71
299-E19-1	150	slightly muddy Sand	0.32	84.69	15	0	0.32	3.4	20.04	29.62	20.73	10.9	5.73	9.26

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E19-1	155	slightly muddy Sand	0.55	86.83	12.62	0.12	0.43	4.76	20.3	31.04	21.34	9.39	4.76	7.87
299-E19-1	160	slightly muddy Sand	0.15	84.99	14.86	0	0.15	2.81	15.69	26.69	24.18	15.62	6.52	8.34
299-E19-1	165	slightly muddy Sand	0.2	85.34	14.46	0	0.2	2.77	21.99	25.23	21.6	13.74	6.34	8.12
299-E19-1	170	slightly muddy Sand	0.67	87.23	12.1	0.22	0.45	3.71	21.08	31.03	20.86	10.54	4.9	7.2
299-E19-1	175	slightly muddy Sand	0.69	83.78	15.54	0	0.69	3.88	16.15	32.06	18.81	12.87	7.39	8.15
299-E19-1	180	slightly muddy Sand	0.7	85.56	13.74	0	0.7	5.44	24.34	27.48	16.81	11.51	5.58	8.16
299-E19-1	185	slightly muddy Sand	0.9	83.45	15.64	0.32	0.58	2.97	16.55	27.28	21.01	15.64	6.79	8.86
299-E19-1	190	slightly muddy Sand	0.42	83.59	15.99	0	0.42	1.4	17.67	28.54	20.41	15.57	7.43	8.56
299-E19-1	195	slightly muddy Sand	0.4	84.53	15.07	0.33	0.07	1.26	21.71	30.68	18.33	12.55	6.51	8.57
299-E19-1	200	slightly muddy Sand	0.3	85.27	14.43	0.12	0.18	1.57	21.98	31.34	18.12	12.26	6.1	8.33
299-E19-1	205	slightly muddy Sand	0.79	86.2	13.01	0.33	0.46	4.07	14.85	30.49	25.76	11.04	5.12	7.88
299-E19-1	210	slightly muddy Sand	1.02	86.01	12.97	0.14	0.89	4.37	20.07	29.9	21.16	10.51	4.91	8.05
299-E19-1	215	slightly gravelly slightly muddy Sand	8.52	80.7	10.78	2.55	5.97	9.76	24.4	26.8	13.04	6.7	3.64	7.14
299-E19-1	220	slightly gravelly slightly muddy Sand	7.38	81.7	10.92	2.88	4.5	8.16	25.19	28.49	13.08	6.78	3.72	7.2
299-E19-1	225	slightly gravelly slightly muddy Sand	6.38	82.66	10.96	2.26	4.12	5.58	18.54	33.42	17.87	7.24	3.72	7.24
299-E19-1	230	slightly muddy Sand	0.9	86.16	12.95	0.07	0.83	2.48	12.74	30.17	29.96	10.81	4.48	8.47
299-E19-1	240	slightly muddy Sand	0.79	83.14	16.07	0.18	0.61	1.28	8.58	23.25	31.71	18.32	6.57	9.49
299-E19-1	245	slightly muddy Sand	0.3	83.24	16.46	0.12	0.18	1.51	16.15	28.99	21.34	15.25	6.69	9.76
299-E19-1	255	sandy Gravel	30.03	63.19	6.78	18.51	11.52	8.45	22.52	19.61	8.24	4.37	2.26	4.52
299-E19-1	260	sandy Gravel	58.26	37.62	4.11	42.59	15.68	5.94	12.02	11.82	5.16	2.68	1.44	2.68
299-E19-1	265	slightly muddy gravelly Sand	26.31	62.19	11.5	14.94	11.36	8.13	18.87	18.6	10.12	6.47	3.79	7.71
299-E19-1	270	slightly muddy gravelly Sand	21.79	63.57	14.65	9.36	12.42	12.79	15.73	15.85	10.56	8.64	5.34	9.3
299-E19-1	275	slightly muddy gravelly Sand	29.14	59.51	11.35	16.18	12.96	15.99	17.34	13.15	7.74	5.29	4.06	7.29
