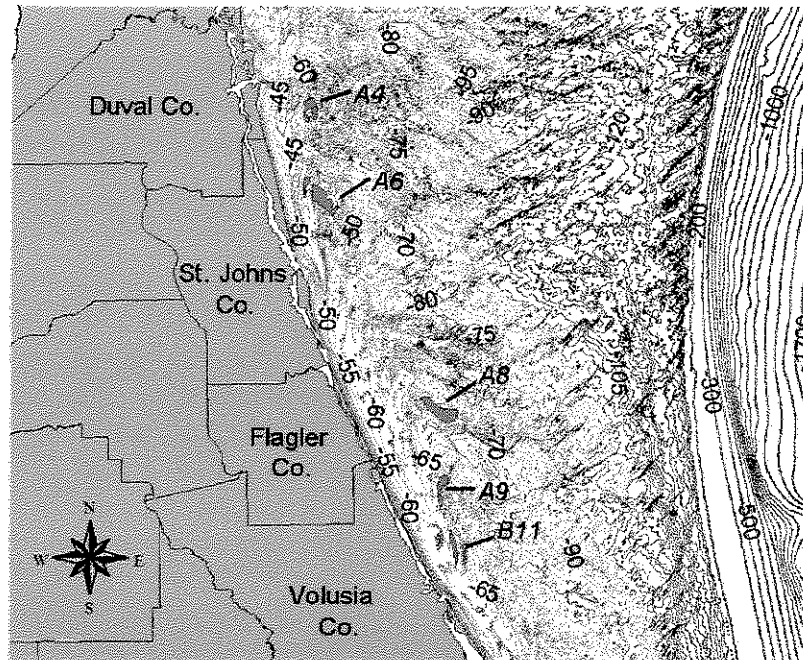


Final Biological Characterization/Numerical Wave Model  
Analysis within Borrow Sites Offshore of Florida's Northeast  
Coast Contract No. 1435-01-05-CT-39075-M05PC00005  
Report Volume II Appendices A-D

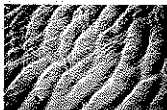


*Submitted to:*

**Department of the Interior Minerals Management Service (MMS)  
Sand and Gravel Program Leasing Division Herndon, VA**

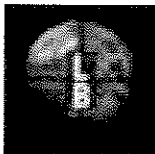
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**The Louis Berger Group, Inc.**

March 2009

**Biological Characterization/Numerical Wave Model Analysis within  
Borrow Sites Offshore of Florida’s Northeast Coast Contract No.  
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## Appendix A

### Fishery Data

- A1. Commercial and Recreational Landings Data for 2005. .... A1-1
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Table A1-1. Commercial and recreational fish landings data for 2005. Commercial data are landings (lbs.) and trips near the study areas from Nassau, Duval, St. Johns, Flagler, Volusia, and Brevard Counties, (FWRI, 2007). Recreational data are landings (number of fish.) from Marine Recreational Fishery Statistics Survey, NMFS Fishery Statistics Division.

Fish Species	Scientific Name	Commercial Landings		Recreational Landings			
		Total landings (pounds)	Total Trips	Proportion of total landings (%)	Proportion of total trips (%)	Number of fish	Proportion of total fish (%)
Shark	various species	828,361	674	17.140%	2.627%		
Kingfish (Whiting)	<i>Menticirrhus</i> spp.	778,079	3,023	16.099%	11.781%	1,695,979	7.501%
Mackerel, Spanish	<i>Scomberomorus maculatus</i>	539,377	795	11.160%	3.098%	1,044,835	4.621%
Mullet, Black/Striped	<i>Mullus cephalus</i>	515,871	1,723	10.674%	6.714%	910,549	4.027%
Mackerel, King	<i>Scomberomorus cavalla</i>	288,253	1,864	5.964%	6.095%	389,742	1.724%
Misc. Food Fish		178,963	1,162	3.703%	4.528%		
Tilefish (Golden)	<i>Lopholatilus chamaeleonticeps</i>	164,663	67	3.407%	0.261%		
Swordfish	<i>Xiphias gladius</i>	161,549	41	3.343%	0.160%		
Flounders	<i>Paralichthys</i> spp.	157,035	2,319	3.249%	9.037%	178,408	0.788%
Snapper, Vermillion	<i>Rhombolites aurorbens</i>	133,721	347	2.767%	1.352%	138,106	0.611%
Amberjacks	<i>Seriola dumerilii</i>	116,238	467	2.405%	1.820%	26,087	0.115%
Groupers, Gag	<i>Mycteroperca microlepis</i>	112,862	647	2.335%	2.521%	114,537	0.507%
Bluefish	<i>Pomatomus saltatrix</i>	89,400	739	1.850%	2.880%	964,724	4.267%
Sheepshead	<i>Archosargus probatocephalus</i>	69,748	1,469	1.443%	5.725%	798,009	3.530%
Snapper, Red	<i>Lutjanus campechanus</i>	69,022	819	1.428%	3.192%	147,856	0.654%
Dolphin	<i>Coryphaena hippurus</i>	64,933	387	1.344%	1.508%	651,627	2.882%
Bait Fish	various, Unspecified	55,060	611	1.139%	2.381%		
Triggerfish (Gray)	Ballistidae	43,831	374	0.907%	1.457%	262,621	1.162%
Shark Fins		41,666	335	0.862%	1.305%		
Pompano (Florida)	<i>Trachinotus carolinus</i>	37,917	1,191	0.785%	4.641%	447,782	1.981%
Jack, Crevalle	<i>Caranx hippos</i>	36,321	554	0.752%	2.159%	1,808,406	7.999%
Blue Runner	<i>Caranx crysos</i>	32,122	556	0.665%	2.167%		
Menhaden (Pogies)	<i>Brevoortia patronus</i>	29,746	36	0.615%	0.140%		
Groupers, Scamp	<i>Mycteroperca phenax</i>	28,508	283	0.548%	1.103%		
Cobia	<i>Rachycentron canadum</i>	22,760	494	0.471%	1.925%	22,059	0.098%
Groupers, Snowy	<i>Epinephelus niveatus</i>	19,404	67	0.401%	0.261%		
Snapper, Gray (Mangrove)	<i>Lutjanus griseus</i>	18,803	519	0.399%	2.023%	1,682,171	7.440%
Tunny, Little (Bonito)	<i>Euthymus alletteratus</i>	16,398	237	0.339%	0.924%	290,976	1.287%
Mullet, Silver/White	<i>Mugil curema</i>	15,053	80	0.311%	0.312%		
Misc. Industrial Fish		13,279	12	0.275%	0.047%		
Groupers, Red	<i>Epinephelus morio</i>	12,605	299	0.261%	1.165%	181,251	0.802%
Tuna, Yellowfin	<i>Thunnus albacares</i>	11,969	29	0.248%	0.113%	2,137	0.009%
Seatrou, Spotted	<i>Cynoscion nebulosus</i>	11,324	312	0.234%	1.216%	3,784,080	16.737%
Croaker	<i>Micropogonias undulatus</i>	10,646	203	0.220%	0.791%	614,648	2.719%
Pinfish	<i>Lagodon rhomboides</i>	9,037	289	0.187%	1.126%	2,171,696	9.606%
Mojarra	Gerreidae	8,587	182	0.178%	0.709%		
Tuna, Albacore	<i>Thunnus alalunga</i>	7,997	18	0.165%	0.070%		
Snapper, Mutton	<i>Lutjanus analis</i>	7,919	135	0.164%	0.526%	294,089	1.301%





Table A1-1. (continued).

Fish Species	Scientific Name	Commercial Landings		Recreational Landings			
		Total landings (pounds)	Total Trips	Proportion of total landings (%)	Proportion of total trips (%)	Number of fish	Proportion of total fish (%)
Tuna, Bigeye	<i>Thunnus obesus</i>	7,453	23	0.154%	0.090%		
Porgies	<i>Sparidae</i> spp.	7,305	160	0.151%	0.624%		
Seatrou, Weakfish	<i>Cynoscion regalis</i>	7,035	682	0.146%	2.658%	189,580	0.839%
Spot	<i>Leiostomus xanthurus</i>	6,795	238	0.141%	0.927%	93,719	0.415%
Sea Bass, Mixed	<i>Centropristis</i> spp.	6,211	219	0.129%	0.853%	832,456	3.682%
Catfish	Anidae, Bagridae	5,337	54	0.110%	0.210%		
Wahoo	<i>Acanthocybium solandri</i>	4,753	67	0.098%	0.261%	21,242	0.094%
Drum, Black	<i>Pogonias cromis</i>	4,205	166	0.087%	0.647%	174,310	0.771%
Jack, Other	Carangidae	3,261	119	0.067%	0.464%		
Eels	Anguilliformes	3,176	10	0.066%	0.039%		
Grunts	Haemulidae	3,084	91	0.064%	0.355%	616,446	2.727%
Bumper, Atlantic	<i>Chloroscombrus chrysurus</i>	3,063	129	0.063%	0.503%		
Ladyfish	<i>Elops saurus</i>	2,986	239	0.062%	0.931%		
Tilapia (Nile Perch)	Cichlidae	2,214	39	0.046%	0.152%		
Grouper, Other	Serranidae	1,442	72	0.030%	0.281%		
Tilefish, Bluefline (Gray)	<i>Caulatilus microptus</i>	1,386	24	0.029%	0.094%		
Hogfish	<i>Lachnolaimus maximus</i>	1,264	45	0.026%	0.175%		
Tuna, Blackfin	<i>Thunnus atlanticus</i>	996	22	0.021%	0.086%	7,045	0.031%
Grouper, Black	<i>Mycteroperca bonaci</i>	555	10	0.011%	0.039%		
Snapper, Other	Lutjanidae	524	21	0.011%	0.082%		
Scad, Bigeye (Goggle Eye)	<i>Selar crumenophthalmus</i>	480	1	0.010%	0.004%		
Snapper, Lane	<i>Lutjanus synagris</i>	419	71	0.009%	0.277%		
Seatrou, Silver	<i>Cynoscion nothus</i>	403	27	0.008%	0.105%		
Grouper, Yellowedge	<i>Epinephelus flavolimbatus</i>	361	11	0.007%	0.043%		
Drum, Red	<i>Sciaenops ocellatus</i>	0	0	0.000%	0.000%	1,467,276	6.490%
Mullet, Black, Roe	<i>Mugil cephalus</i>	351	5	0.007%	0.019%		
Snapper, Yellowtail	<i>Lutjanus chrysurus</i>	280	27	0.006%	0.105%	584,425	2.585%
Scad, Round (Cigarfish)	<i>Decapterus punctatus</i>	204	1	0.004%	0.004%		
Snapper, Silk	<i>Lutjanus vivanus</i>	187	17	0.004%	0.066%		
Permit	<i>Trachinotus falcatus</i>	86	6	0.002%	0.023%		
Sardines, Spanish	<i>Sardinella aurita</i>	50	1	0.001%	0.004%		
Jack, Mixed	Carangidae	42	1	0.001%	0.004%		
Tuna, Bluefin	<i>Thunnus thynnus</i>	30	2	0.001%	0.008%		
Grouper, Warsaw	<i>Epinephelus nigritus</i>	25	1	0.001%	0.004%		
Tuna, Skipjack	<i>Katsuwonus pelamis</i>	11	1	0.000%	0.004%		
<b>Total</b>		<b>4,833,001</b>	<b>25,661</b>	<b>100.000%</b>	<b>100.000%</b>	<b>22,608,874</b>	<b>100.000%</b>



Table A2-1. Commercial invertebrate fisheries landings data for 2005. Commercial data are landings (lbs.) and trips near the study areas from Nassau, Duval, St. Johns, Flagler, Volusia, and Brevard Counties, (FWRI, 2007).

Fish Species	Scientific Name	Commercial Landings		
		Total landings (pounds)	Total Trips	Proportion of total landings (%)
Shrimp, White	<i>Litopenaeus setiferus</i>	3,799,927	2,568	45.354%
Crab, Blue (Hard)	<i>Callinectes sapidus</i>	3,562,414	12,504	42.519%
Shrimp, Brown	<i>Farfantepenaeus aztecus</i>	390,890	374	4.665%
Clams, Hard (Wild Only)	<i>Mercenaria mercenaria</i>	139,825	2,527	1.669%
Misc. Invertebrates		129,650	103	1.547%
Shrimp, Rock	<i>Sicyonia brevirostris</i>	127,827	25	1.526%
Shrimp, Royal Red	<i>Pleoticus robustus</i>	80,055	7	0.955%
Oysters	<i>Crassostrea virginica</i>	38,703	869	0.462%
Lobster, Spiny	<i>Panulirus argus</i>	34,287	244	0.409%
Crab, Blue (Soft)	<i>Callinectes sapidus</i>	30,706	492	0.366%
Shrimp, Pink	<i>Farfantepenaeus duorarum</i>	26,536	16	0.317%
Shrimp, Other	Penaeidae	7,874	10	0.094%
Squid	Cephalopoda	4,835	96	0.058%
Crab, Stone (Claws)	<i>Menippe mercenaria</i>	4,642	364	0.055%
Conch (Helmet and Whelks)	Cassius spp. and Busycon spp.	161	9	0.002%
Lobster, Spanish	<i>Scyllarides aequinoctialis</i>	12	3	0.000%
<b>Total</b>		<b>8,378,344</b>	<b>20,211</b>	<b>100.000%</b>



## Appendix B

### Biological Field Survey Data

B1. Benthic Grab Station Positions and Depths.....	B1-1
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Table B1-1. Benthic sampling station positions and depths for the November 2005 and June 2006 surveys. Water quality profiles were taken at stations shown in bold font. Stations appearing in italicized font were sampled for sediment characteristics, but were not included in the benthic analysis.

Area	November 2005				June 2006			
	Station	Latitude	Longitude	Depth (m)	Station	Latitude	Longitude	Depth (m)
B11	<b>NE1-B11-1</b>	29 12.349	80 53.759	17.3	<b>NE2-B11-1</b>	29 11.723	80 53.528	14.6
	<b>NE1-B11-2</b>	29 11.995	80 53.529	15.8	<i>NE2-B11-2</i>	29 11.066	80 53.666	16.6
	<b>NE1-B11-3</b>	29 11.094	80 53.470	14.8	<b>NE2-B11-3</b>	29 10.719	80 53.386	16.3
	<b>NE1-B11-4</b>	29 13.821	80 53.810	17.8	<i>NE2-B11-4</i>	29 13.308	80 54.033	18.0
	<b>NE1-B11-5</b>	29 12.925	80 54.009	18.2	<b>NE2-B11-5</b>	29 13.443	80 53.985	15.8
	<b>NE1-B11-6</b>	29 13.806	80 54.120	15.9	<b>NE2-B11-6</b>	29 12.532	80 53.740	14.6
	<b>NE1-B11-7</b>	29 10.378	80 53.326	16.4	<b>NE2-B11-7</b>	29 13.802	80 53.807	17.8
	<b>NE1-B11-8</b>	29 14.116	80 54.180	17.5	<b>NE2-B11-8</b>	29 11.293	80 53.356	15.5
	<b>NE1-B11-9</b>	29 11.852	80 53.788	17.0	<b>NE2-B11-9</b>	29 10.372	80 53.490	17.9
	<b>NE1-B11-10</b>	29 11.322	80 53.436	15.5	<i>NE2-B11-10</i>	29 10.007	80 53.414	15.8
	<b>NE1-B11-11</b>	29 13.109	80 53.295	18.9	<i>NE2-B11-11</i>	29 10.433	80 53.876	18.5
	<b>NE1-B11-12</b>	29 09.549	80 53.207	17.8	<b>NE2-B11-12</b>	29 13.879	80 53.451	19.6
	<b>NE1-B11-13</b>	29 13.756	80 54.726	19.5	<b>NE2-B11-13</b>	29 12.773	80 53.369	17.6

A9	<b>NE1-A9-1</b>	29 21.628	80 55.876	14.4	<i>NE2-A9-1</i>	29 22.724	80 55.659	14.0
	<b>NE1-A9-2</b>	29 19.969	80 55.769	15.3	<b>NE2-A9-2</b>	29 23.384	80 55.354	15.8
	<b>NE1-A9-3</b>	29 21.112	80 55.996	14.7	<b>NE2-A9-3</b>	29 19.894	80 55.862	16.0
	<b>NE1-A9-4</b>	29 22.889	80 55.011	15.6	<b>NE2-A9-4</b>	29 21.710	80 55.772	15.3
	<b>NE1-A9-5</b>	29 22.211	80 55.194	15.8	<b>NE2-A9-5</b>	29 22.961	80 55.268	15.8
	<b>NE1-A9-6</b>	29 23.121	80 55.239	16.0	<i>NE2-A9-6</i>	29 21.973	80 55.715	15.6
	<b>NE1-A9-7</b>	29 22.002	80 55.594	16.5	<b>NE2-A9-7</b>	29 22.532	80 55.203	15.0
	<b>NE1-A9-8</b>	29 20.152	80 55.735	14.6	<i>NE2-A9-8</i>	29 20.461	80 55.958	16.5
	<b>NE1-A9-9</b>	29 20.941	80 56.021	16.5	<b>NE2-A9-9</b>	29 21.173	80 56.001	14.7
	<b>NE1-A9-10</b>	29 21.438	80 56.029	16.7	<b>NE2-A9-10</b>	29 21.585	80 55.983	14.4
	<b>NE1-A9-11</b>	29 21.315	80 55.317	16.9	<i>NE2-A9-11</i>	29 22.949	80 55.916	16.6
	<b>NE1-A9-12</b>	29 23.496	80 55.381	16.3	<i>NE2-A9-12</i>	29 22.282	80 56.264	16.8
	<b>NE1-A9-13</b>	29 22.018	80 54.796	16.4	<b>NE2-A9-13</b>	29 18.855	80 55.401	17.7

A8	<b>NE1-A8-1</b>	29 32.363	80 54.717	17.4	<b>NE2-A8-1</b>	29 32.548	80 54.441	16.5
	<b>NE1-A8-2</b>	29 34.943	80 58.469	17.1	<b>NE2-A8-2</b>	29 33.900	80 56.600	16.8
	<b>NE1-A8-3</b>	29 34.335	80 57.822	15.4	<b>NE2-A8-3</b>	29 32.568	80 56.059	16.9
	<b>NE1-A8-4</b>	29 32.987	80 56.724	16.5	<i>NE2-A8-4</i>	29 33.102	80 55.216	17.1
	<b>NE1-A8-5</b>	29 33.834	80 56.461	16.6	<i>NE2-A8-5</i>	29 32.141	80 55.528	15.8
	<b>NE1-A8-6</b>	29 34.491	80 57.882	15.8	<i>NE2-A8-6</i>	29 33.925	80 57.182	20.2
	<b>NE1-A8-7</b>	29 34.092	80 57.958	16.9	<b>NE2-A8-7</b>	29 33.199	80 54.225	17.2
	<b>NE1-A8-8</b>	29 33.308	80 56.301	16.6	<b>NE2-A8-8</b>	29 33.133	80 53.362	17.3
	<b>NE1-A8-9</b>	29 32.521	80 54.106	15.9	<b>NE2-A8-9</b>	29 34.346	80 58.039	17.0
	<b>NE1-A8-10</b>	29 32.285	80 55.067	17.1	<b>NE2-A8-10</b>	29 34.705	80 57.712	18.5
	<b>NE1-A8-11</b>	29 33.198	80 57.636	20.7	<b>NE2-A8-11</b>	29 35.605	80 58.408	18.3
	<b>NE1-A8-12</b>	29 35.752	80 58.134	18.5	<b>NE2-A8-12</b>	29 32.134	80 56.352	20.1
	<b>NE1-A8-13</b>	29 35.370	80 57.140	19.8	<i>NE2-A8-13</i>	29 31.688	80 55.799	19.1

Table B1-1. (continued).

Area	November 2005				June 2006			
	Station	Latitude	Longitude	Depth (m)	Station	Latitude	Longitude	Depth (m)
A6	NE1-A6-1	30 08.670	81 16.365	12.5	NE2-A6-1	30 09.127	81 16.596	12.0
	NE1-A6-2	30 09.162	81 16.279	13.3	NE2-A6-2	30 07.256	81 16.783	13.3
	NE1-A6-3	30 08.839	81 16.170	13.1	NE2-A6-3	30 08.471	81 16.600	12.1
	NE1-A6-4	30 07.299	81 15.120	12.9	NE2-A6-4	30 06.670	81 14.738	13.5
	NE1-A6-5	30 06.079	81 15.098	11.8	NE2-A6-5	30 07.436	81 15.115	12.4
	NE1-A6-6	30 05.672	81 14.366	11.6	NE2-A6-6	30 04.427	81 12.959	12.9
	NE1-A6-7	30 05.601	81 13.215	13.9	NE2-A6-7	30 06.729	81 15.211	11.2
	NE1-A6-8	30 05.150	81 13.945	12.0	NE2-A6-8	30 05.312	81 13.463	13.1
	NE1-A6-9	30 04.461	81 13.210	12.0	NE2-A6-9	30 05.577	81 13.005	16.4
	NE1-A6-10	30 04.540	81 12.917	11.9	NE2-A6-10	30 06.410	81 14.591	14.5
	NE1-A6-11	30 08.510	81 17.254	16.7	NE2-A6-11	30 04.586	81 14.081	11.4
	NE1-A6-12	30 06.454	81 16.141	16.6	NE2-A6-12	30 09.037	81 15.626	12.7
	NE1-A6-13	30 04.301	81 11.739	14.7	NE2-A6-13	30 05.987	81 12.457	14.3

A4	NE1-A4-1	30 21.794	81 16.245	17.9	NE2-A4-1	30 19.616	81 14.938	17.9
	NE1-A4-2	30 21.914	81 16.028	15.7	NE2-A4-2	30 20.523	81 15.691	14.1
	NE1-A4-4	30 21.827	81 16.457	16.2	NE2-A4-3	30 20.112	81 15.628	13.2
	NE1-A4-6	30 22.144	81 16.370	15.0	NE2-A4-4	30 19.405	81 15.404	13.9
	NE1-A4-8	30 21.506	81 16.113	15.8	NE2-A4-5	30 18.913	81 16.707	15.5
	NE1-A4-9	30 21.512	81 16.541	17.1	NE2-A4-6	30 18.466	81 15.129	14.1
	NE1-A4-10	30 22.190	81 16.040	15.8	NE2-A4-7	30 18.536	81 16.572	14.9
	NE1-A4-12	30 21.257	81 15.769	14.2	NE2-A4-8	30 20.103	81 16.180	15.4
	NE1-A4-13	30 21.065	81 15.668	16.0	NE2-A4-9	30 18.344	81 15.298	14.2
	NE1-A4-14	30 21.129	81 15.805	15.4	NE2-A4-10	30 18.994	81 15.232	13.6
	NE1-A4-15	30 20.963	81 15.931	15.5	NE2-A4-11	30 18.874	81 17.020	17.5
	NE1-A4-17	30 20.953	81 15.810	16.8	NE2-A4-12	30 21.645	81 15.789	16.2
	NE1-A4-18	30 21.314	81 15.955	16.6	NE2-A4-13	30 21.191	81 15.069	15.4
	NE1-A4-19	30 21.286	81 15.584	15.7	NE2-A4-14	30 22.319	81 16.277	14.0
	NE1-A4-21	30 20.420	81 16.241	15.2	NE2-A4-15	30 21.697	81 16.122	15.8
	NE1-A4-23	30 18.514	81 15.197	14.5	NE2-A4-16	30 21.761	81 16.419	15.6
	NE1-A4-24	30 20.185	81 15.397	13.5	NE2-A4-17	30 22.170	81 16.071	15.2
	NE1-A4-25	30 20.836	81 16.380	14.0	NE2-A4-18	30 21.358	81 16.526	16.4
	NE1-A4-26	30 18.317	81 16.532	13.9	NE2-A4-19	30 21.622	81 16.416	16.1
	NE1-A4-28	30 19.459	81 15.281	14.4	NE2-A4-20	30 22.104	81 16.209	15.6
	NE1-A4-30	30 19.016	81 16.762	14.8	NE2-A4-21	30 20.844	81 16.666	15.2
	NE1-A4-31	30 19.596	81 17.066	17.7	NE2-A4-22	30 21.532	81 16.592	14.4
	NE1-A4-32	30 21.804	81 15.702	16.6	NE2-A4-23	30 21.519	81 15.949	13.8
	NE1-A4-33	30 19.196	81 14.811	16.5	NE2-A4-24	30 20.940	81 15.539	14.9



Table B1-1. (continued).

Area	November 2005				June 2006			
	Station	Latitude	Longitude	Depth (m)	Station	Latitude	Longitude	Depth (m)
A4					NE2-A4-25	30 21.296	81 15.903	16.8
					NE2-A4-26	30 21.238	81 15.584	17.6
					NE2-A4-27	30 20.985	81 15.853	14.4
					NE2-A4-28	30 21.335	81 15.712	16.2
					NE2-A4-29	30 21.172	81 15.799	15.3
					NE2-A4-30	30 21.152	81 15.566	16.6
					NE2-A4-31	30 20.886	81 15.575	16.5
					NE2-A4-32	30 21.145	81 16.007	14.1
					NE2-A4-33	30 21.075	81 15.681	15.0

Table B2-1. Otter trawl positions in the Northeast Florida study area.

Area	November 2005				June 2006				
	Trawl	Event	Latitude	Longitude	Trawl	Event	Latitude	Longitude	
B11	Y	Start	29 14.360	80 53.773	Y	Start	29 13.639	80 54.746	
		End	29 14.134	80 53.425		End	29 14.104	80 54.855	
	Z	Start	29 14.174	80 54.288	Z	Start	29 13.566	80 54.086	
		End	29 13.856	80 54.001		End	29 13.897	80 54.250	
	AA	Start	29 12.502	80 54.123	AA	Start	29 12.199	80 52.926	
		End	29 12.170	80 54.366		End	29 12.545	80 53.029	
	BB	Start	29 12.462	80 53.926	BB	Start	29 11.932	80 53.835	
		End	29 12.661	80 53.563		End	29 12.085	80 53.503	
	CC	Start	29 11.851	80 53.564	CC	Start	29 10.250	80 53.352	
		End	29 11.506	80 53.519		End	29 10.692	80 53.303	
	DD	Start	29 10.576	80 53.127	DD	Start	29 10.452	80 53.992	
		End	29 10.430	80 52.764		End	29 10.796	80 54.066	
	A9	S	Start	29 23.030	80 54.430	S	Start	29 22.240	80 53.923
			End	29 22.717	80 54.216		End	29 22.593	80 54.008
V		Start	29 20.778	80 55.312	V	Start	29 22.955	80 56.652	
		End	29 20.774	80 55.623		End	29 22.441	80 56.724	
W		Start	29 20.931	80 56.483	W	Start	29 20.150	80 56.606	
		End	29 20.442	80 56.498		End	29 20.549	80 56.653	
X		Start	29 20.612	80 56.154	X	Start	29 19.668	80 55.995	
		End	29 20.852	80 55.879		End	29 20.083	80 56.041	
U		Start	29 22.220	80 55.773	U	Start	29 21.859	80 55.889	
		End	29 22.240	80 55.405		End	29 21.833	80 55.395	
T		Start	29 22.706	80 55.232	T	Start	29 22.693	80 55.311	
		End	29 22.954	80 55.554		End	29 22.410	80 55.772	
A8		M	Start	29 34.751	80 58.392	M	Start	29 34.749	80 58.006
			End	29 34.770	80 58.072		End	29 34.951	80 58.241
	N	Start	29 34.870	80 57.039	N	Start	29 35.727	80 58.799	
		End	29 34.724	80 56.712		End	29 35.750	80 58.432	
	O	Start	29 33.622	80 56.832	O	Start	29 33.430	80 56.392	
		End	29 33.368	80 56.602		End	29 33.674	80 56.582	
	P	Start	29 32.867	80 57.367	P	Start	29 32.267	80 56.985	
		End	29 32.694	80 57.707		End	29 32.502	80 57.221	
	R	Start	29 31.446	80 54.128	R	Start	29 31.807	80 53.222	
		End	29 31.506	80 53.780		End	29 31.986	80 53.079	
	Q	Start	29 33.002	80 54.559	Q	Start	29 32.466	80 54.770	
		End	29 33.252	80 54.282		End	29 32.105	80 54.959	

Table B2-1. (continued).

Area	November 2005				June 2006				
	Trawl	Event	Latitude	Longitude	Trawl	Event	Latitude	Longitude	
A6	L	Start	30 03.358	81 12.844	L	Start	30 04.349	81 14.769	
		End	30 03.671	81 13.204		End	30 04.692	81 14.855	
	K	Start	30 04.945	81 13.511	K	Start	30 05.091	81 13.245	
		End	30 04.978	81 13.144		End	30 05.185	81 13.033	
	J	Start	30 06.829	81 14.365	J	Start	30 07.034	81 14.877	
		End	30 07.116	81 14.181		End	30 07.280	81 14.821	
	I	Start	30 07.719	81 13.935	I	Start	30 07.532	81 13.386	
		End	30 07.941	81 14.151		End	30 07.669	81 13.763	
	H	Start	30 07.636	81 15.988	H	Start	30 08.530	81 17.229	
		End	30 07.959	81 15.905		End	30 08.227	81 17.142	
	G	Start	30 08.370	81 16.364	G	Start	30 08.989	81 16.296	
		End	30 08.385	81 16.714		End	30 08.763	81 16.611	
	A4	E	Start	30 18.309	81 16.424	E	Start	30 18.540	81 16.452
			End	30 18.638	81 16.567		End	30 18.898	81 16.629
B		Start	30 19.110	81 16.104	B	Start	30 19.584	81 17.339	
		End	30 19.095	81 15.741		End	30 19.312	81 17.267	
A		Start	30 19.402	81 15.424	A	Start	30 19.605	81 15.067	
		End	30 19.392	81 15.015		End	30 19.869	81 15.389	
C		Start	30 20.630	81 14.754	C	Start	30 22.006	81 15.770	
		End	30 20.864	81 14.872		End	30 21.833	81 15.476	
D		Start	30 20.021	81 16.199	D	Start	30 20.781	81 16.360	
		End	30 20.292	81 16.026		End	30 21.054	81 16.106	
F		Start	30 19.958	81 16.704	F	Start	30 20.227	81 17.097	
		End	30 19.959	81 17.097		End	30 20.519	81 17.397	



Table B3-1. Positions of plankton and neuston tows in the northeast Florida study area.

Type	November 2005				June 2006						
	Trawl ID	Event	Latitude	Longitude	Trawl ID	Event	Latitude	Longitude			
Plankton	ECIP 1	Start	29 16.159	80 54.531	ECIP0106	Start	28 54.213	80 36.246			
		End	29 16.546	80 54.674		End	28 54.675	80 36.716			
	ECIP 2	Start	29 16.888	80 54.794	ECIP0206	Start	28 55.392	80 37.471			
		End	29 17.241	80 54.897		End	28 55.677	80 37.729			
	ECIP 3	Start	29 17.601	80 54.991	ECIP0306	Start	28 56.025	80 38.053			
		End	29 17.953	80 55.080		End	28 56.329	80 38.319			
	ECIP 4	Start	Three plankton tows were made in transit between areas A8 and A6, but positions are not available as GPS autologging had been disabled during these tows.		Net lost						
		End									
	ECIP 5	Start									
		End									
	ECIP 6	Start									
		End									
	ECIP 7	Start	30 10.722	81 16.766	Autologging disabled during tow						
		End	30 11.159	81 16.692							
ECIP 8	Start	30 11.275	81 16.673								
	End	30 11.687	81 16.592								
ECIP 9	Start	30 11.766	81 16.573	ECN0106					Start	Autologging disabled during tow	
	End	30 12.199	81 16.499						End		
Neuston	ECN 1	Start	29 18.474	80 55.221	ECN0206	Start	28 52.119	80 34.279			
		End	29 18.171	80 55.015		End	28 52.909	80 35.035			
	ECN 2	Start	29 18.697	80 55.271	ECN0306	Start	28 53.259	80 35.355			
		End	29 19.040	80 55.381		End	28 53.635	80 35.699			
	ECN 3	Start	29 19.387	80 55.505	Net lost						
		End	29 19.603	80 55.580							
	ECN 4	Start	Three neuston tows were made in transit between areas A8 and A6, but positions are not available as GPS autologging had been disabled during these tows.								
		End									
	ECN 5	Start									
		End									
	ECN 6	Start									
		End									
	ECN 7	Start	30 12.501	81 16.444							
		End	30 12.919	81 16.366							
ECN 8	Start	30 12.996	81 16.349								
	End	30 13.438	81 16.255								
ECN 9	Start	30 13.514	81 16.236								
	End	30 13.971	81 16.123								

Table B4-1. Epibenthic camera sled transect positions in the northeast Florida study area, November 2005.

Area	Transect	Event	Latitude	Longitude
B11	1	Start	29 14.297	80 54.181
		End	29 13.613	80 54.060
	2	Start	29 11.950	80 52.760
		End	29 13.689	80 53.041
	3	Start	29 12.171	80 53.690
		End	29 10.576	80 53.407
A9	1	Start	29 23.057	80 54.945
		End	29 21.585	80 55.939
	2	Start	29 21.468	80 56.008
		End	29 20.024	80 55.998
	3	Start	29 21.096	80 54.994
		End	29 19.994	80 54.942
	4	Start	29 19.928	80 55.984
		End	29 18.715	80 55.885
A8	1	Start	29 34.877	80 58.062
		End	29 33.710	80 56.541
	2	Start	29 32.140	80 54.823
		End	29 33.408	80 53.497
	3	Start	29 33.237	80 58.065
		End	29 34.976	80 58.960
	4	Start	29 33.485	80 55.930
		End	29 32.120	80 55.418
A6	1	Start	30 05.872	81 14.585
		End	30 07.496	81 14.658
	2	Start	30 07.403	81 16.693
		End	30 09.011	81 16.389
	3	Start	30 04.430	81 12.863
		End	30 05.879	81 14.253
	4	Start	30 08.898	81 15.464
		End	30 07.895	81 13.955
A4	1	Start	30 20.738	81 15.719
		End	30 22.330	81 16.285
	2	Start	30 20.365	81 15.682
		End	30 18.759	81 15.191
	3	Start	30 19.397	81 14.656
		End	30 21.037	81 14.724
	4	Start	30 18.173	81 16.421
		End	30 19.575	81 16.875

Table B5-1 Phylogenetic list of infauna collected during the November 2005 and June 2006 surveys in the A4, A6, A8, A9, and B11 sand borrow areas off of Northeast Florida.

