STS Consultants, Ltd.
Solutions through Science & Engineering

Revised September 6, 2000
August 17, 2000

Contracting Officer Representative
U.S. Army Corps of Engineers
Chicago District
111 N. Canal Street
Chicago, Illinois 60606-7206

RE: Indefinite Delivery Contract - DACW23-99-D-0001 - Delivery Order No. 0011 – Upper Des Plaines River Flood Damage Reduction Project, Prospect Heights, Illinois - STS Project No. 31130

Dear Contracting Officer Representative:

The attached documents present the results of the Upper Des Plaines River Flood Reduction Project Investigation that was performed in Prospect Heights, Illinois. This work was based on our July 1, 1999 proposal, revised February 18, 2000. The scope of work consisted of performing nineteen soil borings extended to depths varying from 10 to 40 feet, associated field and laboratory testing, preparation of formal boring logs and summarization of laboratory test data. The attachments to this transmittal letter include one bound and one unbound assemblage of the following:

- Final Boring Logs
- Laboratory soils testing data and summary sheet(s)

We appreciate this opportunity to be of service to you. If you have any questions regarding the attached information please do not hesitate to contact us.

Respectfully,

STS CONSULTANTS, LTD.

Sara E. Schweitzer, E.I.T.
Assistant Project Engineer

Charles W. Pfingsten, P.E.
Principal Engineer

Attachments

750 Corporate Woods Parkway • Vernon Hills, IL 60061-3153 • (847) 279-2500 • (847) 279-2510 Fax

ATTACHMENTS

1. Computer Generated Boring Logs
2. Laboratory Data Sheets

STS Consultants Ltd.
Consulting Engineers

Moisture Content Data Sheet
ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/26/00

Boring No.	L37-1-00	L37-1-00	L37-1-00	L37-1-00	L37-1-00	L37-1-00	L37-1-00	L37-1-00
Specimen No.	1	2	3	4	4A	5	6	7
Depth ft.	1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5
Tare No.	365	345	376			293		281
Tare Wt.	1.29	1.22	1.30			1.37		1.28
Wet Soil +Tare	60.84	27.21	27.28			39.08		34.80
Dry Soil + Tare	54.87	22.49	25.59			33.53		31.22
Wt. of Water (Ww)	5.97	4.72	1.69			5.55		3.58
Wt. of Dry Soil (Ws)	53.58	21.27	24.29			32.16		29.94
Water Content (%)	11.1	22.2	7.0			17.3		12.0

Boring No.	L37-1-00	L37-1-00	L37-1-00		L37-2-00	L37-2-00	L37-2-00	L37-2-00
Specimen No.	8	9	10		1	2	3	4
Depth ft.	18.5-20.0	21.0-22.5	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0
Tare No.	341	346	380		325		324	245
Tare Wt.	1.27	1.26	1.30		1.24		1.28	1.26
Wet Soil +Tare	49.97	30.25	32.64		30.08		26.25	28.38
Dry Soil + Tare	44.20	27.28	28.42		26.77		23.15	25.06
Wt. of Water (Ww)	5.77	2.97	4.22		3.31		3.10	3.32
Wt. of Dry Soil (Ws)	42.93	26.02	27.12		25.53		21.87	23.80
Water Content (%)	13.4	11.4	15.6		13.0		14.2	13.9

Boring No.	L37-2-00	L37-2-00	L37-2-00	L37-2-00	L37-2-00		L37-3-00	L37-3-00
Specimen No.	5	6	7	8	9		1	2
Depth ft.	11.0-12.05	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5		1.0-2.5	3.5-5.0
Tare No.	216	237	388	328	392		206	397
Tare Wt.	1.23	1.29	1.29	1.28	1.31		1.20	1.28
Wet Soil +Tare	50.72	30.45	45.21	35.98	37.18		31.73	34.42
Dry Soil + Tare	45.09	27.11	39.85	31.88	33.09		26.11	29.62
Wt. of Water (Ww)	5.63	3.34	5.36	4.10	4.09		5.62	4.80
Wt. of Dry Soil (Ws)	43.86	25.82	38.56	30.60	31.78		24.91	28.34
Water Content (%)	12.8	12.9	13.9	13.4	12.9		22.6	16.9

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BR Date: 7/26/00
Calculated By: BR Date: 7/27/00
Checked By: WPQ Date: 8/10/00
Checked By: WPQ Date: 8/10/00

31130 8/11/00

STS Consultants Ltd.
Consulting Engineers

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ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/26/00

Boring No.	L37-3-00	L37-3-00	L37-3-00	L37-3-00	L37-3-00	L37-3-00	L37-3-00	L37-3-00
Specimen No.	3	4	5	6	7	8	9	10
Depth ft.	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0
Tare No.	336		395	311	342	375	257	330
Tare Wt.	1.31		1.29	1.43	1.27	1.32	1.28	1.25
Wet Soil +Tare	32.86		36.21	35.05	46.01	45.33	31.04	46.44
Dry Soil + Tare	28.83		31.92	30.97	40.71	41.01	27.91	41.37
Wt. of Water (Ww)	4.03		4.29	4.08	5.30	4.32	3.13	5.07
Wt. of Dry Soil (Ws)	27.52		30.63	29.54	39.44	39.69	26.63	40.12
Water Content (%)	14.6		14.0	13.8	13.4	10.9	11.8	12.6

Boring No.		L37-4-00	L37-4-00	L37-4-00	L37-4-00	L37-4-00	L37-4-00	L37-4-00
Specimen No.		1	2	3	4	5	6	7
Depth ft.		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5
Tare No.		298	385	393	359	313	358	381
Tare Wt.		1.27	1.28	1.29	1.25	1.25	1.27	1.28
Wet Soil +Tare		41.20	33.87	51.18	48.37	29.37	51.62	57.59
Dry Soil + Tare		33.62	29.16	42.32	42.35	25.42	46.37	51.07
Wt. of Water (Ww)		7.58	4.71	8.86	6.02	3.95	5.25	6.52
Wt. of Dry Soil (Ws)		32.35	27.88	41.03	41.10	24.17	45.10	49.79
Water Content (%)		23.4	16.9	21.6	14.6	16.3	11.6	13.1

Boring No.	L37-4-00	L37-4-00	L37-4-00					
Specimen No.	8	9	10					
Depth ft.	18.5-20.0	21.0-22.5	23.5-25.0					
Tare No.	352	377	399					
Tare Wt.	1.27	1.30	1.27					
Wet Soil +Tare	27.36	41.23	29.71					
Dry Soil + Tare	24.41	36.43	26.62					
Wt. of Water (Ww)	2.95	4.80	3.09					
Wt. of Dry Soil (Ws)	23.14	35.13	25.35					
Water Content (%)	12.7	13.7	12.2					

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/26/00
Calculated By: BF Date: 7/27/00
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Moisture Content Data Sheet
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STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-5-00	L37-5-00	L37-5-00	L37-5-00	L37-5-00	L37-5-00	L37-5-00	L37-5-00
Specimen No.	1	2	3	4	5	6	7	8
Depth ft.	1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0
Tare No.	212	216	249	336			381	257
Tare Wt.	1.23	1.23	1.25	1.31			1.25	1.28
Wet Soil +Tare	42.39	31.30	37.10	34.36			34.10	46.05
Dry Soil + Tare	39.14	24.89	31.01	28.44			29.96	40.76
Wt. of Water (Ww)	3.25	6.41	6.09	5.92			4.14	5.29
Wt. of Dry Soil (Ws)	37.91	23.66	29.76	27.13			28.71	39.48
Water Content (%)	8.6	27.1	20.5	21.8			14.4	13.4

Boring No.	L37-5-00	L37-5-00		L37-6-00	L37-6-00	L37-6-00	L37-6-00	L37-6-00
Specimen No.	9	10		1	2	3	4	5
Depth ft.	21.0-22.5	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5
Tare No.	373	319		366	259	397	245	382
Tare Wt.	1.28	1.29		1.29	1.25	1.28	1.25	1.25
Wet Soil +Tare	26.79	35.25		31.68	37.28	28.69	38.25	24.16
Dry Soil + Tare	23.84	31.40		25.73	31.04	24.14	33.94	21.24
Wt. of Water (Ww)	2.95	3.85		5.95	6.24	4.55	4.31	2.92
Wt. of Dry Soil (Ws)	22.56	30.11		24.44	29.79	22.86	32.69	19.99
Water Content (%)	13.1	12.8		24.3	20.9	19.9	13.2	14.6

Boring No.	L37-6-00	L37-6-00	L37-6-00	L37-6-00	L37-6-00	L37-6-00	L37-6-00	L37-6-00
Specimen No.	6	7	8	9	10	11	12	13
Depth ft.	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0	26.0-27.5	28.5-30.00	31.0-32.5
Tare No.	383	321	322	269	228	330	222	296
Tare Wt.	1.26	1.25	1.25	1.25	1.27	1.25	1.22	1.26
Wet Soil +Tare	43.43	48.68	43.59	39.66	37.32	41.31	37.10	34.77
Dry Soil + Tare	37.75	44.18	38.25	34.77	31.00	35.35	31.88	30.02
Wt. of Water (Ww)	5.68	4.50	5.34	4.89	6.32	5.96	5.22	4.75
Wt. of Dry Soil (Ws)	36.49	42.93	37.00	33.52	29.73	34.10	30.66	28.76
Water Content (%)	15.6	10.5	14.4	14.6	21.3	17.5	17.0	16.5

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
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Moisture Content Data Sheet
ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-6-00	L37-6-00	L37-6-00		L-37-7-00	L37-7-00	L37-7-00	L37-7-00
Specimen No.	14	15	16		1	2	3	4
Depth ft.	33.5-35.0	36.0-37.5	38.5-40.0		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0
Tare No.	213	268	256		352	388	237	380
Tare Wt.	1.21	1.25	1.29		1.27	1.28	1.29	1.28
Wet Soil +Tare	48.06	35.27	27.97		37.11	49.59	27.73	31.61
Dry Soil + Tare	43.70	30.80	24.64		29.96	42.03	23.05	27.27
Wt. of Water (Ww)	4.36	4.47	3.33		7.15	7.56	4.68	4.34
Wt. of Dry Soil (Ws)	42.49	29.55	23.35		28.69	40.75	21.76	25.99
Water Content (%)	10.3	15.1	14.3		24.9	18.6	21.5	16.7

Boring No.	L37-7-00	L37-7-00	L37-7-00	L37-7-00	L37--7-00	L37-7-00		L37-8-00
Specimen No.	5	6	7	8	9	10		1
Depth ft.	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0		1.0-2.5
Tare No.	365	346	341	206	345	375		358
Tare Wt.	1.27	1.26	1.25	1.21	1.21	1.31		1.27
Wet Soil +Tare	40.43	42.14	43.09	38.65	43.26	33.08		37.09
Dry Soil + Tare	33.57	36.70	37.54	33.18	37.67	27.82		29.86
Wt. of Water (Ww)	6.86	5.44	5.55	5.47	5.59	5.26		7.23
Wt. of Dry Soil (Ws)	32.30	35.44	36.29	31.97	36.46	26.51		28.59
Water Content (%)	21.2	15.3	15.3	17.1	15.3	19.8		25.3

Boring No.	L37-8-00	L37-8-00	L37-8-00	L37-8-00	L37-8-00	L37-8-00	L37-8-00	L37-8-00
Specimen No.	2	3	4	5	6	7	8	9
Depth ft.	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.00	21.0-22.5
Tare No.	313	359	342	281		293	324	392
Tare Wt.	1.24	1.25	1.25	1.25		1.27	1.26	1.31
Wet Soil +Tare	26.01	36.58	41.79	47.09		39.30	30.31	28.84
Dry Soil + Tare	21.87	30.07	35.06	42.96		35.21	26.79	25.17
Wt. of Water (Ww)	4.14	6.51	6.73	4.13		4.09	3.52	3.67
Wt. of Dry Soil (Ws)	20.63	28.82	33.81	41.71		33.94	25.53	23.86
Water Content (%)	20.1	22.6	19.9	9.9		12.1	13.8	15.4

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
Checked By: WPQ Date: 8/10/00
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Moisture Content Data Sheet
ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-8-00		L37-9-00	L37-9-00	L37-9-00	L37-9-00	L37-9-00	L37-9-00
Specimen No.	10		1	2	3	4	4A	5
Depth ft.	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	8.5-10.0	11.0-12.5
Tare No.	393		328	311	385	395	298	377
Tare Wt.	1.30		1.24	1.30	1.28	1.29	1.27	1.29
Wet Soil +Tare	35.68		30.33	31.95	40.96	42.52	39.92	47.22
Dry Soil + Tare	34.84		24.97	27.79	35.60	37.34	35.49	41.07
Wt. of Water (Ww)	0.84		5.36	4.16	5.36	5.18	4.43	6.15
Wt. of Dry Soil (Ws)	33.54		23.73	26.49	34.32	36.05	34.22	39.78
Water Content (%)	2.5		22.6	15.7	15.6	14.4	12.9	15.5

Boring No.	L37-9-00	L37-9-00	L37-9-00	L37-9-00	L37-9-00		L37-10-00	L37-10-00
Specimen No.	6	7	8	21.0-22.5	10		1	1A
Depth ft.	13.5-15.0	16.0-17.5	18.5-20.0	339	23.5		1.0-2.5	1.0-2.5
Tare No.	398	376	325	339	210			260
Tare Wt.	1.27	1.30	1.25	1.25	1.25			1.29
Wet Soil +Tare	41.83	38.75	37.40	34.47	38.03			41.49
Dry Soil + Tare	36.74	34.17	32.47	29.55	33.85			34.49
Wt. of Water (Ww)	5.09	4.58	4.93	4.92	4.18			7.00
Wt. of Dry Soil (Ws)	35.47	32.87	31.22	28.30	32.60			33.20
Water Content (%)	14.4	13.9	15.8	17.4	12.8			21.1

Boring No.	L37-10-00	L37-10-00	L37-10-00	L37-10-00	L37-10-00	L37-10-00	L37-10-00	L37-10-00
Specimen No.	2	3	4	5	6	7	8	9
Depth ft.	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5
Tare No.	320	236	232	266	215	295	356	258
Tare Wt.	1.26	1.27	1.24	1.25	1.25	1.25	1.29	1.25
Wet Soil +Tare	36.98	32.41	44.98	43.38	39.25	36.64	35.93	37.34
Dry Soil + Tare	30.84	26.42	40.73	36.98	35.32	31.99	31.38	32.88
Wt. of Water (Ww)	6.14	5.99	4.25	6.40	3.93	4.65	4.55	4.46
Wt. of Dry Soil (Ws)	29.58	25.15	39.49	35.73	34.07	30.74	30.09	31.63
Water Content (%)	20.8	23.8	10.8	17.9	11.5	15.1	15.1	14.1

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
Checked By: WPO Date: 8/10/00
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31130(5) 8/11/00

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ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 07/27/2000

Boring No.	L-37-10		L37-11-00	L37-11-00	L37-11-00	L37-11-00	L37-11-00	L37-11-00
Specimen No.	10		1	2	3	4	5	6
Depth ft.	26.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0
Tare No.	317		353		349	68	354	276
Tare Wt.	1.25		1.27		1.29	1.28	1.24	1.26
Wet Soil +Tare	46.56		25.49		35.29	42.01	37.17	35.37
Dry Soil + Tare	40.66		21.19		28.31	36.90	32.63	31.13
Wt. of Water (Ww)	5.90		4.30		6.98	5.11	4.54	4.24
Wt. of Dry Soil (Ws)	39.41		19.92		27.02	35.62	31.39	29.87
Water Content (%)	15.0		21.6		25.8	14.3	14.5	14.2

Boring No.	L37-11-00	L37-11-00	L37-11-00	L37-11-00		L37-12-00	L37-12-00	L37-12-00
Specimen No.	7	8	9	10		1	2	3
Depth ft.	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5
Tare No.	254	315	303	314		386	265	350
Tare Wt.	1.28	1.26	1.27	1.25		1.28	1.25	1.30
Wet Soil +Tare	35.06	41.12	28.35	35.08		30.46	32.20	35.75
Dry Soil + Tare	30.73	36.23	24.98	31.18		25.88	28.68	32.22
Wt. of Water (Ww)	4.33	4.89	3.37	3.90		4.58	3.52	3.53
Wt. of Dry Soil (Ws)	29.45	34.97	23.71	29.93		24.60	27.43	30.92
Water Content (%)	14.7	14.0	14.2	13.0		18.6	12.8	11.4

Boring No.	L37-12-00	L37-12-00	L37-12-00	L37-12-00	L37-12-00	L37-12-00	L37-12-00	L37-12-00
Specimen No.	3A	4	5	6	7	8	9	10
Depth ft.	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0
Tare No.	301	333	271	340	223	367		267
Tare Wt.	1.26	1.27	1.25	1.25	1.26	1.29		1.25
Wet Soil +Tare	30.90	32.24	33.48	48.31	36.13	37.00		31.05
Dry Soil + Tare	27.53	27.01	28.84	40.79	31.90	32.76		27.22
Wt. of Water (Ww)	3.37	5.23	4.64	7.52	4.23	4.24		3.83
Wt. of Dry Soil (Ws)	26.27	25.74	27.59	39.54	30.64	31.47		25.97
Water Content (%)	12.8	20.3	16.8	19.0	13.8	13.5		14.7

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 07/27/2000
Calculated By: BF Date: 07/28/2000
Checked By: WPQ Date: 08/10/2000

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Consulting Engineers

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Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-13-00	L37-13-00	L37-13-00	L37-13-00	L37-13-00	L37-13-00	L37-13-00	L37-13-00
Specimen No.	1	2	3	4	4A	5	6	7
Depth ft.	1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5
Tare No.	250	396	243	379	283	290		
Tare Wt.	1.27	1.27	1.27	1.28	1.24	1.26		
Wet Soil +Tare	27.37	39.67	31.10	32.72	40.22	40.98		
Dry Soil + Tare	23.74	33.77	25.59	27.72	35.47	36.05		
Wt. of Water (Ww)	3.63	5.90	5.51	5.00	4.75	4.93		
Wt. of Dry Soil (Ws)	22.47	32.50	24.32	26.44	34.23	34.79		
Water Content (%)	16.2	18.2	22.7	18.9	13.9	14.2		

Boring No.	L37-13-00	L37-13-00	L37-13-00	L37-13-00		L37-14-00	L37-14-00	L37-14-00
Specimen No.	7A	8	9	10		1	2	3
Depth ft.	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5
Tare No.	209	347	372			235	284	309
Tare Wt.	1.20	1.31	1.27			1.28	1.26	1.27
Wet Soil +Tare	38.31	34.82	35.45			37.12	40.20	42.83
Dry Soil + Tare	33.23	31.34	31.19			32.21	32.76	37.23
Wt. of Water (Ww)	5.08	3.48	4.26			4.91	7.44	5.60
Wt. of Dry Soil (Ws)	32.03	30.03	29.92			30.93	31.50	35.96
Water Content (%)	15.9	11.6	14.2			15.9	23.6	15.6

Boring No.	L37-14-00	L37-14-00	L37-14-00	L37-14-00	L37-14-00	L37-14-00	L37-14-00	L37-14-00
Specimen No.	3A	4	4A	5	6	6	8	9
Depth ft.	6.0-7.5	8.5-10.0	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5
Tare No.	288		241	391	239	304	335	218
Tare Wt.	1.24		1.26	1.30	1.26	1.27	1.30	1.22
Wet Soil +Tare	46.27		46.40	32.10	37.93	39.27	35.83	40.15
Dry Soil + Tare	42.80		40.91	27.42	34.25	34.59	31.44	35.13
Wt. of Water (Ww)	3.47		5.49	4.68	3.68	4.68	4.39	5.02
Wt. of Dry Soil (Ws)	41.56		39.65	26.12	32.99	33.32	30.14	33.91
Water Content (%)	8.3		13.8	17.9	11.2	14.0	14.6	14.8

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
Checked By: WPO Date: 8/10/00
Checked By: WPO Date: 8/10/00

31130(7) 8/11/00

STS Consultants Ltd.
Consulting Engineers

Moisture Content Data Sheet
ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-14-00		L37-15-00	L37-15-00	L37-15-00	L37-15-00	L37-15-00	L37-15-00
Specimen No.	10		1	2	3	3A	4	5
Depth ft.	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5	6.0-7.5	8.5-10.0	11.0-12.5
Tare No.	253		252	389		400		
Tare Wt.	1.26		1.26	1.30		1.27		
Wet Soil +Tare	27.43		35.07	37.28		39.31		
Dry Soil + Tare	24.61		28.97	32.64		34.28		
Wt. of Water (Ww)	2.82		6.10	4.64		5.03		
Wt. of Dry Soil (Ws)	23.35		27.71	31.34		33.01		
Water Content (%)	12.1		22.0	14.8		15.2		

Boring No.	L37-15-00	L37-15-00	L37-15-00	L37-15-00	L37-15-00		L37-16-00	L37-16-00
Specimen No.	6	7	8	9	10		1	2
Depth ft.	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0		1.0-2.5	3.5-5.0
Tare No.		279	384	274	306		275	387
Tare Wt.		1.24	1.27	1.24	1.25		1.25	1.29
Wet Soil +Tare		42.85	39.34	42.20	33.13		39.58	26.87
Dry Soil + Tare		35.83	34.30	37.01	28.77		34.90	22.58
Wt. of Water (Ww)		7.02	5.04	5.19	4.36		4.68	4.29
Wt. of Dry Soil (Ws)		34.59	33.03	35.77	27.52		33.65	21.29
Water Content (%)		20.3	15.3	14.5	15.8		13.9	20.2

Boring No.	L37-16-00	L37-16-00	L37-16-00	L37-16-00	L37-16-00	L37-16-00	L37-16-00	L37-16-00
Specimen No.	3	4	5	6	7	8	9	9A
Depth ft.	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	21.0-22.5
Tare No.	292	220		351	219	247	251	299
Tare Wt.	1.25	1.23		1.25	1.24	1.26	1.29	1.27
Wet Soil +Tare	34.54	37.14		40.06	31.45	33.21	35.66	35.94
Dry Soil + Tare	27.90	32.24		34.93	27.73	29.99	30.89	31.36
Wt. of Water (Ww)	6.64	4.90		5.13	3.72	3.22	4.77	4.58
Wt. of Dry Soil (Ws)	26.65	31.01		33.68	26.49	28.73	29.60	30.09
Water Content (%)	24.9	15.8		15.2	14.0	11.2	16.1	15.2

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
Checked By: WPO Date: 8/10/00
Checked By: WPO Date: 8/11/00

31130(8) 8/11/00

STS Consultants Ltd.
Consulting Engineers

Moisture Content Data Sheet
ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-16-00		L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00
Specimen No.	10		1	2	3	4	5	6
Depth ft.	23.5-25.0		1.0-2.5	3.5-5.0	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0
Tare No.	221		262	344	272	348	369	368
Tare Wt.	1.26		1.26	1.26	1.26	1.26	1.29	1.35
Wet Soil +Tare	32.89		28.01	27.43	31.45	40.40	47.48	31.73
Dry Soil + Tare	29.35		25.22	23.91	26.64	35.71	38.87	28.06
Wt. of Water (Ww)	3.54		2.79	3.52	4.81	4.69	8.61	3.67
Wt. of Dry Soil (Ws)	28.09		23.96	22.65	25.38	34.45	37.58	26.71
Water Content (%)	12.6		11.6	15.5	19.0	13.6	22.9	13.7

Boring No.	L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00
Specimen No.	7	8	9	9A	10	10A	11	12
Depth ft.	16.0-17.5	18.5-20.0	21.0-22.5	21.0-22.5	23.5-25.0	23.5-25.0	26.0-27.5	28.5-30.0
Tare No.	211	247	270		224	370	305	278
Tare Wt.	1.24	1.33	1.26		1.27	1.25	1.27	1.27
Wet Soil +Tare	44.61	35.11	28.00		42.85	33.05	35.90	42.78
Dry Soil + Tare	38.85	30.82	24.44		37.60	28.79	32.03	38.09
Wt. of Water (Ww)	5.76	4.29	3.56		5.25	4.26	3.87	4.69
Wt. of Dry Soil (Ws)	37.61	29.49	23.18		36.33	27.54	30.76	36.82
Water Content (%)	15.3	14.5	15.4		14.5	15.5	12.6	12.7

Boring No.	L37-17-00	L37-17-00	L37-17-00	L37-17-00	L37-17-00		L37-18-00	L37-18-00
Specimen No.	13	14	14A	15	16		1	2
Depth ft.	31.0-32.5	33.5-35.0	33.5-35.0	36.0-37.5	38.5-40.0		1.0-2.5	3.5-5.0
Tare No.	312	291	329	326	277		214	302
Tare Wt.	1.27	1.28	1.26	1.27	1.25		1.21	1.26
Wet Soil +Tare	38.44	31.14	34.11	33.49	42.56		34.72	33.84
Dry Soil + Tare	33.78	26.44	28.87	29.21	38.02		32.19	27.98
Wt. of Water (Ww)	4.66	4.70	5.24	4.28	4.54		2.53	5.86
Wt. of Dry Soil (Ws)	32.51	25.16	27.61	27.94	36.77		30.98	26.72
Water Content (%)	14.3	18.7	19.0	15.3	12.3		8.2	21.9

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
Checked By: WPQ Date: 8/10/00

31130(9) 8/16/00

STS Consultants Ltd.
Consulting Engineers

Moisture Content Data Sheet
ASTM D 2216

STS Project No.: 31130
Project Name: Des Plaines River
Date: 7/27/00

Boring No.	L37-18-00	L37-18-00	L37-18-00	L37-18-00	L37-18-00	L37-18-00	L37-18-00	L37-18-00
Specimen No.	3	4	5	6	7	8	9	10
Depth ft.	6.0-7.5	8.5-10.0	11.0-12.5	13.5-15.0	16.0-17.5	18.5-20.0	21.0-22.5	23.5-25.0
Tare No.	316		244	378	374	264	300	263
Tare Wt.	1.27		1.29	1.28	1.26	1.26	1.26	1.24
Wet Soil +Tare	36.55		32.25	39.60	34.93	35.64	32.70	35.58
Dry Soil + Tare	30.05		27.98	35.12	30.77	30.55	28.22	29.63
Wt. of Water (Ww)	6.50		4.27	4.48	4.16	5.09	4.48	5.95
Wt. of Dry Soil (Ws)	28.78		26.69	33.84	29.51	29.29	26.96	28.39
Water Content (%)	22.6		16.0	13.2	14.1	17.4	16.6	21.0

Boring No.		L37-19-00	L37-19-00	L37-19-00	L37-19-00	L37-19-00	L37-19-00	
Specimen No.		1	2	2A	3	3A	4	
Depth ft.		1.0-2.5	3.5-5.0	3.5-5.0	6.0-7.5	6.0-7.5	8.5-10.0	
Tare No.		312		348	247	219	272	
Tare Wt.		1.28		1.26	1.26	1.24	1.26	
Wet Soil +Tare		28.79		38.30	27.22	27.25	27.92	
Dry Soil + Tare		25.88		32.85	23.93	22.36	24.29	
Wt. of Water (Ww)		2.91		5.45	3.29	4.89	3.63	
Wt. of Dry Soil (Ws)		24.60		31.59	22.67	21.12	23.03	
Water Content (%)		11.8		17.3	14.5	23.2	15.8	

Boring No.								
Specimen No.								
Depth ft.								
Tare No.								
Tare Wt.								
Wet Soil +Tare								
Dry Soil + Tare								
Wt. of Water (Ww)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wt. of Dry Soil (Ws)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Content (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: All weights in grams (gm)

Calculate Water Content as Follows: $\frac{(Ww)}{(Ws)} \times 100$

Technician: BF Date: 7/27/00
Calculated By: BF Date: 7/28/00
Checked By: WPQ Date: 8/10/00
Checked By: WPQ Date: [illegible]

31130(~1 8/11/00

HOLE NO. L37-1-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N3000,1975003.968 E1104120.565
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-1-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 9; UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	633.4 WD, 633.4 AD, 633.9 @ 24 hrs
16. DATE HOLE	STARTED 7-12-00; COMPLETED 7-12-00
17. ELEVATION TOP OF HOLE	641.89
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	[signature]

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, little to trace sand, trace gravel - brown - stiff (CL) WC=11.1%	10"	S-1	2-3-3 Qp=1.75 tsf
639.4	2.5					
			Silty clay, trace sand and gravel - very stiff - brown (CL) WC=22.2% LL=42% PL=17% PI=25%	12"	S-2	3-5-5 Qp=3.0 tsf
636.9	5.0					
			Fine to coarse sand, trace gravel and silt - brown - moist - medium dense (SP) WC=7.0%	15"	S-3	4-6-10
			Sample 4 is wet. Gravel=31.8%, Sand=54.8%, Silt & Clay=13.4%	8"	S-4	7-14-14
			Sample 4A is gray.	5"	S-4A	
630.9	11.0					
			Silty clay, trace fine to coarse sand and gravel - gray - very stiff (CL) WC=17.3%	4"	S-5	4-6-7 Qp=2.25 tsf
628.4	13.5					
			Silty clay, trace fine to coarse sand, gravel and shale - gray - hard (CL) WC=13.5% LL=21% PL=14% PI=7%	7"	S-6	Qp=4.5+ tsf Tv=7.0 tsf
			WC=12%	13"	S-7	8-8-10 Qp=4.5+ tsf
623.4	18.5					
			Silty clay, trace fine to coarse sand, gravel and shale - gray - stiff (CL) WC=13.4%	16"	S-8	3-6-9 Qp=1.5 tsf
			WC=11.4% LL=24% PL=13% PI=11%	4"	S-9	8-13-22 Qp=3.0 tsf
619.4	22.5					
			Silty clay, trace fine to coarse sand, gravel and shale - gray - hard (CL) WC=15.6% LL=31% PL=25% PI=16%	14"	S-10	4-8-14 Qp=4.5+ tsf
616.9	25.0					
			End of Boring			

HOLE NO. L37-2-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4000,1975524.654 E1104165.271
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-2-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	23.5
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	23.5
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 9 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, Dry AD, 634.57 @ 24 hrs.
16. DATE HOLE	STARTED 7-12-00 / COMPLETED 7-12-00
17. ELEVATION TOP OF HOLE	640.07
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinsher

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Brown to black silty clay with trace fine to coarse sand and gravel, little topsoil - very stiff (CL) WC=13%	12"	S-1	3-6-8 Qp=2.25 tsf
636.6	3.5		Fine to coarse sand, trace gravel, clay and silt - grayish brown - moist to wet - medium dense (SP) Gravel=20.4%, Sand=66.0%, Silt & Clay=13.6%	8"	S-2	4-9-9
634.1	6.0		Silty clay, trace fine to coarse sand, gravel and shale - gray - very stiff to hard (CL) Layer of siltier clay noted in Sample 3. WC=14.2%	13"	S-3	5-5-7 Qp=3.25 tsf
			WC=13.9% LL=37% PL=17% PI=20%	8"	S-4	3-8-9 Qp=4.0 tsf
629.1	11.0		Clayey silt with trace gravel and shale, fine to medium sand - gray - moist - medium dense (ML) WC=12.8%	14"	S-5	7-9-10 Qp=4.5 tsf
626.6	13.5		Very silty clay with trace fine to coarse sand, gravel and shale - gray - very stiff (CL) WC=12.9% LL=23% PL=13% PI=10%	11"	S-6	3-6-7 Qp=3.5 tsf
			WC=13.9%	17"	S-7	3-6-10 Qp=1.75 tsf
621.6	18.5		Silty clay, trace fine to coarse sand, gravel and shale - gray - hard (CL) WC=13.4% LL=27% PL=13% PI=14%	13"	S-8	4-9-11 Qp=4.5+ tsf
			WC=12.9% Boulder or rock at 22'; drilled 6 in. through rock.	12"	S-9	5-12-79/3" Qp=4.5+ tsf
616.6	23.5		End of Boring			

HOLE NO. L37-3-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4001,1976004.239 E1104226.345
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-3-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 10 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, 615.93 AD, 624.93 @ 24 hrs.
16. DATE HOLE	STARTED 7-12-00 / COMPLETED 7-12-00
17. ELEVATION TOP OF HOLE	634.43
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinsher

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, gravel - brown and gray - very stiff (CL) WC=22.6% Occasional topsoil.	9"	S-1	3-5-7 Qp=2.5 tsf
			WC=16.9% LL=32% PL=16% PI=16%	11"	S-2	4-11-17 Qp=3.75 tsf
			1.5" layer of sand WC=14.6%	14"	S-3	7-10-14 Qp=4.5+ tsf
625.9	8.5		Sandy silt, trace gravel and clay - gray - moist - medium dense (SM) Gravel=1.8%, Sand=53.8%, Silt & Clay=44.4%	12"	S-4	13-15-9
623.4	11.0		Silty clay, trace sand, gravel and shale - gray - very stiff to hard (CL) WC=14%	15"	S-5	4-7-9 Qp=2.5 tsf
			WC=13.8% LL=29% PL=14% PI=15%	11"	S-6	5-13-19 Qp=3.5 tsf
			WC=13.4%	15"	S-7	9-13-27 Qp=4.5+ tsf
			Seam of gravelly saturated sand. WC=10.9%	14"	S-8	4-11-15 Qp=4.5+ tsf
			WC=11.8% LL=26% PL=14% PI=12%	14"	S-9	14-20-26 Qp=4.5+ tsf
609.4	25.0		WC=12.6%	11"	S-10	4-14-23 Qp=4.5+ tsf
			End of Boring			

HOLE NO. L37-4-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4002,1976474.042 E1104277.846
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-4-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 10; UNDISTURBED 9
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, 618.65 AD, 631.15 @ 24 hrs.
16. DATE HOLE	STARTED 7-12-00; COMPLETED 7-12-00
17. ELEVATION TOP OF HOLE	635.65
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinke

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, gravel and topsoil - brown to black - stiff (CL) WC=23.4%	10"	S-1	3-4-6 Qp=1.5 tsf
			Layer of clayey silt WC=16.9% LL=30% PL=16% PI=14%	13"	S-2	2-6-8 Qp=2.0 tsf
629.6	6.0					
			Silty clay with trace sand, gravel and shale - brown - hard (CL) WC=21.6%	13"	S-3	9-11-15 Qp=4.5+ tsf
627.1	8.5					
			Clayey silt, trace sand, gravel and shale - gray - moist - dense (ML) WC=14.6%	12"	S-4	9-18-19 Qp=4.5+ tsf
			Seam of sand - wet - medium dense WC=16.3% LL=20% PL=14% PI=6%	17"	S-5	5-7-8 Qp=4.5+ tsf
622.1	13.5					
			Silty clay with trace sand, gravel and shale - gray - very stiff - wet (CL) Seam of silt WC=11.6%	13"	S-6	1-7-12 Qp=3.0 tsf
			WC=13.1%	19"	S-7	7-11-19 Qp=4.5+ tsf
			WC=12.7% LL=27% PL=14% PI=13%	17"	S-8	8-11-20 Qp=4.5+ tsf
			WC=13.7%	14"	S-9	4-12-16 Qp=4.5+ tsf
613.1	22.5					
			Clayey silt, trace sand - gray - moist - extremely dense (ML) WC=12.2%	10"	S-10	38-50/4" Qp=4.5+ tsf
610.6	25.0					
			End of Boring			

HOLE NO. L37-6-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	1 OF 2 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4003,1975766.970 E1104309.906
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-6-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	40
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	40.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 16 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, Dry AD, 627.79 @ 24 hrs.
16. DATE HOLE	STARTED 7-13-00 / COMPLETED 7-13-00
17. ELEVATION TOP OF HOLE	636.29
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinke

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace topsoil, sand, gravel and brick - brown - very stiff (CL) WC=24.3%	10"	S-1	3-4-6 Qp=3.0 tsf
633.8	2.5		Silty clay, trace sand, gravel and brick - grayish brown - very stiff (CL) WC=20.9% LL=33% PL=16% PI=17%	8"	S-2	3-5-8 Qp=3.0 tsf
630.3	6.0		Silty clay, trace sand, gravel and shale - - brown - very stiff (CL) Seam of softer clay. WC=19.9%	16"	S-3	5-10-16 Qp=3.25 tsf
627.8	8.5		Clayey silt, trace sand - gray - moist - dense (ML) WC=13.2%	15"	S-4	6-18-27 Qp=4.5+ tsf
625.3	11.0		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=14.6% LL=27% PL=15% PI=12%	15"	S-5	6-8-9 Qp=4.5+ tsf
622.8	13.5		Very silty clay, trace sand, gravel and shale - gray - very stiff (CL-ML) WC=15.6%	15"	S-6	6-8-9 Qp=4.5+ tsf
620.3	16.0		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=10.5%	14"	S-7	3-4-7 Qp=2.0 tsf
			WC=14.4%	12"	S-8	7-9-9 Qp=4.5 tsf
			Layer of softer clay (Qp=2.25) WC=14.6%	14"	S-9	4-8-9 Qp=4.5+ tsf
612.8	23.5		Clayey silt, trace sand - gray - saturated - dense (ML) WC=21.3%	15"	S-10	12-20-23 Qp=4.5+ tsf

HOLE NO. L37-5-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT: Des Plaines River Project	JOB NUMBER: 31130
2. LOCATION (Coordinates or Station): Cook Co., IL N3069,1982749.196 E1102349.942	
3. DRILLING AGENCY: Fox Exploration	
4. HOLE NO. (As shown on drawing title and file number): L37-5-00	
5. NAME OF DRILLER: Gary Yockey	
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN: 25	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE: 25.0	
10. SIZE AND TYPE OF BIT: 3-3/4" HSA	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D-50	
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: 9 / UNDISTURBED: 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER: Dry WD, Dry AD, 633.13 @ 24 hrs.	
16. DATE HOLE	STARTED: 7-17-00 / COMPLETED: 7-19-00
17. ELEVATION TOP OF HOLE: 642.13	
18. TOTAL CORE RECOVERY FOR BORING: %	
19. SIGNATURE OF INSPECTOR: Brian Reinke	

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, little topsoil, trace sand and gravel - brown to black to hard (CL) WC=8.6%	4"	S-1	6-11-13 Qp=4.5+ tsf
			WC=27.1%	11"	S-2	5-12-16 Qp=4.5+ tsf
636.1	6.0		Drill broke - drilled blind to 6 ft.			
			Silty clay, little sand, trace gravel and shale - brown to black - very stiff (CL) Brick noted. WC=20.5% LL=29% PL=15% PI=14%	8"	S-3	7-6-7 Qp=2.25 tsf
633.6	8.5					
			Silty clay, trace sand, gravel and shale - gray - hard (CL) Silty fine wet sand at tip. WC=21.8%, Gravel=2.6%, Sand=4.6%, Silt & Clay=92.8%	7"	S-4	5-17-13 Qp=4.5+ tsf
632.1	10.0		Silty fine to medium sand, little clay, trace gravel - wet (SM) Brick noted.	4"	S-5	
628.6	13.5					
			Silty clay, trace sand, gravel and shale - very stiff at top (SM) Sandy silt, little clay - gray - moist at bottom (SM) WC=12.6% Dry wt=129.0 pcf LL=19% PL=13% PI=16%	7"	S-6	Tv=2.5 tsf Qp=3.5 tsf
626.1	16.0		Bounced down to 17.5 ft.; pushed rock Silty clay, trace sand, gravel and shale - gray - stiff to very stiff (CL) WC=14.4%	1"	S-7	15-17-13 Qp=1.25 tsf (disturbed)
			Limestone fragments noted (CL) WC=13.4% LL=24% PL=13% PI=11%	9"	S-8	7-6-8 Qp=3.5 tsf
621.1	21.0		Silty clay, trace sand, gravel and shale - gray - hard (CL) Limestone fragments noted WC=13.1%	8"	S-9	9-12-14 Qp=4.0 tsf
			WC=12.8%	9"	S-10	44-11-12 Qp=4.5+ tsf
617.1	25.0		End of Boring			

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	2 OF 2 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4003,1975766.970 E1104309.906
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-6-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	40
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	40.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 16 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, Dry AD, 627.79 @ 24 hrs.
16. DATE HOLE	STARTED 7-13-00 / COMPLETED 7-13-00
17. ELEVATION TOP OF HOLE	636.29
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinke

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Clayey silt, trace sand - gray - saturated - dense (ML) WC=21.3%	18"	S-11	24-31-37 Qp=4.5+ tsf
			Very dense - moist WC=17.5%			
607.8	28.5		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=17.0%	14"	S-12	8-10-13 Qp=4.5 tsf
			Layer of silty sand.			
			Seam of silt. WC=16.5%	17"	S-13	8-12-14 Qp=4.5+ tsf
			WC=10.3%	14"	S-14	12-20-24 Qp=4.5+ tsf
			WC=15.1%	14"	S-15	10-15-18 Qp=4.5+ tsf
			WC=14.3% LL=30% PL=15% PI=15%	12"	S-16	10-15-27 Qp=4.5+ tsf
596.3	40.0		End of Boring			

HOLE NO. L37-7-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT: Des Plaines River Project	JOB NUMBER: 31130
2. LOCATION (Coordinates or Station): Cook Co., IL N4006,1977214.594 E1104364.680	
3. DRILLING AGENCY: Fox Exploration	
4. HOLE NO. (As shown on drawing title and file number): L37-7-00	
5. NAME OF DRILLER: Gary Yockey	
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN: 25	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE: 25.0	
10. SIZE AND TYPE OF BIT: 3-3/4" HSA	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D-50	
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: 8 / UNDISTURBED: 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER: 616.84 WD, 621.64 AD, 631.64 @ 24 hrs.	
16. DATE HOLE	STARTED: 7-13-00 / COMPLETED: 7-13-00
17. ELEVATION TOP OF HOLE: 635.64	
18. TOTAL CORE RECOVERY FOR BORING: %	
19. SIGNATURE OF INSPECTOR: Brian Reinke	

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, gravel and topsoil - brown - very stiff (CL) Note: Brown to black WC=24.9%	10"	S-1	2-4-6 Qp=2.25 tsf
			WC=18.6%	11"	S-2	4-6-11 Qp=4.5 tsf
			WC=21.5% LL=50% PL=19% PI=31% Roots noted - grayish brown	16"	S-3	5-12-16 Qp=4.5+ tsf
627.1	8.5		Clayey silt, trace sand - gray - moist - medium dense to dense (ML) WC=16.7%	15"	S-4	13-24-14 Qp=4.5+ tsf
			Wet WC=21.2%	17"	S-5	4-8-10 Qp=4.0 tsf
622.1	13.5		Very silty clay, trace sand, gravel and shale - gray - hard (CL-ML) WC=15.3%	14"	S-6	3-5-11 Qp=4.5 tsf
			Seam of silty sand. WC=15.3% LL=25% PL=14% PI=11%	15"	S-7	5-9-20 Qp=4.5 tsf
618.1	17.5		Silty clay, trace sand, gravel and shale - gray - hard to very stiff (CL) WC=17.1%	6"	S-8	50/5" Qp=2.25 tsf
			Hit rock at 19 ft.; drilled through to 21 ft.			
			WC=15.3%	13"	S-9	12-14-19 Qp=4.5+ tsf
612.1	23.5		Clayey silt, trace sand - gray - very dense - wet to saturated (ML) WC=19.8%	15"	S-10	19-27-35 Qp=4.5+ tsf
610.6	25.0		End of Boring			

HOLE NO. L37-8-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4005,1977750.661 E1104418.762
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-8-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 9 / UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	617.28 WD, 631.78 AD, 632.28 @ 24 hrs.
16. DATE HOLE	STARTED 7-13-00 / COMPLETED 7-13-00
17. ELEVATION TOP OF HOLE	636.28
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reicher

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace gravel and sand - brown to grayish brown - hard (CL) WC=25.3%	9"	S-1	3-3-5 Qp=4.5 tsf
			Very stiff; seam of wet sand WC=20.1% LL=26% PL=15% PI-11%	9"	S-2	1-4-4 Qp=2.25 tsf
			WC=22.6%	10"	S-3	3-5-6 Qp=4.5+ tsf
627.8	8.5		Clayey silt, trace sand - gray - moist - medium dense (ML) WC=19.9%	13"	S-4	4-7-11 Qp=4.5+ tsf
625.3	11.0		Silty clay, little sand, trace gravel and shale - gray - very stiff to hard (CL) WC=9.9%	13"	S-5	9-11-12 Qp=4.5+ tsf
			LL=24% PL=13% PI=11% WC=14.5% Dry Wt=123.2 pcf c=0.8 kg/cm^2 Phi=0	26"	S-6	Qp=4.5+ tsf Tv=10+ tsf
			WC=12.1%	12"	S-7	4-7-11 Qp=3.5 tsf
			Seam of wet sand WC=13.8%	11"	S-8	4-5-6 Qp=4.5+ tsf
			Seam of wet sand. WC=15.4% LL=27% PL=14% PI=13%	10"	S-9	7-11-12 Qp=4.5+ tsf
611.3	25.0		Silt at tip. WC=2.5%	10"	S-10	19-21-33 Qp=3.75 tsf
			End of Boring			

HOLE NO. L37-9-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4004,1978233.763 E1104474.268
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-9-00
5. NAME OF DRILLER	Kris Norwick
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 11 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, Dry AD, 630.42 @ 24 hrs.
16. DATE HOLE	STARTED 7-14-00 / COMPLETED 7-14-00
17. ELEVATION TOP OF HOLE	634.92
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Rich

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, fine gravel and shale - brown to grayish brown - very stiff (CL) WC=22.6%	7"	S-1	3-5-5 Qp=2.25 tsf
			Stiff WC=15.7%	12"	S-2	3-5-5 Qp=1.5 tsf
			WC=15.6% LL=25% PL=15% PI=10%	16"	S-3	5-5-8 Qp=2.0 tsf
626.4	8.5					
625.8	9.2		Clayey silt, trace sand, gravel and shale - gray - moist - medium dense (ML)	8"	S-4	4-6-7 Qp=4.5+ tsf
			WC=14.4%	7"	S-4A	Qp=3.5 tsf
			Silty clay, trace sand, gravel and shale - gray - very stiff (CL) WC=12.9%			
			WC=15.5%	15"	S-5	2-5-8 Qp=2.0 tsf
			WC=14.4%	18"	S-6	3-5-9 Qp=2.25 tsf
			Seam of silt WC=13.9%	12"	S-7	5-10-13 Qp=3.25 tsf
616.4	18.5					
			Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=15.8%	15"	S-8	8-11-13 Qp=4.5+ tsf
			WC=17.4% LL=32% PL=15% PI=17%	15"	S-9	5-10-20 Qp=4.5+ tsf
			WC=12.8%	14"	S-10	5-15-19 Qp=4.5+ tsf
609.9	25.0		End of Boring			

HOLE NO. L37-10-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4007,1979904.629 E1104805.012
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-10-00
5. NAME OF DRILLER	Kris Norwick
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 11; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	620.55 WD, 627.05 AD, 629.55 @ 24 hrs.
16. DATE HOLE	STARTED 7-14-00; COMPLETED 7-14-00
17. ELEVATION TOP OF HOLE	634.05
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinke

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Fine to coarse sand, trace gravel, silt and topsoil - brown - moist - medium dense (SP)			
632.3	1.8			9"	S-1	5-6-8
			Silty clay, trace sand, gravel and shale - brown with seam of silt - very stiff (CL) WC=21.1%	9"	S-1A	Qp=3.75 tsf
630.6	3.5					
			Silty clay, trace sand, gravel and shale - gray - very stiff to hard (CL) WC=20.8% LL=29% PL=15% PI=14%	17"	S-2	5-6-7 Qp=3.25 tsf
			Layer of gravel and silt - saturated WC=23.8%	12"	S-3	12-11-10 Qp=4.0 tsf
			WC=10.8%	8"	S-4	3-6-10 Qp=2.5 tsf
623.1	11.0					
			Silty clay, trace sand, gravel and shale - gray - stiff (CL) WC=17.9%	9"	S-5	3-6-10 Qp=1.25 tsf
620.6	13.5					
			Silty clay, trace sand, gravel and shale - gray -very stiff to hard (CL) WC=11.5%	14"	S-6	2-6-9 Qp=3.0 tsf
			WC=15.1% LL=26% PL=13% PI=13%	12"	S-7	6-11-14 Qp=3.75 tsf
			WC=15.1%	13"	S-8	5-7-12 Qp=4.5+ tsf
613.1	21.0					
			Clayey silt, trace sand, gravel and shale - gray - very dense (ML) Layer of gravel. WC=14.1%	14"	S-9	16-27-36 Qp=4.5+ tsf
			WC=15.0%	16"	S-10	13-26-26 Qp=4.5+ tsf
609.1	25.0					
			End of Boring			

HOLE NO. L37-11-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4008,1980199.356 E1105034.281
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-11-00
5. NAME OF DRILLER	Kris Norwick
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 9 / UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	626.71 WD, 1627.21 AD, 629.71 @ 24 hrs.
16. DATE HOLE	STARTED 7-14-00 / COMPLETED 7-14-00
17. ELEVATION TOP OF HOLE	637.71
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinstra

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand and gravel, little topsoil - black - very stiff (CL) Wood noted. WC=21.6%	4"	S-1	3-3-4 Qp=2.75 tsf
634.2	3.5					
			Fine to coarse sand, trace gravel and silt - brown - moist - loose (SP)	12"	S-2	3-4-5
631.7	6.0					
			Silty clay, trace sand, gravel and shale - grayish brown - very stiff to hard (CL) WC=25.8%	12"	S-3	3-6-8 Qp=4.0 tsf
			Gray below 8.5 ft. WC=14.3% LL=24% PL=13% PI=11% Layer of gravelly sand. WC=13.3%	20"	S-4	Tv=8.0 tsf Qp=3.5 tsf
			WC=14.5%	9"	S-5	2-6-9 Qp=3.0 tsf
			WC=14.2%	14"	S-6	4-5-8 Qp=2.25 tsf
			WC=14.7%	17"	S-7	4-7-8 Qp=2.0 tsf
			WC=14.0%	15"	S-8	4-6-11 Qp=3.75 tsf
616.7	21.0					
			Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=14.2% LL=29% PL=14% PI=15%	11"	S-9	7-11-12 Qp=4.5+ tsf
614.2	23.5					
			Clayey silt, trace sand, gravel and shale - gray - dense (ML) WC=13.0%	13"	S-10	18-28-21 Qp=4.5+ tsf
612.7	25.0					
			End of Boring			

HOLE NO. L37-12-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4013,1980665.370 E1105235.281
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-12-00
5. NAME OF DRILLER	Kris Norwick
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 10 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	616.97 WD, 629.97 AD, 630.97 @ 24 hrs.
16. DATE HOLE	STARTED 7-14-00 / COMPLETED 7-14-00
17. ELEVATION TOP OF HOLE	636.97
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reichen

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, little topsoil, trace sand, gravel and shale - brown to black - hard (CL) WC=18.6%	8"	S-1	5-6-9 Qp=4.5+ tsf
634.5	2.5		Silty clay, little sand, trace gravel and shale - brown - hard (CL) WC=12.8% LL=30% PL=14% PI=16%	9"	S-2	3-5-7 Qp=4.5+ tsf
			Trace sand WC=11.4%	8"	S-3	6-9-10 Qp=4.5+ tsf
630.3	6.7		Fine to coarse sand, little silt and gravel - brown - wet (SP) WC=12.8%, Gravel=10.2%, Sand=79.2%, Silt & Clay=10.6%	3"	S-3A	
628.5	8.5		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=20.3%	11"	S-4	8-11-14 Qp=4.5+ tsf
			WC=16.8% LL=33% PL=16% PI=17%	10"	S-5	5-8-10 Qp=4.5+ tsf
623.5	13.5		Clayey silt, trace sand - gray - medium dense - wet (ML) Sand at tip. WC=19.0%	12"	S-6	3-7-9 Qp=3.0 tsf
621.0	16.0		Silty clay, trace sand, gravel and shale - gray - very stiff to hard (CL) WC=13.8% With layers of wet silty sand.	4"	S-7	4-5-7 Qp=3.5 tsf
			WC=13.5%	11"	S-8	5-10-22 Qp=4.5+ tsf
			No Recovery	0"	S-9	6-11-14
			WC=14.7%	16"	S-10	8-12-15 Qp=4.5+ tsf
612.0	25.0		End of Boring			

HOLE NO. L37-13-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4011,1981618.791 E1105005.524
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-13-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 11 / UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	Dry WD, 617.18 AD, 629.68 @ 24 hrs.
16. DATE HOLE	STARTED 7-17-00 / COMPLETED 7-17-00
17. ELEVATION TOP OF HOLE	638.68
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Rinder

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, little topsoil, trace sand and gravel - black - very stiff (CL) WC=16.2%	4"	S-1	5-9-9 Qp=2.0 tsf
			WC=18.2% LL=37% PL=18% PI=19%	8"	S-2	2-2-3 Qp=2.0 tsf
			Trace topsoil - brown to black WC=22.7%	8"	S-3	2-3-4 Qp=2.25 tsf
629.9	8.8		WC=18.9%	4"	S-4	3-4-11 Qp=2.25 tsf
628.7	10.0		Sandy clay, little silt, trace gravel and topsoil - brown to black - soft (SC) WC=13.9%	6"	S-4A	Qp=0.25 tsf
			Silty clay, trace sand, gravel and shale - gray - very stiff (CL) WC=14.2%	15"	S-5	3-7-10 Qp=2.75 tsf
625.2	13.5					
623.2	15.5		Silty clay, little sand, trace gravel - gray - very stiff (CL) WC=13.3% LL=23% PL=14% PI=9% Dry Wt=129.1 pcf Qu=2.54 tsf	26"	S-6	Qp=3.5 tsf Tv=4.0 tsf
621.8	16.9		Silty fine to coarse sand, trace gravel, shale and clay - gray - saturated (SM)	11"	S-7	13-17-18
620.2	18.5		Clayey silt, trace sand - gray - saturated (ML) WC=15.9%	5"	S-7A	Qp=4.5 tsf
			Silty clay, trace sand, gravel and shale - gray - very stiff to hard (CL) Rock at tip. WC=11.6%	2"	S-8	6-12-15 Qp=3.0 tsf
			WC=14.2%	13"	S-9	4-12-17 Qp=4.5+ tsf
615.2	23.5		No recovery	0"	S-10	34-50/5"
613.7	25.0		End of Boring			

HOLE NO. L37-14-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT: Des Plaines River Project	JOB NUMBER: 31130
2. LOCATION (Coordinates or Station): Cook Co., IL N4010,1981922.998 E1104888.383	
3. DRILLING AGENCY: Fox Exploration	
4. HOLE NO. (As shown on drawing title and file number): L37-14-00	
5. NAME OF DRILLER: Gary Yockey	
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN: 25	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE: 25.0	
10. SIZE AND TYPE OF BIT: 3-3/4" HSA	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D-50	
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: 12; UNDISTURBED: 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER: 623.11 WD, 624.11 AB, 630.11 @ 24 hrs.	
16. DATE HOLE	STARTED: 7-17-00; COMPLETED: 7-17-00
17. ELEVATION TOP OF HOLE: 640.11	
18. TOTAL CORE RECOVERY FOR BORING: %	
19. SIGNATURE OF INSPECTOR: Brian Reinke	

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, little topsoil, trace sand and gravel - black - hard (CL) Roots noted. WC=15.9%	12"	S-1	4-7-7 Qp=4.5 tsf
			Wood noted. WC=23.6%	12"	S-2	9-9-9 Qp=4.0 tsf
634.1	6.0					
633.5	6.6		Clayey silt, trace sand - gray - very stiff (ML) WC=15.6%	7"	S-3	4-16-14 Qp=2.75 tsf
			Fine to coarse silty sand, little gravel, trace clay - brown - wet - medium dense to dense (SM) WC=8.3%, Gravel=35.8%, Sand=44.3%, Silt & Clay=19.9%	7"	S-3A	
630.0	10.1			7"	S-4	3-7-14
			Silty clay, trace sand, gravel and shale - gray - hard (CL) Seams of sandy silt. WC=13.8%	5"	S-4A	Qp=4.5+ tsf
			WC=17.9%	11"	S-5	3-7-9 Qp=4.5+ tsf
626.6	13.5					
			Clay in tip of layers of fine to medium sand - wet (ML) WC=11.2%	13"	S-6	6-17-12 Qp=4.5+ tsf
624.1	16.0					
			Silty clay, trace sand, gravel and shale - gray - very stiff to hard (CL) WC=14.1%	15"	S-7	3-5-7 Qp=3.25 tsf
			WC=14.6%	12"	S-8	2-3-6 Qp=3.75 tsf
			WC=14.8%	17"	S-9	5-8-9 Qp=3.25 tsf
			WC=12.1% LL=28% PL=13% PI=15%	11"	S-10	39-12-27 Qp=4.5+ tsf
615.1	25.0		End of Boring			

HOLE NO. L37-15-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4009,1982252.934 E1104750.844
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-15-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	25
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	25.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 10 / UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	628.43 WD, 629.42 AD, 629.93 @ 24 hrs.
16. DATE HOLE	STARTED 7-17-00 / COMPLETED 7-17-00
17. ELEVATION TOP OF HOLE	639.43
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinke

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, gravel and topsoil - black to brown - hard (CL) WC=22.0% LL=38% PL=18% PI=20%	14"	S-1	7-6-4 Qp=4.5+ tsf
			WC=14.8%	10"	S-2	4-5-8 Qp=4.5+ tsf
634.4	5.0		Fine to coarse sand, trace silt, gravel and clay - brown - moist - medium dense (SP)	5"	S-3	6-7-8
633.0	6.4		Clayey silt, trace sand - brown - moist (ML) WC=15.2%	9"	S-3A	Qp=4.5+ tsf
630.9	8.5		Fine to coarse sand, trace silt, gravel and clay - brown and gray - wet - medium dense (SP) Layer of gravelly sand.	10"	S-4	7-10-12
628.4	11.0		Silty clay, trace sand - gray - wet (CL) WC=14.5% LL=33% PL=15% PI=18% Dry Wt=120.8 pcf c=1.6 kg/cm^2 Phi=0	19"	S-5	Qp=1.5 tsf Tv=1.5 tsf
625.9	13.5		Silty fine to medium sand, trace clay - gray - saturated dense (SM)	16"	S-6	6-17-16
623.4	16.0		Clayey silt, little sand, trace gravel and shale - gray - medium dense (ML) WC=20.3%	15"	S-7	8-12-10 Qp=4.5+ tsf
620.9	18.5		Silty clay, trace sand, gravel and shale - gray - very stiff to hard (CL) WC=15.3% LL=24% PL=13% PI=11%	16"	S-8	3-4-6 Qp=2.5 tsf
			WC=14.5%	16"	S-9	8-12-17 Qp=3.75 tsf
			WC=15.8%	15"	S-10	5-9-14 Qp=4.0 tsf
614.4	25.0		End of Boring			

HOLE NO. L37-16-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT: Des Plaines River Project	JOB NUMBER: 31130
2. LOCATION (Coordinates or Station): Cook Co., IL N3972,1982583.843 E1102934.743	
3. DRILLING AGENCY: Fox Exploration	
4. HOLE NO. (As shown on drawing title and file number): L37-16-00	
5. NAME OF DRILLER: Gary Yockey	
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN: 25	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE: 25.0	
10. SIZE AND TYPE OF BIT: 3-3/4" HSA	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D-50	
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: 10; UNDISTURBED: 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER: Dry WD, 625.37 AD, 630.87 @ 24 hrs.	
16. DATE HOLE	STARTED: 7-18-00; COMPLETED: 7-18-00
17. ELEVATION TOP OF HOLE: 636.37	
18. TOTAL CORE RECOVERY FOR BORING: %	
19. SIGNATURE OF INSPECTOR: Brian Pitcher	

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace gravel and shale - brown to brownish gray - hard (CL) WC=13.9%	10"	S-1	3-5-5 Qp=4.5+ tsf
			WC=20.2% LL=41% PL=18% PI=23%	8"	S-2	18-18-11 Qp=4.5+ tsf
630.4	6.0					
			Fine to coarse sand, little silt, trace gravel - brown to gray - saturated - medium dense (SM) Gray clay in tip. WC=24.9%, Gravel=1.0%, Sand=84.4%, Silt & Clay=14.6%	12"	S-3	7-7-8
627.9	8.5					
			Silty clay, trace sand, gravel and shale - gray - stiff to very stiff (CL) WC=15.8%	12"	S-4	2-4-4 Qp-1.75 tsf
			WC=16.0% LL=24% PL=13% PI=11% Dry Wt=120.5 pcf c=0.5 kg/cm^2 Phi=0	27"	S-5	Qp=2.0 tsf Tv=4.5 tsf
			WC=15.2%	12"	S-6	2-3-5 Qp=1.75 tsf
620.4	16.0					
			Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=14.0%	15"	S-7	4-6-9 Qp=4.25 tsf
			WC=11.2%	12"	S-8	5-11-11 Qp=4.5+ tsf
614.8	21.6		WC=16.1% LL=28% PL=15% PI=13%	7"	S-9	5-22-38 Qp=4.5+ tsf
			Clayey silt, trace sand, gravel and shale - gray - very dense (ML) WC=15.2%	10"	S-9A	Qp=4.5+ tsf
612.9	23.5					
			Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=12.6%	16"	S-10	10-14-16 Qp=4.5+ tsf
611.4	25.0					
			End of Boring			

HOLE NO. L37-17-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 2 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N3071,1982627.876 E1102731.920
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-17-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	40
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	40.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 19 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	628.29 WD, 629.29 AD, 631.29 @ 24 hrs.
16. DATE HOLE	STARTED 7-18-00 / COMPLETED 7-18-00
17. ELEVATION TOP OF HOLE	640.29
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reicher

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, gravel, shale and topsoil - brown to black - hard (CL) Limestone noted. WC=11.6%	11"	S-1	5-6-11 Qp=4.5+ tsf
637.8	2.5		Silty clay, trace sand, gravel and shale - brown - very stiff to hard (CL) WC=15.5% LL=29% PL=14% PI=15%	12"	S-2	4-5-8 Qp=3.25 tsf
			WC=19%	14"	S-3	4-8-10 Qp=4.5+ tsf
			Seams of fine to coarse sand - brown - moist WC=13.6%	14"	S-4	5-8-9 Qp=4.5+ tsf
629.3	11.0		Fine to coarse silty sand - gray - saturated - medium dense (SM) WC=22.9%, Sand=92.8%, Silt & Clay=7.2%	12"	S-5	5-7-7
626.8	13.5		Silty clay, trace sand, gravel and shale - gray - medium to stiff (CL) WC=13.7% LL=26% PL=13% PI=13%	13"	S-6	2-2-4 Qp=.75 tsf
			WC=15.3%	15"	S-7	2-4-4 Qp=1.5 tsf
621.8	18.5		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=14.5%	15"	S-8	4-7-9 Qp=4.0 tsf
			WC=15.4%	4"	S-9	11-12-11 Qp=4.5 tsf
619.0	21.3		Silty fine to medium sand, trace clay and gravel - gray - moist to wet - medium dense (SM)	13"	S-9A	
616.8	23.5					
616.3	24.0		Silty clay, trace sand, gravel and shale - gray - very stiff (CL) WC=14.5%	6"	S-10	2-13-16 Qp=3.5 tsf
615.3	25.0		Clayey silt - medium dense - moist (ML) WC=15.5%	6"	S-10A	Qp=4.5+ tsf