299-E19-1	280	muddy sandy Gravel	79.73	17.52	2.75	62.48	17.25	8.86	4.09	2.08	1.41	1.07	0.81	1.95
299-E19-1	285	muddy sandy Gravel	32.12	53.04	14.84	22.35	9.77	8.52	12.75	14.78	9.83	7.15	6.26	8.58
299-E19-1	290	gravelly muddy Sand	24.91	58.63	16.46	13.83	11.08	10.53	13.53	15.48	10.65	8.45	6.98	9.49
299-E19-1	295	gravelly muddy Sand	20.82	61.49	17.69	10.15	10.66	11.11	14.81	15.77	10.98	8.81	7.34	10.34
299-E19-1	300	muddy sandy Gravel	42.6	44.58	12.82	28.88	13.72	11.37	10.29	9.93	7.34	5.66	5.11	7.7
299-E19-1	305	gravelly muddy Sand	28.77	56.38	14.85	16.13	12.64	11.29	13.68	14.29	9.69	7.42	6.13	8.71
299-E19-1	310	gravelly muddy Sand	24.54	58.55	16.91	11.67	12.86	11.32	12.81	15.66	10.72	8.04	6.97	9.95
299-E19-1	315	gravelly muddy Sand	15.32	61.8	22.88	5.4	9.93	8.63	10.94	17.7	14.03	10.5	9.5	13.38
299-E19-1	320	muddy sandy Gravel	37.51	46.99	15.5	28.33	9.18	7.44	8.25	12.03	10.91	8.37	6.14	9.36
299-E19-1	325	gravelly muddy Sand	25.6	56.87	17.53	10.56	15.04	10.35	8.7	17.25	11.94	8.63	7.04	10.49
299-E19-1	330	gravelly muddy Sand	26.41	55.41	18.18	16.34	10.07	8.04	9.18	15.14	12.98	10.07	7.73	10.45

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E19-1	335	muddy sandy Gravel	31.93	51.41	16.66	17.44	14.49	10.82	9.38	12.93	10.52	7.76	6.25	10.4
299-E19-1	340	gravelly muddy Sand	25.54	56.28	18.18	12.28	13.26	11.16	10.39	14.46	11.79	8.49	6.95	11.23
299-E19-1	345	muddy sandy Gravel	44.18	44.9	10.92	32.29	11.88	9.36	8.46	11.94	9.36	5.76	3.54	7.38
299-E19-1	350	muddy sandy Gravel	30.13	57.5	12.36	17.29	12.85	9.42	8.46	20.59	12.24	6.78	4.08	8.28
299-E19-1	355	muddy sandy Gravel	42.25	44.42	13.34	23.78	18.47	12.67	7.79	10.32	7.91	5.73	4.04	9.29
299-E19-1	360	gravelly muddy Sand	12.38	68.81	18.81	2.68	9.7	11.79	13.21	18.99	15.3	9.52	6.61	12.2
299-E19-1	365	muddy sandy Gravel	35.11	57.5	7.4	22.65	12.46	7.86	7.79	20.05	16.12	5.66	2.73	4.66
299-E19-1	370	gravelly Sand	18.76	76.34	4.9	6.03	12.72	15.71	17.38	29.87	10.27	3.11	2.09	2.81
299-E23-1	0	slightly gravelly slightly muddy Sand	6.45	83.79	9.77	3.19	3.26	11.1	31.1	20.07	10.56	10.96	5.78	3.99
299-E23-1	5	slightly muddy Sand	2.33	81.91	15.76	0.47	1.86	5.43	14.83	15.37	16.93	29.35	8.46	7.3
299-E23-1	10	slightly gravelly slightly muddy Sand	9.77	76.93	13.3	1.92	7.85	16.67	21.96	15.14	11.06	12.1	6.33	6.97
299-E23-1	15	gravelly Sand	10.48	83.28	6.25	1.01	9.47	17.92	32.54	20.22	8	4.6	2.85	3.4