Phylum	Class	Taxonomic Name
Annelida	Hirudinea	Hirudinea (LPIL)
Annelida	Oligochaeta	Oligochaeta (LPIL)
Annelida	Polychaeta	Ampharetidae (LPIL)
Annelida	Polychaeta	<i>Ampharete parvidentata</i>
Annelida	Polychaeta	<i>Anaitides longipes</i>
Annelida	Polychaeta	<i>Anaitides madeirensis</i>
Annelida	Polychaeta	<i>Ancistrostylis hartmanae</i>
Annelida	Polychaeta	<i>Ancistrostylis</i> sp. C
Annelida	Polychaeta	<i>Aonides paucibranchiata</i>
Annelida	Polychaeta	<i>Aoprionospio dayi</i>
Annelida	Polychaeta	<i>Aoprionospio pygmaea</i>
Annelida	Polychaeta	<i>Aoprionospio</i> sp.
Annelida	Polychaeta	Arabellidae (LPIL)
Annelida	Polychaeta	<i>Aricidea cerrutii</i>
Annelida	Polychaeta	<i>Aricidea catherinae</i>
Annelida	Polychaeta	<i>Aricidea lopezi</i>
Annelida	Polychaeta	<i>Aricidea suecica</i>
Annelida	Polychaeta	<i>Aricidea</i> sp. A
Annelida	Polychaeta	<i>Aricidea</i> sp. C
Annelida	Polychaeta	<i>Aricidea</i> sp.
Annelida	Polychaeta	<i>Aricidea wassi</i>
Annelida	Polychaeta	<i>Armandia maculata</i>
Annelida	Polychaeta	<i>Armandia agilis</i>
Annelida	Polychaeta	<i>Autolytus</i> sp.
Annelida	Polychaeta	<i>Autosyllis</i> sp.
Annelida	Polychaeta	<i>Axiothella</i> sp. A
Annelida	Polychaeta	<i>Bhawania heteroseta</i>
Annelida	Polychaeta	<i>Boguea enigmatica</i>
Annelida	Polychaeta	<i>Boguea</i> sp.
Annelida	Polychaeta	<i>Brania clavata</i>
Annelida	Polychaeta	<i>Brania swedmarki</i>
Annelida	Polychaeta	<i>Brania wellfleetensis</i>
Annelida	Polychaeta	<i>Brania</i> sp. A
Annelida	Polychaeta	Capitellidae (LPIL)
Annelida	Polychaeta	<i>Cauleriella cf. alta</i>
Annelida	Polychaeta	<i>Cauleriella</i> sp.
Annelida	Polychaeta	<i>Cauleriella</i> sp. B
Annelida	Polychaeta	<i>Ceratocephale oculata</i>
Annelida	Polychaeta	<i>Ceratonereis mirabilis</i>
Annelida	Polychaeta	Cirratulidae (LPIL)
Annelida	Polychaeta	<i>Cirriformia</i> sp. A
Annelida	Polychaeta	<i>Cirriformia</i> sp. B
Annelida	Polychaeta	<i>Cirriformia</i> sp.
Annelida	Polychaeta	<i>Cirrophorus cf. forticirratu</i>



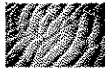
Annelida	Polychaeta	<i>Cirrophorus lyra</i>
Annelida	Polychaeta	<i>Diopatra cuprea</i>
Annelida	Polychaeta	<i>Dispia uncinata</i>
Annelida	Polychaeta	<i>Dorvillea sociabilis</i>
Annelida	Polychaeta	Dorvilleidae (LPIL)
Annelida	Polychaeta	<i>Eteone lactea</i>
Annelida	Polychaeta	<i>Eteone</i> sp.
Annelida	Polychaeta	<i>Euclymene</i> sp. A
Annelida	Polychaeta	<i>Eunice vittata</i>
Annelida	Polychaeta	<i>Exogone atlantica</i>
Annelida	Polychaeta	<i>Exogone dispar</i>
Annelida	Polychaeta	<i>Exogone lourei</i>
Annelida	Polychaeta	Flabelligeridae (LPIL)
Annelida	Polychaeta	<i>Glycera</i> sp.
Annelida	Polychaeta	Glyceridae (LPIL)
Annelida	Polychaeta	<i>Gonaiada littorea</i>
Annelida	Polychaeta	Goniadidae (LPIL)
Annelida	Polychaeta	<i>Goniadides carolinae</i>
Annelida	Polychaeta	<i>Goniadides maculata</i>
Annelida	Polychaeta	<i>Gyptis brevipalpa</i>
Annelida	Polychaeta	<i>Gyptis</i> sp.
Annelida	Polychaeta	<i>Hesione picta</i>
Annelida	Polychaeta	Hesionidae (LPIL)
Annelida	Polychaeta	<i>Hesionura</i> sp. A
Annelida	Polychaeta	<i>Heteropodarke cf. heteromorpha</i>
Annelida	Polychaeta	<i>Heteropodarke</i> sp. A
Annelida	Polychaeta	<i>Isolda pulchella</i>
Annelida	Polychaeta	<i>Leitoscoloplos robustus</i>
Annelida	Polychaeta	<i>Lumbrinereis acuta</i>
Annelida	Polychaeta	<i>Lumbrinereis januarii</i>
Annelida	Polychaeta	<i>Lumbrinereis</i> sp.
Annelida	Polychaeta	<i>Lumbrinereis</i> sp. B
Annelida	Polychaeta	<i>Lumbrinereis verrilli</i>
Annelida	Polychaeta	<i>Magelona pettiboneae</i>
Annelida	Polychaeta	<i>Magelona</i> sp.
Annelida	Polychaeta	<i>Magelona</i> sp. A
Annelida	Polychaeta	<i>Magelona</i> sp. B
Annelida	Polychaeta	<i>Magelona</i> sp. G
Annelida	Polychaeta	<i>Magelona</i> sp. J
Annelida	Polychaeta	<i>Magelona</i> sp. M
Annelida	Polychaeta	<i>Magelona riojai</i>
Annelida	Polychaeta	<i>Malacoceros vanderhorsti</i>
Annelida	Polychaeta	<i>Mediomastus californiensis</i>
Annelida	Polychaeta	<i>Meiodorvillea</i> sp. A
Annelida	Polychaeta	<i>Minuspia cirrifera</i>
Annelida	Polychaeta	<i>Mooreonuphis pallidula</i>
Annelida	Polychaeta	<i>Mooreonuphis nebulosa</i>
Annelida	Polychaeta	<i>Myriochele oculata</i>
Annelida	Polychaeta	<i>Neathes micromma</i>
Annelida	Polychaeta	<i>Nephtys picta</i>



Annelida	Polychaeta	<i>Nephtys</i> sp.
Annelida	Polychaeta	Nereidae (LPIL)
Annelida	Polychaeta	<i>Nereis</i> sp.
Annelida	Polychaeta	<i>Notomastus hemipodus</i>
Annelida	Polychaeta	<i>Onuphis</i> sp.
Annelida	Polychaeta	<i>Onuphis</i> sp. A
Annelida	Polychaeta	<i>Onuphis</i> sp. C
Annelida	Polychaeta	<i>Onuphis eremita oculata</i>
Annelida	Polychaeta	<i>Onuphis eremita maculata</i>
Annelida	Polychaeta	<i>Opistosyllis</i> sp.
Annelida	Polychaeta	<i>Ophelia denticulata</i>
Annelida	Polychaeta	<i>Ophelina cf. acuminata</i>
Annelida	Polychaeta	<i>Owenia</i> sp. A
Annelida	Polychaeta	Paraonidae (LPIL)
Annelida	Polychaeta	<i>Paraonis pygoenigmatica</i>
Annelida	Polychaeta	<i>Parapionosyllis longicirrata</i>
Annelida	Polychaeta	<i>Paraprionospio pinnata</i>
Annelida	Polychaeta	<i>Pherusa inflata</i>
Annelida	Polychaeta	<i>Phloe</i> sp.
Annelida	Polychaeta	<i>Phyllodoce arenae</i>
Annelida	Polychaeta	Phyllodocidae (LPIL)
Annelida	Polychaeta	<i>Pionosyllis</i> sp.
Annelida	Polychaeta	<i>Pisione remota</i>
Annelida	Polychaeta	<i>Plakosyllis quadrioculata</i>
Annelida	Polychaeta	Polychaeta (LPIL)
Annelida	Polychaeta	<i>Polydora ligni</i>
Annelida	Polychaeta	<i>Polydora socialis</i>
Annelida	Polychaeta	<i>Polydora</i> sp.
Annelida	Polychaeta	<i>Prionospio</i> spp.
Annelida	Polychaeta	Sabellidae (LPIL)
Annelida	Polychaeta	<i>Schistomeringos</i> sp.
Annelida	Polychaeta	<i>Scolelepis</i> sp.
Annelida	Polychaeta	<i>Scolelepis squamata</i>
Annelida	Polychaeta	<i>Scolelepis texana</i>
Annelida	Polychaeta	<i>Scoloplos rubra</i>
Annelida	Polychaeta	Serpulidae (LPIL)
Annelida	Polychaeta	<i>Sigalion</i> sp. A
Annelida	Polychaeta	Sigalionidae (LPIL)
Annelida	Polychaeta	<i>Sigambra tentaculata</i>
Annelida	Polychaeta	<i>Sigambra wassi</i>
Annelida	Polychaeta	<i>Sphaerosyllis aciculata</i>
Annelida	Polychaeta	<i>Sphaerosyllis longicauda</i>
Annelida	Polychaeta	<i>Sphaerosyllis piriferopsis</i>
Annelida	Polychaeta	<i>Spio pettiboneae</i>
Annelida	Polychaeta	<i>Spiophanes bombyx</i>
Annelida	Polychaeta	<i>Spiophanes missionensis</i>
Annelida	Polychaeta	<i>Spiochaetopterus costarum</i>
Annelida	Polychaeta	<i>Spiochaetopterus oculatus</i>
Annelida	Polychaeta	Sternaspidae (LPIL)
Annelida	Polychaeta	<i>Sthenelais</i> sp. A



Annelida	Polychaeta	<i>Streptosyllis pettiboneae</i>
Annelida	Polychaeta	Syllidae (LPIL)
Annelida	Polychaeta	<i>Syllis cornuta</i>
Annelida	Polychaeta	<i>Syllis</i> sp.
Annelida	Polychaeta	<i>Syllis</i> sp. A
Annelida	Polychaeta	<i>Syllis fulvus</i>
Annelida	Polychaeta	<i>Synelmis</i> sp. B
Annelida	Polychaeta	Terebellidae (LPIL)
Annelida	Polychaeta	<i>Tharyx annulosus</i>
Annelida	Polychaeta	<i>Tharyx</i> sp.
Annelida	Polychaeta	<i>Travisia hobsonae</i>
Annelida	Polychaeta	<i>Travisia</i> sp.
Annelida	Polychaeta	<i>Typanosyllis</i> sp. A
Arthropoda	Amphipoda	<i>Acanthohaustorius intermedius</i>
Arthropoda	Amphipoda	<i>Acanthohaustorius pansus</i>
Arthropoda	Amphipoda	<i>Acanthohaustorius</i> sp.
Arthropoda	Amphipoda	<i>Amerchelidium americanum</i>
Arthropoda	Amphipoda	<i>Ampelisca</i> sp.
Arthropoda	Amphipoda	Amphiloichidae (LPIL)
Arthropoda	Amphipoda	Aoridae (LPIL)
Arthropoda	Amphipoda	<i>Argissa hamatipes</i>
Arthropoda	Amphipoda	<i>Batea catharinensis</i>
Arthropoda	Amphipoda	<i>Bemlos mackinneyi</i>
Arthropoda	Amphipoda	<i>Bemlos</i> sp.
Arthropoda	Amphipoda	<i>Cerapus cudjoe</i>
Arthropoda	Amphipoda	<i>Elasmopus laevis</i>
Arthropoda	Amphipoda	<i>Erichthonius brasileinensis</i>
Arthropoda	Amphipoda	<i>Eudevanopus honduranus</i>
Arthropoda	Amphipoda	Eusiridae (LPIL)
Arthropoda	Amphipoda	<i>Gibberosus myersi</i>
Arthropoda	Amphipoda	Haustoridae (LPIL)
Arthropoda	Amphipoda	Iphimediidae (LPIL)
Arthropoda	Amphipoda	Isaeidae (LPIL)
Arthropoda	Amphipoda	Ischyroceridae (LPIL)
Arthropoda	Amphipoda	<i>Lembos</i> sp.
Arthropoda	Amphipoda	<i>Lembos unifasciatus</i>
Arthropoda	Amphipoda	Liljeborgiidae (LPIL)
Arthropoda	Amphipoda	<i>Listriella barnardi</i>
Arthropoda	Amphipoda	Lysianassidae (LPIL)
Arthropoda	Amphipoda	<i>Metatiron triocellatus</i>
Arthropoda	Amphipoda	<i>Metharpinia floridana</i>
Arthropoda	Amphipoda	<i>Photis pugnator</i>
Arthropoda	Amphipoda	Podoceridae (LPIL)
Arthropoda	Amphipoda	Pontoporeiidae (LPIL)
Arthropoda	Amphipoda	<i>Protohaustorius wigleyi</i>
Arthropoda	Amphipoda	<i>Rudilemboides naglei</i>
Arthropoda	Amphipoda	Stenothoidae (LPIL)
Arthropoda	Balanomorpha	Balanomorpha (LPIL)
Arthropoda	Cumacea	Bodotriidae (LPIL)
Arthropoda	Cumacea	Diastylidae (LPIL)



Arthropoda	Cumacea	Nannastacidae (LPIL)
Arthropoda	Decapoda	Decapoda (LPIL)
Arthropoda	Decapoda (Natantia)	<i>Alpheus</i> sp.
Arthropoda	Decapoda (Natantia)	Axiidae (LPIL)
Arthropoda	Decapoda (Natantia)	<i>Callinassa acanthochirus</i>
Arthropoda	Decapoda (Natantia)	Callinassidae (LPIL)
Arthropoda	Decapoda (Natantia)	<i>Callichirus islagrande</i>
Arthropoda	Decapoda (Natantia)	<i>Discias serratirostris</i>
Arthropoda	Decapoda (Natantia)	<i>Latreutes parvulus</i>
Arthropoda	Decapoda (Natantia)	<i>Leptochela bermudensis</i>
Arthropoda	Decapoda (Natantia)	<i>Leptochela serratorbita</i>
Arthropoda	Decapoda (Natantia)	<i>Lucifer faxoni</i>
Arthropoda	Decapoda (Natantia)	<i>Ogyrides alphaerostris</i>
Arthropoda	Decapoda (Natantia)	<i>Ogyrides hayi</i>
Arthropoda	Decapoda (Natantia)	<i>Palaeomonetes pugio</i>
Arthropoda	Decapoda (Natantia)	<i>Processa hemphilli</i>
Arthropoda	Decapoda (Natantia)	<i>Phtisica marina</i>
Arthropoda	Decapoda (Natantia)	<i>Neopontonides beaufortensis</i>
Arthropoda	Decapoda (Natantia)	<i>Sicyonia laevigata</i>
Arthropoda	Decapoda (Natantia)	<i>Sicyonia typica</i>
Arthropoda	Decapoda (Natantia)	<i>Trachypenaeopsis mobilispinis</i>
Arthropoda	Decapoda (Natantia)	<i>Trachypenaeus</i> sp.
Arthropoda	Decapoda (Natantia)	<i>Upogebia affinis</i>
Arthropoda	Decapoda (Reptantia)	<i>Albunea paretii</i>
Arthropoda	Decapoda (Reptantia)	<i>Callinectes sapidus</i>
Arthropoda	Decapoda (Reptantia)	<i>Cancellus</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Cancellus viridis</i>
Arthropoda	Decapoda (Reptantia)	<i>Cronius</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Cryptopodia concava</i>
Arthropoda	Decapoda (Reptantia)	<i>Emerita portoricensis</i>
Arthropoda	Decapoda (Reptantia)	<i>Euceramus praelongus</i>
Arthropoda	Decapoda (Reptantia)	<i>Euchirograpsus</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Goneplax sigsbei</i>
Arthropoda	Decapoda (Reptantia)	<i>Lepidopa benedicti</i>
Arthropoda	Decapoda (Reptantia)	<i>Lepidopa websteri</i>
Arthropoda	Decapoda (Reptantia)	Majidae (LPIL)
Arthropoda	Decapoda (Reptantia)	Paguroidea (LPIL)
Arthropoda	Decapoda (Reptantia)	<i>Paguristes hummi</i>
Arthropoda	Decapoda (Reptantia)	<i>Paguristes</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Pagurus gymnodactylus</i>
Arthropoda	Decapoda (Reptantia)	<i>Pagurus</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Persephona mediterranea</i>
Arthropoda	Decapoda (Reptantia)	<i>Pinnixa cylindrica</i>
Arthropoda	Decapoda (Reptantia)	<i>Pinnixa floridana</i>
Arthropoda	Decapoda (Reptantia)	<i>Pinnixa sayana</i>
Arthropoda	Decapoda (Reptantia)	<i>Pinnixa</i> sp.
Arthropoda	Decapoda (Reptantia)	<i>Pinnotheres ostreum</i>
Arthropoda	Decapoda (Reptantia)	Pinnotheridae (LPIL)
Arthropoda	Decapoda (Reptantia)	<i>Portunus floridanus</i>
Arthropoda	Decapoda (Reptantia)	<i>Portunus</i> sp.



Arthropoda	Decapoda (Reptantia)	<i>Ranilia constricta</i>
Arthropoda	Isopoda	<i>Accalanthura crenulata</i>
Arthropoda	Isopoda	<i>Apseudes olimpia</i>
Arthropoda	Isopoda	Asellota (LPIL)
Arthropoda	Isopoda	<i>Chiridotea coeca</i>
Arthropoda	Isopoda	<i>Eurydice littoralis</i>
Arthropoda	Isopoda	<i>Paranthura floridensis</i>
Arthropoda	Isopoda	<i>Serolis mgrayi</i>
Arthropoda	Isopoda	<i>Sphaeroma quadridentatum</i>
Arthropoda	Mysidacea	<i>Bowmaniella dissimilis</i>
Arthropoda	Mysidacea	<i>Bowmaniella portoricensis</i>
Arthropoda	Mysidacea	<i>Brasilomysis castroi</i>
Arthropoda	Mysidacea	Mysidae (LPIL)
Arthropoda	Mysidacea	<i>Mysidopsis bigelowi</i>
Arthropoda	Mysidacea	<i>Mysidopsis furca</i>
Arthropoda	Mysidacea	<i>Promysis atlantica</i>
Arthropoda	Ostracoda	<i>Asteropterygion</i> sp.
Arthropoda	Ostracoda	Cyclasteropinae (LPIL)
Arthropoda	Ostracoda	<i>Eusarsiella</i> sp. A
Arthropoda	Ostracoda	<i>Eusarsiella</i> sp. B
Arthropoda	Ostracoda	Ostracod sp. C
Arthropoda	Ostracoda	Ostracod sp. E
Arthropoda	Ostracoda	<i>Parasterope</i> sp.
Arthropoda	Ostracoda	<i>Pseudophilomedes</i> sp.
Arthropoda	Ostracoda	<i>Reticulocythereis</i> sp.
Arthropoda	Ostracoda	<i>Rutiderma</i> sp. A
Arthropoda	Ostracoda	<i>Rutiderma</i> sp. B
Arthropoda	Pycnogonida	Pycnogonida (LPIL)
Arthropoda	Stomatopoda	<i>Squilla</i> sp.
Arthropoda	Tanaidacea	<i>Kalliapsuedes macsweenyi</i>
Arthropoda	Tanaidacea	<i>Leptochelia dubia</i>
Arthropoda	Tanaidacea	<i>Tanaissus psammophilus</i>
Brachiopoda	Inarticulata	<i>Glottidia pyramidata</i>
Cephalochordata	Leptocardii	<i>Branchiostoma floridae</i>
Cnidaria	Anthozoa	Cnidaria (LPIL)
Cnidaria	Anthozoa	<i>Renilla reniformis</i>
Echiura	–	Echiura (LPIL)
Echinodermata	Asteroidea	<i>Luidia clathrata</i>
Echinodermata	Echinoidea	Echinoidea (LPIL)
Echinodermata	Echinoidea	<i>Encope michelini</i>
Echinodermata	Holothuroidea	Holothuroidea (LPIL)
Echinodermata	Holothuroidea	<i>Leptosynapta tenuis</i>
Echinodermata	Holothuroidea	<i>Thyonella pervicax</i>
Echinodermata	Ophiuroidea	<i>Hemipholis elongata</i>
Echinodermata	Ophiuroidea	<i>Ophiolepis elegans</i>
Echinodermata	Ophiuroidea	Ophiuroidea (LPIL)
Echinodermata	Spatangoida	Spatangoida (LPIL)
Mollusca	Bivalvia	<i>Abra aequalis</i>
Mollusca	Bivalvia	<i>Americardia media</i>
Mollusca	Bivalvia	<i>Anadara transversa</i>





Mollusca	Bivalvia	<i>Anomia simplex</i>
Mollusca	Bivalvia	<i>Argopecten gibbus</i>
Mollusca	Bivalvia	<i>Atrina seminuda</i>
Mollusca	Bivalvia	Bivalvia (LPIL)
Mollusca	Bivalvia	Cardiidae (LPIL)
Mollusca	Bivalvia	Carditidae (LPIL)
Mollusca	Bivalvia	<i>Chione cancellata</i>
Mollusca	Bivalvia	<i>Chione intapurpurea</i>
Mollusca	Bivalvia	<i>Corbula contracta</i>
Mollusca	Bivalvia	<i>Crassinella lunulata</i>
Mollusca	Bivalvia	<i>Crassinella martinicensis</i>
Mollusca	Bivalvia	<i>Diplodonta</i> sp.
Mollusca	Bivalvia	<i>Donax</i> sp.
Mollusca	Bivalvia	<i>Ervilia concentrica</i>
Mollusca	Bivalvia	<i>Gouldia cerina</i>
Mollusca	Bivalvia	<i>Laevicardium</i> sp.
Mollusca	Bivalvia	<i>Lima pellucida</i>
Mollusca	Bivalvia	<i>Lucina multilineata</i>
Mollusca	Bivalvia	<i>Lucina nassula</i>
Mollusca	Bivalvia	<i>Macoma brevifrons</i>
Mollusca	Bivalvia	<i>Macoma tenta</i>
Mollusca	Bivalvia	<i>Mactra fragilis</i>
Mollusca	Bivalvia	<i>Musculus lateralis</i>
Mollusca	Bivalvia	<i>Mysella planulata</i>
Mollusca	Bivalvia	<i>Nuculana</i> sp.
Mollusca	Bivalvia	<i>Pandora trilineata</i>
Mollusca	Bivalvia	<i>Pitar fulminata</i>
Mollusca	Bivalvia	<i>Pythinella cuneata</i>
Mollusca	Bivalvia	<i>Semele bellastrata</i>
Mollusca	Bivalvia	<i>Semele nuculoides</i>
Mollusca	Bivalvia	<i>Spisula raveneli</i>
Mollusca	Bivalvia	<i>Strigilla mirabilis</i>
Mollusca	Bivalvia	<i>Tellidora cristata</i>
Mollusca	Bivalvia	Tellinidae (LPIL)
Mollusca	Bivalvia	<i>Tivela</i> sp.
Mollusca	Bivalvia	<i>Trachycardium muricatum</i>
Mollusca	Bivalvia	<i>Verticordia ornata</i>
Mollusca	Gastropoda	<i>Acteocina caniculata</i>
Mollusca	Gastropoda	<i>Anachis obesa</i>
Mollusca	Gastropoda	<i>Anachis sparsa</i>
Mollusca	Gastropoda	<i>Architectonica nobilis</i>
Mollusca	Gastropoda	<i>Caecum bipartitum</i>
Mollusca	Gastropoda	<i>Caecum cooperi</i>
Mollusca	Gastropoda	<i>Caecum imbricatum</i>
Mollusca	Gastropoda	<i>Caecum johnsoni</i>
Mollusca	Gastropoda	<i>Caecum pulchellum</i>
Mollusca	Gastropoda	<i>Calyptraea centralis</i>
Mollusca	Gastropoda	<i>Cancellaria reticulata</i>
Mollusca	Gastropoda	<i>Colus</i> sp.
Mollusca	Gastropoda	Conidae (LPIL)



Mollusca	Gastropoda	<i>Crepidula plana</i>
Mollusca	Gastropoda	<i>Cryoturris</i> sp.
Mollusca	Gastropoda	<i>Eulima bilineata</i>
Mollusca	Gastropoda	<i>Eulima</i> sp.
Mollusca	Gastropoda	Gastropoda (LPIL)
Mollusca	Gastropoda	<i>Haminoea succinea</i>
Mollusca	Gastropoda	<i>Kurtziella limonitella</i>
Mollusca	Gastropoda	<i>Kurtziella serga</i>
Mollusca	Gastropoda	<i>Kurtziella</i> sp.
Mollusca	Gastropoda	<i>Mitrella lunulata</i>
Mollusca	Gastropoda	<i>Modulus carchedonius</i>
Mollusca	Gastropoda	<i>Natica pusilla</i>
Mollusca	Gastropoda	<i>Niso interrupta</i>
Mollusca	Gastropoda	<i>Odostomia seminuda</i>
Mollusca	Gastropoda	<i>Oliva reticularis</i>
Mollusca	Gastropoda	<i>Oliva sayana</i>
Mollusca	Gastropoda	<i>Olivella minuta</i>
Mollusca	Gastropoda	<i>Olivella mutica</i>
Mollusca	Gastropoda	Retusidae (LPIL)
Mollusca	Gastropoda	<i>Rictaxis punctostriatus</i>
Mollusca	Gastropoda	<i>Terebra dislocata</i>
Mollusca	Gastropoda	<i>Truncatella caribaeensis</i>
Mollusca	Gastropoda	<i>Turbonilla</i> sp.
Mollusca	Gastropoda	Turridae (LPIL)
Mollusca	Gastropoda	<i>Vitrinella multistriata</i>
Mollusca	Gastropoda	<i>Volvulella persimilis</i>
Mollusca	Polyplacophora	Polyplacophora (LPIL)
Mollusca	Scaphopoda	<i>Cadulus quadridentatus</i>
Mollusca	Scaphopoda	<i>Dentalium texasianum</i>
Mollusca	Scaphopoda	<i>Dentalium eborum</i>
Mollusca	Scaphopoda	<i>Dentalium</i> sp.
Phoronidae	--	Phoronis (LPIL)
Platyhelminthes	Turbellaria	Turbellaria (LPIL)
Rhynchozoela	--	Rhynchozoela (LPIL)
Sipuncula	--	Sipuncula (LPIL)



MV Thunderforce, the survey platform used for the northeast Florida surveys.



Bottlenose dolphins in the northeast study area, June 2006.



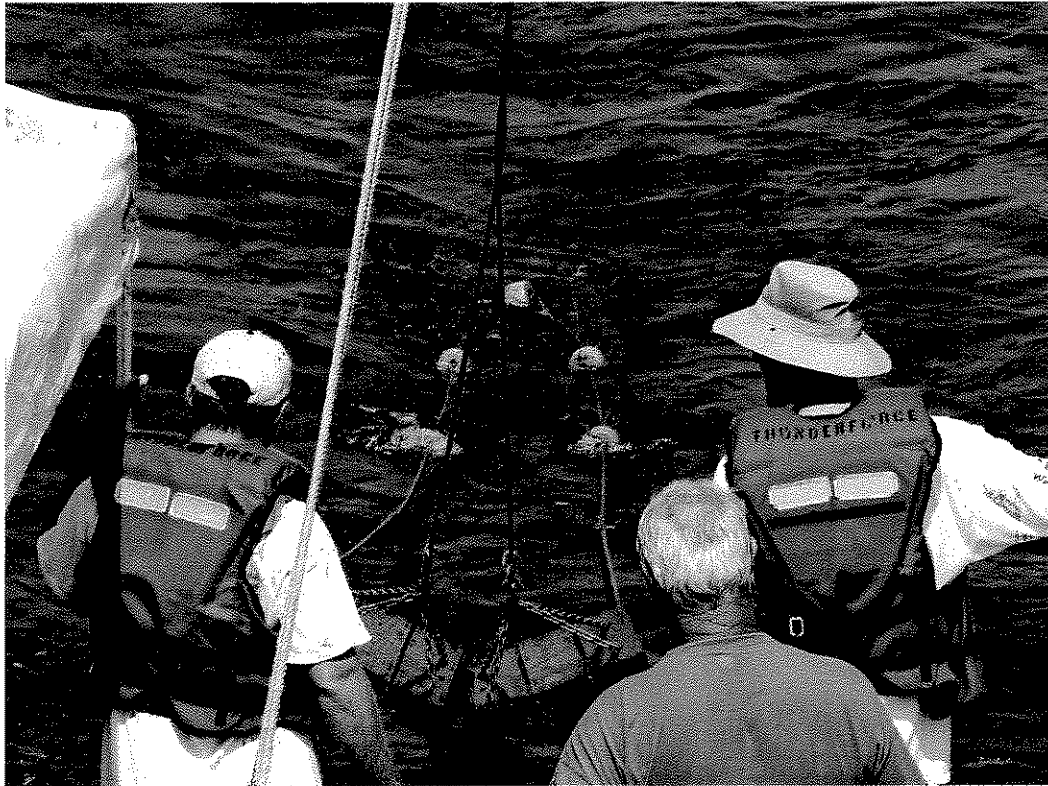
Recovering a benthic grab in the northeast Florida study area.



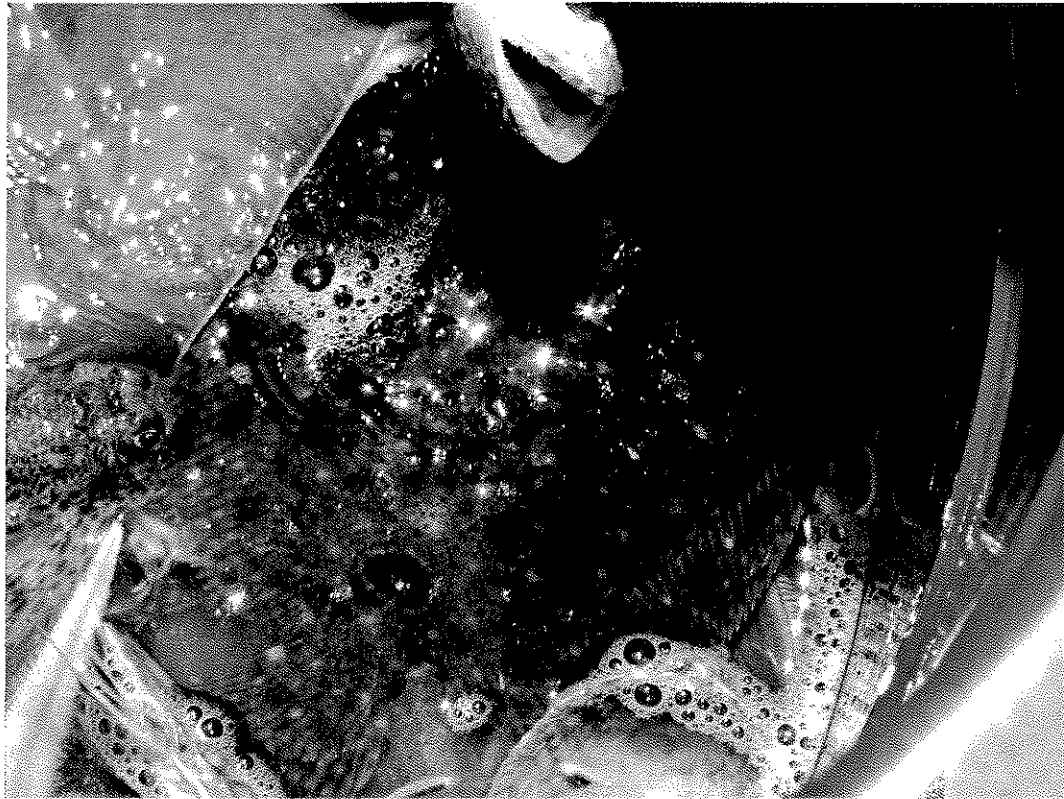
Measuring the depth of sediment taken in the Smith-MacIntyre benthic grab.



Benthic grab sample sieving and processing, November 2005.



Setting out an otter trawl in the northeast study area, June 2006.



Assorted fish caught by otter trawl in the northeast study area.

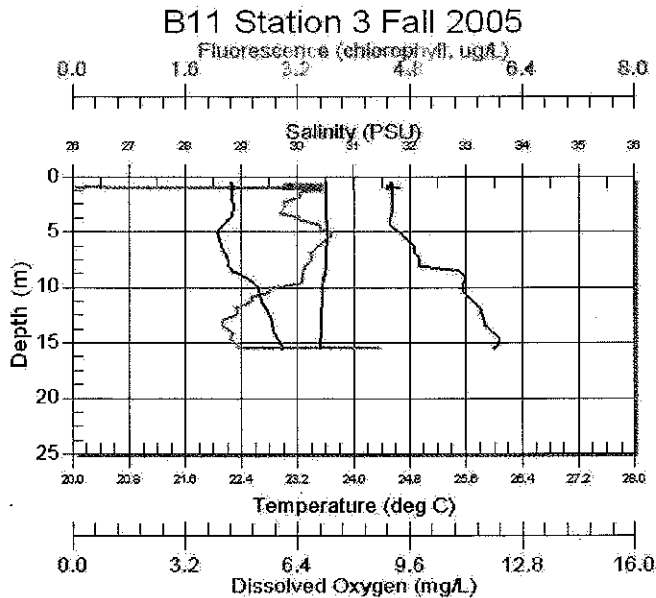
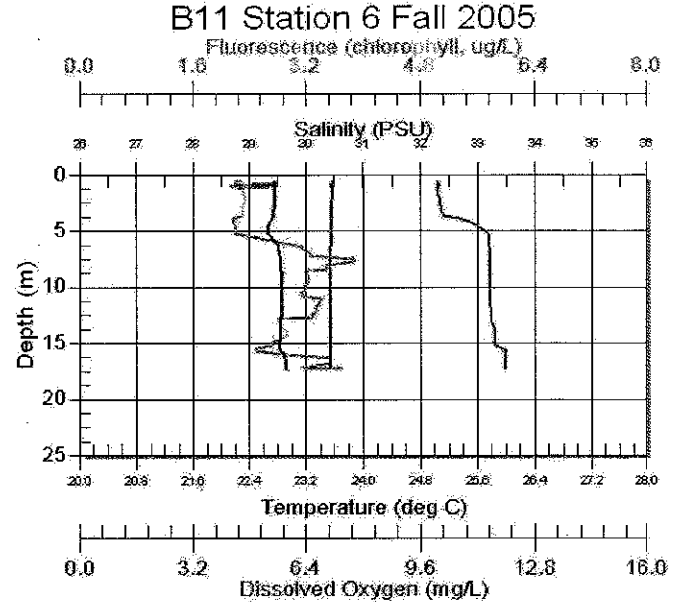
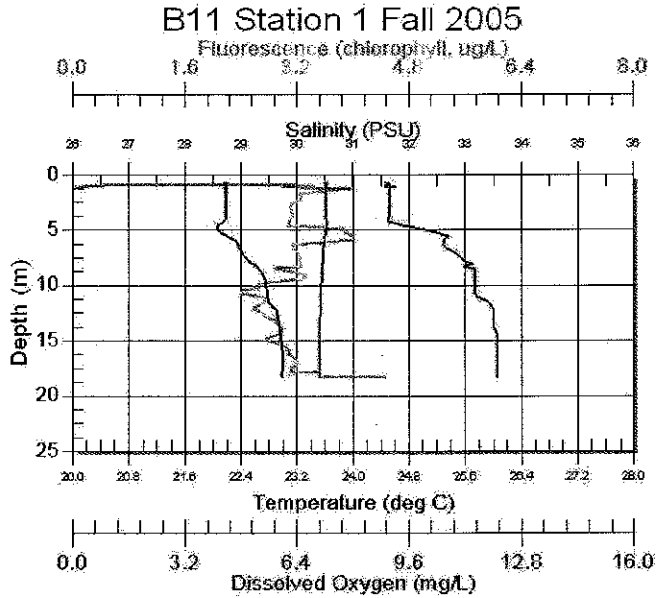


Calico crab *Hepatus epheliticus* caught by otter trawl in the northeast study area, June 2006.

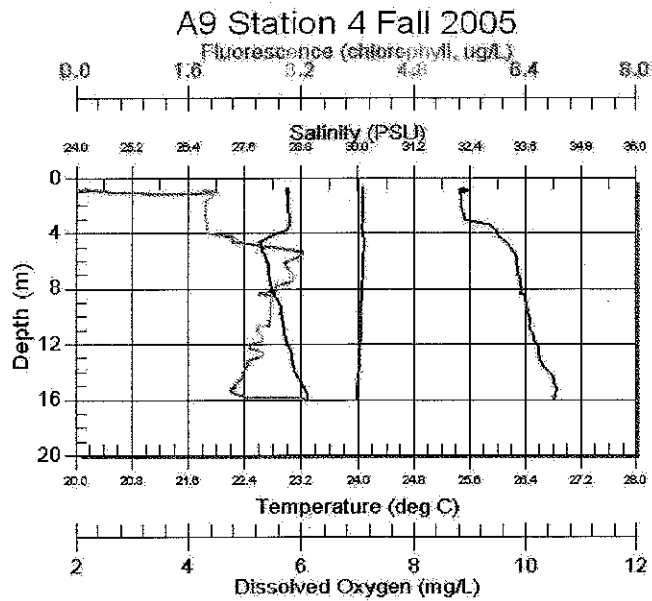
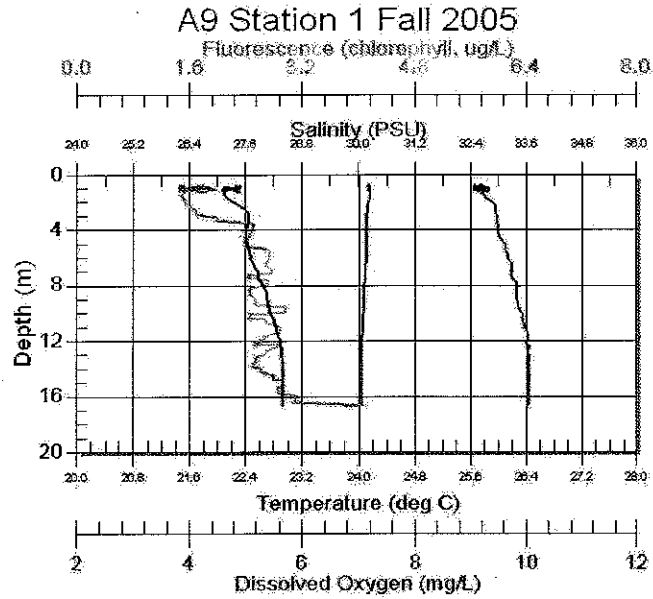


**Appendix B7. RESULTS OF INDIVIDUAL CTD CASTS**

**Fall 2005 – Area B11**

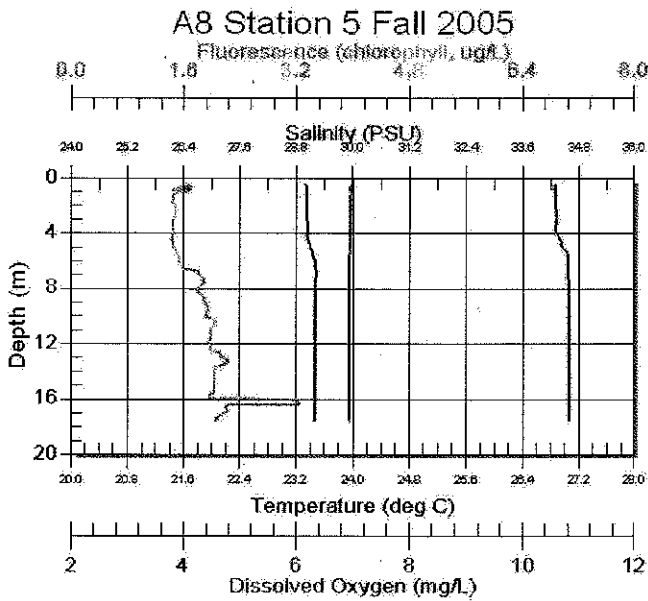
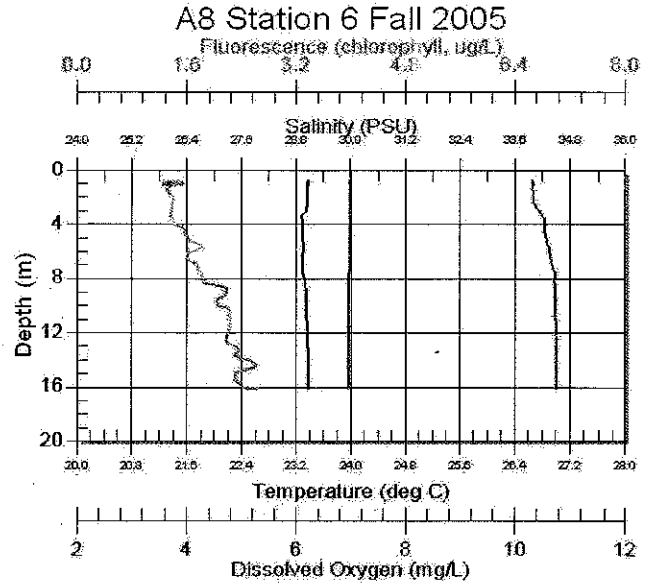
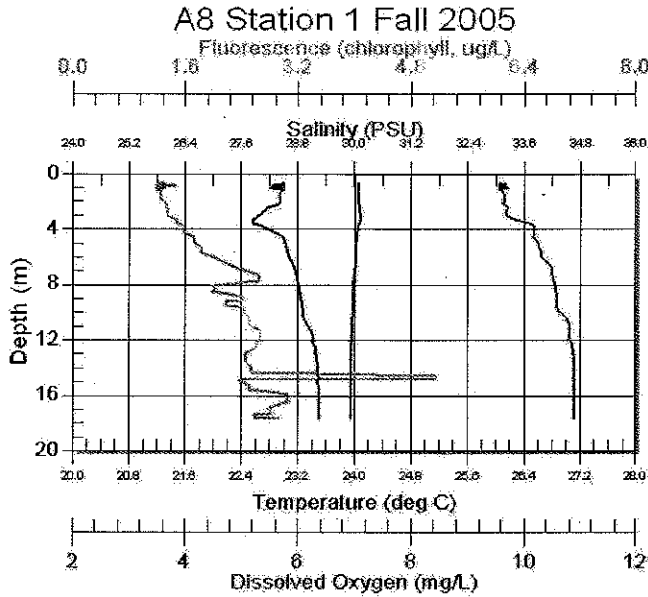