HOLE NO. L37-17-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 2 OF 2 SHEETS	
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N3071,1982627.876 E1102731.920
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-17-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	40
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	40.0
10. SIZE AND TYPE OF BIT	3-3/4" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D-50
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 19 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	628.29 WD, 629.29 AD, 631.29 @ 24 hrs.
16. DATE HOLE	STARTED 7-18-00 / COMPLETED 7-18-00
17. ELEVATION TOP OF HOLE	640.29
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinsch

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=12.6%	13"	S-11	6-11-13 Qp=4.5+ tsf
			WC=12.7% LL=26% PL=13% PI=13%	15"	S-12	6-10-14 Qp=4.5+ tsf
			WC=14.3%	13"	S-13	12-18-24 Qp=4.5+ tsf
606.3	34.0		WC=18.7%	6"	S-14	10-41-31 Qp=4.5+ tsf
			Clayey silt, trace fine sand - very dense to extremely dense (ML) WC=19.0%	8"	S-14A	Qp=4.5+ tsf
			WC=15.3%	16"	S-15	21-35-62 Qp=4.5+ tsf
601.8	38.5					
600.3	40.0		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=12.3% LL=27% PL=14% PI=13%	13"	S-16	11-15-21 Qp=4.5+ tsf
			End of Boring			

HOLE NO. L37-18-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT: Des Plaines River Project	JOB NUMBER: 31130
2. LOCATION (Coordinates or Station): Cook Co., IL N3070,1982714.473 E1102471.585	
3. DRILLING AGENCY: Fox Exploration	
4. HOLE NO. (As shown on drawing title and file number): L37-18-00	
5. NAME OF DRILLER: Gary Yockey	
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN: 23.5	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE: 23.5	
10. SIZE AND TYPE OF BIT: 3-3/4" HSA	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D-50	
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: 9; UNDISTURBED: 1
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER: 628.71 WD, 630.21 AD, 632.21 @ 24 hrs.	
16. DATE HOLE	STARTED: 7-19-00; COMPLETED: 7-19-00
17. ELEVATION TOP OF HOLE: 639.21	
18. TOTAL CORE RECOVERY FOR BORING: %	
19. SIGNATURE OF INSPECTOR: Brian Reinecke	

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Silty clay, little topsoil, trace sand and gravel - brown - very stiff to hard (CL) WC=8.2%	5"	S-1	6-10-6 Qp=4.5+ tsf
634.2	5.0		WC=21.9%	6"	S-2	4-5-7 Qp=2.5 tsf
			Silty clay, trace sand, gravel and shale - brown - hard (CL) WC=22.6% LL=44% PL=22% PI=22%	12"	S-3	5-8-13 Qp=4.5+ tsf
630.7	8.5		Fine to coarse silty sand, trace gravel and clay - gray - wet - medium dense (SM) LL-15% PL=13% PI=2& Gravel=5.9%, Sand=75,2%, Silt & Clay=18.9%	10"	S-4	7-11-13
628.2	11.0		Silty clay, trace sand, gravel and shale - gray - stiff to very stiff (CL) WC=16.0% LL=22% PL=13% PI=9% Dry wt=158.4 pcf, Qu=2.04	22"	S-5	Qp=2.0 tsf Tv=6.0 tsf
			WC=13.2%	12"	S-6	4-5-7 Qp=1.75 tsf
			WC=14.1%	15"	S-7	3-4-8 Qp=1.5 tsf
			WC=17.4% LL=31% PL=14% PI=17%	12"	S-8	3-6-11 Qp=3.25 tsf
618.2	21.0		Silty clay, trace sand, gravel and shale - gray - hard (CL) WC=16.6% LL=28% PL=14% PI=14%	15"	S-9	7-11-15 Qp=4.5+ tsf
615.7	23.5		Limestone fragments WC=21.0%	2"	S-10	50/3"
			End of Boring			

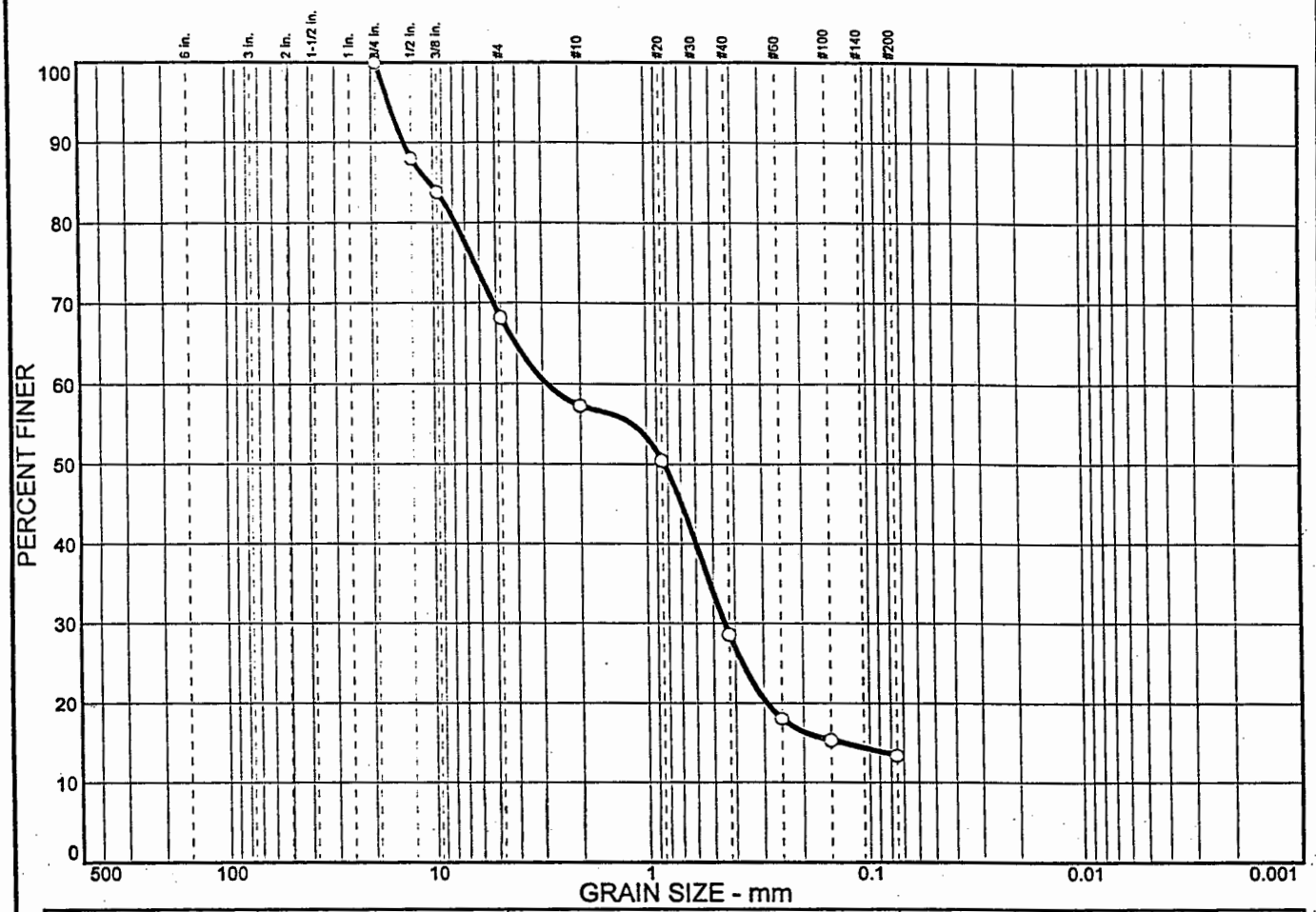
HOLE NO. L37-19-00

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET	1 OF 1 SHEETS
1. PROJECT	Des Plaines River Project
JOB NUMBER	31130
2. LOCATION (Coordinates or Station)	Cook Co., IL N4012,1981179.698 E1105073.829
3. DRILLING AGENCY	Fox Exploration
4. HOLE NO. (As shown on drawing title and file number)	L37-19-00
5. NAME OF DRILLER	Gary Yockey
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	10.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Hand Auger
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 6 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	631.07 WD, 631.57 AD, 631.57 @ 24 hrs.
16. DATE HOLE	STARTED 7-19-00 / COMPLETED 7-19-00
17. ELEVATION TOP OF HOLE	638.57
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	Brian Reinhart

ELEVATION (ft) a	DEPTH (ft) b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Sandy clay, little silt, trace gravel - brown (SC) Clayey sand in tip. WC=11.8%	13"	S-1	Qp=3.0 tsf in clay
635.1	3.5					
634.7	3.9		Fine to coarse sand, trace clay - brown - moist (SP)	5"	S-2	
			Sandy clay, trace silt and gravel - brown - medium (SC) LL=25% PL=15% PI=10% WC=17.3% (Sample 2A)	3"	S-2A	Qp=0.5 tsf
632.3	6.3		Layer of fine to coarse sand - brown WC=14.5%	3"	S-3	Qp=1.25 tsf
			Fine to coarse silty sand, little clay, trace gravel (SM-SC) WC=23.2%	3"	S-3A	Qp=2.75 tsf
			Clayey material and rock fragments in tip. WC=15.8%, PL=19% PI=NP%	10"	S-4	
628.6	10.0		End of Boring			

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	31.8	54.8	13.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.50 in.	88.0		
.375 in.	83.8		
#4	68.2		
#10	57.3		
#20	50.5		
#40	28.6		
#60	18.0		
#100	15.3		
#200	13.4		

* (no specification provided)

Soil Description

FINE-COARSE SAND SOME FINE GRAVEL LITTLE SILT - BROWN

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 10.4 D_{60}= 2.86 D_{50}= 0.832
D_{30}= 0.445 D_{15}= 0.134 D_{10}=
C_u= C_c=

Classification

USCS= SP AASHTO=

Remarks

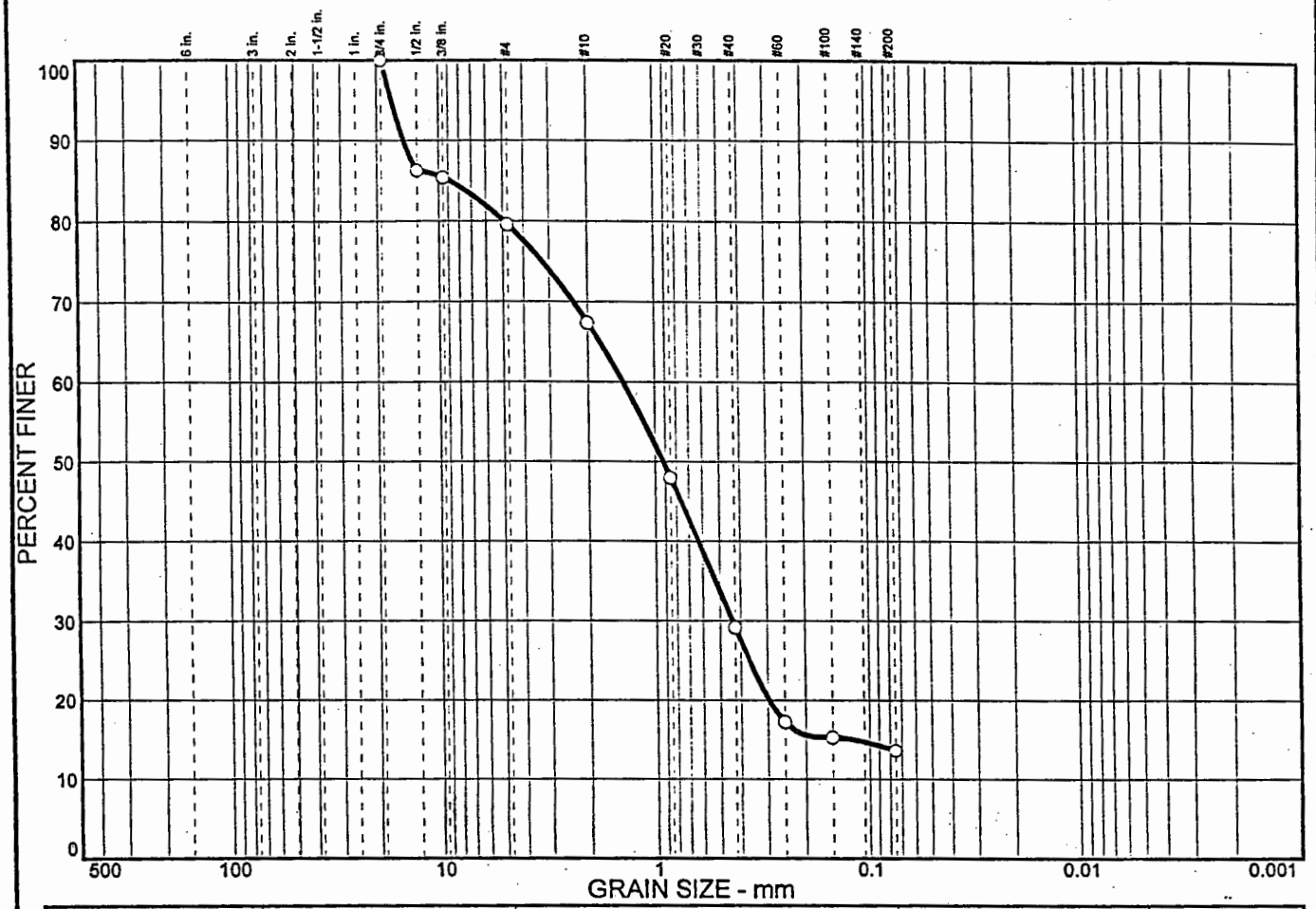
Sample No.: S-4 **Source of Sample:** BORING L37-1-00 **Date:** 7/28/00
Location: **Elev./Depth:** 8.5-10.0

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	20.4	66.0	13.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.50 in.	86.3		
.375 in.	85.4		
#4	79.6		
#10	67.4		
#20	48.0		
#40	29.2		
#60	17.2		
#100	15.3		
#200	13.6		

* (no specification provided)

Soil Description

F-C SAND SOME F GRAVEL LITTLE SILT - BROWN

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 8.87 D_{60}= 1.39 D_{50}= 0.919
D_{30}= 0.437 D_{15}= 0.119 D_{10}=
C_u= C_c=

Classification

USCS= SP AASHTO=

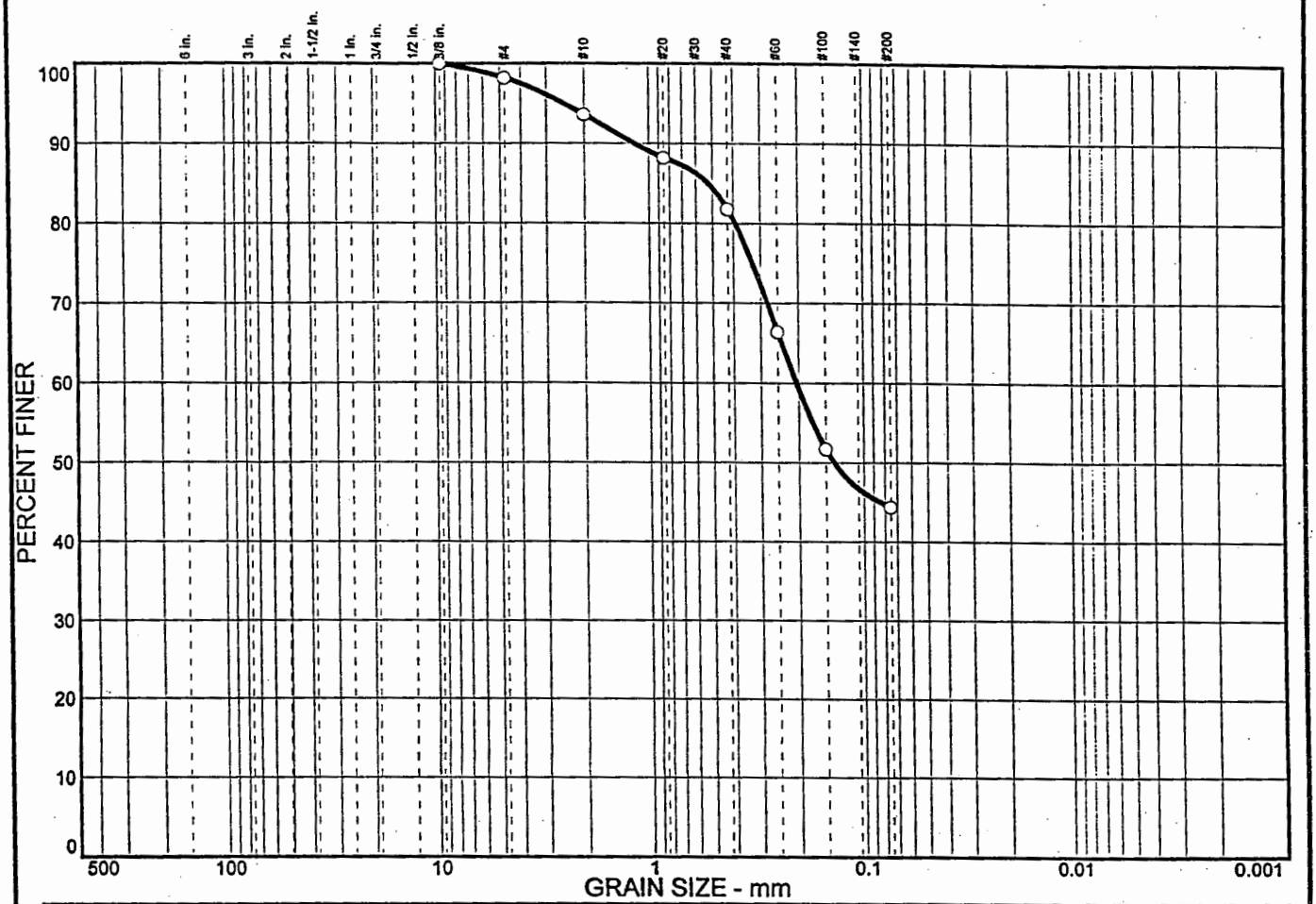
Remarks

Sample No.: S-2 **Source of Sample:** BORING L37-2-00 **Date:** 7/28/00
Location: **Elev./Depth:** 3.5-5.0

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION
Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	1.8	53.8	44.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	98.2		
#10	93.6		
#20	88.2		
#40	81.8		
#60	66.4		
#100	51.7		
#200	44.4		

* (no specification provided)

Soil Description

SILTY CLAY AND F-C SAND TR F GRAVEL - DARK GRAY

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.522 D_{60}= 0.205 D_{50}= 0.137
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

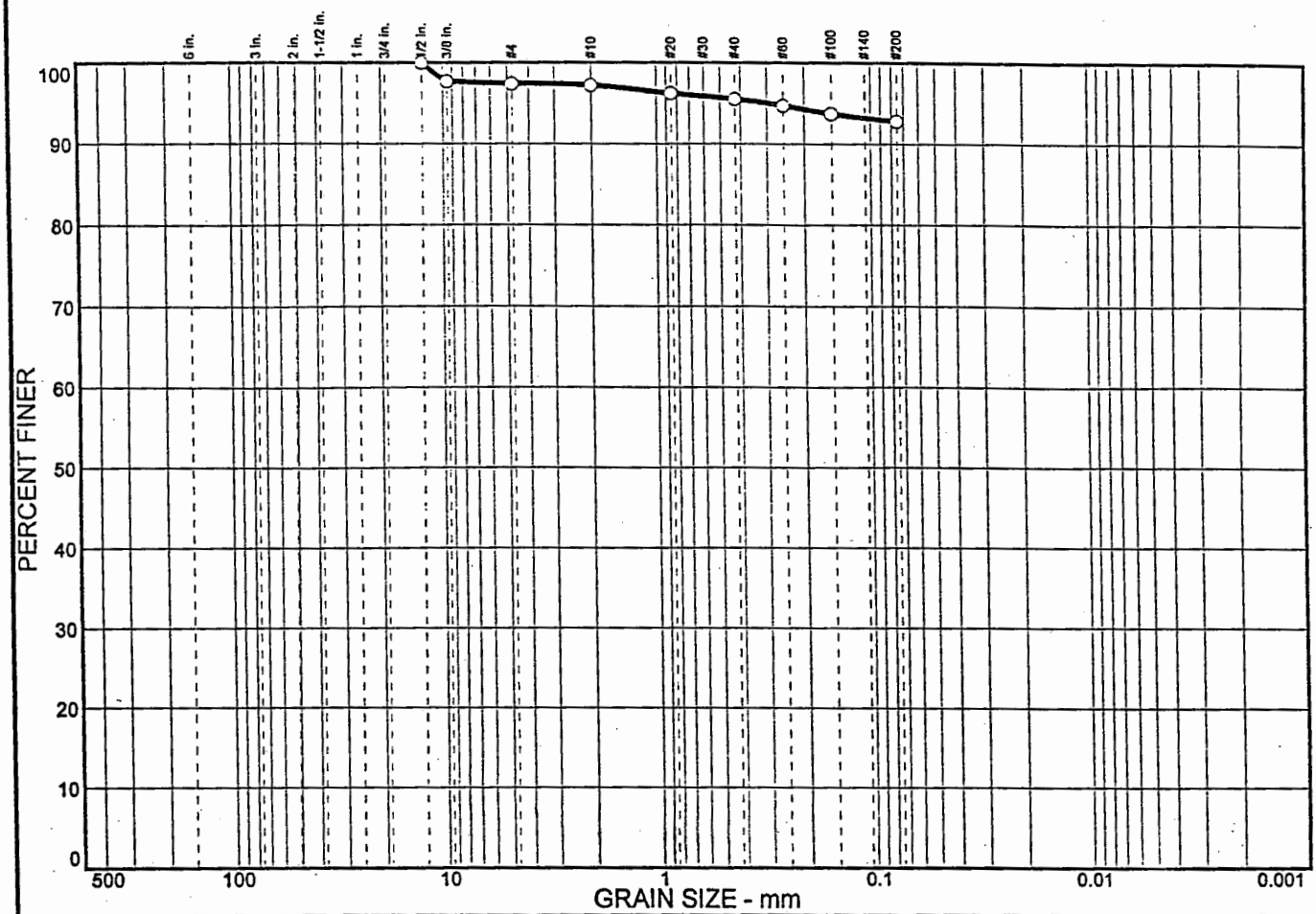
Sample No.: S-4 **Source of Sample:** BORING L37-3-00 **Date:** 7/28/00
Location: **Elev./Depth:** 8.5-10.0

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	2.6	4.6	92.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.50 in.	100.0		
.375 in.	97.7		
#4	97.4		
#10	97.2		
#20	96.2		
#40	95.5		
#60	94.7		
#100	93.7		
#200	92.8		

* (no specification provided)

Soil Description

SILTY CLAY TRACE F-MED SAND TRACE F GRAVEL - BROWN

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= ML AASHTO=

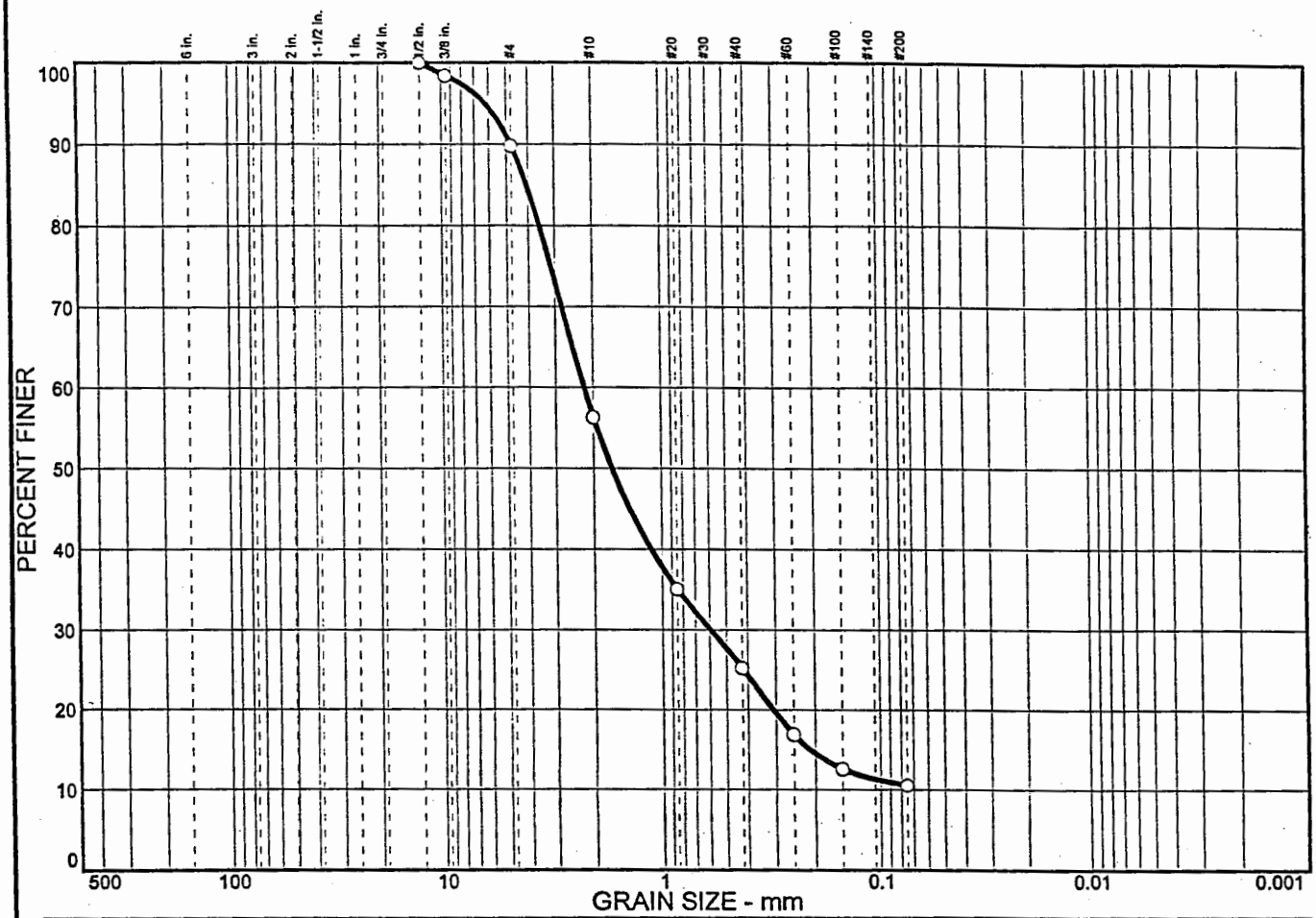
Remarks

Sample No.: S-4 **Source of Sample:** BORING L37-5-00 **Date:** 7/31/00
Location: **Elev./Depth:** 8.5-10.0

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION
Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	10.2	79.2	10.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.50 in.	100.0		
.375 in.	98.4		
#4	89.8		
#10	56.3		
#20	35.1		
#40	25.3		
#60	16.9		
#100	12.6		
#200	10.6		

* (no specification provided)

Soil Description

F-C SAND LITTLE SILT LITTLE F GRAVEL - BROWN

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 4.06 D_{60}= 2.20 D_{50}= 1.66
D_{30}= 0.593 D_{15}= 0.211 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO=

Remarks

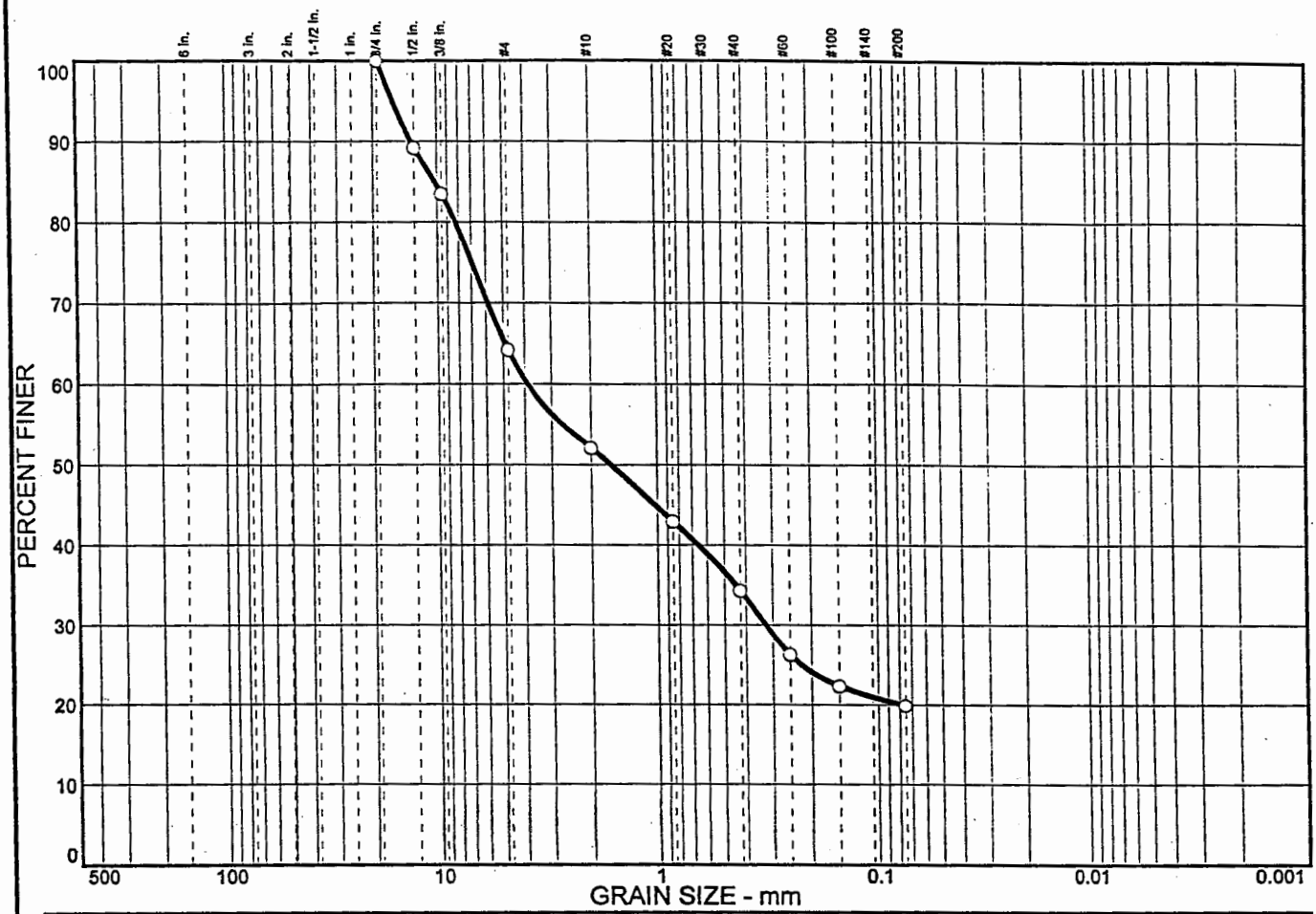
Sample No.: S-3A **Source of Sample:** BORING L37-12-00 **Date:** 7/31/00
Location: **Elev./Depth:** 6.0-7.5

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	35.8	44.3	19.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.50 in.	89.2		
.375 in.	83.5		
#4	64.2		
#10	52.1		
#20	42.9		
#40	34.3		
#60	26.3		
#100	22.4		
#200	19.9		

* (no specification provided)

Soil Description

F-C SAND AND F GRAVEL LITTLE SILT - BROWN

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 10.2 D_{60}= 3.88 D_{50}= 1.62
D_{30}= 0.324 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

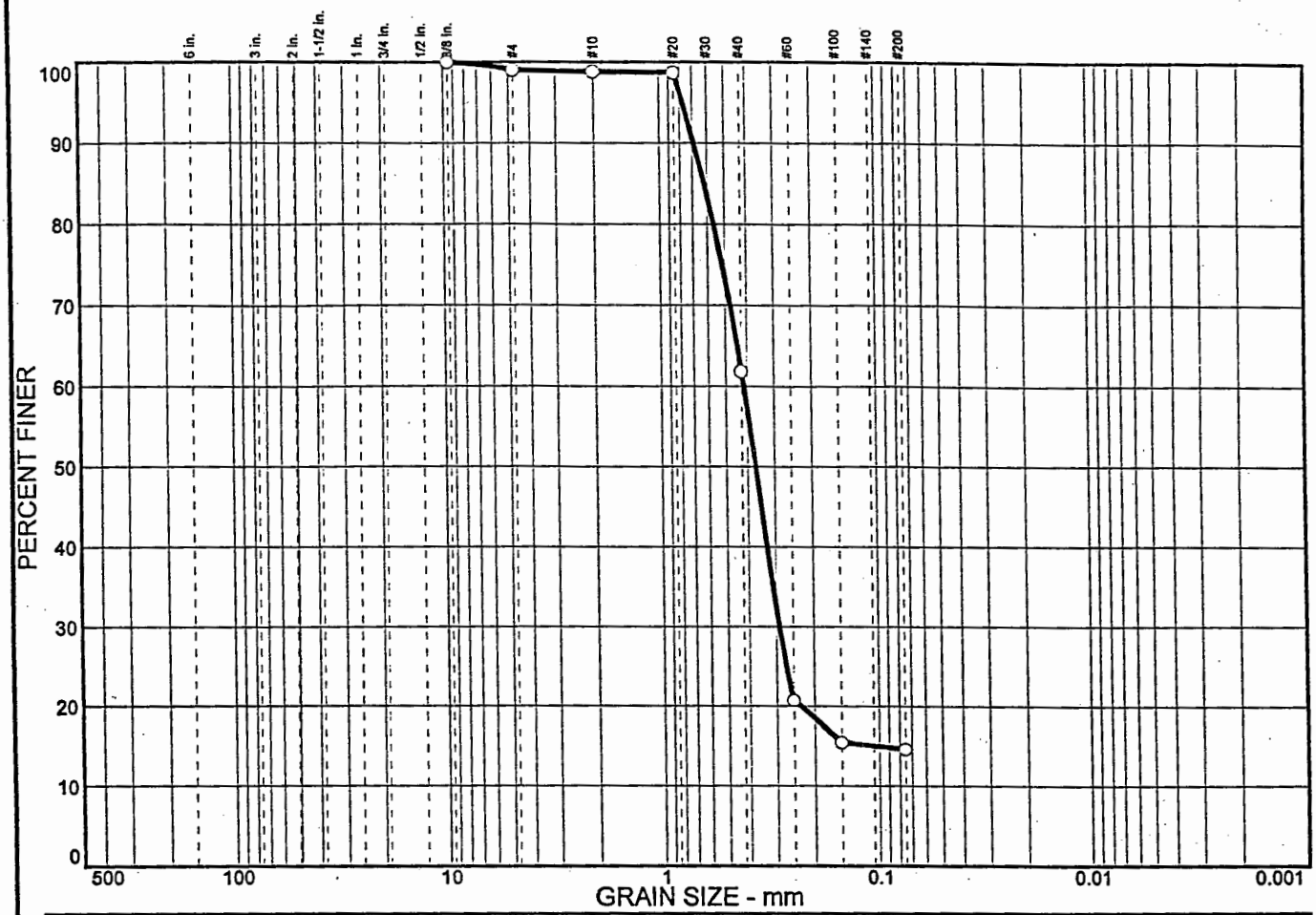
Remarks

Sample No.: S-3A Source of Sample: BORING L37-14-00 Date: 7/31/00
Location: Elev./Depth: 6.0-7.5

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION
Project No: 31130 Plate

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	1.0	84.4	14.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	99.0		
#10	98.8		
#20	98.7		
#40	61.9		
#60	20.8		
#100	15.5		
#200	14.6		

* (no specification provided)

Soil Description

F-MED SAND LITTLE SILT TR F GRAVEL - BROWN

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.619 D_{60}= 0.415 D_{50}= 0.369
D_{30}= 0.290 D_{15}= 0.102 D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

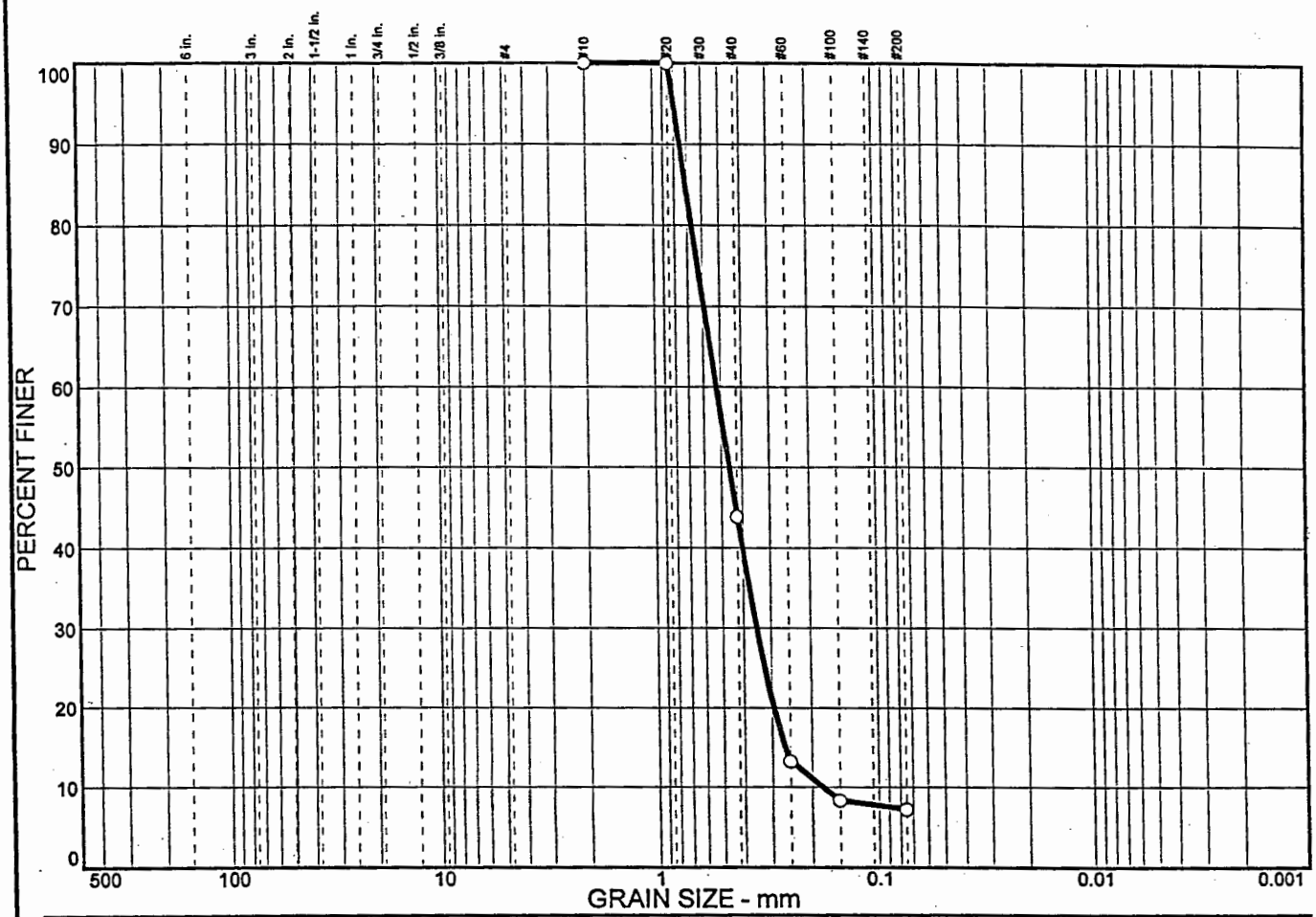
Remarks

Sample No.: S-3 **Source of Sample:** BORING L37-16-00 **Date:** 7/31/00
Location: **Elev./Depth:** 6.0-7.5

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION
Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	92.8	7.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	43.9		
#60	13.2		
#100	8.3		
#200	7.2		

* (no specification provided)

Soil Description

FINE-MEDIUM SAND TRACE SILT - DARK GRAY

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.711 D_{60}= 0.524 D_{50}= 0.461
D_{30}= 0.349 D_{15}= 0.263 D_{10}= 0.179
C_u= 2.92 C_c= 1.30

Classification

USCS= SP-SM AASHTO=

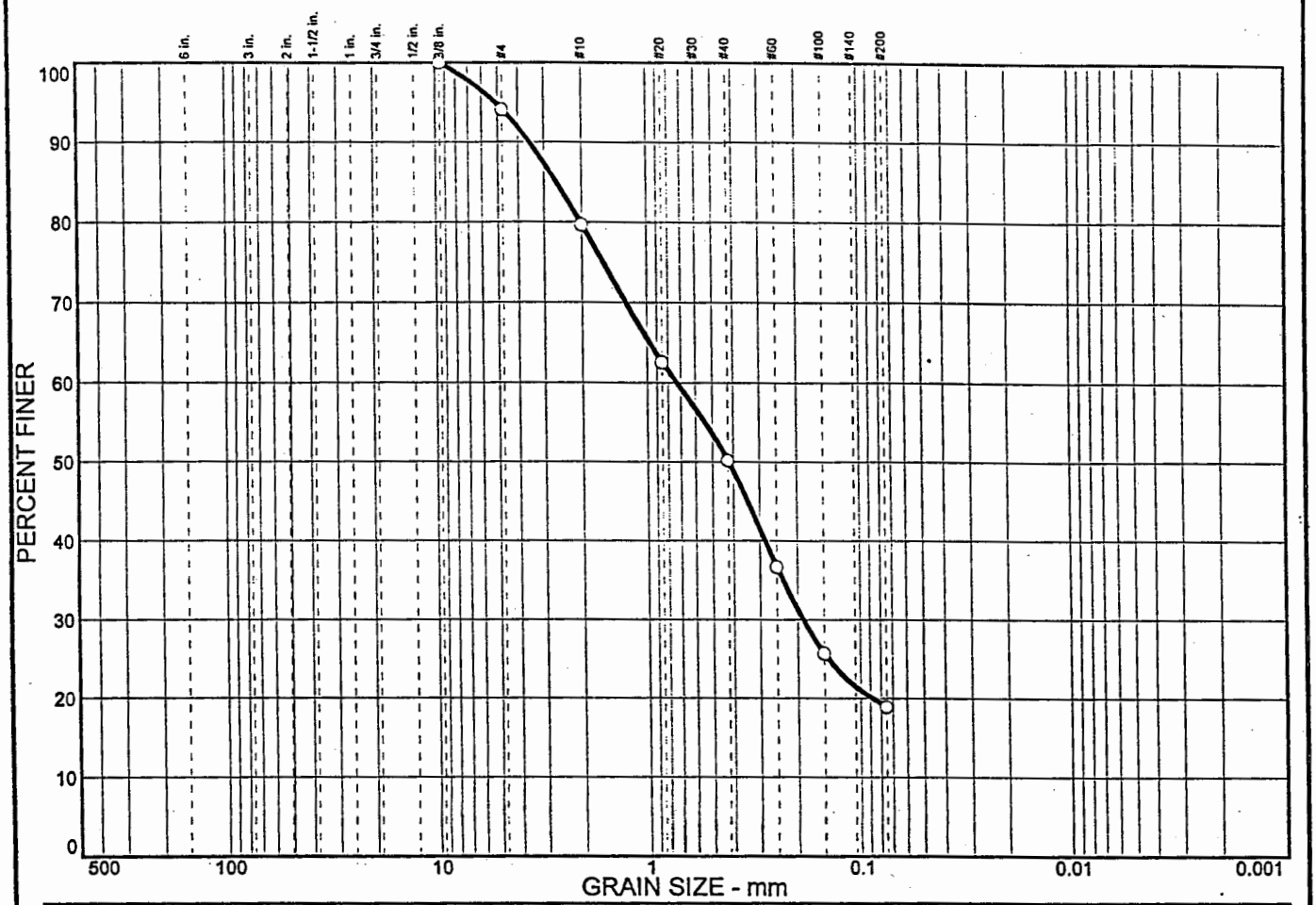
Remarks

Sample No.: S-5 **Source of Sample:** BORING L37-17-00 **Date:** 7/31/00
Location: **Elev./Depth:** 11.0-12.5

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION
Project No: 31130 **Plate**

Particle Size Distribution Report (ASTM D 422)



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	5.9	75.2	18.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	94.1		
#10	79.7		
#20	62.6		
#40	50.2		
#60	36.7		
#100	25.8		
#200	18.9		

* (no specification provided)

Soil Description

F-C SAND LITTLE SILT TR F GRAVEL - DARK GRAY

Atterberg Limits

PL= 13 LL= 15 PI= 2

Coefficients

D_{85}= 2.63 D_{60}= 0.729 D_{50}= 0.421
D_{30}= 0.188 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

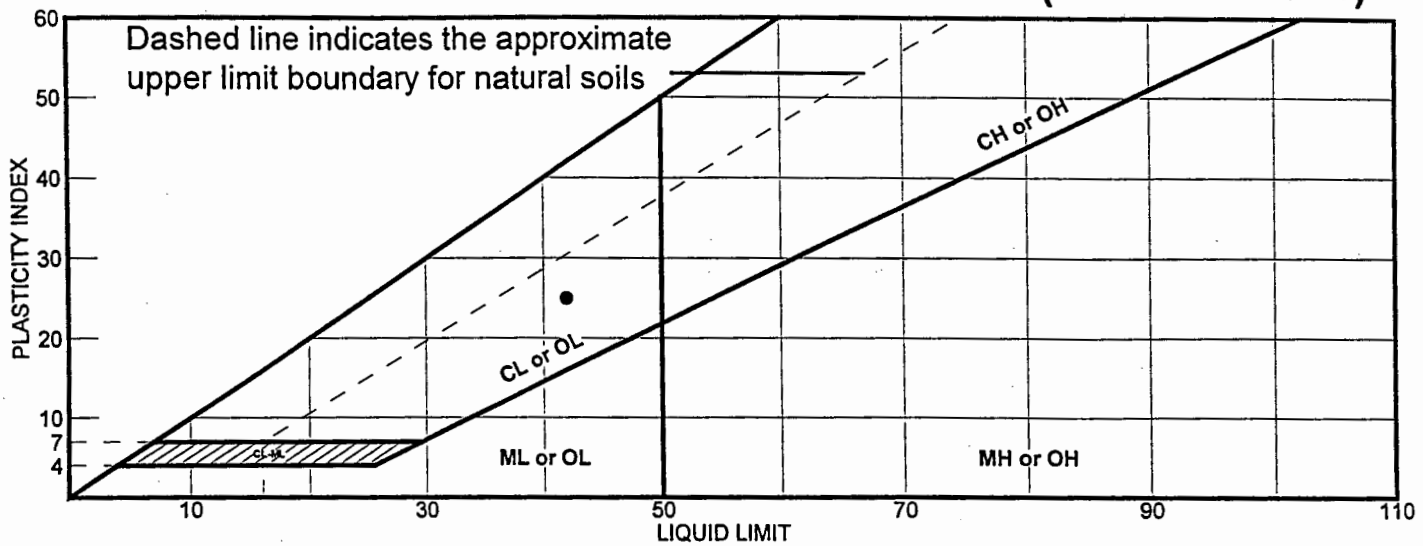
Remarks

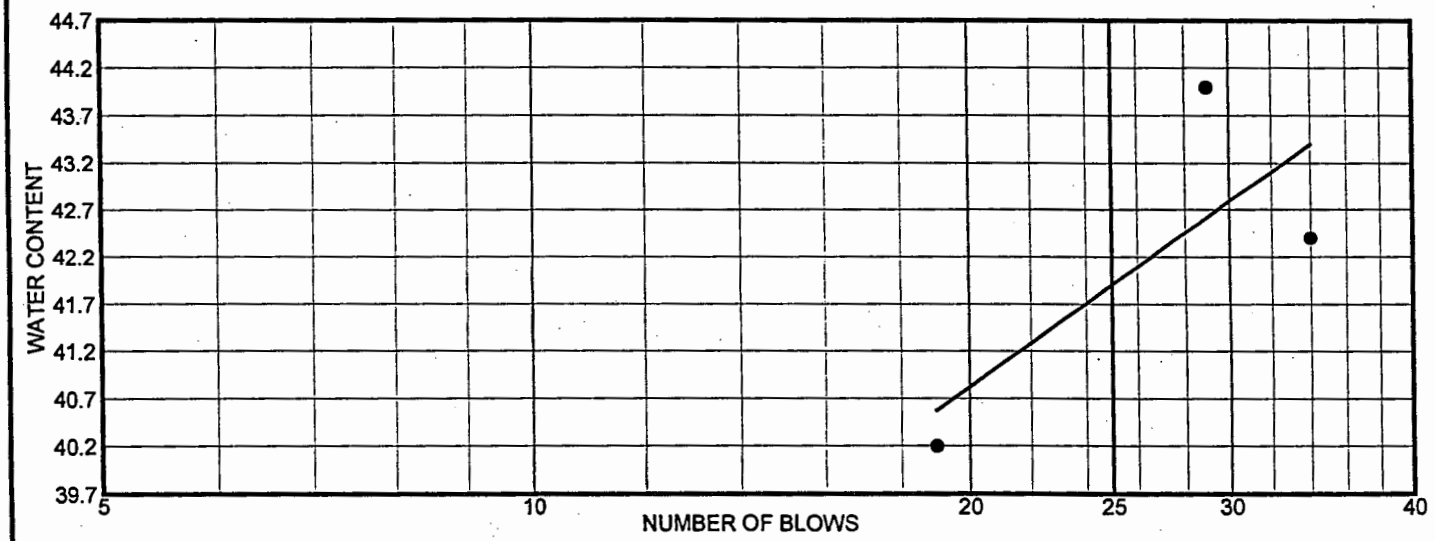
Sample No.: S-4 **Source of Sample:** BORING L37-18-00 **Date:** 7/31/00
Location: **Elev./Depth:** 8.5-10.0

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Client:
Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION
Project No: 31130 **Plate**

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - BROWN	42	17	25			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-1-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

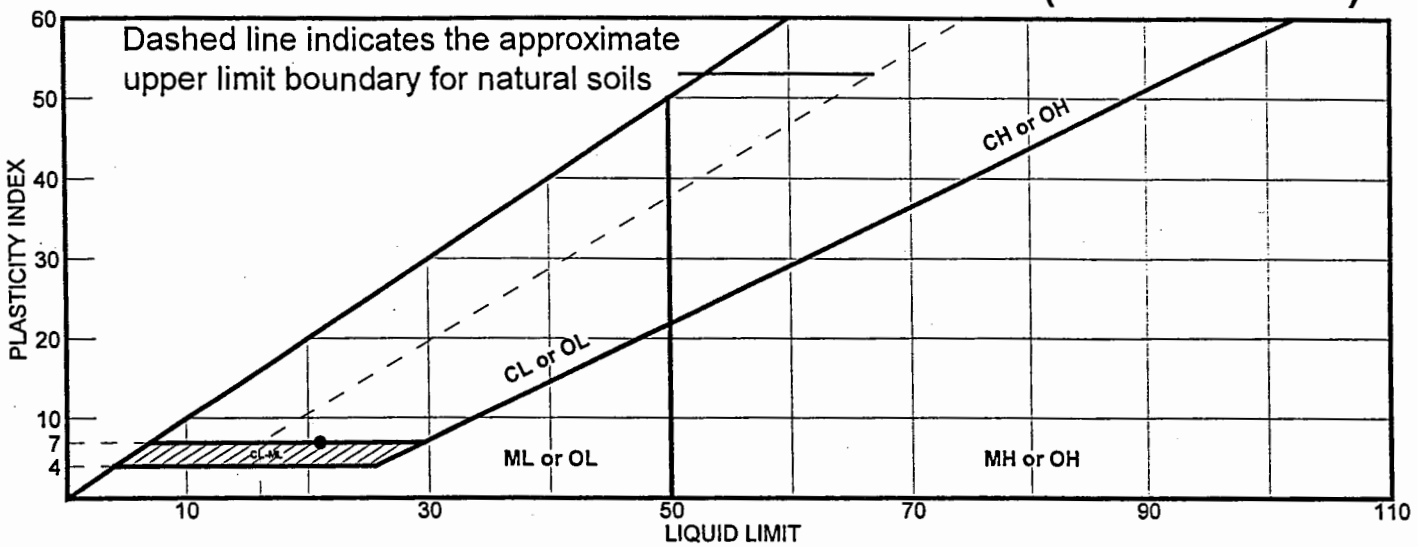
Remarks:

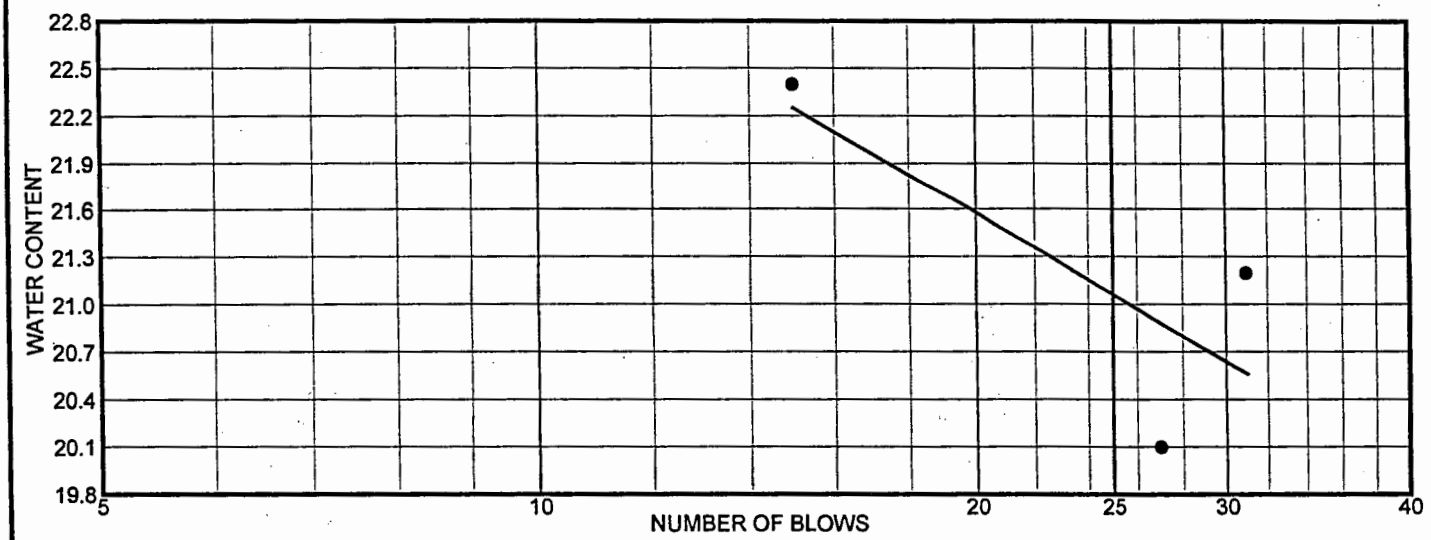
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	21	14	7			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-1-00 **Sample No.:** S-6 **Elev./Depth:** 13.5-15.0

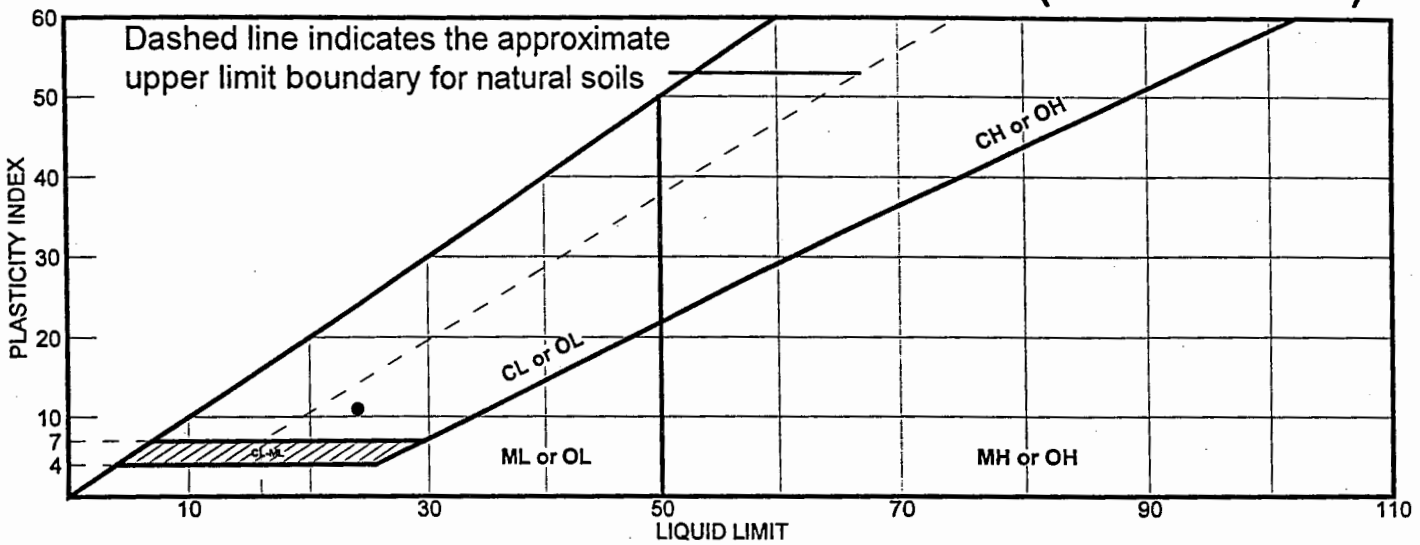
Remarks:

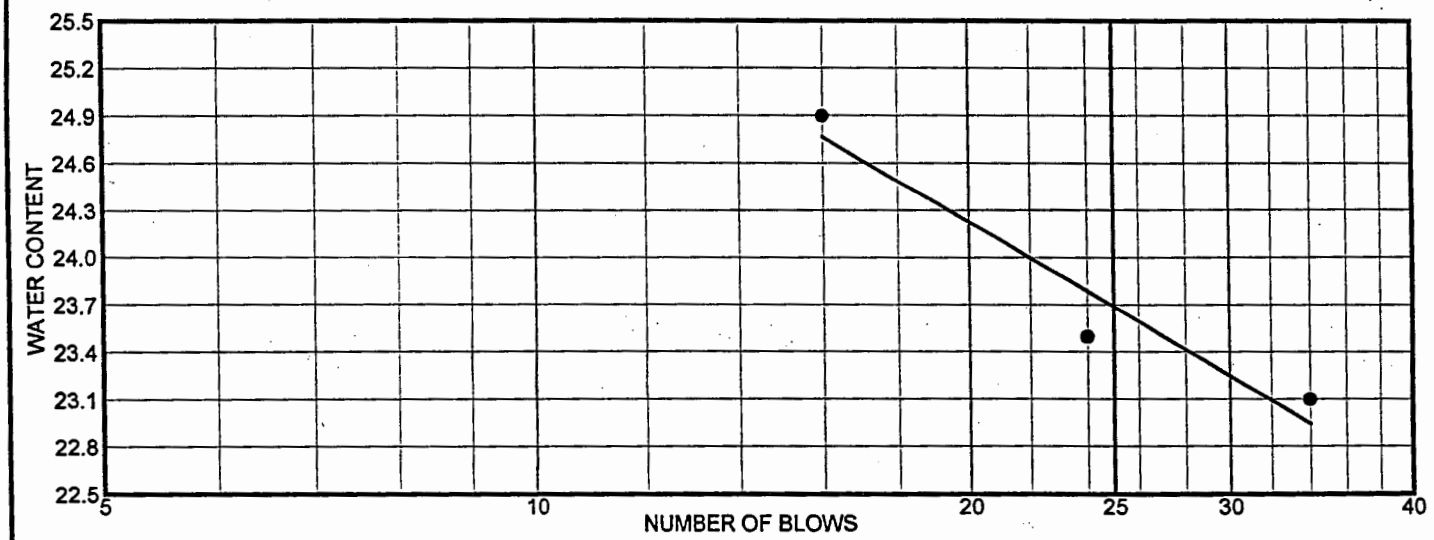
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	24	13	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-1-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

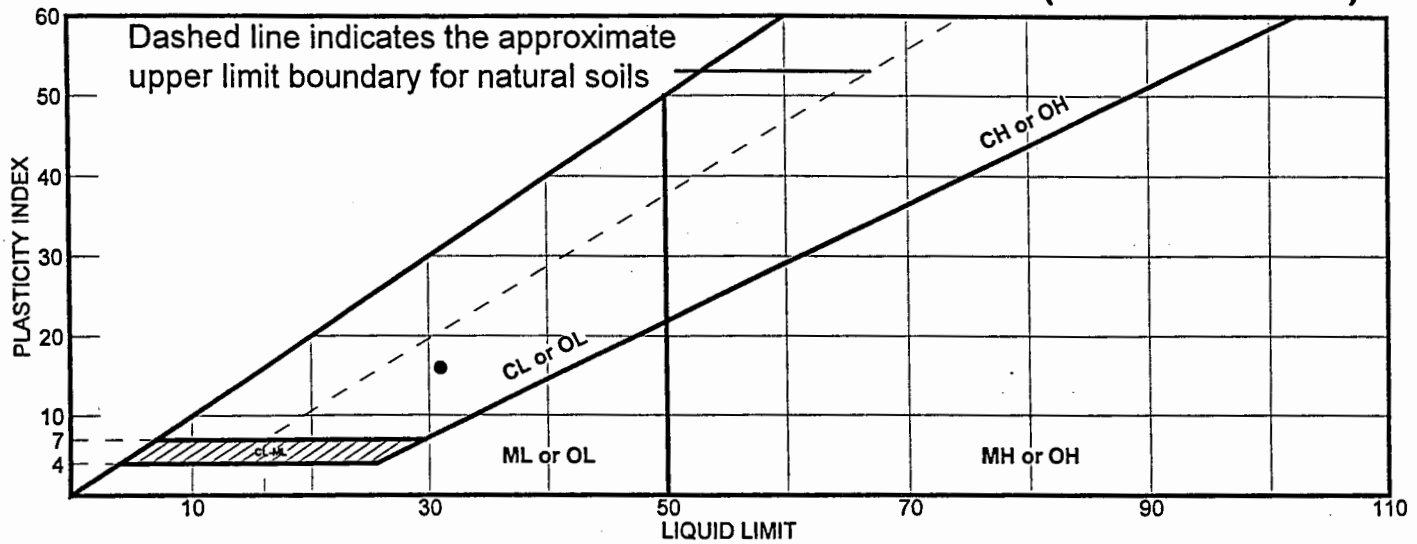
Remarks:

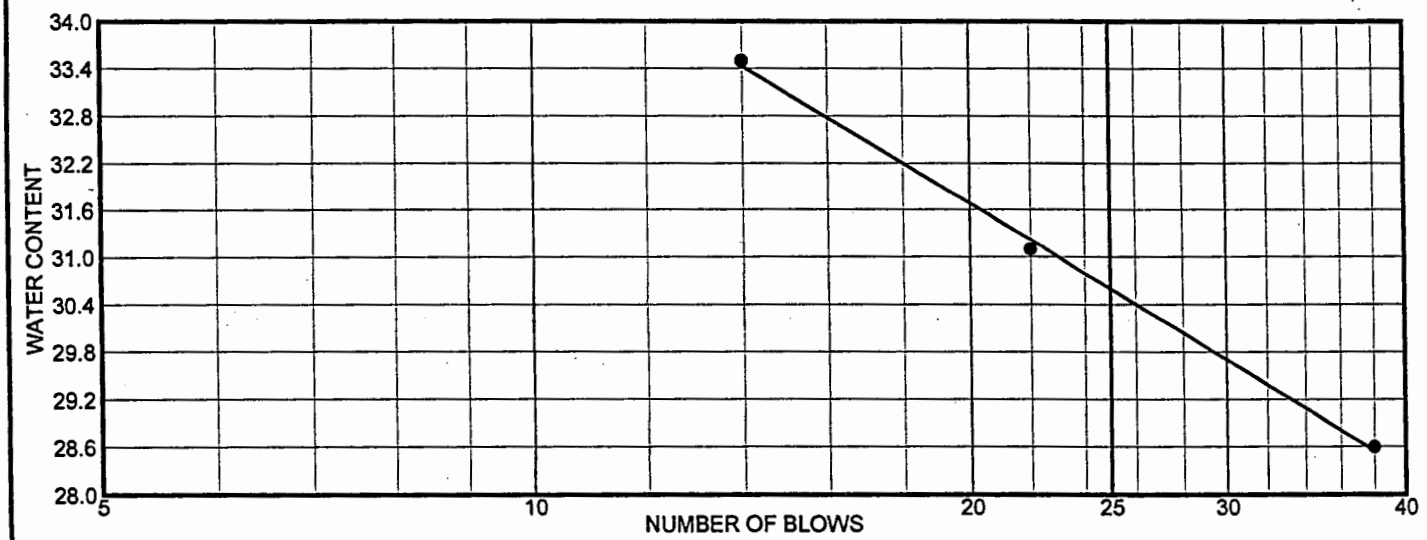
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY, TRACE FINE TO COARSE SAND, TRACE FINE GRAVEL, TRACE SHALE -- GRAY	31	15	16			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-1-00 **Sample No.:** S-10 **Elev./Depth:** 23.5-25.0

Remarks:

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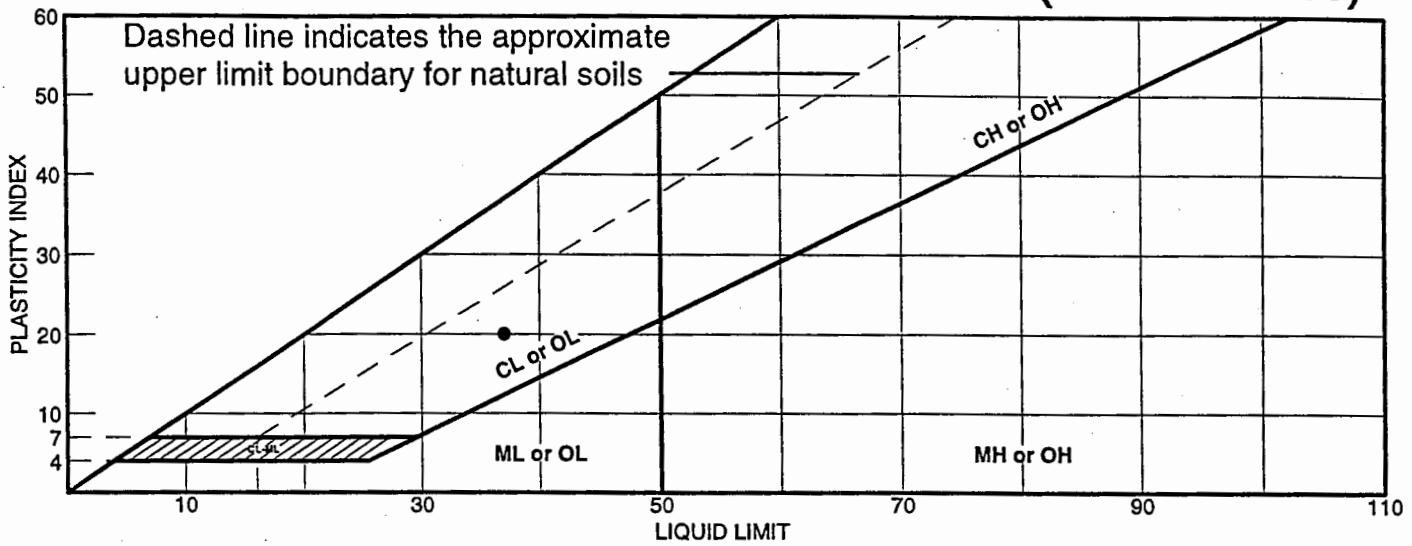
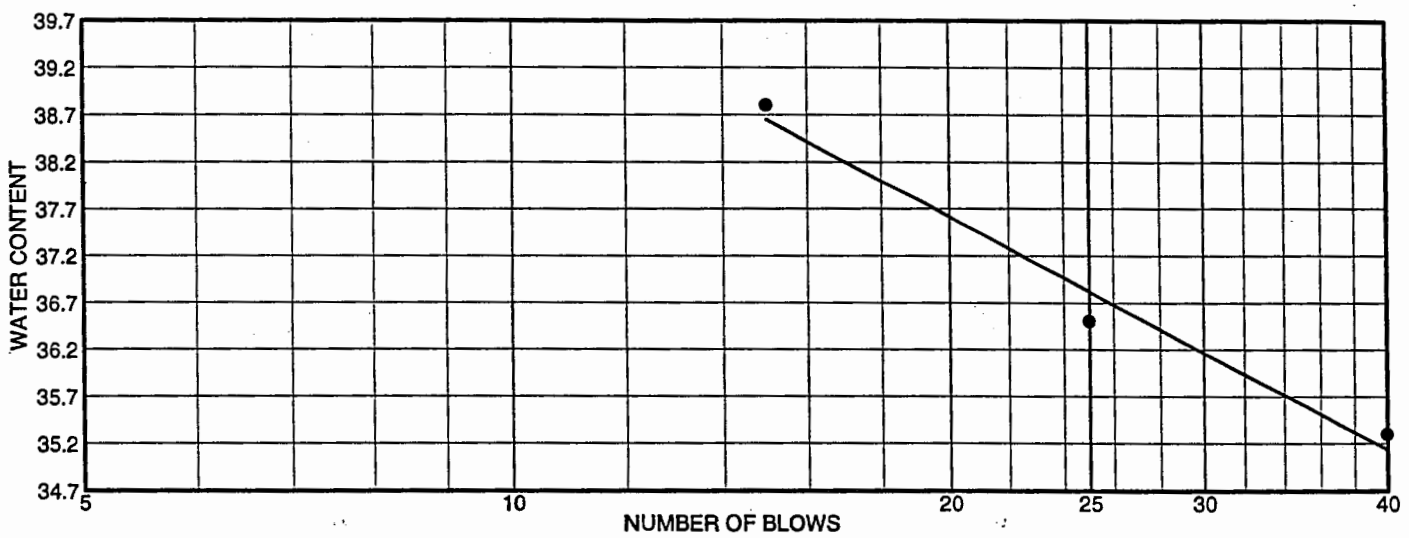
STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL,TRACE SHALE-- GRAY	37	17	20			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-2-00 **Sample No.:** S-4 **Elev./Depth:** 8.5-10.0

Remarks:

●

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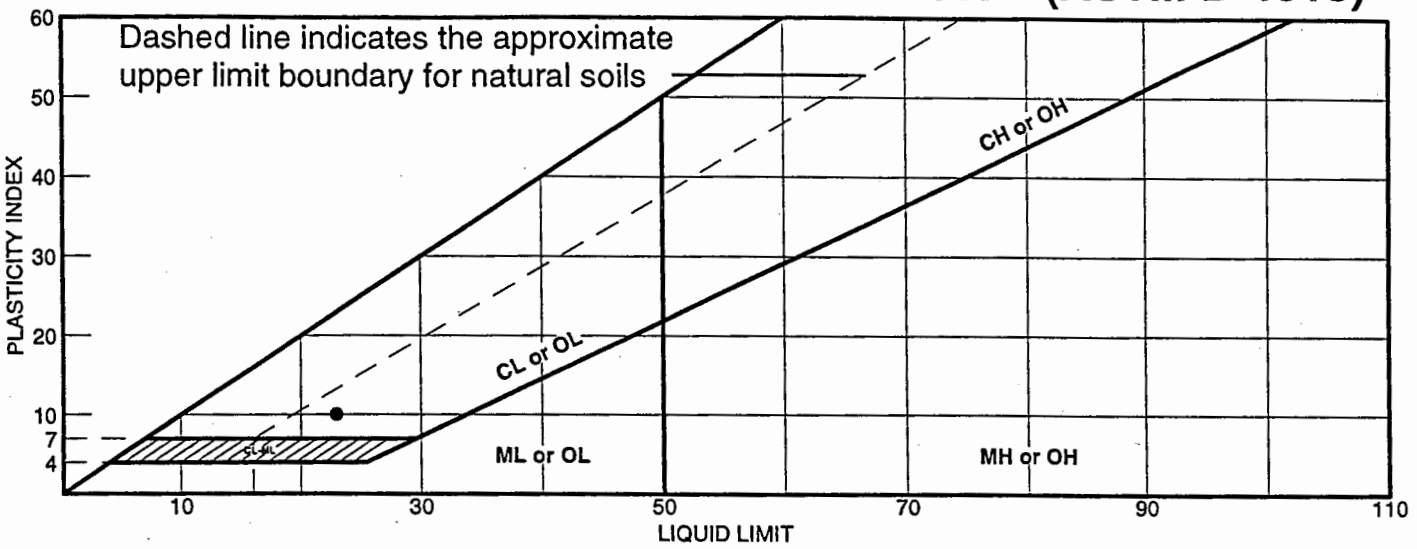
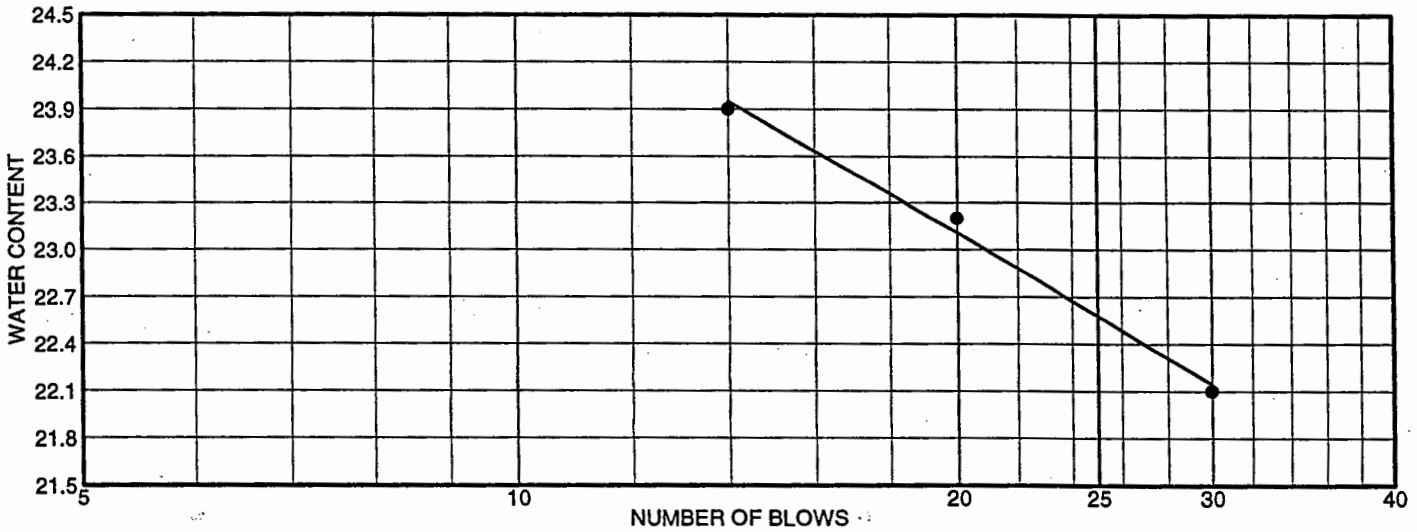
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL,TRACE SHALE--GRAY	23	13	10			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-2-00 **Sample No.:** S-6 **Elev./Depth:** 13.5-15.0

Remarks:

●

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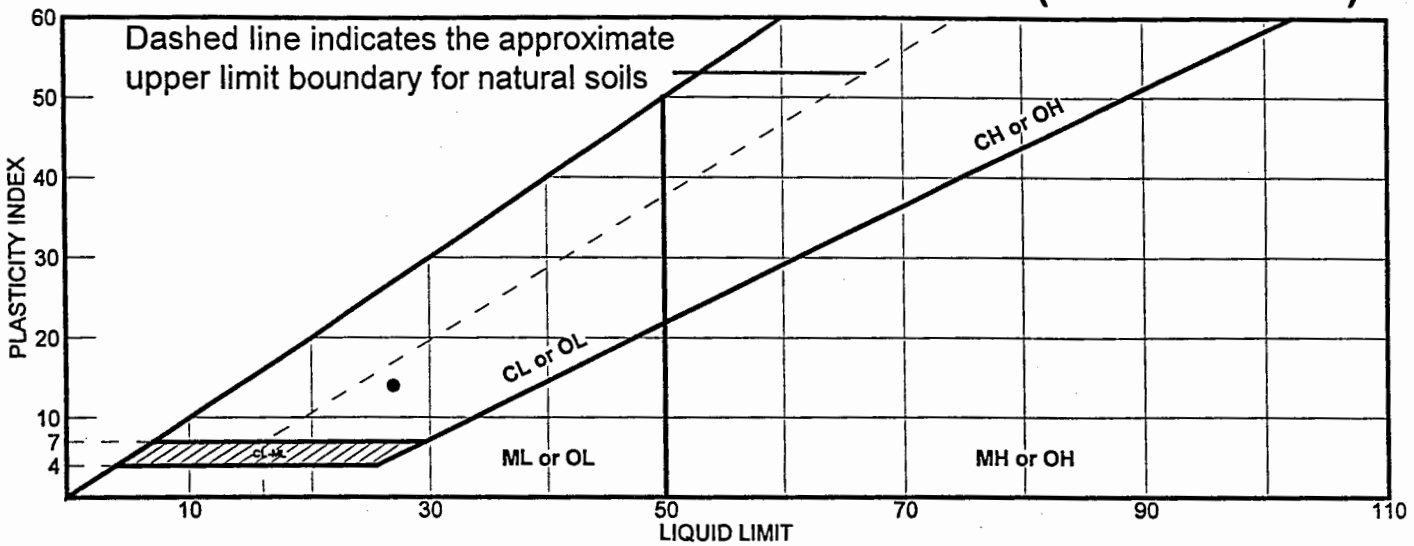
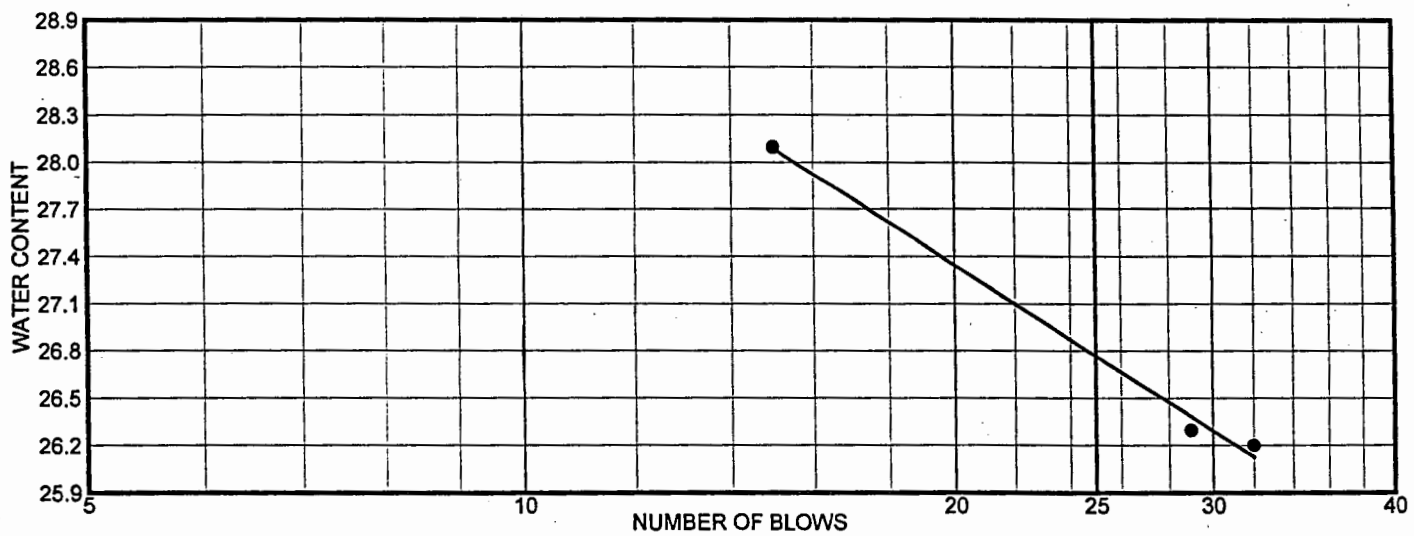
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	27	13	14			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-2-00 **Sample No.:** S-8 **Elev./Depth:** 18.5-20.0

Remarks:

●

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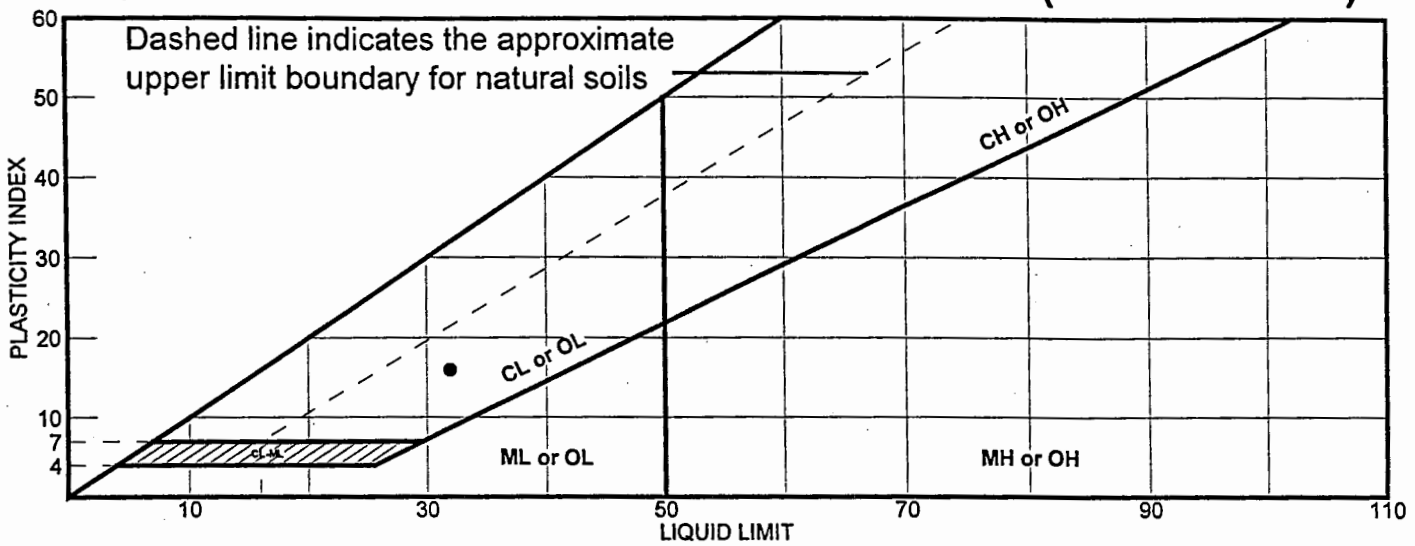
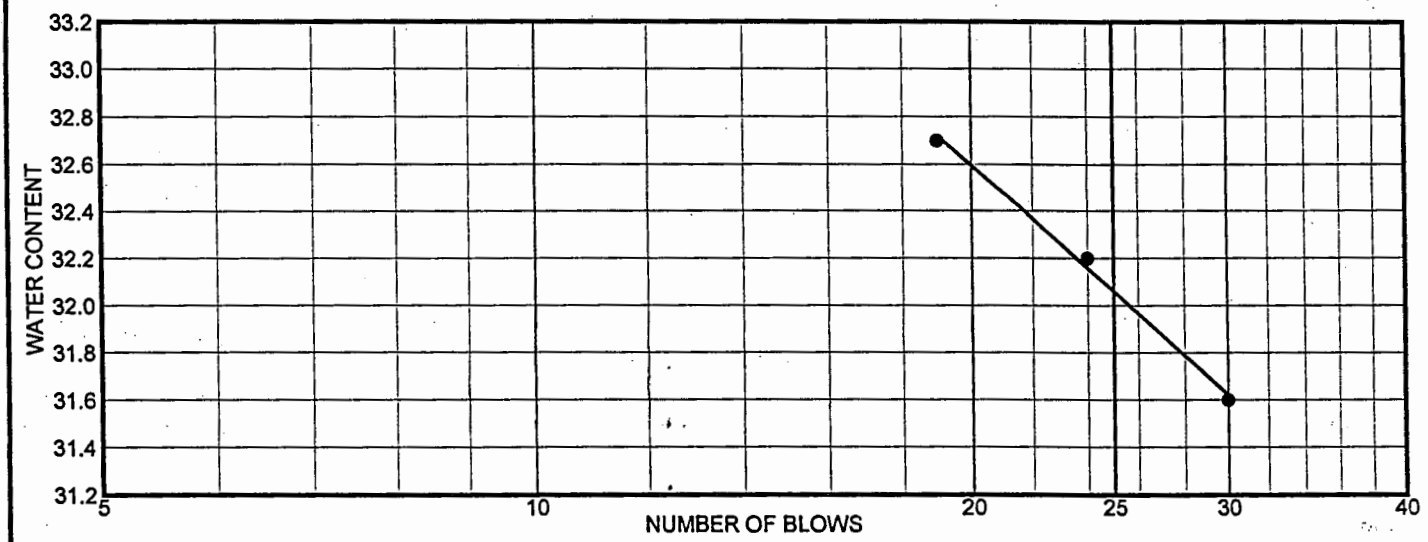
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	32	16	16			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-3-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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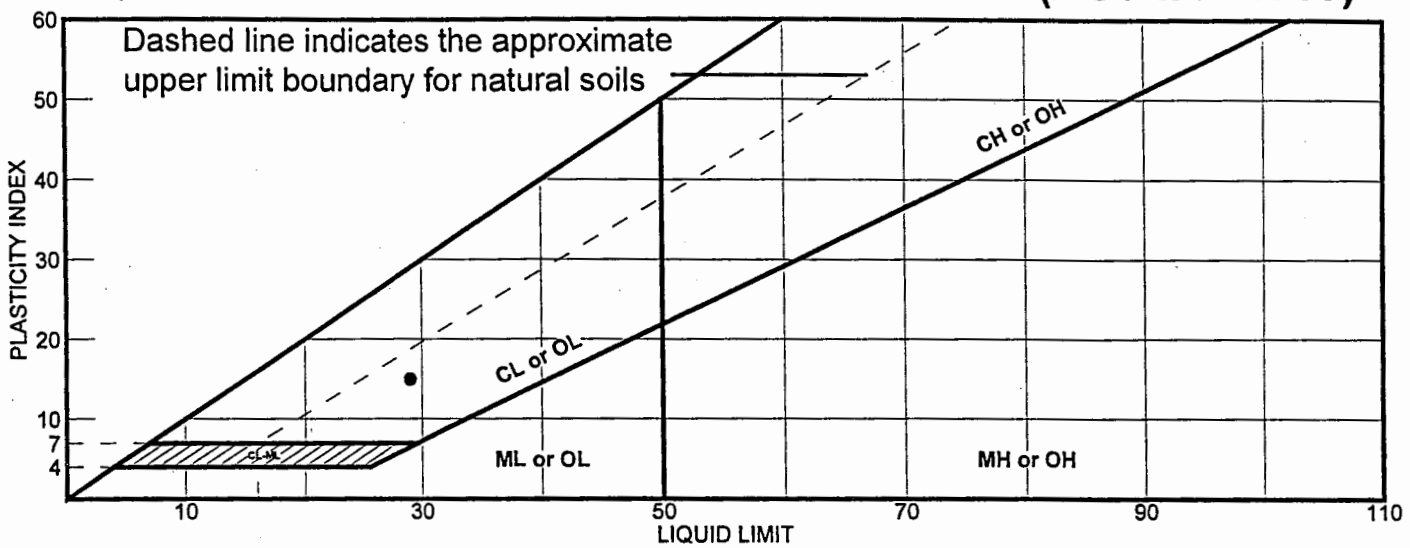
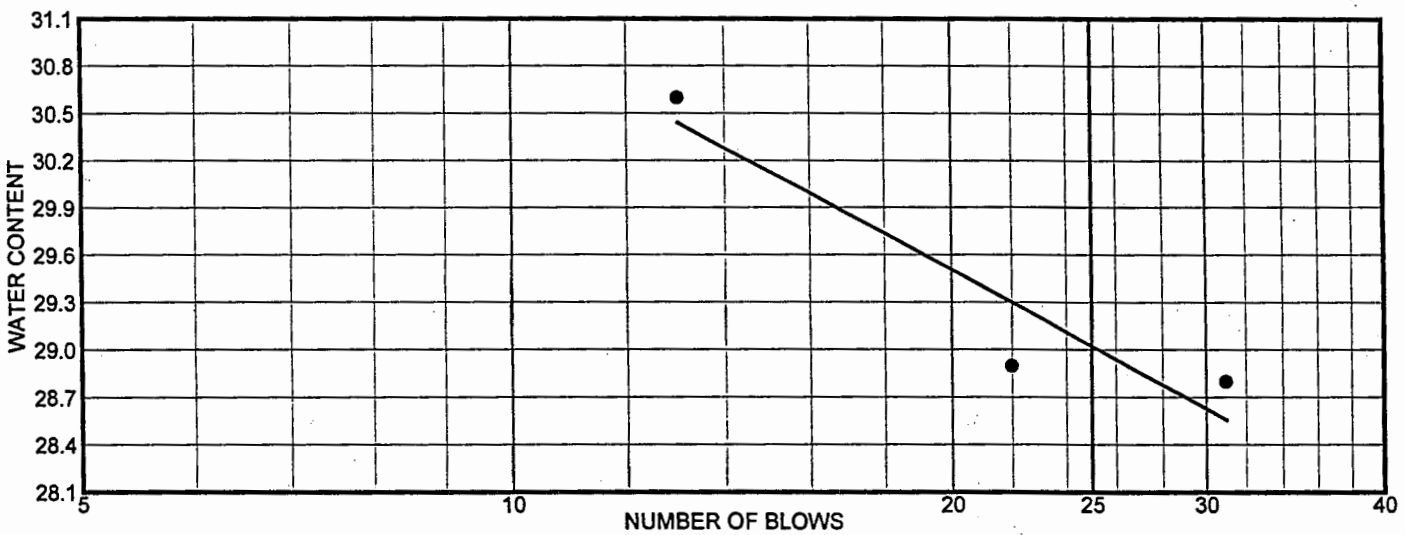
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	29	14	15			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-3-00 **Sample No.:** S-6 **Elev./Depth:** 13.5-15.0

Remarks:

●

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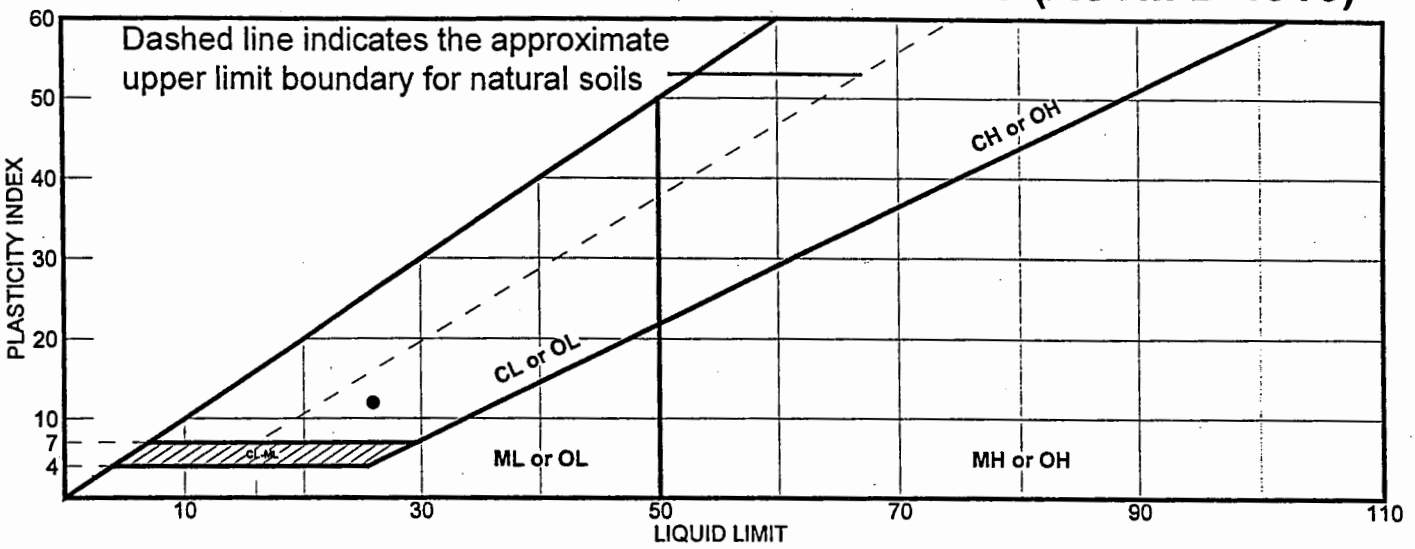
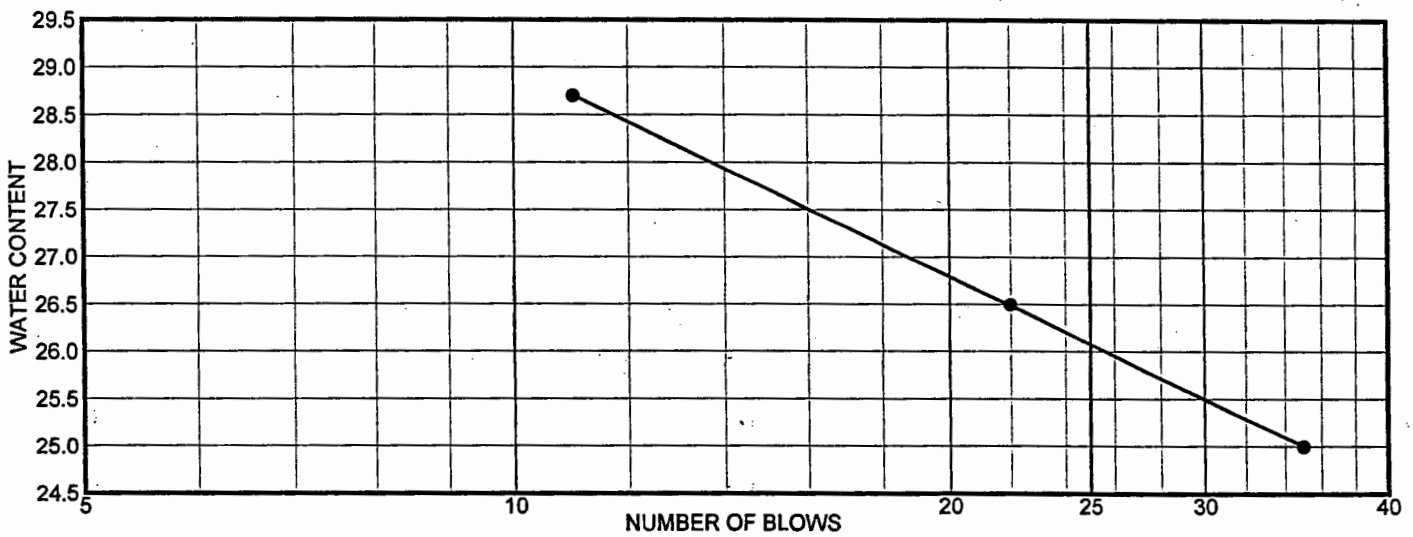
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	26	14	12			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-3-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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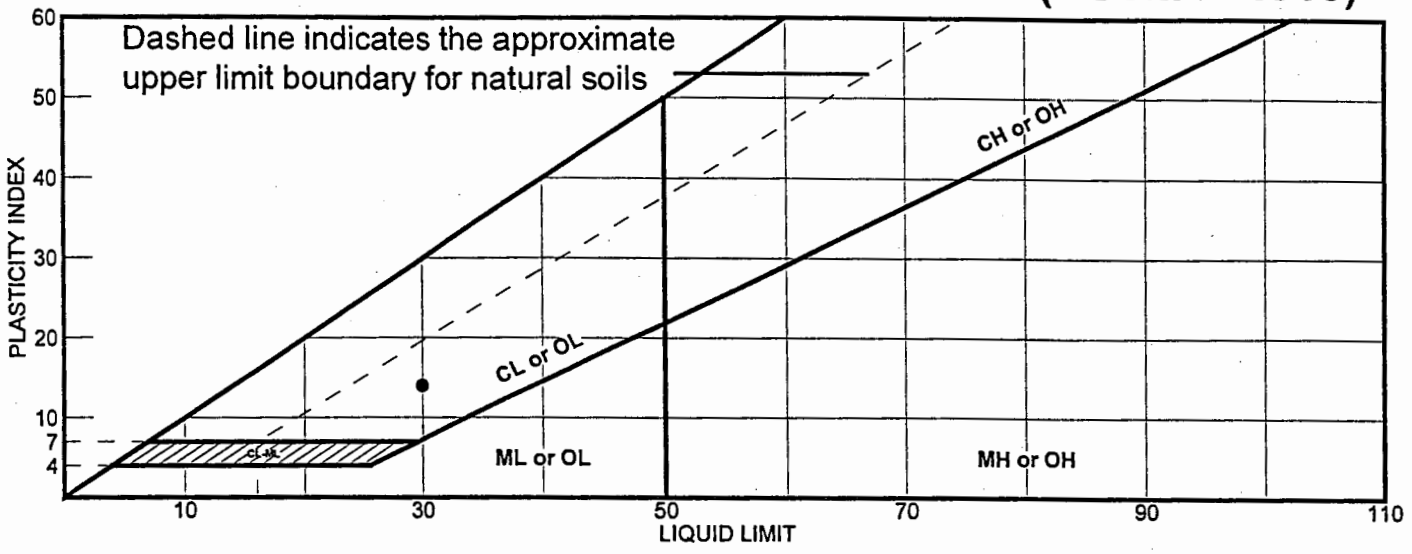
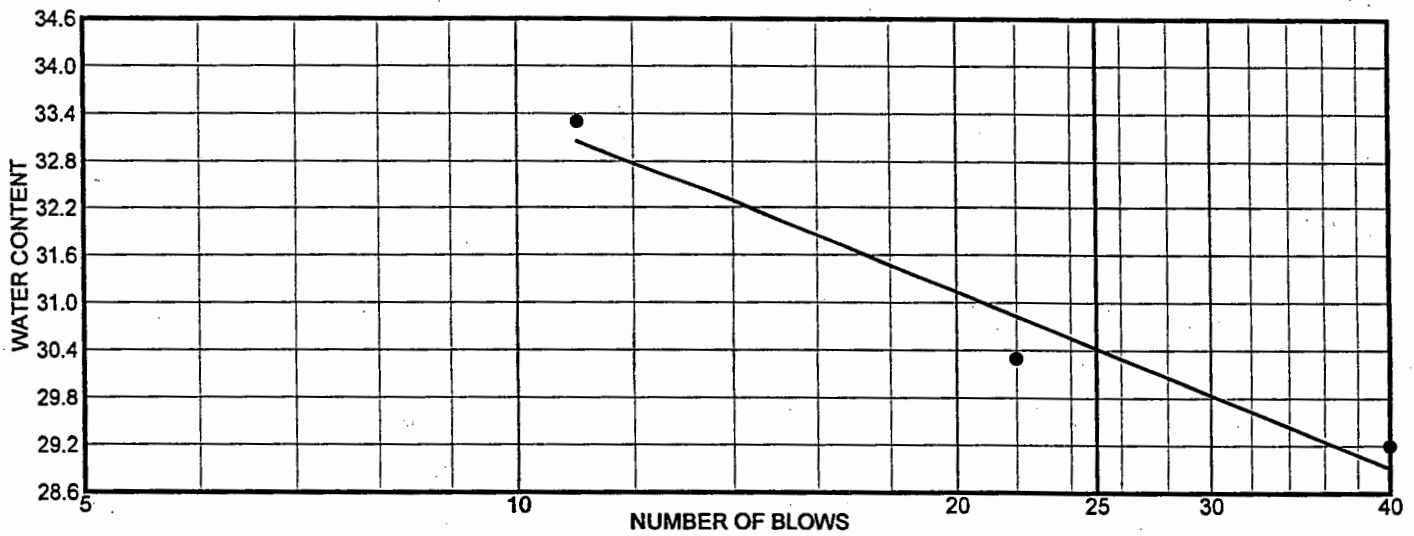
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - LT.BROWN	30	16	14			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-4-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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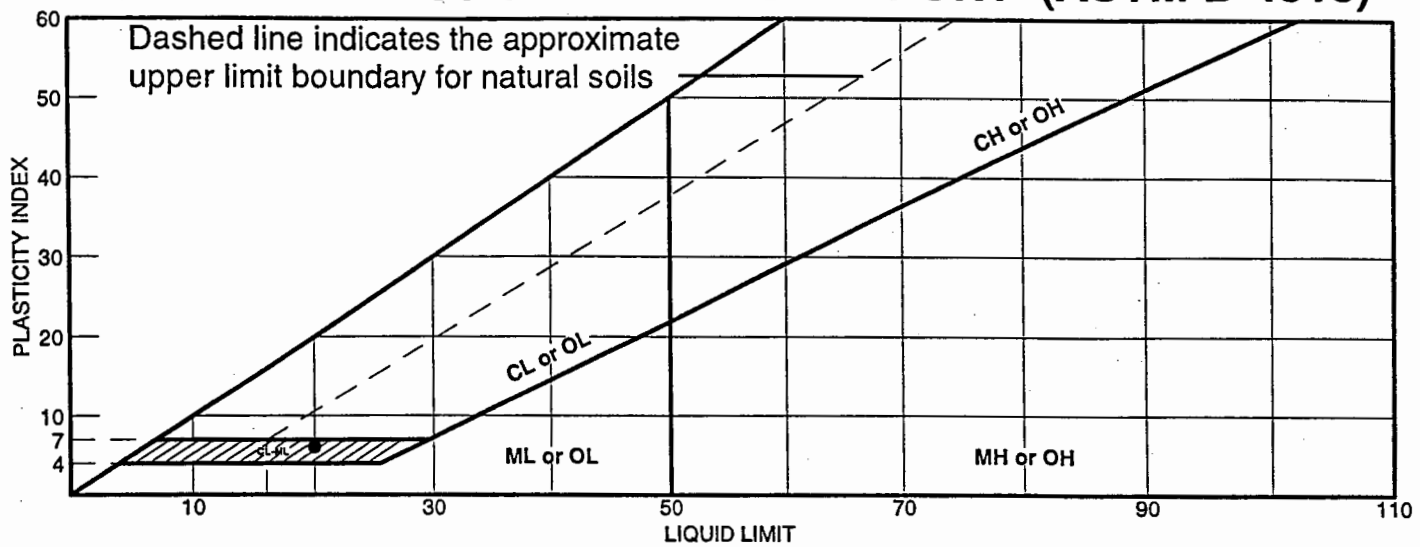
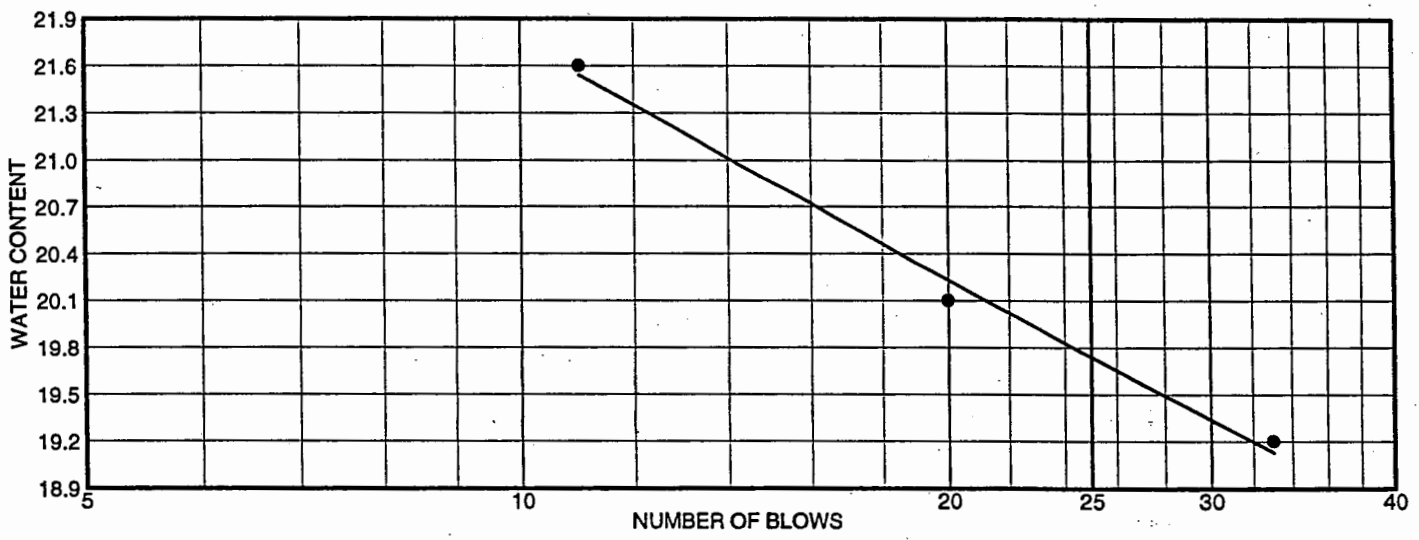
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	CLAYEY SILT,TRACE FINE TO COARSE SAND, TRACE FINE GRAVEL-- GRAY	20	14	6			(ML)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-4-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-12.5

Remarks:

●

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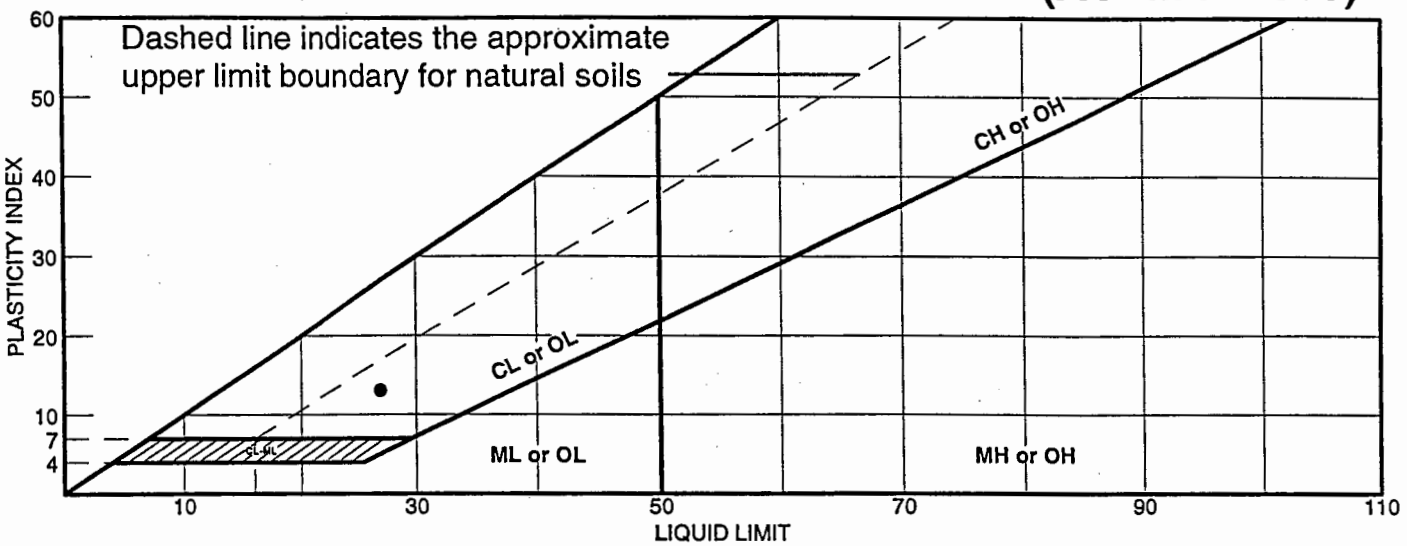
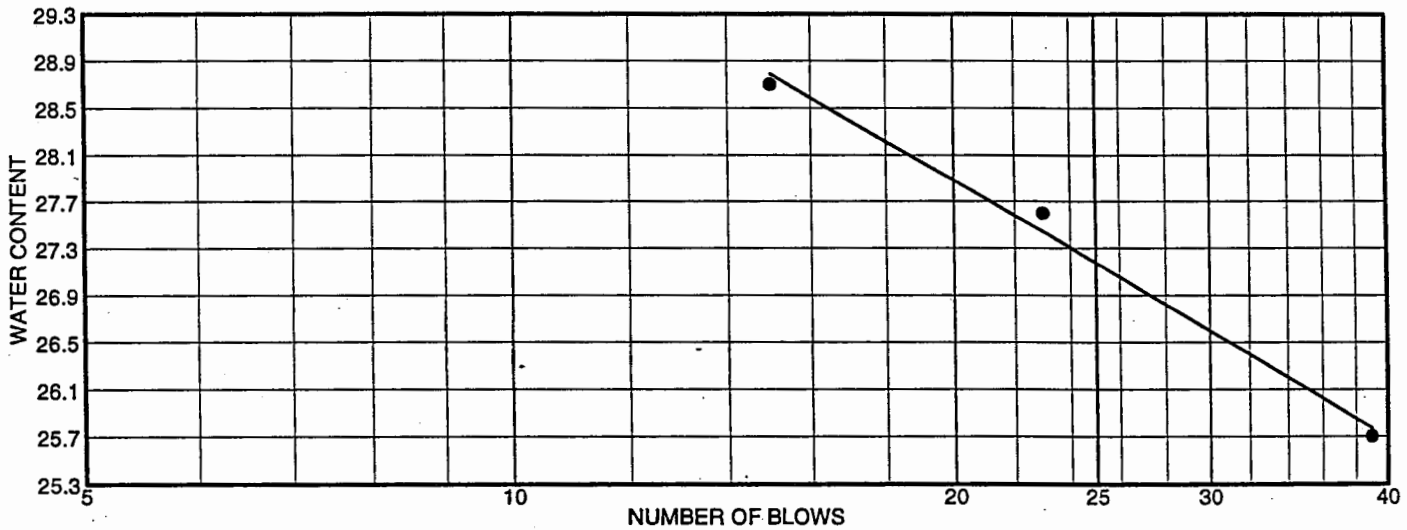
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL,TRACE SHALE-- GRAY	27	14	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-4-00 **Sample No.:** S-8 **Elev./Depth:** 18.5-20.0

Remarks:

●

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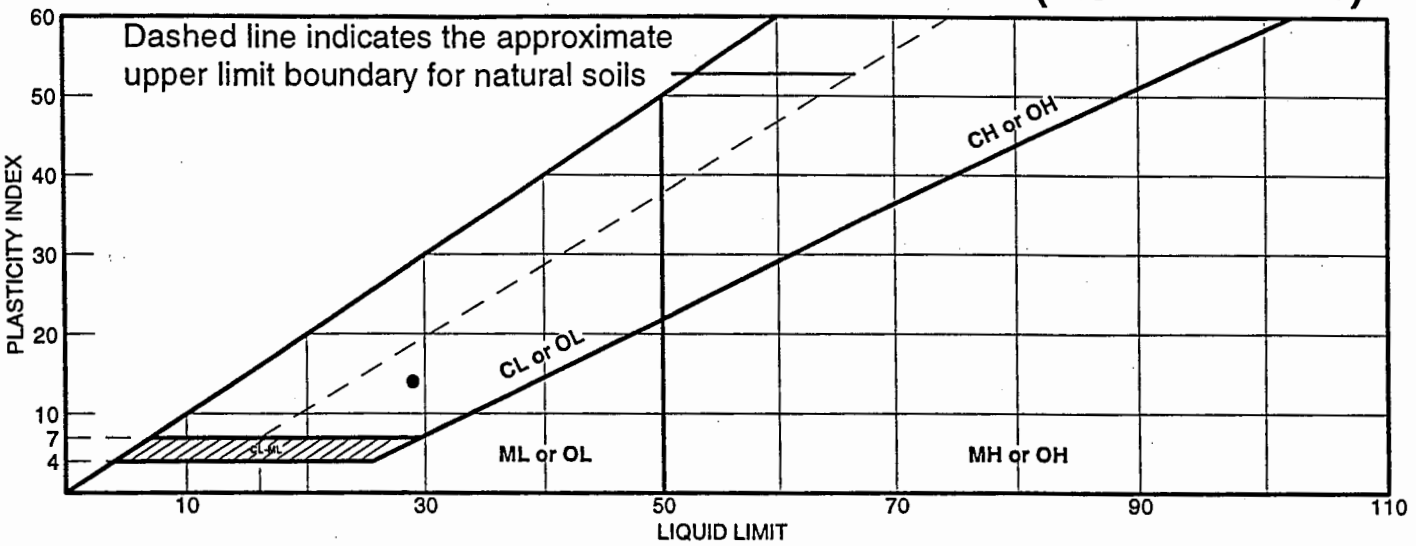
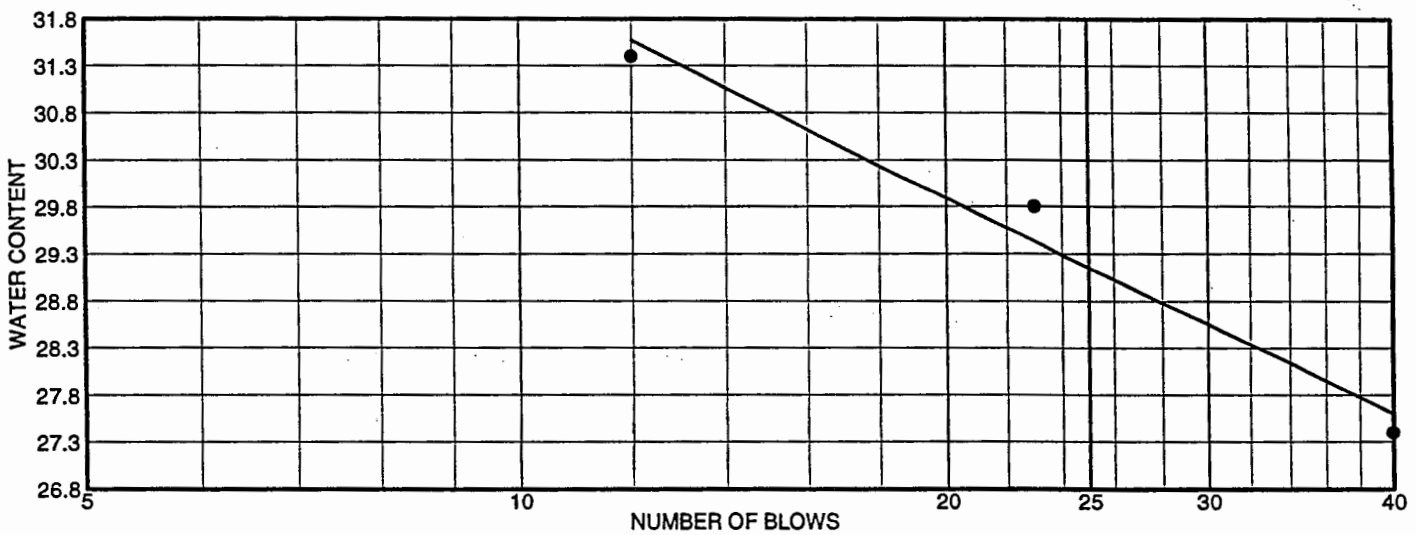
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL, TRACE SHALE-- BROWNISH GRAY	29	15	14			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-5-00 **Sample No.:** S-3 **Elev./Depth:** 6.0-7.5

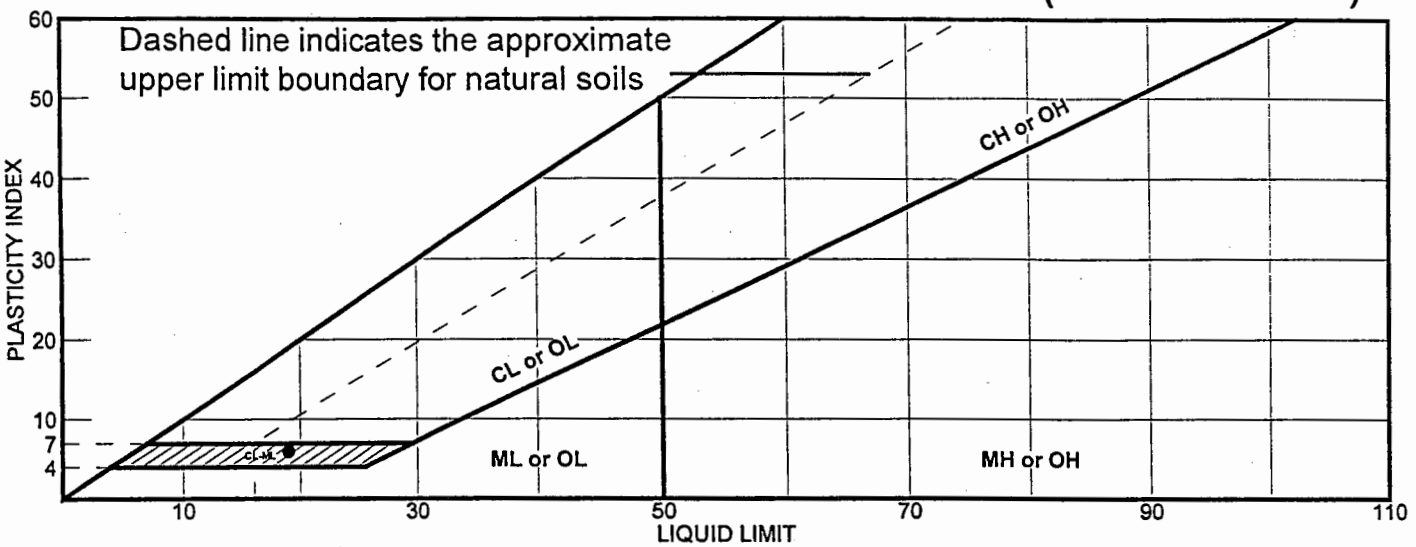
Remarks:

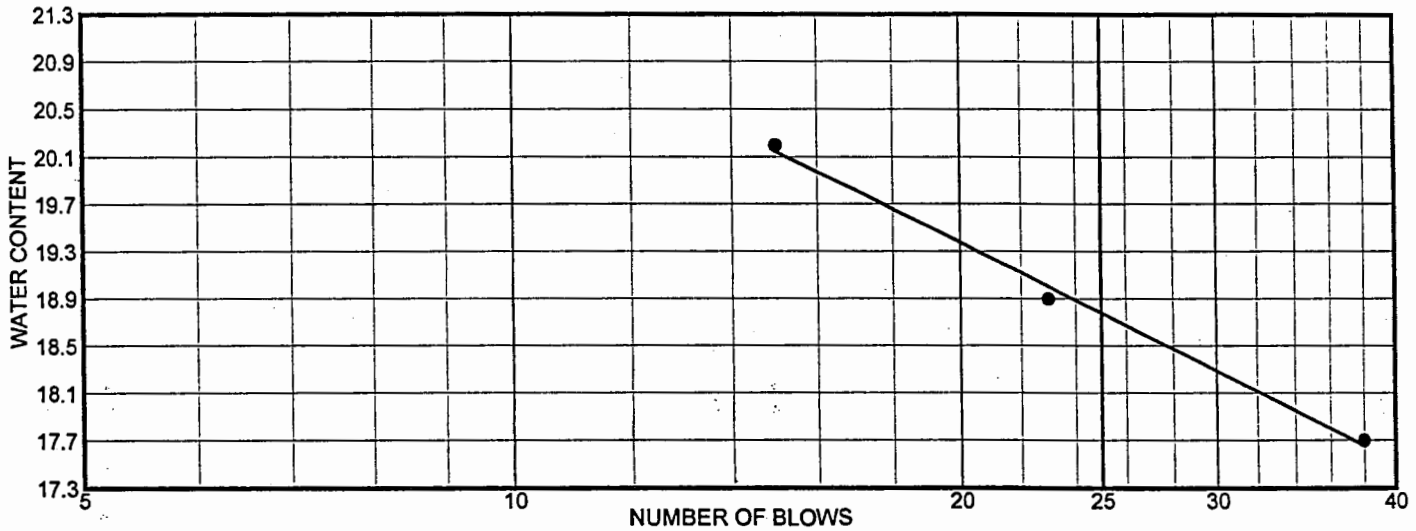
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY SILT LITTLE CLAY - GRAY	19	13	6			(SM)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-5-00 **Sample No.:** S-6 **Elev./Depth:** 13.0-14.0

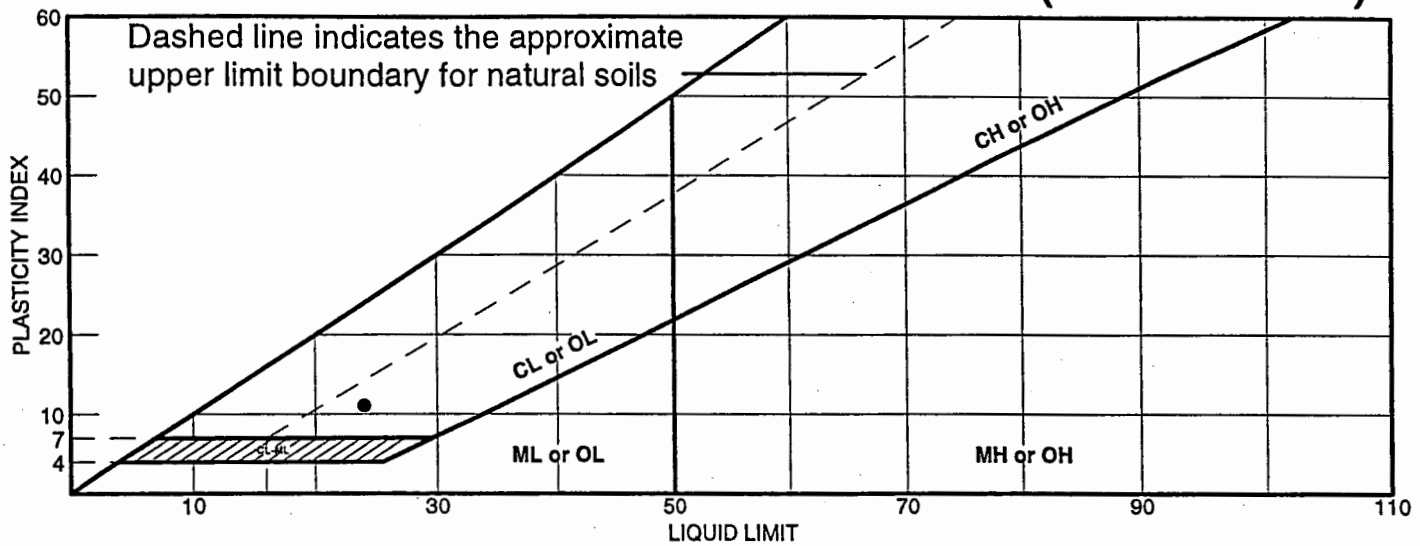
Remarks:

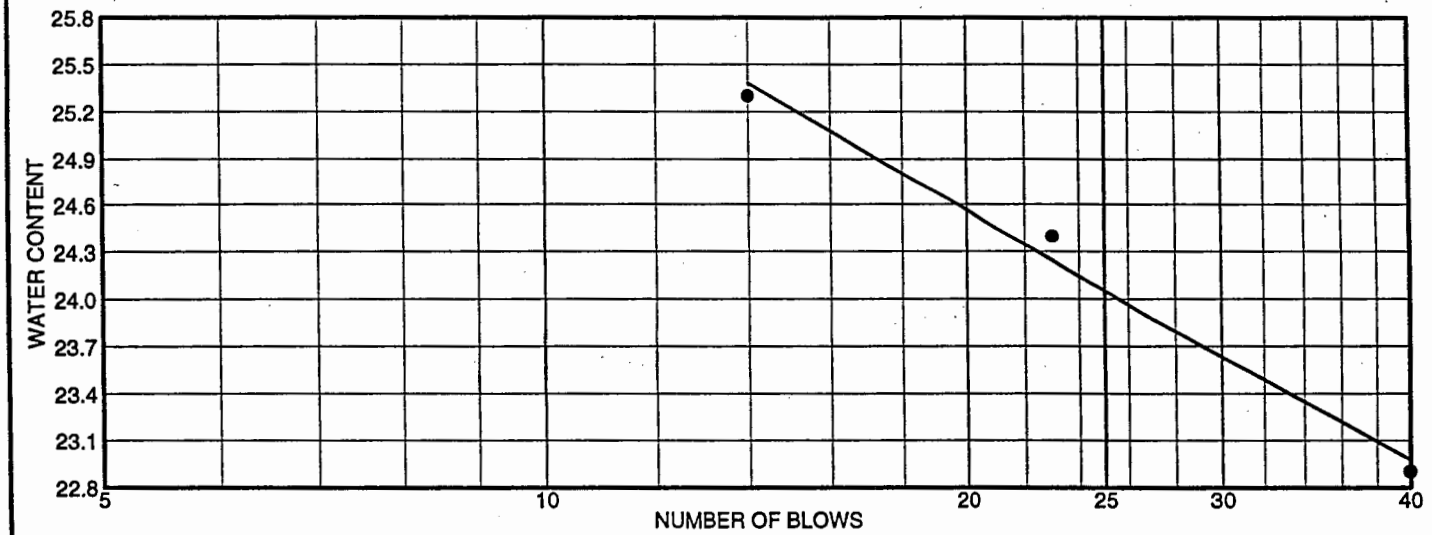
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL, TRACE SHALE-- GRAY	24	13	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-5-00 **Sample No.:** S-8 **Elev./Depth:** 18.5-20.0