299-E23-1	20	Sand	4.3	88.15	7.55	0.46	3.84	14.05	41.57	18.15	8.52	5.86	2.6	4.94
299-E23-1	25	Sand	1.16	94.64	4.2	0	1.16	13.48	52.9	18.12	6.3	3.84	2.03	2.17
299-E23-1	30	Sand	3.39	92.71	3.91	0.72	2.67	19.49	49.09	15.65	5.61	2.87	1.56	2.35
299-E23-1	35	Sand	0.94	95.23	3.84	0	0.94	16.68	50.35	19.26	5.79	3.15	1.26	2.58
299-E23-1	40	Sand	0.89	96.3	2.8	0.06	0.83	17.72	50.35	18.93	6.5	2.8	1.4	1.4
299-E23-1	45	Sand	0.58	97.25	2.17	0	0.58	13.67	51.76	23.83	6.26	1.73	1.02	1.15
299-E23-1	50	Sand	1.74	92.38	5.88	0	1.74	15.23	38.21	23.38	10.22	5.34	2	3.87
299-E23-1	55	Sand	2.16	92.36	5.49	0	2.16	18.08	40.41	21.1	8.33	4.44	2.28	3.21
299-E23-1	60	Sand	0.9	92.37	6.74	0	0.9	17.74	41.62	20.88	7.86	4.27	2.62	4.12
299-E23-1	65	Sand	2.06	93.73	4.2	0	2.06	17.07	38.99	26.63	7.25	3.79	1.57	2.64
299-E23-1	70	Sand	1.32	89.03	9.65	0	1.32	9.65	29.82	31.43	9.87	8.26	3.58	6.07
299-E23-1	75	Sand	1.44	91.34	7.22	0	1.44	10.11	38.79	27.31	9.73	5.4	3.33	3.89
299-E23-1	80	Sand	1.21	91.5	7.29	0	1.21	8.64	27.71	35.93	12.86	6.36	2.71	4.57
299-E23-1	85	Sand	1.29	90.77	7.93	0	1.29	6	22.14	37.82	16.51	8.3	3.04	4.89
299-E23-1	95	Sand	1.5	90.79	7.72	0	1.5	8.39	29.07	30.65	15.95	6.73	4.15	3.57
299-E23-1	100	Sand	0.83	91.77	7.39	0	0.83	5.96	24.73	38.44	15.67	6.97	2.92	4.47
299-E23-1	110	Sand	1.21	92.04	6.75	0	1.21	9.11	34.08	33.06	10.8	4.99	2.83	3.91
299-E23-1	115	Sand	2.02	91.99	5.99	0	2.02	11.84	35.91	29.73	9.89	4.62	2.67	3.32
299-E23-1	120	slightly muddy Sand	1.57	87.58	10.85	0	1.57	5.27	16.51	33.41	22.96	9.43	3.77	7.08
299-E23-1	125	Sand	3.55	89.6	6.85	0.73	2.82	11.28	29.33	30.62	12.73	5.64	2.82	4.03
299-E23-1	130	Sand	3.03	92.74	4.24	0	3.03	13.78	35.05	30.66	9.24	4.01	2.35	1.89
299-E23-1	135	Sand	0.2	96.2	3.6	0	0.2	1.36	11.76	42.42	30.46	10.2	2.04	1.56
299-E23-1	140	Sand	0.54	89.86	9.61	0	0.54	3.97	16.2	42.67	19.49	7.53	4.1	5.51
299-E23-1	145	Sand	0.61	92.18	7.2	0	0.61	4.88	16.78	44.23	20.13	6.16	3.17	4.03
299-E23-1	155	Sand	0.39	89.82	9.8	0	0.39	1.74	11.67	48.23	19.86	8.32	3.48	6.32
299-E23-1	160	slightly muddy Sand	0	89.17	10.83	0	0	0.73	5	41.13	32.39	9.92	4.64	6.19

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E23-1	165	Sand	1.01	90.36	8.62	0	1.01	7.15	24.01	35.12	17.09	6.99	3.81	4.82
299-E23-1	170	Sand	2.34	90.63	7.03	0	2.34	10.63	28.2	33.59	12.27	5.94	2.58	4.45
299-E23-1	175	Sand	3.77	87.79	8.44	0	3.77	4.67	21.54	37.88	14.45	9.25	3.77	4.67
299-E23-1	180	Sand	1.66	91.77	6.57	0	1.66	7.83	28.56	36.95	13.13	5.3	2.85	3.72