Fall 2005 - Area A9

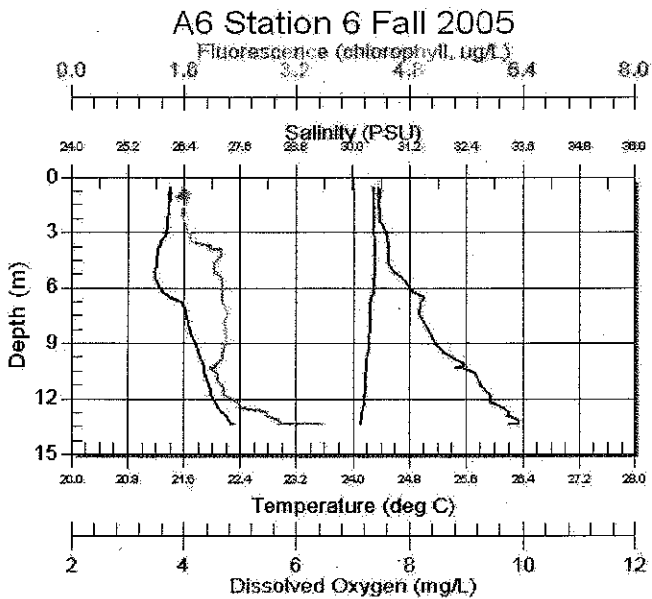
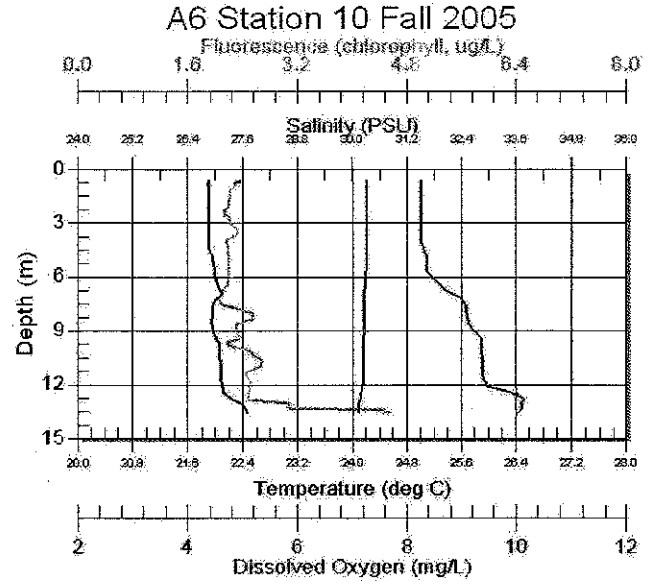
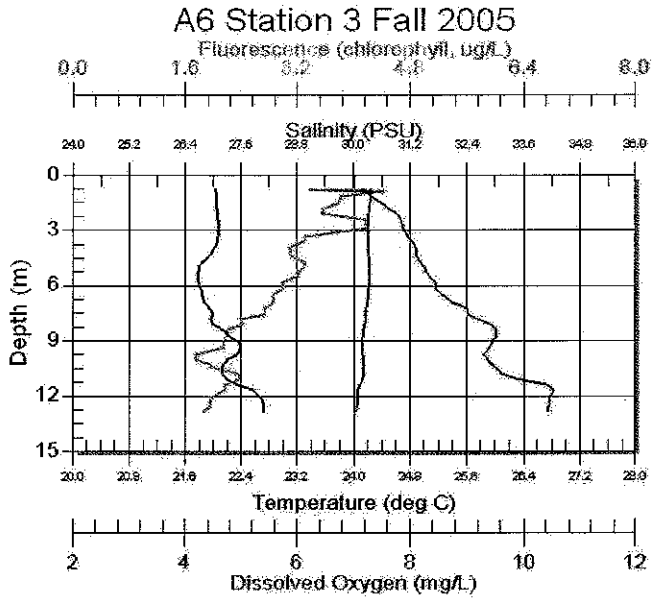




### Fall 2005 - Area A8

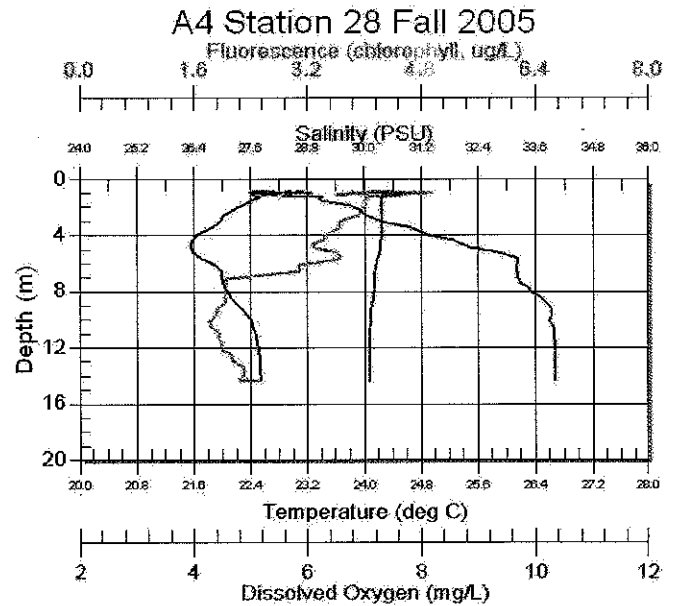
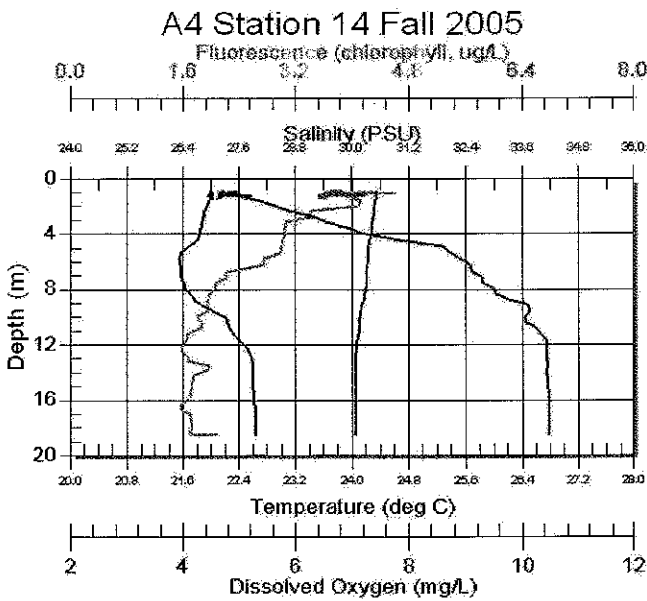
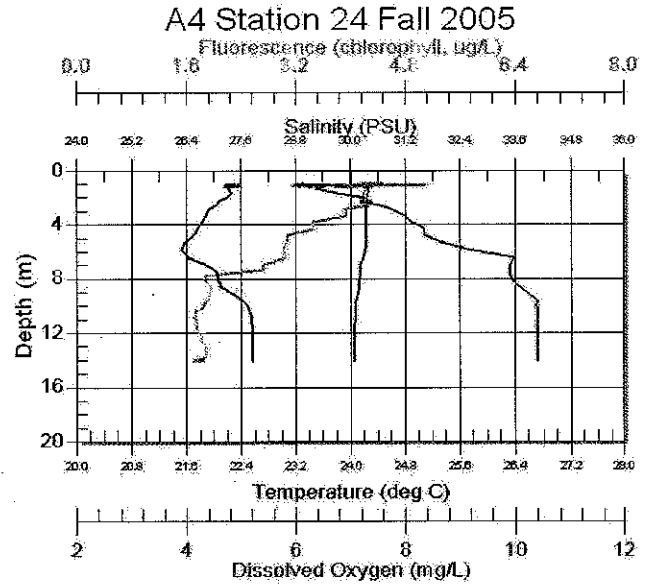
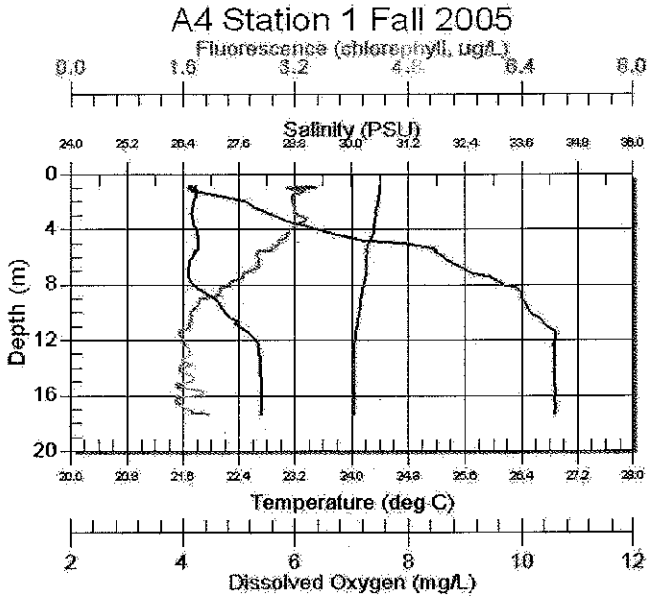


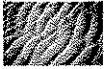
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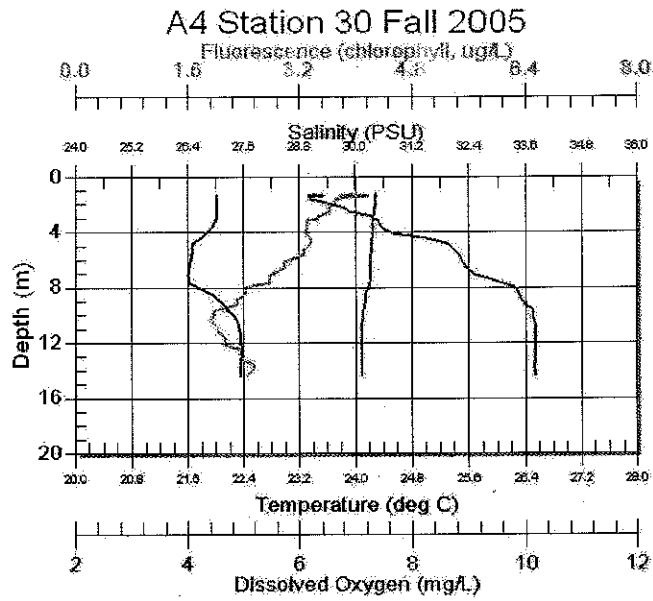


### Fall 2005 - Area A4





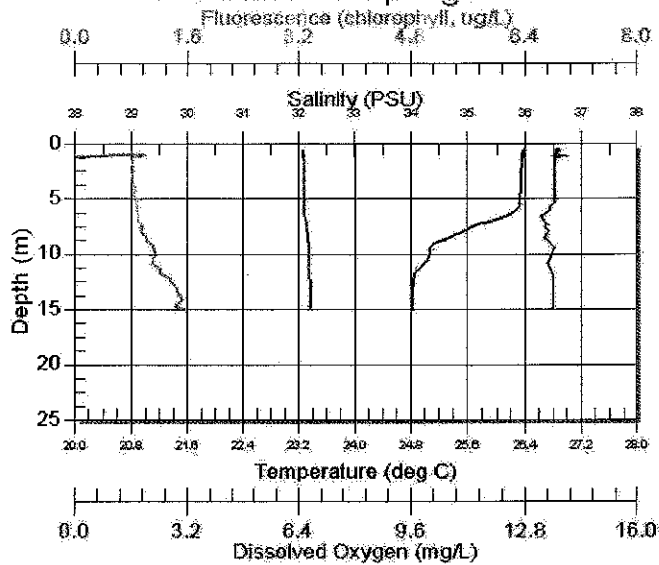
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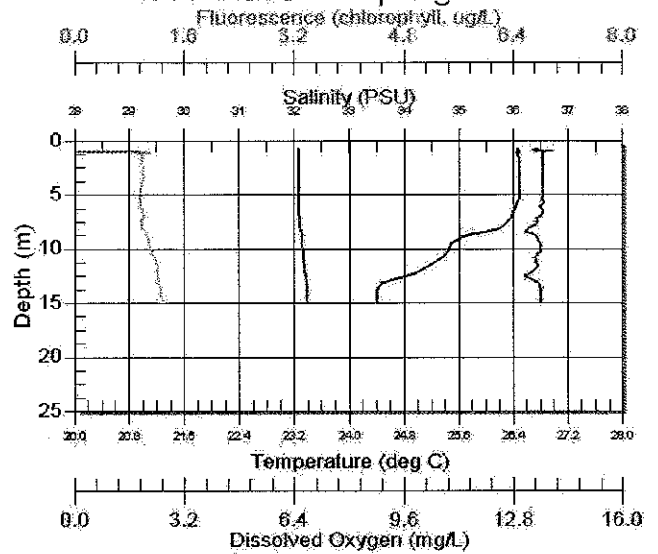


### Spring 2006 – Area B11

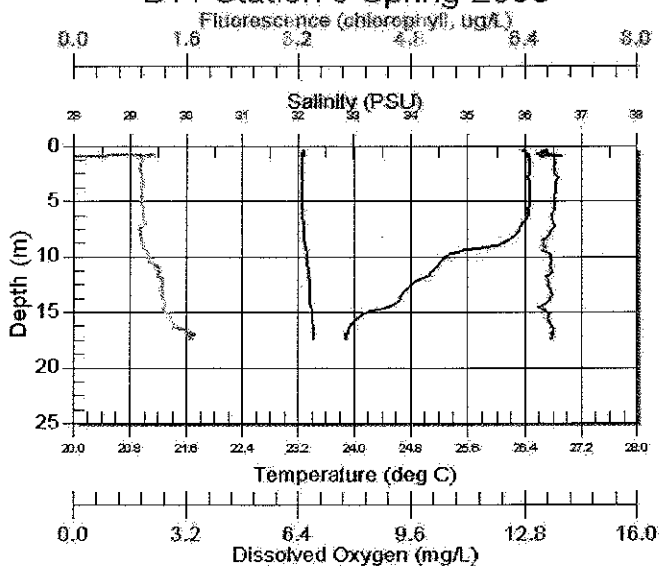
#### B11 Station 3 Spring 2006



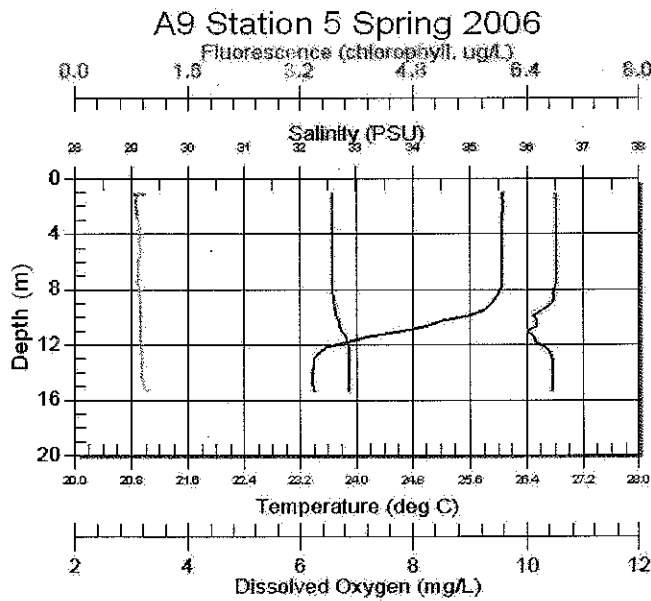
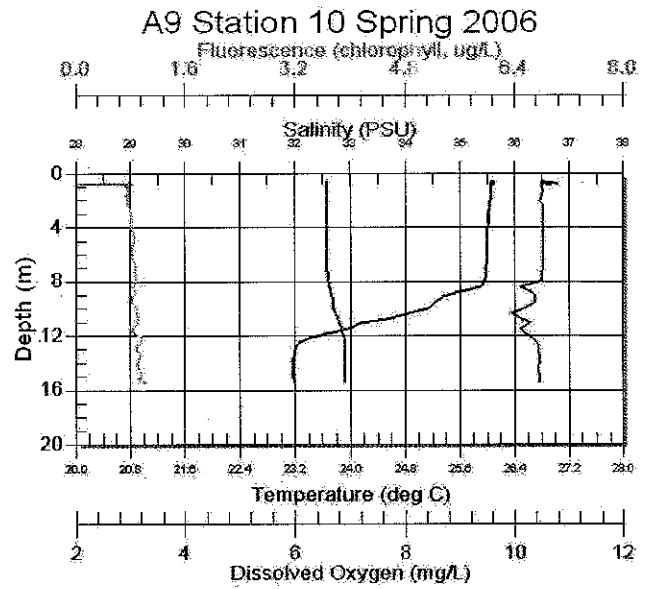
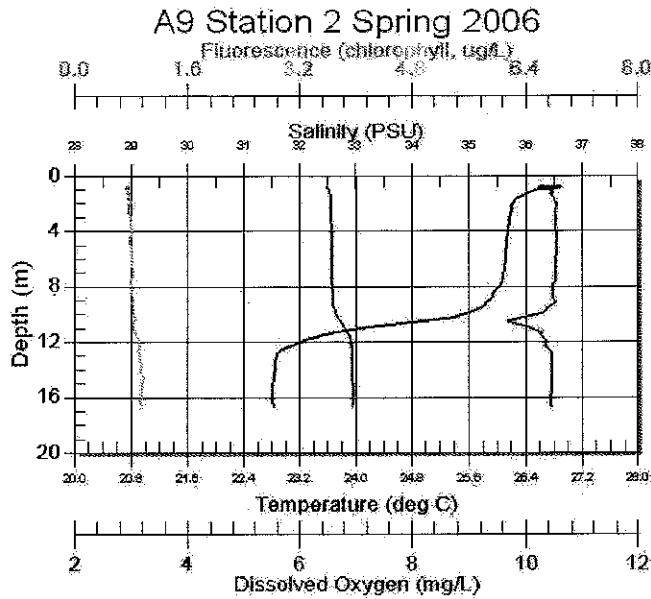
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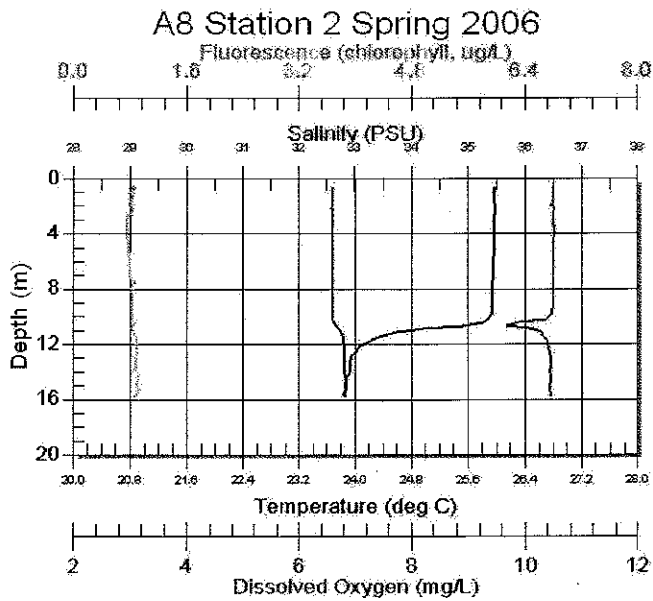
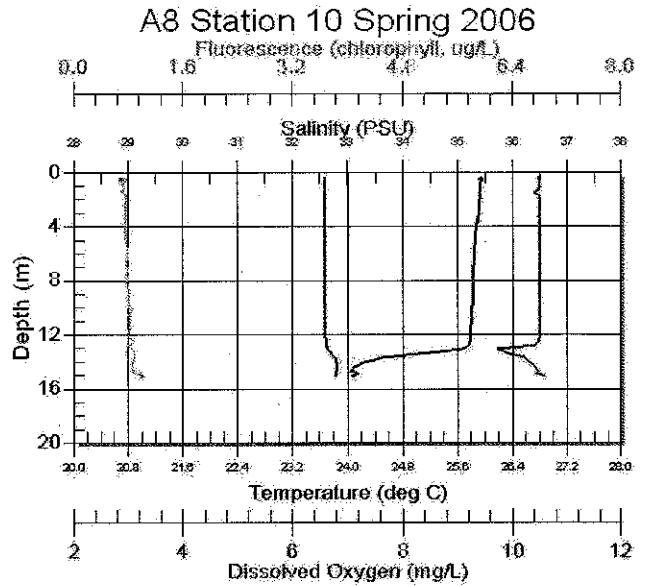
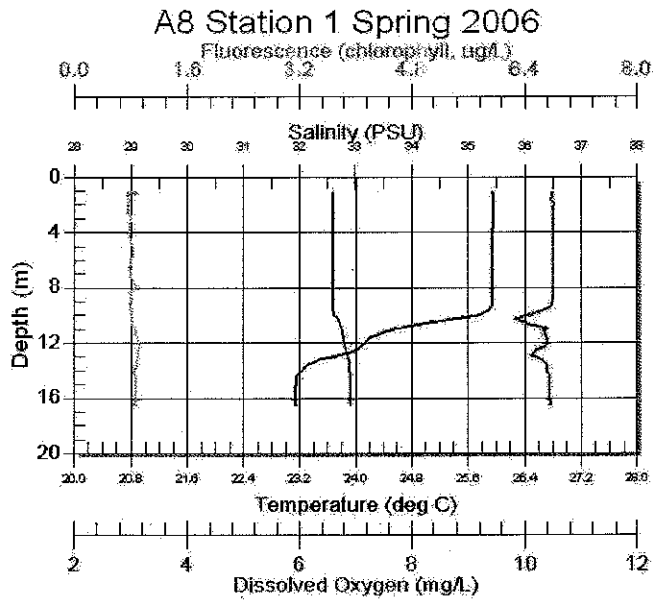
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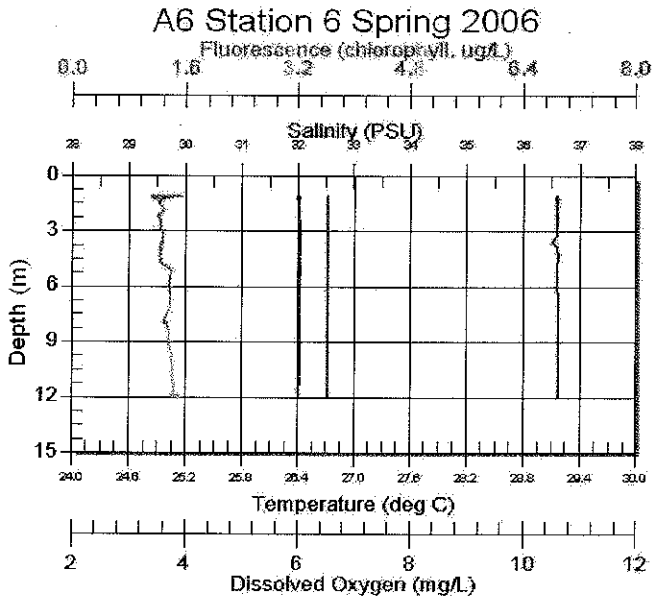
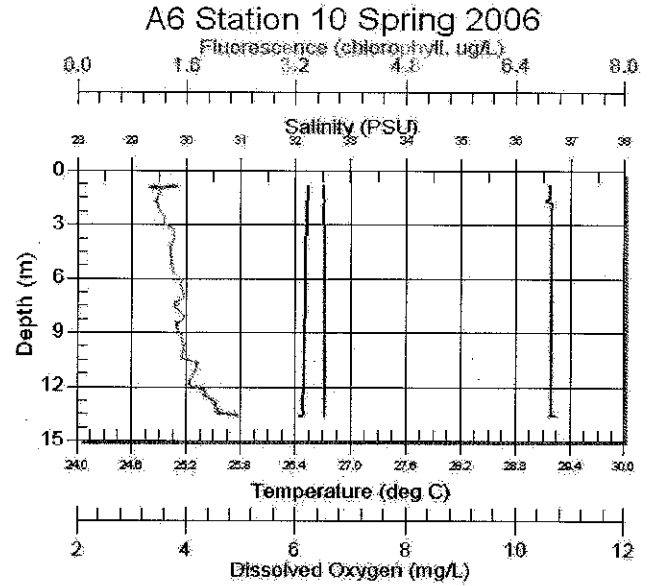
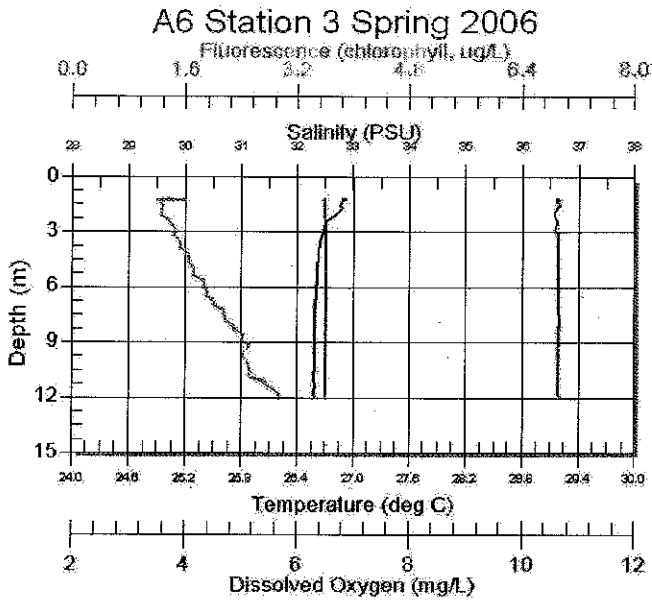
### Spring 2006 – Area A9



### Spring 2006 – Area A8

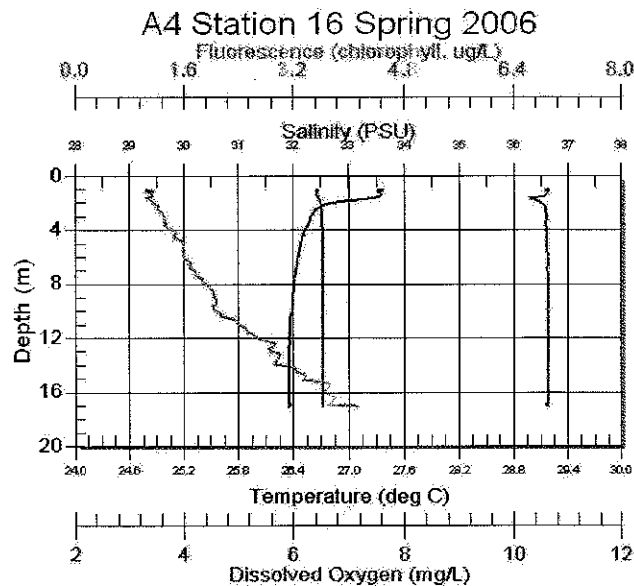
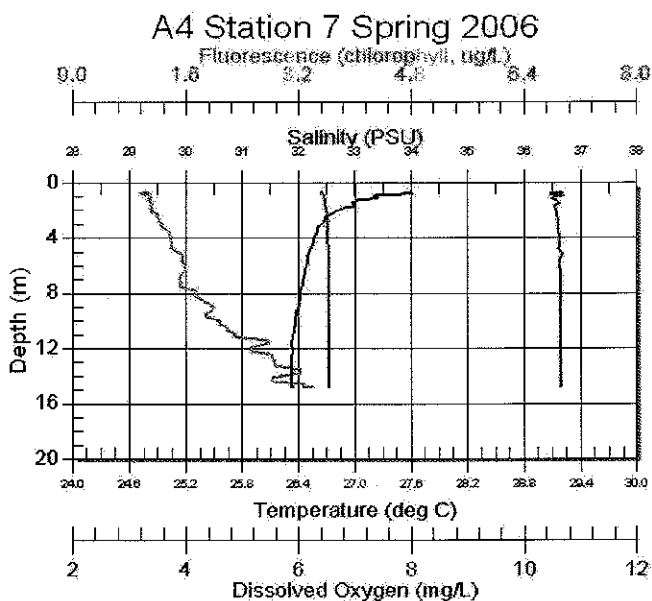
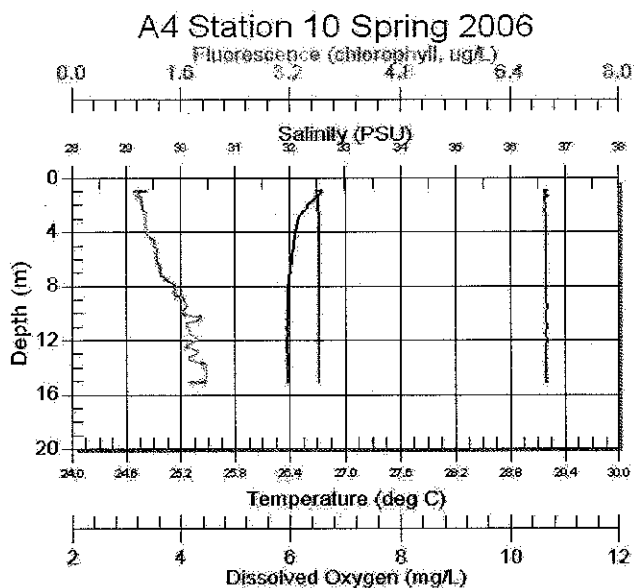
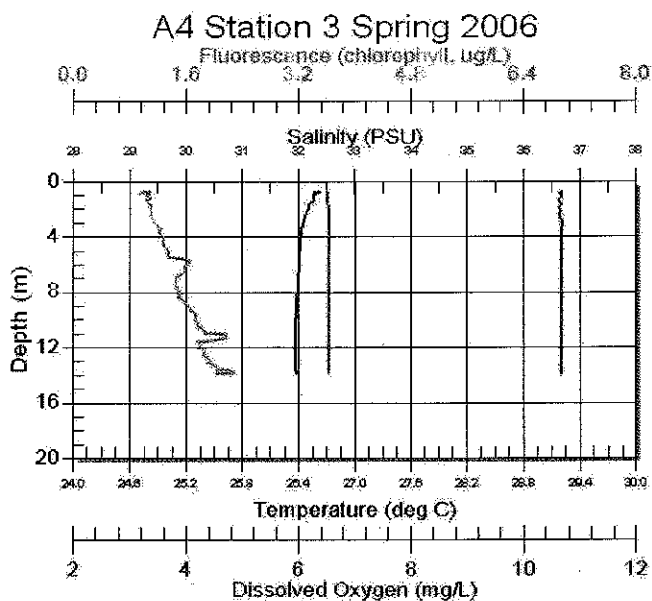


### Spring 2006 – Area A6



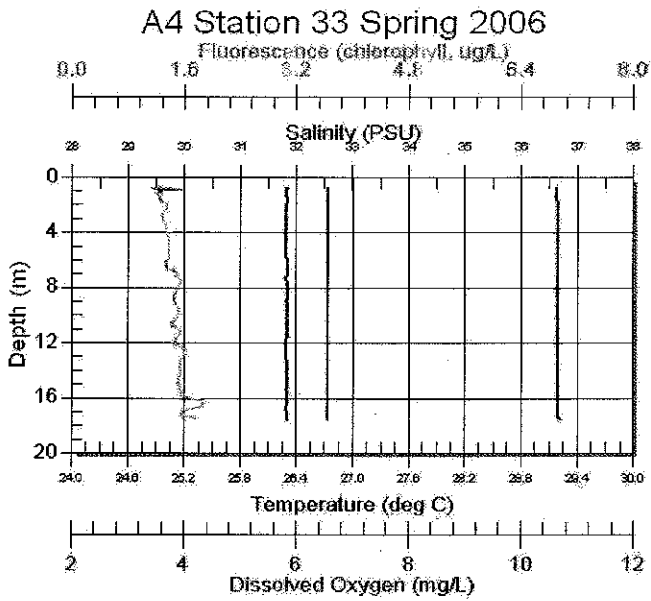


### Spring 2006 – Area A4





### Spring 2006 - Area A4, continued.



**Scientific Environmental Applications, Inc. (SEA)**

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Melbourne, FL 32934

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Telephone/fax 321.254.2708

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**Memorandum Report**

**TO:** Mr. Barry S. Drucker, Physical Oceanographer/Environmental Coordinator, Contracting Officer's Technical Representative (COTR), U. S. Department of Interior Minerals Management Service (MMS), Sand and Gravel Program, 381 Elden St., Mail Stop 4010, Herndon, VA 20170-4817

**FROM:** Dr. Jeff Reidenauer, Technical Program Manager, The Louis Berger Group, Inc. 30A Vreeland Road, Florham Park, NJ 07932

**DATE:** April 9, 2007

**CC:** via email - Kim Zarillo, Contract Manager, S.E.A.

**SUBJECT:** Results of Fisherman Survey 2007 for Contract No. 1435-01-05-CT-39075  
Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the Northeast Coast of Florida

**NE Coast Florida Fisherman Survey**

Between January and February 2007, fishermen along Florida's northeast coastal counties from St. Johns County and south to Volusia County were surveyed for a total of 3 days to assess their use of MMS study sites A4, A6, A8, A9, and B11. The survey was designed to assess the fishermen's perception of potential impacts to the fishing industry from dredging activities that may occur at the study sites. Attempts were made to survey recreational, commercial, bait shop owners, and guides in the fishing industry. The survey methods and results are described in this report.

**Methods***Sampling*

A questionnaire survey tool, see Appendix A, was designed to assess the types of fishermen (e.g., commercial or recreational) and to obtain information about fishing practices on and/or near the MMS study sites and fishermen's perceptions of dredging impacts to the fishing industry. This survey is a convenience sample of willing participants at major ports inshore of the study areas and is not a statistical analysis. The sample target was commercial and/or recreational fishermen that may use the study sites. Identifying, defining and estimating the subpopulation of fishermen for a statistical survey using MMS study sites would require a more in-depth analysis. Identifying and establishing fishermen populations are problematic for several reasons: access to information collected by state and federal agencies about fishermen is not public, the subset of fishermen relevant to the study sites probably fish for specific species that require specific licenses. Fishing licenses are provided by the state and distributed by county registration. Fishing activities and locations do not necessarily match county boundaries. Data collected from licensees for Florida fish catches or trip landings are kept confidential (Florida Fish & Wildlife Commission 2006). Federal licenses may/may not overlap in federal and state

waters, yet data collected for landing numbers with respect to the purpose of the license(s) are aggregated for larger geographical areas beyond the study sites. For example, federally licensed Fisherman A is licensed in St. Johns County, but fishes off Volusia County in federal waters. Florida vessel registration statistics are available by county and classes, however the definition of vessel registration class and uses are broad. For commercial vessels, payment for use of the vessel is considered commercial, such as sightseeing. One approach to a statistically valid survey would be for MMS to collaborate with Florida Wildlife Commission (FWC) Division of Marine Fisheries and the National Marine Fisheries Services (NMFS) ongoing survey landing programs that have access to landing records tied to license holders. The two agencies have the advantages of access to license information, a long history of collecting data from licensees, and statistically established survey methods that are evaluated and updated (National Research Council (NRC) of National Academy of Sciences ((NAS), 2007:NMFS 2007). They have the ability to expand their data collection efforts to reach the population of fisherman that use these and future MMS study sites.

In this study, the target group was located by visiting known ports of entry for fishermen off northeast Florida. Data was collected in January and February 2007 at major ports in New Smyrna Beach and St. Augustine. Surveys were conducted during three one-day trips interviewing boat captains, charter fishing guides, boat supply store owners, bait & tackle store owners, and dive shops owners. Surveys were conducted by a complement of personal interview and fill-in forms. Participants were shown a map of the study locations then verbally asked questions numbered 1-6 in which case the surveyor entered responses on the form, or a blank survey form was provided to the respondent and collected upon completion. Question clarification was provided upon request, but no guidance for answers was given. A Florida Tech Ph.D. candidate conducted the surveys. During data entry questionnaires were numbered in sequential order for example NE-MMS-1 to NE-MMS-17 for QA/QC purposes. Data from each survey were entered into an excel spreadsheet for summary analysis.

## **Results**

In total, (17) seventeen fishermen representing commercial and recreational interests responded to the questionnaire. A tabulation of survey responses are provided in Table 1. Comments received from participants are provided in full for Question 6.

### **Categories of Fishermen**

Respondents answered whether they were fishermen or divers. They then selected qualifying conditions, commercial or recreational. One respondent was a recreational diver and (3) three were fishermen guides and the rest answered either as 24% commercial and 76% recreational fishermen (see Table 1). For simplification purposes, responses were split into two groups commercial and recreational.

### **Target Fish Species**

The primary target fish species by the number of responses were: grouper (4) and red snapper (3); kingfish (3); Whiting (4); Pompano (3); and Tarpon and Trout (2) each. One (1) response provided for each of the following target species: pelagic fish; bottom trolling; common to area; multiple species; various fish; Mullet; reef fish; Dolphin; Tuna; and Wahoo; Flounder; Black drum; and Sheep head. Responses often included more than one target fish.

### **Target Habitat**

Habitat choices that were provided in the questionnaire were hard bottom, sand bottom, artificial reef, and open water. A summary of target habitats chosen were (11) or 65% hard bottom, (9) or 53% sand bottom, (8) or 47% artificial reef, and (9) or 53% open water. Responses often included more than one target habitat.

### **Fishing on Study Sites and/or Within 5 Miles**

Question 4 asked if respondents fished on the sites shown on the map provided in Appendix A. Responses were (7) or 41% No, percentages of those that used the sites were (10) or 59%. The breakdown of use at each site was (2) or 12% at A4; (4) or 24% at A6; (2) or 12% A8; (2) or 12% A9 and (5) or 29% B11. Six (6) respondents who were mostly trawlers said they fished during all seasons on the study sites.

In Question 5, fishermen were asked if they fished within 5 miles of the sites shown on a map. Responses were (2) or 12% No, percentages of those that used the sites were (15) or 88%. The breakdown of use at each site was (3) or 18% at A4; (7) or 41% at A6; (6) or 35% A8; (3) or 18% A9 and (7) or 41% B11. Two (2) respondents fished during either summer or spring and fall and the rest fished all seasons. For both Questions 4 and 5 the type(s) of gear used included rod and reel, surf fish gear, hook and line, trolling and other.

### **Fisherman Concerns of Dredging Impacts on Fishing**

In Question 6, respondents were asked three related questions on the perceived impacts of dredging on fishing. The first question was “Are you concerned that dredging on these sites will directly impact your fishing activities – if so, how?” The second question was “Are you concerned that dredging on these sites will indirectly impact your fishing activities – if so, how?” The final question was “What are other things do you think are impacted or should be considered?”