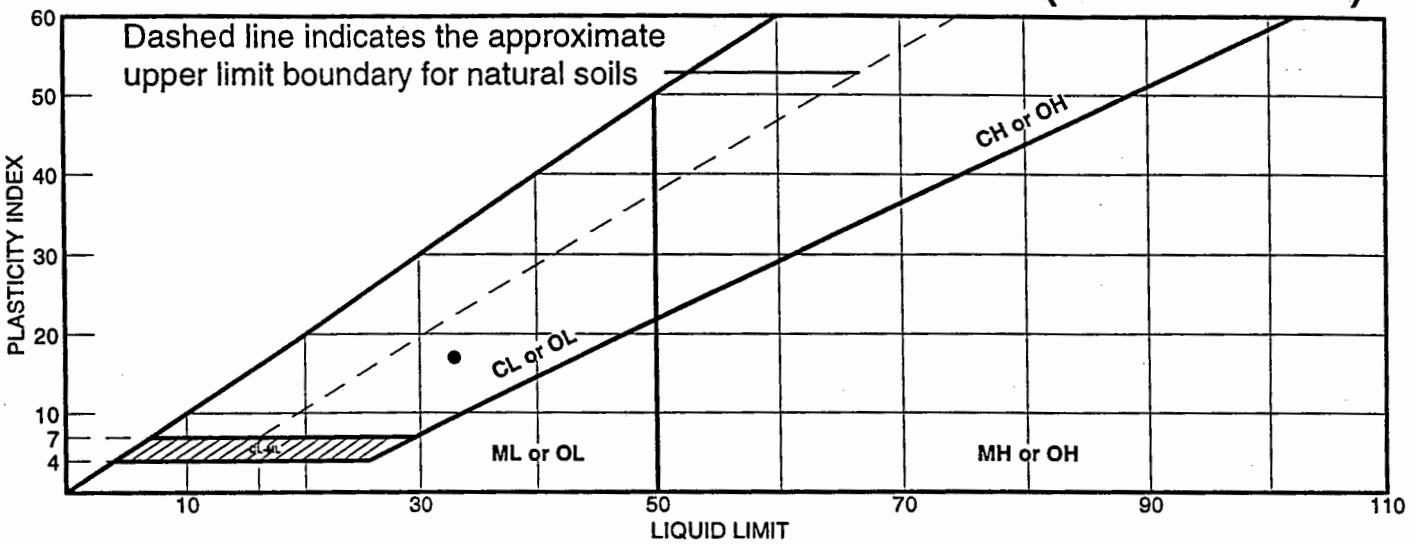
Remarks:

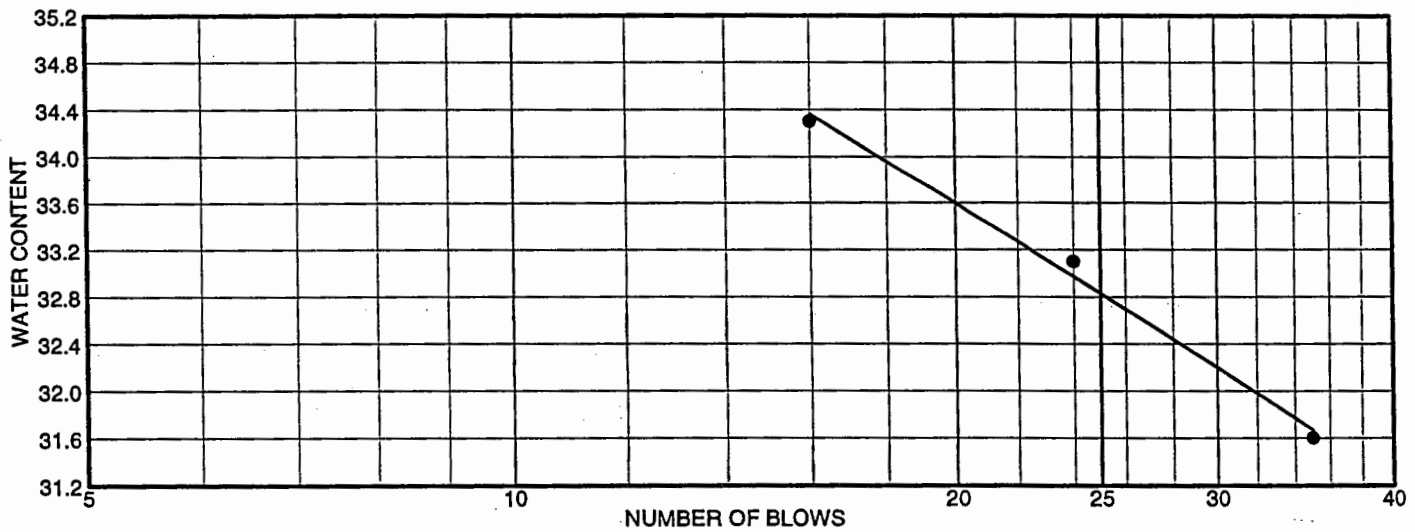
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL-- GRAYISH BROWN	33	16	17			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-6-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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Vernon Hills, IL 60061

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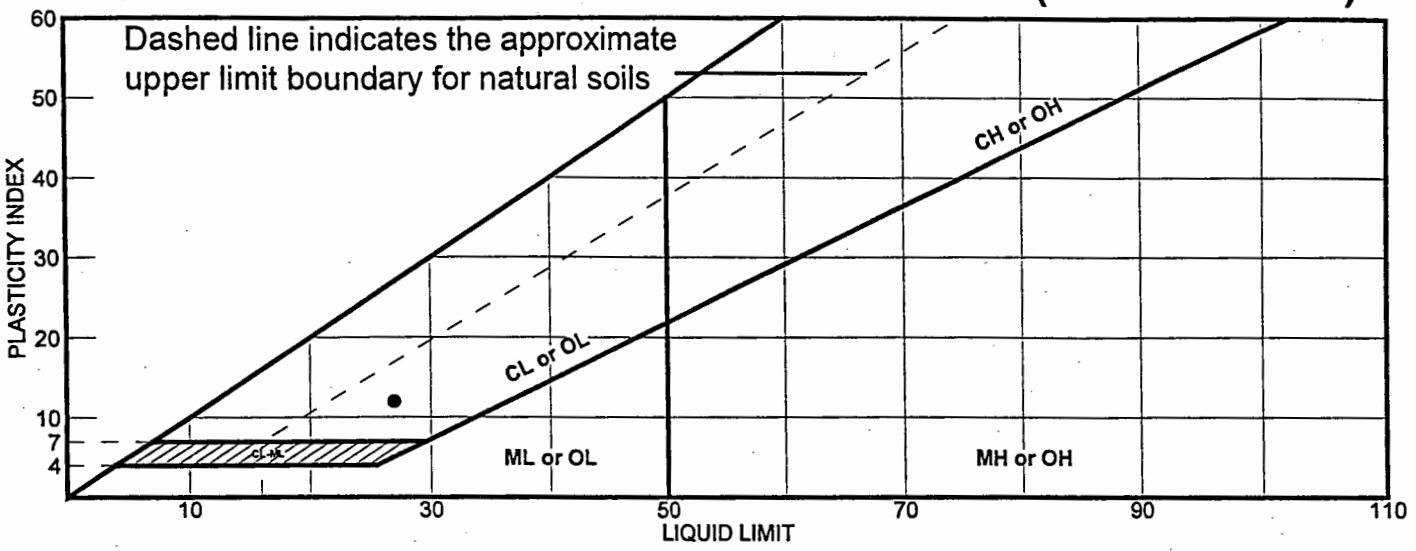
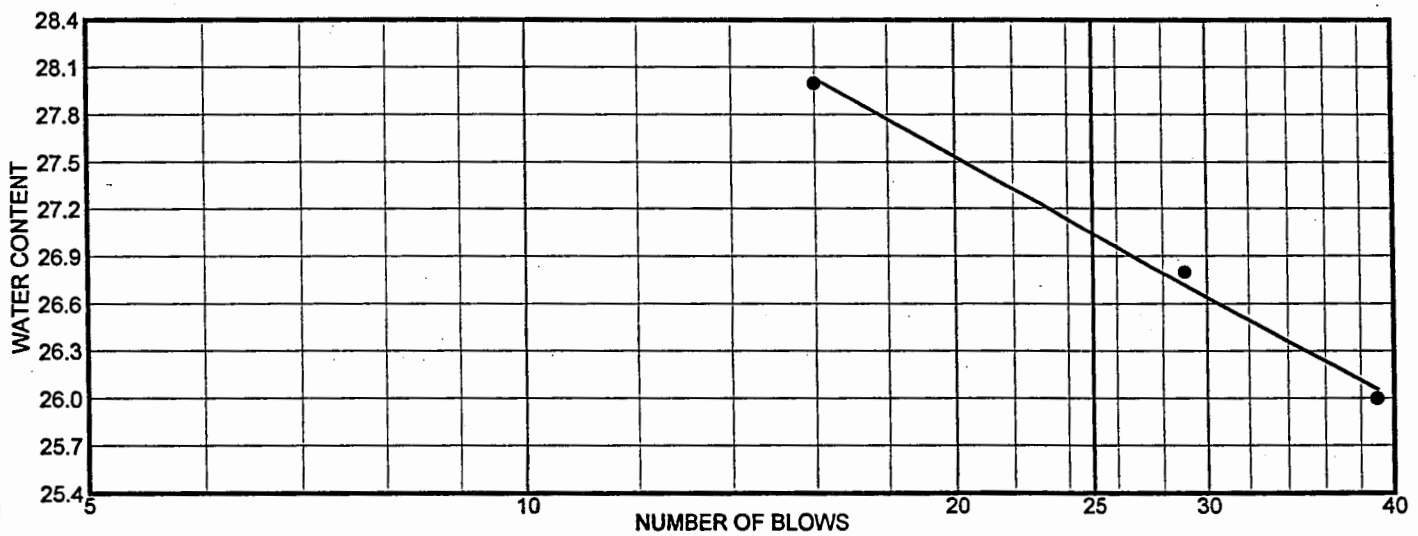
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY, TRACE FINE TO COARSE SAND, TRACE GRAVEL, TRACE SHALE -- GRAY	27	15	12			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-6-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-12.5

Remarks:

●

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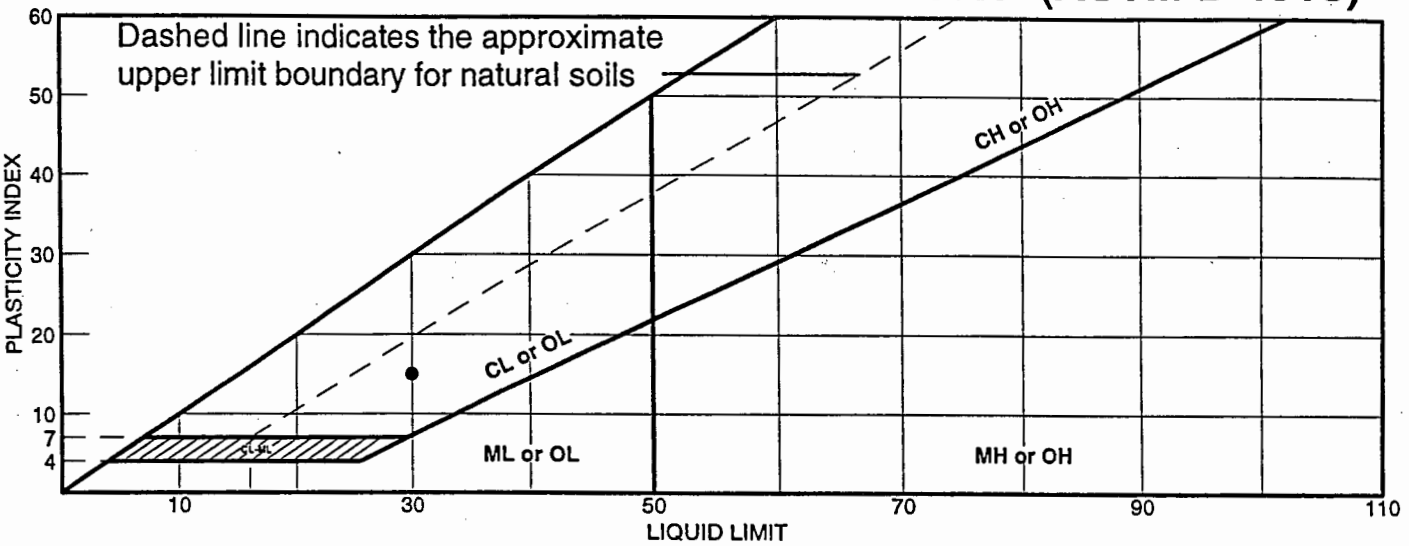
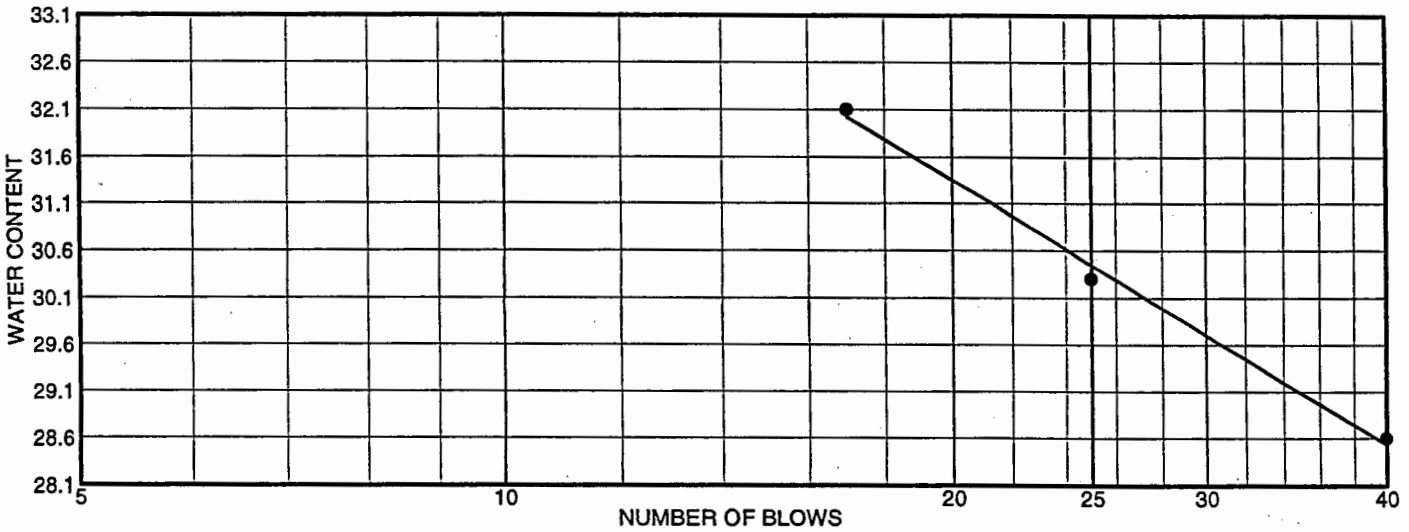
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL,TRACE SHALE-- GRAY	30	15	15			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-6-00 **Sample No.:** S-16 **Elev./Depth:** 38.5-40.0

Remarks:

●

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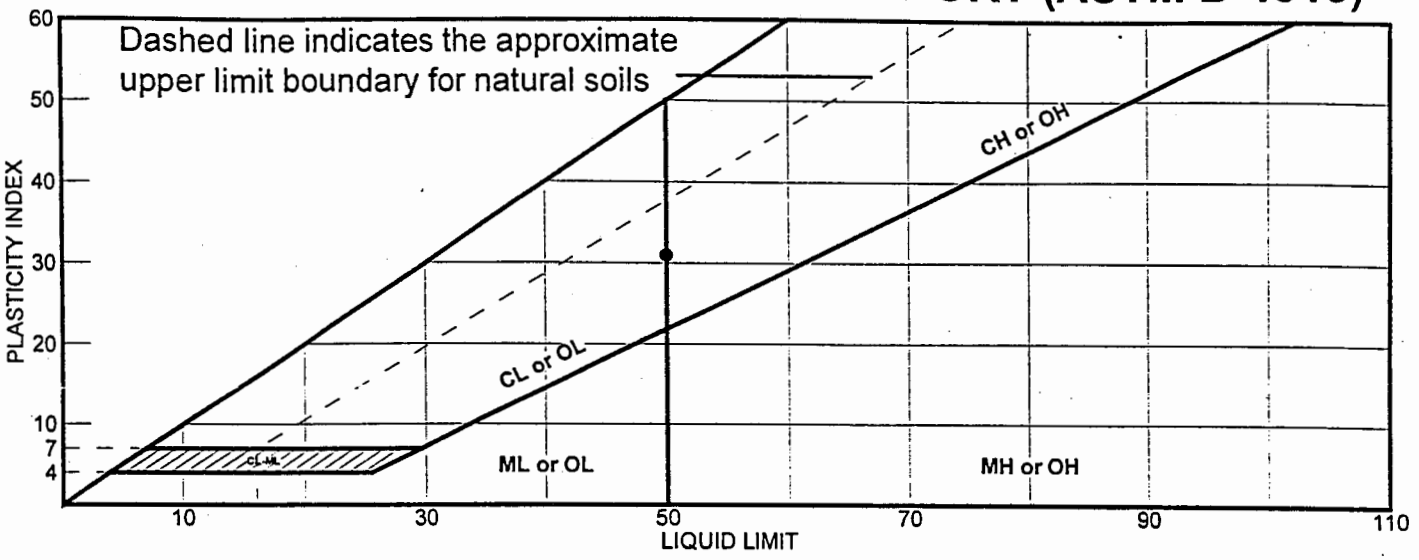
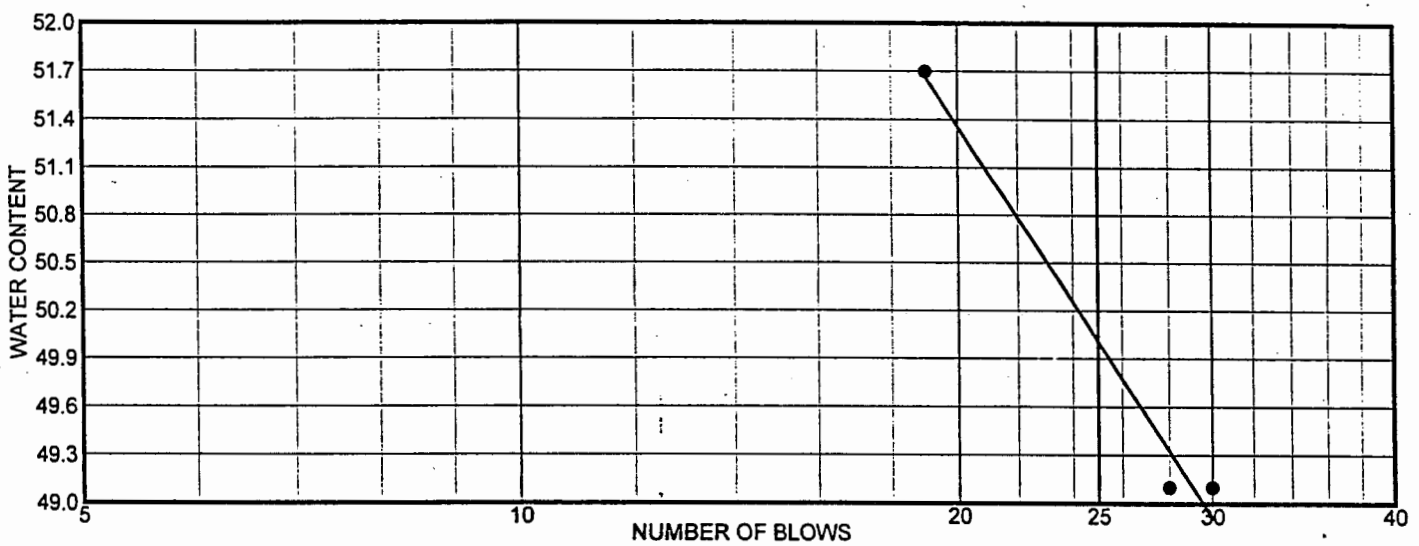
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TRACE F-C SAND TRACE F GRAVEL TRACE SHALE - GRAYISH BROWN	50	19	31			(CL-CH)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-7-00 **Sample No.:** S-3 **Elev./Depth:** 6.0-7.5

Remarks:

●

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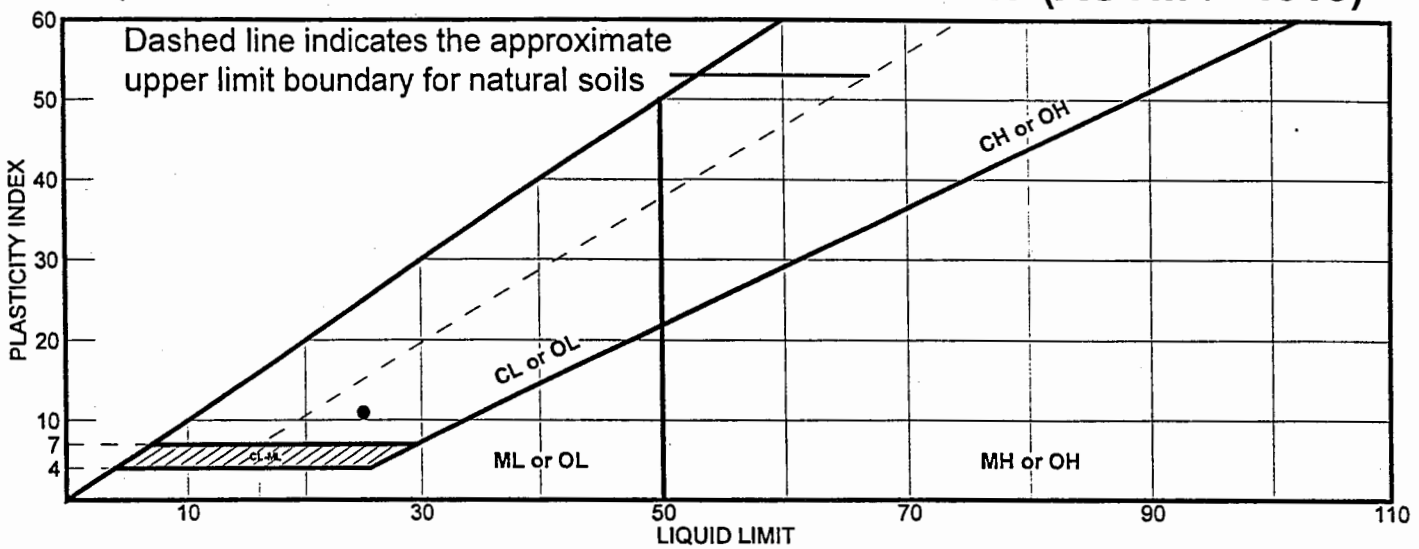
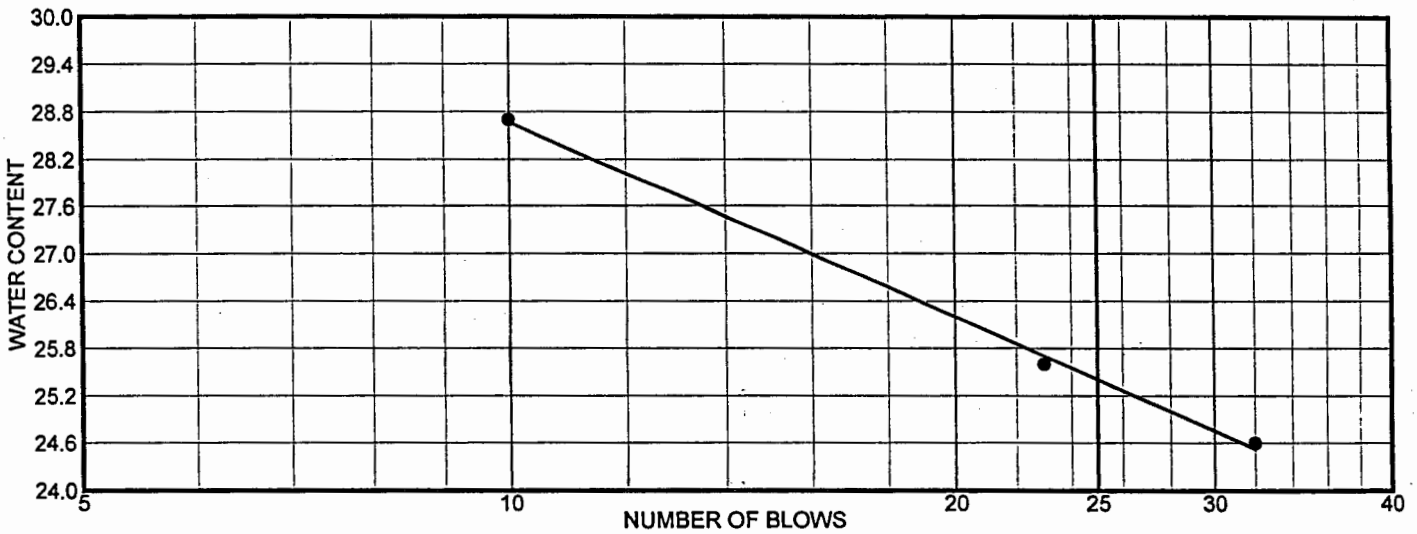
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	VERY SILTY CLAY, TRACE FINE TO COARSE SAND, TRACE GRAVEL, TRACE SHALE -- GRAY	25	14	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-7-00 **Sample No.:** S-7 **Elev./Depth:** 16.0-17.5

Remarks:

●

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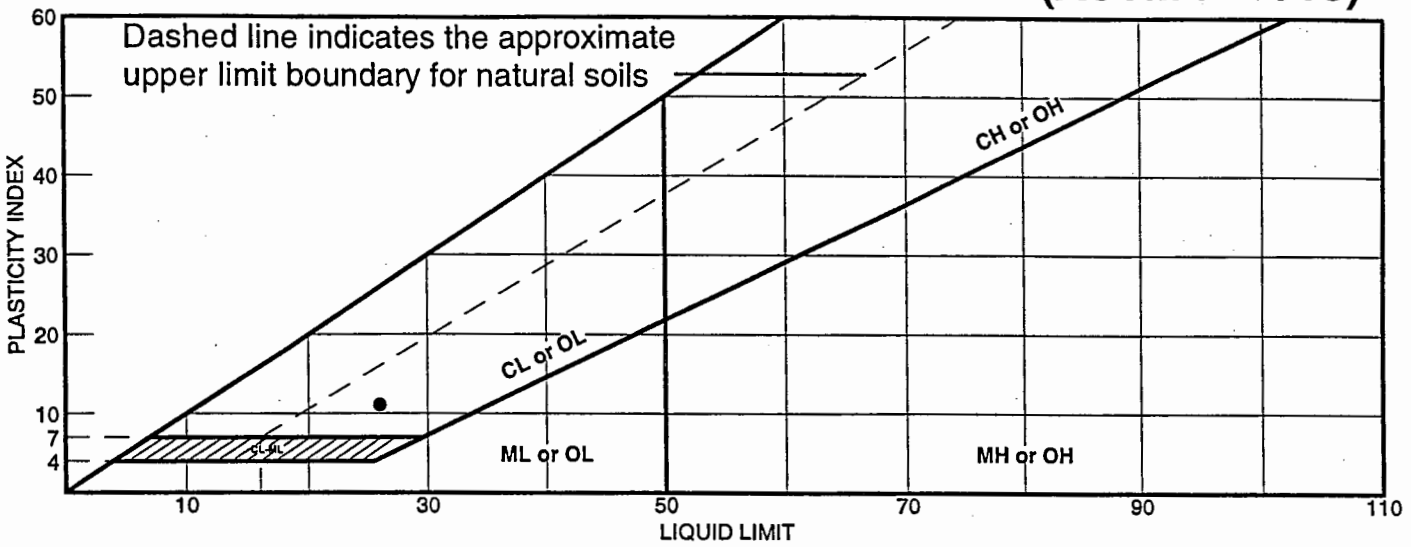
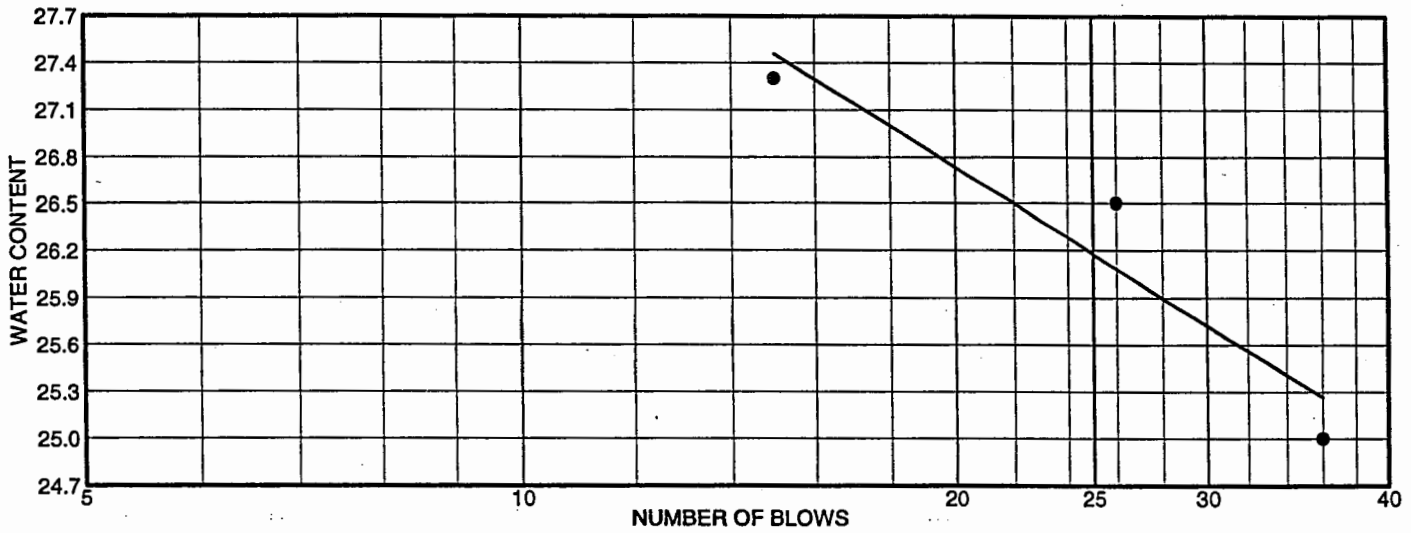
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY,TRACE FINE TO COARSE SAND,TRACE FINE GRAVEL-- GRAYISH BROWN	26	15	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-8-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

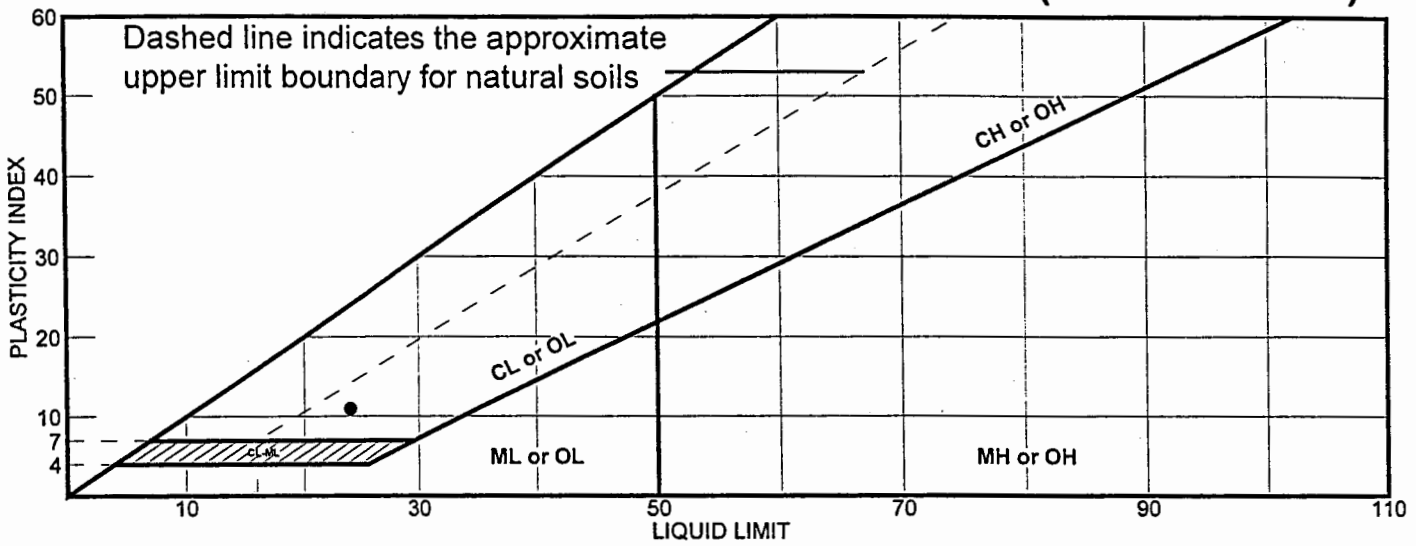
Remarks:

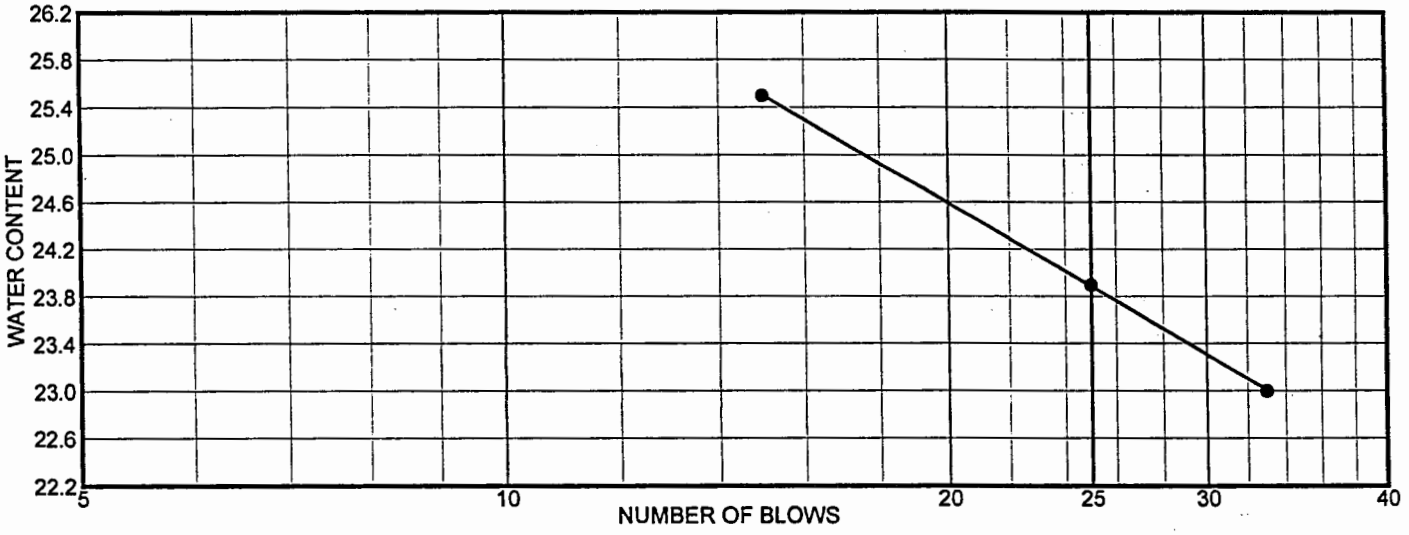
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	24	13	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-8-00 **Sample No.:** S-6 **Elev./Depth:** 13.5-16.0

Remarks:

●

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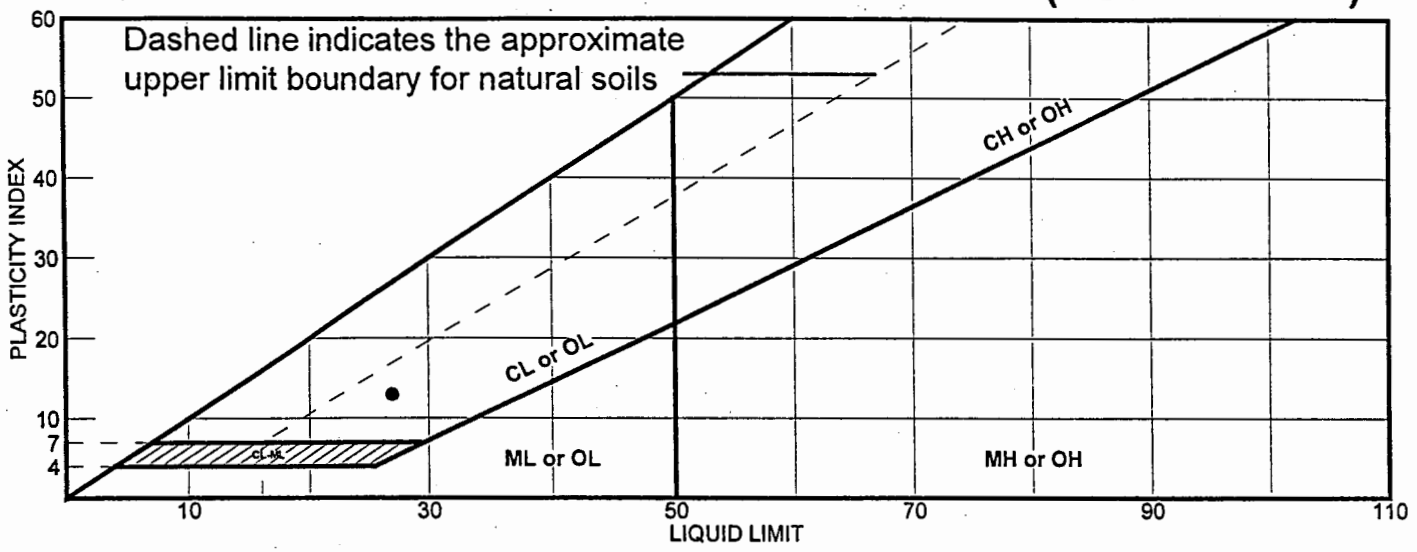
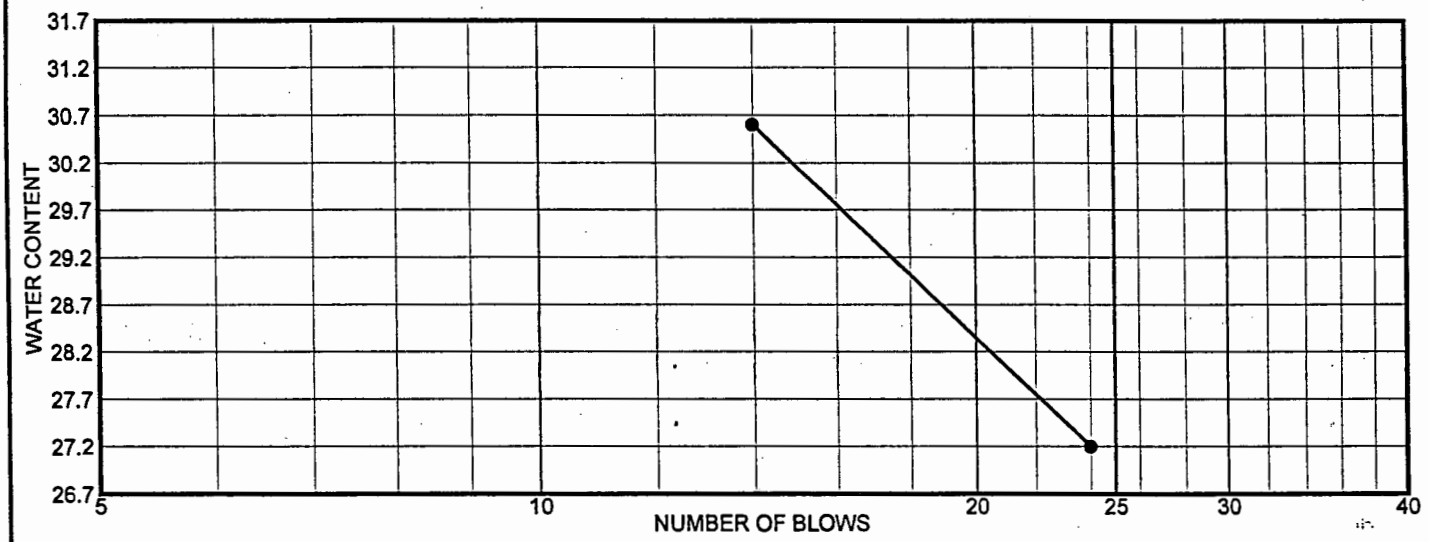
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	27	14	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-8-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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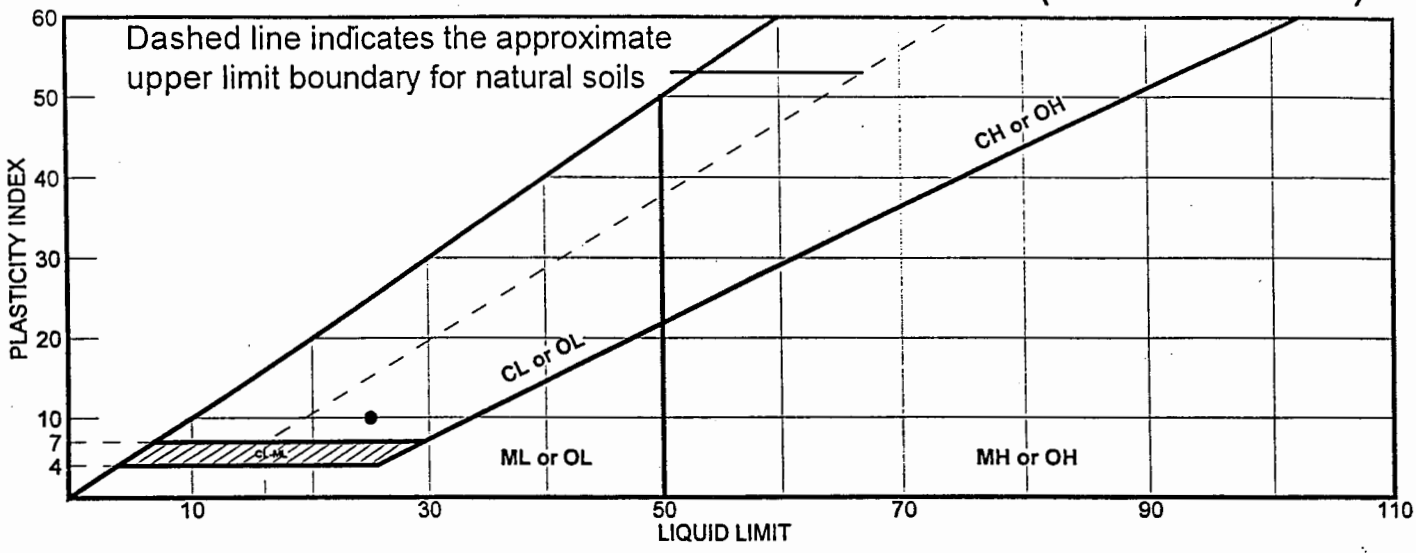
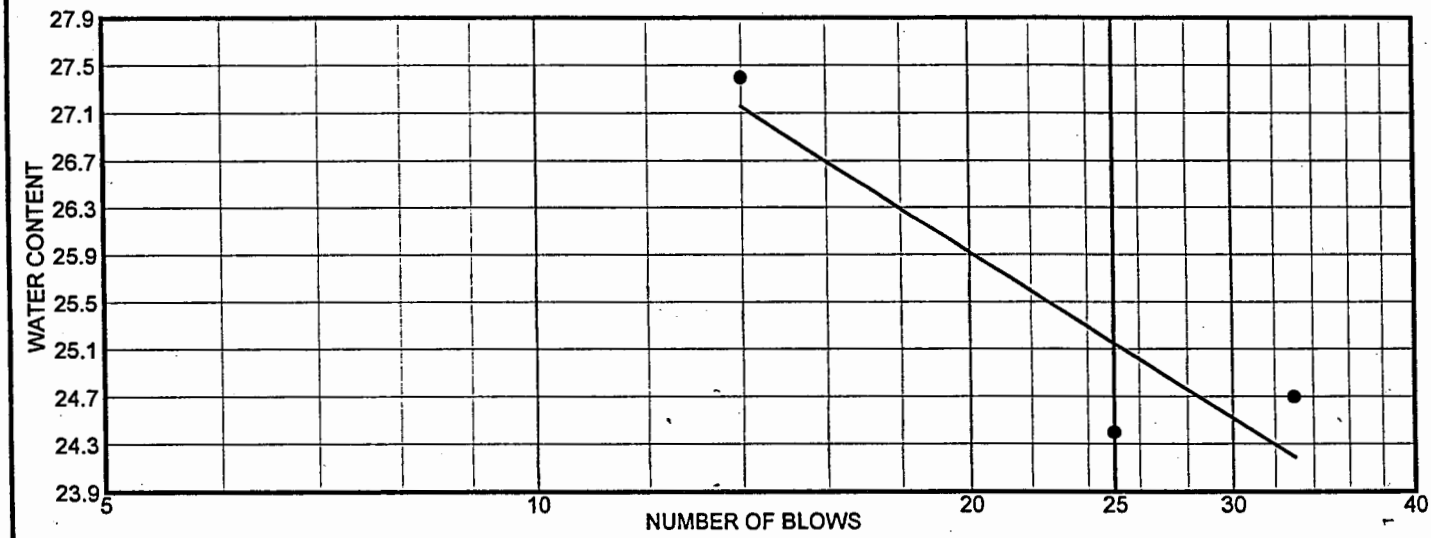
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAYISH BROWN	25	15	10			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-9-00 **Sample No.:** S-3 **Elev./Depth:** 6.0-7.5

Remarks:

●

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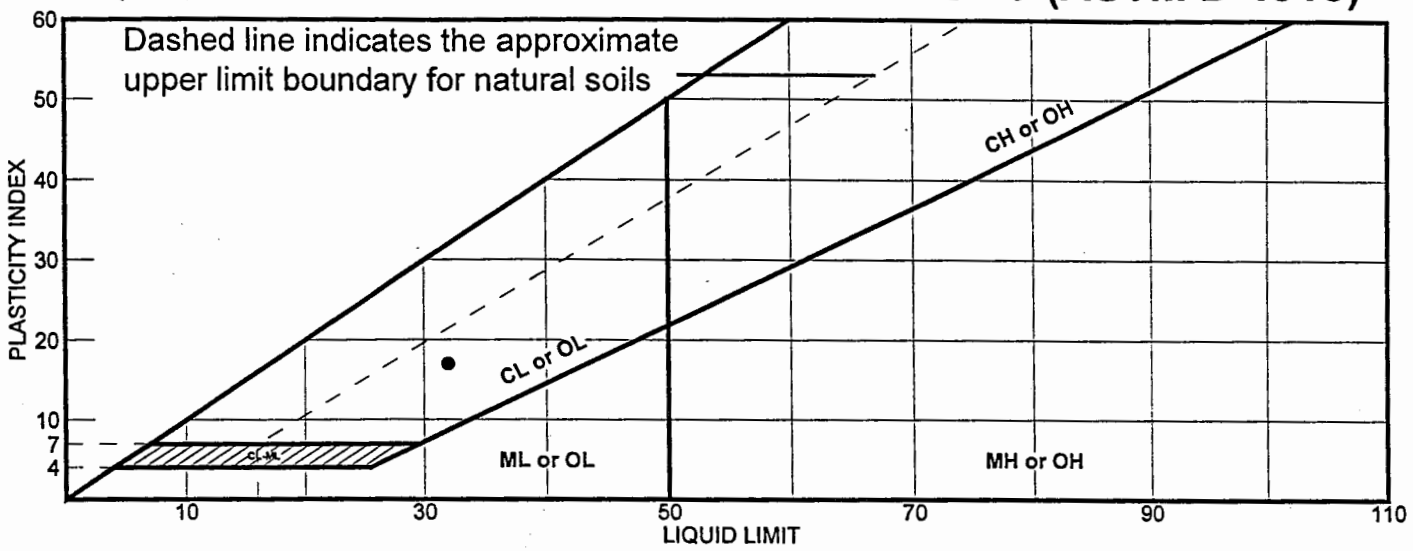
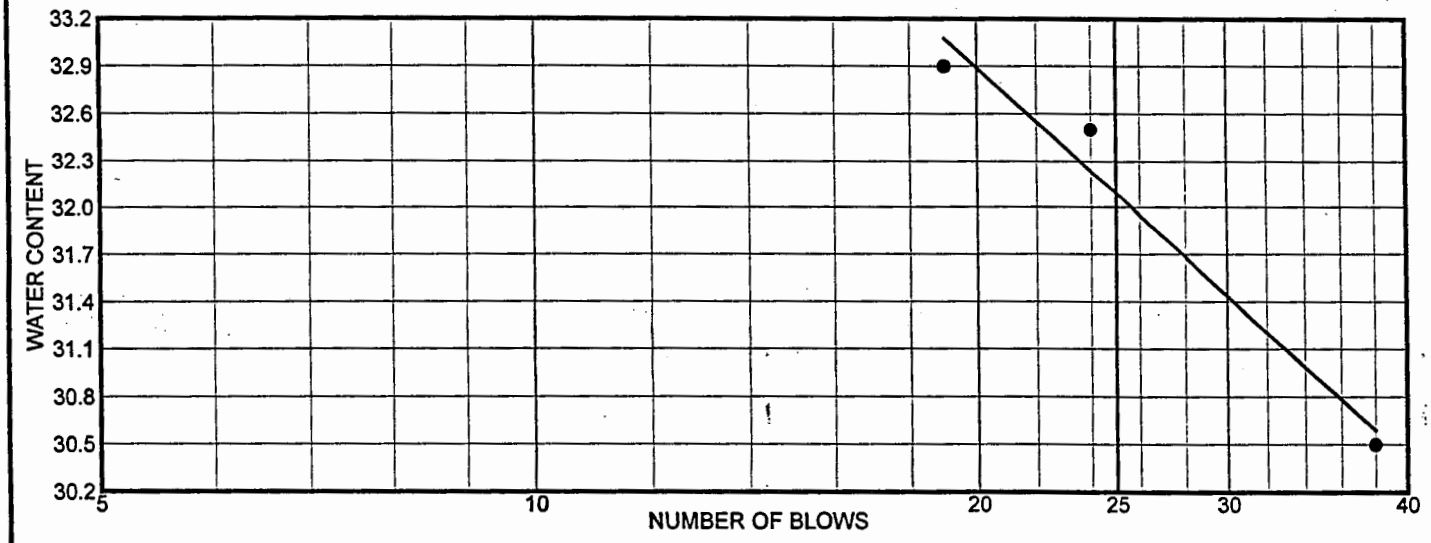
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	32	15	17			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-9-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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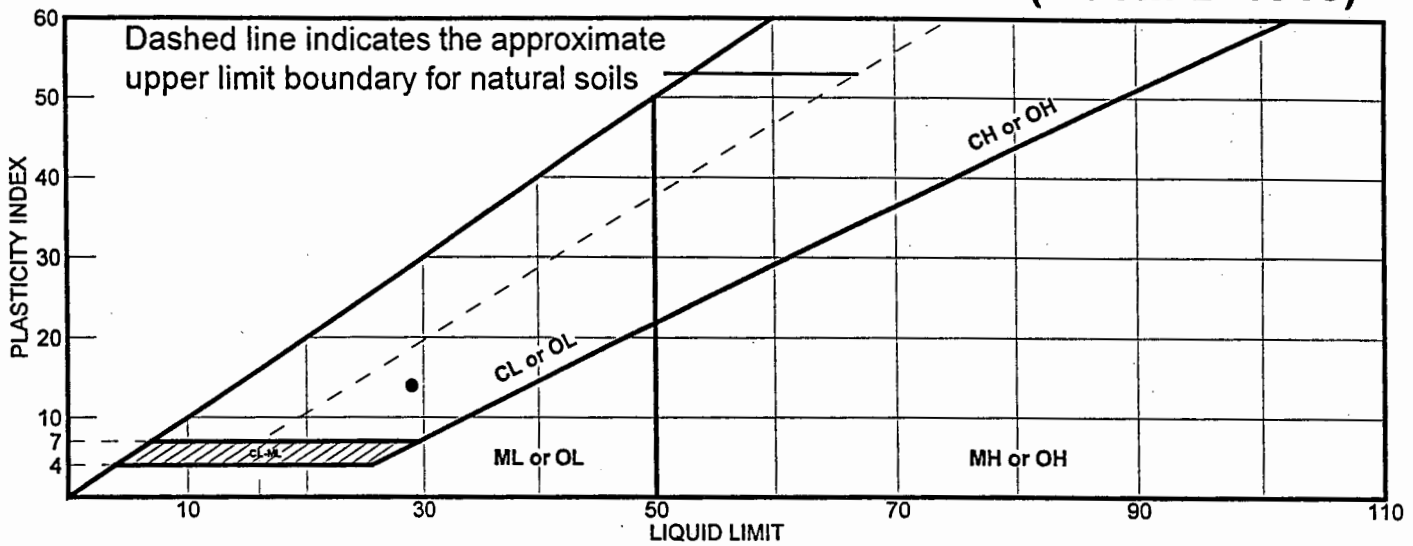
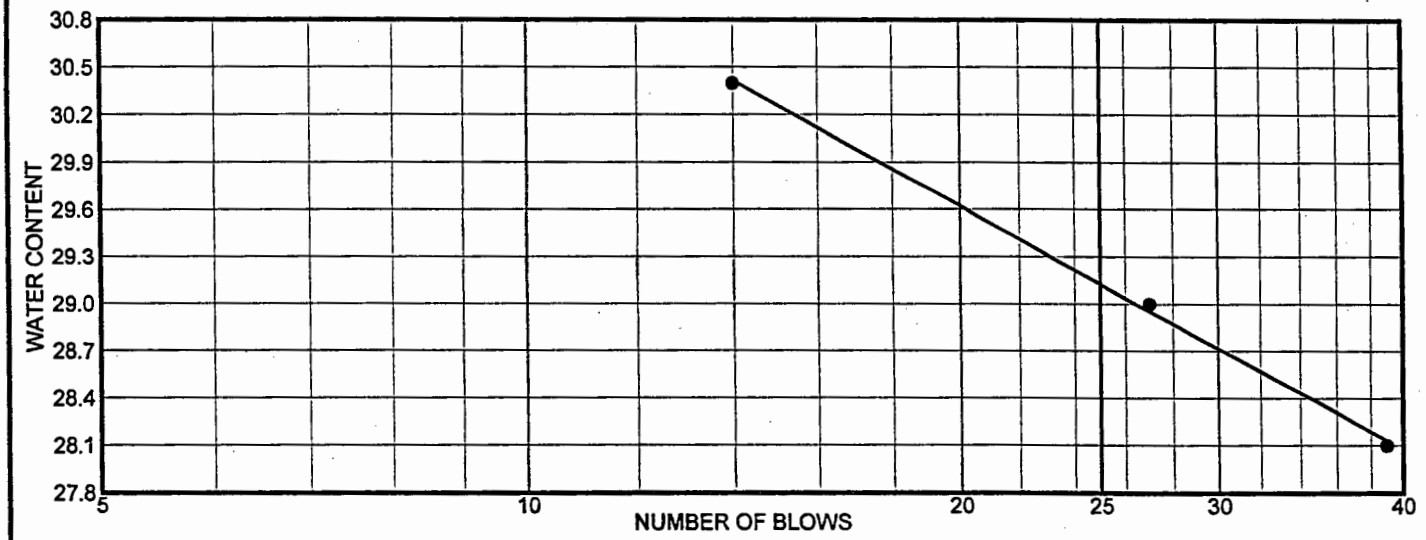
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	29	15	14			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-10-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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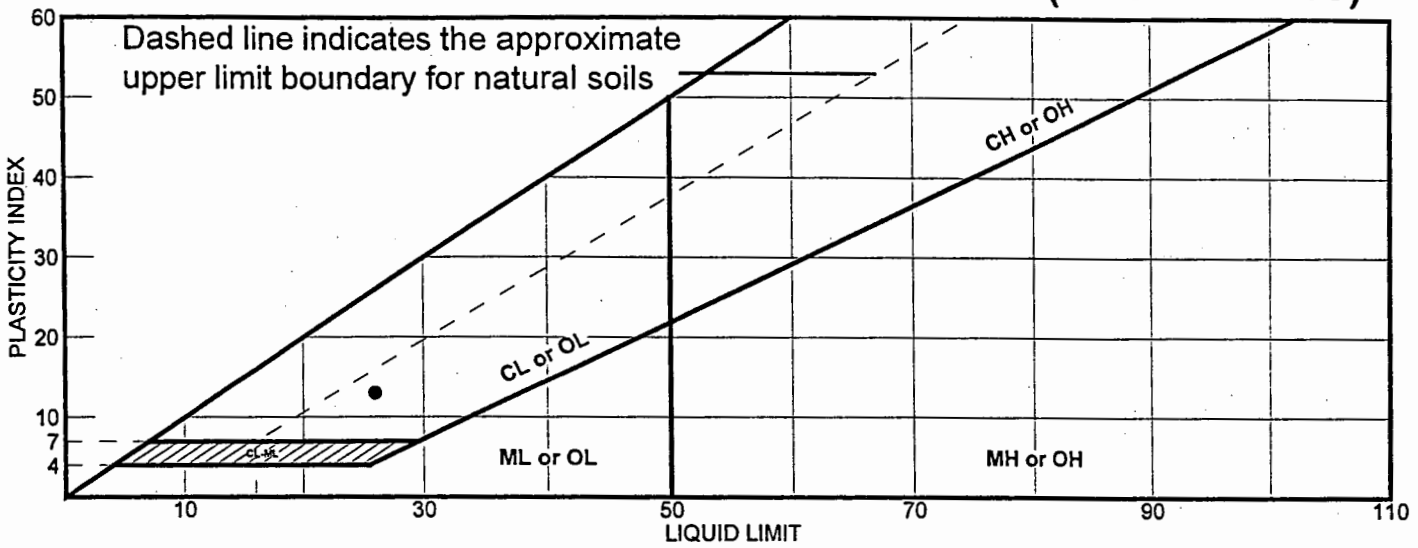
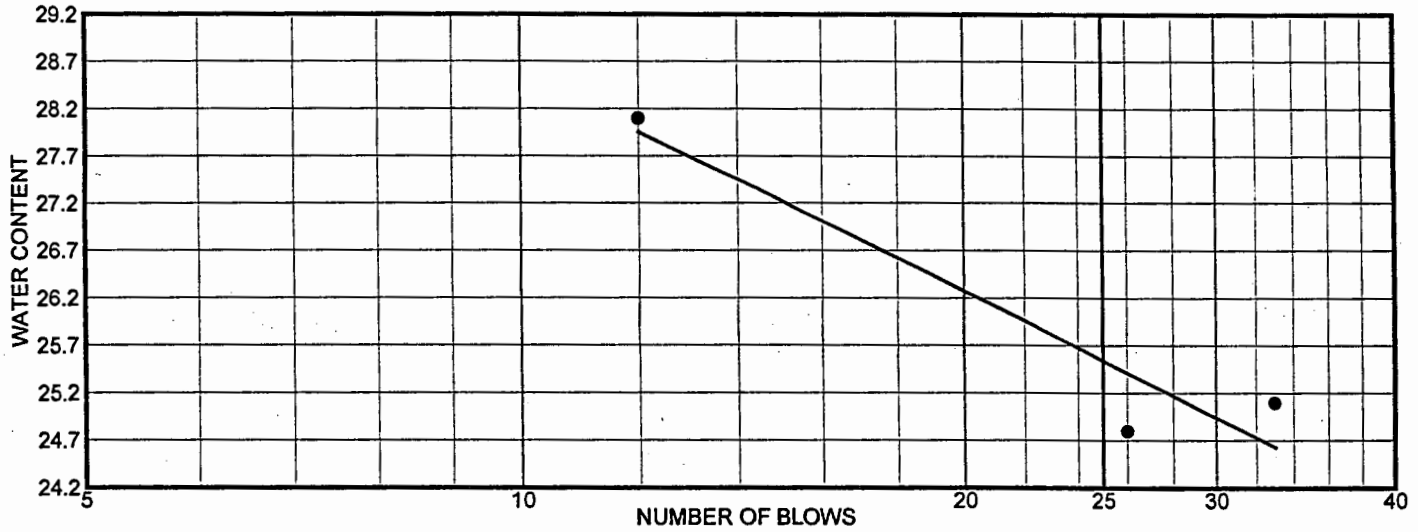
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	26	13	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-10-00 **Sample No.:** S-7 **Elev./Depth:** 16.0-17.5

Remarks:

●

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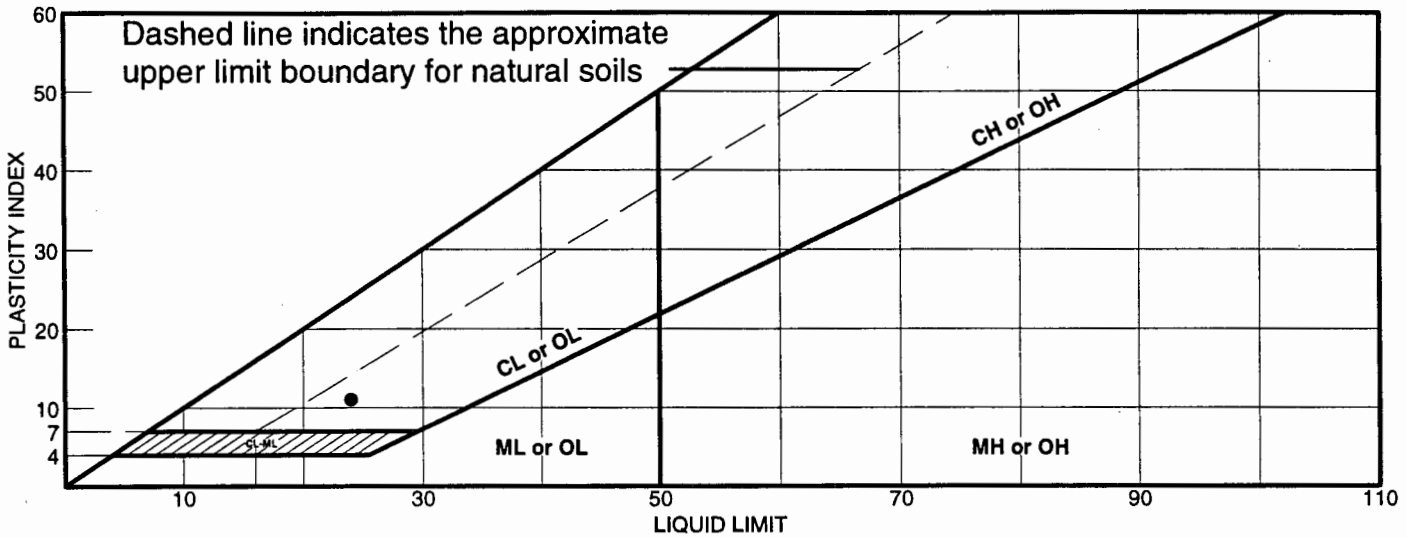
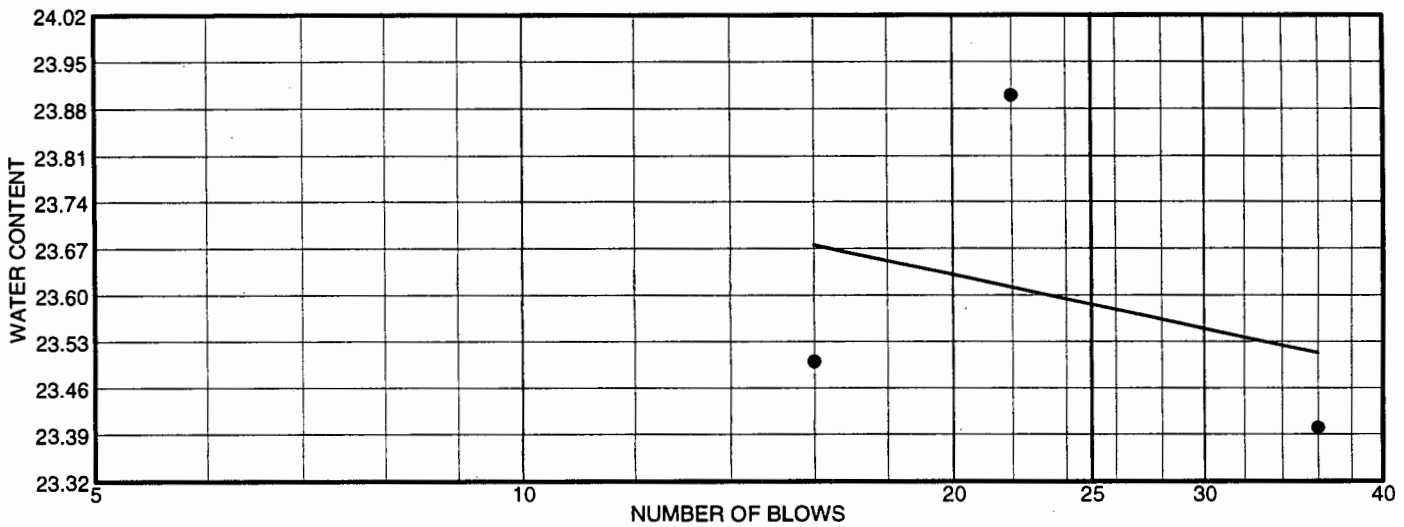
LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	24	13	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-11-00 **Sample No.:** S-4 **Elev./Depth:** 8.5-10.5