299-E23-1	185	Sand	1.8	91.58	6.62	0	1.8	12.25	29.74	30.72	12.58	6.29	2.45	4.17
299-E23-1	205	slightly gravelly slightly muddy Sand	7.37	83.05	9.59	2.49	4.88	13	30.78	26.82	9.59	2.86	3.78	5.81
299-E23-1	215	gravelly Sand	21.76	73.16	5.08	6.46	15.3	17.48	25.4	19.79	7.06	3.43	2.11	2.97
299-E23-1	220	sandy Gravel	38.75	57.96	3.28	13.29	25.46	23.06	16.49	10.89	4.96	2.56	1.12	2.16
299-E23-1	225	slightly muddy gravelly Sand	12.59	76.73	10.68	0.42	12.17	24.57	21.6	14.18	8.49	7.89	4.15	6.53
299-E23-1	230	slightly gravelly Sand	9.85	82.64	7.52	0.56	9.29	21.63	27.58	18.85	9.47	5.11	3.06	4.46
299-E23-1	235	slightly gravelly Sand	5.92	86.48	7.6	0	5.92	21.79	30.01	20.73	8.47	5.48	2.62	4.98
299-E23-1	240	slightly gravelly Sand	5.16	88.26	6.57	2.21	2.95	16.46	31.73	25.09	9.52	5.46	2.95	3.62
299-E23-1	245	Sand	1.36	90.33	8.31	0	1.36	12.32	32.88	29.33	10.51	5.29	3.17	5.14
299-E23-1	250	Sand	1	91.27	7.72	0	1	8.31	28.07	36.67	12.15	6.07	2.65	5.07
299-E23-1	255	slightly muddy Sand	0.85	85.82	13.33	0	0.85	2.5	11.29	21.21	36.9	13.92	5.84	7.49
299-E23-1	260	slightly muddy Sand	1	84.12	14.88	0	1	4.12	16.01	19.07	32.96	11.96	5.98	8.9
299-E23-1	265	slightly muddy gravelly Sand	14.38	75.85	9.77	5.88	8.5	8.22	24.86	23.23	12.32	7.22	3.19	6.59
299-E23-1	270	sandy Gravel	38.37	58.1	3.53	2.47	35.9	33.57	3.18	12.65	5.94	2.76	1.77	1.77
299-E23-1	275	gravelly muddy Sand	21.95	60.27	17.79	6.48	15.47	13.09	11.78	12.37	12.02	11.01	7.38	10.41
299-E23-1	280	muddy sandy Gravel	34.18	54.61	11.22	12.74	21.44	15.51	11.54	9.77	8.58	9.21	3.78	7.44
299-E23-1	285	slightly muddy gravelly Sand	15.35	74.2	10.45	5.42	9.93	23.06	18.94	11.76	9.34	11.1	5.36	5.09
299-E23-1	290	slightly gravelly muddy Sand	8.97	68.2	22.83	0.61	8.36	25.95	17.77	8.18	8.06	8.24	11.42	11.42
299-E23-1	295	slightly gravelly muddy Sand	9.48	49.53	40.99	0.67	8.81	7.61	5.74	8.01	7.34	20.83	18.16	22.83
299-E23-1	300	gravelly muddy Sand	13.7	48.56	37.74	7.23	6.47	6.2	5.17	7.85	6.89	22.45	16.94	20.8
299-E23-1	305	Sand	0	92.41	7.58	0	0	1.25	14.65	44.52	25.42	6.57	2.88	4.7
299-E23-1	310	Sand	0.58	92.08	7.33	0	0.58	6.25	30.55	37.74	12.22	5.32	2.23	5.1
299-E23-1	315	Sand	0	96.56	3.43	0	0	0.82	8.31	43.68	35.16	8.59	2.06	1.37
299-E23-1	320	slightly muddy Sand	0.8	84.88	14.32	0	0.8	0.87	4.93	24.05	39.77	15.26	6.66	7.66
299-E23-1	325	Sand	0.99	92.54	6.47	0	0.99	8.75	21.27	30.83	23	8.69	2.47	4.01
299-E23-1	330	slightly gravelly Sand	8.53	84.02	7.45	0.54	7.99	27.44	25.95	18.5	7.86	4.27	3.25	4.2