#### Direct and Indirect Impacts on Fishing from Dredging

##### *Direct Impacts on Fishing from Dredging*

Thirty-five percent (6) said there was no direct impact on fishing from dredging. Others provided comment about perceived direct impacts, which were

- Yes. By keeping me away from productive kingfish grounds
- Disturbs habitat for juvenile fish
- Covered up a lot of rocks which were home to many fish species and there's no sand fleas around now for bait.
- By killing habitat
- It upsets the natural flow of the environment, and changes the habitat
- Any dredging destroys the natural habitat - Take for ex. The fishing at St. Augustine Pier
- Destroys habitat and is a total waste of money
- Turns water muddy, disturbs some artificial reefs
- Water will change (muddy), sand fleas and crabs on bottom will be disrupted
- Muddy water, tear up what bottom is left

*Indirect Impacts on Fishing from Dredging*

Fifty-two percent (52%) said there was no indirect impact to them from dredging and the rest either did not respond or provided comment. Comments ranged from a positive effect on fishing to the perception that certain fishing problems may be indirectly related to dredging, such as

- Own a bait shop and lost a lot of business from pier fishermen
- By killing food source
- Moves the bait, shellfish, and other small species out to shake up food chain
- Previous statement plus the beaches are closed. After projects are completed everything changes for the WORSE
- Beach renourishment fills in outlets and cuts. Waste tax dollars big time
- Dredge holes support ground fish
- Tourism may be affected if beach is disrupted

**Other Things to Consider and Comments**

Responses for these two parts of question 6 were general in nature. They were combined and include:

- Never being able to control mother nature
- Locals using the beach, conditions fishing at piers, sometimes need to travel distances to find good places to fish
- Long jetties to help the beaches renourish themselves
- Corp of Engineers is wasteful and only concerned with self perpetuation
- Sand pumped on beaches without some sort of breaks or retainers is useless
- Leave well enough alone
- It's a joke to try to change mother-nature

**References**

July 2006. Commercial Saltwater Regulations Florida Fish and Wildlife Conservation Commission 2006-2007, Florida Fish & Wildlife Conservation Commission Division of Marine Fisheries Management. Volume 97. Tallahassee, Florida.

[http://myfwc.com/marine/Commercial\\_Fisheries\\_Information.htm](http://myfwc.com/marine/Commercial_Fisheries_Information.htm)

February 2007. Development Plan for Improving Recreational Fisheries Statistics. NMFS, Office of Science and Technology. Courtesy: NOAA Fisheries.

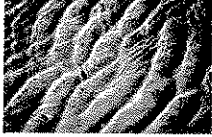
[http://www.st.nmfs.gov/RecSurveyUpgrade/documents/Rec\\_Implementation\\_Plan\\_02092007.pdf](http://www.st.nmfs.gov/RecSurveyUpgrade/documents/Rec_Implementation_Plan_02092007.pdf)

2006. Committee on the Review of Recreational Fisheries Survey Methods, National Research Council. Review of Recreational Fisheries Survey Methods. Ocean Studies Board Division on Earth and Life Studies, The National Academies Press Washington, D.C [www.nap.edu](http://www.nap.edu)

Table 1. 2007 MMS Florida Northeast Coast Fisherman Survey Results (Questions 1-5).

Question	1. Fishing, Diving, Commercial, or Rec?				2. Species?	3. Habitat Targets?			4. On Site?							5. Within 5 Miles of site?													
	Fishing	Diving	Commercial	Recreation		Artificial Reef	Open H2O	SB	HB	No	Yes	A4	A6	A8	A9	B11	Target	Gear	Season	No	Yes	A4	A6	A8	A9	B11	Target	Gear	Season
Sample NE-MMS-1	1				Reef fish, pelagic	1	1		1								Hook & Line	All									Snapper, Grouper, Kingfish		
NE-MMS-2	1				Grouper, Snapper, Dolphin, Tuna, Wahoo	1																							
NE-MMS-3	1			1	Grouper, Snapper	1											Hook & Line	Sum									Shark		
NE-MMS-4	1				Whiting, Black drum, Sheepshead	1											Rod & Reel, Dead bait	Fall, Winter									Whiting, Black drum, Pompano	Rod & Reel	
NE-MMS-5	1		1		Grouper	1											Rod & Reel, Dead bait	All								Grouper	Hook & Line	All	
NE-MMS-6	1			1	Whiting, Drum, Pompano	1											Rod & Reel	All								Grouper, Pelagic, Snapper	Rod & Reel	All	
NE-MMS-7	1				Common to area	1											Changes depending on what fishing for	All								Various	Changes depending on what fishing for	All	
NE-MMS-8	1			1	Various	1											Various	All								Whiting, Blues, Black drum, Redfish, Pompano	Various	All	
NE-MMS-9	1			1	Reds, Trout, Flounder, King, Tarpon	1																				King & Tarpon	Spinners	Sum	
NE-MMS-10	1				Redfish, Trout	1																				All types	Whatever needed at the time	All	
NE-MMS-11	1		1		Multi species	1																				Multi	Rod & Reel		
NE-MMS-12	1					1																							
NE-MMS-13	1				Whiting, Pompano, Mullet	1												Rod & Reel	All								Whiting, Pompano, Mullet		
NE-MMS-14	1				Whiting, Pompano	1												Surf fishing gear	Spring - Fall										
NE-MMS-15	1				Grouper, Snapper, Kingfish	1																					Grouper, Snapper		
NE-MMS-16	1				Trolling & bottom fish	1																					Trolling & bottom fish	Rod & Reel	All
NE-MMS-17	1				Kingfish	1																				Kingfish	Trolling	All	
<b>Totals</b>	<b>16</b>	<b>1</b>	<b>2</b>	<b>13</b>		<b>11</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>10</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>5</b>														
<b>% of Totals</b>	<b>94%</b>	<b>6%</b>	<b>24%</b>	<b>89%</b>		<b>65%</b>	<b>53%</b>	<b>47%</b>	<b>41%</b>	<b>59%</b>	<b>12%</b>	<b>24%</b>	<b>12%</b>	<b>12%</b>	<b>29%</b>														

S.E.A., INC.



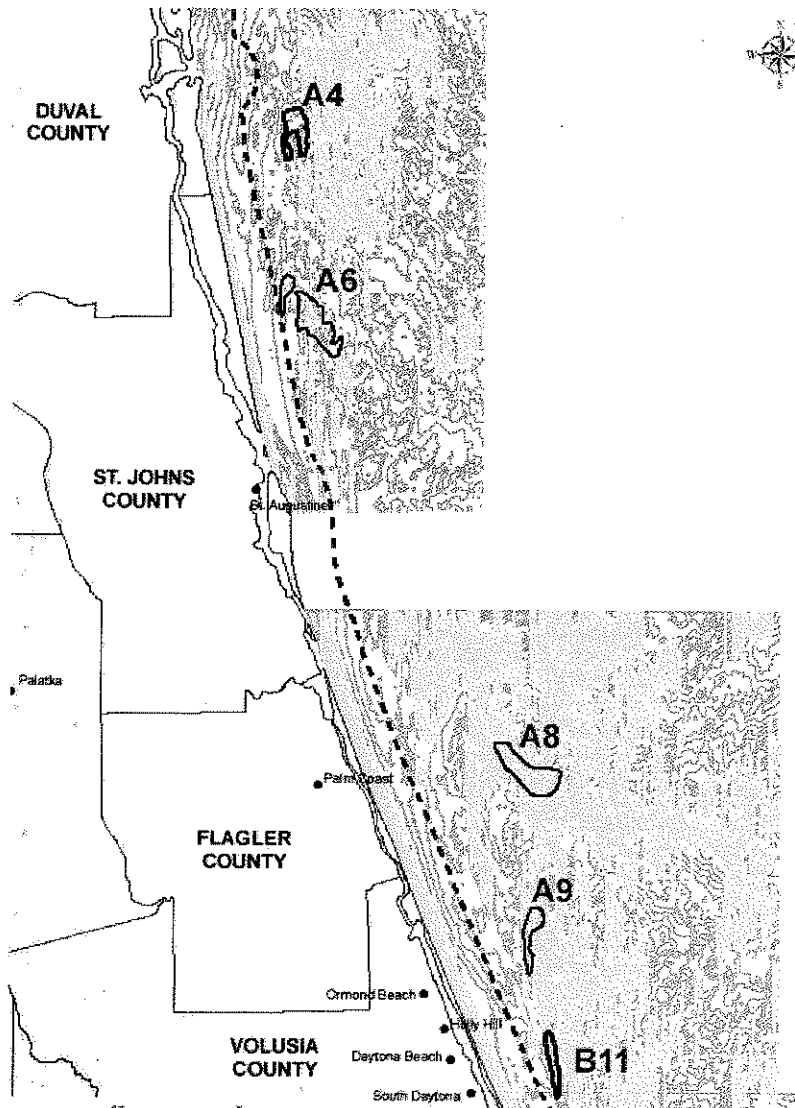
## Potential Impacts of Sand Dredging for Beach Renourishment on Commercial and Recreational Fisheries and Diving in Northeast Florida



**Issue:** Sand for beach renourishment may be dredged from five sites offshore from Duval to Volusia Counties

**Background:** All sites are low sand hills rising 3-5 feet above the surrounding sea floor. Trawl surveys and reviews of previous studies are being conducted to determine what fish and shellfish inhabit those areas.

**Fisheries Concern:** Will removal of sand from these habitats directly or indirectly impact commercial and/or recreational fishing and diving? Please help the U.S. Minerals Management Service answer this question by responding to our survey. For more information contact Kim Zarillo at 321.254.2708 or by email [seapp1@aol.com](mailto:seapp1@aol.com).





**Impacts of Sand Dredging on Fishing and Diving**

1) Type of Fishing or Diving:

Commercial \_\_\_ Guide \_\_\_ Recreational \_\_\_

2) Target species of fish and shellfish: \_\_\_\_\_

3) What types of habitat are you targeting?

hard bottom \_\_\_ sand bottom \_\_\_ artificial reef \_\_\_ open water \_\_\_

4) Do you fish on the sites shown in the figure?

No \_\_\_ Yes, I fish on A4 \_\_\_ A6 \_\_\_ A8 \_\_\_ A9 \_\_\_ B11 \_\_\_

If yes, what species are you targeting? \_\_\_\_\_

What type(s) of gear do you use? \_\_\_\_\_

What seasons do you fish there? Spring, Summer, Fall, Winter

5) Do you fish within about 5 miles of the sites shown on the front?

No \_\_\_ Yes, I fish on A4 \_\_\_ A6 \_\_\_ A8 \_\_\_ A9 \_\_\_ B11 \_\_\_

If yes, what species are you targeting? \_\_\_\_\_

What type(s) of gear do you use? \_\_\_\_\_

What seasons do you fish there? Spring, Summer, Fall, Winter

6) Are you concerned that dredging on these sites will directly impact your fishing activities – if so, how?

\_\_\_\_\_

Indirectly impact your fishing activities – if so, how? \_\_\_\_\_

\_\_\_\_\_

What are other things do you think may be impacted or should be considered?

\_\_\_\_\_

\_\_\_\_\_

Thank you very much for your assistance.

**Data Sheet - Marine Mammal Recording Form – Location and Effort Data (Fall 2005)**

**SEA Marine Mammal Recording Form - Location and Effort Data**

Vessel Name: M/V ThunderForce  
 Survey Type: MMS Cruise  
 Time Zone of Records: EDT  
 Lead Observer: Leif Halvorson  
 Vessel Type: Research Vessel  
 Project Start Date: 11/02/05  
 Page 2 of 2  
 Observer 2: Marcell Szalag  
 Project End Date: 11/09/05

Date	11/07/05	11/07/05	11/07/05	11/07/05	11/07/05	11/08/05	11/08/05	QC
<b>Observer(s)</b>	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag	Leif Halvorson Marcell Szalag
<b>Duration of Visual Surveys for Protected Species</b>								
Time when visual survey began	9:06	9:06	9:06	9:06	9:06	6:38	6:38	
Time when visual survey ended	17:58	17:58	17:58	17:58	17:58	17:35	17:35	
Duration of visual survey for protected species (Hrs:Mins)	8:52	8:52	8:52	8:52	8:52	10:57	10:57	
<b>Duration of Acoustic Survey for Protected Species</b>								
Time when acoustic survey began	12:28	14:16	15:32	17:34	12:56	19:25	19:25	
Time when acoustic survey ended	14:04	15:11	16:21	18:25	14:24	20:15	20:15	
Duration of acoustic survey for protected species (hrs:mins)	1:36	0:55	0:49	0:51	1:28	0:50	0:50	
<b>Location and Observation Conditions</b>								
Latitude at start of survey	30°08.91'N	30°07.50'N	30°08.97'N	30°04.35'N	30°20.71'N	30°19.75'N	30°19.75'N	
Longitude at start of survey	81°16.36'W	81°16.68'W	81°15.53'W	81°12.87'W	81°15.72'W	81°16.90'	81°16.90'	
Latitude at end of survey	30°08.73'N	30°09.04'N	30°07.75'N	30°05.59'N	30°22.43'N	30°19.49'N	30°19.49'N	
Longitude at end of survey	81°16.57'W	81°16.38'W	81°13.70'W	81°13.98'W	81°16.25'W	81°16.06'W	81°16.06'W	
Wind Force: (Circle one to specify scale used)	10mph	10mph	10mph	10mph	5mph	5mph	5mph	
Knots MPH	slight	slight	slight	slight	slight	slight	slight	
Sea State: (Glassy-mirror like: Slight - few white caps; Choppy - many white caps. Rough - large waves spray)	low	low	low	low	low	low	low	
Swell (0 = Low <2m; M = medium 2-4m; L = Large >4m)	good	good	good	good	good	good	good	
Visibility (Poor <1km; Moderate 1-5 km; Good >5 km)	good	good	good	good	good	good	good	
Notes: Latitude and Longitude at start and stop of survey represent the locations of start and stop of hydrophone use throughout the day.								
							Leif Halvorson	
							Lead Observer	



**SEA Marine Mammal Recording Form - Location and Effort Data**


Vessel Name: M/V ThunderForce  
 Survey Type: MMS Cruise  
 Time Zone of Records: EDT  
 Lead Observer: Leif Halvorson

Vessel Type: Research Vessel  
 Project Start Date: 11/02/05  
 Page 2 of 2  
 Observer 2: Marcell Szelag

Project End Date: 11/09/05

Date	11/07/05	11/07/05	11/07/05	11/07/05	11/07/05	11/08/05	11/08/05	QC
Observer(s)	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag	Leif Halvorson Marcell Szelag
<b>Duration of Visual Surveys for Protected Species</b>								
Time when visual survey began	9:06	9:06	9:06	9:06	9:06	6:38	6:38	
Time when visual survey ended	17:58	17:58	17:58	17:58	17:58	17:35	17:35	
Duration of visual survey for protected species (hrs.mins)	8:52	8:52	8:52	8:52	8:52	10:57	10:57	
<b>Duration of Acoustic Survey for Protected Species</b>								
Time when acoustic survey began	12:28	14:16	15:32	17:34	12:56	19:25	19:25	
Time when acoustic survey ended	14:04	15:11	16:21	18:25	14:24	20:15	20:15	
Duration of acoustic survey for protected species (hrs.mins)	1:36	0:55	0:49	0:51	1:28	0:50	0:50	
<b>Location and Observation Conditions</b>								
Latitude at start of survey	30°08.91'N	30°07.50'N	30°08.97'N	30°04.35'N	30°20.71'N	30°19.75'N	30°19.75'N	
Longitude at start of survey	81°16.36'W	81°16.68'W	81°15.53'W	81°12.87'W	81°15.72'W	81°16.90'	81°16.90'	
Latitude at end of survey	30°08.73'N	30°09.04'N	30°07.75'N	30°05.59'N	30°22.43'N	30°19.49'N	30°19.49'N	
Longitude at end of survey	81°16.57'W	81°16.38'W	81°13.70'W	81°13.98'W	81°16.25'W	81°16.06'W	81°16.06'W	
Wind Force: (Circle one to specify scale used)	10mph	10mph	10mph	10mph	5mph	5mph	5mph	
Knots MPH	slight	slight	slight	slight	slight	slight	slight	
Sea State (Glassy-mirror-like: Slight - few white caps; Choppy - many white caps. Rough - large waves & spray)	low	low	low	low	low	low	low	
Swell (0 = Low <2m; M = medium 2-4m; L = Large >4m)	good	good	good	good	good	good	good	
Visibility (Poor <1km; Moderate 1-5 km; Good >5 km)	good	good	good	good	good	good	good	
Notes: Latitude and Longitude at start and stop of survey represent the locations of start and stop of hydrophone use throughout the day.								
								Leif Halvorson Lead Observer

## Marine Mammal Recording Form - Record of Sighting

SEA Marine Mammal Recording Form - Record of Sighting									
Date	11/4/2005	Time	16:21	Project No.	05079dre	Sighting No.	1		
<p><b>How did this sighting occur?</b></p> <p>While you were keeping a continuous watch for marine mammals <input type="checkbox"/></p> <p>Spotted incidentally by you or someone else <input type="checkbox"/></p> <p>Other (please specify) <input type="checkbox"/> ancillary</p>									
Ship				M/V Thunderforce				Observer	Leif Halvorson
Ships Position (Latitude and Longitude)						Water Depth (meters)			
Lat: 29° 11.01'N Lon: 80°53.49'W						16			
Species				Certainty of identification					
Tursiops truncatus Bottlenose dolphin				Definite / Probable / Possible					
Total Number				Number of Adults					
2				2					
				Number Of Juveniles					
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)						Photograph or Video Taken			
2 large adult bottlenose dolphins headed E NE. They surfaced on 3 occasions and then were not seen again.						Yes / No			
						Direction of travel in relation to ship			
									
Behavior				Direction of travel of animals (compass heading)					
surfaced for air and then dove				east northeast					
Activity of Ship				Closest distance of animal to Ship					
towing the camera sled				50 m					



### Marine Mammal Recording Form - Record of Sighting


SEAMarine Mammal Recording Form - Record of Sighting			
Date	11/5/2005	Time	7:05
Project No.	05079dre		Sighting No.
2			
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals			<input checked="" type="checkbox"/>
Spotted incidentally by you or someone else			<input type="checkbox"/>
Other (please specify)			<input type="checkbox"/>
Ship	R/V Thunderforce		Observer
			Leif Halvorson Marceli Szlag
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat:29°20.11'N lon:80°55.71'W		16	
Species		Certainty of identification	
<i>Tursiops truncatus</i> Bottlenose dolphin		Definite / Probable / Possible	
Total Number	at least 4		Number of Adults
			4
			Number Of Juvenile ?
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
Several dolphin off in the distance. Falcated dorsal fins, and produced several blows. Difficult to determine size.		Yes / No	
		Direction of travel in relation to ship	
Behavior		Direction of travel of animals (compass heading)	
Continually surfacing and traveling southeast. Produced several blows. Remained in view for over 1/2 hour		east southeast	
Activity of Ship			Closest distance of animal to Ship
Slowly traveling north			750m



### Marine Mammal Recording Form - Record of Sighting

SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/5/2005	Time	11:44
Project No.	05079dre	Sighting No.	3
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals		<input checked="" type="checkbox"/>	
Spotted incidentally by you or someone else		<input type="checkbox"/>	
Other (please specify)		<input type="checkbox"/>	
Ship	R/V Thunderforce		Observer
			Leif Halvorson Marceli Szlag
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat:29°19.60'N lon:80°55.93'W		16	
Species	Certainty of identification		
<i>Caretta caretta</i> Loggerhead turtle	Definite / Probable / Possible		
Total Number	1	Number of Adults	1
		Number Of Juveniles	
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
A large adult turtle, yellow and brown in color. A broad head and wide carapace. Definitely a Loggerhead		Yes / No	
		Direction of travel in relation to ship	
Behavior	Direction of travel of animals (compass heading)		
Surfaced for a short breath and dove out of sight	west		
Activity of Ship	Closest distance of animal to Ship		
towing camera	30m		

## Marine Mammal Recording Form - Record of Sighting

SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/5/2005	Time	14:22
Project No.	05079dre		Sighting No.
4			
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals			<input checked="" type="checkbox"/>
Spotted incidentally by you or someone else			<input type="checkbox"/>
Other (please specify)			<input type="checkbox"/>
Ship	R/V Thunderforce		Observer
			Leif Halvorsen Marceli Szlag
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat:29°21.95'N lon:80°55.66'W		16	
Species	Caretta caretta Loggerhead turtle		Certainty of identification
			Definite / Probable / Possible
Total Number	1		Number of Adults
			1
			Number Of Juveniles
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
Yellow and brown turtle with a large head		Yes / No	
		Direction of travel in relation to ship	
			
Behavior	Stuck its head out of the water and then dove		Direction of travel of animals (compass heading)
			east
Activity of Ship	towing camera sled		Closest distance of animal to Ship
			100m




## Marine Mammal Recording Form - Record of Sighting


SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/5/2005	Time	15:50
Project No.	05079dre		Sighting No.
5			
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals Spotted incidentally by you or someone else Other (please specify)			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ship	R/V Thunderforce		Observer
			Leif Halvorson Marceli Szelag
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat:23° 20'N lon:80°54.91'W		16	
Species	Dermochelys coriacea Leatherback turtle		Certainty of identification
			Definite / Probable / Possible
Total Number	1		Number of Adults
			Number Of Juveniles
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
Very large and dark turtle with distinct ridges on its back. Unmistakably a leatherback.		Yes / No	
		Direction of travel in relation to ship	
Behavior	Slowly traveling east along the surface. Surfaced about four times		Direction of travel of animals (compass heading)
			east
Activity of Ship	turning around to get into position		Closet distance of animal to Ship
			50m



## Marine Mammal Recording Form - Record of Sighting

SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/6/2005	Time	Project No. 05079dre   Sighting No. 6
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals		<input checked="" type="checkbox"/>	
Spotted incidentally by you or someone else		<input type="checkbox"/>	
Other (please specify)		<input type="checkbox"/>	
Ship	R/V Thunderforce	Observer	Leif Halvorson
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat:29°21.98'N lon:80°56.23'W		16	
Species	<i>Caretta caretta</i> Loggerhead turtle	Certainty of identification	
		Definite / Probable / Possible	
Total Number	1	Number of Adults	1
		Number Of Juveniles	
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
Medium sized turtle with brown carapace and large head		Yes / No	
		Direction of travel in relation to ship	
			
Behavior	Surfaced just off our bow and then went under, swimming to the south	Direction of travel of animals (compass heading)	
		south	
Activity of Ship	Transfiting to grab site	Closest distance of animal to Ship	
		60m	

## Marine Mammal Recording Form - Record of Sighting


SEA Marine Mammal Recording Form - Record of Sighting							
Date	11/6/2005	Time	15:29	Project No.	05079dre	Sighting No.	7
How did this sighting occur?							
While you were keeping a continuous watch for marine mammals						<input checked="" type="checkbox"/>	
Spotted incidentally by you or someone else						<input type="checkbox"/>	
Other (please specify)						<input type="checkbox"/>	
Ship	R/V Thunderforce			Observer	Marceli Szelag		
Ships Position (Latitude and Longitude)				Water Depth (meters)			
lat:29°34.09'N lon:80°57.93'W				16			
Species				Certainty of identification			
Caretta caretta or Chelonia mydas Loggerhead or Green				Definite / Probable / Possible			
Total Number				Number of Adults			
1				1			
				Number Of Juveniles			
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)				Photograph or Video Taken			
200-300m from vessel on starboard side moving west. Head was only visible part. Too far away for definitive identification.				Yes / No			
				Direction of travel in relation to ship			
							
Behavior				Direction of travel of animals (compass heading)			
Stuck its head out of water three times and then disappeared.				west			
Activity of Ship				Closest distance of animal to Ship			
Benthic Grabs				250m			



### Marine Mammal Recording Form - Record of Sighting

SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/6/2005	Time	17:47
Project No.	05079dre		Sighting No.
How did this sighting occur?  While you were keeping a continuous watch for marine mammals Spotted incidentally by you or someone else Other (please specify)			
Ship		Observer	
R/V Thunderforce		Leif Halvorson	
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat:29°34.94'N lon:80°57.97'W		16	
Species		Certainty of identification	
<i>Tursiops truncatus</i> Bottlenose Dolphin		Definite / Probable / Possible	
Total Number		Number of Adults	
1		1	
		Number Of Juveniles	
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
A grey dolphin passes by port side traveling north		Yes / No	
		Direction of travel in relation to ship	
Behavior		Direction of travel of animals (compass heading)	
Surfaced several times heading north and out of sight		North	
Activity of Ship		Closest distance of animal to Ship	
Towing camera sled		25m	

## Marine Mammal Recording Form - Record of Sighting


SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/7/2005	Time	9:31
Project No.	05079dre	Sighting No.	9
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals		<input checked="" type="checkbox"/>	
Spotted incidentally by you or someone else		<input type="checkbox"/>	
Other (please specify)		<input type="checkbox"/>	
Ship	R/V Thunderforce	Observer	Marceli Szelag
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat: 30°04.10'N lon: 81°11.65'W		16	
Species	<i>Tursiops truncatus</i> Bottlenose dolphin	Certainty of identification	
		Definite / Probable / Possible	
Total Number	1	Number of Adults	1
		Number Of Juveniles	
Description (include features such as overall size: shape of head: color and pattern: size, shape and position of dorsal fin: height, direction and shape of blow)		Photograph or Video Taken	
Spotted 100 m off the bow. Distance changed as we approached so did the direction of travel. Visible dorsal fin and upper part of the body- Bottlenose.		Yes / No	
		Direction of travel in relation to ship	
			
Behavior	Two blows, surfaced for a while then disappeared.	Direction of travel of animals (compass heading)	
		Variable	
Activity of Ship	Benthic grabs	Closest distance of animal to Ship	
		10m	




### Marine Mammal Recording Form - Record of Sighting

SEA Marine Mammal Recording Form - Record of Sighting			
Date	11/7/2005	Time	9:31
Project No.	05079dre		Sighting No.
10			
How did this sighting occur?			
While you were keeping a continuous watch for marine mammals			<input checked="" type="checkbox"/>
Spotted incidentally by you or someone else			<input type="checkbox"/>
Other (please specify)			<input type="checkbox"/>
Ship	R/V Thunderforce		Observer
			Marceli Szelag
Ships Position (Latitude and Longitude)		Water Depth (meters)	
lat: 30°07.50'N lon: 81°16.68'W		16	
Species	Tursiops truncatus Bottlenose dolphin		Certainty of identification
			Definite / Probable / Possible
Total Number	3		Number of Adults
			3
			Number Of Juveniles
Description (include features such as overall size; shape of head; color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		Photograph or Video Taken	
Visible dorsal fin and upper part of the body.		Yes / No	
		Direction of travel in relation to ship	
Behavior	Direction of travel of animals (compass heading)		
Several blows, surfaced for a while then disappeared.	South		
Activity of Ship	Closest distance of animal to Ship		
Recording with camera	400 m		


## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 3-Jun-06	<b>Time (Include Time Zone):</b> 18:20 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-01			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals: Spotted incidentally by you or someone else: Other (Please specify on the line below):			<table border="1"> <tr><td> </td></tr> <tr><td>XXX</td></tr> <tr><td> </td></tr> </table>		XXX	
XXX						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 28° 07.099' N Longitude: 80° 13.06' W		<b>Water Depth (in meters):</b> Fathometer not working due to high speed, estimate 20m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b> Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b> Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Medium sized adult turtle, yellowish brown head and flippers, dark brown carapace		<b>Photographs or Video:</b> No				
<b>Behavior:</b>  Animal surfaced for a breath and then quickly dove upon seeing the vessel		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading) 100°				
<b>Activity of Vessel:</b> Underway to first project site	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b> 100m				

## Protected Species Recording Form - Record of Sighting


Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 4-Jun-06	<b>Time (Include Time Zone):</b> 6:45 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-02			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 10.25' N Longitude: 80° 52.89' W		<b>Water Depth (in meters):</b> 16m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Adult dolphin, gray body with gray, well defined beak and falcate dorsal fin		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Surfaced for breath 2X and then was not seen again		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  120°				
<b>Activity of Vessel:</b>  Underway	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b>  200m			

## Protected Species Recording Form - Record of Sighting


Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 4-Jun-06	<b>Time (Include Time Zone):</b> 8:18 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-03			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 10.46 N Longitude: 80° 53.93 W		<b>Water Depth (in meters):</b> 18m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definitive				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  2		<b>Number of adults:</b> 2				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Adult dolphins both approx 8-9ft in length with gray backs, falcate dorsal fins, and dark gray, well defined beaks. One of the dolphins had a noticeable black patch on the tip of it's dorsal fin.		<b>Photographs or Video:</b>  Yes				
<b>Behavior:</b>  Both dolphins swam alongside the boat while it was turning for several minutes.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  Vessel in tight circling pattern with constantly changing heading, eventually tracked to the West				
<b>Activity of Vessel:</b> Turning in a circle for processing of sand grab samples.	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b> 10m				




## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 4-Jun-06	<b>Time (Include Time Zone):</b> 14:52 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-04			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 11.71' N Longitude: 80° 52.76' W		<b>Water Depth (in meters):</b> 19m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  adult with yellowish brown head, slight beak, and large dark brown carapace.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Surface on the starboard side of the boat, took a few breaths, and then dove.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  170°				
<b>Activity of Vessel:</b>  underway	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b>  350m			

## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 4-Jun-06	<b>Time (Include Time Zone):</b> 19:23 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-05			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince and Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 11.02' N Longitude: 80° 52.81' W		<b>Water Depth (in meters):</b> 18m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  3		<b>Number of adults:</b> 3				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  7-8ft in length with gray bodies and lighter underbelly, gray beak-well defined, with falcate dorsal fin.		<b>Photographs or Video:</b> Yes				
		<b>Direction of travel in relation to the ship:</b>  				
<b>Behavior:</b>  Porpoised towards and under the vessel. Middle adult breached <10m behind boat.		<b>Direction of travel of animals:</b> (compass heading)  80°				
<b>Activity of Vessel:</b>  underway	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b>  10m			

## Protected Species Recording Form - Record of Sighting


Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 5-Jun-06	<b>Time (Include Time Zone):</b> 11:50-12:29 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-06			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 22.17' N Longitude: 80° 55.39' W		<b>Water Depth (in meters):</b> 15m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Pantropical spotted dolphin Scientific Name: <i>Stenella attenuata</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  2		<b>Number of adults:</b> 2				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  7 feet long adults, with dark grayish cape narrowing behind the dorsal fin. Whitish tip of beak noticeable.		<b>Photographs or Video:</b>  Yes				
<b>Behavior:</b>  Approached the boat, turned around, and started to bowride.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading) unable to determine due to circling				
<b>Activity of Vessel:</b> circling due to processing of sand grabs	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b> 5m				




**Protected Species Recording Form - Record of Sighting**

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 5-Jun-06	<b>Time (Include Time Zone):</b> 16:04 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-07			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 22.00' N Longitude: 80° 58.43' W		<b>Water Depth (in meters):</b> 17m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Extremely large adult with a yellowish/brownish head with slight beak and large dark brown carapace. The carapace had a mottled appearance indicative of a large epibiont load.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Basking above the surface and taking leisurely breaths and occasionally splashing his rear flippers.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  190°				
<b>Activity of Vessel:</b>  underway	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b>  500m			


## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 5-Jun-06	<b>Time (Include Time Zone):</b> 16:28 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-08			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 23.70' N Longitude: 80° 56.80' W		<b>Water Depth (in meters):</b> 21m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>		<b>Certainty of Identification:</b>				
Common name: Bottlenose Dolphin or Pantropical spotted		Definite for one of the two				
Scientific Name: <i>Tursiops truncatus</i> or <i>Stenella attenuata</i>						
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)		<b>Number of adults:</b>				
1		1				
		<b>Number of juveniles:</b>				
		0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>				
8ft adult dolphin with slight grayish cape, and whitish beak. Definite crease between melon and beak.		No				
		<b>Direction of travel in relation to the ship:</b>				
<b>Behavior:</b>						
		<b>Direction of travel of animals:</b> (compass heading)				
Came at the boat, porpoised once on portside bow, and then dove.		30°				
<b>Activity of Vessel:</b> underway	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b> 5m			


## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 5-Jun-06	<b>Time (Include Time Zone):</b> 17:43 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-09			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 21.25' N Longitude: 80° 56.58' W		<b>Water Depth (in meters):</b> 19m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>		<b>Certainty of Identification:</b>				
Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)		<b>Number of adults:</b>				
1		1				
		<b>Number of juveniles:</b>				
		0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>				
Small adult with a brownish/yellowish head, slight beak, and dark brown carapace.		No				
		<b>Direction of travel in relation to the ship:</b>				
						
<b>Behavior:</b>		<b>Direction of travel of animals:</b> (compass heading)				
Swam by submerged right next to the vessel.		340°				
<b>Activity of Vessel:</b> underway	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b> 7m				

## Protected Species Recording Form - Record of Sighting


Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 5-Jun-06	<b>Time (Include Time Zone):</b> 19:58 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-10			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince and Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 26.026' N Longitude: 80° 56.80' W		<b>Water Depth (in meters):</b> 18m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>		<b>Certainty of Identification:</b>				
Common name: Loggerhead sea turtle		Definite				
Scientific Name: <i>Caretta caretta</i>						
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)		<b>Number of adults:</b>				
1		1				
		<b>Number of juveniles:</b>				
		0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>				
Large adult with a brownish/yellowish head with slight beak. Carapace was dark brown and approx. 2.5 ft across.		No				
<b>Behavior:</b>		<b>Direction of travel in relation to the ship:</b>				
Surfaced briefly for just a few breaths and then dove, but was very close to the boat so as to provide a good visual.						
		<b>Direction of travel of animals:</b> (compass heading)				
		170°				
<b>Activity of Vessel:</b> Trawling	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b> 50m			

## Protected Species Recording Form - Record of Sighting


Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 6-Jun-06	<b>Time (Include Time Zone):</b> 8:07 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-11			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 32.53' N Longitude: 80° 54.45' W		<b>Water Depth (in meters):</b> 18m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>		<b>Certainty of Identification:</b>				
Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)		<b>Number of adults:</b>				
1		1				
		<b>Number of juveniles:</b>				
		0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>				
Medium adult turtle, yellowish brown head and flippers with dark brown carapace		No				
		<b>Direction of travel in relation to the ship:</b>				
						
<b>Behavior:</b>		<b>Direction of travel of animals:</b> (compass heading)				
Turtle was up at the surface for 2 breaths and dove		300°				
<b>Activity of Vessel:</b>	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>				
On to next sampling site		100m				




## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 6-Jun-06	<b>Time (Include Time Zone):</b> 8:30 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-12			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 31.65' N Longitude: 80° 55.82' W		<b>Water Depth (in meters):</b> 20m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Bottlenose dolphin Scientific Name: <i>Tursiops truncatus</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  6		<b>Number of adults:</b> 6				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Animals were all 7-9' long with triangular, falcate dorsal fins. Gray uniform coloring and well defined beak		<b>Photographs or Video:</b>  Photos and video				
<b>Behavior:</b>  Animals were swimming around and under the vessel for over 20 minutes. They were porpoising at the surface and seemed very curious about the vessel.		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading) Constantly changing due to avid swimming				
<b>Activity of Vessel:</b>  Sand grab sampling	<b>Notes:</b>  Audio files also taken	<b>Closest distance of animal to vessel (in meters):</b> 5m				


## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 6-Jun-06	<b>Time (Include Time Zone):</b> 11:52 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-13			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 29° 34.60' N Longitude: 80° 57.80' W		<b>Water Depth (in meters):</b> 15m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Animal had yellowish brown head, slight beak and yellowish brown flippers with a dark brown carapace.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Animal was at the surface for breath and swimming slowly at the surface. Was up top for about 4-5 minutes and was photographed		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  205°				
<b>Activity of Vessel:</b>  Underway	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b>  250m			


## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 6-Jun-06	<b>Time (Include Time Zone):</b> 18:53 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-14			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 30° 04.37' N Longitude: 81° 14.78' W		<b>Water Depth (in meters):</b> 17m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Smallish adult turtle with yellowish brown head and flippers with dark brown carapace.		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Turtle surfaced for breath and upon being startled dove quickly in a manner that suggested a deep dive		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  315°				
<b>Activity of Vessel:</b>  Trawling	<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b>  25m			


## Protected Species Recording Form - Record of Sighting

Record of Sighting Form for MMS Sand Barrow Analysis Cruise						
<b>Date:</b> 6-Jun-06	<b>Time (Include Time Zone):</b> 19:25 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-15			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1" style="margin: auto;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="text-align: center;">XXX</td></tr> </table>			XXX
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below): Turtle brought onboard in the sand trawl net-Reference Sighting Report #14						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 30° 05.74' N Longitude: 81° 15.00' W		<b>Water Depth (in meters):</b> 17m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)		<b>Number of adults:</b>				
1		1				
		<b>Number of juveniles:</b>				
		0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)		<b>Photographs or Video:</b>  Photos and Video taken				
Adult turtle about 2.5' long and 2' wide with a yellowish brown head and slight beak. Turtle was carrying a large epibiont load and was covered in barnacles, both on carapace and smaller ones on head and flippers.		<b>Direction of travel in relation to the ship:</b>  				
<b>Behavior:</b>  Animal was initially hauled in with the net and was biting on a portion of the net. Turtle had not ingested any of the net and was struggling with it's flippers. Once turned up to drain out any water about a Tbsp or 2 drained out and then stopped. Animal		<b>Direction of travel of animals:</b> (compass heading)  175°				
<b>Activity of Vessel:</b>  Trawling	<b>Notes:</b> Animal was checked for injuries & tags then turned to drain water that may have been aspirated	<b>Closest distance of animal to vessel (in meters):</b>  On board				

## Protected Species Recording Form - Record of Sighting


Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 7-Jun-06	<b>Time (Include Time Zone):</b> 8:46 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-16			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee and Justin Prince				
<b>Position of Vessel at time of sighting:</b> Latitude: 30° 05.44' N Longitude: 81° 12.98' W		<b>Water Depth (in meters):</b> 13m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Adult turtle with yellowish brown head and slight beak, with dark brown carapace		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Turtle was up for breath for a short time and then dove. Got a really good look at it while it was up.		<b>Direction of travel in relation to the ship:</b>  → 				
<b>Activity of Vessel:</b>  Drifting, lost steering		<b>Direction of travel of animals:</b> (compass heading)  .				
<b>Notes:</b>		<b>Closest distance of animal to vessel (in meters):</b> 200m				

**Protected Species Recording Form - Record of Sighting**

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 7-Jun-06	<b>Time (Include Time Zone):</b> 17:21 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-17			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:			<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>	XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> R/V Thunderforce		<b>Observer(s) who spotted the animal:</b> Justin Prince and Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 30° 22.31' N Longitude: 81° 16.45' W		<b>Water Depth (in meters):</b> 18m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Adult turtle with large yellowish brown head and flippers and dark brown carapace		<b>Photographs or Video:</b>  Yes				
<b>Behavior:</b>  Turtle surfaced briefly for air and was at the surface for a short time but was close enough to the vessel to get a good view		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  20°				
<b>Activity of Vessel:</b>  Obtaining sand grab samples	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  350m				