Remarks:

●

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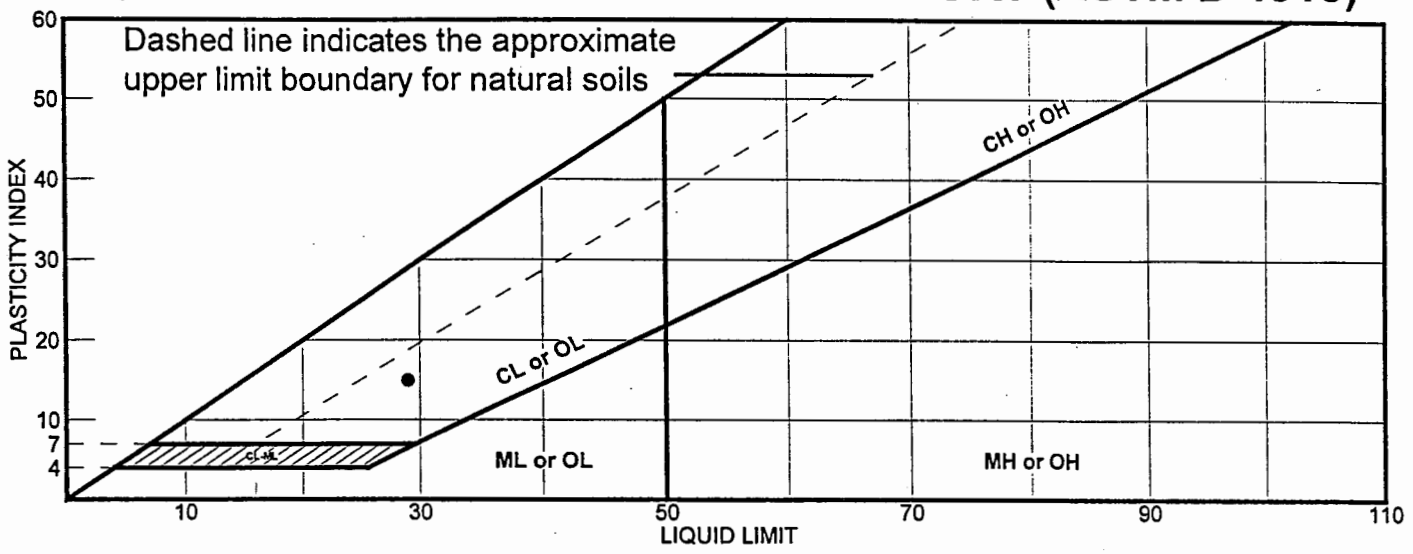
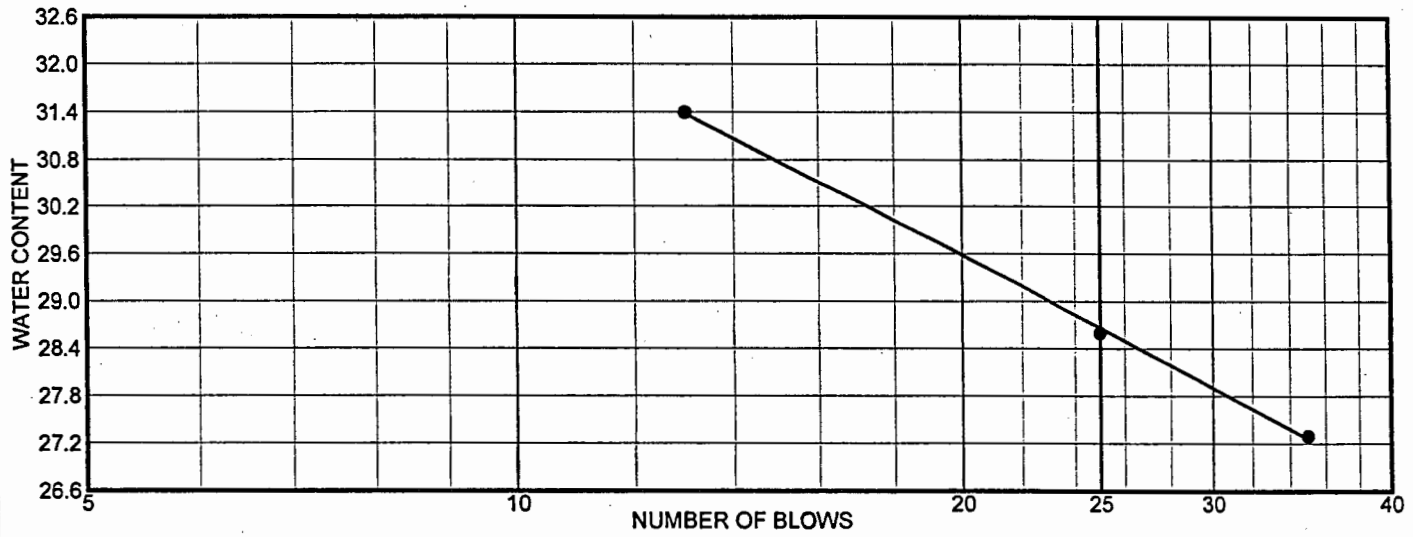
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY, TRACE FINE TO COARSE, TRACE GRAVEL, TRACE SHALE -- GRAY	29	14	15			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-11-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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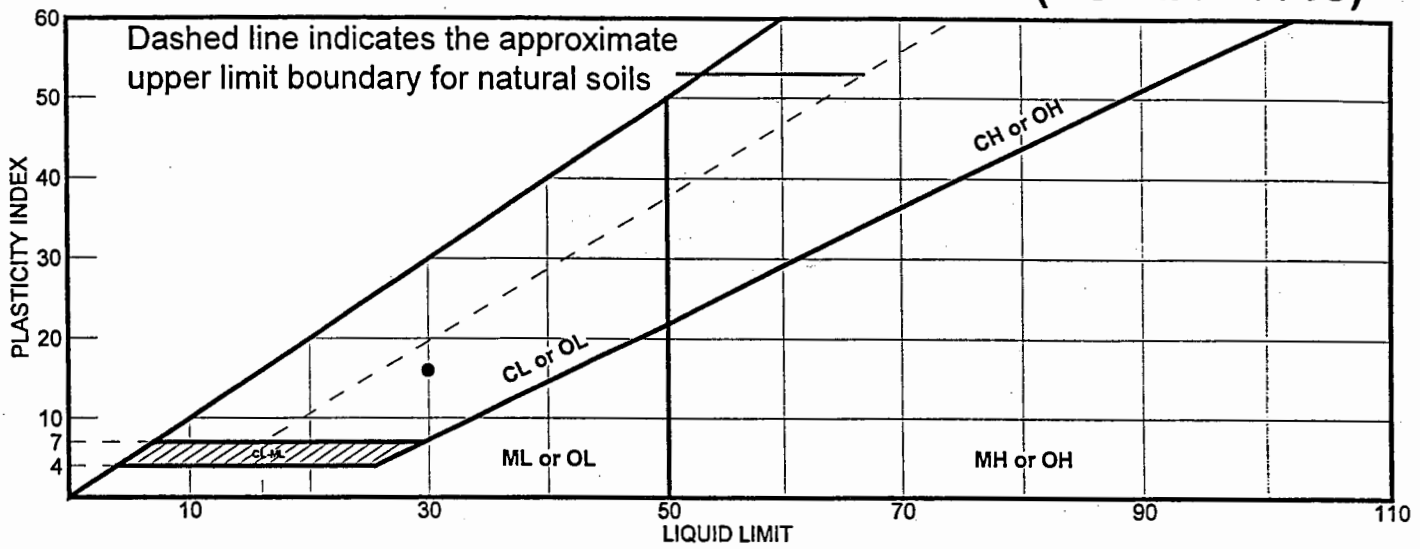
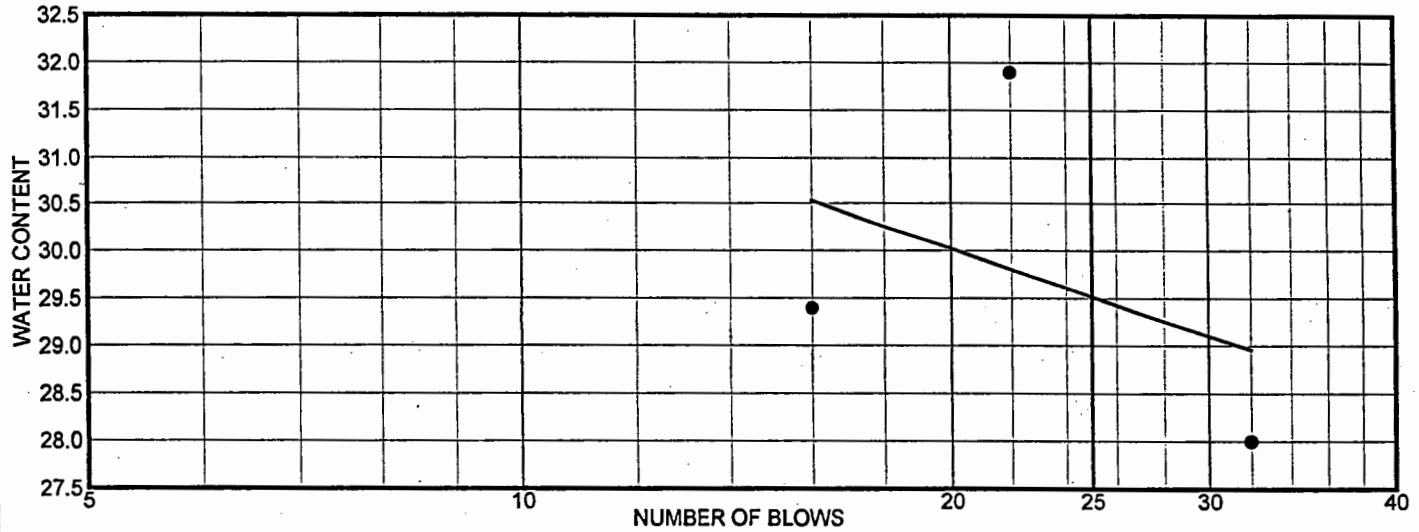
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY LITTLE F-C SAND TR F GRAVEL - BROWN	30	14	16			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-12-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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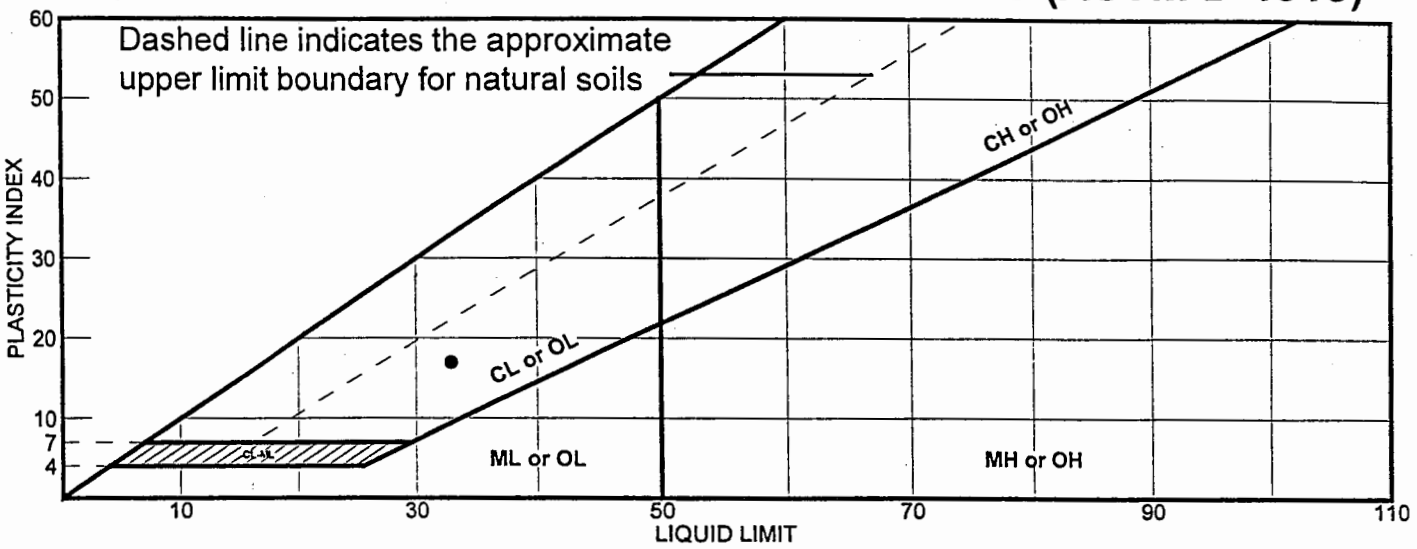
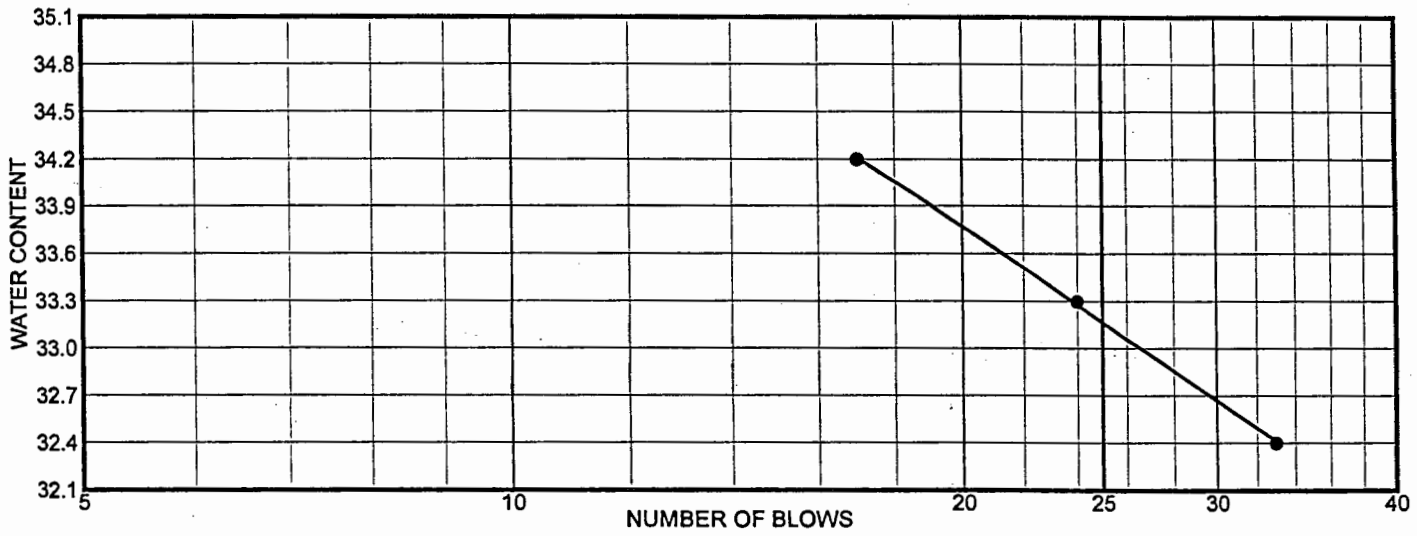
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TRACE F-C SAND - GRAY	33	16	17			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-12-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-12.5

Remarks:

●

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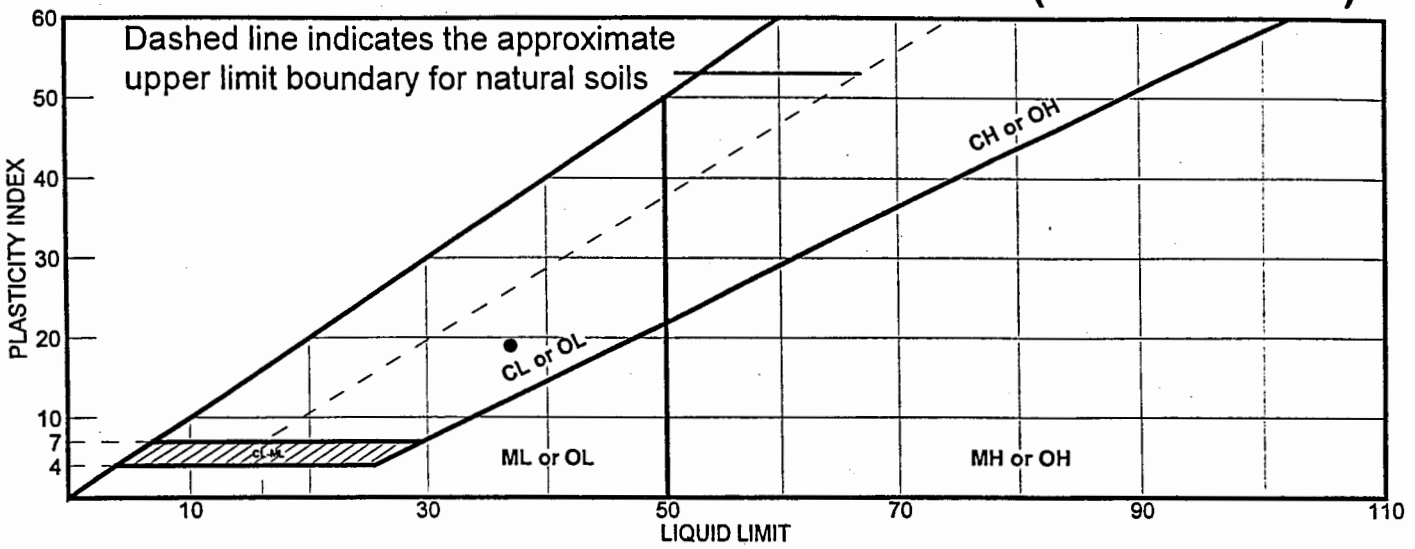
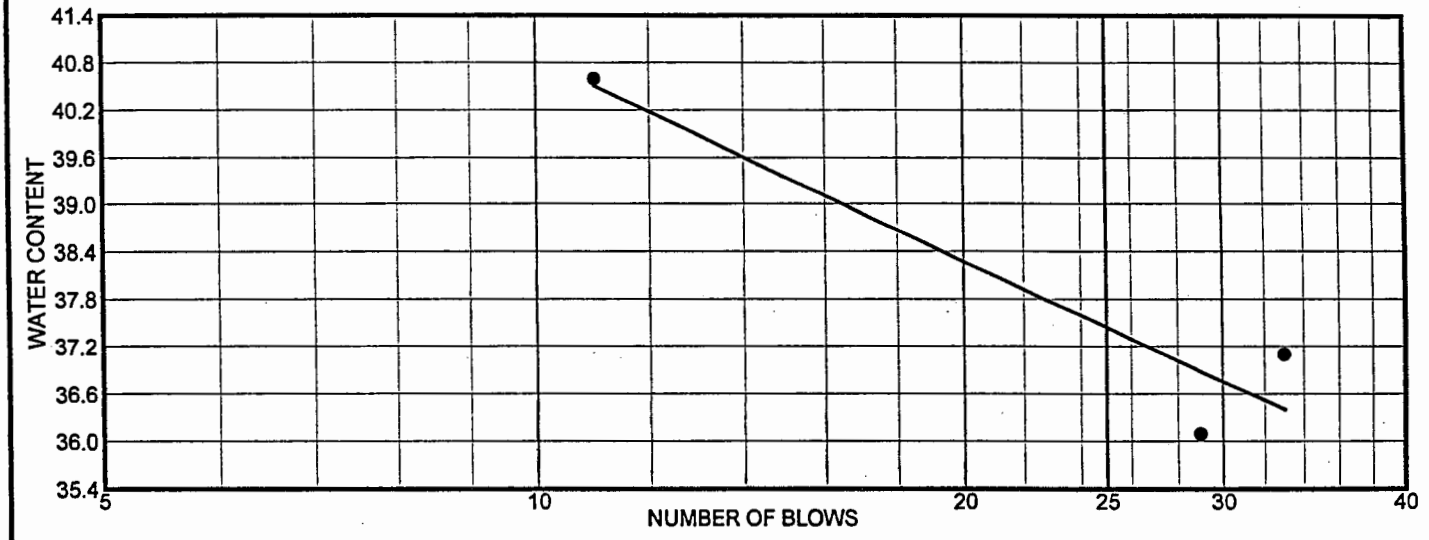
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY LITTLE TOPSOIL TR F-C SAND TR F GRAVEL - BROWN/BLACK	37	18	19			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-13-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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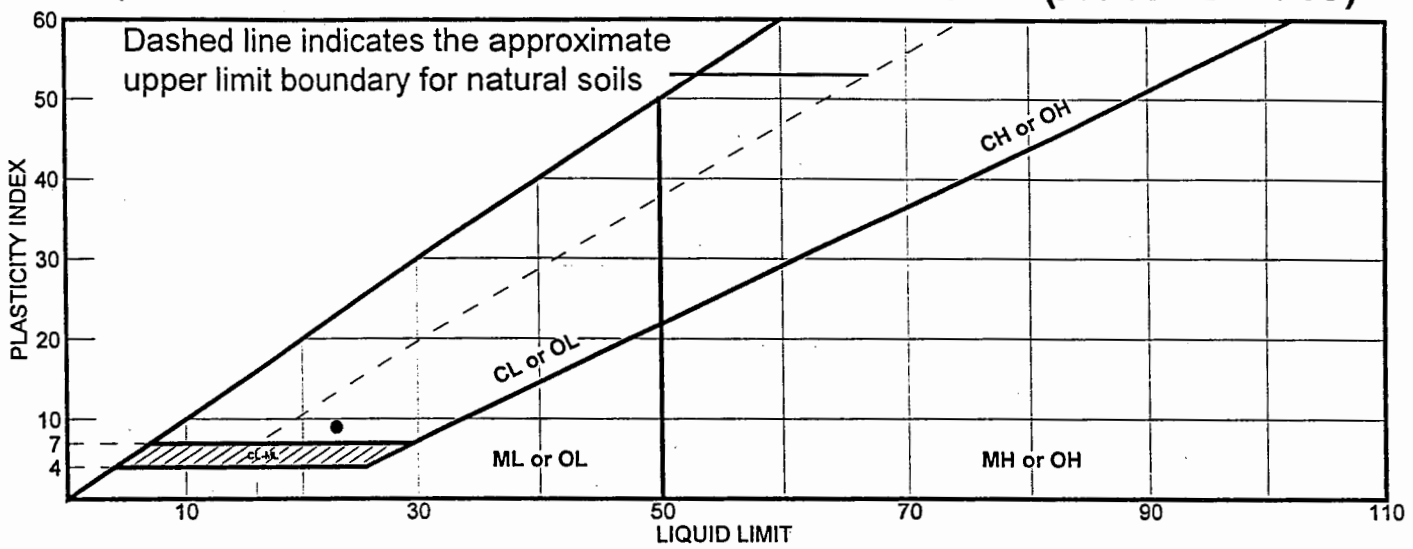
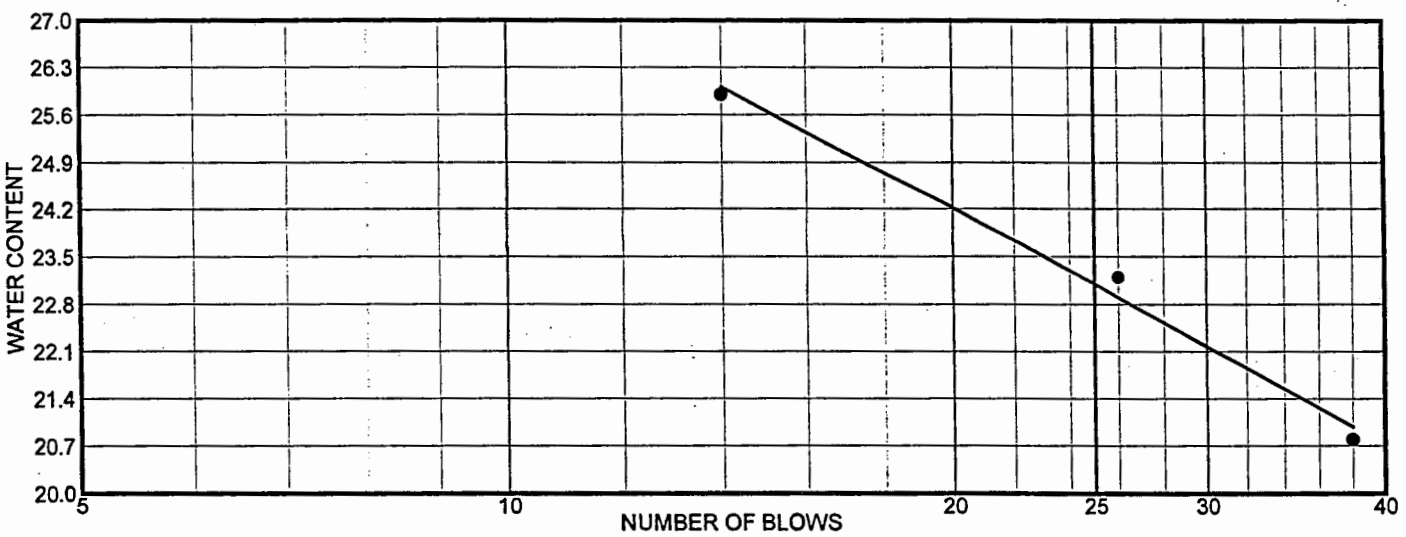
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY LITTLE F-C SAND TR F GRAVEL - GRAY	23	14	9			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-13-00 **Sample No.:** S-6 **Elev./Depth:** 13.5-15.5

Remarks:

●

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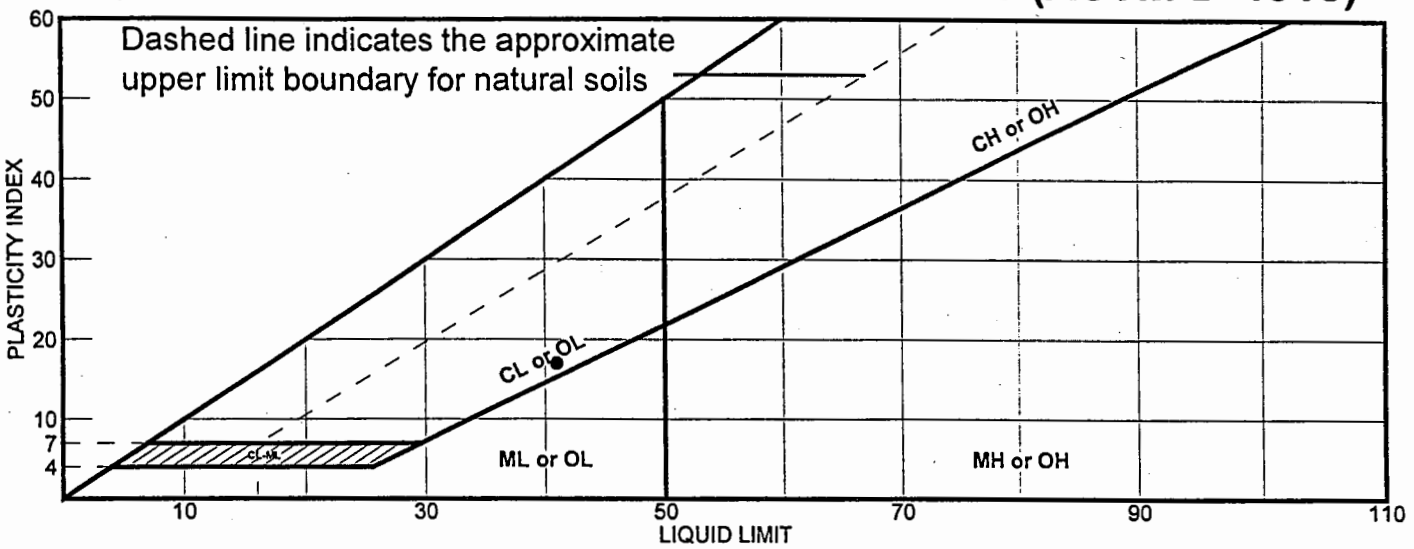
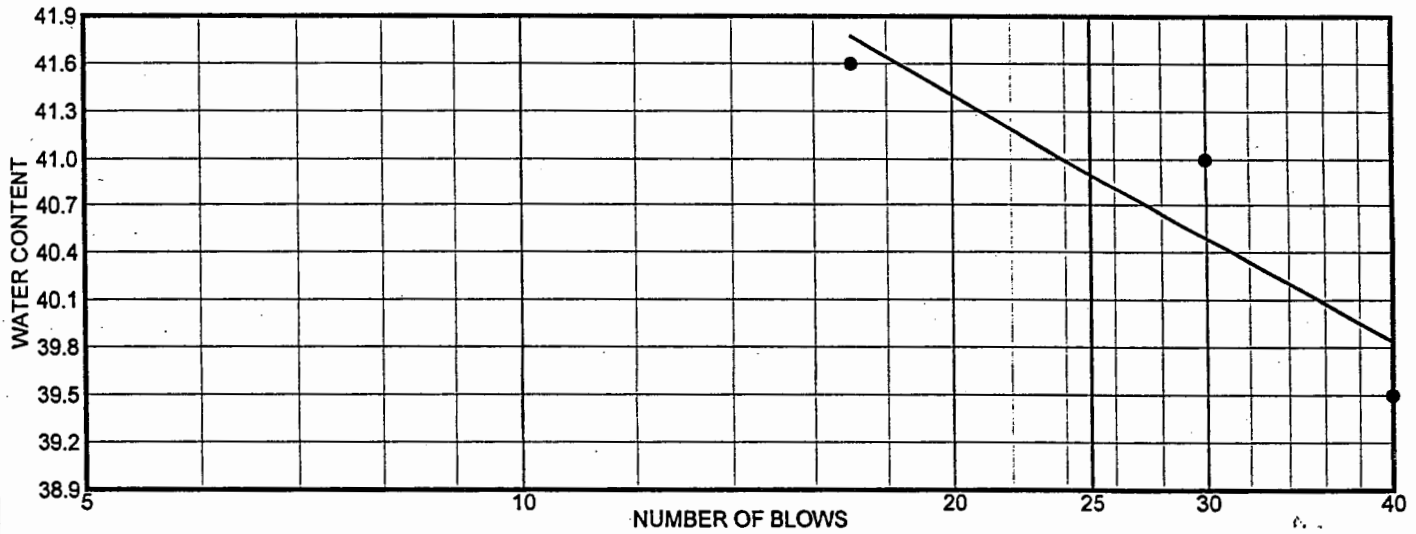
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY LITTLE TOPSOIL TR F-C SAND TR F GRAVEL - BROWN/BLACK	41	24	17			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-14-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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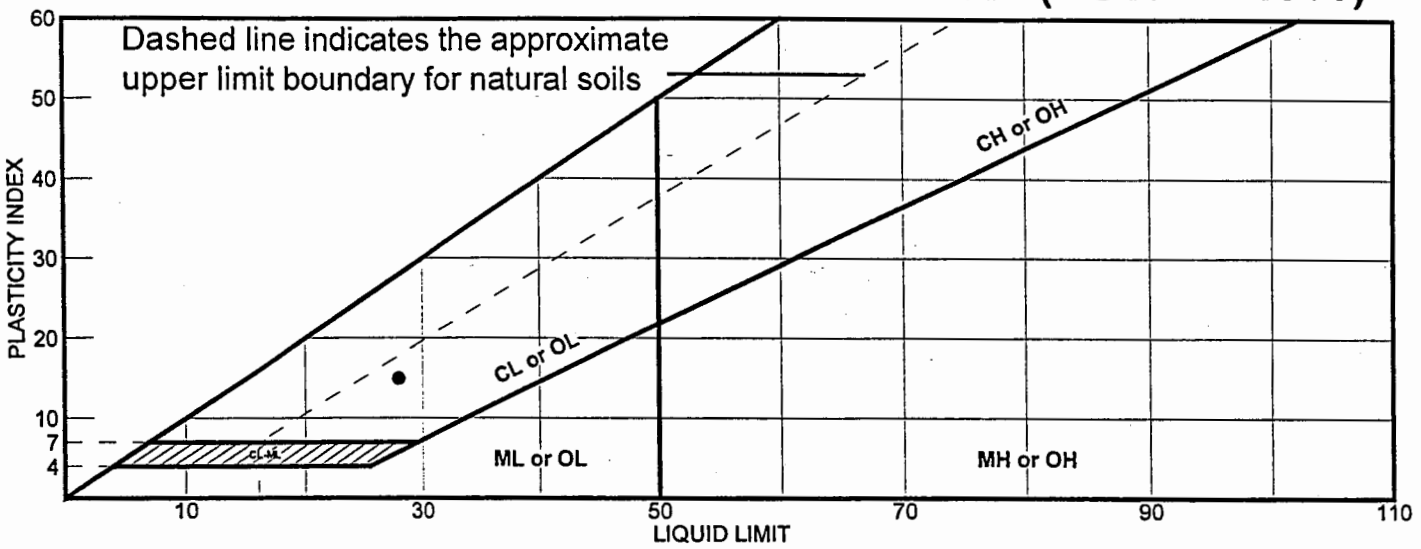
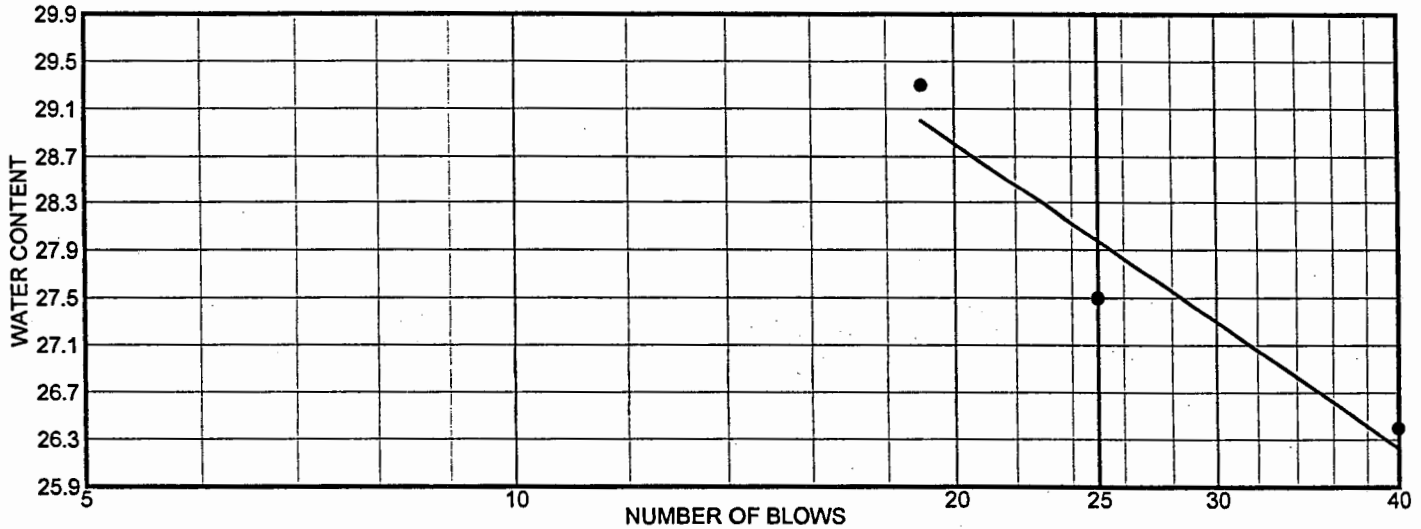
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	28	13	15			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-14-00 **Sample No.:** S-10 **Elev./Depth:** 23.5-25.0

Remarks:

●

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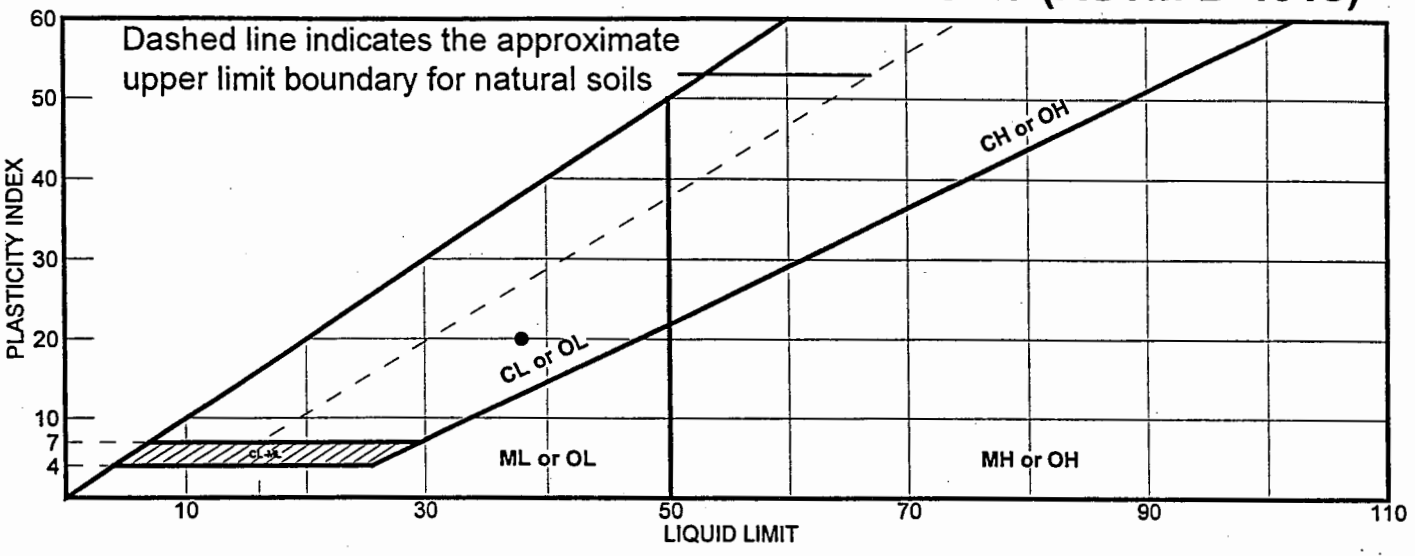
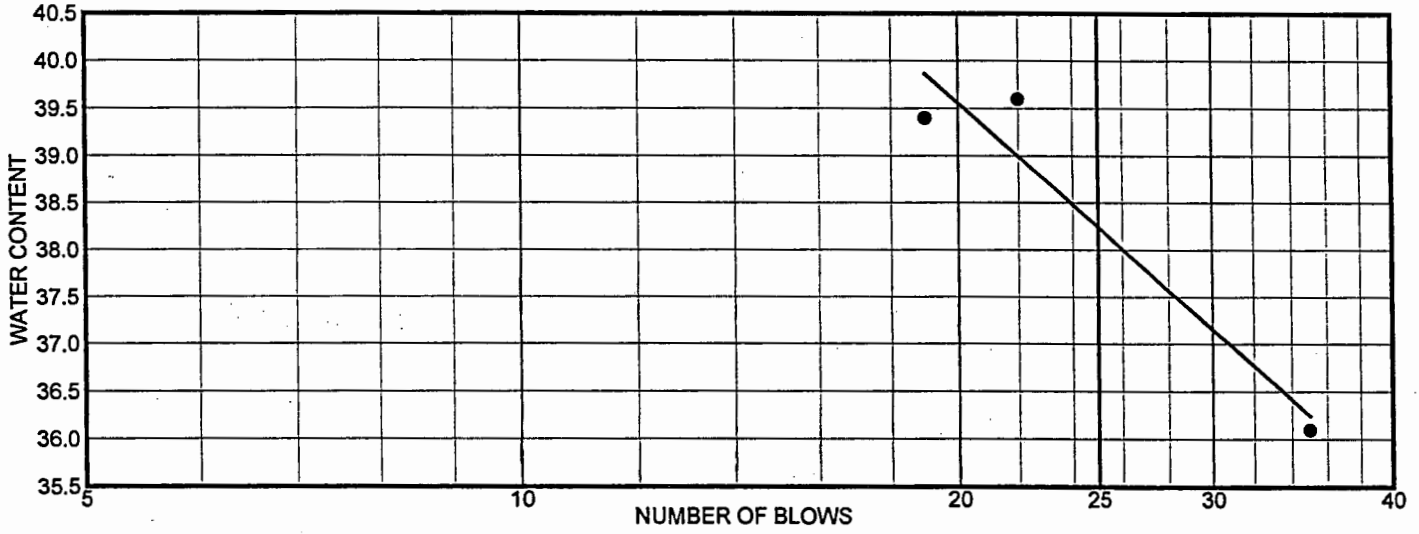
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY LITTLE TOPSOIL TR F-C SAND TR F GRAVEL - BROWN/BLACK	38	18	20			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-15-00 **Sample No.:** S-1 **Elev./Depth:** 1.0-2.5

Remarks:

●

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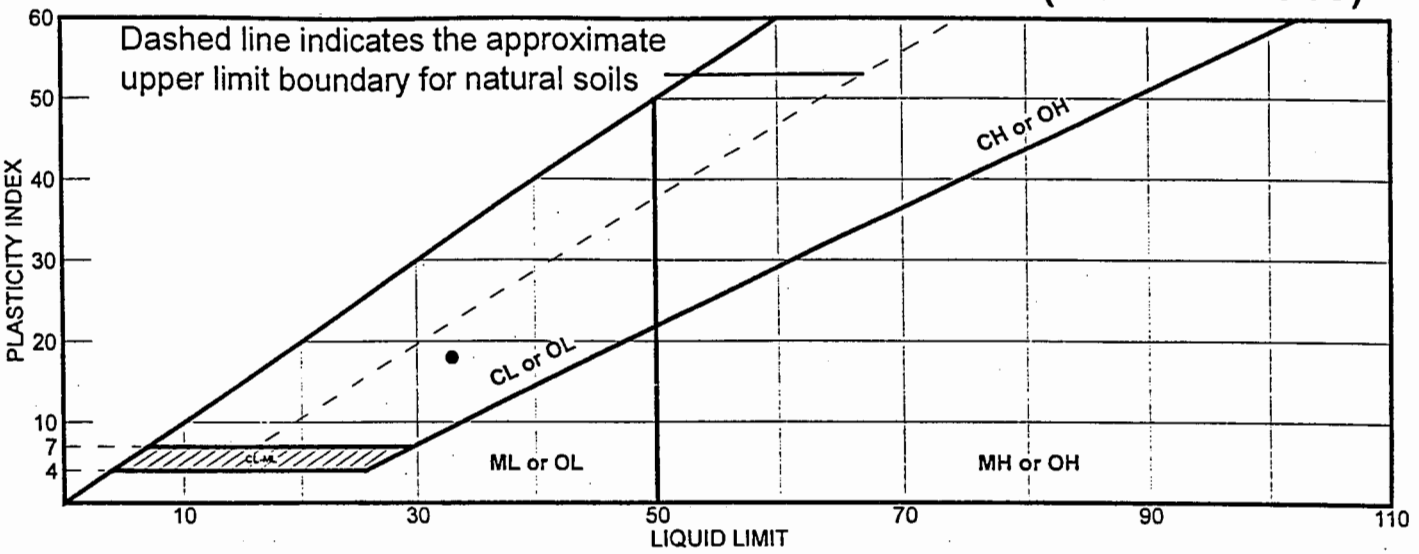
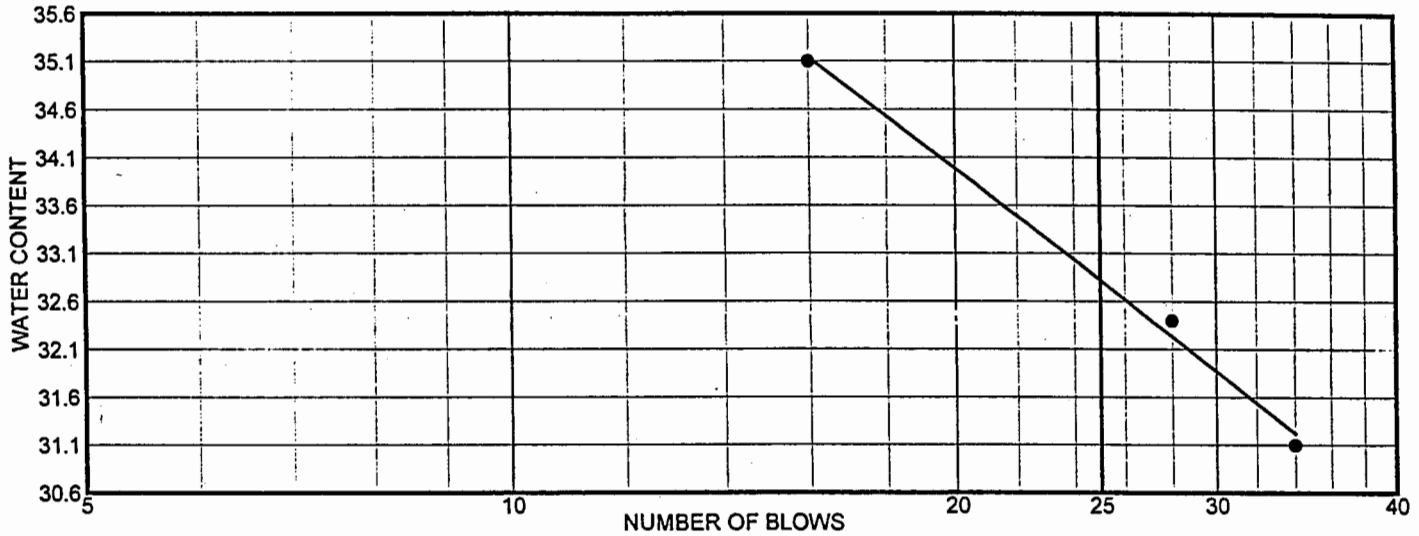
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY LITTLE F-C SAND - GRAY	33	15	18			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-15-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-13.0

Remarks:

●

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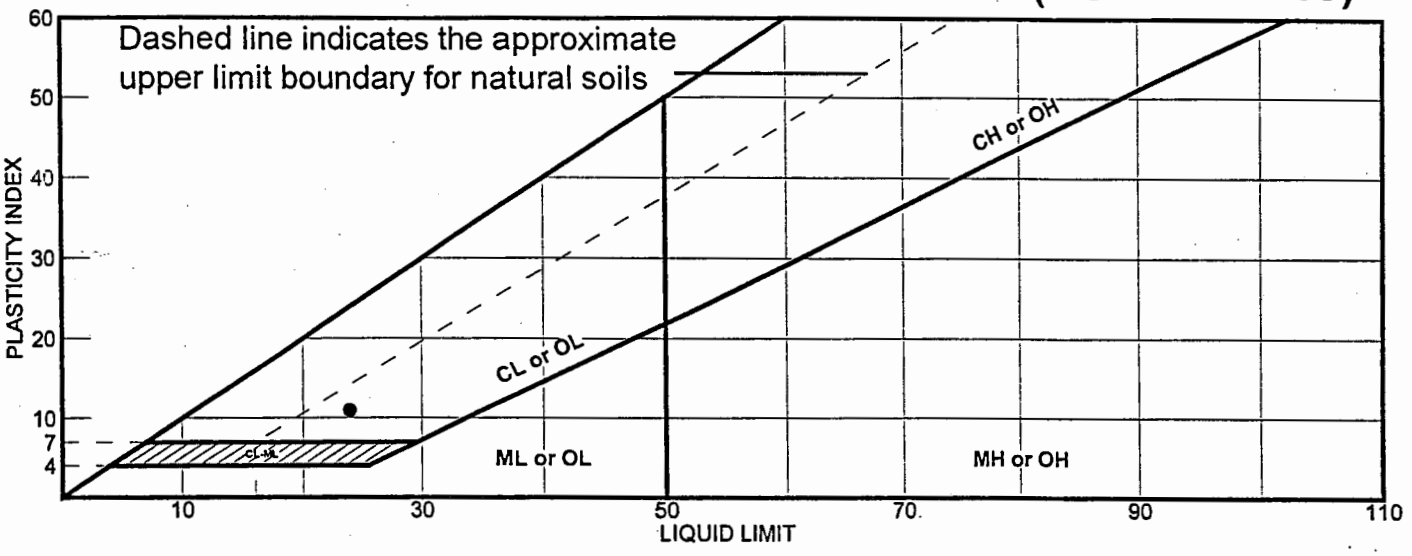
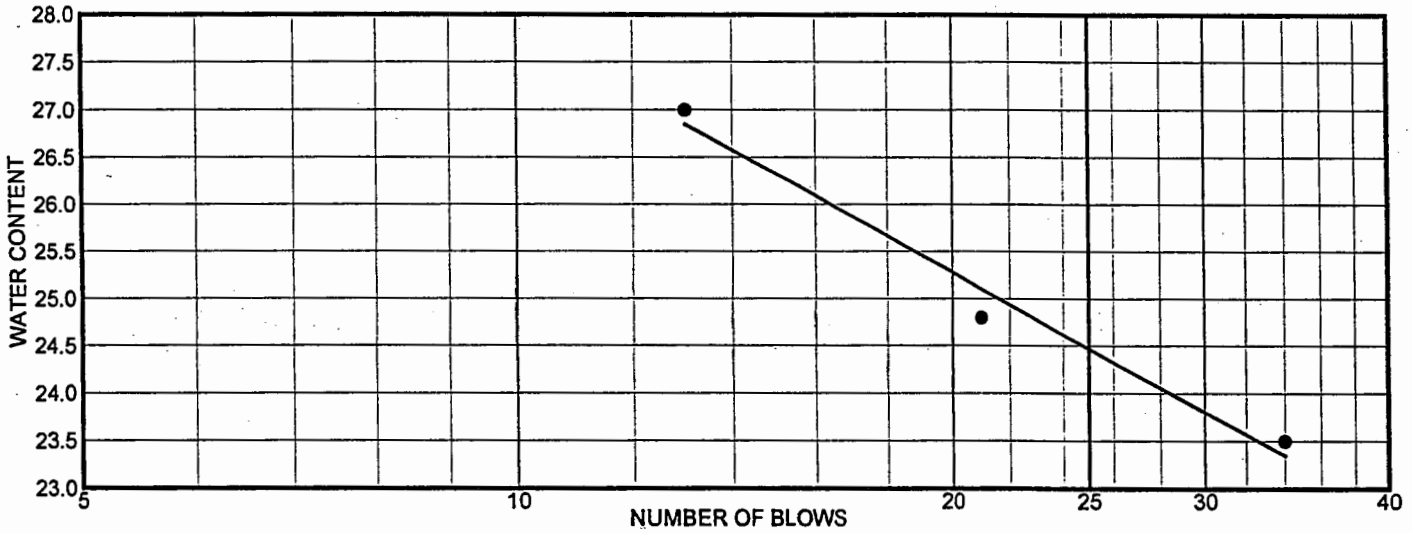
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	24	13	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-15-00 **Sample No.:** S-8 **Elev./Depth:** 18.5-20.0

Remarks:

●

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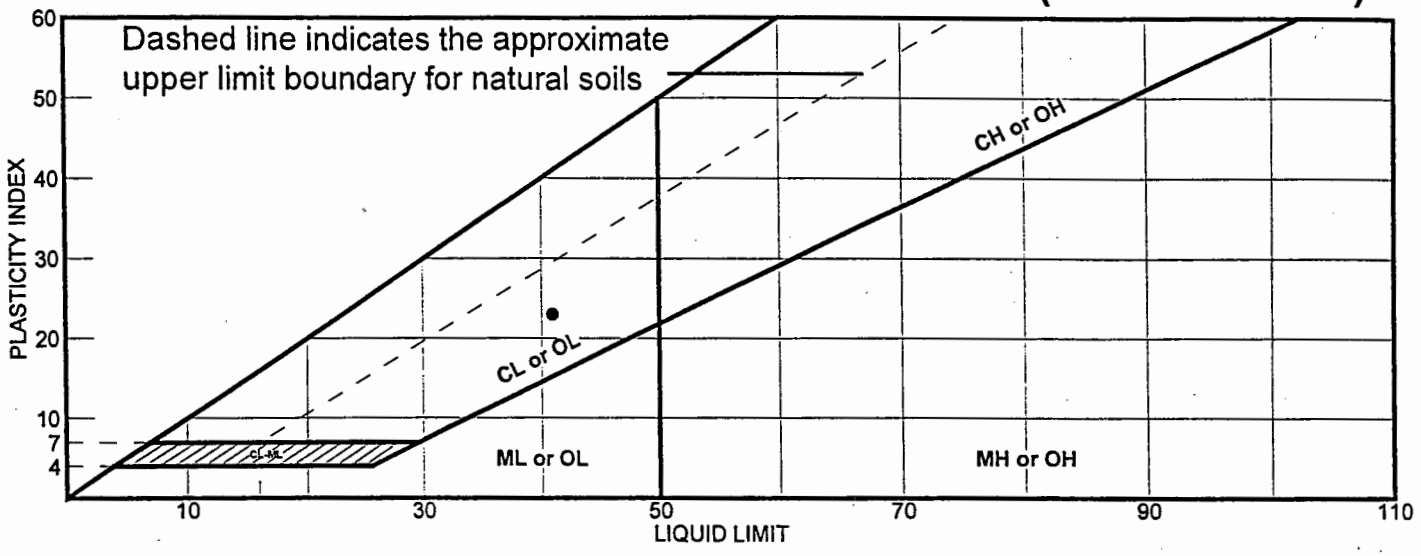
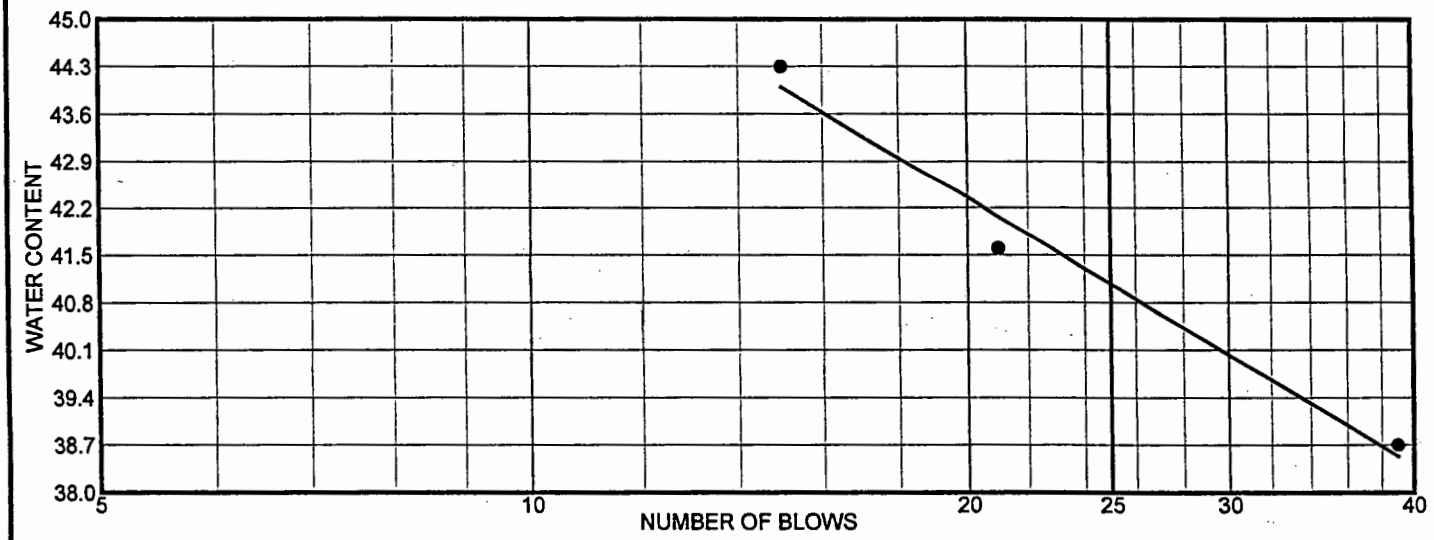
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - BROWN	41	18	23			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-16-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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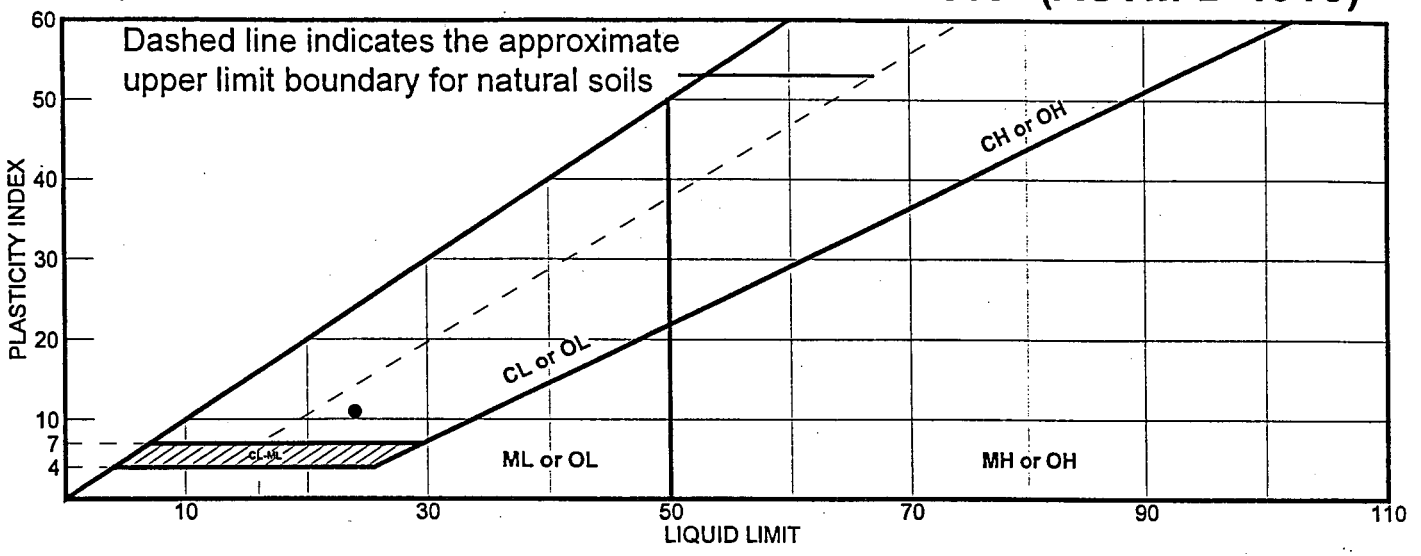
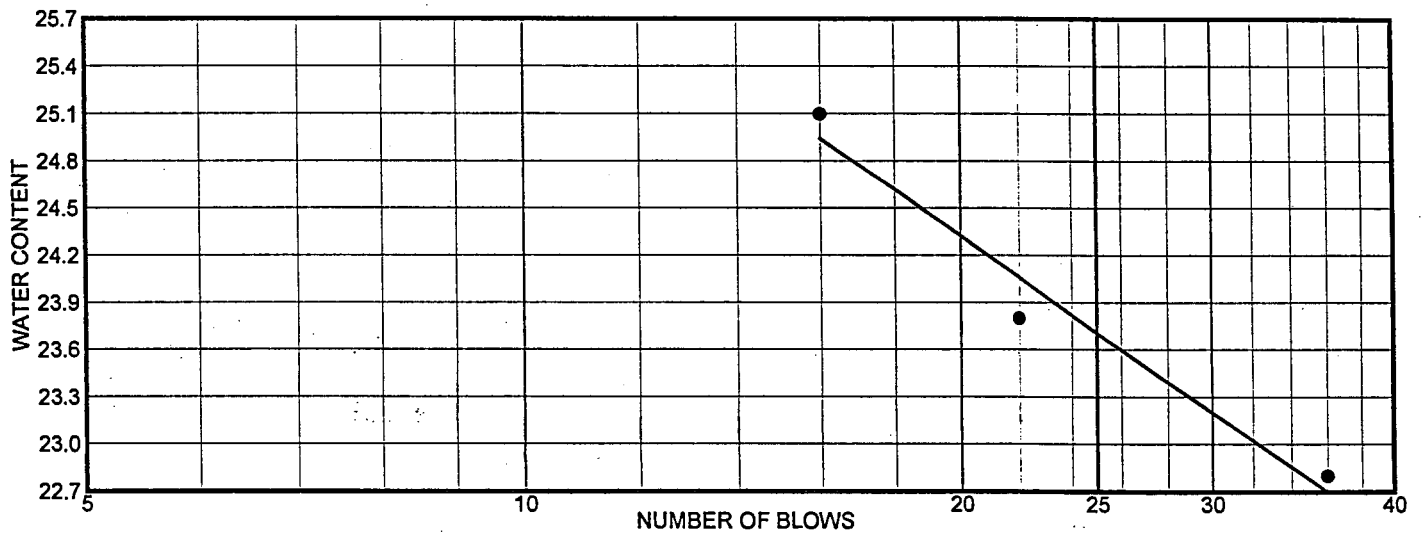
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	24	13	11			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-16-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-12.5

Remarks:

●

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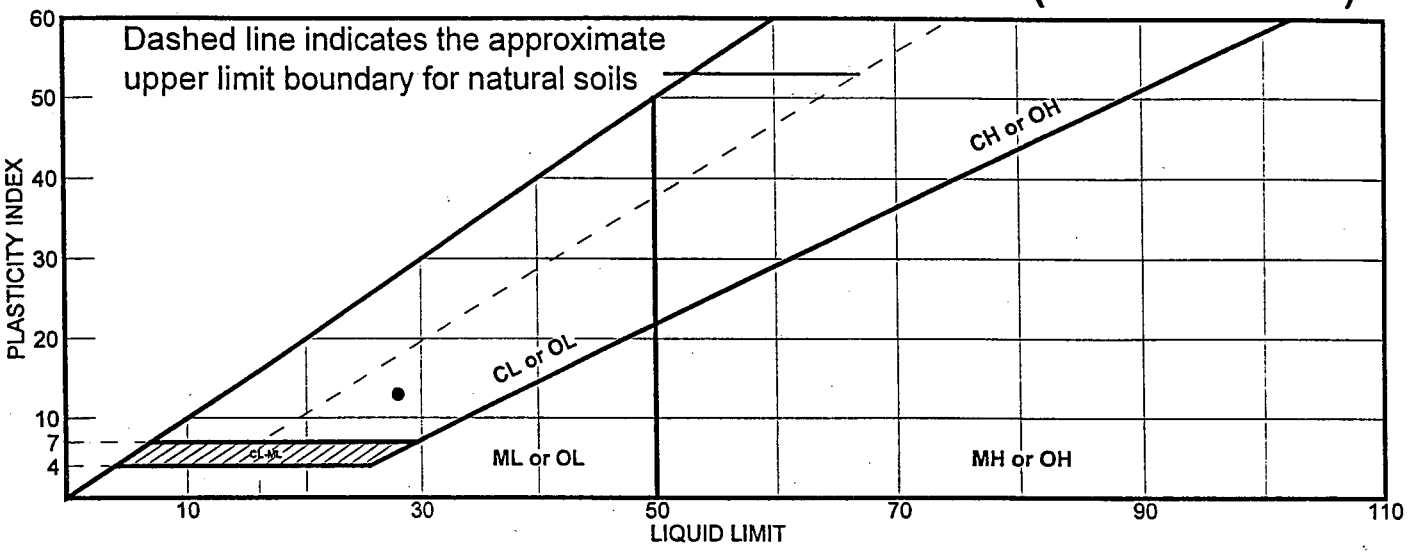
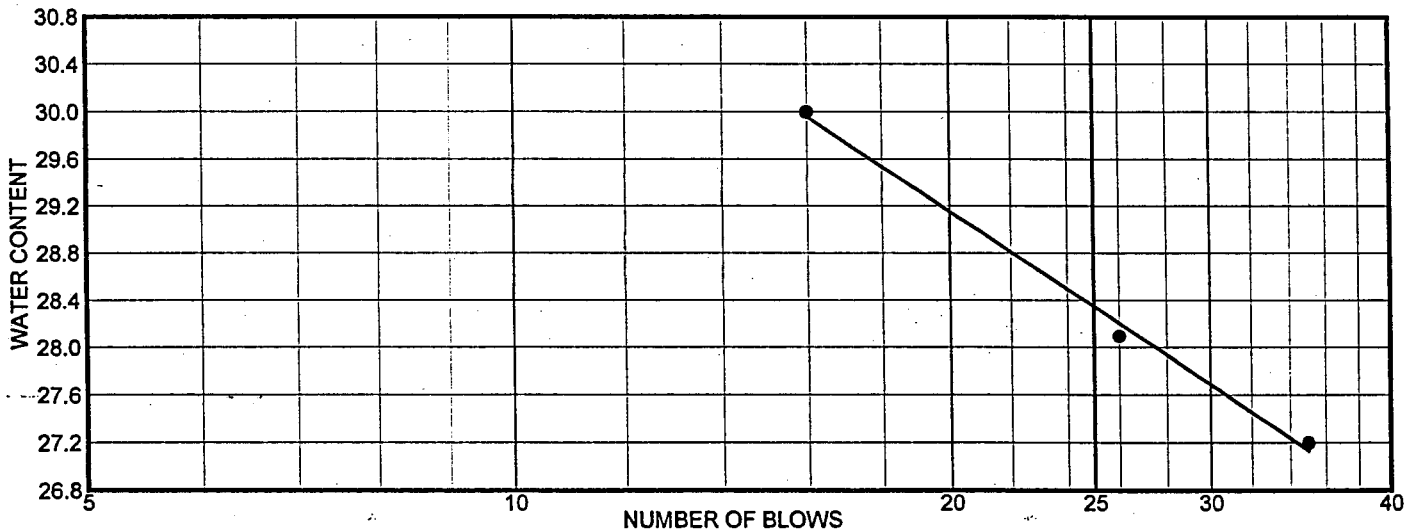
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	28	15	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-16-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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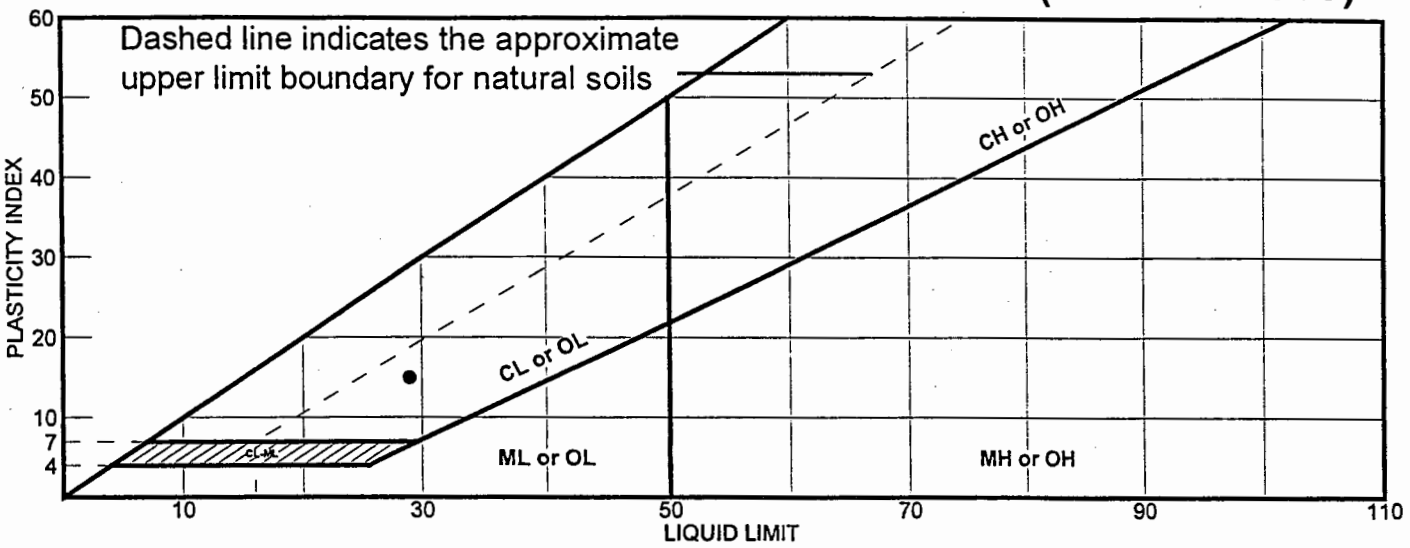
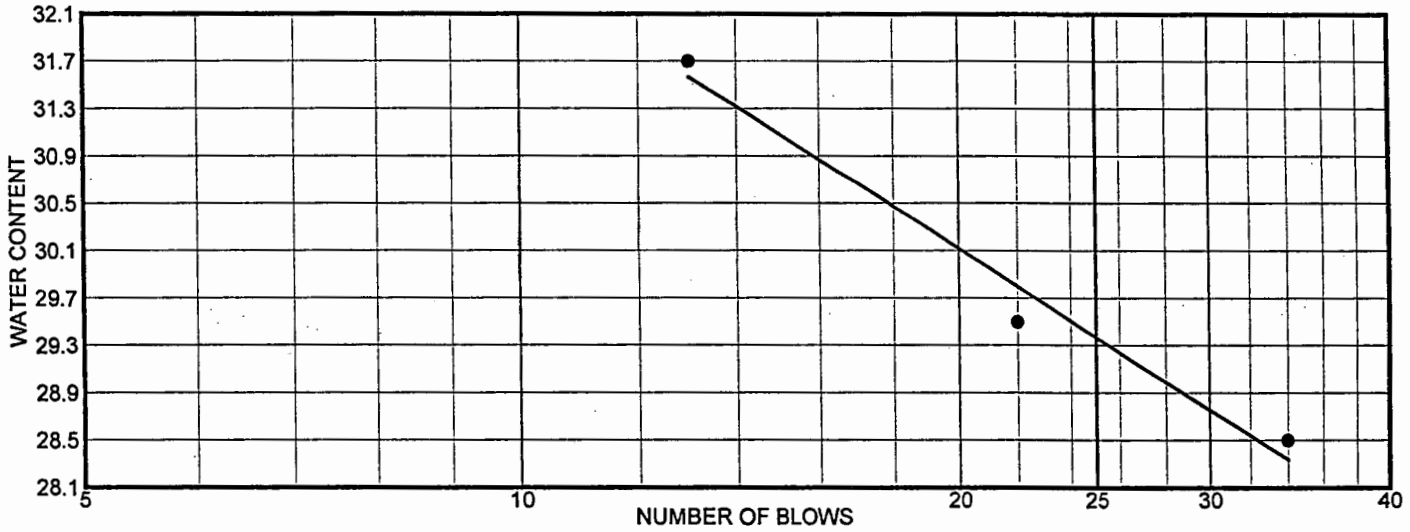
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAYISH BROWN	29	14	15			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-17-00 **Sample No.:** S-2 **Elev./Depth:** 3.5-5.0

Remarks:

●

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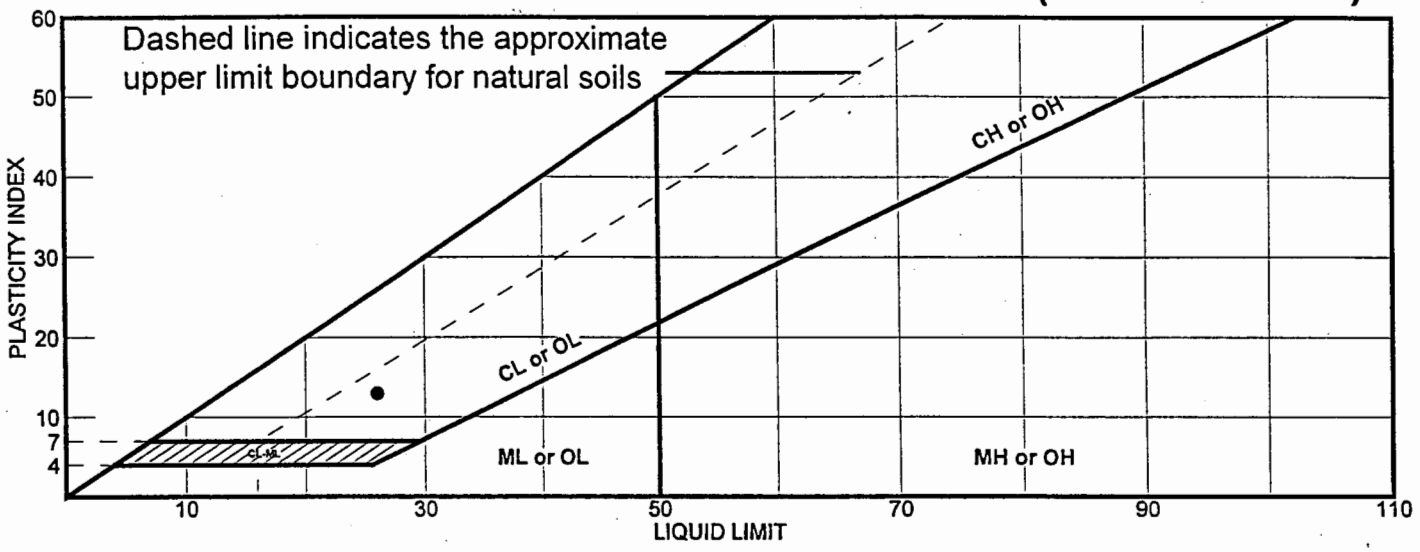
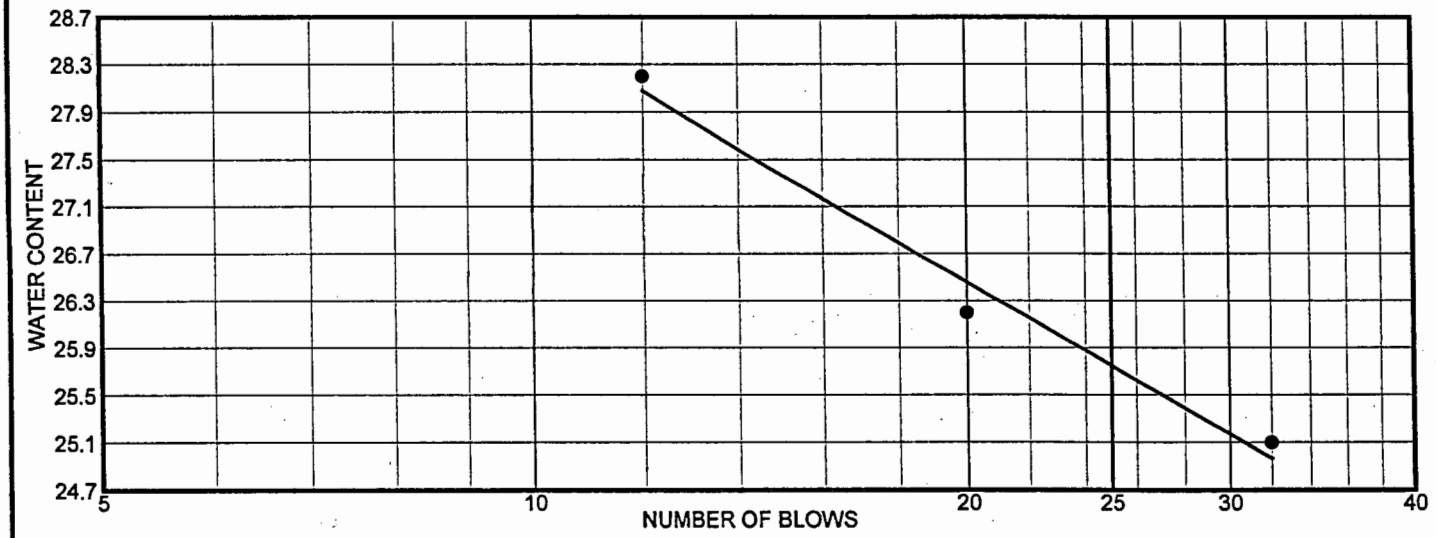
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	26	13	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-17-00 **Sample No.:** S-6 **Elev./Depth:** 13.5-15.0

Remarks:

●

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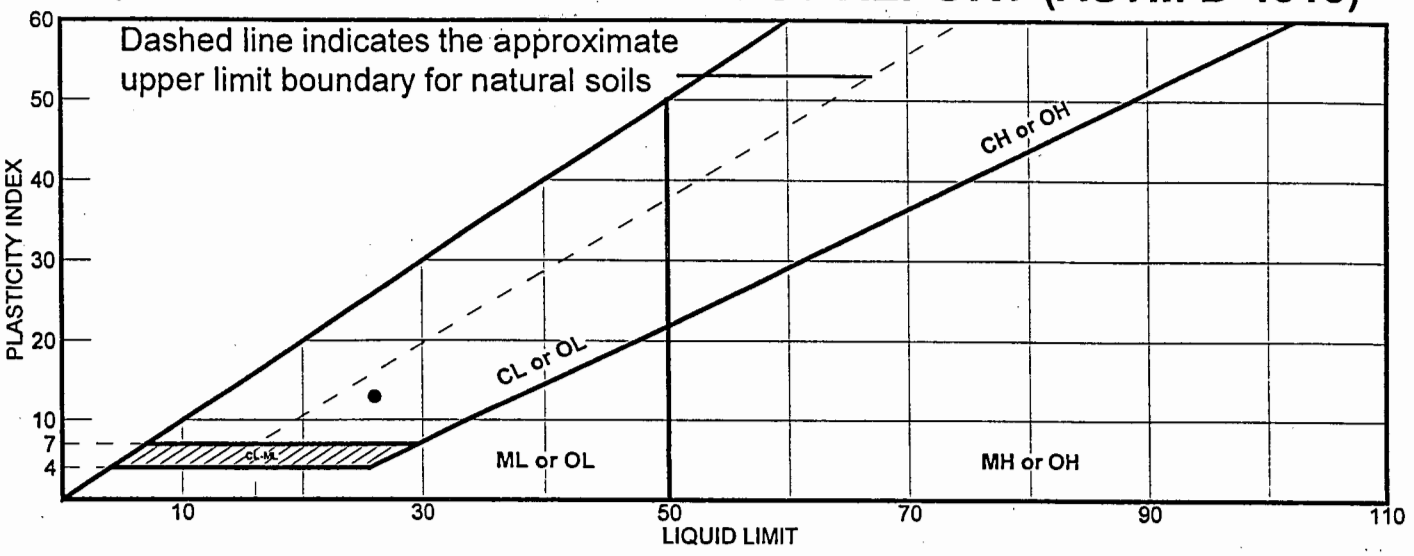
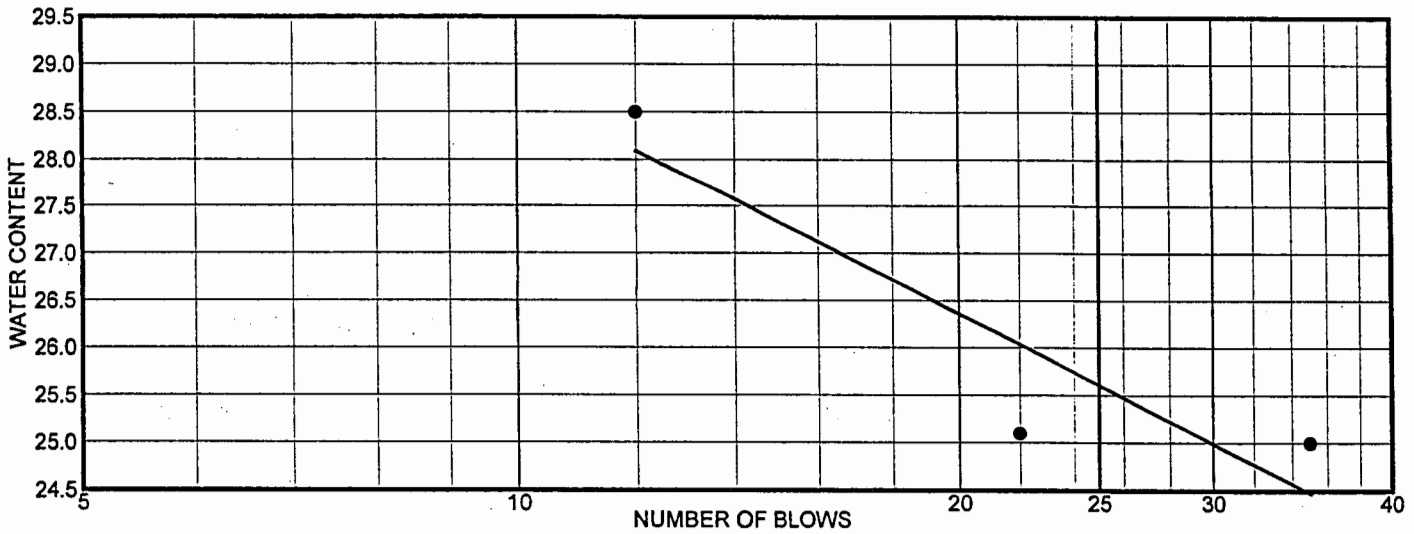
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	26	13	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-17-00 **Sample No.:** S-12 **Elev./Depth:** 28.5-30.0

Remarks:

●

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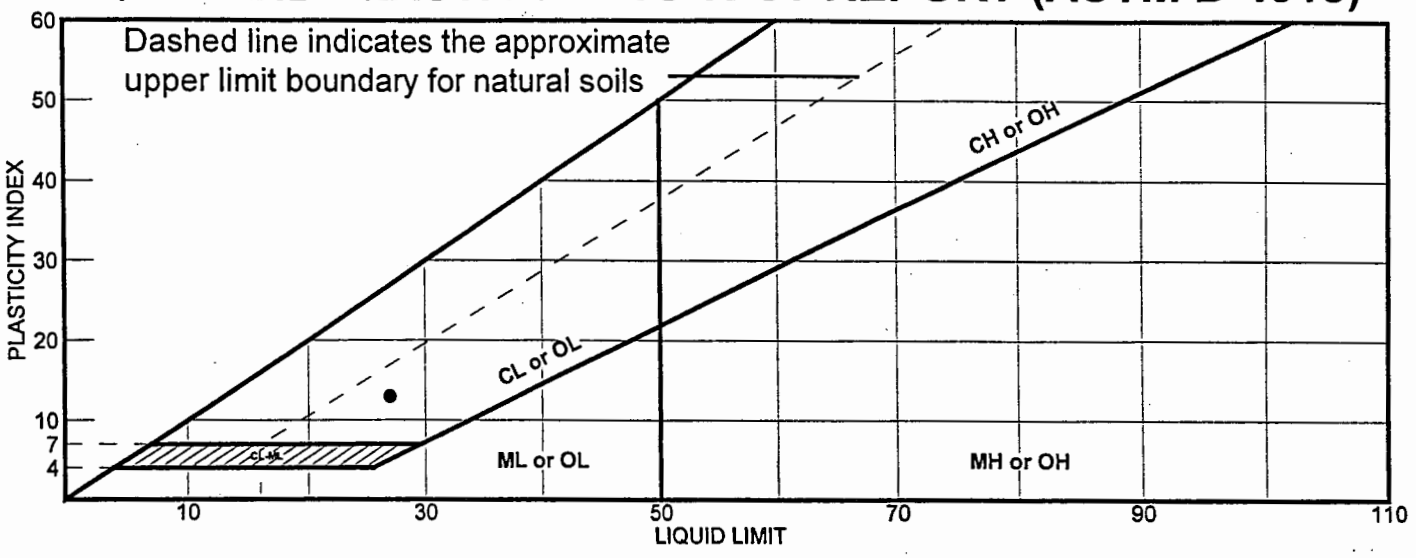
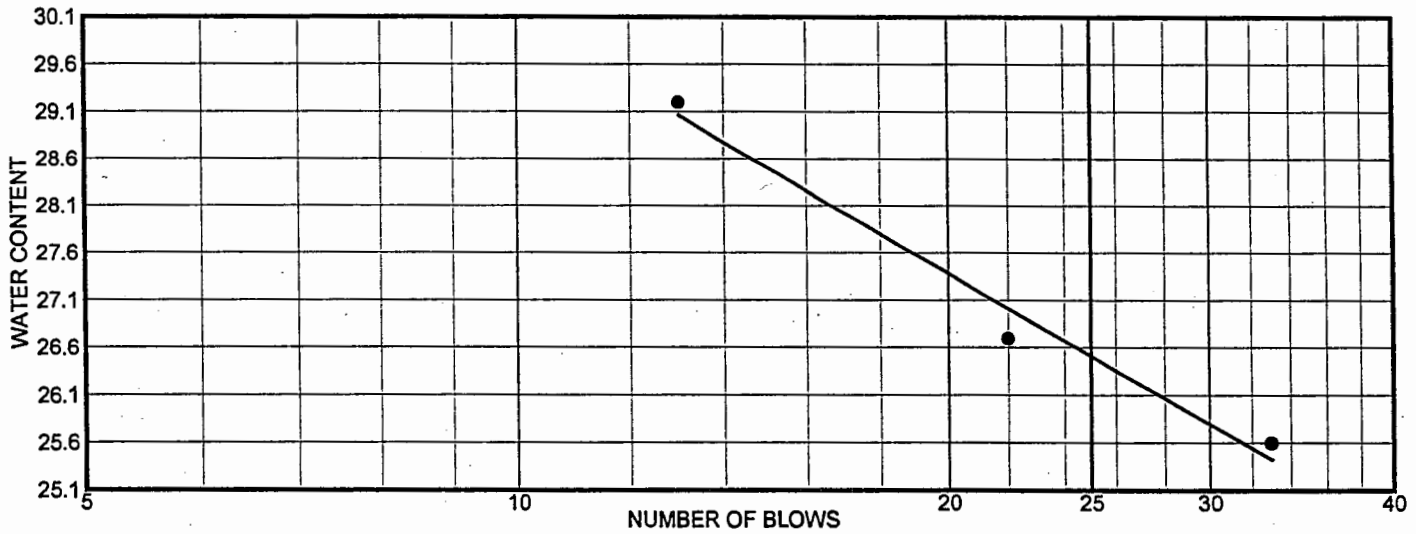
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	27	14	13			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-17-00 **Sample No.:** S-16 **Elev./Depth:** 38.5-40.0

Remarks:

●

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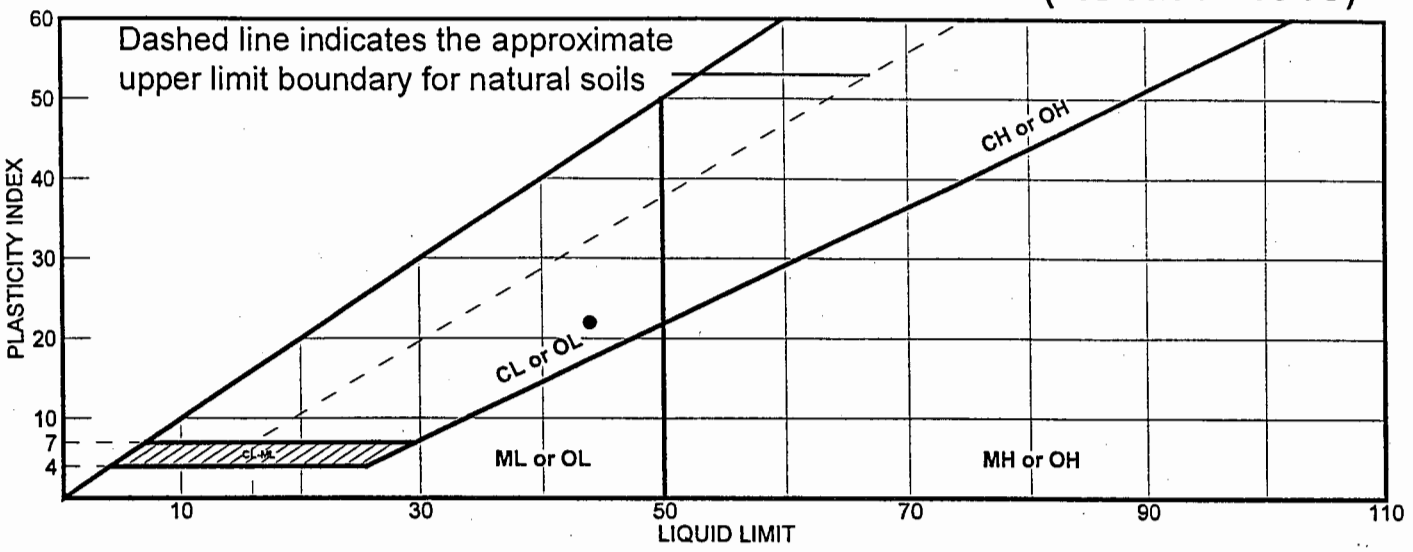
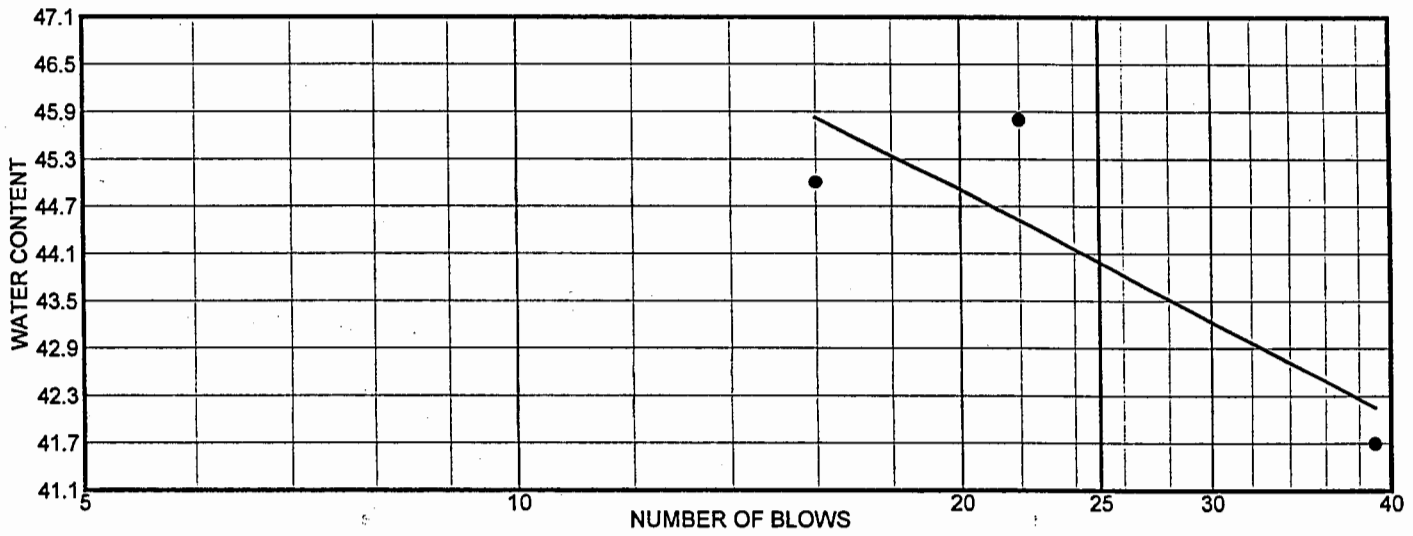
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - BROWN	44	22	22			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-3 **Elev./Depth:** 6.0-7.5

Remarks:

●

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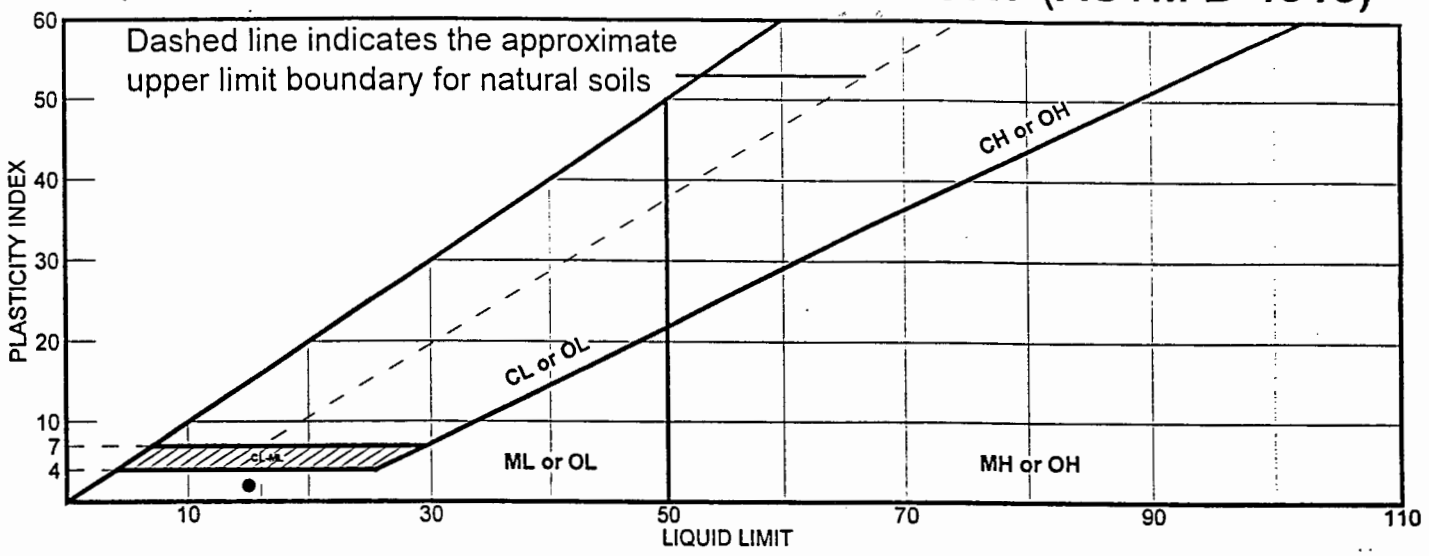
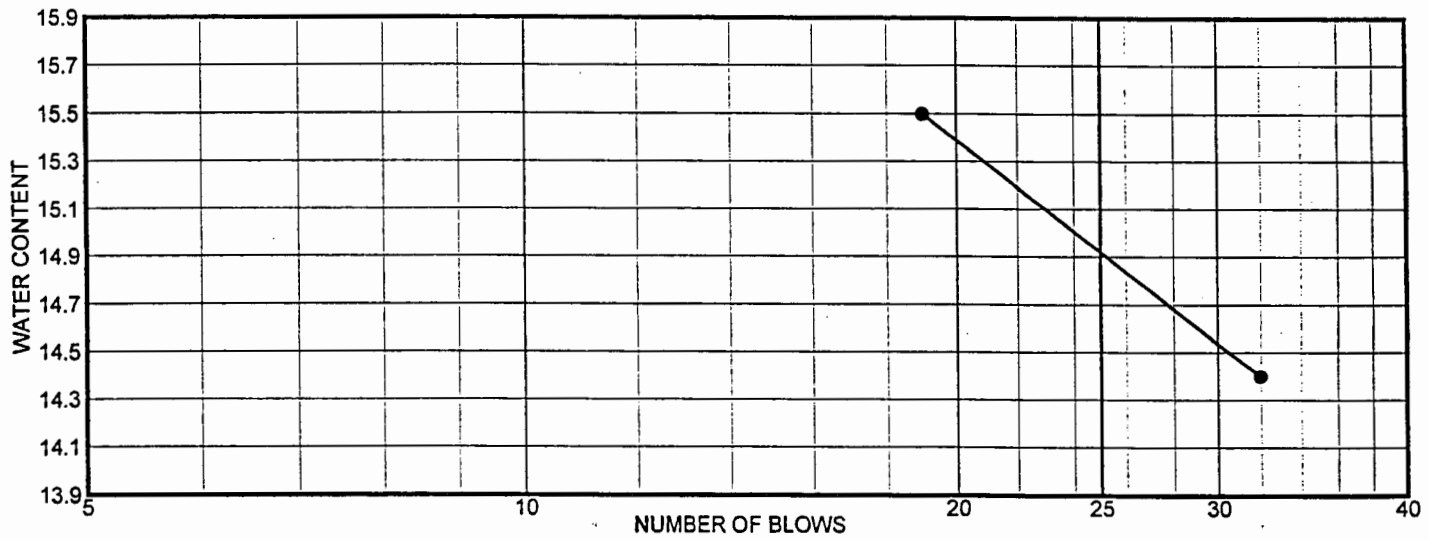
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	F-C SAND LITTLE SILT TR F GRAVEL - DARK GRAY	15	13	2	50.2	18.9	SM

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-4 **Elev./Depth:** 8.5-10.0

Remarks:

●

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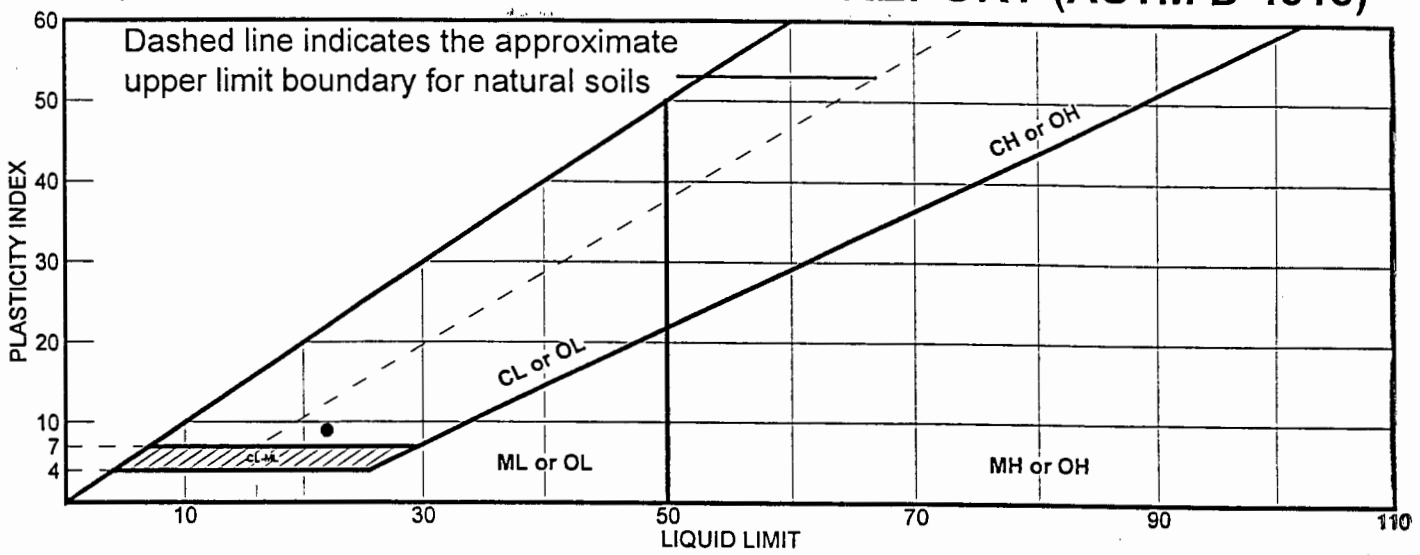
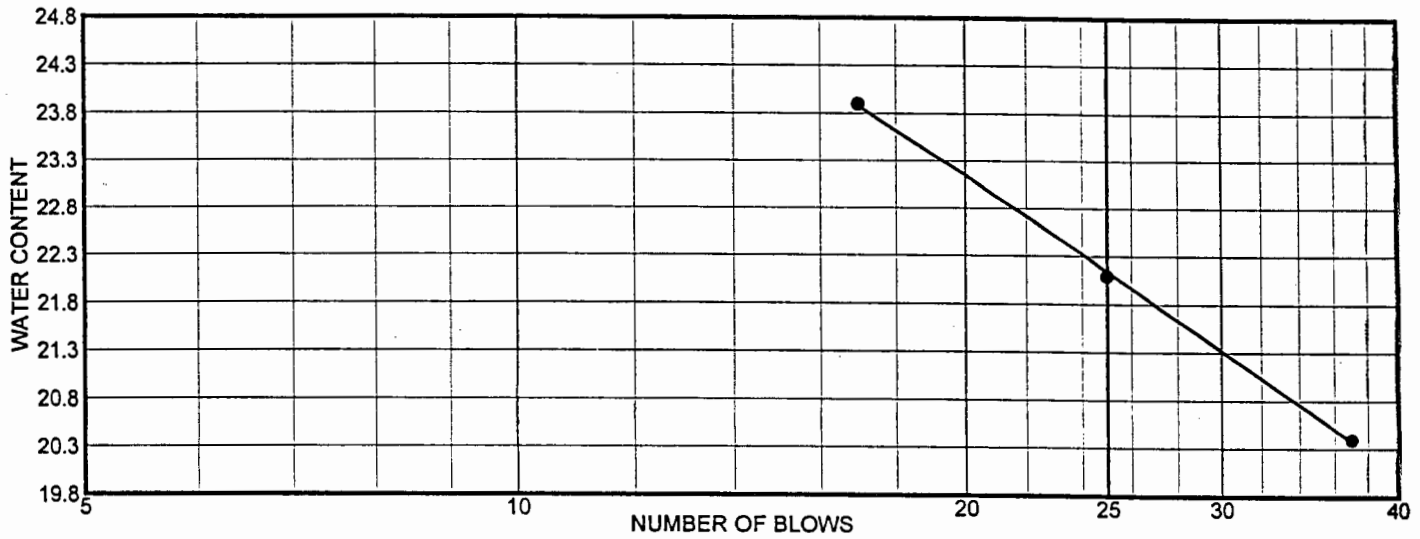
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	22	13	9			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-13.0

Remarks:

●

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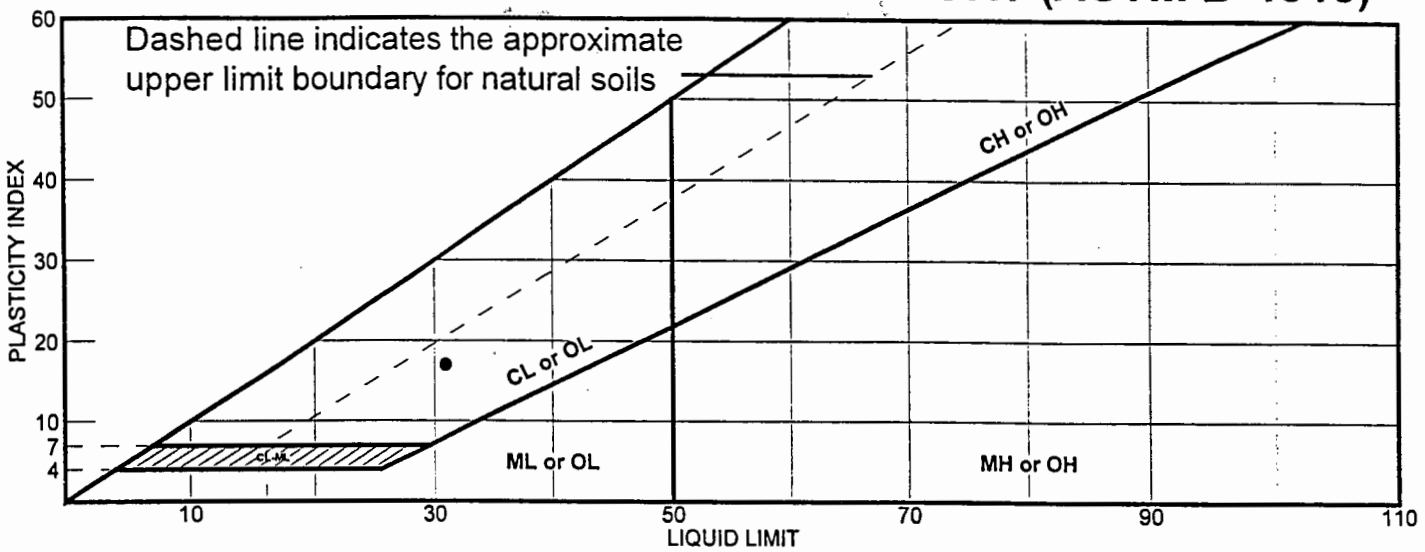
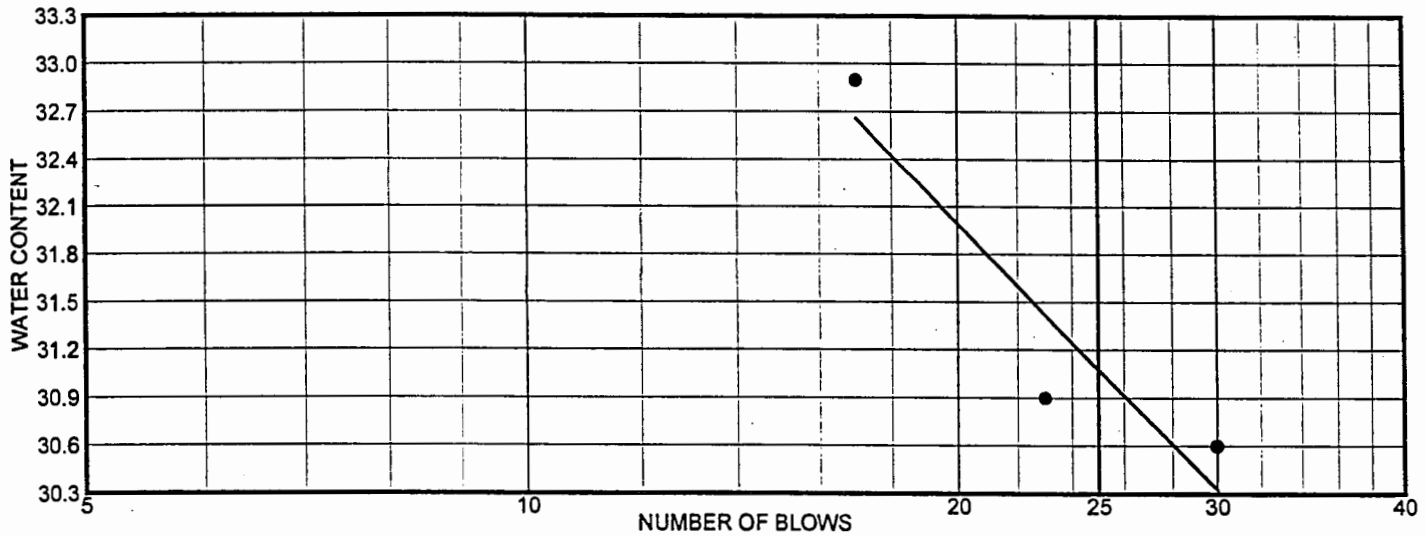
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	31	14	17			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-8 **Elev./Depth:** 18.5-20.0

Remarks:

●

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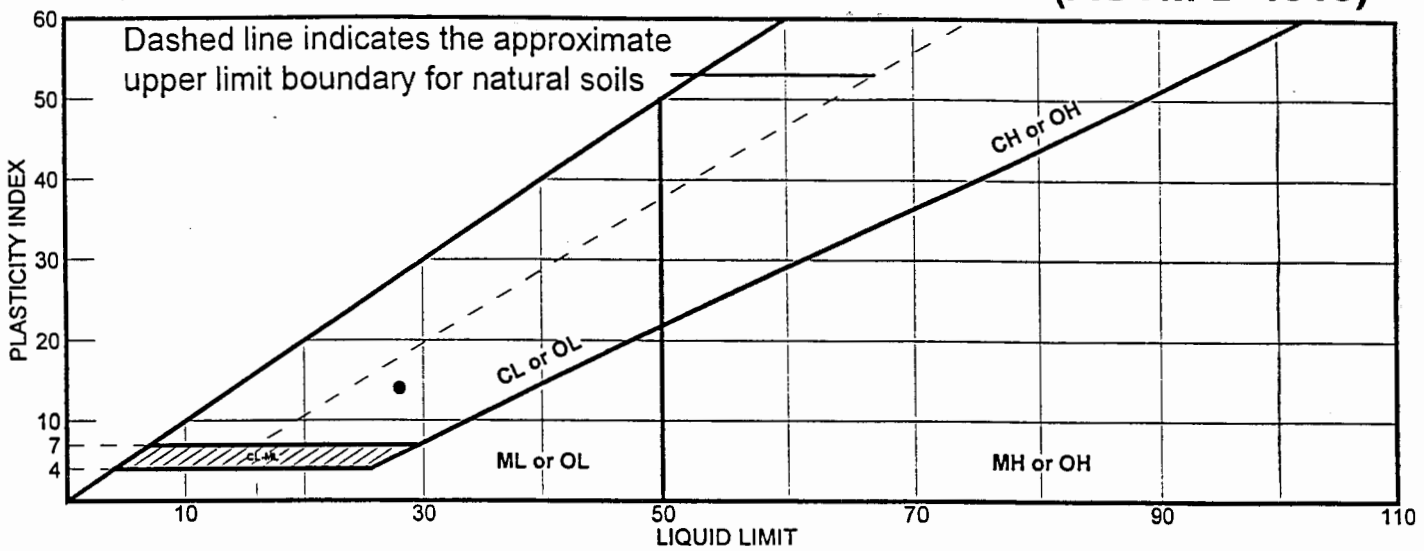
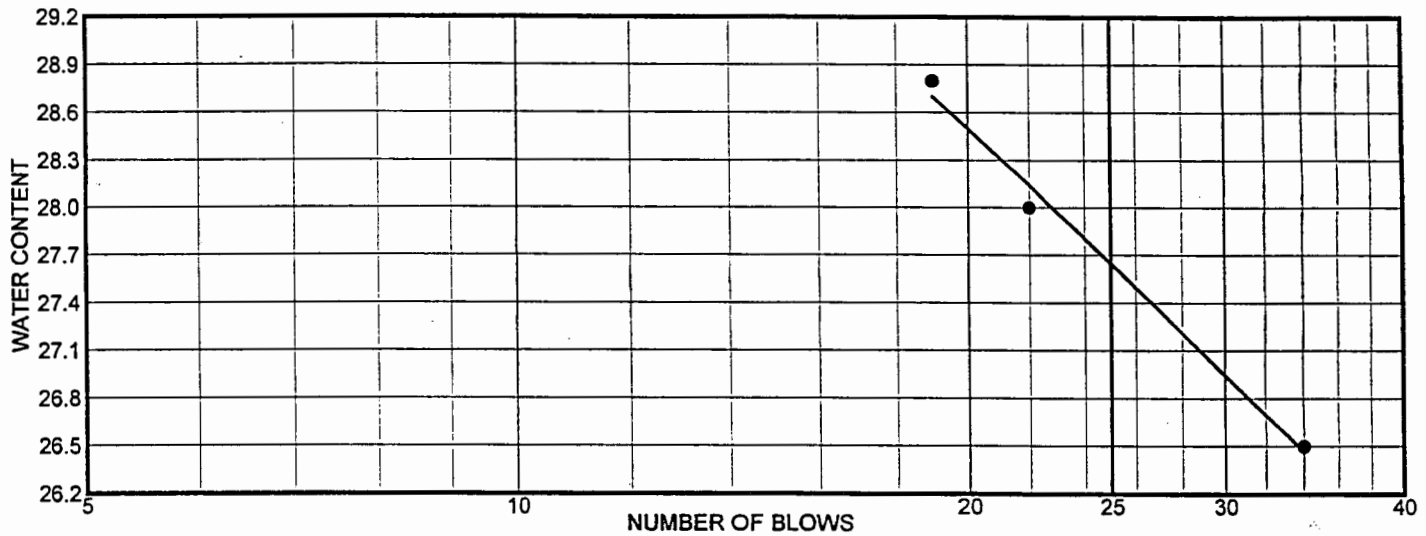
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	28	14	14			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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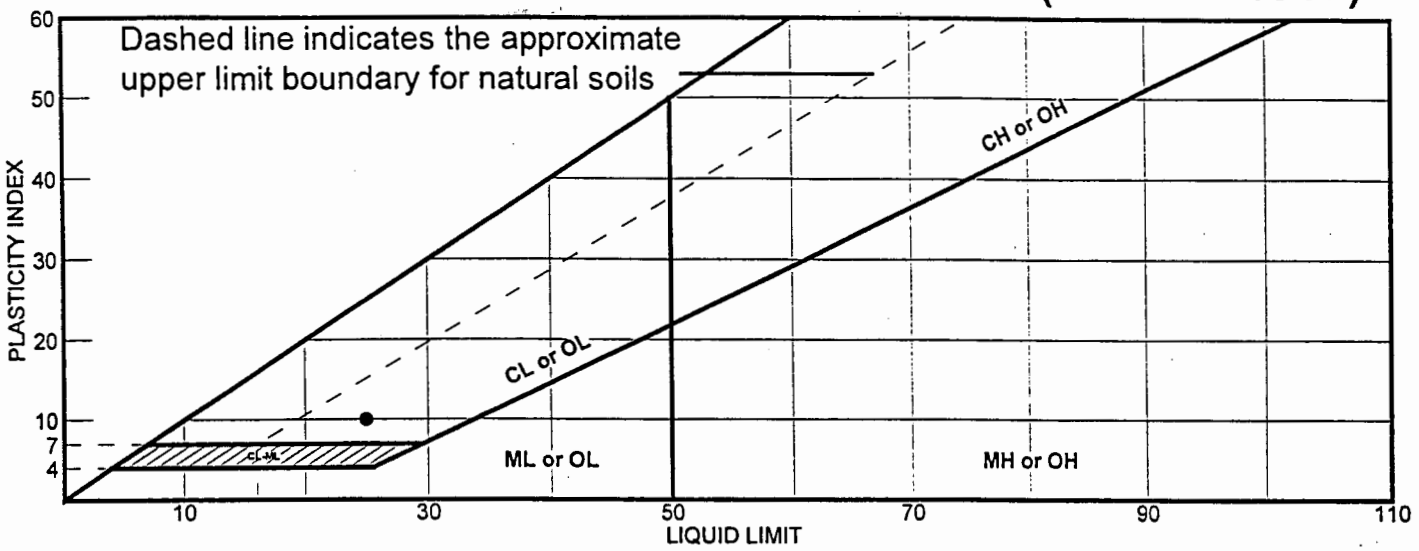
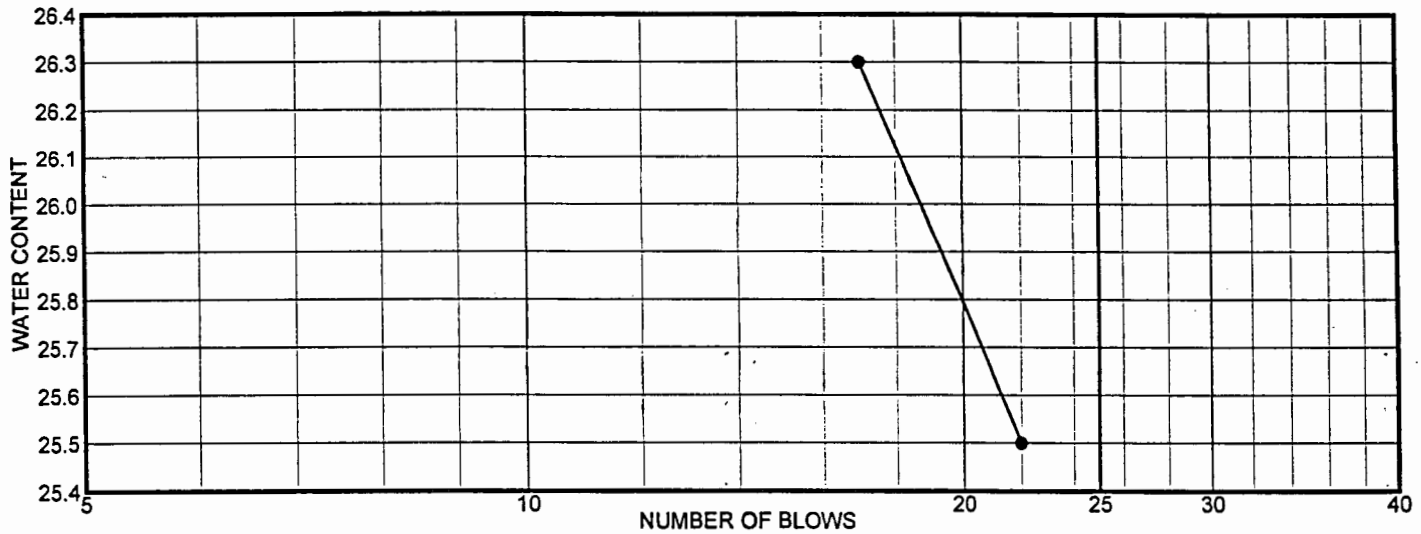
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY CLAY TR SILT TR F GRAVEL - BROWN	25	15	10			(SC)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-19-00 **Sample No.:** S-2A **Elev./Depth:** 3.5-5.0

Remarks:

●

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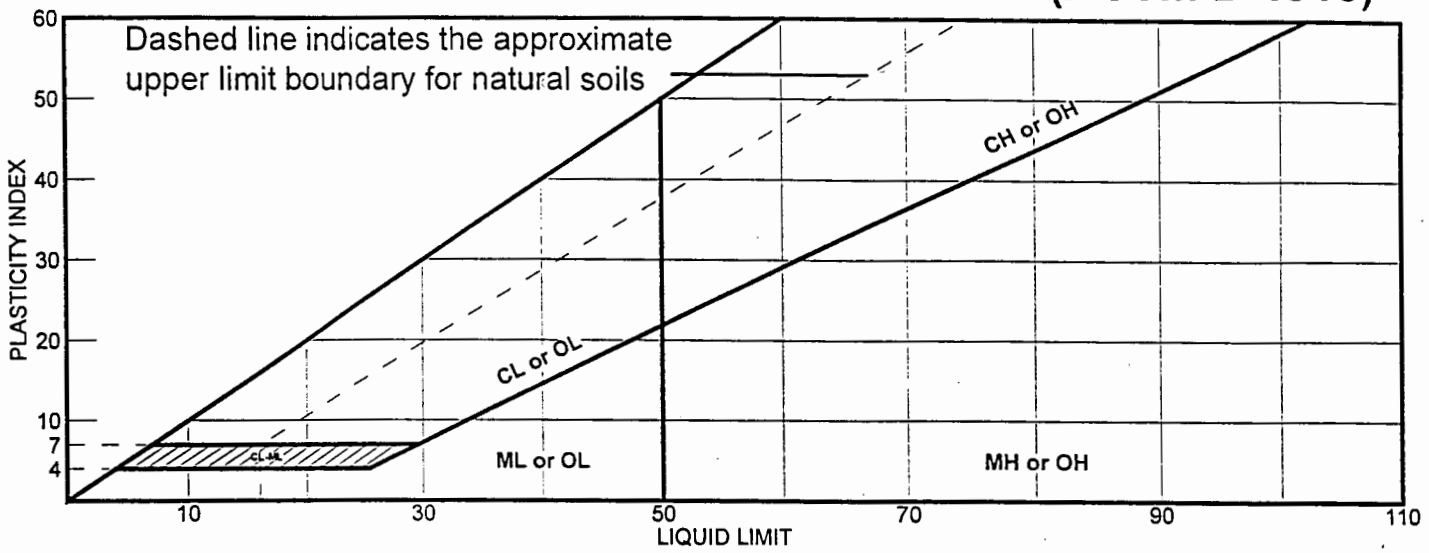
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	F-C SILTY SAND LITTLE CLAY TR F GRAVEL - BROWN		19	NP			(SM-SC)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-19-00 **Sample No.:** S-4 **Elev./Depth:** 8.5-10.0

Remarks:

●

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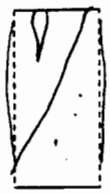
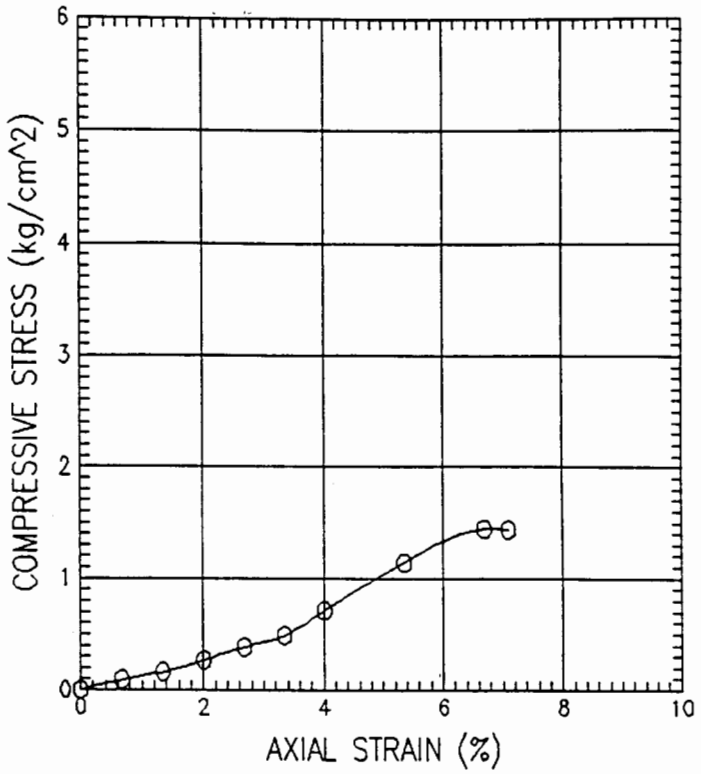
Plate

FAILURE SKETCHES



31130UC



☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

SYMBOL			O			
TEST NO.			31130UC			
TYPE OF SPECIMEN			REMOLDED			
INITIAL	WATER CONTENT %	w_o	12.25			
	VOID RATIO	e_o	0.339			
	SATURATION %	S_o	98.37			
	DRY DENSITY (gm/cm^3)	γ_d	2.03			
TIME TO FAILURE (min)		t_f				
UNCONFINED COMPRESSIVE STRENGTH (kg/cm^2)		q_u	1.44			
UNDRAINED SHEAR STRENGTH (kg/cm^2)		s_u	0.72			
RATE OF STRAIN (%/min)			.1			
INITIAL SPECIMEN DIAMETER (cm)		D_o	4.78			
INITIAL SPECIMEN HEIGHT (cm)		H_o	9.50			

DESCRIPTION OF SPECIMENS: 1) CLAYEY SILT TRACE SAND GRAVEL -- GRAY (ML-CL)

LL :	PL :	PI :	GS : 2.72

REMARKS:	PROJECT DES PLAINES RIVER					
1)						
	BORING NO. 5	SAMPLE NO.	6			
	TECH. LO	DEPTH/ELEV	13.5-15.0			
	LABORATORY	DATE	8-22-00			
	UNCONFINED COMPRESSION TEST REPORT					

UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC
Boring No. : 5
Test Date : 8-22-00
Tested by : LO
Sample No. : 6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : REMOLDED
Elevation :
Soil Description : CLAYEY SILT TRACE SAND GRAVEL -- GRAY (ML-CL)
Remarks :

Height : 9.496 (cm)
Quality of Sample : FAIR
Area : 17.9 (cm^2)
Piston Friction : 0.00 (kg)
Wet Unit Weight : 2.281 (gm/cm^3)
Volume : 170.1 (cm^3)
Piston Weight : 0.00 (gm)
Dry Unit Weight : 2.032 (gm/cm^3)

SAMPLE INFORMATION

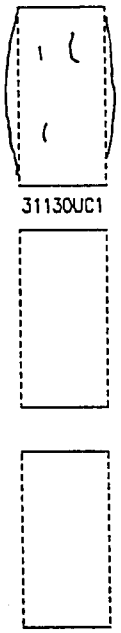
	SAMPLE #1	SAMPLE #2	SAMPLE #3
CONTAINER NO.	143		
WT CONTAINER + WET SOIL (gm)	162.49	0.00	0.00
WT CONTAINER + DRY SOIL (gm)	147.45	0.00	0.00
WT WATER (gm)	15.04	0.00	0.00
WT CONTAINER (gm)	24.65	0.00	0.00
WT DRY SOIL (gm)	122.80	0.00	0.00
WATER CONTENT (%)	12.25	0.00	0.00

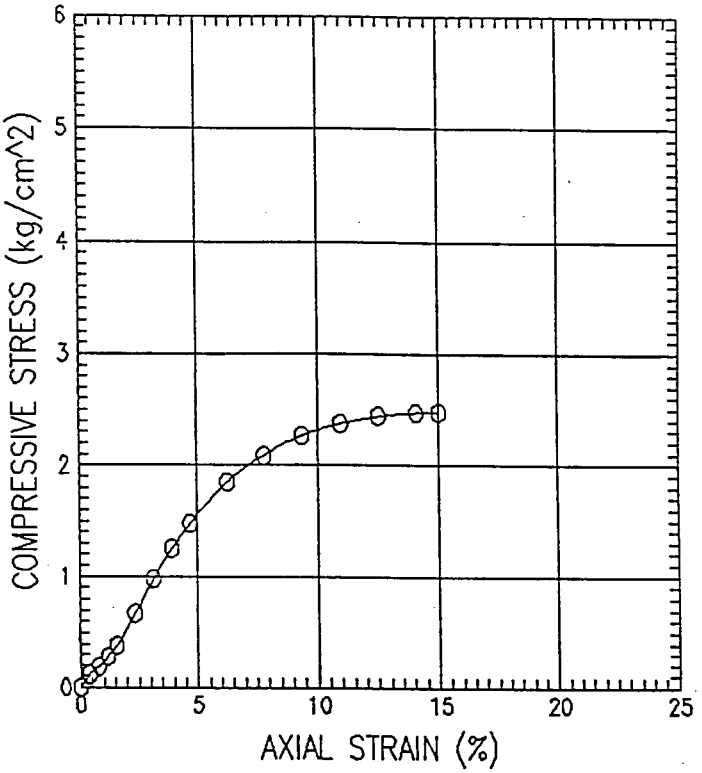
UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC
Boring No. : 5
Test Date : 8-22-00
Tested by : LO
Sample No. : 6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : REMOLDED
Elevation :
Soil Description : CLAYEY SILT TRACE SAND GRAVEL -- GRAY (ML-CL)
Remarks :