299-E23-1	335	muddy Sand	1.67	78.42	19.91	0	1.67	3.62	14.63	30.05	19.26	10.86	7.6	12.31
299-E23-1	340	Sand	0	93.82	6.18	0	0	0.41	5.35	36.93	38.57	12.56	2.61	3.57
299-E23-1	345	Sand	0	95.26	4.75	0	0	0.97	12.47	48.85	26.73	6.24	2.38	2.38
299-E23-1	348	Sand	0.54	94.42	5.05	0	0.54	8.08	34.66	35.67	12.65	3.36	1.82	3.23

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E24-7	5	slightly muddy gravelly Sand	15.62	70.72	13.66	8.52	7.1	16.14	24.54	13.36	9.52	7.16	5.38	8.28
299-E24-7	10	slightly muddy gravelly Sand	14.01	71.16	14.83	5.97	8.04	16.37	24.59	13.06	9.63	7.51	7.03	7.8
299-E24-7	15	slightly gravelly slightly muddy Sand	7.22	80.88	11.9	2.06	5.16	14.45	30.18	19.79	9.9	6.56	5.04	6.86
299-E24-7	20	slightly muddy Sand	1.08	86.76	12.16	0.07	1.01	9.48	32.59	26.08	12.16	6.45	4.5	7.66
299-E24-7	25	Sand	1.97	89.63	8.41	0	1.97	13.18	38.79	22.58	10	5.08	3.18	5.23
299-E24-7	30	Sand	1.12	95.38	3.5	0	1.12	7.67	38.12	36.34	10.05	3.2	1.49	2.01
299-E24-7	35	Sand	4.63	92.25	3.13	0.3	4.33	23.41	48.26	13.72	4.75	2.11	1.38	1.74
299-E24-7	40	slightly muddy Sand	1.63	88.3	10.07	0.64	0.99	17.59	48.23	14.04	4.96	3.48	6.03	4.04
299-E24-7	45	slightly muddy Sand	0.41	82.84	16.76	0	0.41	9.54	44.55	16.96	6.2	5.59	7.9	8.86
299-E24-7	50	Sand	0.25	92.2	7.54	0	0.25	8.36	56.19	19.92	4.78	2.95	4.15	3.39
299-E24-7	55	Sand	0.21	94.34	5.45	0	0.21	2.65	23.11	42.6	20.67	5.31	2.23	3.21
299-E24-7	60	Sand	0.74	91.7	7.56	0.2	0.54	9.03	40.13	27.76	10.1	4.68	3.55	4.01
299-E24-7	65	Sand	1.49	93.03	5.47	0.07	1.42	14.2	42.4	21.73	10.3	4.4	2.2	3.27
299-E24-7	70	Sand	1.27	92.65	6.08	0	1.27	12.58	41.98	22.19	11.02	4.88	2.47	3.6
299-E24-7	75	slightly muddy Sand	3.23	81.2	15.57	1.1	2.13	7.82	28.6	25.99	11.25	7.54	5.21	10.36
299-E24-7	80	slightly muddy Sand	1.5	86.51	11.99	0	1.5	10.99	34.33	25.27	9.85	6.07	4.21	7.78
299-E24-7	90	Sand	2.21	89.62	8.17	0.61	1.6	8.55	30.76	32.52	12.6	5.19	2.82	5.34
299-E24-7	95	slightly muddy Sand	0.54	89.29	10.18	0	0.54	1.93	15.06	38.98	24.46	8.86	4.4	5.78
299-E24-7	105	Sand	1.8	94.97	3.23	0	1.8	10.49	36.35	34.34	10.56	3.23	1.51	1.72
299-E24-7	110	Sand	0.3	92.81	6.88	0	0.3	3.78	20.65	40.39	21.56	6.43	2.72	4.16
299-E24-7	115	Sand	0.26	91.7	8.04	0	0.26	2.96	17.17	32.86	27.07	11.64	3.73	4.31
299-E24-7	120	Sand	0.84	93.95	5.22	0	0.84	8.82	31.81	30.91	15.71	6.7	2.58	2.64
299-E24-7	125	slightly muddy Sand	2.81	86.95	10.24	0.27	2.54	9.44	22.89	27.78	19.28	7.56	3.82	6.43
299-E24-7	130	slightly gravelly slightly muddy Sand	7.75	81.85	10.41	1.21	6.54	25.19	29.25	19.16	4.44	3.81	4	6.41