**Protected Species Recording Form - Record of Sighting**

Record of Sighting Form for MMS Sand Borrow Analysis Cruise						
<b>Date:</b> 8-Jun-06	<b>Time (Include Time Zone):</b> 12:07 EDT	<b>Project Number:</b> 06070DRE	<b>Sighting Number:</b> 2006-18			
<b>How did this sighting occur?</b>						
While you were keeping a continuous watch for marine mammals:		<table border="1"> <tr><td>XXX</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>		XXX		
XXX						
Spotted incidentally by you or someone else:						
Other (Please specify on the line below):						
<b>Vessel Name:</b> RV Thunderforce		<b>Observer(s) who spotted the animal:</b> Rachel Hardee				
<b>Position of Vessel at time of sighting:</b> Latitude: 30° 19.40' N Longitude: 81° 15.40' W		<b>Water Depth (in meters):</b> 16m				
<b>Please give as much information as possible about what you saw:</b>						
<b>Species:</b>  Common name: Loggerhead sea turtle Scientific Name: <i>Caretta caretta</i>		<b>Certainty of Identification:</b>  Definite				
<b>Total number of animals:</b> (If large or mixed pods estimate as best as you can)  1		<b>Number of adults:</b> 1				
		<b>Number of juveniles:</b> 0				
<b>Description of animals:</b> (Include features such as overall size, shape of head, color and pattern; size, shape and position of dorsal fin; height, direction and shape of blow)  Large adult turtle with broad yellowish brown head and flippers and dark brown carapace		<b>Photographs or Video:</b>  No				
<b>Behavior:</b>  Turtle was basking at the surface taking leisurely breaths and occasionally splashed it's front flippers		<b>Direction of travel in relation to the ship:</b>  				
		<b>Direction of travel of animals:</b> (compass heading)  242°				
<b>Activity of Vessel:</b>  Sand grab sampling	<b>Notes:</b>	<b>Closest distance of animal to vessel (in meters):</b>  750m				

**ECOES Protected Species Recording Form - Visual Location & Effort Data**

Vessel Name: Thunderforce

Page 1

Project Dates: June 3, 2006 - June 9, 2006 (East Cruise)

Project: MMS East Coast Sand Borrow Survey

Observers: Rachel Hardee (lead), Justin Prince

QC

Time Zone of Records: EDT

<b>Date:</b>	4-Jun-06	5-Jun-06	6-Jun-06
<b>Observers:</b>	RH,JP	RH,JP	RH,JP
<b>Duration of Visual Surveys for Protected Species:</b>			
Time when visual survey began:	6:30	6:15	6:20
Time when visual survey ended:	20:30	20:15	20:42
Duration of visual survey: hr:min:	14:00	14:00	14:22
<b>Location and Observation Conditions:</b>			
Starting latitude:	29° 10.25' N	29° 23.06' N	29° 31.27' N
Starting longitude:	80° 52.89' W	80° 54.93' W	80° 55.33' W
Ending latitude:	29° 17.34' N	29° 28.28' N	30° 05.54' N
Ending longitude:	80° 53.21' W	80° 55.52' W	81° 12.41' W
Wind Force (with scale used)	B1-2	B1-2	B1-3
Sea State:	Slight	Glassy to Slight	Slight
Swell:	Low	Low	Low
Visibility:	Good	Good	Good
<b>Notes &amp; Comments:</b>			
<b>Date:</b>	7-Jun-06	8-Jun-06	
<b>Observers:</b>	RH,JP	RH,JP	
<b>Duration of Visual Surveys for Protected Species:</b>			
Time when visual survey began:	6:05	6:28	
Time when visual survey ended:	20:26	13:10	
Duration of visual survey: hr:min:	14:21	6:42	
<b>Location and Observation Conditions:</b>			
Starting latitude:	30° 04.47' N	30° 22.46' N	
Starting longitude:	81° 14.15' W	81° 15.50' W	
Ending latitude:	30° 19.79' N	30° 18.42' N	
Ending longitude:	81° 17.42' W	81° 15.32' W	
Wind Force (with scale used)	B1-3	B1-3	
Sea State:	Slight to Choppy	Slight to Choppy	
Swell:	Low	Low	
Visibility:	Good	Good	
<b>Notes &amp; Comments:</b>			



## ECOES Protected Species Recording Form - Acoustic Data

Vessel Name: Thunderforce

Page 2

Project Dates: June 3, 2006 - June 9, 2006 (East Cruise)

Project: MMS East Coast Sand Borrow Survey

Observers: Rachel Hardee (lead), Justin Prince

QC

Time Zone of Records: EDT

Date:	6-Jun-06	6-Jun-06	7-Jun-06
Observers:	RH,JP	RH,JP	RH,JP
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	8:58	10:41	6:45
End acoustic survey:	9:14	10:51	6:47
Length of sound files (minutes)	4:19,12:02	10:02	02:26
<b>Location of Deployment:</b>			
Latitude of deployment:	29° 31.65' N	29° 33.90' N	30° 05.74' N
Longitude of deployment:	80° 55.82' W	80° 56.59' W	81° 14.61' W
<b>Notes:</b>			
Date:	7-Jun-06	7-Jun-06	7-Jun-06
Observers:	RH,JP	RH,JP	RH,JP
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	7:30	9:52	11:28
End acoustic survey:	7:35	10:02	11:38
Length of sound files (minutes)	05:01	10:03	10:01
<b>Location of Deployment:</b>			
Latitude of deployment:	30° 04.43' N	30° 06.42' N	30° 08.88' N
Longitude of deployment:	81° 12.95' W	81° 14.60' W	81° 16.11' W
<b>Notes:</b>			
Date:	7-Jun-06	7-Jun-06	8-Jun-06
Observers:	RH,JP	RH,JP	RH,JP
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	13:34	15:54	7:52
End acoustic survey:	13:43	16:04	8:02
Length of sound files (minutes)	09:37	10:03	7:14,2:47
<b>Location of Deployment:</b>			
Latitude of deployment:	30° 18.62' N	30° 21.76' N	30° 21.15' N
Longitude of deployment:	81° 16.61' W	81° 16.41' W	81° 15.55' W
<b>Notes:</b>			

**ECOES Protected Species Recording Form - Acoustic Data**

Vessel Name: Thunderforce

Page 3

Project Dates: June 3, 2006 - June 9, 2006 (East Cruise)

Project: MMS East Coast Sand Borrow Survey

Observers: Rachel Hardee (lead), Justin Prince

QC

Time Zone of Records: EDT

<b>Date:</b>	8-Jun-06	8-Jun-06	
<b>Observers:</b>	RH,JP	RH,JP	
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:	8:42	11:31	
End acoustic survey:	9:01	11:41	
Length of sound files (minutes)	19:23	10:02	
<b>Location of Deployment:</b>			
Latitude of deployment:	30° 21.29' N	30° 20.11' N	
Longitude of deployment:	81° 15.57' W	81° 15.63' W	
<b>Notes:</b>			
<b>Date:</b>			
<b>Observers:</b>			
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:			
End acoustic survey:			
Length of sound files (minutes)			
<b>Location of Deployment:</b>			
Latitude of deployment:			
Longitude of deployment:			
<b>Notes:</b>			
<b>Date:</b>			
<b>Observers:</b>			
<b>Duration of Acoustic Surveys for Protected Species:</b>			
Begin acoustic survey:			
End acoustic survey:			
Length of sound files (minutes)			
<b>Location of Deployment:</b>			
Latitude of deployment:			
Longitude of deployment:			
<b>Notes:</b>			



## Appendix C

### Geological Field Survey Data

- C1. Sample Properties and Grain Size Statistics from the A4, A6, A8, A9, and B11 Shoals.....C1-1
- C2. Granulometric Report for Sediment Samples of November 2005 ..C2-7
- C3. Granulometric Report for Sediment Samples of June 2006 .....C3-159

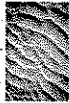
## 2005 Summary of Sample Properties and Grain Size Statistics from NE Shoals

Sample ID	Fine %	Mean mm	Med mm	St. Dev.	Skew	Kurt.	Carb %	Org. %
NE1-A4-01	0.86	0.17	0.16	0.48	-1.01	6.03	5.52	0.40
NE1-A4-02	1.97	0.32	0.29	0.87	-0.91	5.15	12.93	0.68
NE1-A4-04	2.56	0.29	0.28	0.76	-0.16	2.89	6.60	0.53
NE1-A4-06	1.96	0.15	0.14	0.54	-1.77	9.22	7.46	0.64
NE1-A4-08	3.33	0.23	0.21	0.68	-0.88	4.37	8.35	0.55
NE1-A4-09	3.02	0.18	0.16	0.68	-1.44	7.37	8.88	0.70
NE1-A4-10	1.25	0.23	0.23	0.69	-0.28	3.50	7.34	0.53
NE1-A4-12	1.25	0.21	0.19	0.71	-1.29	5.80	6.79	0.44
NE1-A4-13	2.53	0.23	0.21	0.75	-0.97	4.82	6.83	0.54
NE1-A4-14	0.94	0.18	0.16	0.68	-1.38	5.90	7.68	0.42
NE1-A4-15	1.77	0.21	0.18	0.77	-1.39	8.07	7.82	0.49
NE1-A4-17	2.13	0.18	0.16	0.79	-1.08	4.08	9.55	0.89
NE1-A4-18	3.94	0.23	0.16	1.16	-1.34	4.87	13.17	1.38
NE1-A4-19	1.69	0.17	0.16	0.59	-1.86	10.73	5.18	0.57
NE1-A4-21	1.29	0.27	0.24	0.72	-1.06	5.34	8.69	0.60
NE1-A4-23	1.43	0.21	0.19	0.77	-2.43	10.89	13.12	0.58
NE1-A4-24	1.25	0.18	0.17	0.47	-1.00	5.47	5.49	0.33
NE1-A4-25	2.06	0.27	0.25	0.72	-0.57	3.61	8.10	0.47
NE1-A4-26	1.41	0.33	0.31	0.69	-0.48	3.57	3.80	0.31
NE1-A4-28	1.31	0.19	0.18	0.48	-0.89	5.02	5.92	0.34
NE1-A4-30	1.65	0.25	0.23	0.69	-0.72	4.02	5.81	0.35
NE1-A4-31	1.62	0.31	0.31	0.77	0.24	3.18	5.30	0.48
NE1-A4-32	1.70	0.15	0.12	0.99	-2.27	9.26	20.28	0.82
NE1-A4-33	1.61	0.18	0.16	0.80	-1.95	8.32	13.36	0.76
NE1-A6-01	1.30	0.33	0.31	0.72	-0.99	5.20	6.41	0.41
NE1-A6-02	1.59	0.29	0.27	0.66	-0.76	4.22	5.55	0.36
NE1-A6-03	0.79	0.33	0.30	0.70	-0.62	3.77	5.81	0.37
NE1-A6-04	1.13	0.31	0.29	0.73	-0.88	4.64	11.99	0.59
NE1-A6-05	1.82	0.33	0.31	0.73	-0.67	4.39	7.44	0.41
NE1-A6-06	1.01	0.34	0.32	0.80	-0.72	4.41	9.49	0.48
NE1-A6-07	2.61	0.50	0.50	0.84	-0.13	3.44	13.93	0.66
NE1-A6-08	0.80	0.24	0.22	0.57	-0.99	6.10	8.10	0.45



**2005 Summary of Sample Properties and Grain Size Statistics from NE Shoals (continued).**

Sample ID	Fine %	Mean mm	Med mm	St. Dev.	Skew	Kurt.	Carb %	Org. %
NE1-A6-09	1.24	0.30	0.28	0.71	-0.97	4.73	12.59	0.61
NE1-A6-10	1.09	0.26	0.24	0.67	-0.89	4.20	13.05	0.56
NE1-A6-11	19.36	0.13	0.10	0.83	-2.03	7.80	11.17	2.25
NE1-A6-12	7.24	0.16	0.14	0.81	-2.22	10.20	9.74	2.06
NE1-A6-13	1.91	0.24	0.22	0.65	-1.40	6.87	13.85	0.74
NE1-A8-01	1.05	0.38	0.34	0.91	-0.98	4.05	13.50	0.62
NE1-A8-02	1.60	0.34	0.28	0.95	-1.16	3.96	11.16	0.56
NE1-A8-03	0.66	0.33	0.30	0.72	-0.70	3.51	5.51	0.31
NE1-A8-04	0.94	0.26	0.24	0.68	-1.44	6.03	4.37	0.22
NE1-A8-05	1.12	0.31	0.29	0.64	-0.36	2.67	14.34	0.34
NE1-A8-06	1.20	0.32	0.28	0.92	-1.51	5.80	24.34	0.71
NE1-A8-07	1.20	0.31	0.28	0.81	-1.24	5.36	13.71	0.48
NE1-A8-08	1.40	0.35	0.30	0.88	-1.11	4.42	14.22	0.46
NE1-A8-09	1.73	0.35	0.31	0.88	-1.20	4.75	18.91	0.90
NE1-A8-10	1.16	0.25	0.23	0.67	-1.75	7.87	12.78	0.78
NE1-A8-11	1.72	0.31	0.29	0.71	-0.99	4.95	11.77	0.75
NE1-A8-12	0.80	0.33	0.31	0.71	0.04	2.34	23.50	0.83
NE1-A8-13	1.11	0.30	0.23	1.02	-1.54	5.51	23.73	0.98
NE1-A9-01	1.76	0.25	0.23	0.66	-1.87	9.18	14.54	0.53
NE1-A9-02	0.83	0.29	0.26	0.77	-1.15	4.92	18.93	0.66
NE1-A9-03	0.63	0.27	0.24	0.73	-1.90	8.30	12.22	0.62


**2005 Summary of Sample Properties and Grain Size Statistics from NE Shoals (continued).**

Sample ID	Fine %	Mean mm	Med mm	St. Dev.	Skew	Kurt.	Carb %	Org. %
NE1-A9-04	0.98	0.31	0.28	0.77	-1.23	5.85	24.39	0.90
NE1-A9-05	0.44	0.23	0.22	0.54	-0.88	6.08	15.91	0.87
NE1-A9-06	0.87	0.43	0.38	0.96	-0.58	2.92	27.46	0.82
NE1-A9-07	0.66	0.44	0.38	1.02	-0.83	3.36	34.76	0.95
NE1-A9-08	1.00	0.34	0.28	1.04	-1.09	3.83	24.77	0.90
NE1-A9-09	1.02	0.21	0.21	0.43	-1.22	7.58	7.97	0.49
NE1-A9-10	0.69	0.24	0.23	0.48	-1.30	8.12	10.36	0.86
NE1-A9-11	1.70	0.25	0.22	0.80	-1.99	8.04	18.26	0.76
NE1-A9-12	1.12	0.32	0.26	0.99	-1.36	5.18	27.37	0.95
NE1-A9-13	0.96	0.28	0.25	0.74	-1.10	4.71	23.91	0.87
NE1-B11-01	1.10	0.20	0.20	0.50	-1.76	15.79	7.20	0.48
NE1-B11-02	1.20	0.19	0.18	0.62	-2.47	13.53	9.14	0.52
NE1-B11-03	1.22	0.22	0.21	0.51	-1.99	12.59	8.05	0.46
NE1-B11-04	1.44	0.17	0.16	0.54	-2.32	13.80	7.65	0.57
NE1-B11-05	1.16	0.35	0.30	0.91	-1.54	5.60	24.33	0.95
NE1-B11-06	0.42	0.22	0.21	0.40	-2.47	24.24	6.49	0.71
NE1-B11-07	0.96	0.20	0.20	0.37	0.22	4.82	4.95	0.45
NE1-B11-08	1.19	0.21	0.21	0.43	-1.78	14.35	6.98	0.76
NE1-B11-09	0.69	0.31	0.27	0.90	-1.78	6.80	21.43	0.79
NE1-B11-10	1.28	0.21	0.20	0.48	-1.65	11.13	7.52	0.50
NE1-B11-11	4.21	0.16	0.15	0.71	-2.99	16.64	15.05	1.10
NE1-B11-12	1.67	0.24	0.22	0.76	-1.74	8.14	13.86	0.94
NE1-B11-13	7.99	0.17	0.14	0.87	-2.09	9.01	24.04	4.23



## 2006 Summary of Sample Properties and Grain Size Statistics from NE Shoals

Sampled ID	Fine %	Mean mm	Med. mm	St. Dev.	Skew.	Kurt.	Carb. %	Org. %
NE2-A4-1	0.52	0.23	0.22	0.6	-0.74	3.95	6.64	0.54
NE2-A4-2	2.9	0.27	0.24	0.69	-0.9	4.4	7.24	0.37
NE2-A4-3	2.84	0.32	0.3	0.66	-0.56	3.48	7.04	0.5
NE2-A4-4	2.05	0.36	0.35	0.76	-0.39	3.98	10.42	0.61
NE2-A4-5	0.5	0.2	0.18	0.74	-1.31	5.38	7.18	0.9
NE2-A4-6	0.78	0.21	0.19	0.72	-2.15	10.18	8.71	0.88
NE2-A4-7	1.43	0.27	0.24	0.7	-0.91	4.4	9.93	1.08
NE2-A4-8	0.56	0.47	0.44	0.87	-0.52	3.26	9.98	0.58
NE2-A4-9	0.02	0.33	0.26	0.96	-1.4	5	16.31	0.81
NE2-A4-10	0	0.21	0.21	0.53	-0.95	5.48	5.84	0.66
NE2-A4-11	0.49	0.31	0.3	0.79	-0.31	3.23	5.88	0.79
NE2-A4-12	0.81	0.44	0.43	1.04	-0.44	3.5	16.4	0.77
NE2-A4-13	0.86	0.65	0.65	1.12	0.12	2.84	31.2	1.43
NE2-A4-14	0.19	0.24	0.23	0.65	-0.92	5.46	8.51	0.59
NE2-A4-15	0.14	0.21	0.2	0.68	-1.11	5.4	7.58	0.85
NE2-A4-16	0.08	0.18	0.16	0.81	-1.27	4.85	11.29	1.64
NE2-A4-17	0.37	0.17	0.15	0.83	-1.69	6.37	13.48	1.48
NE2-A4-18	0.04	0.25	0.23	0.67	-0.8	4.29	6.15	0.68
NE2-A4-19	0.48	0.25	0.25	0.74	-0.43	4.21	7.94	0.94
NE2-A4-20	0.73	0.31	0.26	1.09	-0.78	3.3	12.69	0.97
NE2-A4-21	0.76	0.48	0.45	0.83	-0.26	2.75	7.03	0.33
NE2-A4-22	1.39	0.49	0.45	1.01	-0.29	2.49	7.27	0.45
NE2-A4-23	1.31	0.19	0.19	0.54	-0.99	5.25	5.8	0.71
NE2-A4-24	0.54	0.22	0.21	0.64	-0.94	4.47	5.52	0.7
NE2-A4-25	0.47	0.2	0.19	0.68	-1.01	4.5	7.46	1.17
NE2-A4-26	0.72	0.18	0.16	0.68	-1.75	8.12	8.59	1.08
NE2-A4-27	1.18	0.24	0.23	0.76	-0.64	3.35	8.16	0.81
NE2-A4-28	2.55	0.22	0.19	0.85	-1.51	5.25	12.85	1.59
NE2-A4-29	0.62	0.36	0.36	0.97	-0.27	2.67	10.25	0.93
NE2-A4-30	1.15	0.19	0.17	0.64	-1.45	6.14	10.07	1.36
NE2-A4-31	0.44	0.23	0.2	0.76	-1.24	5.37	7.13	0.93
NE2-A4-32	0.63	0.23	0.21	0.77	-1.1	4.63	7.58	0.78
NE2-A4-33	0.53	0.36	0.37	0.78	-0.18	3.83	11.47	1.19

## 2006 Summary of Sample Properties and Grain Size Statistics from NE Shoals (continued).

Sampled ID	Fine %	Mean mm	Med. mm	St. Dev.	Skew.	Kurt.	Carb. %	Org. %
NE2-A6-1	0.02	0.37	0.34	0.76	-0.76	4.04	12.79	0.79
NE2-A6-2	0.01	0.3	0.28	0.74	-1.67	7.34	9.42	0.58
NE2-A6-3	3.89	0.32	0.29	0.63	-1.15	5.72	9.09	0.33
NE2-A6-4	1.44	0.24	0.22	0.62	-1.25	5.73	7.32	0.4
NE2-A6-5	1.2	0.37	0.33	0.76	-0.84	4.24	9.56	0.43
NE2-A6-6	0.27	0.3	0.29	0.7	-0.9	4.53	13.13	0.67
NE2-A6-7	0.04	0.38	0.36	0.83	-0.65	3.61	10.73	0.61
NE2-A6-8	2.22	0.39	0.38	0.71	-0.34	3.7	8.94	0.32
NE2-A6-9	0.39	0.36	0.32	0.97	-1.5	6.09	10.97	0.63
NE2-A6-10	0.27	0.39	0.36	0.97	-0.65	3.31	16.08	0.95
NE2-A6-11	0.38	0.19	0.16	0.89	-1.66	5.79	9.8	1.21
NE2-A6-12	0.44	0.43	0.39	1.02	-0.47	2.97	10.25	0.63
NE2-A6-13	0.46	0.31	0.29	0.68	-0.92	5.07	12.17	0.72
NE2-A8-1	0.17	0.49	0.45	1.03	-0.83	3.68	21.94	0.86
NE2-A8-2	0.61	0.36	0.31	0.9	-1.03	3.79	23.98	0.84
NE2-A8-3	0.66	0.37	0.33	0.8	-0.94	3.97	11.51	0.53
NE2-A8-4	0.71	0.29	0.26	0.77	-1.52	5.82	14.79	0.69
NE2-A8-5	0.08	0.43	0.4	0.87	-1.03	4.4	18.86	0.77
NE2-A8-6	0.02	0.25	0.23	0.69	-1.83	7.66	15.13	0.88
NE2-A8-7	0.22	0.37	0.34	0.85	-1.02	4.41	16.29	0.66
NE2-A8-8	0.35	0.31	0.28	0.77	-1.34	5.63	19.87	0.71
NE2-A8-9	0.4	0.3	0.26	0.8	-1.57	6.25	18.02	1.14
NE2-A8-10	0	0.31	0.26	0.83	-1.34	4.77	18.98	0.95
NE2-A8-11	0.02	0.53	0.46	1.19	-0.56	2.69	42.84	1.76
NE2-A8-12	2.76	0.26	0.24	0.66	-1.37	6.26	11.87	0.81
NE2-A8-13	0.55	0.27	0.23	0.74	-1.48	6.22	13.19	0.93





**2006 Summary of Sample Properties and Grain Size Statistics from NE Shoals (continued).**

Sampled ID	Fine %	Mean mm	Med. mm	St. Dev.	Skew.	Kurt.	Carb. %	Org. %
NE2-A9-1	0	0.29	0.27	0.62	-1.06	4.94	16.11	0.58
NE2-A9-2	0.14	0.42	0.37	0.99	-0.88	3.5	31.66	0.91
NE2-A9-3	0.14	0.31	0.28	0.72	-1.3	5.3	16.28	0.67
NE2-A9-4	0.05	0.27	0.24	0.75	-1.75	7.43	15.56	0.71
NE2-A9-5	0.28	0.45	0.39	0.98	-0.83	3.35	31.19	1.06
NE2-A9-6	0.04	0.33	0.29	0.88	-1.55	5.69	18.47	0.77
NE2-A9-7	0.66	0.43	0.37	0.96	-0.81	3.39	26.19	0.72
NE2-A9-8	0.92	0.4	0.36	0.91	-0.9	3.66	29.28	1.01
NE2-A9-9	0.85	0.22	0.21	0.56	-1.84	9.21	6.31	0.38
NE2-A9-10	0.81	0.36	0.31	0.9	-1.35	5.31	21.67	0.65
NE2-A9-11	0.33	0.4	0.32	1.04	-0.88	3.38	20.03	0.79
NE2-A9-12	1.14	0.46	0.41	0.98	-0.52	2.71	26.66	1.26
NE2-A9-13	1.14	0.25	0.22	0.81	-1.54	5.82	13.84	0.66
NE2-B11-1	1.2	0.21	0.2	0.52	-2.31	14.41	6.54	0.42
NE2-B11-2	0.62	0.51	0.44	1.42	-0.19	1.94	36.62	1.67
NE2-B11-3	0.37	0.23	0.21	0.7	-1.76	8.53	9.16	1.01
NE2-B11-4	0.02	0.36	0.28	1.02	-1.44	4.75	23.2	0.69
NE2-B11-5	0.03	0.23	0.21	0.55	-2.17	13	8.19	0.68
NE2-B11-6	0.39	0.21	0.21	0.45	-1.33	7.93	5.94	0.4
NE2-B11-7	0.16	0.19	0.17	0.58	-1.74	9.76	8.23	0.85
NE2-B11-8	0.51	0.2	0.18	0.59	-1.9	8.88	8.54	0.59
NE2-B11-9	0.54	0.55	0.46	1.18	-0.39	2.67	43.57	1.47
NE2-B11-10	0.48	0.22	0.18	0.94	-1.19	4.44	16.46	1.64
NE2-B11-11	0.53	0.18	0.16	0.78	-1.61	7.04	12.41	1.45
NE2-B11-12	0.98	0.18	0.16	0.74	-1.49	6.14	14.05	2
NE2-B11-13	2.95	0.18	0.17	0.57	-2.02	9.72	7.6	1.13

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-01

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
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ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>570,778</b>	Northing (ft): <b>2,192,131</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.26</b>	Wash Weight (g): <b>29.80</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.68</b>	Fines (%): #200 - <b>1.06</b> #230 - <b>0.86</b>	Organics (%): <b>0.40</b>	Carbonates (%): <b>5.52</b>	Shells (%):
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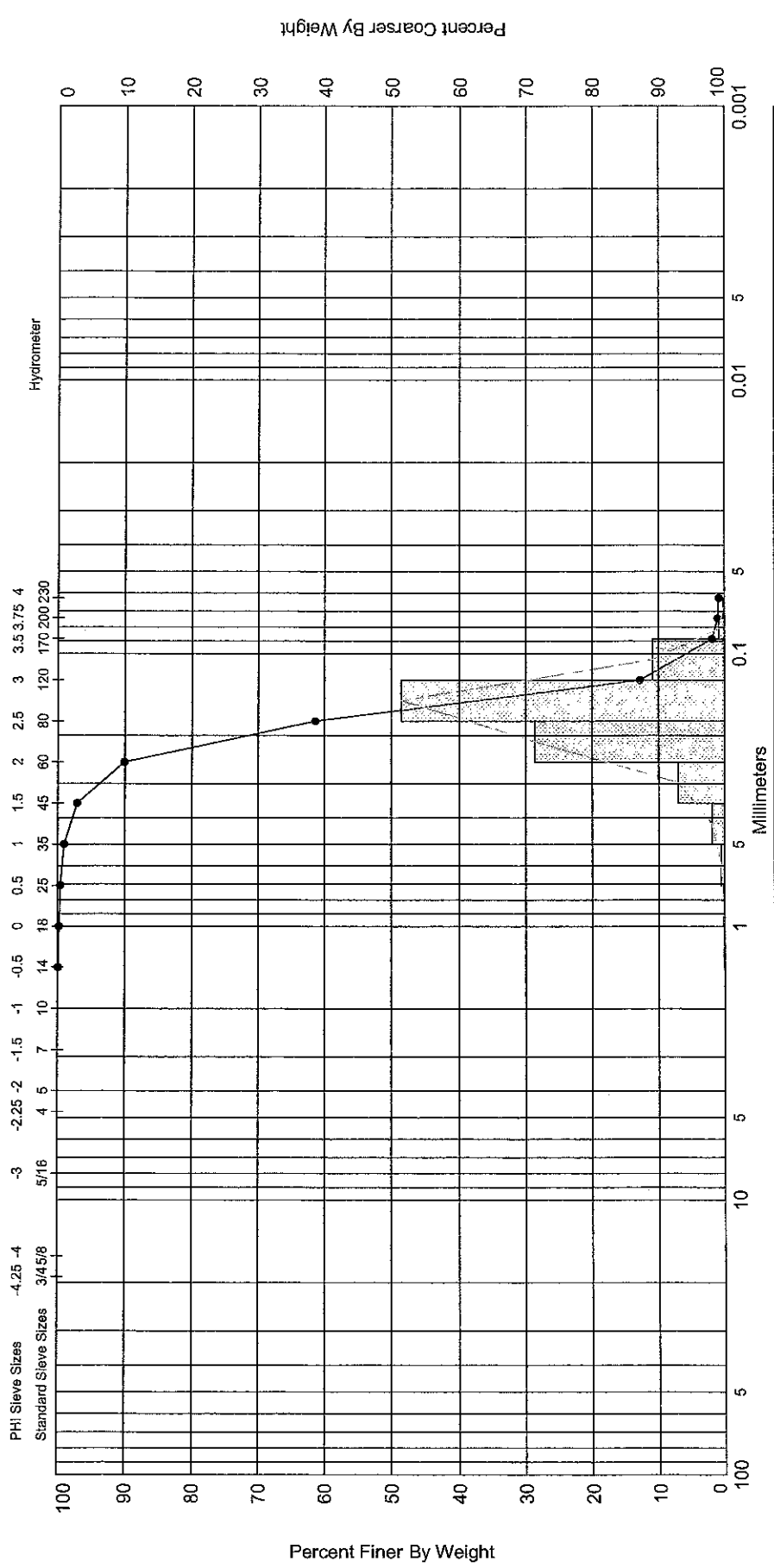
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
14	-0.50	1.41	0.03	0.08	0.03	0.08
18	0.00	1.00	0.04	0.12	0.06	0.20
25	0.50	0.71	0.06	0.20	0.12	0.40
35	1.00	0.50	0.16	0.54	0.28	0.94
45	1.50	0.35	0.58	1.93	0.87	2.87
60	2.00	0.25	2.14	7.06	3.01	9.93
80	2.50	0.18	8.68	28.69	11.69	38.62
120	3.00	0.13	14.70	48.58	26.39	87.20
170	3.50	0.09	3.30	10.90	29.69	98.10
200	3.75	0.07	0.25	0.84	29.94	98.94
230	4.00	0.06	0.06	0.20	30.00	99.14

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.36	2.97	2.87	2.62	2.26	2.11	1.65

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.55	0.17	0.48	-1.01	6.03

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse		Fine	Medium		Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE1-A4-01	●		SP	#200 - 1.06 #230 - 0.86	0.40	5.52	2.62	2.55	-1.01	6.03	0.48	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	11-23-05			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Eastings (ft):	570,778			
												Northings (ft):	2,192,131			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-02

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>571,920</b>	Northing (ft): <b>2,192,855</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.07</b>	Wash Weight (g): <b>29.38</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.35</b>	Fines (%): #200 - 2.02 #230 - 1.97	Organics (%): <b>0.68</b>	Carbonates (%): <b>12.93</b>	Shells (%):
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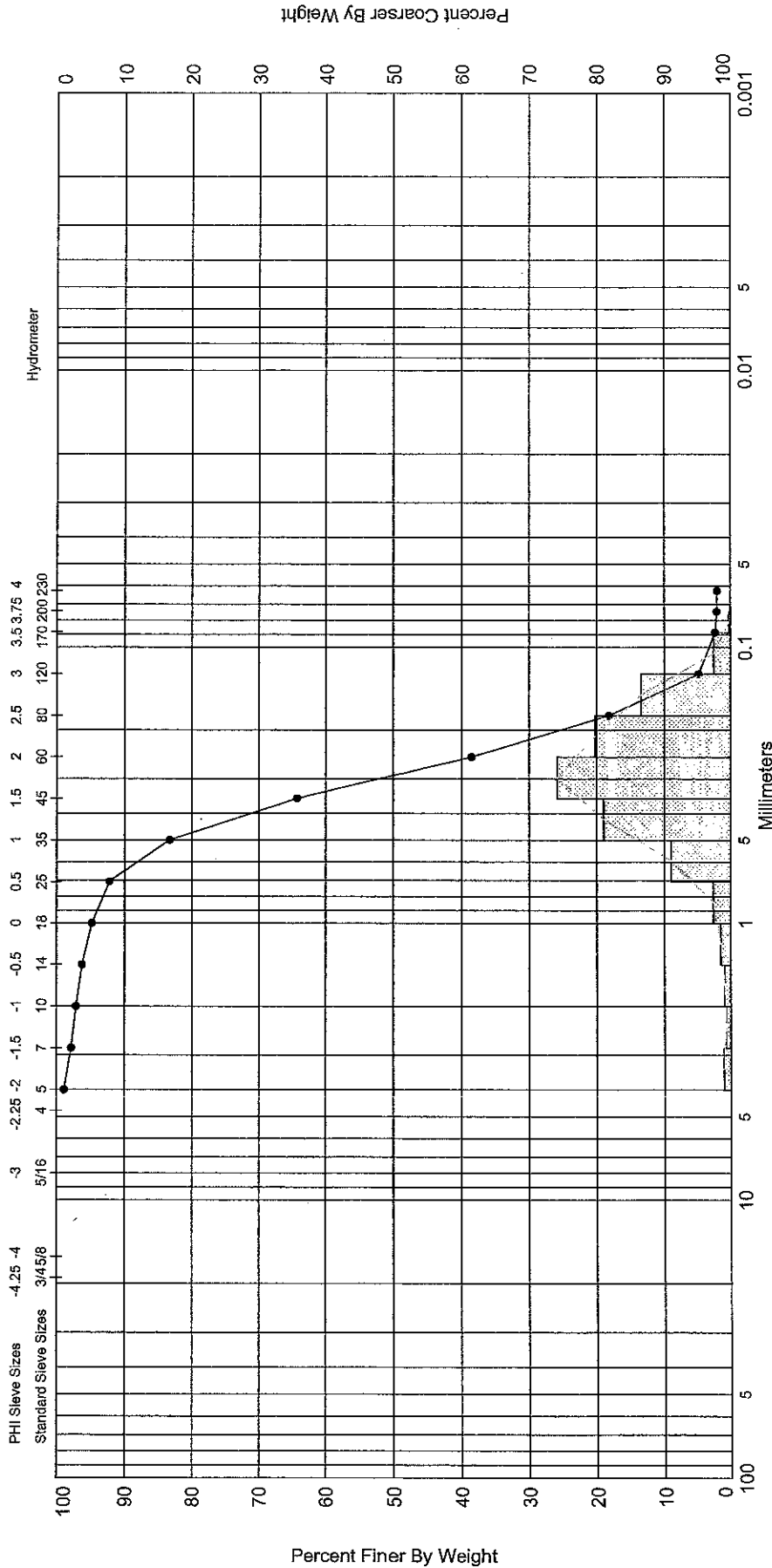
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.33	1.11	0.33	1.11
7	-1.50	2.83	0.31	1.02	0.64	2.13
10	-1.00	2.00	0.21	0.70	0.85	2.83
14	-0.50	1.41	0.27	0.89	1.12	3.72
18	0.00	1.00	0.44	1.47	1.56	5.19
25	0.50	0.71	0.77	2.56	2.33	7.75
35	1.00	0.50	2.70	8.98	5.03	16.73
45	1.50	0.35	5.70	18.97	10.74	35.70
60	2.00	0.25	7.76	25.82	18.50	61.52
80	2.50	0.18	6.09	20.26	24.59	81.78
120	3.00	0.13	4.04	13.44	28.63	95.22
170	3.50	0.09	0.75	2.50	29.39	97.72
200	3.75	0.07	0.08	0.26	29.47	97.98
230	4.00	0.06	0.02	0.05	29.48	98.03

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.58	2.33	1.78	1.22	0.96	-0.06

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.65	0.32	0.87	-0.91	5.15

GRANULARMETRIC REPORT MMS\_EAST.GPJ\_FL\_DEP\_ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	

Sample	NE1-A4-02	Symbol	●	Elev. (ft)		USCS	SP	% Fines	2.02	% Organics	0.68	% Carbonates	12.93	Median	1.78	Mean	1.65	Skew	-0.91	Kurt	5.15	Sort	0.87	Sample Information	MMS Field Study 2005 CT - 39075
Comments:	Depths and elevations based on measured values																								
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																									
Analysis Date: 11-23-05																									
Analyzed By: SEA Inc.																									
Easting (ft): 571,920																									
Northing (ft): 2,192,855																									
Horizontal System: NAD 1983																									
Vertical System: MSL																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-04

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>569,664</b>	Northing (ft): <b>2,192,333</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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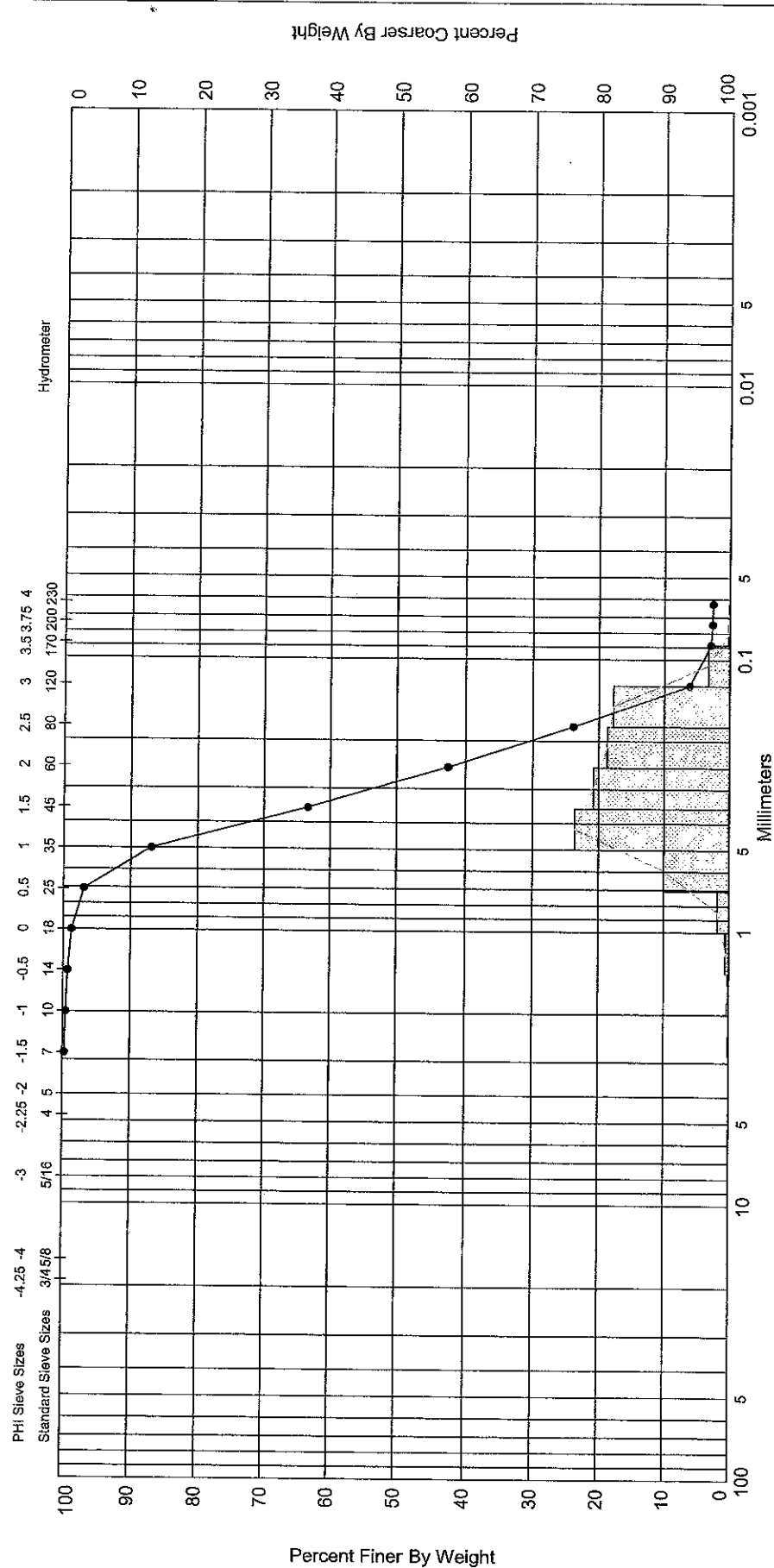
Dry Weight (g): <b>30.11</b>	Wash Weight (g): <b>29.49</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.52</b>	Fines (%): #200 - 2.63 #230 - 2.56	Organics (%): <b>0.53</b>	Carbonates (%): <b>6.60</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.08	0.27	0.08	0.27
10	-1.00	2.00	0.05	0.15	0.13	0.42
14	-0.50	1.41	0.08	0.26	0.21	0.68
18	0.00	1.00	0.17	0.55	0.37	1.23
25	0.50	0.71	0.54	1.79	0.91	3.02
35	1.00	0.50	3.03	10.07	3.94	13.09
45	1.50	0.35	7.10	23.59	11.05	36.68
60	2.00	0.25	6.26	20.78	17.30	57.46
80	2.50	0.18	5.63	18.69	22.93	76.15
120	3.00	0.13	5.34	17.74	28.27	93.89
170	3.50	0.09	0.97	3.23	29.24	97.12
200	3.75	0.07	0.07	0.25	29.32	97.37
230	4.00	0.06	0.02	0.07	29.34	97.44