	AXIAL COMPRESSION (cm)	AXIAL STRAIN (%)	LOAD (kg)	CORR. LOAD ON SAMPLE (kg)	VERTICAL STRESS (kg/cm^2)	SHEAR STRESS (kg/cm^2)
1)	0.000	0.00	0.00	0.00	0.00	0.00
2)	0.064	0.67	1.73	1.73	0.10	0.05
3)	0.127	1.34	2.95	2.95	0.16	0.08
4)	0.191	2.01	4.90	4.90	0.26	0.13
5)	0.254	2.67	7.22	7.22	0.38	0.19
6)	0.318	3.34	9.26	9.26	0.49	0.24
7)	0.381	4.01	13.67	13.67	0.71	0.36
8)	0.508	5.35	22.43	22.43	1.14	0.57
9)	0.635	6.69	29.10	29.10	1.44	0.72
10)	0.673	7.09	29.19	29.19	1.44	0.72

FAILURE SKETCHES





☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

SYMBOL			O			
TEST NO.			31130UC1			
TYPE OF SPECIMEN			3 IN ST			
INITIAL	WATER CONTENT %	w_o	13.33			
	VOID RATIO	e_o	0.306			
	SATURATION %	S_o	117.68			
	DRY DENSITY (gm/cm^3)	γ_d	2.07			
TIME TO FAILURE (min)		t_f				
UNCONFINED COMPRESSIVE STRENGTH (kg/cm^2)		q_u	2.48			
UNDRAINED SHEAR STRENGTH (kg/cm^2)		s_u	1.24			
RATE OF STRAIN (%/min)			.1			
INITIAL SPECIMEN DIAMETER (cm)		D_o	7.17			
INITIAL SPECIMEN HEIGHT (cm)		H_o	16.26			

DESCRIPTION OF SPECIMENS: 1) SILTY CLAY LITTLE F-C SAND, GRAVEL -- GRAY (CL)

LL : 23.00	PL : 14.00	PI : 9.00	GS : 2.70

REMARKS:	PROJECT DES PLAINES RIVER					
1)						
	BORING NO. L37-13-00	SAMPLE NO.	6			
	TECH. ER	DEPTH/ELEV	13.5-15.5			
	LABORATORY	DATE	8-2-00			
	UNCONFINED COMPRESSION TEST REPORT					

UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC1
Boring No. : L37-13-00
Test Date : 8-2-00
Tested by : ER
Sample No. : 6
Depth : 13.5-15.5
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY LITTLE F-C SAND, GRAVEL -- GRAY (CL)
Remarks :

Height : 16.260 (cm)
Quality of Sample : FAIR
Area : 40.4 (cm^2)
Piston Friction : 0.00 (kg)
Wet Unit Weight : 2.343 (gm/cm^3)
Volume : 656.5 (cm^3)
Piston Weight : 0.00 (gm)
Dry Unit Weight : 2.068 (gm/cm^3)

SAMPLE INFORMATION

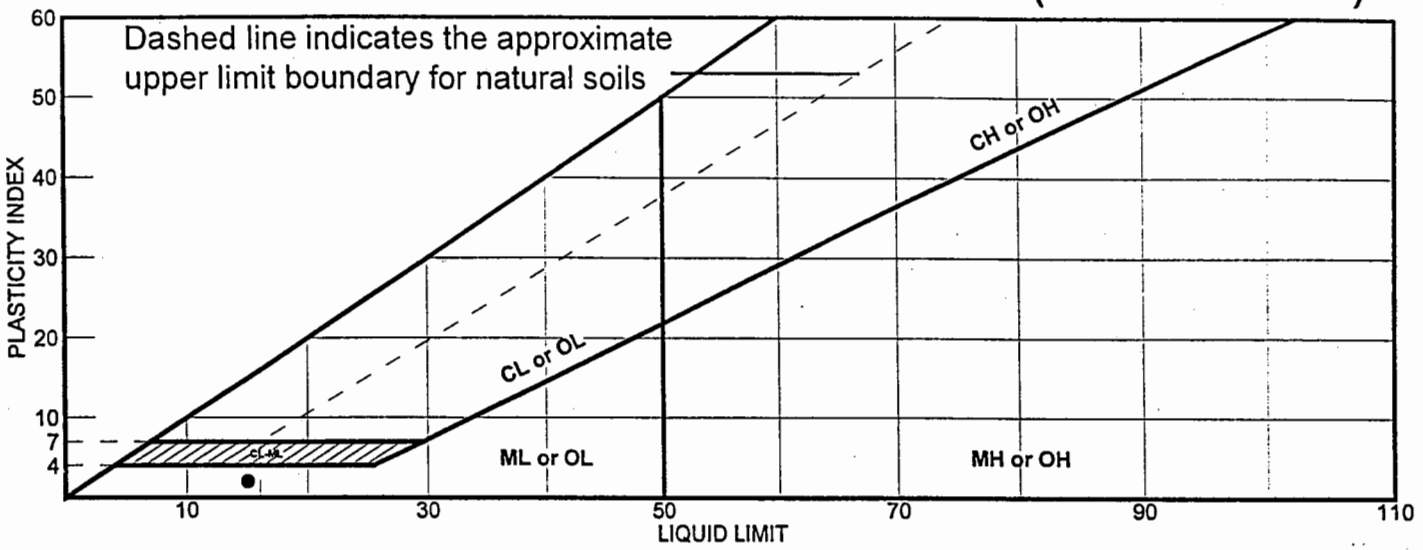
	SAMPLE #1	SAMPLE #2	SAMPLE #3
CONTAINER NO.	42		
WT CONTAINER + WET SOIL (gm)	151.94	0.00	0.00
WT CONTAINER + DRY SOIL (gm)	134.22	0.00	0.00
WT WATER (gm)	17.72	0.00	0.00
WT CONTAINER (gm)	1.29	0.00	0.00
WT DRY SOIL (gm)	132.93	0.00	0.00
WATER CONTENT (%)	13.33	0.00	0.00

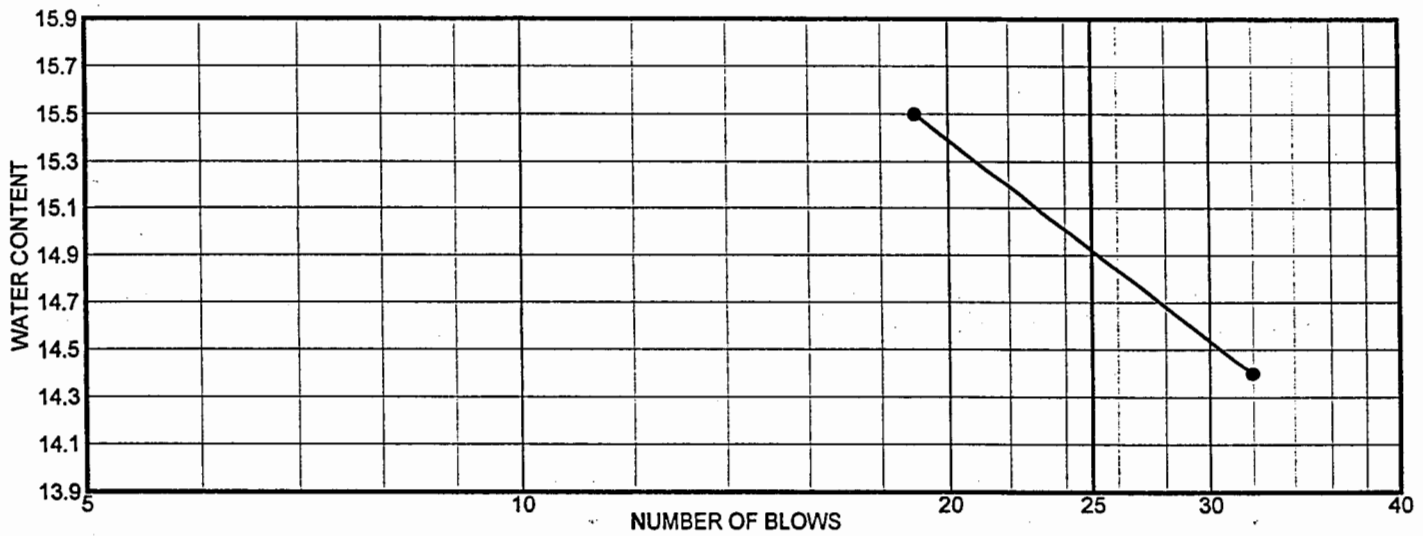
UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC1
Boring No. : L37-13-00
Test Date : 8-2-00
Tested by : ER
Sample No. : 6
Depth : 13.5-15.5
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY LITTLE F-C SAND, GRAVEL -- GRAY (CL)
Remarks :

	AXIAL COMPRESSION (cm)	AXIAL STRAIN (%)	LOAD (kg)	CORR. LOAD ON SAMPLE (kg)	VERTICAL STRESS (kg/cm^2)	SHEAR STRESS (kg/cm^2)
1)	0.000	0.00	0.00	0.00	0.00	0.00
2)	0.064	0.39	4.63	4.63	0.11	0.06
3)	0.127	0.78	7.67	7.67	0.19	0.09
4)	0.191	1.17	11.44	11.44	0.28	0.14
5)	0.254	1.56	15.98	15.98	0.39	0.19
6)	0.381	2.34	28.28	28.28	0.67	0.34
7)	0.508	3.12	41.72	41.72	0.98	0.49
8)	0.635	3.91	53.89	53.89	1.25	0.62
9)	0.762	4.69	64.60	64.60	1.48	0.74
10)	1.016	6.25	83.26	83.26	1.85	0.92
11)	1.270	7.81	96.88	96.88	2.09	1.04
12)	1.524	9.37	108.32	108.32	2.26	1.13
13)	1.778	10.93	117.09	117.09	2.37	1.19
14)	2.032	12.50	124.44	124.44	2.44	1.22
15)	2.286	14.06	130.39	130.39	2.47	1.24
16)	2.438	15.00	133.48	133.48	2.48	1.24

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	F-C SAND LITTLE SILT TR F GRAVEL - DARK GRAY	15	13	2	50.2	18.9	SM

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-4 **Elev./Depth:** 8.5-10.0

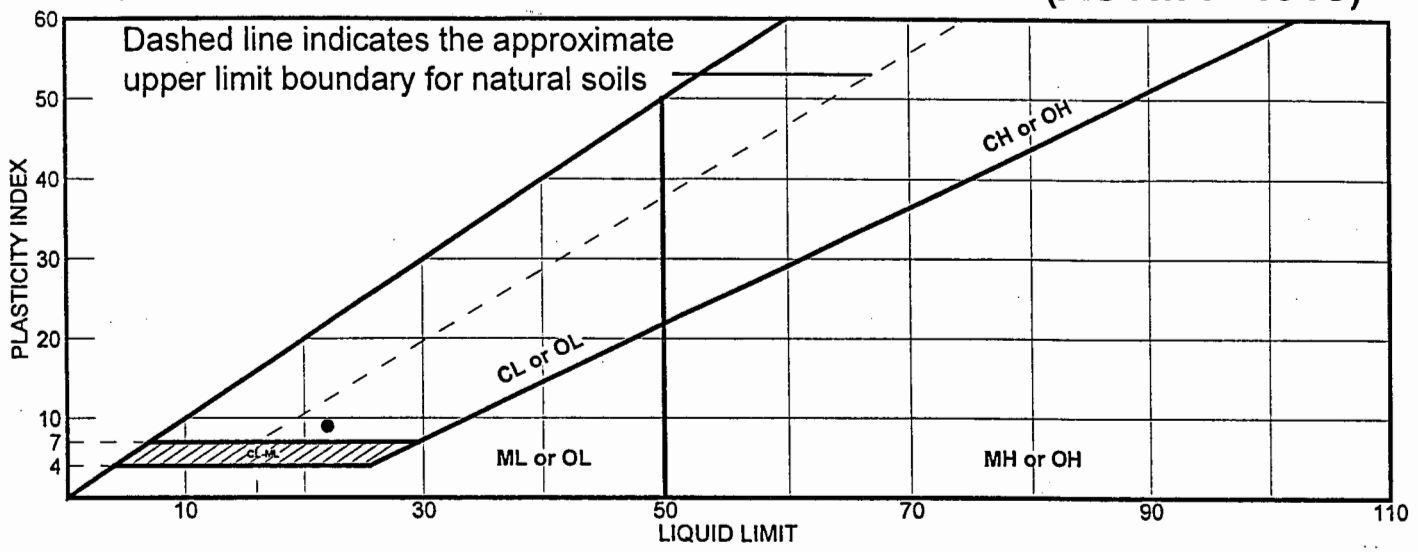
Remarks:

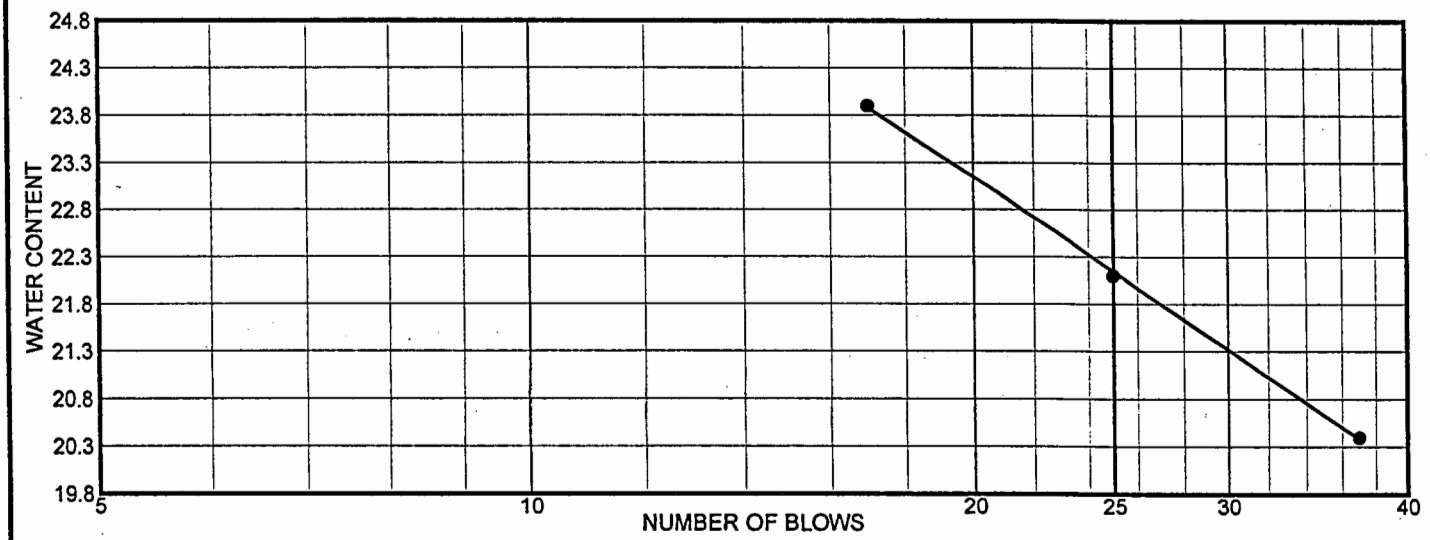
●

STS Consultants Ltd.
750 Corporate Woods Parkway
Vernon Hills, IL 60061

Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	22	13	9			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-5 **Elev./Depth:** 11.0-13.0

Remarks:

●

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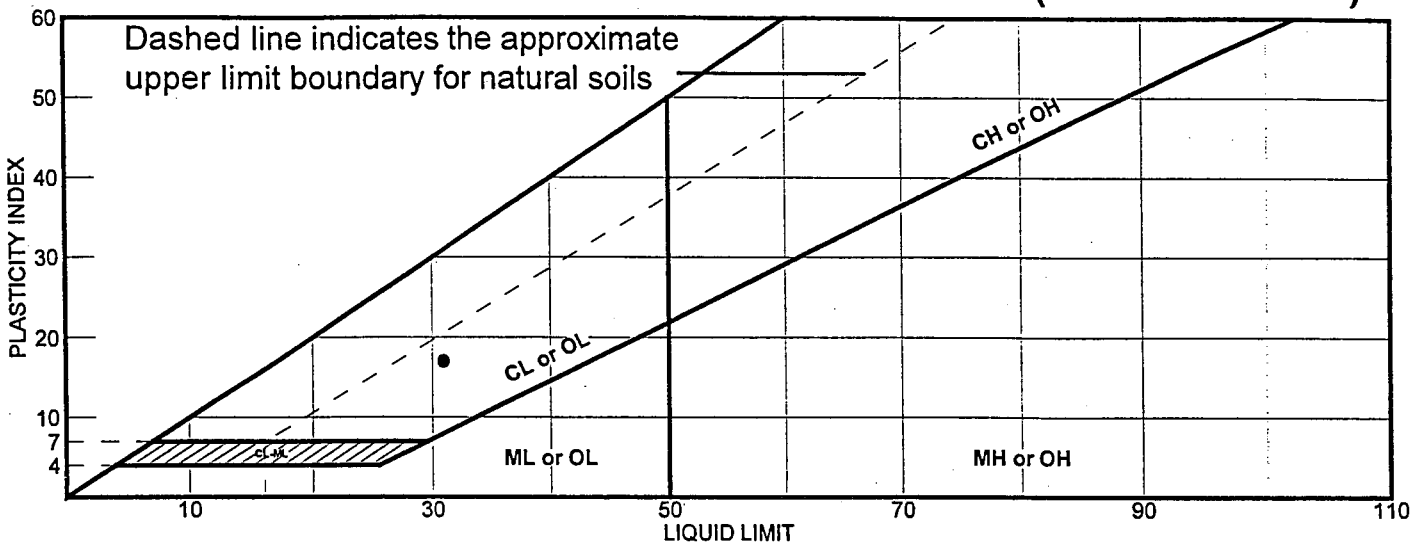
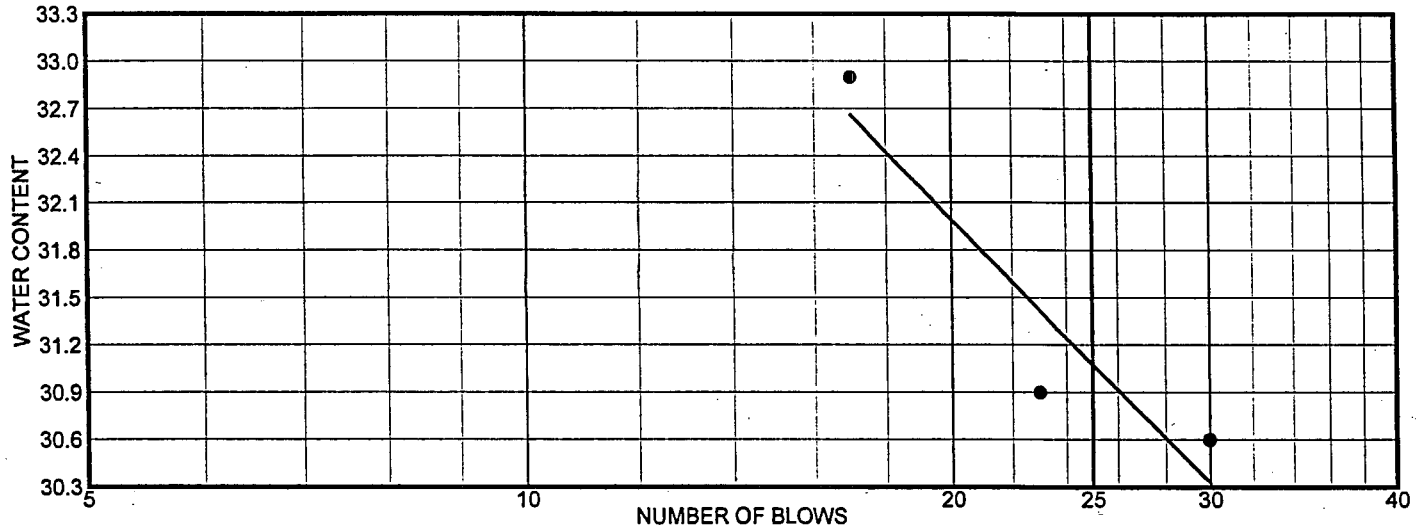
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	31	14	17			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-8 **Elev./Depth:** 18.5-20.0

Remarks:

●

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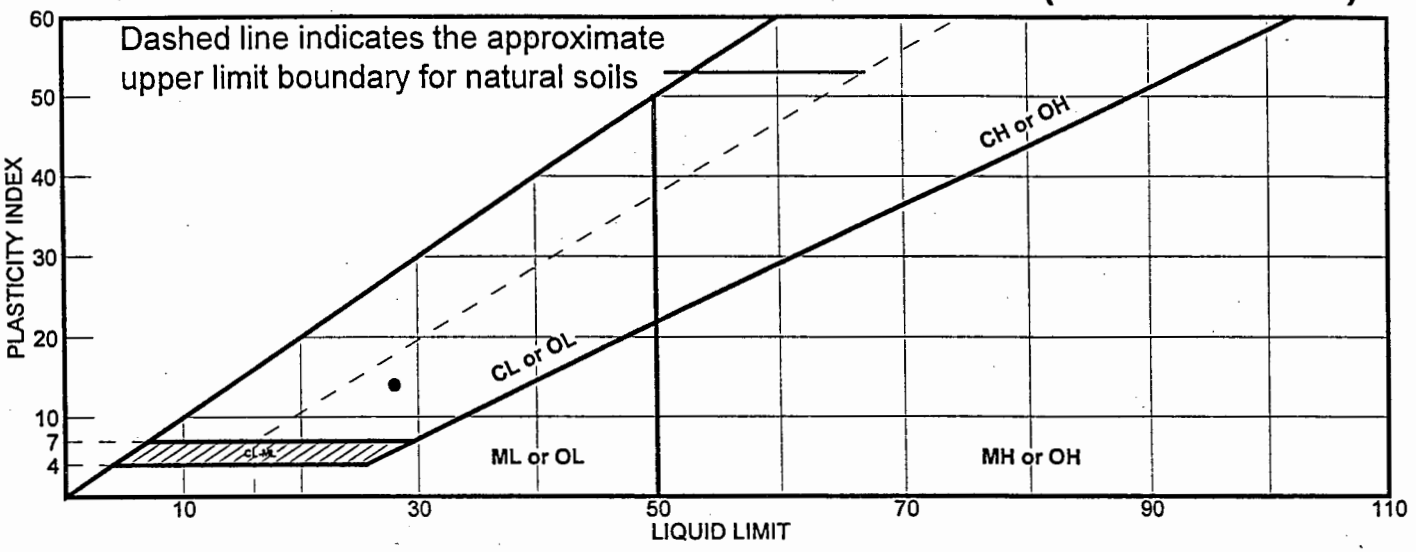
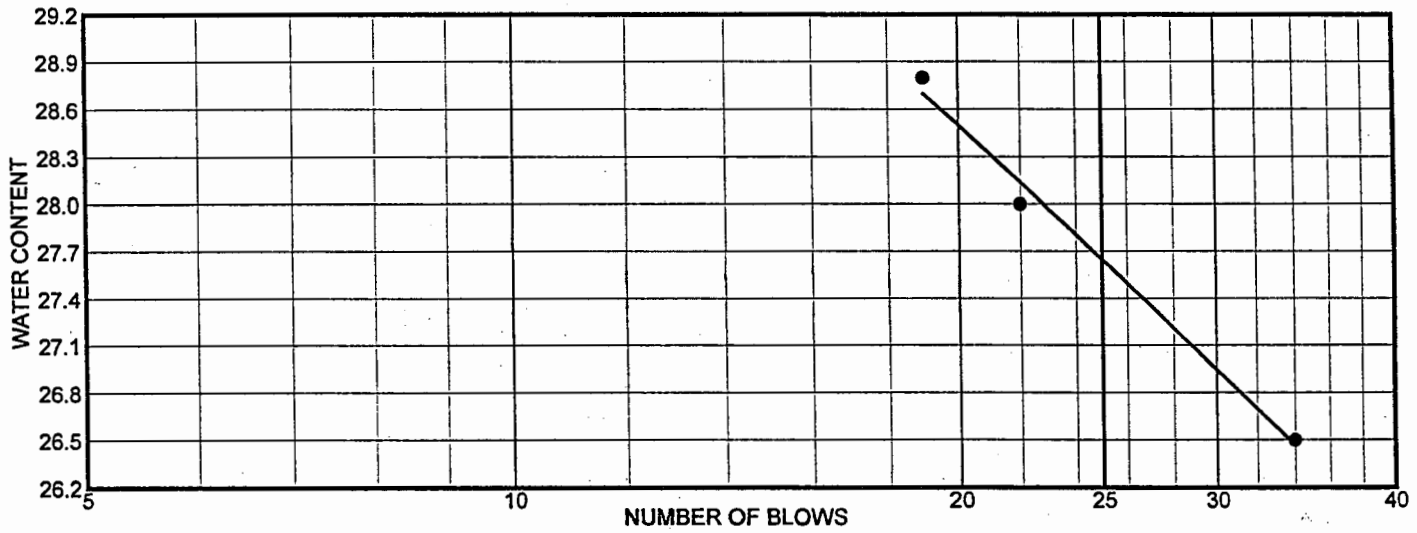
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SILTY CLAY TR F-C SAND TR F GRAVEL - GRAY	28	14	14			(CL)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-18-00 **Sample No.:** S-9 **Elev./Depth:** 21.0-22.5

Remarks:

●

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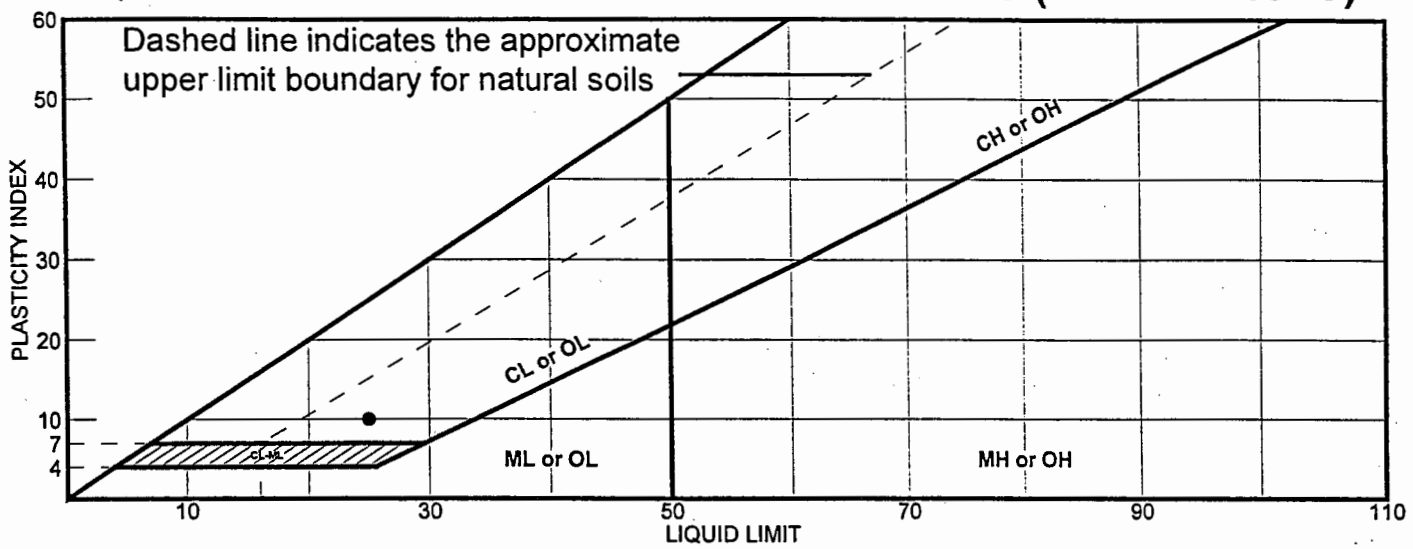
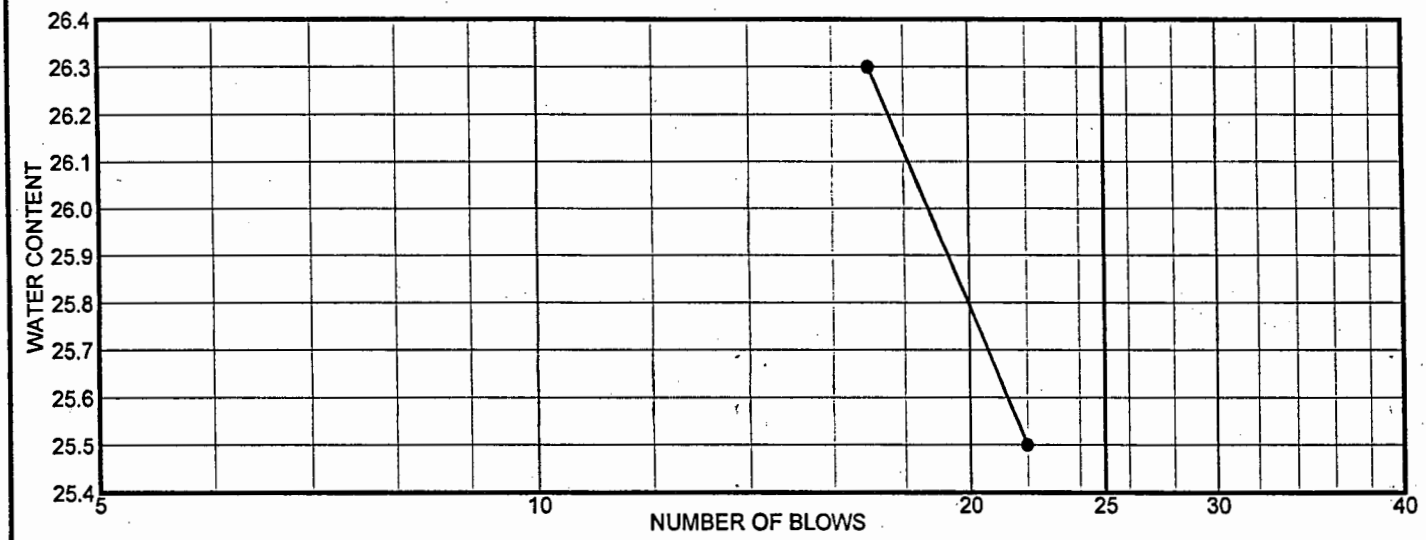
LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	SANDY CLAY TR SILT TR F GRAVEL - BROWN	25	15	10			(SC)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-19-00 **Sample No.:** S-2A **Elev./Depth:** 3.5-5.0

Remarks:

●

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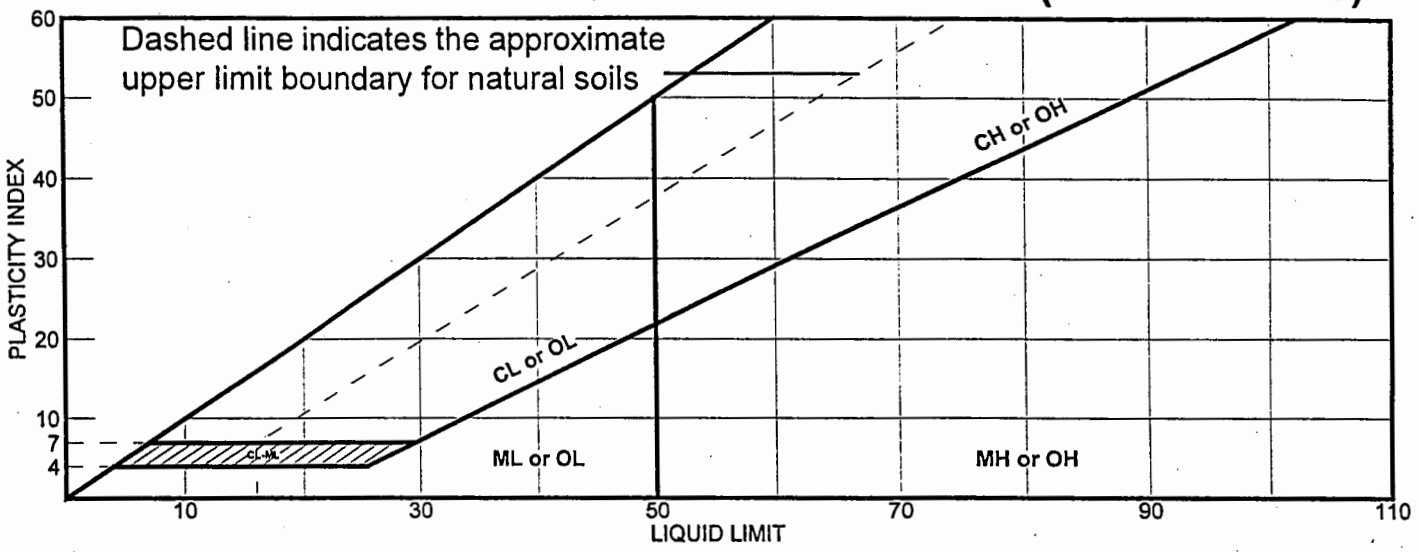
Plate

LIQUID AND PLASTIC LIMITS TEST REPORT (ASTM D 4318)



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	F-C SILTY SAND LITTLE CLAY TR F GRAVEL - BROWN		19	NP			(SM-SC)

Project No. 31130 **Client:**

Project: DES PLAINES RIVER FLOOD DAMAGE REDUCTION

● **Source:** BORING L37-19-00 **Sample No.:** S-4 **Elev./Depth:** 8.5-10.0

Remarks:

●

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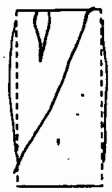
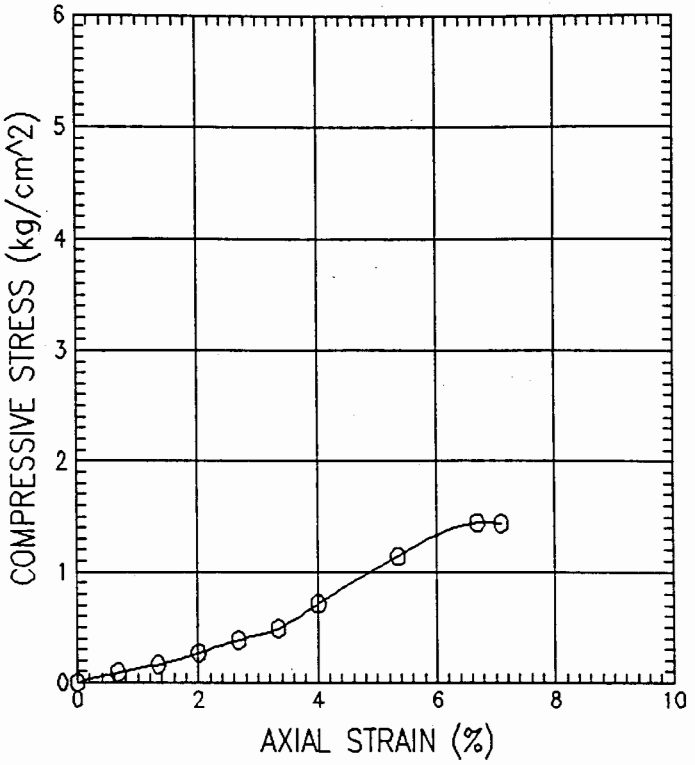
Vernon Hills, IL 60061

Plate

FAILURE SKETCHES



31130UC



☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

SYMBOL			O			
TEST NO.			31130UC			
TYPE OF SPECIMEN			REMOLDED			
INITIAL	WATER CONTENT %	w_o	12.25			
	VOID RATIO	e_o	0.339			
	SATURATION %	S_o	98.37			
	DRY DENSITY (gm/cm^3)	γ_d	2.03			
TIME TO FAILURE (min)		t_f				
UNCONFINED COMPRESSIVE STRENGTH (kg/cm^2)		q_u	1.44			
UNDRAINED SHEAR STRENGTH (kg/cm^2)		s_u	0.72			
RATE OF STRAIN (%/min)			.1			
INITIAL SPECIMEN DIAMETER (cm)		D_o	4.78			
INITIAL SPECIMEN HEIGHT (cm)		H_o	9.50			

DESCRIPTION OF SPECIMENS: 1) CLAYEY SILT TRACE SAND GRAVEL -- GRAY (ML-CL)

LL :	PL :	PI :	GS : 2.72

REMARKS:	PROJECT DES PLAINES RIVER					
1)						
	BORING NO. 5	SAMPLE NO.	6			
	TECH. LO	DEPTH/ELEV	13.5-15.0			
	LABORATORY	DATE	8-22-00			
	UNCONFINED COMPRESSION TEST REPORT					

UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC
Boring No. : 5
Test Date : 8-22-00
Tested by : LO
Sample No. : 6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : REMOLDED
Elevation :
Soil Description : CLAYEY SILT TRACE SAND GRAVEL -- GRAY (ML-CL)
Remarks :

Height : 9.496 (cm)
Quality of Sample : FAIR
Area : 17.9 (cm^2)
Piston Friction : 0.00 (kg)
Wet Unit Weight : 2.281 (gm/cm^3)
Volume : 170.1 (cm^3)
Piston Weight : 0.00 (gm)
Dry Unit Weight : 2.032 (gm/cm^3)

SAMPLE INFORMATION

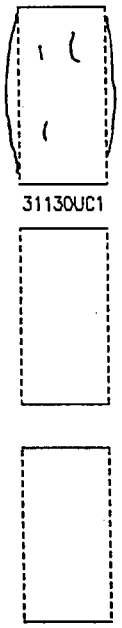
	SAMPLE #1	SAMPLE #2	SAMPLE #3
CONTAINER NO.	143		
WT CONTAINER + WET SOIL (gm)	162.49	0.00	0.00
WT CONTAINER + DRY SOIL (gm)	147.45	0.00	0.00
WT WATER (gm)	15.04	0.00	0.00
WT CONTAINER (gm)	24.65	0.00	0.00
WT DRY SOIL (gm)	122.80	0.00	0.00
WATER CONTENT (%)	12.25	0.00	0.00

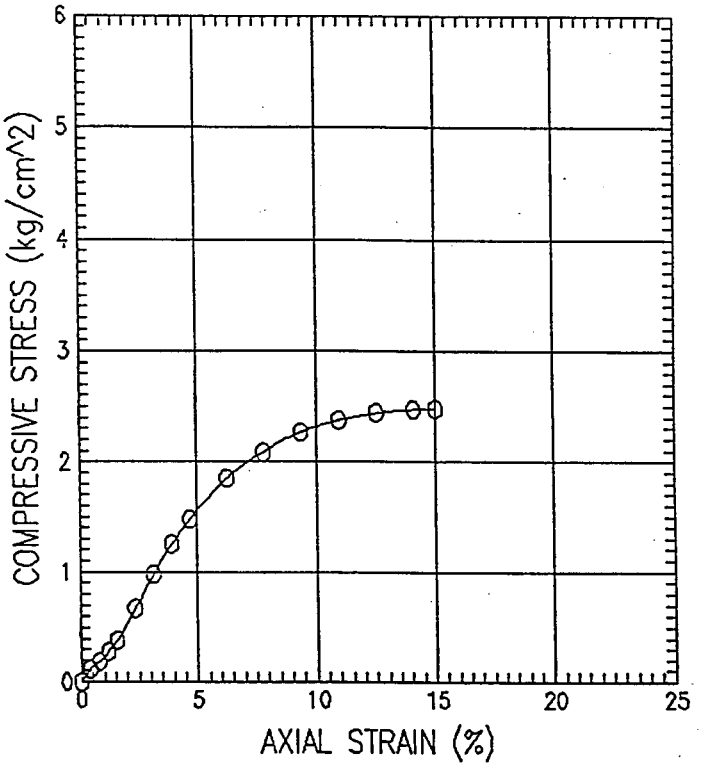
UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC
Boring No. : 5
Test Date : 8-22-00
Tested by : LO
Sample No. : 6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : REMOLDED
Elevation :
Soil Description : CLAYEY SILT TRACE SAND GRAVEL -- GRAY (ML-CL)
Remarks :

	AXIAL COMPRESSION (cm)	AXIAL STRAIN (%)	LOAD (kg)	CORR. LOAD ON SAMPLE (kg)	VERTICAL STRESS (kg/cm^2)	SHEAR STRESS (kg/cm^2)
1)	0.000	0.00	0.00	0.00	0.00	0.00
2)	0.064	0.67	1.73	1.73	0.10	0.05
3)	0.127	1.34	2.95	2.95	0.16	0.08
4)	0.191	2.01	4.90	4.90	0.26	0.13
5)	0.254	2.67	7.22	7.22	0.38	0.19
6)	0.318	3.34	9.26	9.26	0.49	0.24
7)	0.381	4.01	13.67	13.67	0.71	0.36
8)	0.508	5.35	22.43	22.43	1.14	0.57
9)	0.635	6.69	29.10	29.10	1.44	0.72
10)	0.673	7.09	29.19	29.19	1.44	0.72

FAILURE SKETCHES





☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

SYMBOL			O			
TEST NO.			31130UC1			
TYPE OF SPECIMEN			3 IN ST			
INITIAL	WATER CONTENT %	w_o	13.33			
	VOID RATIO	e_o	0.306			
	SATURATION %	S_o	117.68			
	DRY DENSITY (gm/cm^3)	γ_d	2.07			
TIME TO FAILURE (min)		t_f				
UNCONFINED COMPRESSIVE STRENGTH (kg/cm^2)		q_u	2.48			
UNDRAINED SHEAR STRENGTH (kg/cm^2)		s_u	1.24			
RATE OF STRAIN (%/min)			.1			
INITIAL SPECIMEN DIAMETER (cm)		D_o	7.17			
INITIAL SPECIMEN HEIGHT (cm)		H_o	16.26			

DESCRIPTION OF SPECIMENS: 1) SILTY CLAY LITTLE F-C SAND, GRAVEL -- GRAY (CL)

LL : 23.00	PL : 14.00	PI : 9.00	GS : 2.70

REMARKS:	PROJECT DES PLAINES RIVER					
1)						
	BORING NO. L37-13-00	SAMPLE NO.	6			
	TECH. ER	DEPTH/ELEV	13.5-15.5			
	LABORATORY	DATE	8-2-00			
	UNCONFINED COMPRESSION TEST REPORT					

UNCONFINED COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC1
Boring No. : L37-13-00
Test Date : 8-2-00
Tested by : ER
Sample No. : 6
Depth : 13.5-15.5
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY LITTLE F-C SAND, GRAVEL -- GRAY (CL)
Remarks :

Height : 16.260 (cm)
Quality of Sample : FAIR
Area : 40.4 (cm^2)
Piston Friction : 0.00 (kg)
Wet Unit Weight : 2.343 (gm/cm^3)
Volume : 656.5 (cm^3)
Piston Weight : 0.00 (gm)
Dry Unit Weight : 2.068 (gm/cm^3)

SAMPLE INFORMATION

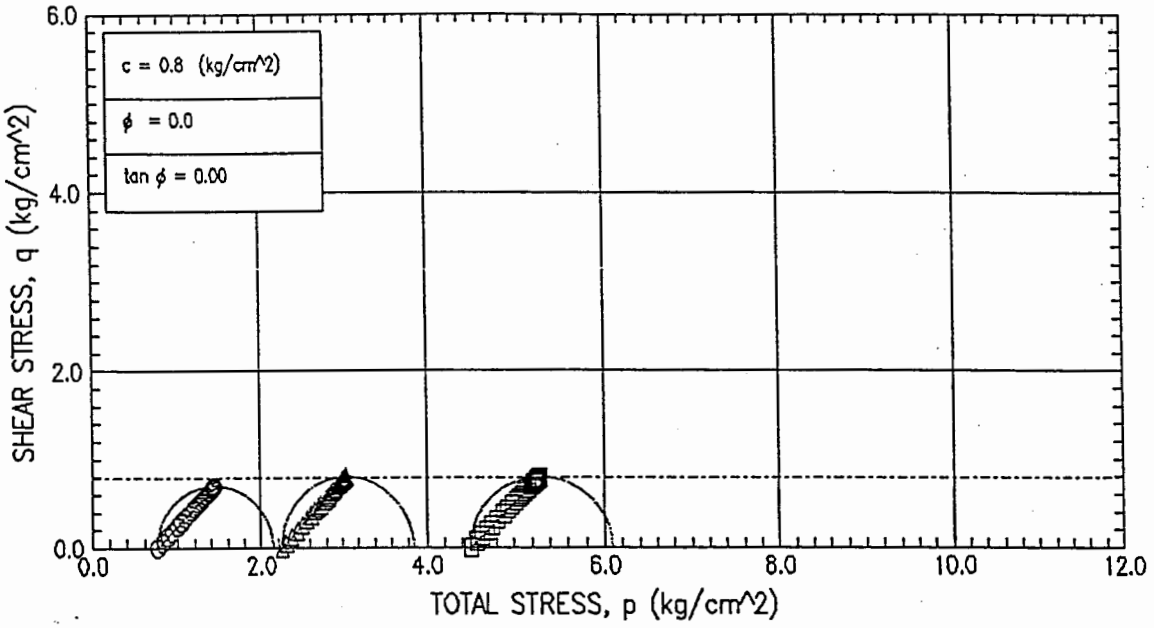
	SAMPLE #1	SAMPLE #2	SAMPLE #3
CONTAINER NO.	42		
WT CONTAINER + WET SOIL (gm)	151.94	0.00	0.00
WT CONTAINER + DRY SOIL (gm)	134.22	0.00	0.00
WT WATER (gm)	17.72	0.00	0.00
WT CONTAINER (gm)	1.29	0.00	0.00
WT DRY SOIL (gm)	132.93	0.00	0.00
WATER CONTENT (%)	13.33	0.00	0.00

UNCONFINED COMPRESSION TEST

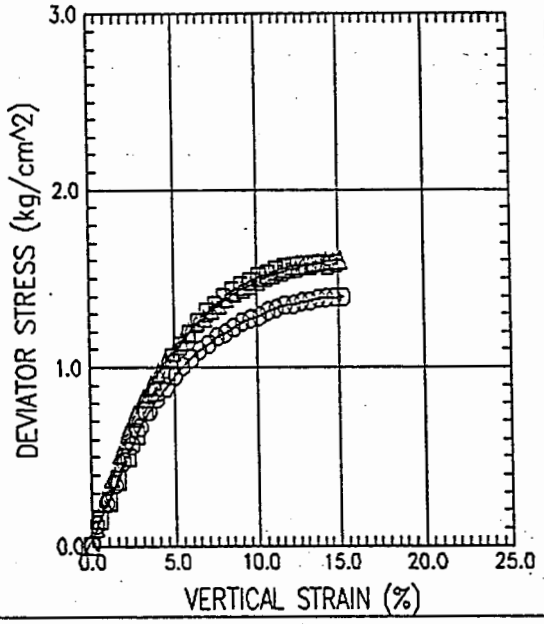
Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UC1
Boring No. : L37-13-00
Test Date : 8-2-00
Tested by : ER
Sample No. : 6
Depth : 13.5-15.5
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY LITTLE F-C SAND, GRAVEL -- GRAY (CL)
Remarks :

	AXIAL COMPRESSION (cm)	AXIAL STRAIN (%)	LOAD (kg)	CORR. LOAD ON SAMPLE (kg)	VERTICAL STRESS (kg/cm^2)	SHEAR STRESS (kg/cm^2)
1)	0.000	0.00	0.00	0.00	0.00	0.00
2)	0.064	0.39	4.63	4.63	0.11	0.06
3)	0.127	0.78	7.67	7.67	0.19	0.09
4)	0.191	1.17	11.44	11.44	0.28	0.14
5)	0.254	1.56	15.98	15.98	0.39	0.19
6)	0.381	2.34	28.28	28.28	0.67	0.34
7)	0.508	3.12	41.72	41.72	0.98	0.49
8)	0.635	3.91	53.89	53.89	1.25	0.62
9)	0.762	4.69	64.60	64.60	1.48	0.74
10)	1.016	6.25	83.26	83.26	1.85	0.92
11)	1.270	7.81	96.88	96.88	2.09	1.04
12)	1.524	9.37	108.32	108.32	2.26	1.13
13)	1.778	10.93	117.09	117.09	2.37	1.19
14)	2.032	12.50	124.44	124.44	2.44	1.22
15)	2.286	14.06	130.39	130.39	2.47	1.24
16)	2.438	15.00	133.48	133.48	2.48	1.24

UU TRIAXIAL COMPRESSION TEST ASTM D 2850



FAILURE SKETCHES



SYMBOL		○	△	□	
TEST NO.		31130UU1	31130UU2	31130UU3	
INITIAL	WATER CONTENT (%)	14.55	14.55	14.55	
	DRY DENSITY (gm/cm^3)	1.97	1.99	1.96	
	SATURATION (%)	104.21	107.47	102.99	
	VOID RATIO	0.380	0.368	0.384	
BEFORE SHEAR	WATER CONTENT (%)	14.55	14.55	14.55	
	DRY DENSITY (gm/cm^3)	1.97	1.99	1.96	
	SATURATION (%)	104.21	107.47	102.99	
	VOID RATIO	0.380	0.368	0.384	
	BACK PRESS. (kg/cm^2)	0.00	0.00	0.00	
MINOR PRIN. STRESS (kg/cm^2)		0.75	2.25	4.50	
MAX. DEV. STRESS (kg/cm^2)		1.39	1.60	1.58	
TIME TO FAILURE (min)		30.00	32.98	28.00	
RATE OF STRAIN INCR (%/min)		0.50	0.50	0.50	
INITIAL DIAMETER (cm)		7.21	7.20	7.21	
INITIAL HEIGHT (cm)		15.27	17.28	14.78	
B-VALUE		0.00	0.00	0.00	

STRAIN CONTROLLED

DESCRIPTION OF SPECIMENS:

1) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL2) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL3) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- G

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN 3 IN ST		TYPE OF TEST UU (Q)			
REMARKS:				PROJECT DES PLAINES RIVER					
1)				PROJECT NO.31130					
2)				BORING NO. L37-8-00	SAMPLE NO.	S-6	S-6	S-6	
3)				TECH. LO	DEPTH/ELEV	13.5-15.0	13.5-15.0	13.5-15.0	
				LABORATORY	DATE	8/3/00	8/3/00	8/3/00	
				TRIAXIAL COMPRESSION TEST REPORT					

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UU3
Boring No. : L37-8-00
Test Date : 8/3/00
Tested by : LO
Sample No. : S-6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 14.775 (cm)
Piston Diameter : 0.000 (cm)
Filter Correction : 0.00 (kg/cm^2)
Area : 40.794 (cm^2)
Piston Friction : 0.00 (kg)
Membrane Correction : 0.00 (kg/cm)
Volume : 602.7 (cm^3)
Piston Weight : 0.00 (gm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.8	0.00	0.00	0.00	0.00	4.50	4.50
2)	0.077	0.52	41.2	0.00	6.03	6.03	0.15	4.65	4.65
3)	0.155	1.05	41.5	0.00	10.55	10.55	0.25	4.75	4.75
4)	0.232	1.57	41.9	0.00	15.57	15.57	0.37	4.87	4.87
5)	0.317	2.14	42.3	0.00	21.10	21.10	0.50	5.00	5.00
6)	0.394	2.67	42.7	0.00	26.62	26.62	0.62	5.12	5.12
7)	0.471	3.19	43.1	0.00	32.65	32.65	0.76	5.26	5.26
8)	0.556	3.76	43.5	0.00	37.67	37.67	0.87	5.37	5.37
9)	0.633	4.29	43.9	0.00	42.19	42.19	0.96	5.46	5.46
10)	0.711	4.81	44.3	0.00	46.71	46.71	1.05	5.55	5.55
11)	0.788	5.33	44.8	0.00	50.23	50.23	1.12	5.62	5.62
12)	0.865	5.86	45.2	0.00	53.74	53.74	1.19	5.69	5.69
13)	0.943	6.38	45.6	0.00	57.26	57.26	1.25	5.75	5.75
14)	1.020	6.91	46.1	0.00	60.27	60.27	1.31	5.81	5.81
15)	1.098	7.43	46.6	0.00	62.78	62.78	1.35	5.85	5.85
16)	1.175	7.95	47.0	0.00	65.30	65.30	1.39	5.89	5.89
17)	1.252	8.48	47.5	0.00	67.81	67.81	1.43	5.93	5.93
18)	1.330	9.00	48.0	0.00	69.82	69.82	1.45	5.95	5.95
19)	1.407	9.52	48.5	0.00	71.83	71.83	1.48	5.98	5.98
20)	1.492	10.10	49.0	0.00	73.83	73.83	1.51	6.01	6.01
21)	1.569	10.62	49.6	0.00	75.34	75.34	1.52	6.02	6.02
22)	1.646	11.14	50.1	0.00	77.35	77.35	1.54	6.04	6.04
23)	1.724	11.67	50.6	0.00	78.86	78.86	1.56	6.06	6.06
24)	1.801	12.19	51.2	0.00	80.36	80.36	1.57	6.07	6.07
25)	1.886	12.76	51.8	0.00	81.37	81.37	1.57	6.07	6.07
26)	1.963	13.29	52.4	0.00	82.37	82.37	1.57	6.07	6.07
27)	2.040	13.81	53.0	0.00	83.88	83.88	1.58	6.08	6.08
28)	2.118	14.33	53.6	0.00	84.38	84.38	1.57	6.07	6.07
29)	2.195	14.86	54.2	0.00	85.89	85.89	1.58	6.08	6.08

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UU2
Boring No. : L37-8-00
Test Date : 8/3/00
Tested by : LO
Sample No. : S-6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 17.278 (cm)
Area : 40.715 (cm^2)
Volume : 703.5 (cm^3)
Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.7	0.00	0.00	0.00	0.00	2.25	2.25
2)	0.048	0.28	40.9	0.00	4.16	4.16	0.10	2.35	2.35
3)	0.129	0.75	41.2	0.00	10.21	10.21	0.25	2.50	2.50
4)	0.204	1.18	41.5	0.00	15.88	15.88	0.38	2.63	2.63
5)	0.286	1.66	41.9	0.00	21.55	21.55	0.51	2.76	2.76
6)	0.368	2.13	42.2	0.00	26.84	26.84	0.64	2.89	2.89
7)	0.449	2.60	42.6	0.00	31.37	31.37	0.74	2.99	2.99
8)	0.531	3.07	42.9	0.00	35.53	35.53	0.83	3.08	3.08
9)	0.606	3.51	43.2	0.00	38.94	38.94	0.90	3.15	3.15
10)	0.688	3.98	43.6	0.00	42.34	42.34	0.97	3.22	3.22
11)	0.770	4.45	44.0	0.00	45.74	45.74	1.04	3.29	3.29
12)	0.851	4.93	44.4	0.00	48.39	48.39	1.09	3.34	3.34
13)	0.933	5.40	44.7	0.00	51.41	51.41	1.15	3.40	3.40
14)	1.008	5.83	45.1	0.00	54.06	54.06	1.20	3.45	3.45
15)	1.090	6.31	45.5	0.00	56.70	56.70	1.25	3.50	3.50
16)	1.171	6.78	45.9	0.00	58.59	58.59	1.28	3.53	3.53
17)	1.253	7.25	46.3	0.00	61.24	61.24	1.32	3.57	3.57
18)	1.328	7.69	46.7	0.00	63.13	63.13	1.35	3.60	3.60
19)	1.416	8.20	47.2	0.00	65.40	65.40	1.39	3.64	3.64
20)	1.491	8.63	47.6	0.00	67.29	67.29	1.41	3.66	3.66
21)	1.573	9.10	48.0	0.00	69.18	69.18	1.44	3.69	3.69
22)	1.655	9.58	48.4	0.00	70.69	70.69	1.46	3.71	3.71
23)	1.736	10.05	48.9	0.00	72.58	72.58	1.48	3.73	3.73
24)	1.811	10.48	49.3	0.00	74.09	74.09	1.50	3.75	3.75
25)	1.893	10.96	49.8	0.00	75.60	75.60	1.52	3.77	3.77
26)	1.975	11.43	50.3	0.00	77.11	77.11	1.53	3.78	3.78
27)	2.057	11.90	50.8	0.00	78.63	78.63	1.55	3.80	3.80
28)	2.138	12.38	51.3	0.00	79.76	79.76	1.55	3.80	3.80
29)	2.213	12.81	51.8	0.00	81.27	81.27	1.57	3.82	3.82
30)	2.295	13.28	52.3	0.00	82.78	82.78	1.58	3.83	3.83
31)	2.377	13.76	52.8	0.00	83.92	83.92	1.59	3.84	3.84
32)	2.458	14.23	53.4	0.00	85.05	85.05	1.59	3.84	3.84
33)	2.540	14.70	53.9	0.00	86.19	86.19	1.60	3.85	3.85
34)	2.615	15.13	54.4	0.00	87.32	87.32	1.60	3.85	3.85

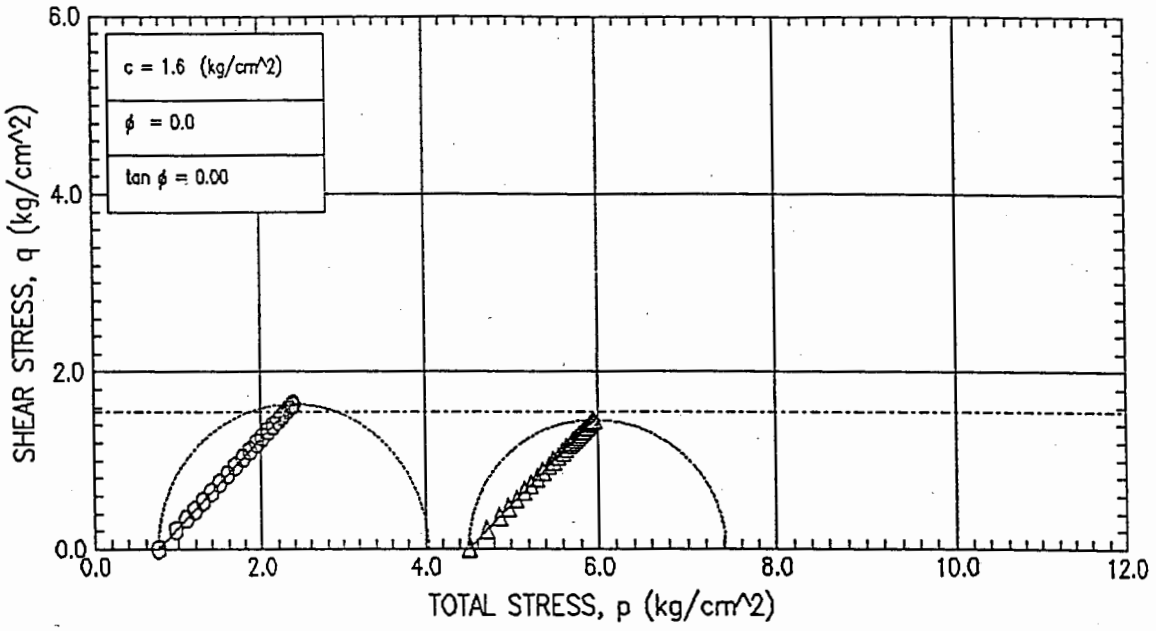
UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UU1
Boring No. : L37-8-00
Test Date : 8/3/00
Tested by : LO
Sample No. : S-6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

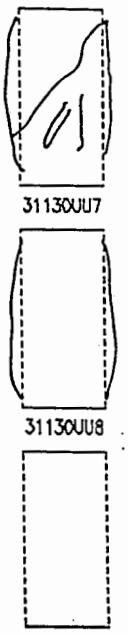
Height : 15.266 (cm)
Piston Diameter : 0.000 (cm)
Filter Correction : 0.00 (kg/cm^2)
Area : 40.806 (cm^2)
Piston Friction : 0.00 (kg)
Membrane Correction : 0.00 (kg/cm)
Volume : 622.9 (cm^3)
Piston Weight : 0.00 (gm)
Area Correction : Parabolic

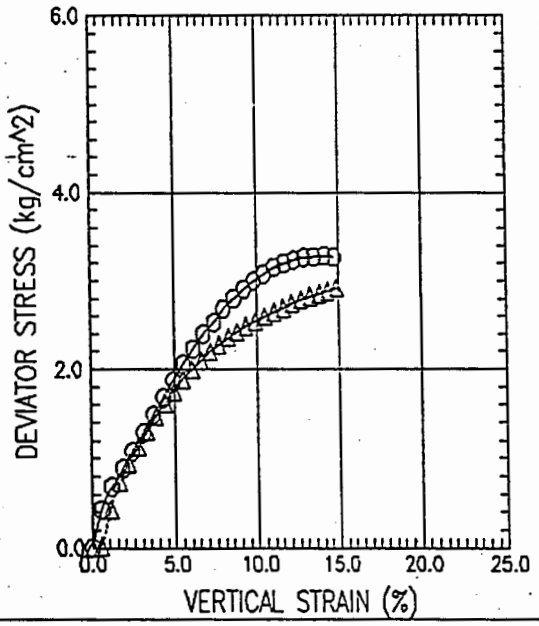
	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.8	0.00	0.00	0.00	0.00	0.75	0.75
2)	0.049	0.32	41.0	0.00	5.02	5.02	0.12	0.87	0.87
3)	0.134	0.88	41.4	0.00	10.05	10.05	0.24	0.99	0.99
4)	0.211	1.38	41.8	0.00	14.57	14.57	0.35	1.10	1.10
5)	0.288	1.89	42.1	0.00	20.09	20.09	0.48	1.23	1.23
6)	0.366	2.40	42.5	0.00	24.11	24.11	0.57	1.32	1.32
7)	0.443	2.90	42.9	0.00	28.63	28.63	0.67	1.42	1.42
8)	0.521	3.41	43.3	0.00	32.65	32.65	0.75	1.50	1.50
9)	0.598	3.92	43.7	0.00	36.16	36.16	0.83	1.58	1.58
10)	0.683	4.47	44.1	0.00	39.18	39.18	0.89	1.64	1.64
11)	0.760	4.98	44.5	0.00	42.19	42.19	0.95	1.70	1.70
12)	0.837	5.48	44.9	0.00	45.20	45.20	1.01	1.76	1.76
13)	0.915	5.99	45.3	0.00	47.72	47.72	1.05	1.80	1.80
14)	0.992	6.50	45.8	0.00	50.23	50.23	1.10	1.85	1.85
15)	1.077	7.05	46.2	0.00	52.24	52.24	1.13	1.88	1.88
16)	1.154	7.56	46.7	0.00	54.75	54.75	1.17	1.92	1.92
17)	1.231	8.07	47.1	0.00	56.25	56.25	1.19	1.94	1.94
18)	1.309	8.57	47.6	0.00	58.26	58.26	1.22	1.97	1.97
19)	1.386	9.08	48.1	0.00	60.27	60.27	1.25	2.00	2.00
20)	1.464	9.59	48.6	0.00	61.78	61.78	1.27	2.02	2.02
21)	1.548	10.14	49.1	0.00	63.29	63.29	1.29	2.04	2.04
22)	1.625	10.65	49.6	0.00	65.30	65.30	1.32	2.07	2.07
23)	1.703	11.15	50.1	0.00	66.80	66.80	1.33	2.08	2.08
24)	1.780	11.66	50.6	0.00	68.31	68.31	1.35	2.10	2.10
25)	1.865	12.21	51.2	0.00	69.31	69.31	1.35	2.10	2.10
26)	1.942	12.72	51.8	0.00	70.82	70.82	1.37	2.12	2.12
27)	2.019	13.23	52.3	0.00	71.83	71.83	1.37	2.12	2.12
28)	2.097	13.73	52.9	0.00	73.33	73.33	1.39	2.14	2.14
29)	2.174	14.24	53.5	0.00	74.34	74.34	1.39	2.14	2.14
30)	2.252	14.75	54.1	0.00	75.34	75.34	1.39	2.14	2.14
31)	2.336	15.30	54.8	0.00	76.35	76.35	1.39	2.14	2.14