299-E24-7	135	slightly muddy Sand	0.84	88.49	10.68	0	0.84	6.21	27.21	33.23	15.1	6.74	3.82	6.86
299-E24-7	140	Sand	1.43	89.35	9.21	0.27	1.16	6.55	20.33	36.49	19.3	6.68	3.62	5.59
299-E24-7	145	Sand	0.71	90.97	8.33	0	0.71	3.67	21.88	39.24	19.76	6.42	3.32	5.01
299-E24-7	150	Sand	1.41	94.18	4.42	0	1.41	8.03	25.77	39.09	17.07	4.22	1.81	2.61
299-E24-7	155	slightly muddy Sand	0.14	88.97	10.88	0	0.14	0.96	12.26	44.97	23.62	7.16	3.86	7.02
299-E24-7	160	Sand	0.14	90.24	9.61	0	0.14	1.04	10.38	43.31	27.99	7.52	3.62	5.99
299-E24-7	165	slightly muddy Sand	0.89	88.47	10.65	0.15	0.74	5.4	36.65	21.38	17.09	8.95	3.99	6.66
299-E24-7	170	slightly muddy Sand	0.78	88.99	10.22	0	0.78	3.31	20.44	38.12	19.78	7.34	3.73	6.49
299-E24-7	175	slightly muddy Sand	1.16	88.83	10.01	0.45	0.71	4.07	22.72	36.54	18.4	7.1	3.68	6.33
299-E24-7	180	Sand	0.32	90.87	8.81	0	0.32	3.37	22.73	42.55	16.52	5.7	3.24	5.57
299-E24-7	185	Sand	0.33	89.88	9.78	0	0.33	2.45	16.39	43.75	19.76	7.53	3.77	6.01
299-E24-7	190	Sand	1.52	89.8	8.68	0.2	1.32	6.51	26.18	35.46	15.86	5.79	3.29	5.39

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E24-7	195	Sand	1.07	93.02	5.92	0.19	0.88	9.88	29.96	33.73	14.16	5.29	3.27	2.64
299-E24-7	205	Sand	2.48	90.66	6.85	0	2.48	8.45	23.62	38.19	15.01	5.39	2.62	4.23
299-E24-7	210	slightly gravelly Sand	9.9	85.98	4.11	2.23	7.67	16.39	36.61	22.45	7.39	3.14	1.6	2.51
299-E24-7	215	slightly gravelly Sand	7.61	87.88	4.53	1.21	6.4	22.51	37.78	18.83	6.04	2.72	1.57	2.96
299-E24-7	220	sandy Gravel	60.1	39.09	0.8	26.66	33.44	21.67	11.82	3.88	1.17	0.55	0.37	0.43
299-E24-7	225	sandy Gravel	38.66	60.38	0.96	13.32	25.34	26.24	15.8	10.44	6.25	1.65	0.55	0.41
299-E24-7	230	gravelly Sand	10.24	87.96	1.81	0.25	9.99	34.46	32.02	14.17	5.37	1.94	0.87	0.94
299-E24-7	235	Sand	1	92.32	6.68	0	1	8.51	32.98	32.39	12.94	5.5	2.54	4.14
299-E24-7	240	Sand	0.94	90.43	8.62	0	0.94	10.5	37.94	25.92	10.35	5.72	3.19	5.43
299-E24-7	245	Sand	2.32	89.06	8.62	0.13	2.19	9.95	33.75	28.25	11.41	5.7	3.32	5.31
299-E24-7	250	Sand	1.54	95.7	2.75	0	1.54	13.57	43.25	29.08	7.45	2.35	1.01	1.75
299-E24-7	255	Sand	0.44	94.29	5.27	0	0.44	7.87	31.43	36.32	13.78	4.89	1.97	3.3
299-E24-7	260	gravelly Sand	17.48	76.2	6.32	13.94	3.54	8.63	24.2	22.77	15.16	5.44	2.58	3.74
299-E24-7	270	slightly muddy gravelly Sand	11.27	79.42	9.3	6.43	4.84	9.81	29.94	24.39	10.38	4.9	3.12	6.18
299-E24-7	275	gravelly Sand	18.64	78.87	2.5	16.61	2.03	6.55	23.3	30.52	14.85	3.65	1.22	1.28