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.17	2.72	2.47	1.82	1.25	1.06	0.60

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.8	0.29	0.76	-0.16	2.89

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL\_DEP ROSS.GDT 5/12/08



Sample	Gravel		Sand			Silt and Clay		Sample Information	
	Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort	Project Name:
NE1-A4-04			0.53	6.60	1.82	-0.16	2.89	0.76	MMS Field Study 2005 CT - 39075
Comments: Depths and elevations based on measured values									
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708									
Analyzed By: SEA Inc. Easting (ft): 569,664 Northing (ft): 2,192,333 Horizontal System: NAD 1983 Vertical System: MSL									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-06

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">570,126</p>	Northing (ft): <p style="text-align: center;">2,194,254</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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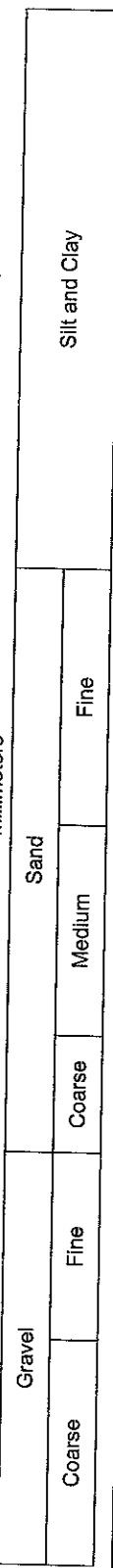
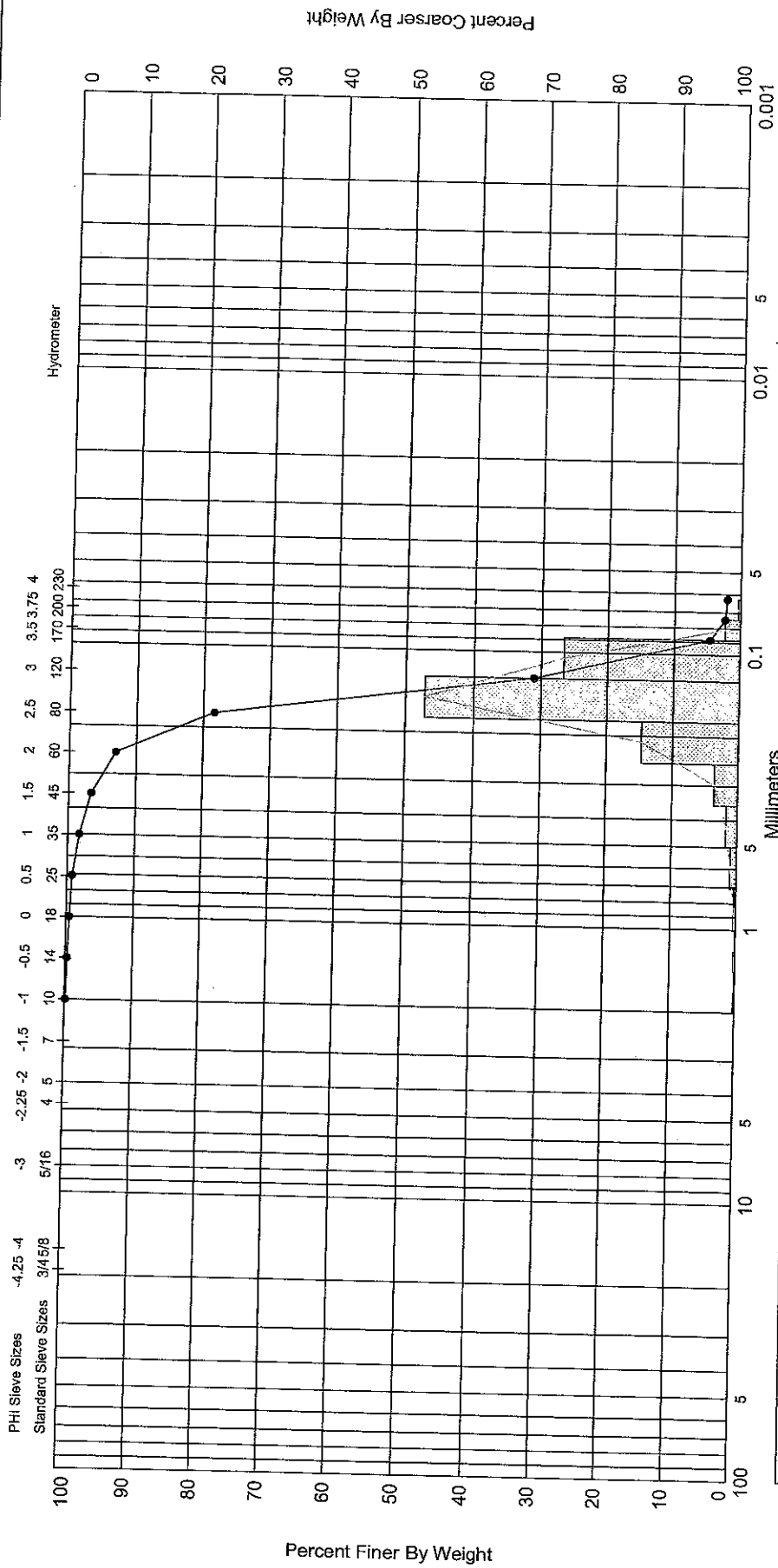
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 2.29 #230 - 1.96	Organics (%):	Carbonates (%):	Shells (%):
30.12	29.58	0.06	-0.02		0.64	7.46	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.04	0.12	0.04	0.12	
14	-0.50	1.41	0.04	0.15	0.08	0.27	
18	0.00	1.00	0.06	0.18	0.13	0.45	
25	0.50	0.71	0.10	0.34	0.24	0.79	
35	1.00	0.50	0.28	0.93	0.52	1.72	
45	1.50	0.35	0.50	1.65	1.02	3.37	
60	2.00	0.25	1.07	3.55	2.08	6.92	
80	2.50	0.18	4.43	14.69	6.51	21.61	
120	3.00	0.13	14.25	47.31	20.76	68.92	
170	3.50	0.09	8.00	26.56	28.76	95.48	
200	3.75	0.07	0.67	2.23	29.43	97.71	
230	4.00	0.06	0.10	0.33	29.53	98.04	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.49	3.28	3.11	2.80	2.54	2.31	1.73
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.73	0.15	0.54	-1.77	9.22	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
NE1-A4-06	—●—		SP	#200 - 2.23 #230 - 1.96	0.64	7.46	2.8	2.73	-1.77	9.22	0.54	Project Name:	MMS Field Study 2005 CT - 39075
Comments:												Analysis Date:	11-23-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	570,126
												Northing (ft):	2,194,254
												Horizontal System:	NAD 1983
												Vertical System:	MSL
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-08

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>571,468</b>	Northing (ft): <b>2,190,383</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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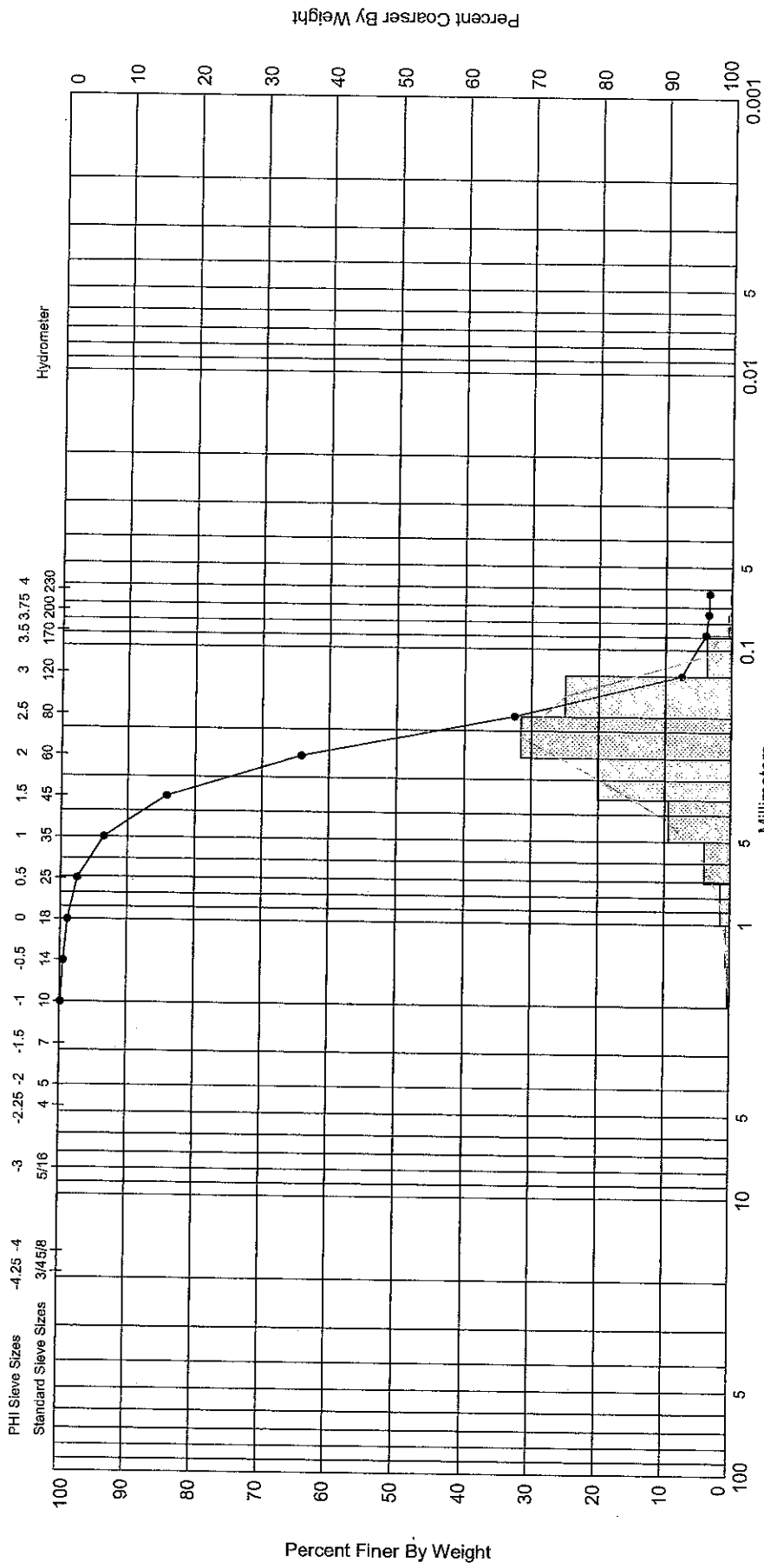
Dry Weight (g): <b>30.27</b>	Wash Weight (g): <b>29.25</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): <b>#200 - 3.45</b> <b>#230 - 3.33</b>	Organics (%): <b>0.55</b>	Carbonates (%): <b>8.35</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.03	0.11	0.03	0.11
14	-0.50	1.41	0.11	0.36	0.14	0.47
18	0.00	1.00	0.18	0.60	0.32	1.07
25	0.50	0.71	0.43	1.43	0.75	2.50
35	1.00	0.50	1.18	3.90	1.93	6.40
45	1.50	0.35	2.85	9.43	4.78	15.83
60	2.00	0.25	6.08	20.09	10.87	35.92
80	2.50	0.18	9.55	31.54	20.41	67.46
120	3.00	0.13	7.57	25.00	27.98	92.46
170	3.50	0.09	1.12	3.68	29.09	96.14
200	3.75	0.07	0.12	0.41	29.22	96.55
230	4.00	0.06	0.04	0.12	29.25	96.67

[Empty space for notes or additional data]

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.35	2.83	2.65	2.22	1.73	1.50	0.82
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.1	0.23	0.68	-0.88	4.37	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 3.45	#230 - 3.33	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information					
NE1-A4-08	●		SP				0.55	8.35	2.22	2.1	-0.88	4.37	0.68	Project Name:	MMS Field Study 2005 CT - 39075			Analysis Date:	11-23-05
Comments:														Analyzed By:	SEA Inc.				
Depths and elevations based on measured values														Easting (ft):	571,468				
														Northing (ft):	2,190,383				
														Horizontal System:	NAD 1983				
														Vertical System:	MSL				
														Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-09

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

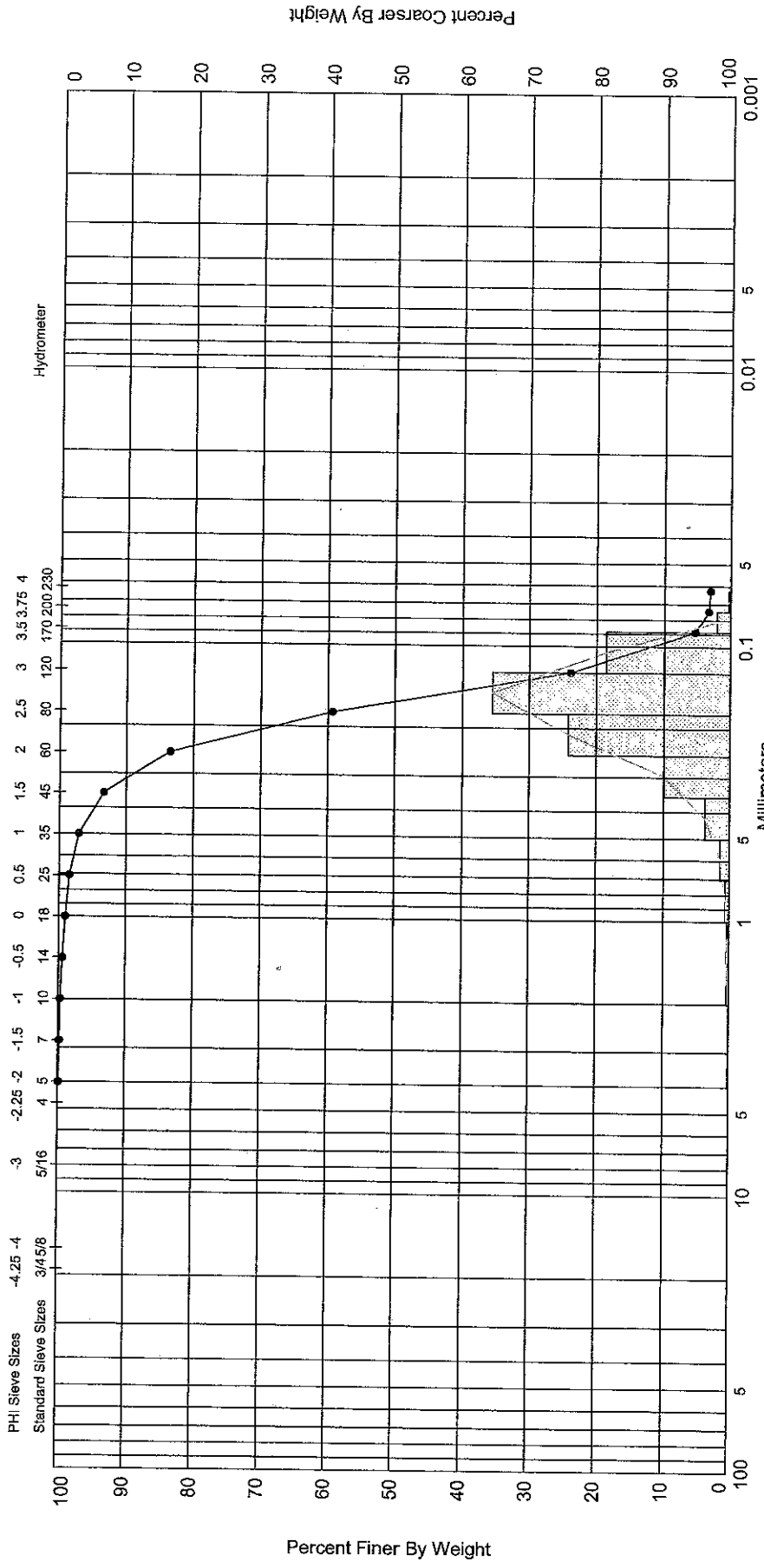
Easting (ft): <b>569,218</b>	Northing (ft): <b>2,190,425</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 3.28 #230 - 3.02	Organics (%):	Carbonates (%):	Shells (%):
30.14	29.29	0.06	0.03		0.70	8.88	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.03	0.09	0.03	0.09	
7	-1.50	2.83	0.02	0.08	0.05	0.17	
10	-1.00	2.00	0.03	0.11	0.08	0.28	
14	-0.50	1.41	0.08	0.27	0.16	0.55	
18	0.00	1.00	0.12	0.38	0.28	0.93	
25	0.50	0.71	0.17	0.57	0.45	1.50	
35	1.00	0.50	0.41	1.37	0.87	2.87	
45	1.50	0.35	1.13	3.73	1.99	6.60	
60	2.00	0.25	2.99	9.93	4.98	16.53	
80	2.50	0.18	7.28	24.16	12.27	40.69	
120	3.00	0.13	10.69	35.47	22.95	76.16	
170	3.50	0.09	5.59	18.53	28.54	94.69	
200	3.75	0.07	0.61	2.03	29.15	96.72	
230	4.00	0.06	0.08	0.26	29.23	96.98	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.54	3.21	2.98	2.63	2.18	1.97	1.29
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.5	0.18	0.68	-1.44	7.37	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand				Silt and Clay				
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A4-09	●	—	SP	#200 - 3.28 #230 - 3.02	0.70	8.88	2.63	2.5	-1.44	7.37	0.68	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	11-23-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	569,218		
												Northing (ft):	2,190,425		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-10

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>571,861</b>	Northing (ft): <b>2,194,528</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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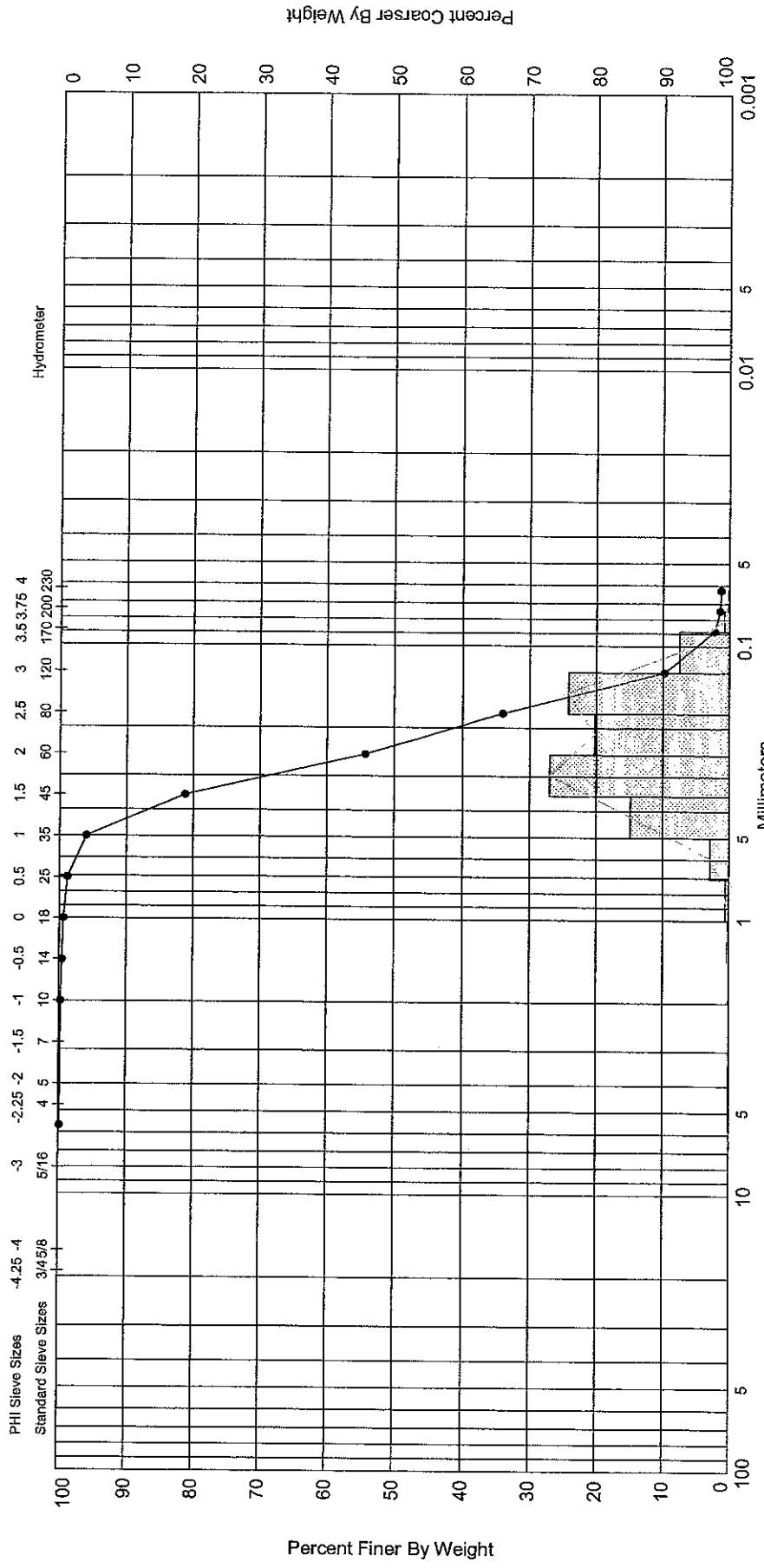
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.12</b>	Wash Weight (g): <b>29.79</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.13</b>	Fines (%): #200 - 1.42 #230 - 1.25	Organics (%): <b>0.53</b>	Carbonates (%): <b>7.34</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
3.5	-2.50	5.66	0.05	0.17	0.05	0.17	
10	-1.00	2.00	0.02	0.07	0.07	0.24	
14	-0.50	1.41	0.05	0.17	0.13	0.41	
18	0.00	1.00	0.07	0.22	0.19	0.63	
25	0.50	0.71	0.16	0.54	0.35	1.17	
35	1.00	0.50	0.85	2.82	1.20	3.99	
45	1.50	0.35	4.46	14.82	5.67	18.81	
60	2.00	0.25	8.12	26.95	13.78	45.76	
80	2.50	0.18	6.10	20.26	19.89	66.02	
120	3.00	0.13	7.29	24.21	27.18	90.23	
170	3.50	0.09	2.28	7.57	29.46	97.80	
200	3.75	0.07	0.23	0.78	29.69	98.58	
230	4.00	0.06	0.05	0.17	29.74	98.75	

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<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
3.32	2.87	2.69	2.10	1.61	1.41	1.03
<b>Moment Statistics</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
	2.1	0.23	0.69	-0.28	3.5	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE1-A4-10	●	—	SP	#200 - 1.42 #230 - 1.25	0.53	7.34	2.1	2.1	-0.28	3.5	0.69	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	11-23-05			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (ft):	571,861			
												Northing (ft):	2,194,528			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-12

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,272</b>	Northing (ft): <b>2,188,870</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.23</b>	Wash Weight (g): <b>29.91</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.19</b>	Fines (%): #200 - 1.33 #230 - 1.25	Organics (%): <b>0.44</b>	Carbonates (%): <b>6.79</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
7	-1.50	2.83	0.02	0.05	0.02	0.05	
10	-1.00	2.00	0.09	0.29	0.10	0.34	
14	-0.50	1.41	0.10	0.33	0.21	0.67	
18	0.00	1.00	0.11	0.37	0.32	1.04	
25	0.50	0.71	0.31	1.04	0.63	2.08	
35	1.00	0.50	1.01	3.34	1.64	5.42	
45	1.50	0.35	2.30	7.59	3.93	13.01	
60	2.00	0.25	3.97	13.13	7.90	26.14	
80	2.50	0.18	8.52	28.19	16.42	54.33	
120	3.00	0.13	10.86	35.92	27.28	90.25	
170	3.50	0.09	2.35	7.77	29.63	98.02	
200	3.75	0.07	0.20	0.65	29.83	98.67	
230	4.00	0.06	0.02	0.08	29.85	98.75	

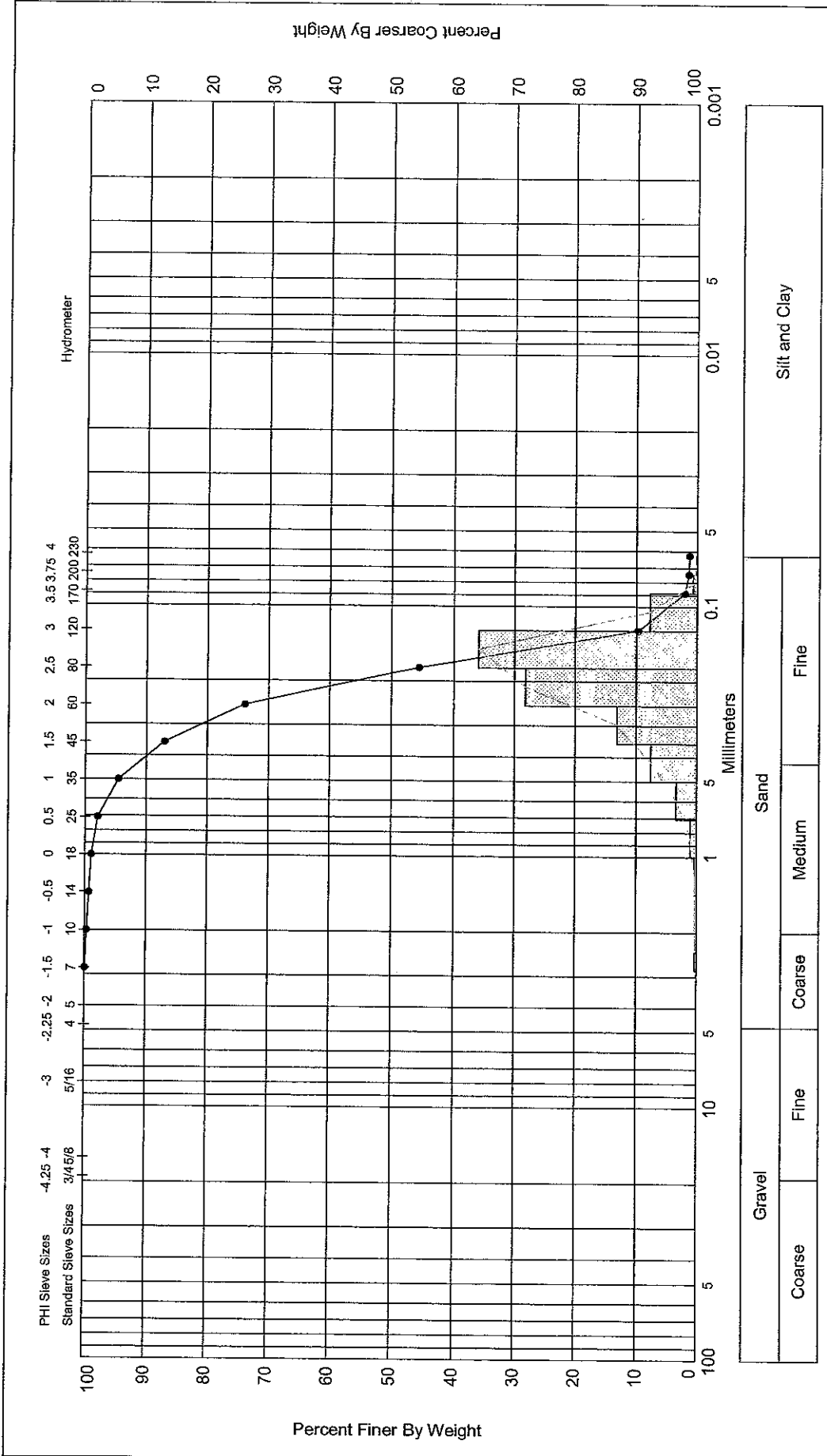
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	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.31	2.91	2.79	2.42	1.96	1.61	0.94
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	2.27	0.21	0.71	-1.29	5.8		

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



SIEVE ANALYSIS MMS EAST.GPJ FL DEF ROSS.GDT 3/31/06



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information					
							Coarse	Medium	Fine	Coarse	Medium	Fine	Project Name:	Analysis Date:	Analyzed By:	Easting (ft):	Northing (ft):	Horizontal System:
NE1-A4-12	●		SP	0.44	0.44	6.79	2.42	2.27	-1.29	5.8	0.71	MMS Field Study 2005 CT - 39075	11-23-05	SEA Inc.	573,272	2,188,870	NAD 1983	MSL
Comments:																		
Depths and elevations based on measured values																		
Scientific Environmental Applications																		
5575 Willoughby Drive																		
Melbourne, FL 32934																		
ph 321 254-2708																		
fax 321 254-2708																		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-13

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,801</b>	Northing (ft): <b>2,187,705</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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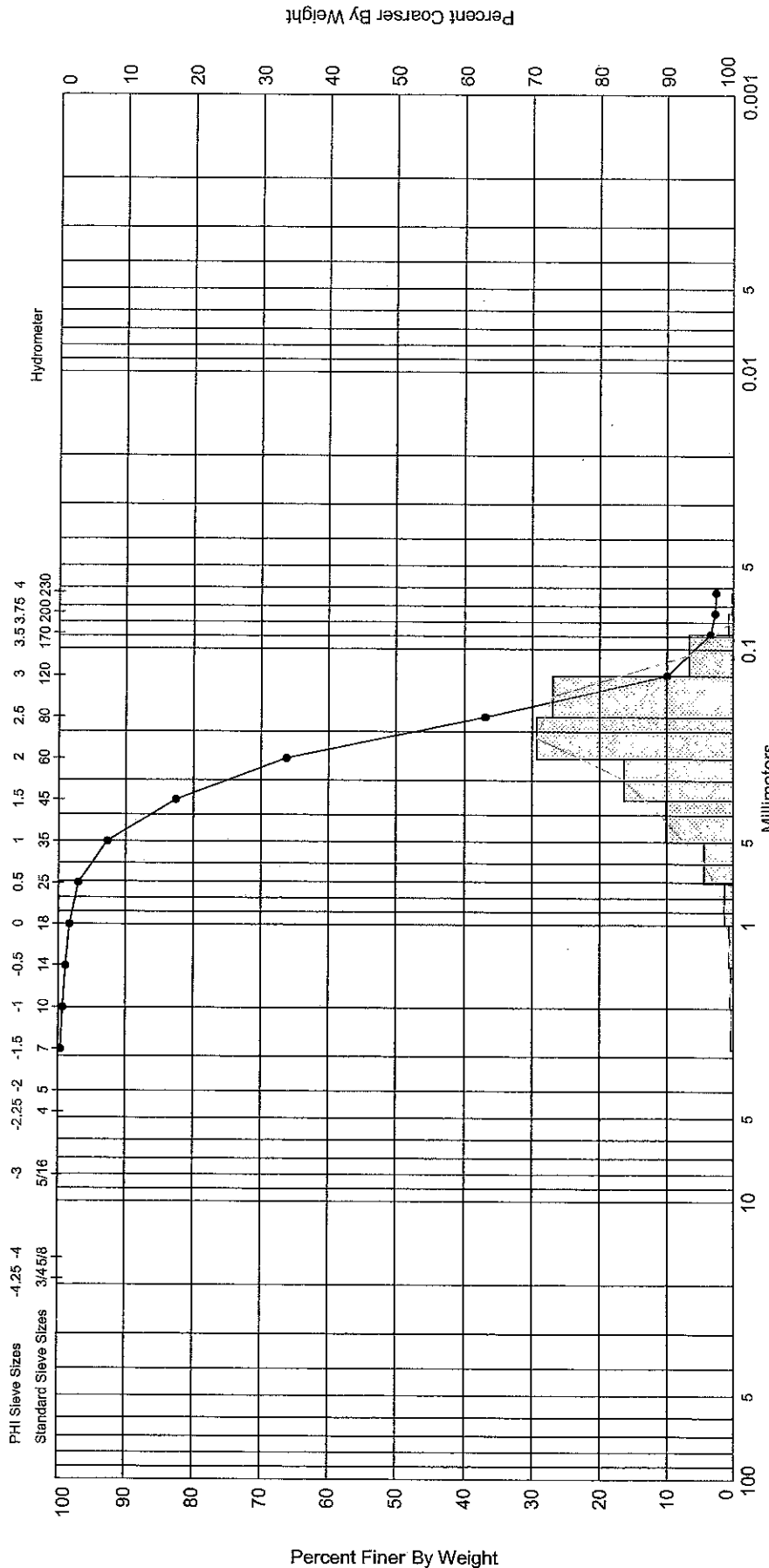
Dry Weight (g): <b>30.32</b>	Wash Weight (g): <b>29.50</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.16</b>	Fines (%): #200 - 2.70 #230 - 2.53	Organics (%): <b>0.54</b>	Carbonates (%): <b>6.83</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.11	0.36	0.11	0.36
10	-1.00	2.00	0.10	0.31	0.20	0.67
14	-0.50	1.41	0.13	0.41	0.33	1.08
18	0.00	1.00	0.18	0.59	0.51	1.67
25	0.50	0.71	0.39	1.30	0.90	2.97
35	1.00	0.50	1.31	4.31	2.21	7.28
45	1.50	0.35	3.08	10.14	5.28	17.42
60	2.00	0.25	4.95	16.34	10.24	33.76
80	2.50	0.18	8.89	29.32	19.12	63.08
120	3.00	0.13	8.17	26.94	27.29	90.02
170	3.50	0.09	2.00	6.60	29.29	96.62
200	3.75	0.07	0.21	0.68	29.50	97.30
230	4.00	0.06	0.05	0.17	29.55	97.47

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.38	2.89	2.72	2.28	1.73	1.43	0.74
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.13	0.23	0.75	-0.97	4.82	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine

Sample	NE1-A4-13	Symbol	●	Elev. (ft)		USCS	SP	% Fines #200 - 2.70	2.70	% Organics #230 - 2.53	2.53	% Carbonates	6.83	Median	2.28	Mean	2.13	Skew	-0.97	Kurt	4.82	Sort	0.75
Sample Information		MMS Field Study 2005 CT - 39075																					
Project Name:		MMS Field Study 2005 CT - 39075																					
Analysis Date:		11-23-05																					
Analyzed By:		SEA Inc.																					
Easting (ft):		573,801																					
Northing (ft):		2,187,705																					
Horizontal System:		NAD 1983																					
Vertical System:		MSL																					
Comments:		Depths and elevations based on measured values																					
		Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																					