UU TRIAXIAL COMPRESSION TEST ASTM D 2850



FALURE SKETCHES





SYMBOL		O	Δ		
TEST NO.		31130UU7	31130UU8		
INITIAL	WATER CONTENT (%)	14.49	13.84		
	DRY DENSITY (gm/cm^3)	1.93	1.94		
	SATURATION (%)	95.56	94.22		
	VOID RATIO	0.412	0.399		
BEFORE SHEAR	WATER CONTENT (%)	14.49	13.84		
	DRY DENSITY (gm/cm^3)	1.93	1.94		
	SATURATION (%)	95.56	94.22		
	VOID RATIO	0.412	0.399		
	BACK PRESS. (kg/cm^2)	0.00	0.00		
MINOR PRIN. STRESS (kg/cm^2)		0.75	4.50		
MAX. DEV. STRESS (kg/cm^2)		3.28	2.92		
TIME TO FAILURE (min)		22.98	27.00		
RATE OF STRAIN INCR (%/min)		0.50	0.50		
INITIAL DIAMETER (cm)		7.11	7.22		
INITIAL HEIGHT (cm)		12.71	14.47		
B-VALUE		0.00	0.00		

STRAIN CONTROLLED

DESCRIPTION OF SPECIMENS:

1) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL2) SILTY CLAY TRACE F-C SAND GRAVEL -- GRAY CL

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN 3 IN ST	TYPE OF TEST UU (Q)

REMARKS:	PROJECT DES PLAINES RIVER					
1)	PROJECT NO.31130					
2)	BORING NO. L37-15-00	SAMPLE NO.	S-5	S-5		
	TECH. LO	DEPTH/ELEV	11.0-13.0	11.0-13.0		
	LABORATORY	DATE	8/3/00	8/3/00		
	TRIAXIAL COMPRESSION TEST REPORT					

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-15-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU7
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 12.710 (cm)
Area : 39.670 (cm^2)
Volume : 504.2 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	39.7	0.00	0.00	0.00	0.00	0.75	0.75
2)	0.070	0.55	40.0	0.00	17.08	17.08	0.43	1.18	1.18
3)	0.148	1.16	40.5	0.00	27.63	27.63	0.68	1.43	1.43
4)	0.232	1.83	40.9	0.00	36.16	36.16	0.88	1.63	1.63
5)	0.303	2.38	41.3	0.00	44.70	44.70	1.08	1.83	1.83
6)	0.387	3.04	41.8	0.00	53.74	53.74	1.29	2.04	2.04
7)	0.464	3.65	42.2	0.00	62.78	62.78	1.49	2.24	2.24
8)	0.542	4.26	42.7	0.00	71.83	71.83	1.68	2.43	2.43
9)	0.619	4.87	43.2	0.00	80.87	80.87	1.87	2.62	2.62
10)	0.697	5.48	43.7	0.00	89.91	89.91	2.06	2.81	2.81
11)	0.774	6.09	44.2	0.00	98.45	98.45	2.23	2.98	2.98
12)	0.851	6.70	44.7	0.00	106.98	106.98	2.40	3.15	3.15
13)	0.936	7.36	45.2	0.00	114.52	114.52	2.53	3.28	3.28
14)	1.006	7.92	45.7	0.00	122.56	122.56	2.68	3.43	3.43
15)	1.091	8.58	46.3	0.00	129.59	129.59	2.80	3.55	3.55
16)	1.168	9.19	46.8	0.00	136.12	136.12	2.91	3.66	3.66
17)	1.245	9.80	47.4	0.00	142.14	142.14	3.00	3.75	3.75
18)	1.323	10.41	48.0	0.00	147.67	147.67	3.08	3.83	3.83
19)	1.400	11.02	48.6	0.00	153.19	153.19	3.15	3.90	3.90
20)	1.478	11.63	49.2	0.00	157.21	157.21	3.20	3.95	3.95
21)	1.555	12.23	49.8	0.00	161.23	161.23	3.24	3.99	3.99
22)	1.632	12.84	50.5	0.00	164.75	164.75	3.26	4.01	4.01
23)	1.710	13.45	51.1	0.00	167.26	167.26	3.27	4.02	4.02
24)	1.794	14.12	51.9	0.00	170.27	170.27	3.28	4.03	4.03
25)	1.872	14.73	52.6	0.00	171.78	171.78	3.27	4.02	4.02

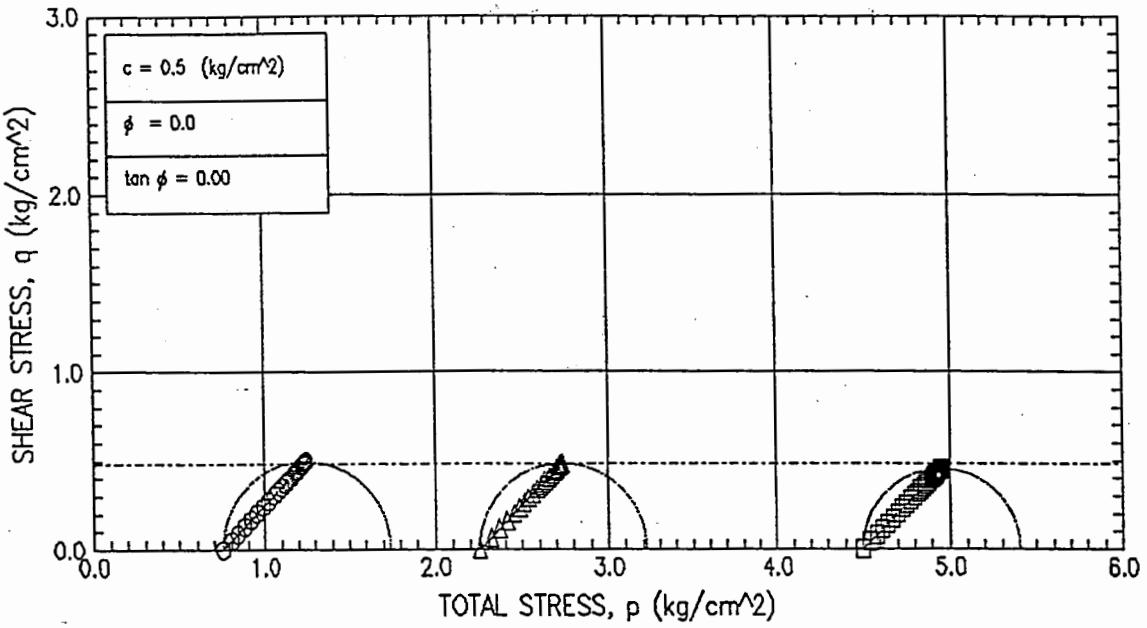
UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UU8
Boring No. : L37-15-00
Test Date : 8/3/00
Tested by : LO
Sample No. : S-5
Depth : 11.0-13.0
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL -- GRAY CL
Remarks :

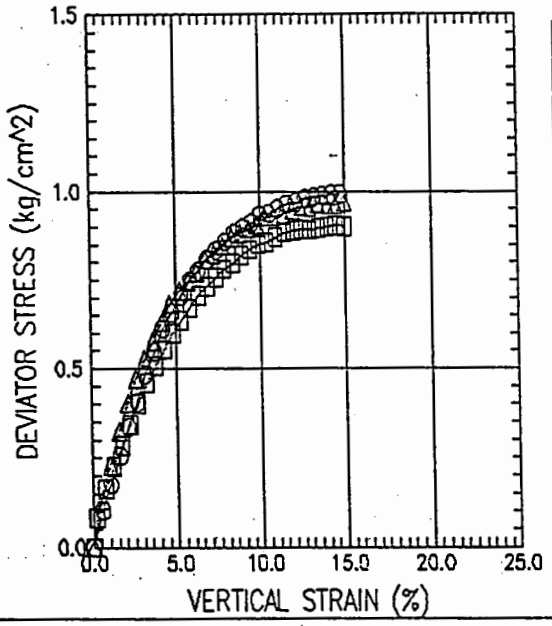
Height : 14.473 (cm)
Area : 40.908 (cm^2)
Volume : 592.1 (cm^3)
Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.9	0.00	0.00	0.00	0.00	4.50	4.50
2)	0.075	0.52	41.3	0.00	0.76	0.76	0.02	4.52	4.52
3)	0.157	1.08	41.7	0.00	18.14	18.14	0.44	4.94	4.94
4)	0.238	1.65	42.1	0.00	31.00	31.00	0.74	5.24	5.24
5)	0.313	2.17	42.5	0.00	40.07	40.07	0.94	5.44	5.44
6)	0.395	2.73	42.9	0.00	48.39	48.39	1.13	5.63	5.63
7)	0.477	3.30	43.3	0.00	56.70	56.70	1.31	5.81	5.81
8)	0.552	3.81	43.7	0.00	64.26	64.26	1.47	5.97	5.97
9)	0.633	4.38	44.1	0.00	71.44	71.44	1.62	6.12	6.12
10)	0.715	4.94	44.6	0.00	78.25	78.25	1.75	6.25	6.25
11)	0.790	5.46	45.0	0.00	85.05	85.05	1.89	6.39	6.39
12)	0.872	6.03	45.5	0.00	90.72	90.72	1.99	6.49	6.49
13)	0.953	6.59	46.0	0.00	96.39	96.39	2.10	6.60	6.60
14)	1.028	7.11	46.4	0.00	102.06	102.06	2.20	6.70	6.70
15)	1.110	7.67	46.9	0.00	106.98	106.98	2.28	6.78	6.78
16)	1.192	8.24	47.4	0.00	111.89	111.89	2.36	6.86	6.86
17)	1.267	8.76	47.9	0.00	116.05	116.05	2.42	6.92	6.92
18)	1.348	9.32	48.5	0.00	120.59	120.59	2.49	6.99	6.99
19)	1.430	9.89	49.0	0.00	124.74	124.74	2.55	7.05	7.05
20)	1.512	10.45	49.6	0.00	128.52	128.52	2.59	7.09	7.09
21)	1.593	11.02	50.1	0.00	132.68	132.68	2.65	7.15	7.15
22)	1.675	11.58	50.7	0.00	136.46	136.46	2.69	7.19	7.19
23)	1.750	12.10	51.3	0.00	140.62	140.62	2.74	7.24	7.24
24)	1.832	12.66	51.9	0.00	144.40	144.40	2.78	7.28	7.28
25)	1.914	13.23	52.5	0.00	148.18	148.18	2.82	7.32	7.32
26)	1.995	13.79	53.1	0.00	151.58	151.58	2.85	7.35	7.35
27)	2.070	14.31	53.7	0.00	154.98	154.98	2.88	7.38	7.38
28)	2.152	14.88	54.4	0.00	158.77	158.77	2.92	7.42	7.42

UU TRIAXIAL COMPRESSION TEST ASTM D 2850



FAILURE SKETCHES



SYMBOL		○	△	□	
TEST NO.		31130UU4	31130UU5	31130UU6	
INITIAL	WATER CONTENT (%)	16.03	16.03	16.03	
	DRY DENSITY (gm/cm^3)	1.94	1.92	1.93	
	SATURATION (%)	108.07	104.66	106.10	
	VOID RATIO	0.403	0.417	0.411	
BEFORE SHEAR	WATER CONTENT (%)	16.03	16.03	16.03	
	DRY DENSITY (gm/cm^3)	1.94	1.92	1.93	
	SATURATION (%)	108.07	104.66	106.10	
	VOID RATIO	0.403	0.417	0.411	
	BACK PRESS. (kg/cm^2)	0.00	0.00	0.00	
MINOR PRIN. STRESS (kg/cm^2)		0.75	2.25	4.50	
MAX. DEV. STRESS (kg/cm^2)		0.99	0.97	0.90	
TIME TO FAILURE (min)		27.98	28.98	29.00	
RATE OF STRAIN INCR (%/min)		0.50	0.50	0.50	
INITIAL DIAMETER (cm)		7.15	7.21	7.25	
INITIAL HEIGHT (cm)		15.29	15.22	15.77	
B-VALUE		0.00	0.00	0.00	

STRAIN CONTROLLED

DESCRIPTION OF SPECIMENS:

1) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL2) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL3) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- G

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN 3 IN ST	TYPE OF TEST UU (Q)				
REMARKS:				PROJECT DES PLAINES RIVER					
1)				PROJECT NO.31130					
2)				BORING NO. L37-16-00	SAMPLE NO.	S-5	S-5	S-5	
3)				TECH. LO	DEPTH/ELEV	11.0-13.0	11.0-13.0	11.0-13.0	
				LABORATORY	DATE	8/3/00	8/3/00	8/3/00	
				TRIAXIAL COMPRESSION TEST REPORT					

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-16-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU4
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 15.291 (cm)
Area : 40.185 (cm^2)
Volume : 614.5 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.2	0.00	0.00	0.00	0.00	0.75	0.75
2)	0.082	0.53	40.5	0.00	4.16	4.16	0.10	0.85	0.85
3)	0.157	1.02	40.9	0.00	7.18	7.18	0.18	0.93	0.93
4)	0.245	1.60	41.3	0.00	10.58	10.58	0.26	1.01	1.01
5)	0.320	2.09	41.6	0.00	13.99	13.99	0.34	1.09	1.09
6)	0.402	2.63	42.0	0.00	17.01	17.01	0.40	1.15	1.15
7)	0.477	3.12	42.4	0.00	20.41	20.41	0.48	1.23	1.23
8)	0.565	3.70	42.8	0.00	23.44	23.44	0.55	1.30	1.30
9)	0.640	4.19	43.2	0.00	26.46	26.46	0.61	1.36	1.36
10)	0.722	4.72	43.6	0.00	28.73	28.73	0.66	1.41	1.41
11)	0.804	5.26	44.0	0.00	31.00	31.00	0.70	1.45	1.45
12)	0.885	5.79	44.5	0.00	33.27	33.27	0.75	1.50	1.50
13)	0.960	6.28	44.9	0.00	34.78	34.78	0.77	1.52	1.52
14)	1.042	6.81	45.3	0.00	36.67	36.67	0.81	1.56	1.56
15)	1.124	7.35	45.8	0.00	38.18	38.18	0.83	1.58	1.58
16)	1.205	7.88	46.3	0.00	39.69	39.69	0.86	1.61	1.61
17)	1.287	8.42	46.7	0.00	41.20	41.20	0.88	1.63	1.63
18)	1.369	8.95	47.2	0.00	42.34	42.34	0.90	1.65	1.65
19)	1.450	9.49	47.7	0.00	43.47	43.47	0.91	1.66	1.66
20)	1.525	9.98	48.2	0.00	44.98	44.98	0.93	1.68	1.68
21)	1.614	10.55	48.8	0.00	45.74	45.74	0.94	1.69	1.69
22)	1.689	11.04	49.3	0.00	46.87	46.87	0.95	1.70	1.70
23)	1.771	11.58	49.8	0.00	48.01	48.01	0.96	1.71	1.71
24)	1.852	12.11	50.4	0.00	48.76	48.76	0.97	1.72	1.72
25)	1.934	12.65	50.9	0.00	49.90	49.90	0.98	1.73	1.73
26)	2.016	13.18	51.5	0.00	50.65	50.65	0.98	1.73	1.73
27)	2.091	13.67	52.0	0.00	51.41	51.41	0.99	1.74	1.74
28)	2.172	14.21	52.7	0.00	52.17	52.17	0.99	1.74	1.74
29)	2.254	14.74	53.3	0.00	52.92	52.92	0.99	1.74	1.74

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-16-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU5
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 15.220 (cm)
Area : 40.828 (cm^2)
Volume : 621.4 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.8	0.00	0.00	0.00	0.00	2.25	2.25
2)	0.077	0.51	41.2	0.00	5.53	5.53	0.13	2.38	2.38
3)	0.155	1.02	41.5	0.00	9.54	9.54	0.23	2.48	2.48
4)	0.239	1.57	41.9	0.00	13.56	13.56	0.32	2.57	2.57
5)	0.317	2.08	42.3	0.00	17.08	17.08	0.40	2.65	2.65
6)	0.394	2.59	42.7	0.00	20.09	20.09	0.47	2.72	2.72
7)	0.471	3.10	43.1	0.00	22.60	22.60	0.53	2.78	2.78
8)	0.549	3.61	43.4	0.00	25.11	25.11	0.58	2.83	2.83
9)	0.626	4.11	43.8	0.00	27.63	27.63	0.63	2.88	2.88
10)	0.704	4.62	44.2	0.00	30.14	30.14	0.68	2.93	2.93
11)	0.788	5.18	44.7	0.00	32.15	32.15	0.72	2.97	2.97
12)	0.865	5.69	45.1	0.00	33.65	33.65	0.75	3.00	3.00
13)	0.943	6.19	45.5	0.00	35.16	35.16	0.77	3.02	3.02
14)	1.020	6.70	46.0	0.00	37.17	37.17	0.81	3.06	3.06
15)	1.098	7.21	46.4	0.00	38.17	38.17	0.82	3.07	3.07
16)	1.175	7.72	46.9	0.00	39.68	39.68	0.85	3.10	3.10
17)	1.259	8.28	47.4	0.00	41.19	41.19	0.87	3.12	3.12
18)	1.337	8.78	47.8	0.00	42.19	42.19	0.88	3.13	3.13
19)	1.414	9.29	48.3	0.00	43.20	43.20	0.89	3.14	3.14
20)	1.492	9.80	48.8	0.00	44.20	44.20	0.91	3.16	3.16
21)	1.569	10.31	49.3	0.00	45.71	45.71	0.93	3.18	3.18
22)	1.646	10.82	49.8	0.00	46.21	46.21	0.93	3.18	3.18
23)	1.731	11.37	50.4	0.00	47.21	47.21	0.94	3.19	3.19
24)	1.808	11.88	50.9	0.00	48.22	48.22	0.95	3.20	3.20
25)	1.886	12.39	51.5	0.00	49.22	49.22	0.96	3.21	3.21
26)	1.963	12.90	52.0	0.00	49.73	49.73	0.96	3.21	3.21
27)	2.040	13.41	52.6	0.00	50.73	50.73	0.96	3.21	3.21
28)	2.125	13.96	53.2	0.00	51.23	51.23	0.96	3.21	3.21
29)	2.202	14.47	53.8	0.00	51.73	51.73	0.96	3.21	3.21
30)	2.280	14.98	54.4	0.00	52.74	52.74	0.97	3.22	3.22

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-16-00
Sample No. : S-5
Sample Type : 3 IN ST
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Location :
Test No. : 31130UU6
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

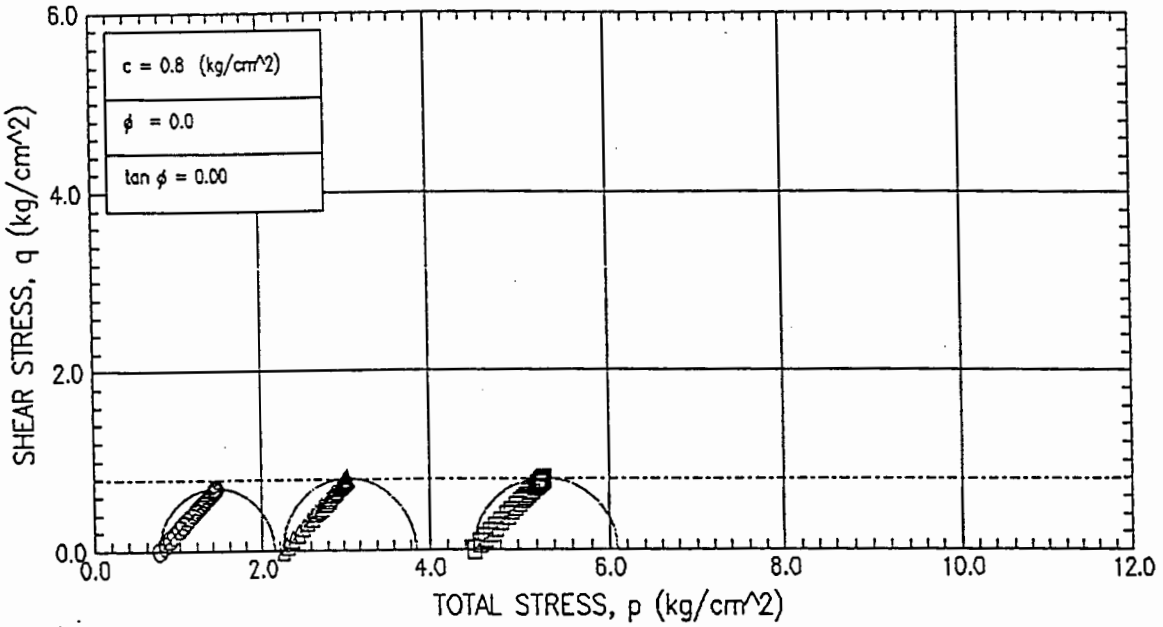
Height : 15.770 (cm)
Area : 41.248 (cm^2)
Volume : 650.5 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

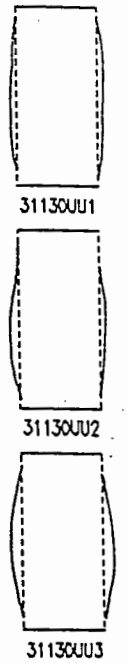
Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

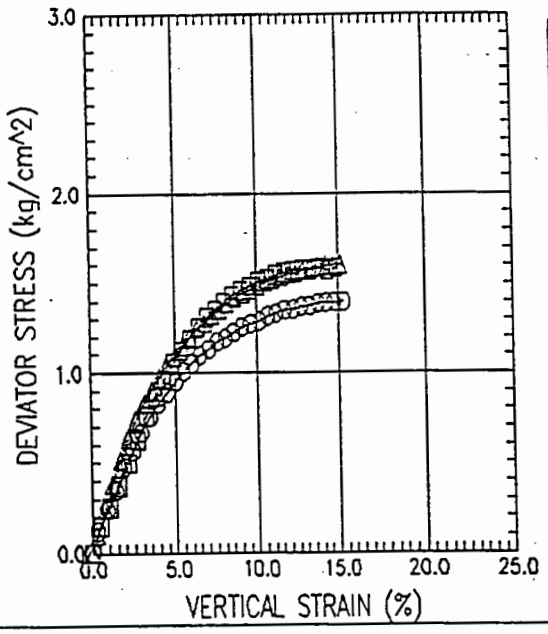
	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	41.3	0.00	0.00	0.00	0.00	4.50	4.50
2)	0.034	0.22	41.4	0.00	3.40	3.40	0.08	4.58	4.58
3)	0.116	0.73	41.8	0.00	6.80	6.80	0.16	4.66	4.66
4)	0.191	1.21	42.1	0.00	9.45	9.45	0.22	4.72	4.72
5)	0.272	1.73	42.5	0.00	12.10	12.10	0.28	4.78	4.78
6)	0.354	2.25	42.9	0.00	14.74	14.74	0.34	4.84	4.84
7)	0.429	2.72	43.2	0.00	17.39	17.39	0.40	4.90	4.90
8)	0.511	3.24	43.6	0.00	20.03	20.03	0.46	4.96	4.96
9)	0.592	3.76	44.0	0.00	22.30	22.30	0.51	5.01	5.01
10)	0.674	4.28	44.4	0.00	24.57	24.57	0.55	5.05	5.05
11)	0.749	4.75	44.8	0.00	26.84	26.84	0.60	5.10	5.10
12)	0.831	5.27	45.2	0.00	28.73	28.73	0.64	5.14	5.14
13)	0.913	5.79	45.7	0.00	30.62	30.62	0.67	5.17	5.17
14)	0.987	6.26	46.1	0.00	32.51	32.51	0.71	5.21	5.21
15)	1.069	6.78	46.5	0.00	34.02	34.02	0.73	5.23	5.23
16)	1.151	7.30	47.0	0.00	35.53	35.53	0.76	5.26	5.26
17)	1.233	7.82	47.4	0.00	37.05	37.05	0.78	5.28	5.28
18)	1.314	8.34	47.9	0.00	38.18	38.18	0.80	5.30	5.30
19)	1.396	8.86	48.4	0.00	39.69	39.69	0.82	5.32	5.32
20)	1.471	9.33	48.9	0.00	40.83	40.83	0.84	5.34	5.34
21)	1.553	9.85	49.4	0.00	41.96	41.96	0.85	5.35	5.35
22)	1.634	10.37	49.9	0.00	42.72	42.72	0.86	5.36	5.36
23)	1.716	10.89	50.4	0.00	43.85	43.85	0.87	5.37	5.37
24)	1.798	11.40	51.0	0.00	44.98	44.98	0.88	5.38	5.38
25)	1.880	11.92	51.5	0.00	45.74	45.74	0.89	5.39	5.39
26)	1.961	12.44	52.1	0.00	46.50	46.50	0.89	5.39	5.39
27)	2.036	12.92	52.6	0.00	46.87	46.87	0.89	5.39	5.39
28)	2.118	13.44	53.2	0.00	47.63	47.63	0.90	5.40	5.40
29)	2.200	13.95	53.8	0.00	48.39	48.39	0.90	5.40	5.40
30)	2.281	14.47	54.4	0.00	49.14	49.14	0.90	5.40	5.40
31)	2.356	14.95	55.0	0.00	49.52	49.52	0.90	5.40	5.40

UU TRIAXIAL COMPRESSION TEST ASTM D 2850



FAILURE SKETCHES





SYMBOL		○	△	□	
TEST NO.		31130UU1	31130UU2	31130UU3	
INITIAL	WATER CONTENT (%)	14.55	14.55	14.55	
	DRY DENSITY (gm/cm^3)	1.97	1.99	1.96	
	SATURATION (%)	104.21	107.47	102.99	
	VOID RATIO	0.380	0.368	0.384	
BEFORE SHEAR	WATER CONTENT (%)	14.55	14.55	14.55	
	DRY DENSITY (gm/cm^3)	1.97	1.99	1.96	
	SATURATION (%)	104.21	107.47	102.99	
	VOID RATIO	0.380	0.368	0.384	
	BACK PRESS. (kg/cm^2)	0.00	0.00	0.00	
MINOR PRIN. STRESS (kg/cm^2)		0.75	2.25	4.50	
MAX. DEV. STRESS (kg/cm^2)		1.39	1.60	1.58	
TIME TO FAILURE (min)		30.00	32.98	28.00	
RATE OF STRAIN INCR (%/min)		0.50	0.50	0.50	
INITIAL DIAMETER (cm)		7.21	7.20	7.21	
INITIAL HEIGHT (cm)		15.27	17.28	14.78	
B-VALUE		0.00	0.00	0.00	

STRAIN CONTROLLED

DESCRIPTION OF SPECIMENS:

1) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL2) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL3) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- G

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN 3 IN ST		TYPE OF TEST UU (Q)		
REMARKS:				PROJECT DES PLAINES RIVER				
1)				PROJECT NO.31130				
2)				BORING NO. L37-8-00	SAMPLE NO.	S-6	S-6	S-6
3)				TECH. LO	DEPTH/ELEV	13.5-15.0	13.5-15.0	13.5-15.0
				LABORATORY	DATE	8/3/00	8/3/00	8/3/00
				TRIAXIAL COMPRESSION TEST REPORT				

Mon Aug 07 16:10:13 2000

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-8-00
Sample No. : S-6
Sample Type : 3 IN ST

Location :
Test No. : 31130UU3
Test Date : 8/3/00
Depth : 13.5-15.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 14.775 (cm)
Area : 40.794 (cm^2)
Volume : 602.7 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.8	0.00	0.00	0.00	0.00	4.50	4.50
2)	0.077	0.52	41.2	0.00	6.03	6.03	0.15	4.65	4.65
3)	0.155	1.05	41.5	0.00	10.55	10.55	0.25	4.75	4.75
4)	0.232	1.57	41.9	0.00	15.57	15.57	0.37	4.87	4.87
5)	0.317	2.14	42.3	0.00	21.10	21.10	0.50	5.00	5.00
6)	0.394	2.67	42.7	0.00	26.62	26.62	0.62	5.12	5.12
7)	0.471	3.19	43.1	0.00	32.65	32.65	0.76	5.26	5.26
8)	0.556	3.76	43.5	0.00	37.67	37.67	0.87	5.37	5.37
9)	0.633	4.29	43.9	0.00	42.19	42.19	0.96	5.46	5.46
10)	0.711	4.81	44.3	0.00	46.71	46.71	1.05	5.55	5.55
11)	0.788	5.33	44.8	0.00	50.23	50.23	1.12	5.62	5.62
12)	0.865	5.86	45.2	0.00	53.74	53.74	1.19	5.69	5.69
13)	0.943	6.38	45.6	0.00	57.26	57.26	1.25	5.75	5.75
14)	1.020	6.91	46.1	0.00	60.27	60.27	1.31	5.81	5.81
15)	1.098	7.43	46.6	0.00	62.78	62.78	1.35	5.85	5.85
16)	1.175	7.95	47.0	0.00	65.30	65.30	1.39	5.89	5.89
17)	1.252	8.48	47.5	0.00	67.81	67.81	1.43	5.93	5.93
18)	1.330	9.00	48.0	0.00	69.82	69.82	1.45	5.95	5.95
19)	1.407	9.52	48.5	0.00	71.83	71.83	1.48	5.98	5.98
20)	1.492	10.10	49.0	0.00	73.83	73.83	1.51	6.01	6.01
21)	1.569	10.62	49.6	0.00	75.34	75.34	1.52	6.02	6.02
22)	1.646	11.14	50.1	0.00	77.35	77.35	1.54	6.04	6.04
23)	1.724	11.67	50.6	0.00	78.86	78.86	1.56	6.06	6.06
24)	1.801	12.19	51.2	0.00	80.36	80.36	1.57	6.07	6.07
25)	1.886	12.76	51.8	0.00	81.37	81.37	1.57	6.07	6.07
26)	1.963	13.29	52.4	0.00	82.37	82.37	1.57	6.07	6.07
27)	2.040	13.81	53.0	0.00	83.88	83.88	1.58	6.08	6.08
28)	2.118	14.33	53.6	0.00	84.38	84.38	1.57	6.07	6.07
29)	2.195	14.86	54.2	0.00	85.89	85.89	1.58	6.08	6.08

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Location :
Project No. : 31130
Test No. : 31130UU2
Boring No. : L37-8-00
Test Date : 8/3/00
Tested by : LO
Sample No. : S-6
Depth : 13.5-15.0
Checked by : WPQ
Sample Type : 3 IN ST
Elevation :
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 17.278 (cm)
Area : 40.715 (cm^2)
Volume : 703.5 (cm^3)
Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.7	0.00	0.00	0.00	0.00	2.25	2.25
2)	0.048	0.28	40.9	0.00	4.16	4.16	0.10	2.35	2.35
3)	0.129	0.75	41.2	0.00	10.21	10.21	0.25	2.50	2.50
4)	0.204	1.18	41.5	0.00	15.88	15.88	0.38	2.63	2.63
5)	0.286	1.66	41.9	0.00	21.55	21.55	0.51	2.76	2.76
6)	0.368	2.13	42.2	0.00	26.84	26.84	0.64	2.89	2.89
7)	0.449	2.60	42.6	0.00	31.37	31.37	0.74	2.99	2.99
8)	0.531	3.07	42.9	0.00	35.53	35.53	0.83	3.08	3.08
9)	0.606	3.51	43.2	0.00	38.94	38.94	0.90	3.15	3.15
10)	0.688	3.98	43.6	0.00	42.34	42.34	0.97	3.22	3.22
11)	0.770	4.45	44.0	0.00	45.74	45.74	1.04	3.29	3.29
12)	0.851	4.93	44.4	0.00	48.39	48.39	1.09	3.34	3.34
13)	0.933	5.40	44.7	0.00	51.41	51.41	1.15	3.40	3.40
14)	1.008	5.83	45.1	0.00	54.06	54.06	1.20	3.45	3.45
15)	1.090	6.31	45.5	0.00	56.70	56.70	1.25	3.50	3.50
16)	1.171	6.78	45.9	0.00	58.59	58.59	1.28	3.53	3.53
17)	1.253	7.25	46.3	0.00	61.24	61.24	1.32	3.57	3.57
18)	1.328	7.69	46.7	0.00	63.13	63.13	1.35	3.60	3.60
19)	1.416	8.20	47.2	0.00	65.40	65.40	1.39	3.64	3.64
20)	1.491	8.63	47.6	0.00	67.29	67.29	1.41	3.66	3.66
21)	1.573	9.10	48.0	0.00	69.18	69.18	1.44	3.69	3.69
22)	1.655	9.58	48.4	0.00	70.69	70.69	1.46	3.71	3.71
23)	1.736	10.05	48.9	0.00	72.58	72.58	1.48	3.73	3.73
24)	1.811	10.48	49.3	0.00	74.09	74.09	1.50	3.75	3.75
25)	1.893	10.96	49.8	0.00	75.60	75.60	1.52	3.77	3.77
26)	1.975	11.43	50.3	0.00	77.11	77.11	1.53	3.78	3.78
27)	2.057	11.90	50.8	0.00	78.63	78.63	1.55	3.80	3.80
28)	2.138	12.38	51.3	0.00	79.76	79.76	1.55	3.80	3.80
29)	2.213	12.81	51.8	0.00	81.27	81.27	1.57	3.82	3.82
30)	2.295	13.28	52.3	0.00	82.78	82.78	1.58	3.83	3.83
31)	2.377	13.76	52.8	0.00	83.92	83.92	1.59	3.84	3.84
32)	2.458	14.23	53.4	0.00	85.05	85.05	1.59	3.84	3.84
33)	2.540	14.70	53.9	0.00	86.19	86.19	1.60	3.85	3.85
34)	2.615	15.13	54.4	0.00	87.32	87.32	1.60	3.85	3.85

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-8-00
Sample No. : S-6
Sample Type : 3 IN ST
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Location :
Test No. : 31130UU1
Test Date : 8/3/00
Depth : 13.5-15.0
Elevation :

Tested by : LO
Checked by : WPQ

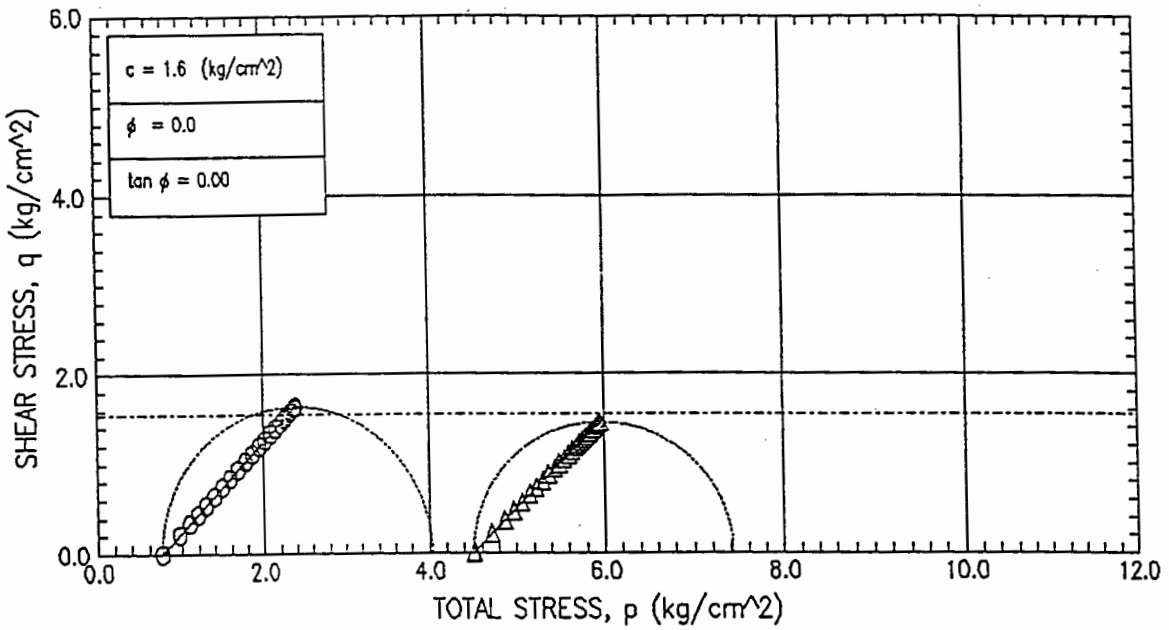
Height : 15.266 (cm)
Area : 40.806 (cm^2)
Volume : 622.9 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

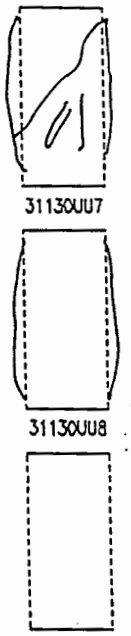
Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

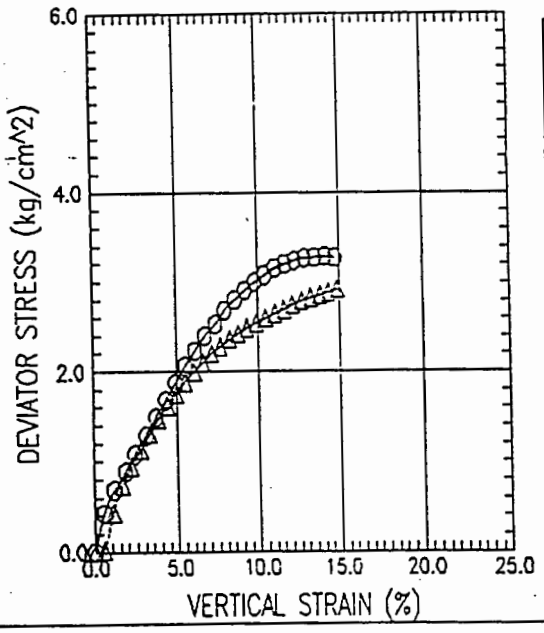
	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.8	0.00	0.00	0.00	0.00	0.75	0.75
2)	0.049	0.32	41.0	0.00	5.02	5.02	0.12	0.87	0.87
3)	0.134	0.88	41.4	0.00	10.05	10.05	0.24	0.99	0.99
4)	0.211	1.38	41.8	0.00	14.57	14.57	0.35	1.10	1.10
5)	0.288	1.89	42.1	0.00	20.09	20.09	0.48	1.23	1.23
6)	0.366	2.40	42.5	0.00	24.11	24.11	0.57	1.32	1.32
7)	0.443	2.90	42.9	0.00	28.63	28.63	0.67	1.42	1.42
8)	0.521	3.41	43.3	0.00	32.65	32.65	0.75	1.50	1.50
9)	0.598	3.92	43.7	0.00	36.16	36.16	0.83	1.58	1.58
10)	0.683	4.47	44.1	0.00	39.18	39.18	0.89	1.64	1.64
11)	0.760	4.98	44.5	0.00	42.19	42.19	0.95	1.70	1.70
12)	0.837	5.48	44.9	0.00	45.20	45.20	1.01	1.76	1.76
13)	0.915	5.99	45.3	0.00	47.72	47.72	1.05	1.80	1.80
14)	0.992	6.50	45.8	0.00	50.23	50.23	1.10	1.85	1.85
15)	1.077	7.05	46.2	0.00	52.24	52.24	1.13	1.88	1.88
16)	1.154	7.56	46.7	0.00	54.75	54.75	1.17	1.92	1.92
17)	1.231	8.07	47.1	0.00	56.25	56.25	1.19	1.94	1.94
18)	1.309	8.57	47.6	0.00	58.26	58.26	1.22	1.97	1.97
19)	1.386	9.08	48.1	0.00	60.27	60.27	1.25	2.00	2.00
20)	1.464	9.59	48.6	0.00	61.78	61.78	1.27	2.02	2.02
21)	1.548	10.14	49.1	0.00	63.29	63.29	1.29	2.04	2.04
22)	1.625	10.65	49.6	0.00	65.30	65.30	1.32	2.07	2.07
23)	1.703	11.15	50.1	0.00	66.80	66.80	1.33	2.08	2.08
24)	1.780	11.66	50.6	0.00	68.31	68.31	1.35	2.10	2.10
25)	1.865	12.21	51.2	0.00	69.31	69.31	1.35	2.10	2.10
26)	1.942	12.72	51.8	0.00	70.82	70.82	1.37	2.12	2.12
27)	2.019	13.23	52.3	0.00	71.83	71.83	1.37	2.12	2.12
28)	2.097	13.73	52.9	0.00	73.33	73.33	1.39	2.14	2.14
29)	2.174	14.24	53.5	0.00	74.34	74.34	1.39	2.14	2.14
30)	2.252	14.75	54.1	0.00	75.34	75.34	1.39	2.14	2.14
31)	2.336	15.30	54.8	0.00	76.35	76.35	1.39	2.14	2.14

UU TRIAXIAL COMPRESSION TEST ASTM D 2850



FAILURE SKETCHES





SYMBOL		○	△		
TEST NO.		31130UU7	31130UU8		
INITIAL	WATER CONTENT (%)	14.49	13.84		
	DRY DENSITY (gm/cm^3)	1.93	1.94		
	SATURATION (%)	95.56	94.22		
	VOID RATIO	0.412	0.399		
BEFORE SHEAR	WATER CONTENT (%)	14.49	13.84		
	DRY DENSITY (gm/cm^3)	1.93	1.94		
	SATURATION (%)	95.56	94.22		
	VOID RATIO	0.412	0.399		
	BACK PRESS. (kg/cm^2)	0.00	0.00		
MINOR PRIN. STRESS (kg/cm^2)		0.75	4.50		
MAX. DEV. STRESS (kg/cm^2)		3.28	2.92		
TIME TO FAILURE (min)		22.98	27.00		
RATE OF STRAIN INCR (%/min)		0.50	0.50		
INITIAL DIAMETER (cm)		7.11	7.22		
INITIAL HEIGHT (cm)		12.71	14.47		
B-VALUE		0.00	0.00		

STRAIN CONTROLLED

DESCRIPTION OF SPECIMENS:

1) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL 2) SILTY CLAY TRACE F-C SAND GRAVEL -- GRAY CL

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN 3 IN ST		TYPE OF TEST UU (Q)			
REMARKS:				PROJECT DES PLAINES RIVER					
1)				PROJECT NO.31130					
2)				BORING NO. L37-15-00	SAMPLE NO.	S-5	S-5		
				TECH. LO	DEPTH/ELEV	11.0-13.0	11.0-13.0		
				LABORATORY	DATE	8/3/00	8/3/00		
				TRIAXIAL COMPRESSION TEST REPORT					

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-15-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU7
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 12.710 (cm)
Area : 39.670 (cm^2)
Volume : 504.2 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	39.7	0.00	0.00	0.00	0.00	0.75	0.75
2)	0.070	0.55	40.0	0.00	17.08	17.08	0.43	1.18	1.18
3)	0.148	1.16	40.5	0.00	27.63	27.63	0.68	1.43	1.43
4)	0.232	1.83	40.9	0.00	36.16	36.16	0.88	1.63	1.63
5)	0.303	2.38	41.3	0.00	44.70	44.70	1.08	1.83	1.83
6)	0.387	3.04	41.8	0.00	53.74	53.74	1.29	2.04	2.04
7)	0.464	3.65	42.2	0.00	62.78	62.78	1.49	2.24	2.24
8)	0.542	4.26	42.7	0.00	71.83	71.83	1.68	2.43	2.43
9)	0.619	4.87	43.2	0.00	80.87	80.87	1.87	2.62	2.62
10)	0.697	5.48	43.7	0.00	89.91	89.91	2.06	2.81	2.81
11)	0.774	6.09	44.2	0.00	98.45	98.45	2.23	2.98	2.98
12)	0.851	6.70	44.7	0.00	106.98	106.98	2.40	3.15	3.15
13)	0.936	7.36	45.2	0.00	114.52	114.52	2.53	3.28	3.28
14)	1.006	7.92	45.7	0.00	122.56	122.56	2.68	3.43	3.43
15)	1.091	8.58	46.3	0.00	129.59	129.59	2.80	3.55	3.55
16)	1.168	9.19	46.8	0.00	136.12	136.12	2.91	3.66	3.66
17)	1.245	9.80	47.4	0.00	142.14	142.14	3.00	3.75	3.75
18)	1.323	10.41	48.0	0.00	147.67	147.67	3.08	3.83	3.83
19)	1.400	11.02	48.6	0.00	153.19	153.19	3.15	3.90	3.90
20)	1.478	11.63	49.2	0.00	157.21	157.21	3.20	3.95	3.95
21)	1.555	12.23	49.8	0.00	161.23	161.23	3.24	3.99	3.99
22)	1.632	12.84	50.5	0.00	164.75	164.75	3.26	4.01	4.01
23)	1.710	13.45	51.1	0.00	167.26	167.26	3.27	4.02	4.02
24)	1.794	14.12	51.9	0.00	170.27	170.27	3.28	4.03	4.03
25)	1.872	14.73	52.6	0.00	171.78	171.78	3.27	4.02	4.02

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-15-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU3
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL -- GRAY CL
Remarks :

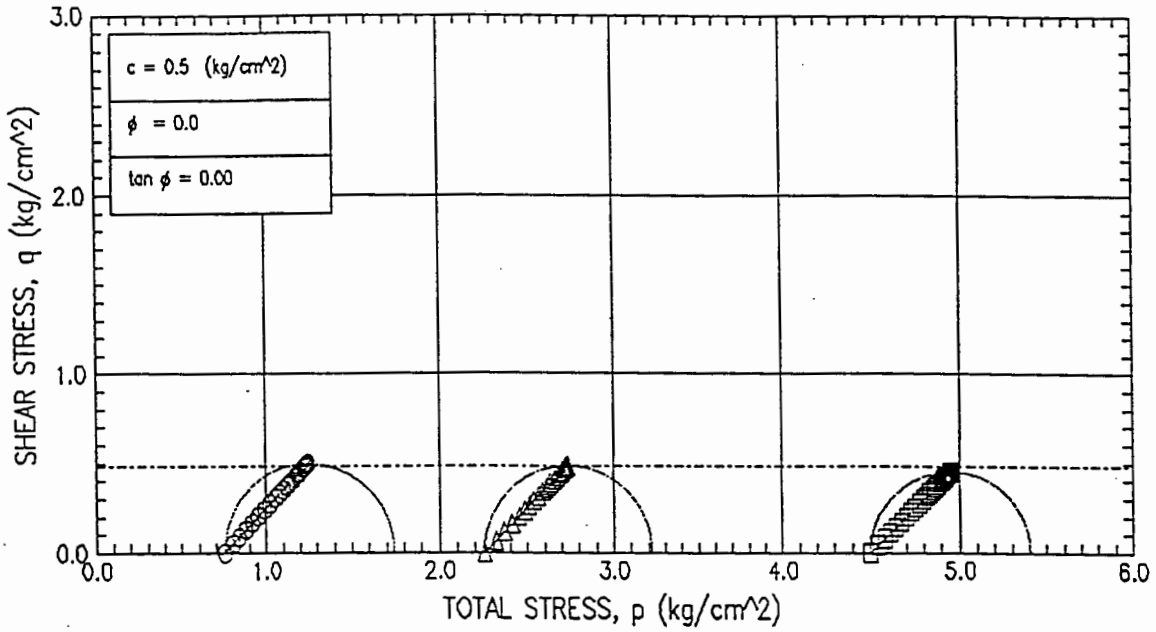
Height : 14.473 (cm)
Area : 40.909 (cm^2)
Volume : 592.1 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

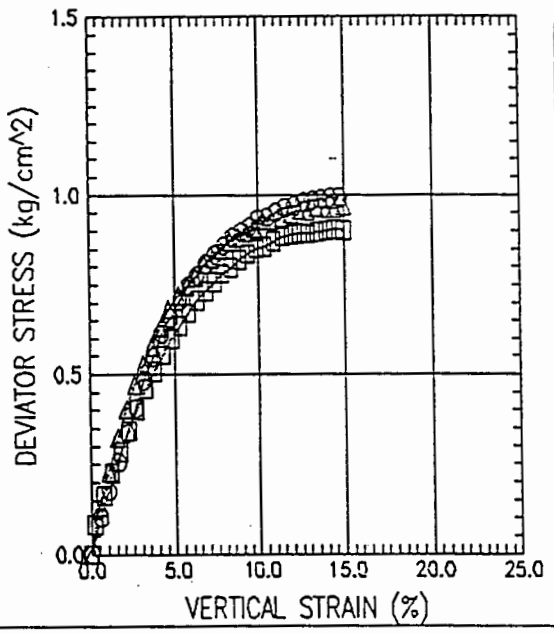
Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.9	0.00	0.00	0.00	0.00	4.50	4.50
2)	0.075	0.52	41.3	0.00	0.76	0.76	0.02	4.52	4.52
3)	0.157	1.08	41.7	0.00	18.14	18.14	0.44	4.94	4.94
4)	0.238	1.65	42.1	0.00	31.00	31.00	0.74	5.24	5.24
5)	0.313	2.17	42.5	0.00	40.07	40.07	0.94	5.44	5.44
6)	0.395	2.73	42.9	0.00	48.39	48.39	1.13	5.63	5.63
7)	0.477	3.30	43.3	0.00	56.70	56.70	1.31	5.81	5.81
8)	0.552	3.81	43.7	0.00	64.26	64.26	1.47	5.97	5.97
9)	0.633	4.38	44.1	0.00	71.44	71.44	1.62	6.12	6.12
10)	0.715	4.94	44.6	0.00	78.25	78.25	1.75	6.25	6.25
11)	0.790	5.46	45.0	0.00	85.05	85.05	1.89	6.39	6.39
12)	0.872	6.03	45.5	0.00	90.72	90.72	1.99	6.49	6.49
13)	0.953	6.59	46.0	0.00	96.39	96.39	2.10	6.60	6.60
14)	1.028	7.11	46.4	0.00	102.06	102.06	2.20	6.70	6.70
15)	1.110	7.67	46.9	0.00	106.98	106.98	2.28	6.78	6.78
16)	1.192	8.24	47.4	0.00	111.89	111.89	2.36	6.86	6.86
17)	1.267	8.76	47.9	0.00	116.05	116.05	2.42	6.92	6.92
18)	1.348	9.32	48.5	0.00	120.59	120.59	2.49	6.99	6.99
19)	1.430	9.89	49.0	0.00	124.74	124.74	2.55	7.05	7.05
20)	1.512	10.45	49.6	0.00	128.52	128.52	2.59	7.09	7.09
21)	1.593	11.02	50.1	0.00	132.68	132.68	2.65	7.15	7.15
22)	1.675	11.58	50.7	0.00	136.46	136.46	2.69	7.19	7.19
23)	1.750	12.10	51.3	0.00	140.62	140.62	2.74	7.24	7.24
24)	1.832	12.66	51.9	0.00	144.40	144.40	2.78	7.28	7.28
25)	1.914	13.23	52.5	0.00	148.18	148.18	2.82	7.32	7.32
26)	1.995	13.79	53.1	0.00	151.58	151.58	2.85	7.35	7.35
27)	2.070	14.31	53.7	0.00	154.98	154.98	2.88	7.38	7.38
28)	2.152	14.88	54.4	0.00	158.77	158.77	2.92	7.42	7.42

UU TRIAXIAL COMPRESSION TEST ASTM D 2850



FAILURE SKETCHES



SYMBOL		○	△	□	
TEST NO.		31130UU4	31130UU5	31130UU6	
INITIAL	WATER CONTENT (%)	16.03	16.03	16.03	
	DRY DENSITY (gm/cm^3)	1.94	1.92	1.93	
	SATURATION (%)	108.07	104.66	106.10	
	VOID RATIO	0.403	0.417	0.411	
BEFORE SHEAR	WATER CONTENT (%)	16.03	16.03	16.03	
	DRY DENSITY (gm/cm^3)	1.94	1.92	1.93	
	SATURATION (%)	108.07	104.66	106.10	
	VOID RATIO	0.403	0.417	0.411	
	BACK PRESS. (kg/cm^2)	0.00	0.00	0.00	
MINOR PRIN. STRESS (kg/cm^2)		0.75	2.25	4.50	
MAX. DEV. STRESS (kg/cm^2)		0.99	0.97	0.90	
TIME TO FAILURE (min)		27.98	28.98	29.00	
RATE OF STRAIN INCR (%/min)		0.50	0.50	0.50	
INITIAL DIAMETER (cm)		7.15	7.21	7.25	
INITIAL HEIGHT (cm)		15.29	15.22	15.77	
B-VALUE		0.00	0.00	0.00	

STRAIN CONTROLLED

DESCRIPTION OF SPECIMENS:

1) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL2) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL3) SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- G

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN 3 IN ST		TYPE OF TEST UU (Q)			
REMARKS:				PROJECT DES PLAINES RIVER					
1)				PROJECT NO.31130					
2)				BORING NO. L37-16-00	SAMPLE NO.	S-5	S-5	S-5	
3)				TECH. LO	DEPTH/ELEV	11.0-13.0	11.0-13.0	11.0-13.0	
				LABORATORY	DATE	8/3/00	8/3/00	8/3/00	
				TRIAXIAL COMPRESSION TEST REPORT					

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-16-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU4
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 15.291 (cm)
Area : 40.185 (cm^2)
Volume : 614.5 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.2	0.00	0.00	0.00	0.00	0.75	0.75
2)	0.082	0.53	40.5	0.00	4.16	4.16	0.10	0.85	0.85
3)	0.157	1.02	40.9	0.00	7.18	7.18	0.18	0.93	0.93
4)	0.245	1.60	41.3	0.00	10.58	10.58	0.26	1.01	1.01
5)	0.320	2.09	41.6	0.00	13.99	13.99	0.34	1.09	1.09
6)	0.402	2.63	42.0	0.00	17.01	17.01	0.40	1.15	1.15
7)	0.477	3.12	42.4	0.00	20.41	20.41	0.48	1.23	1.23
8)	0.565	3.70	42.8	0.00	23.44	23.44	0.55	1.30	1.30
9)	0.640	4.19	43.2	0.00	26.46	26.46	0.61	1.36	1.36
10)	0.722	4.72	43.6	0.00	28.73	28.73	0.66	1.41	1.41
11)	0.804	5.26	44.0	0.00	31.00	31.00	0.70	1.45	1.45
12)	0.885	5.79	44.5	0.00	33.27	33.27	0.75	1.50	1.50
13)	0.960	6.28	44.9	0.00	34.78	34.78	0.77	1.52	1.52
14)	1.042	6.81	45.3	0.00	36.67	36.67	0.81	1.56	1.56
15)	1.124	7.35	45.8	0.00	38.18	38.18	0.83	1.58	1.58
16)	1.205	7.88	46.3	0.00	39.69	39.69	0.86	1.61	1.61
17)	1.287	8.42	46.7	0.00	41.20	41.20	0.88	1.63	1.63
18)	1.369	8.95	47.2	0.00	42.34	42.34	0.90	1.65	1.65
19)	1.450	9.49	47.7	0.00	43.47	43.47	0.91	1.66	1.66
20)	1.525	9.98	48.2	0.00	44.98	44.98	0.93	1.68	1.68
21)	1.614	10.55	48.8	0.00	45.74	45.74	0.94	1.69	1.69
22)	1.689	11.04	49.3	0.00	46.87	46.87	0.95	1.70	1.70
23)	1.771	11.58	49.8	0.00	48.01	48.01	0.96	1.71	1.71
24)	1.852	12.11	50.4	0.00	48.76	48.76	0.97	1.72	1.72
25)	1.934	12.65	50.9	0.00	49.90	49.90	0.98	1.73	1.73
26)	2.016	13.18	51.5	0.00	50.65	50.65	0.98	1.73	1.73
27)	2.091	13.67	52.0	0.00	51.41	51.41	0.99	1.74	1.74
28)	2.172	14.21	52.7	0.00	52.17	52.17	0.99	1.74	1.74
29)	2.254	14.74	53.3	0.00	52.92	52.92	0.99	1.74	1.74

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-16-00
Sample No. : S-5
Sample Type : 3 IN ST
Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Location :
Test No. : 31130UU5
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Height : 15.220 (cm)
Area : 40.928 (cm^2)
Volume : 621.4 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	40.8	0.00	0.00	0.00	0.00	2.25	2.25
2)	0.077	0.51	41.2	0.00	5.53	5.53	0.13	2.38	2.38
3)	0.155	1.02	41.5	0.00	9.54	9.54	0.23	2.48	2.48
4)	0.239	1.57	41.9	0.00	13.56	13.56	0.32	2.57	2.57
5)	0.317	2.08	42.3	0.00	17.08	17.08	0.40	2.65	2.65
6)	0.394	2.59	42.7	0.00	20.09	20.09	0.47	2.72	2.72
7)	0.471	3.10	43.1	0.00	22.60	22.60	0.53	2.78	2.78
8)	0.549	3.61	43.4	0.00	25.11	25.11	0.58	2.83	2.83
9)	0.626	4.11	43.8	0.00	27.63	27.63	0.63	2.88	2.88
10)	0.704	4.62	44.2	0.00	30.14	30.14	0.68	2.93	2.93
11)	0.788	5.18	44.7	0.00	32.15	32.15	0.72	2.97	2.97
12)	0.865	5.69	45.1	0.00	33.65	33.65	0.75	3.00	3.00
13)	0.943	6.19	45.5	0.00	35.16	35.16	0.77	3.02	3.02
14)	1.020	6.70	46.0	0.00	37.17	37.17	0.81	3.06	3.06
15)	1.098	7.21	46.4	0.00	38.17	38.17	0.82	3.07	3.07
16)	1.175	7.72	46.9	0.00	39.68	39.68	0.85	3.10	3.10
17)	1.259	8.28	47.4	0.00	41.19	41.19	0.87	3.12	3.12
18)	1.337	8.78	47.8	0.00	42.19	42.19	0.88	3.13	3.13
19)	1.414	9.29	48.3	0.00	43.20	43.20	0.89	3.14	3.14
20)	1.492	9.80	48.8	0.00	44.20	44.20	0.91	3.16	3.16
21)	1.569	10.31	49.3	0.00	45.71	45.71	0.93	3.18	3.18
22)	1.646	10.82	49.8	0.00	46.21	46.21	0.93	3.18	3.18
23)	1.731	11.37	50.4	0.00	47.21	47.21	0.94	3.19	3.19
24)	1.808	11.88	50.9	0.00	48.22	48.22	0.95	3.20	3.20
25)	1.886	12.39	51.5	0.00	49.22	49.22	0.96	3.21	3.21
26)	1.963	12.90	52.0	0.00	49.73	49.73	0.96	3.21	3.21
27)	2.040	13.41	52.6	0.00	50.73	50.73	0.96	3.21	3.21
28)	2.125	13.96	53.2	0.00	51.23	51.23	0.96	3.21	3.21
29)	2.202	14.47	53.8	0.00	51.73	51.73	0.96	3.21	3.21
30)	2.280	14.98	54.4	0.00	52.74	52.74	0.97	3.22	3.22

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : DES PLAINES RIVER
Project No. : 31130
Boring No. : L37-16-00
Sample No. : S-5
Sample Type : 3 IN ST

Location :
Test No. : 31130UU6
Test Date : 8/3/00
Depth : 11.0-13.0
Elevation :

Tested by : LO
Checked by : WPQ

Soil Description : SILTY CLAY TRACE F-C SAND GRAVEL SHALE -- GRAY CL
Remarks :

Height : 15.770 (cm)
Area : 41.248 (cm^2)
Volume : 650.5 (cm^3)

Piston Diameter : 0.000 (cm)
Piston Friction : 0.00 (kg)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (kg/cm^2)
Membrane Correction : 0.00 (kg/cm)
Area Correction : Parabolic

	CHANGE IN LENGTH (cm)	VERTICAL STRAIN (%)	CORR. AREA (cm^2)	PORE PRESSURE (kg/cm^2)	DEV. LOAD (kg)	CORR. DEV. LOAD (kg)	DEV. STRESS (kg/cm^2)	TOTAL VERTICAL STRESS (kg/cm^2)	EFFECTIVE VERTICAL STRESS (kg/cm^2)
1)	0.000	0.00	41.3	0.00	0.00	0.00	0.00	4.50	4.50
2)	0.034	0.22	41.4	0.00	3.40	3.40	0.08	4.58	4.58
3)	0.116	0.73	41.8	0.00	6.80	6.80	0.16	4.66	4.66
4)	0.191	1.21	42.1	0.00	9.45	9.45	0.22	4.72	4.72
5)	0.272	1.73	42.5	0.00	12.10	12.10	0.28	4.78	4.78
6)	0.354	2.25	42.9	0.00	14.74	14.74	0.34	4.84	4.84
7)	0.429	2.72	43.2	0.00	17.39	17.39	0.40	4.90	4.90
8)	0.511	3.24	43.6	0.00	20.03	20.03	0.46	4.96	4.96
9)	0.592	3.76	44.0	0.00	22.30	22.30	0.51	5.01	5.01
10)	0.674	4.28	44.4	0.00	24.57	24.57	0.55	5.05	5.05
11)	0.749	4.75	44.8	0.00	26.84	26.84	0.60	5.10	5.10
12)	0.831	5.27	45.2	0.00	28.73	28.73	0.64	5.14	5.14
13)	0.913	5.79	45.7	0.00	30.62	30.62	0.67	5.17	5.17
14)	0.987	6.26	46.1	0.00	32.51	32.51	0.71	5.21	5.21
15)	1.069	6.78	46.5	0.00	34.02	34.02	0.73	5.23	5.23
16)	1.151	7.30	47.0	0.00	35.53	35.53	0.76	5.26	5.26
17)	1.233	7.82	47.4	0.00	37.05	37.05	0.78	5.28	5.28
18)	1.314	8.34	47.9	0.00	38.18	38.18	0.80	5.30	5.30
19)	1.396	8.86	48.4	0.00	39.69	39.69	0.82	5.32	5.32
20)	1.471	9.33	48.9	0.00	40.83	40.83	0.84	5.34	5.34
21)	1.553	9.85	49.4	0.00	41.96	41.96	0.85	5.35	5.35
22)	1.634	10.37	49.9	0.00	42.72	42.72	0.86	5.36	5.36
23)	1.716	10.89	50.4	0.00	43.85	43.85	0.87	5.37	5.37
24)	1.798	11.40	51.0	0.00	44.98	44.98	0.88	5.38	5.38
25)	1.880	11.92	51.5	0.00	45.74	45.74	0.89	5.39	5.39
26)	1.961	12.44	52.1	0.00	46.50	46.50	0.89	5.39	5.39
27)	2.036	12.92	52.6	0.00	46.87	46.87	0.89	5.39	5.39
28)	2.118	13.44	53.2	0.00	47.63	47.63	0.90	5.40	5.40
29)	2.200	13.95	53.8	0.00	48.39	48.39	0.90	5.40	5.40
30)	2.281	14.47	54.4	0.00	49.14	49.14	0.90	5.40	5.40
31)	2.356	14.95	55.0	0.00	49.52	49.52	0.90	5.40	5.40