299-E24-7	280	gravelly Sand	27.83	69.63	2.55	9.06	18.77	21.49	20.31	15.39	9.12	3.32	1.18	1.36
299-E24-7	295	muddy sandy Gravel	63.48	27.6	8.92	50	13.48	8.42	6.27	4.49	4.81	3.61	2.91	6.01
299-E24-7	300	Gravel	87.36	10.74	1.9	64.24	23.12	4.19	2.49	1.64	1.31	1.11	0.79	1.11
299-E24-7	315	Gravel	83.77	15.32	0.9	58.56	25.21	6.88	3.56	2.47	1.57	0.84	0.42	0.48
299-E24-7	325	muddy sandy Gravel	51.23	42.39	6.38	32.75	18.48	14.45	12.04	7.65	4.94	3.31	2.23	4.15
299-E24-7	330	Gravel	94.01	5.81	0.18	86.26	7.75	3.08	1.59	0.7	0.35	0.09	0.09	0.09
299-E24-7	345	sandy Gravel	37.16	58.33	4.51	12.98	24.18	19.19	12.16	13.52	9.7	3.76	1.71	2.8
299-E24-7	360	sandy Gravel	51.3	46.03	2.67	27.25	24.05	15.34	14.57	9.95	4.27	1.9	1.07	1.6
299-E24-7	370	sandy Gravel	30.7	62.69	6.61	8.62	22.08	23.55	14.76	12.04	8.15	4.19	2.3	4.31
299-E24-7	375	sandy Gravel	33.12	65.74	1.15	14.43	18.69	22.73	24.82	12.63	4.26	1.3	0.58	0.58
299-E24-7	390	sandy Gravel	64.3	33.35	2.34	48.94	15.36	11.7	9.58	7.39	3.07	1.61	0.8	1.54
299-E24-7	395	sandy Gravel	49.34	47.79	2.88	25.36	23.98	17.93	14.09	10.07	3.84	1.86	1.08	1.8
299-E24-7	400	slightly muddy gravelly Sand	20.27	71.68	8.05	6.88	13.39	15.36	17.26	21.31	12.1	5.65	3.01	5.04
299-E24-7	405	sandy Gravel	45.53	50.27	4.2	24.53	21	17.07	13.6	11.4	5.53	2.67	1.47	2.73
299-E24-7	410	slightly muddy gravelly Sand	13.66	76.45	9.89	3.24	10.42	10.13	14.49	28.39	16.14	7.3	3.89	6.01
299-E24-7	415	gravelly Sand	14.88	76.83	8.3	2.26	12.62	13.28	14.74	28.22	14.61	5.98	3.05	5.25
299-E24-7	425	slightly muddy Sand	4.8	76.88	18.32	0.06	4.74	11.29	19.7	21.2	15.2	9.49	6.67	11.65
299-E24-7	430	slightly muddy Sand	3.08	80.88	16.03	1.21	1.87	4.76	29.23	22.66	15.01	9.22	5.85	10.19
299-E24-7	435	muddy Sand	1.31	65.4	33.29	0.3	1.01	1.72	10.6	12.03	20.02	21.03	12.97	20.32
299-E24-7	440	slightly gravelly slightly muddy Sand	9.86	75.55	14.6	2.86	7	9.12	15.94	24.27	16.12	10.1	5.84	8.76
299-E24-7	445	sandy Gravel	38.45	57.52	4.02	18.33	20.12	20.19	14.61	13.56	6.25	2.91	1.55	2.48

Well Name	Bottom of Sampled Interval (ft)	Lithology	Total Gravel (wt. %)	Total Sand (wt. %)	Total Mud (wt. %)	Fine Pebble (wt. %)	Very Fine Pebble (wt. %)	Very Coarse Sand (wt. %)	Coarse Sand (wt. %)	Medium Sand (wt. %)	Fine Sand (wt. %)	Very Fine Sand (wt. %)	Silt (wt. %)	Pan (wt. %)
299-E24-7	450	gravelly Sand	20.87	77.41	1.72	6.45	14.42	24.57	29.16	17.1	5.3	1.28	0.64	1.08

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