SIEVE ANALYSIS MMS EAST.GPJ FL DEP ROSS.GDT 3/31/08

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-14

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,081</b>	Northing (ft): <b>2,188,094</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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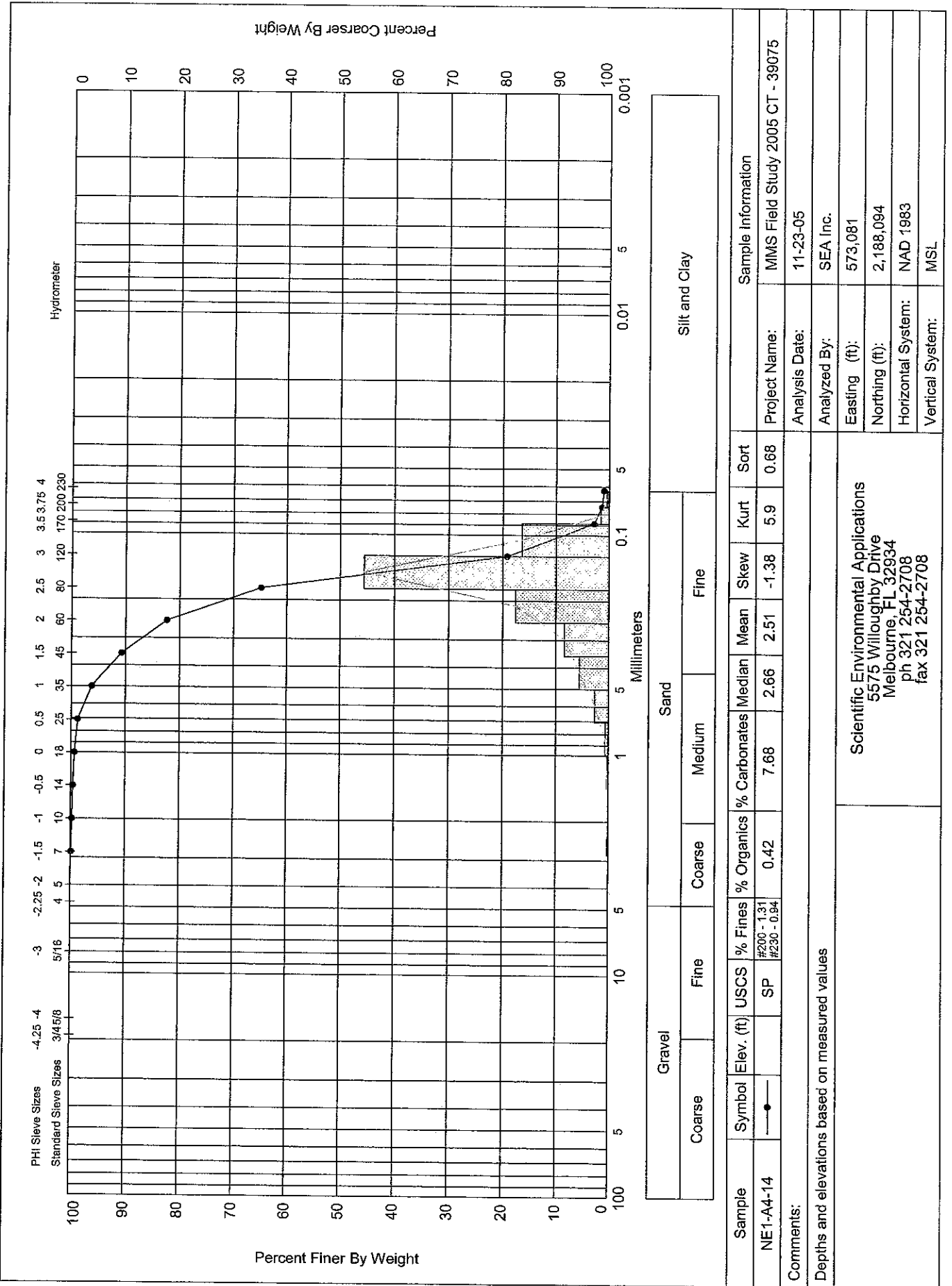
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.26</b>	Wash Weight (g): <b>29.94</b>	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>-0.20</b>	Fines (%): #200 - 1.31 #230 - 0.94	Organics (%): <b>0.42</b>	Carbonates (%): <b>7.68</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.03	0.09	0.03	0.09	
10	-1.00	2.00	0.04	0.14	0.07	0.23	
14	-0.50	1.41	0.04	0.14	0.11	0.37	
18	0.00	1.00	0.08	0.25	0.19	0.62	
25	0.50	0.71	0.18	0.58	0.36	1.20	
35	1.00	0.50	0.79	2.59	1.15	3.79	
45	1.50	0.35	1.65	5.47	2.80	9.26	
60	2.00	0.25	2.54	8.39	5.34	17.65	
80	2.50	0.18	5.32	17.58	10.66	35.23	
120	3.00	0.13	13.79	45.58	24.45	80.81	
170	3.50	0.09	4.95	16.36	29.40	97.17	
200	3.75	0.07	0.46	1.52	29.86	98.69	
230	4.00	0.06	0.11	0.37	29.98	99.06	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	3.10	2.94	2.66	2.21	1.90	1.11
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.51	0.18	0.68	-1.38	5.9	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Comments:  
 Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	11-23-05
Analyzed By:	SEA Inc.
Easting (ft):	573,081
Northing (ft):	2,188,094
Horizontal System:	NAD 1983
Vertical System:	MSL

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-15

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>572,417</b>	Northing (ft): <b>2,187,090</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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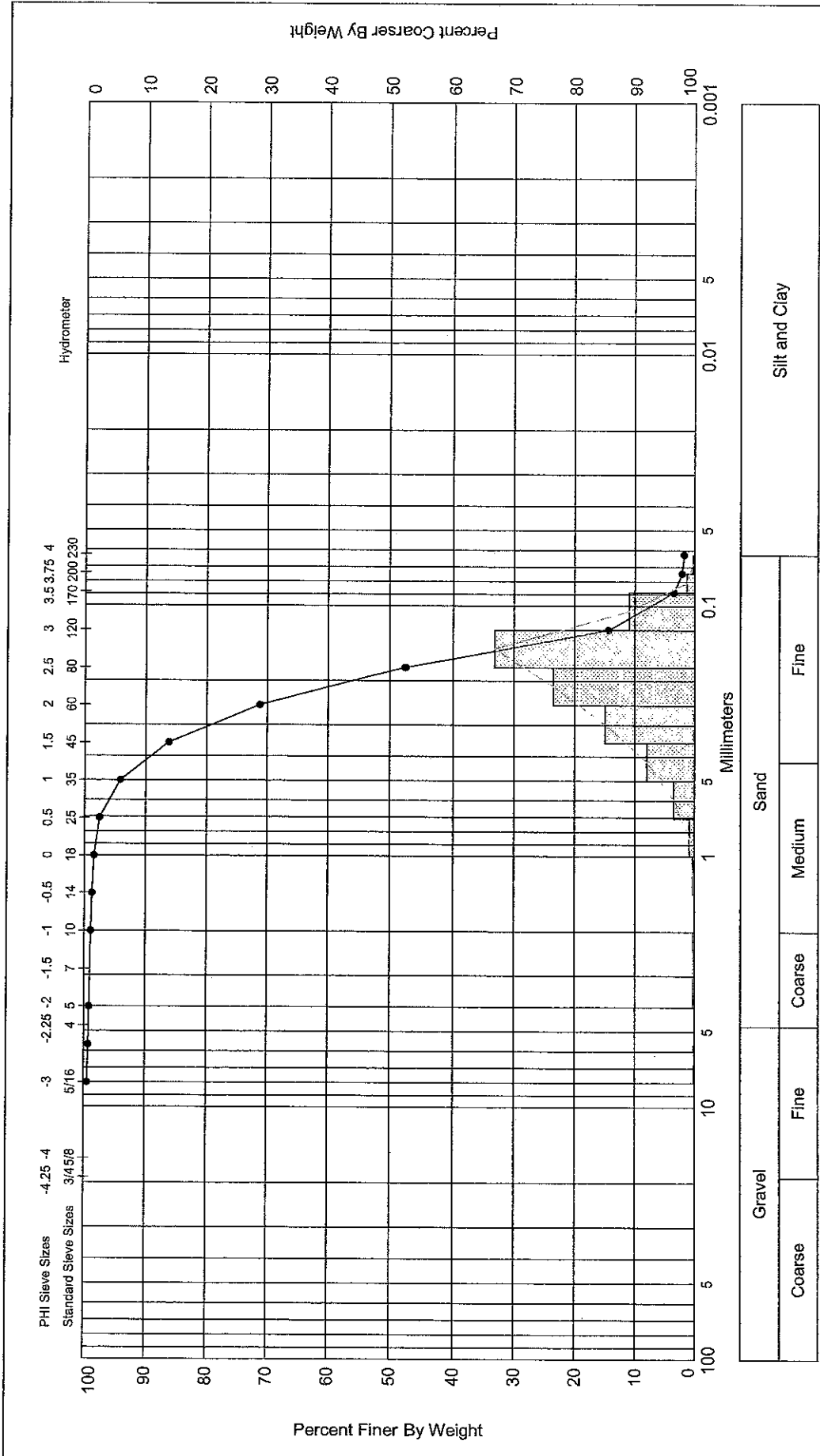
Dry Weight (g): <b>30.15</b>	Wash Weight (g): <b>29.69</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.22</b>	Fines (%): #200 - 2.09 #230 - 1.77	Organics (%): <b>0.49</b>	Carbonates (%): <b>7.82</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5/16"	-3.00	8.00	0.16	0.54	0.16	0.54
3.5	-2.50	5.66	0.05	0.16	0.21	0.70
5	-2.00	4.00	0.03	0.11	0.24	0.81
10	-1.00	2.00	0.08	0.26	0.32	1.07
14	-0.50	1.41	0.05	0.18	0.38	1.25
18	0.00	1.00	0.10	0.32	0.47	1.57
25	0.50	0.71	0.27	0.88	0.74	2.45
35	1.00	0.50	1.02	3.39	1.76	5.84
45	1.50	0.35	2.40	7.97	4.16	13.81
60	2.00	0.25	4.52	15.00	8.69	28.81
80	2.50	0.18	7.10	23.56	15.79	52.37
120	3.00	0.13	10.01	33.19	25.80	85.56
170	3.50	0.09	3.32	11.01	29.12	96.57
200	3.75	0.07	0.40	1.34	29.52	97.91
230	4.00	0.06	0.10	0.32	29.62	98.23

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	2.98	2.84	2.45	1.87	1.57	0.88
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.26	0.21	0.77	-1.39	8.07	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE1-A4-15	●	—	SP	#200 - 2.09 #230 - 1.77	0.49	7.82	2.45	2.26	-1.39	8.07	0.77	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	11-23-05			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (ft):	572,417			
												Northing (ft):	2,187,090			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-17

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">573,053</p>	Northing (ft): <p style="text-align: center;">2,187,027</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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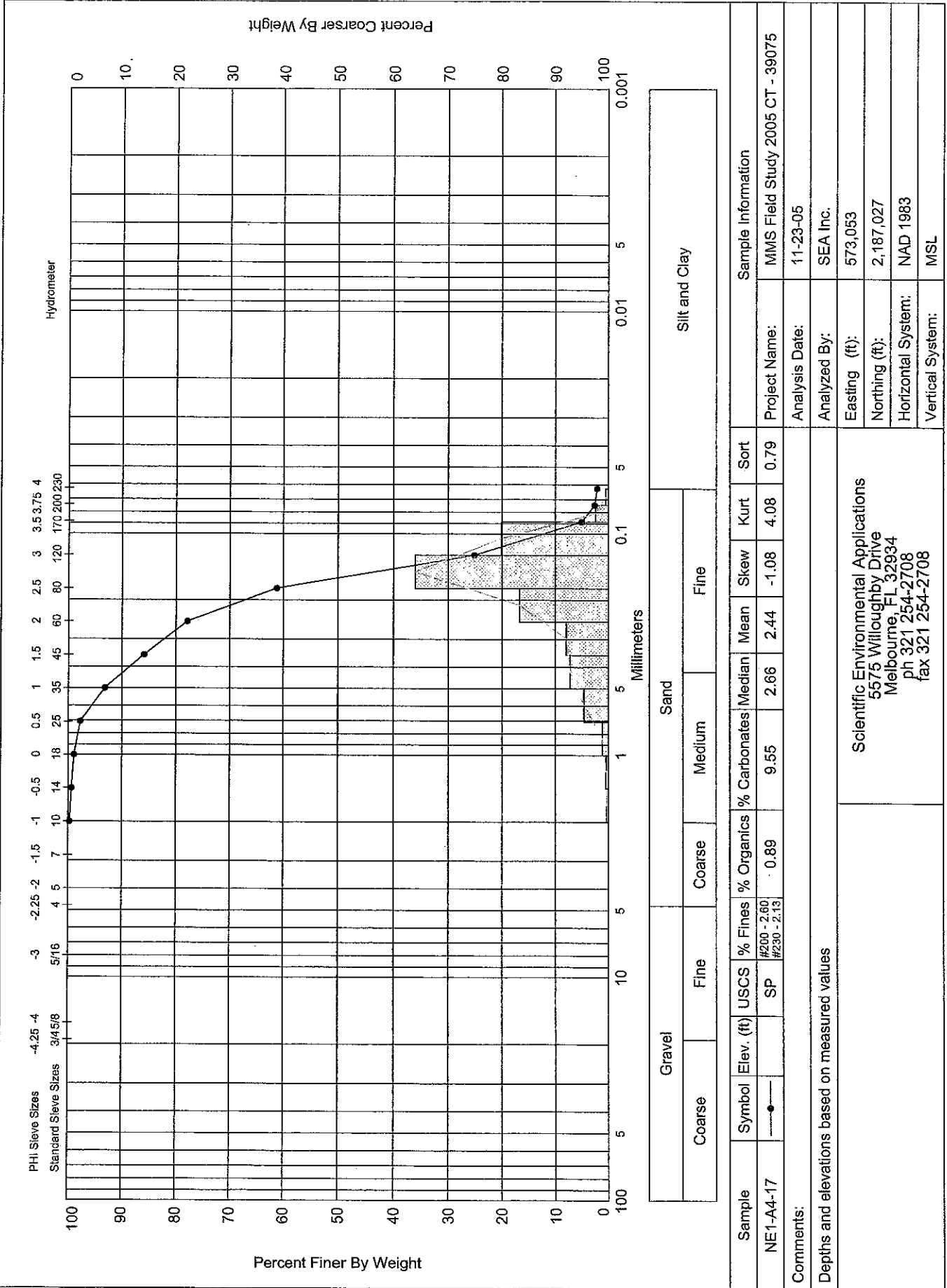
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 2.60 #230 - 2.13	Organics (%):	Carbonates (%):	Shells (%):
30.13	29.55	0.06	0.05		0.89	9.55	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.09	0.29	0.09	0.29	
14	-0.50	1.41	0.11	0.36	0.19	0.65	
18	0.00	1.00	0.13	0.44	0.33	1.09	
25	0.50	0.71	0.34	1.13	0.67	2.22	
35	1.00	0.50	1.39	4.60	2.05	6.82	
45	1.50	0.35	2.20	7.30	4.25	14.12	
60	2.00	0.25	2.40	7.98	6.66	22.10	
80	2.50	0.18	5.02	16.68	11.68	38.78	
120	3.00	0.13	10.87	36.07	22.55	74.85	
170	3.50	0.09	6.05	20.09	28.60	94.94	
200	3.75	0.07	0.74	2.46	29.34	97.40	
230	4.00	0.06	0.14	0.47	29.48	97.87	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.51	3.23	3.00	2.66	2.09	1.62	0.80
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.44	0.18	0.79	-1.08	4.08	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
NE1-A4-17	●—		SP	#200 - 2.60 #230 - 2.13	0.89	9.55	2.66	2.44	-1.08	4.08	0.79	Project Name:	MMS Field Study 2005 CT - 39075
Comments:												Analysis Date:	11-23-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	573,053
												Northing (ft):	2,187,027
												Horizontal System:	NAD 1983
												Vertical System:	MSL
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-18

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

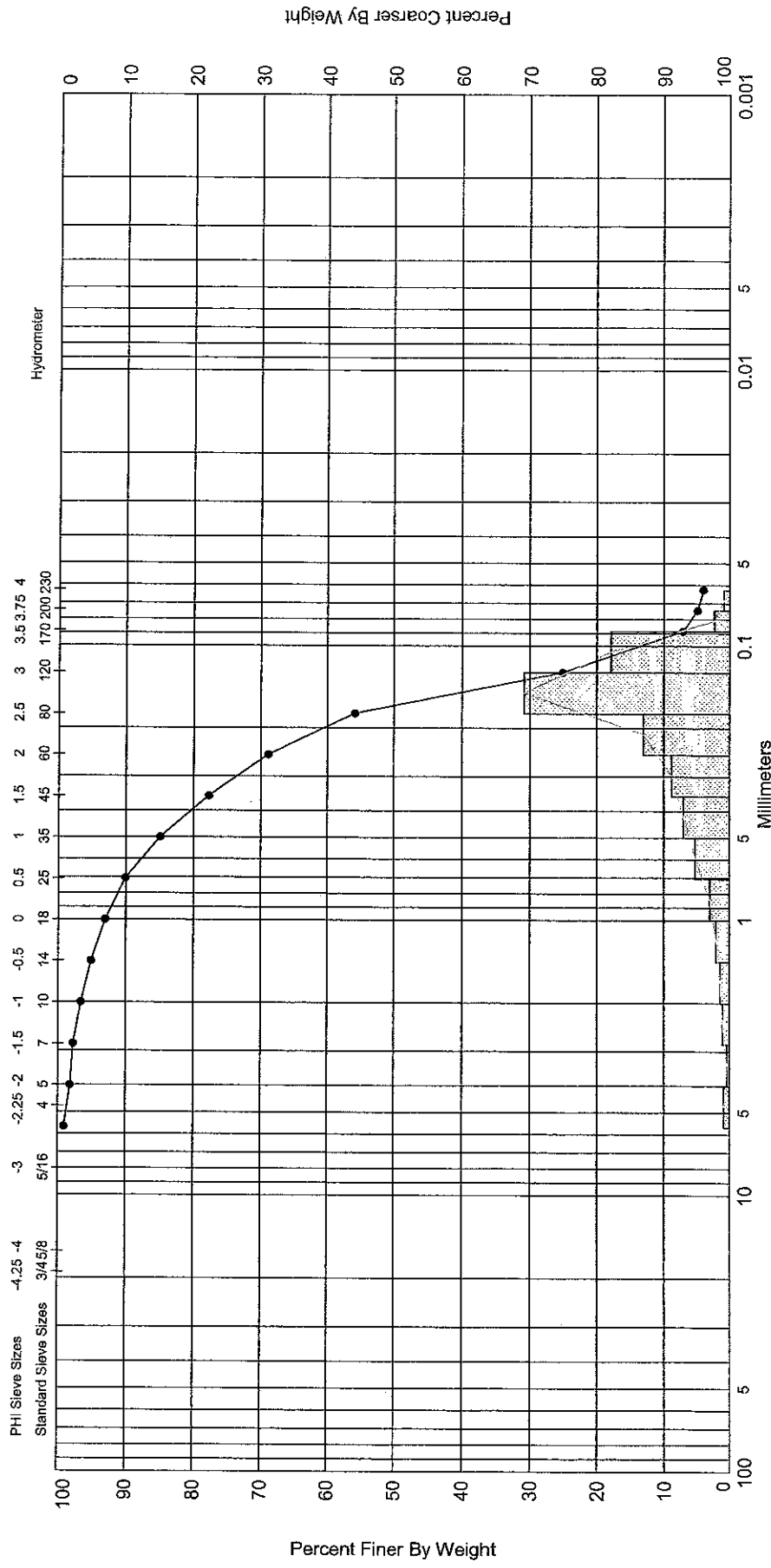
Easting (ft): <p style="text-align: center;">572,296</p>	Northing (ft): <p style="text-align: center;">2,189,217</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 4.83 #230 - 3.94	Organics (%):	Carbonates (%):	Shells (%):
30.08	29.05	0.05	0.37		1.38	13.17	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.28	0.92	0.28	0.92	
5	-2.00	4.00	0.27	0.91	0.55	1.83	
7	-1.50	2.83	0.13	0.44	0.68	2.27	
10	-1.00	2.00	0.33	1.10	1.01	3.37	
14	-0.50	1.41	0.44	1.48	1.45	4.85	
18	0.00	1.00	0.62	2.07	2.08	6.92	
25	0.50	0.71	0.91	3.02	2.98	9.94	
35	1.00	0.50	1.55	5.16	4.54	15.10	
45	1.50	0.35	2.15	7.15	6.69	22.25	
60	2.00	0.25	2.67	8.88	9.36	31.13	
80	2.50	0.18	3.90	12.97	13.26	44.10	
120	3.00	0.13	9.27	30.82	22.53	74.92	
170	3.50	0.09	5.40	17.94	27.93	92.86	
200	3.75	0.07	0.70	2.31	28.63	95.17	
230	4.00	0.06	0.27	0.89	28.89	96.06	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.73	3.25	3.00	2.60	1.65	1.06	-0.46
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.13	0.23	1.16	-1.34	4.87	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	NE1-A4-18	Symbol	●	Elev. (ft)		USCS	SP	% Fines	4.83	% Organics	1.38	% Carbonates	13.17	Median	2.6	Mean	2.13	Skew	-1.34	Kurt	4.87	Sort	1.16	Sample Information	
								#200 - 4.83																Project Name:	MMS Field Study 2005 CT - 39075
Comments:																							Analysis Date:	11-23-05	
Depths and elevations based on measured values																							Analyzed By:	SEA Inc.	
																							Easting (ft):	572,296	
																							Northing (ft):	2,189,217	
																							Horizontal System:	NAD 1983	
																							Vertical System:	MSL	

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-19

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>574,245</b>	Northing (ft): <b>2,189,043</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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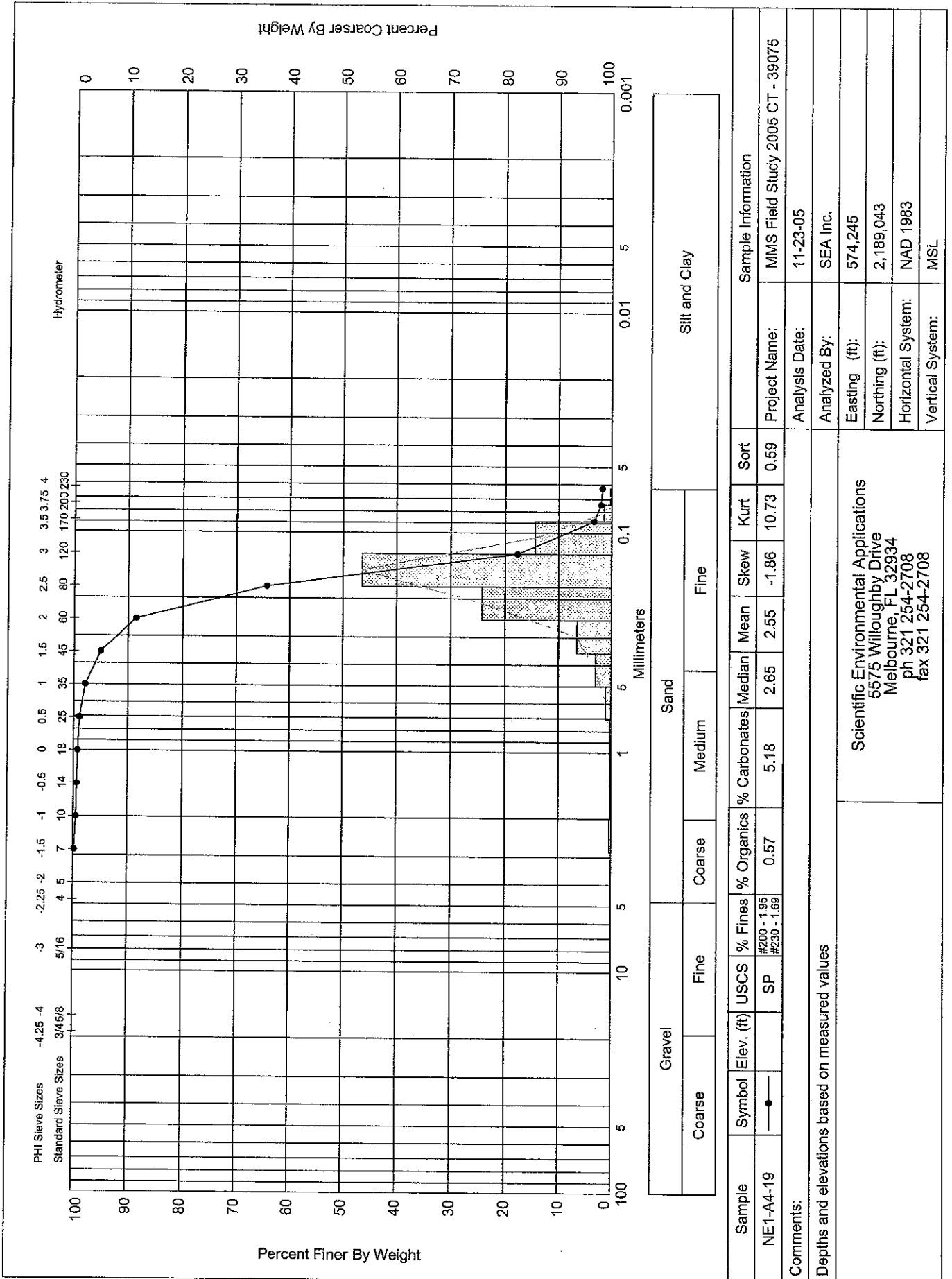
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.95 #230 - 1.69	Organics (%):	Carbonates (%):	Shells (%):
30.13	29.69	0.02	0.16		0.57	5.18	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.05	0.17	0.05	0.17	
10	-1.00	2.00	0.10	0.33	0.15	0.50	
14	-0.50	1.41	0.04	0.13	0.19	0.63	
18	0.00	1.00	0.05	0.15	0.23	0.78	
25	0.50	0.71	0.09	0.30	0.32	1.08	
35	1.00	0.50	0.30	1.00	0.62	2.08	
45	1.50	0.35	0.87	2.90	1.50	4.98	
60	2.00	0.25	1.97	6.53	3.47	11.51	
80	2.50	0.18	7.30	24.23	10.77	35.74	
120	3.00	0.13	14.02	46.52	24.78	82.26	
170	3.50	0.09	4.35	14.44	29.14	96.70	
200	3.75	0.07	0.41	1.35	29.54	98.05	
230	4.00	0.06	0.08	0.26	29.62	98.31	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.06	2.92	2.65	2.28	2.09	1.50
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.55	0.17	0.59	-1.86	10.73	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Comments:  
 Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-21

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>570,779</b>	Northing (ft): <b>2,183,802</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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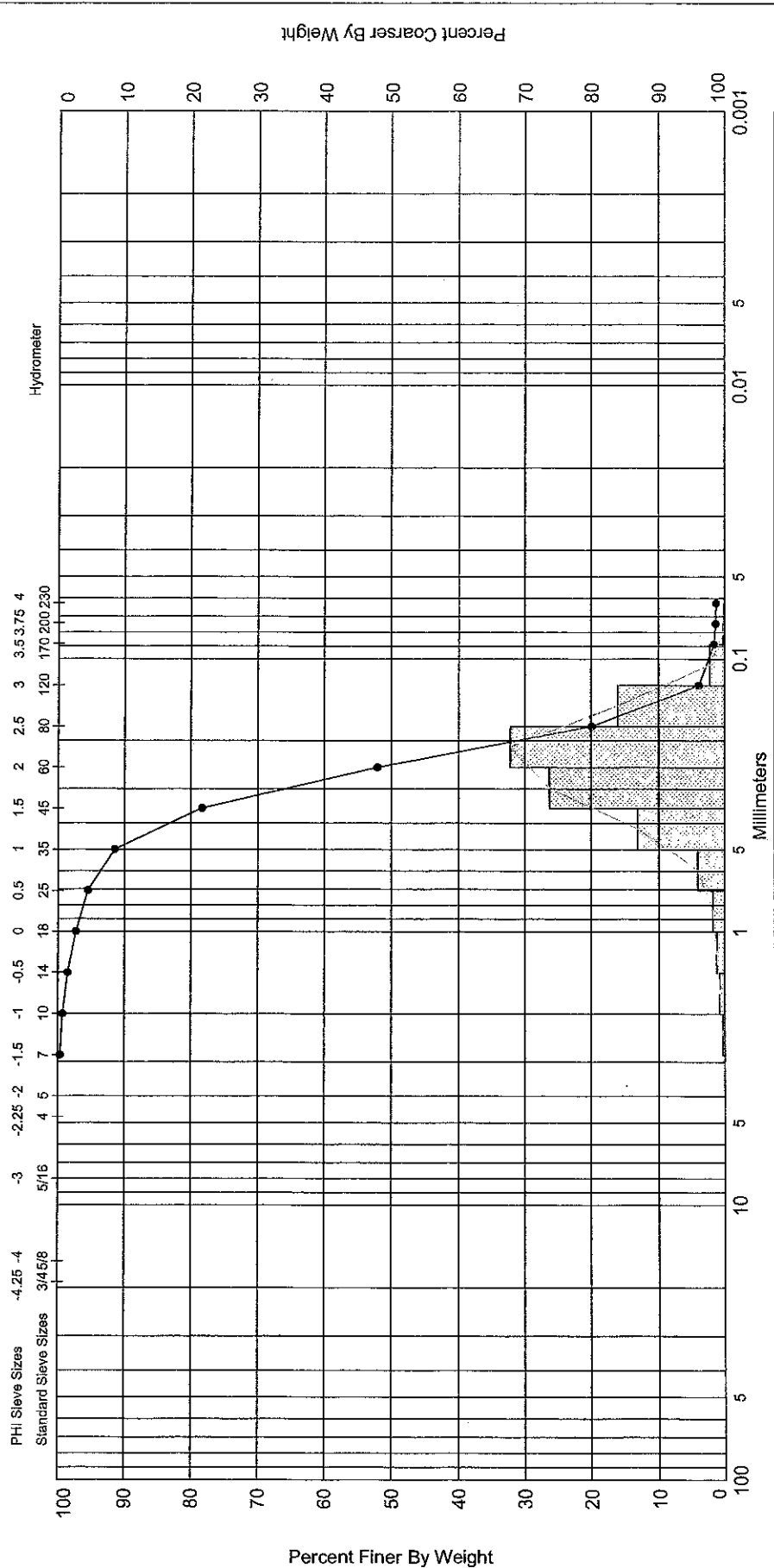
Dry Weight (g): <b>30.13</b>	Wash Weight (g): <b>29.78</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.14</b>	Fines (%): #200 - 1.36 #230 - 1.29	Organics (%): <b>0.60</b>	Carbonates (%): <b>8.69</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.09	0.31	0.09	0.31
10	-1.00	2.00	0.11	0.36	0.20	0.67
14	-0.50	1.41	0.23	0.77	0.43	1.44
18	0.00	1.00	0.38	1.26	0.81	2.70
25	0.50	0.71	0.55	1.81	1.36	4.51
35	1.00	0.50	1.22	4.04	2.58	8.55
45	1.50	0.35	3.94	13.09	6.52	21.64
60	2.00	0.25	7.92	26.30	14.44	47.94
80	2.50	0.18	9.69	32.15	24.13	80.09
120	3.00	0.13	4.84	16.05	28.97	96.14
170	3.50	0.09	0.67	2.24	29.64	98.38
200	3.75	0.07	0.08	0.26	29.72	98.64
230	4.00	0.06	0.02	0.07	29.74	98.71

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.62	2.42	2.03	1.56	1.28	0.56
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.91	0.27	0.72	-1.06	5.34	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay			
Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort	
					-1.06	5.34	0.72	
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean
NE1-A4-21	●		SP	#200 - 1.36 #230 - 1.29	0.60	8.69	2.03	1.91
Comments:								Sample Information
Depths and elevations based on measured values								Project Name:
								MMS Field Study 2005 CT - 39075
								Analysis Date:
								11-23-05
								Analyzed By:
								SEA Inc.
								Easting (ft):
								570,779
								Northing (ft):
								2,183,802
								Horizontal System:
								NAD 1983
								Vertical System:
								MSL
								Scientific Environmental Applications
								5575 Willoughby Drive
								Melbourne, FL 32934
								ph 321 254-2708
								fax 321 254-2708

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-23

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>576,242</b>	Northing (ft): <b>2,172,236</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.11</b>	Wash Weight (g): <b>29.75</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.19</b>	Fines (%): #200 - 1.46 #230 - 1.43	Organics (%): <b>0.58</b>	Carbonates (%): <b>13.12</b>	Shells (%):
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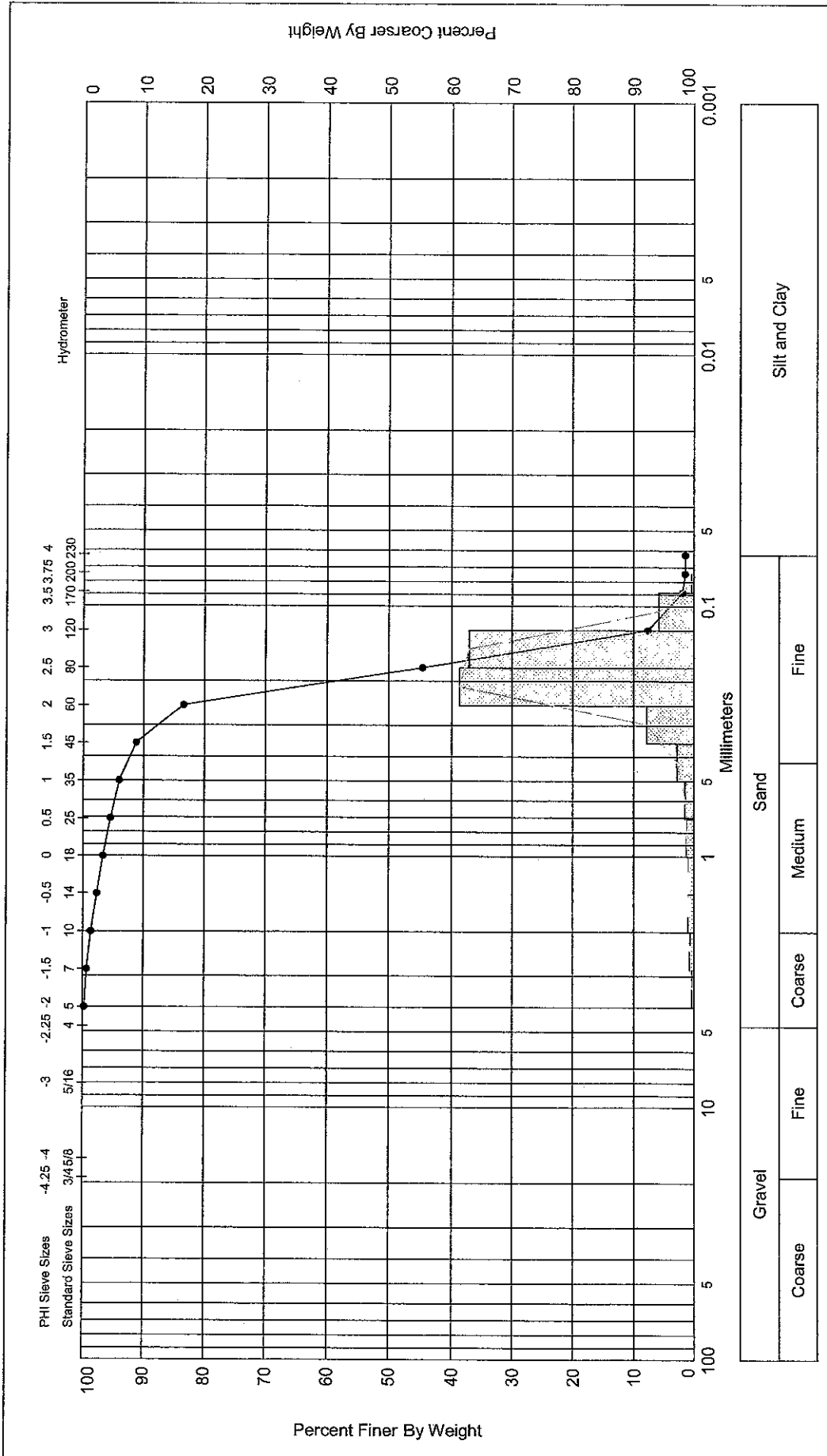
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.07	0.22	0.06	0.22
7	-1.50	2.83	0.12	0.41	0.19	0.63
10	-1.00	2.00	0.21	0.69	0.40	1.32
14	-0.50	1.41	0.29	0.95	0.68	2.27
18	0.00	1.00	0.30	0.99	0.98	3.26
25	0.50	0.71	0.37	1.23	1.35	4.49
35	1.00	0.50	0.44	1.45	1.79	5.94
45	1.50	0.35	0.85	2.82	2.64	8.76
60	2.00	0.25	2.35	7.82	4.99	16.58
80	2.50	0.18	11.64	38.67	16.64	55.25
120	3.00	0.13	11.16	37.08	27.80	92.33
170	3.50	0.09	1.74	5.79	29.54	98.12
200	3.75	0.07	0.13	0.42	29.67	98.54
230	4.00	0.06	0.01	0.03	29.68	98.57

(Empty space reserved for notes or additional data)

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.23	2.89	2.77	2.43	2.11	1.96	0.68
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.28	0.21	0.77	-2.43	10.89	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEF ROSS.GDT 5/12/08





Sample	Symbol	Elev. (ft)	USCS		% Fines	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information	
			SP	SK				ME	MEAN	SK	MEAN	SK	MEAN	Project Name:	Analysis Date:
NE1-A4-23	●		SP	SK	ME	13.12	2.43	2.28	-2.43	10.89	0.77	MMS Field Study 2005 CT - 39075	11-23-05	MMS Field Study 2005 CT - 39075	
Comments:															
Depths and elevations based on measured values															
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708															
Analyzed By: SEA Inc.															
Easting (ft): 576,242															
Northing (ft): 2,172,236															
Horizontal System: NAD 1983															
Vertical System: MSL															

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-24

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>575,213</b>	Northing (ft): <b>2,182,367</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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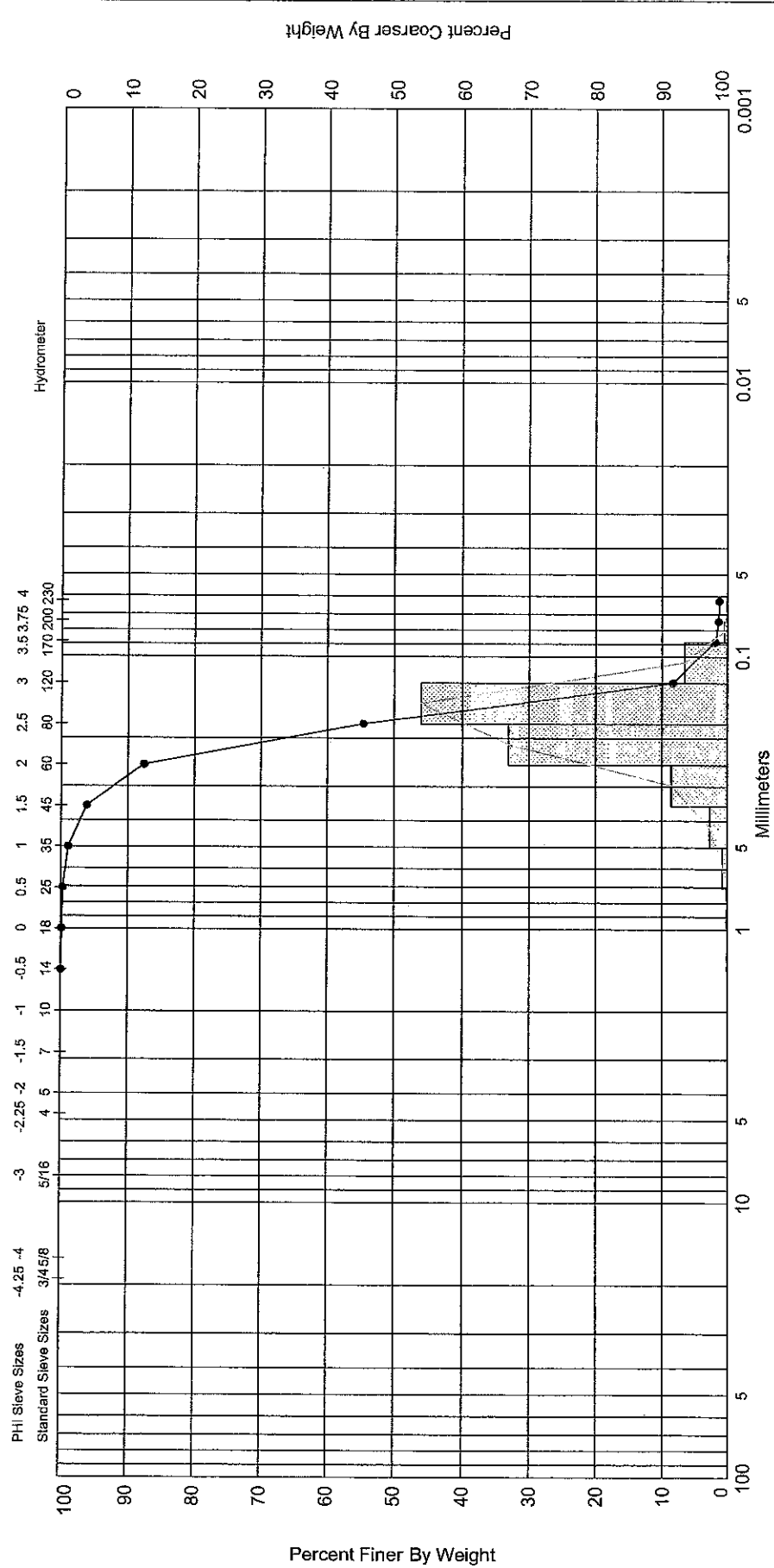
Dry Weight (g): <b>30.13</b>	Wash Weight (g): <b>29.75</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.03</b>	Fines (%): #200 - 1.36 #230 - 1.25	Organics (%): <b>0.33</b>	Carbonates (%): <b>5.49</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
14	-0.50	1.41	0.01	0.04	0.01	0.04
18	0.00	1.00	0.03	0.08	0.04	0.12
25	0.50	0.71	0.05	0.15	0.08	0.27
35	1.00	0.50	0.23	0.78	0.32	1.05
45	1.50	0.35	0.83	2.75	1.15	3.80
60	2.00	0.25	2.59	8.61	3.74	12.41
80	2.50	0.18	9.95	33.04	13.69	45.45
120	3.00	0.13	13.92	46.20	27.62	91.65
170	3.50	0.09	1.96	6.49	29.57	98.14
200	3.75	0.07	0.15	0.50	29.72	98.64
230	4.00	0.06	0.03	0.11	29.76	98.75

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.26	2.92	2.82	2.55	2.19	2.05	1.57
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.47	0.18	0.47	-1	5.47	

GRANULOMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A4-24	●		SP	1.36	0.33	5.49	2.55	2.47	-1	5.47	0.47	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	11-23-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	575,213		
												Northing (ft):	2,182,367		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-25

Analysis Date: 11-23-05

Analyzed By: SEA Inc

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">570,054</p>	Northing (ft): <p style="text-align: center;">2,186,325</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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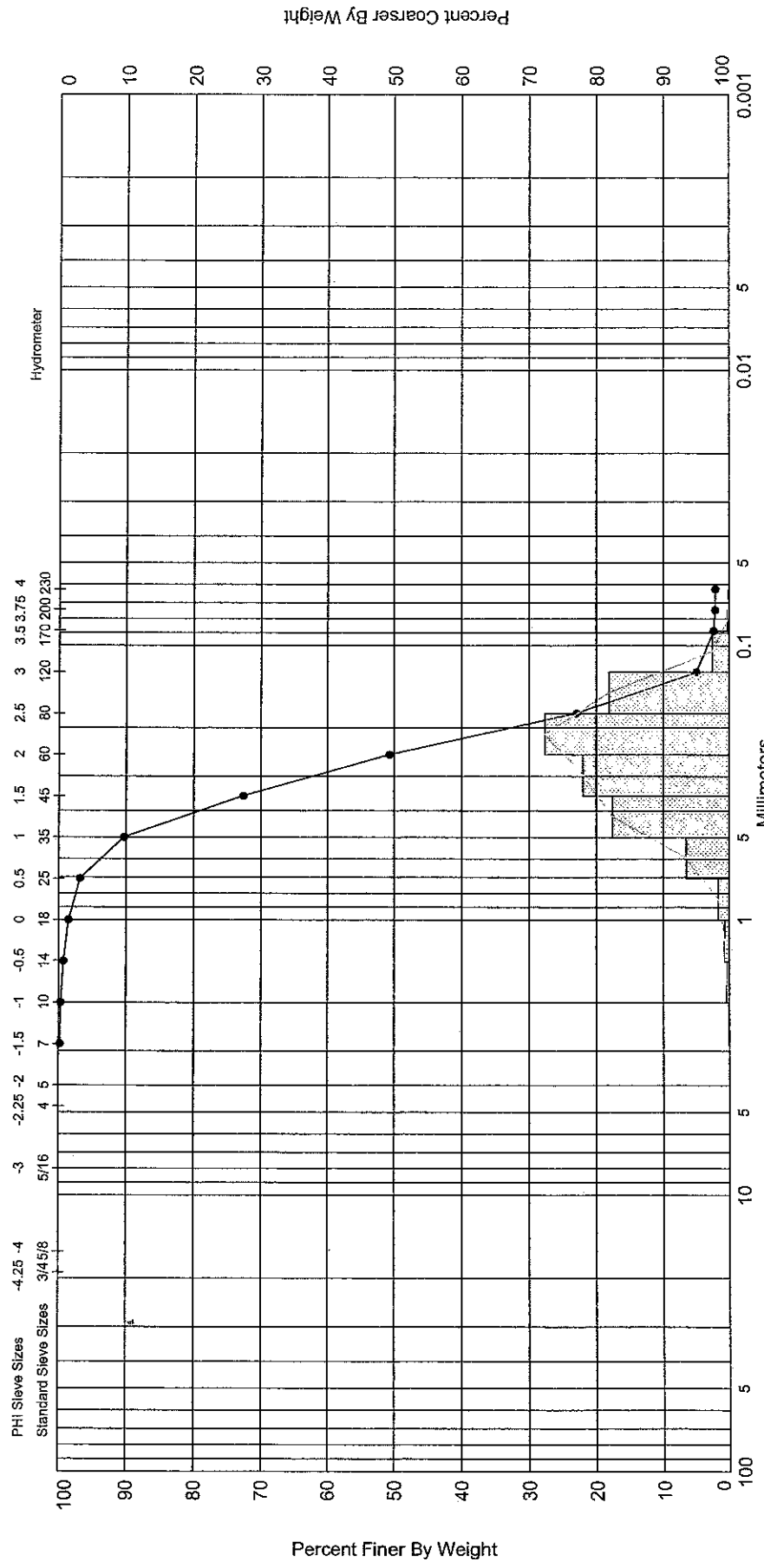
Dry Weight (g): <p style="text-align: center;">30.17</p>	Wash Weight (g): <p style="text-align: center;">29.64</p>	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">0.30</p>	Fines (%): #200 - 2.10 #230 - 2.06	Organics (%): <p style="text-align: center;">0.47</p>	Carbonates (%): <p style="text-align: center;">8.10</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.07	0.22	0.07	0.22
10	-1.00	2.00	0.03	0.10	0.10	0.32
14	-0.50	1.41	0.12	0.41	0.22	0.73
18	0.00	1.00	0.22	0.73	0.44	1.46
25	0.50	0.71	0.51	1.67	0.94	3.13
35	1.00	0.50	1.98	6.56	2.92	9.69
45	1.50	0.35	5.32	17.63	8.24	27.32
60	2.00	0.25	6.64	22.02	14.88	49.34
80	2.50	0.18	8.33	27.62	23.22	76.96
120	3.00	0.13	5.48	18.18	28.70	95.14
170	3.50	0.09	0.76	2.52	29.46	97.66
200	3.75	0.07	0.07	0.24	29.53	97.90
230	4.00	0.06	0.01	0.04	29.54	97.94

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.00	2.69	2.46	2.01	1.43	1.18	0.64
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.9	0.27	0.72	-0.57	3.61	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
NE1-A4-25	●		SP	#200 - 2.10 #230 - 2.08	0.47	8.10	2.01	1.9	-0.57	3.61	0.72	MMS Field Study 2005 CT - 39075
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Analysis Date:			11-23-05			Analyzed By:			SEA Inc			
Easting (ft):			570,054			Northing (ft):			2,186,325			
Horizontal System:			NAD 1983			Vertical System:			MSL			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-26

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>569,218</b>	Northing (ft): <b>2,171,058</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.11</b>	Wash Weight (g): <b>29.82</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.43</b>	Fines (%): #200 - 1.42 #230 - 1.41	Organics (%): <b>0.31</b>	Carbonates (%): <b>3.80</b>	Shells (%):
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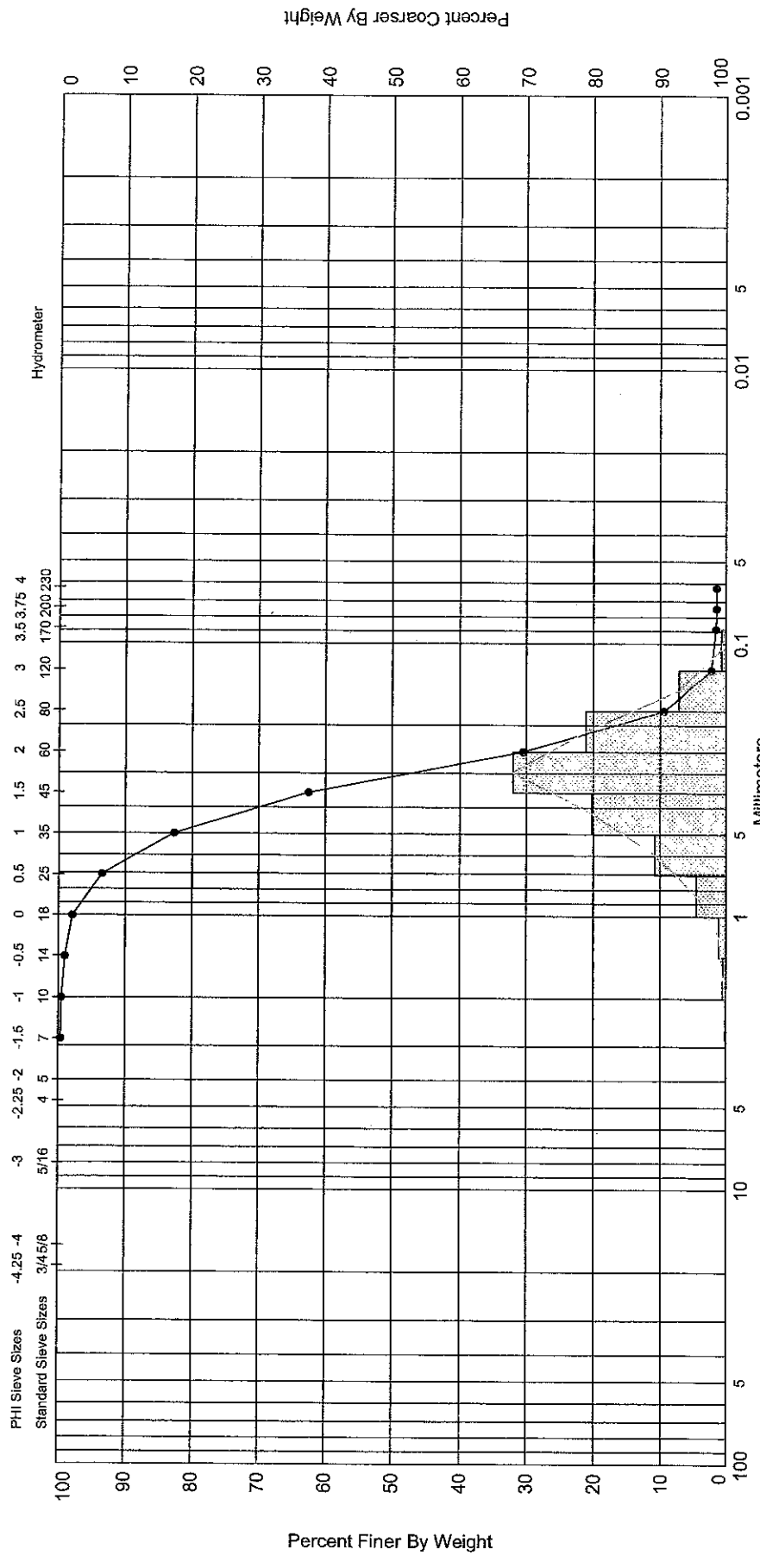
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.10	0.33	0.10	0.33
10	-1.00	2.00	0.04	0.12	0.13	0.45
14	-0.50	1.41	0.15	0.50	0.29	0.95
18	0.00	1.00	0.33	1.09	0.61	2.04
25	0.50	0.71	1.33	4.41	1.94	6.45
35	1.00	0.50	3.26	10.83	5.20	17.28
45	1.50	0.35	6.08	20.19	11.28	37.47
60	2.00	0.25	9.65	32.04	20.93	69.51
80	2.50	0.18	6.36	21.12	27.29	90.63
120	3.00	0.13	2.17	7.19	29.45	97.82
170	3.50	0.09	0.21	0.68	29.66	98.50
200	3.75	0.07	0.02	0.08	29.68	98.58
230	4.00	0.06	0.00	0.01	29.69	98.59

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.80	2.34	2.13	1.70	1.19	0.94	0.34

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.61	0.33	0.69	-0.48	3.57

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A4-26	●		SP	#200 - 1.42 #230 - 1.41	0.31	3.80	1.7	1.61	-0.48	3.57	0.69	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	11-23-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	569,218		
												Northing (ft):	2,171,058		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-28

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): 575,813	Northing (ft): 2,177,965	Coordinate System: FL State Plane East NAD 83	Elevation (ft):
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USCS: SP	Munsell:	Comments:
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Dry Weight (g): 30.16	Wash Weight (g): 29.69	Pan Retained (g): 0.01	Sieve Loss (%): -0.25	Fines (%): #200 - 1.37 #230 - 1.31	Organics (%): 0.34	Carbonates (%): 5.92	Shells (%):
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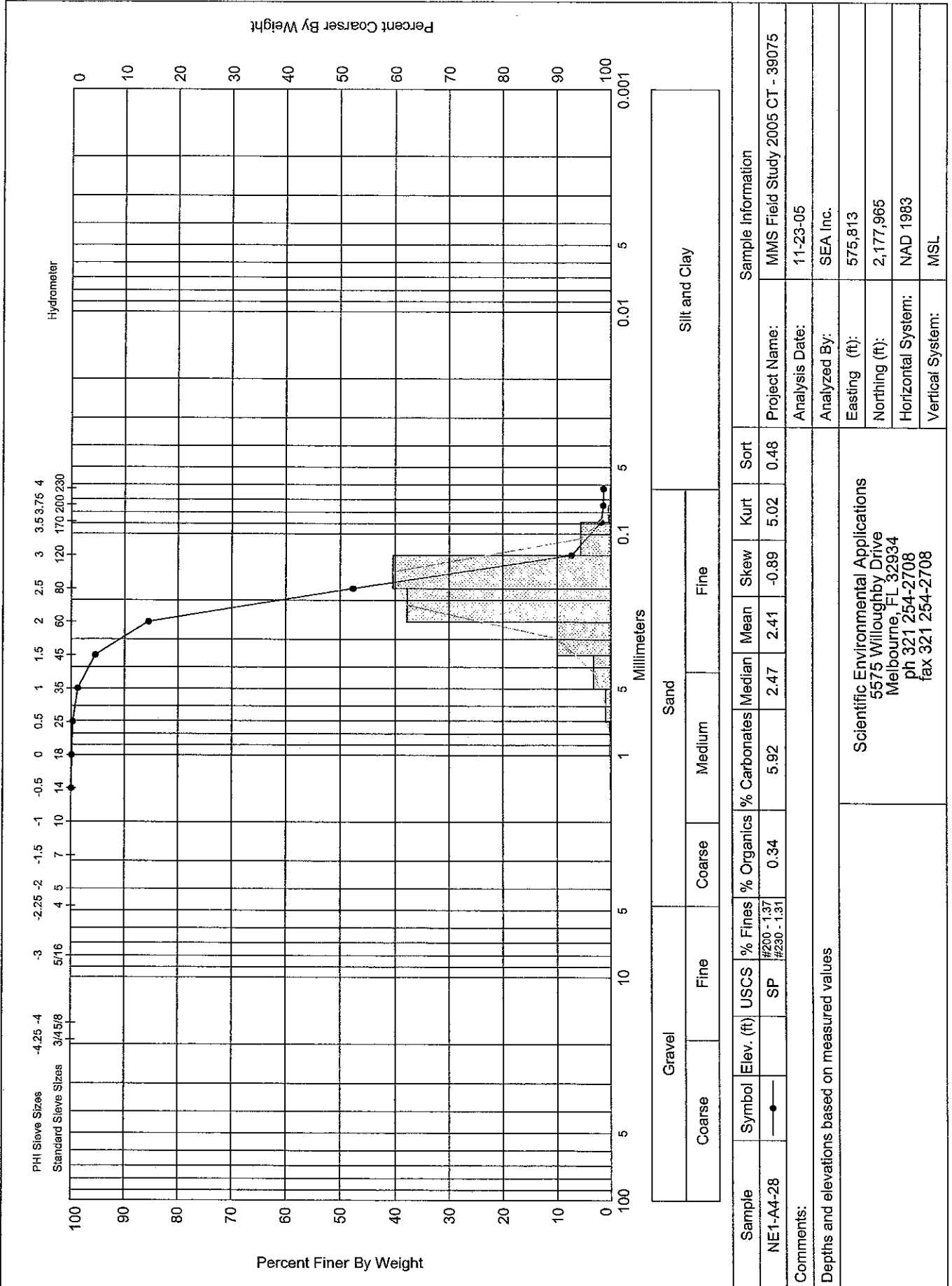
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
14	-0.50	1.41	0.02	0.06	0.02	0.06
18	0.00	1.00	0.02	0.06	0.04	0.12
25	0.50	0.71	0.06	0.20	0.10	0.32
35	1.00	0.50	0.27	0.91	0.37	1.23
45	1.50	0.35	0.97	3.23	1.34	4.46
60	2.00	0.25	3.01	9.97	4.35	14.43
80	2.50	0.18	11.39	37.78	15.74	52.21
120	3.00	0.13	12.20	40.45	27.94	92.66
170	3.50	0.09	1.69	5.60	29.63	98.26
200	3.75	0.07	0.11	0.37	29.74	98.63
230	4.00	0.06	0.02	0.06	29.76	98.69

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.21	2.89	2.78	2.47	2.14	2.02	1.53
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.41	0.19	0.48	-0.89	5.02	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-30

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>568,019</b>	Northing (ft): <b>2,175,298</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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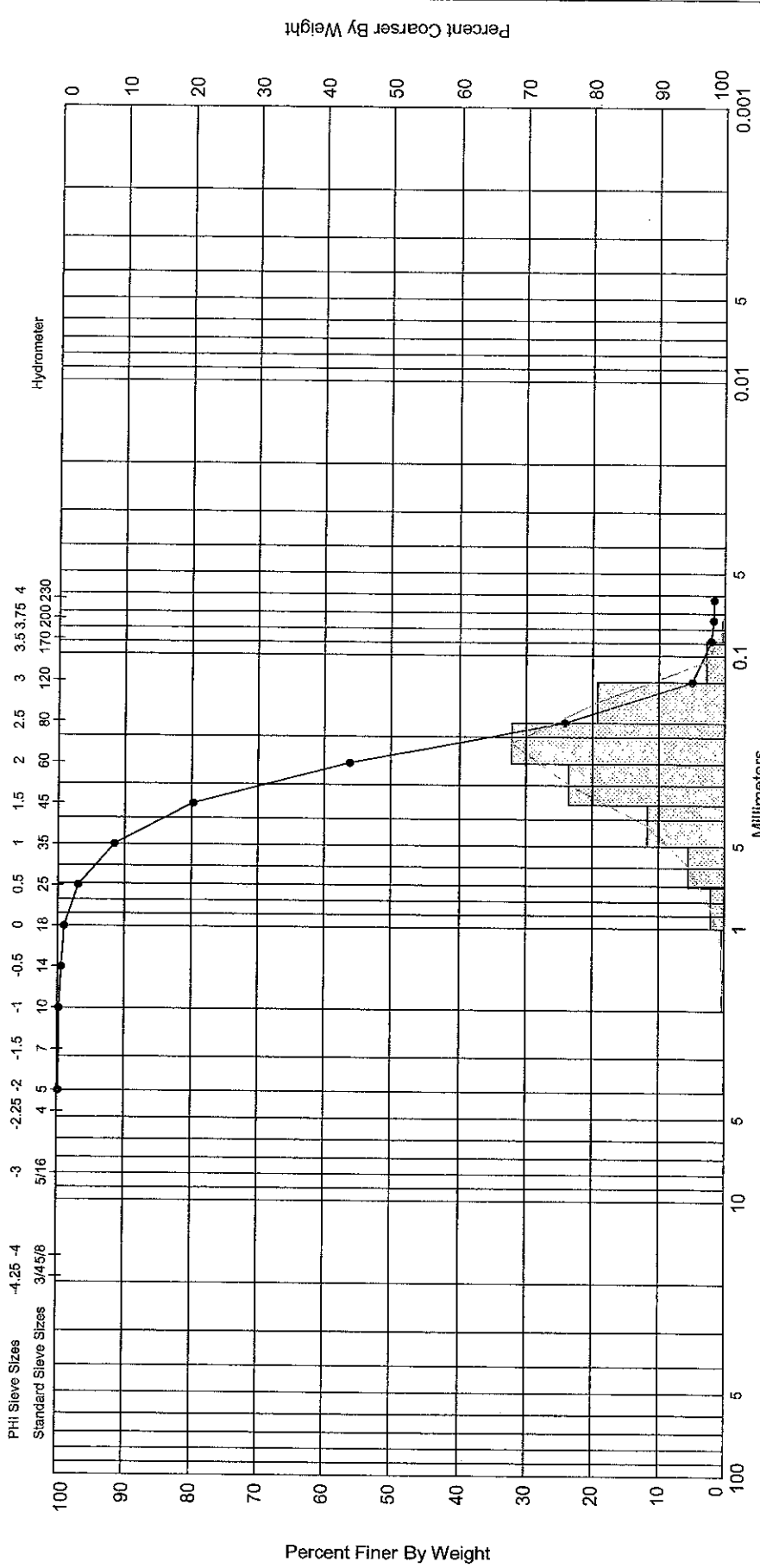
Dry Weight (g): <b>30.12</b>	Wash Weight (g): <b>29.66</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.13</b>	Fines (%): #200 - 1.74 #230 - 1.65	Organics (%): <b>0.35</b>	Carbonates (%): <b>5.81</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.05	0.17	0.05	0.17
10	-1.00	2.00	0.01	0.05	0.06	0.22
14	-0.50	1.41	0.10	0.33	0.16	0.55
18	0.00	1.00	0.13	0.43	0.29	0.98
25	0.50	0.71	0.63	2.09	0.92	3.07
35	1.00	0.50	1.63	5.40	2.55	8.47
45	1.50	0.35	3.54	11.74	6.08	20.21
60	2.00	0.25	7.10	23.58	13.19	43.79
80	2.50	0.18	9.67	32.10	22.85	75.89
120	3.00	0.13	5.80	19.25	28.65	95.14
170	3.50	0.09	0.84	2.78	29.49	97.92
200	3.75	0.07	0.10	0.34	29.59	98.26
230	4.00	0.06	0.03	0.09	29.62	98.35

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.00	2.71	2.49	2.10	1.60	1.32	0.68
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.99	0.25	0.69	-0.72	4.02	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay						
Coarse		Fine		Medium		Fine					
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-A4-30	●		SP	#200 - 1.74 #230 - 1.65	0.35	5.81	2.1	1.99	-0.72	4.02	0.69
Comments: Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											
Sample Information						Project Name:					
						MMS Field Study 2005 CT - 39075					
Analysis Date:						11-23-05					
Analyzed By:						SEA Inc.					
Easting (ft):						568,019					
Northing (ft):						2,175,298					
Horizontal System:						NAD 1983					
Vertical System:						MSL					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-31

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>566,429</b>	Northing (ft): <b>2,178,818</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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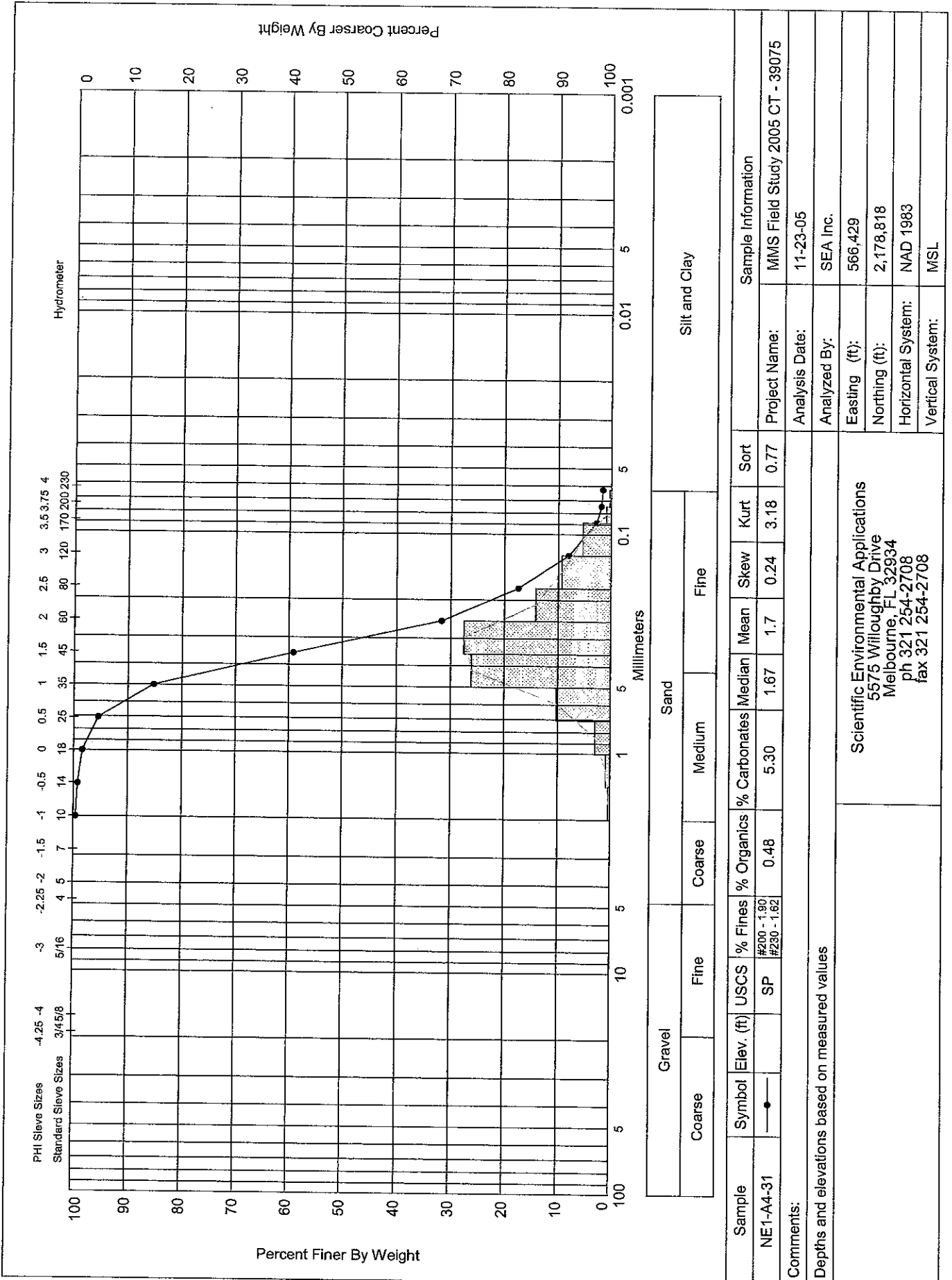
Dry Weight (g): <b>30.13</b>	Wash Weight (g): <b>29.69</b>	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.11</b>	Fines (%): #200 - 1.90 #230 - 1.62	Organics (%): <b>0.48</b>	Carbonates (%): <b>5.30</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.13	0.43	0.13	0.43
14	-0.50	1.41	0.10	0.35	0.23	0.78
18	0.00	1.00	0.25	0.84	0.49	1.62
25	0.50	0.71	0.87	2.90	1.36	4.52
35	1.00	0.50	3.09	10.26	4.45	14.78
45	1.50	0.35	7.87	26.11	12.32	40.89
60	2.00	0.25	8.28	27.48	20.60	68.37
80	2.50	0.18	4.28	14.21	24.88	82.58
120	3.00	0.13	2.81	9.33	27.69	91.91
170	3.50	0.09	1.60	5.32	29.30	97.23
200	3.75	0.07	0.26	0.87	29.56	98.10
230	4.00	0.06	0.08	0.28	29.65	98.38

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.29	2.58	2.23	1.67	1.20	1.02	0.52
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.7	0.31	0.77	0.24	3.18	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08

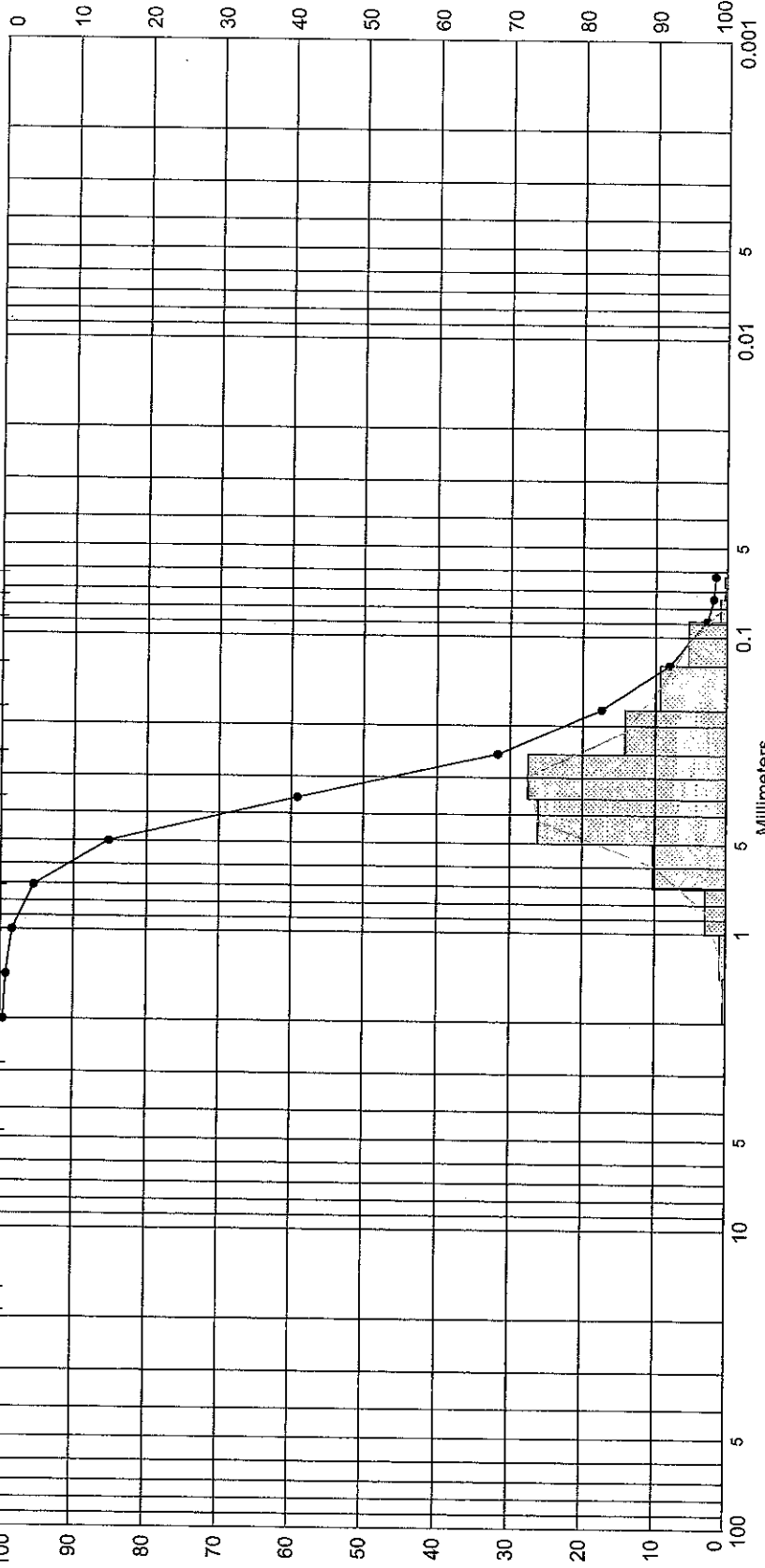


Percent Finer By Weight

PHI Sieve Sizes  
Standard Sieve Sizes

4.25 - 4  
3/4 5/8  
-3  
-2.25 - 2  
4 5  
-1.5  
7  
-1  
10  
-0.5  
14  
0  
18  
0.5  
25  
1  
35  
1.5  
45  
2  
60  
2.5  
80  
3  
120  
3.5  
170  
4  
200

Hydrometer



Percent Coarser By Weight

Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-32

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,632</b>	Northing (ft): <b>2,192,184</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.15</b>	Wash Weight (g): <b>29.87</b>	Pan Retained (g): <b>0.14</b>	Sieve Loss (%): <b>0.30</b>	Fines (%): #200 - 3.38 #230 - 1.70	Organics (%): <b>0.82</b>	Carbonates (%): <b>20.28</b>	Shells (%):
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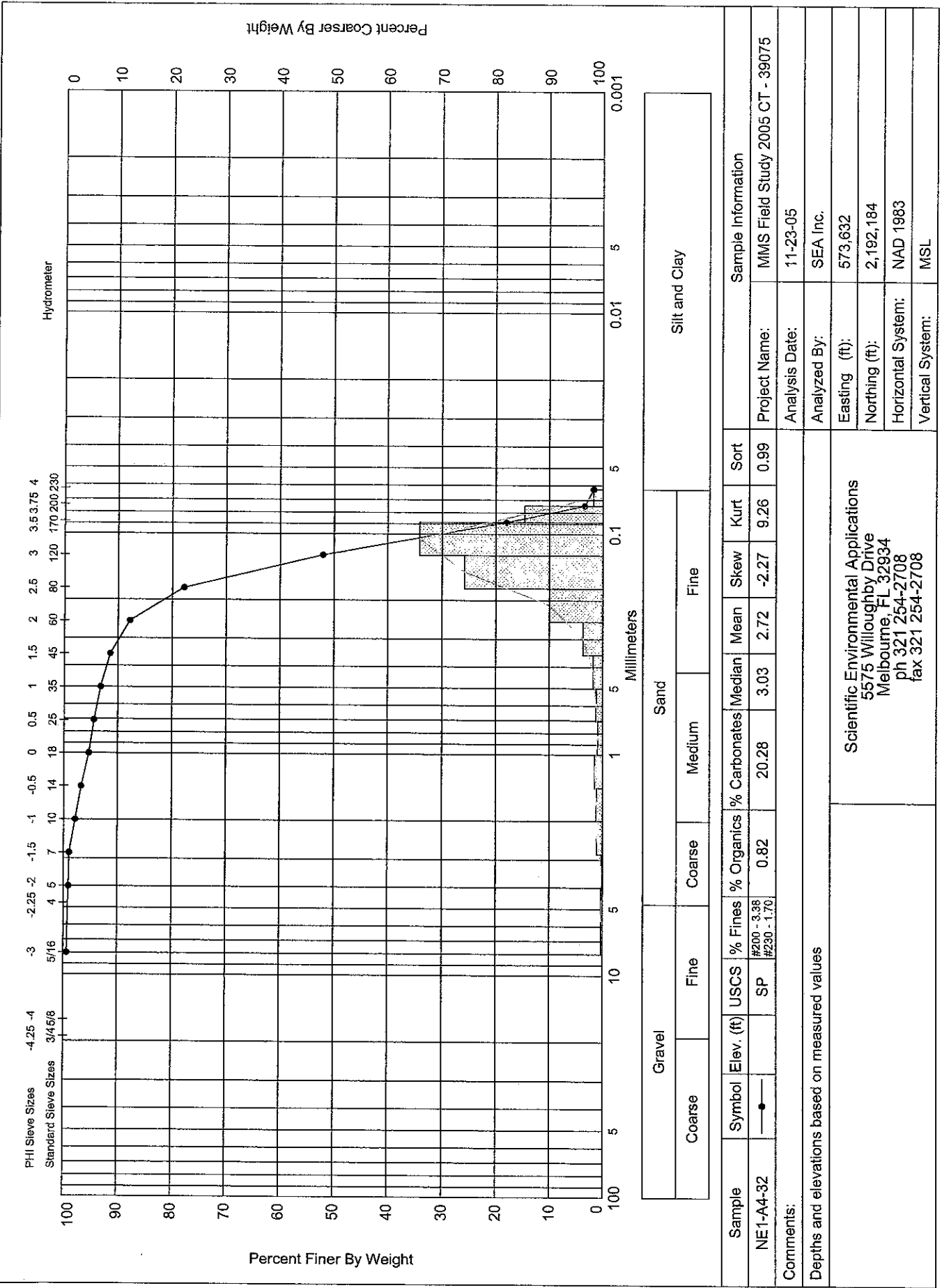
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5/16"	-3.00	8.00	0.19	0.63	0.19	0.63
5	-2.00	4.00	0.09	0.29	0.28	0.92
7	-1.50	2.83	0.04	0.15	0.32	1.07
10	-1.00	2.00	0.32	1.06	0.64	2.13
14	-0.50	1.41	0.33	1.11	0.97	3.24
18	0.00	1.00	0.43	1.44	1.41	4.68
25	0.50	0.71	0.29	0.95	1.69	5.63
35	1.00	0.50	0.37	1.21	2.06	6.84
45	1.50	0.35	0.52	1.73	2.58	8.57
60	2.00	0.25	1.11	3.68	3.69	12.25
80	2.50	0.18	3.01	9.97	6.69	22.22
120	3.00	0.13	7.76	25.75	14.46	47.97
170	3.50	0.09	10.26	34.02	24.71	81.99
200	3.75	0.07	4.41	14.63	29.13	96.62
230	4.00	0.06	0.51	1.68	29.63	98.30

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.72	3.53	3.40	3.03	2.55	2.19	0.17

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.72	0.15	0.99	-2.27	9.26

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A4-33

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>578,281</b>	Northing (ft): <b>2,176,366</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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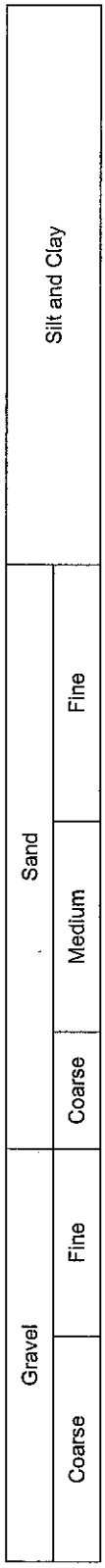
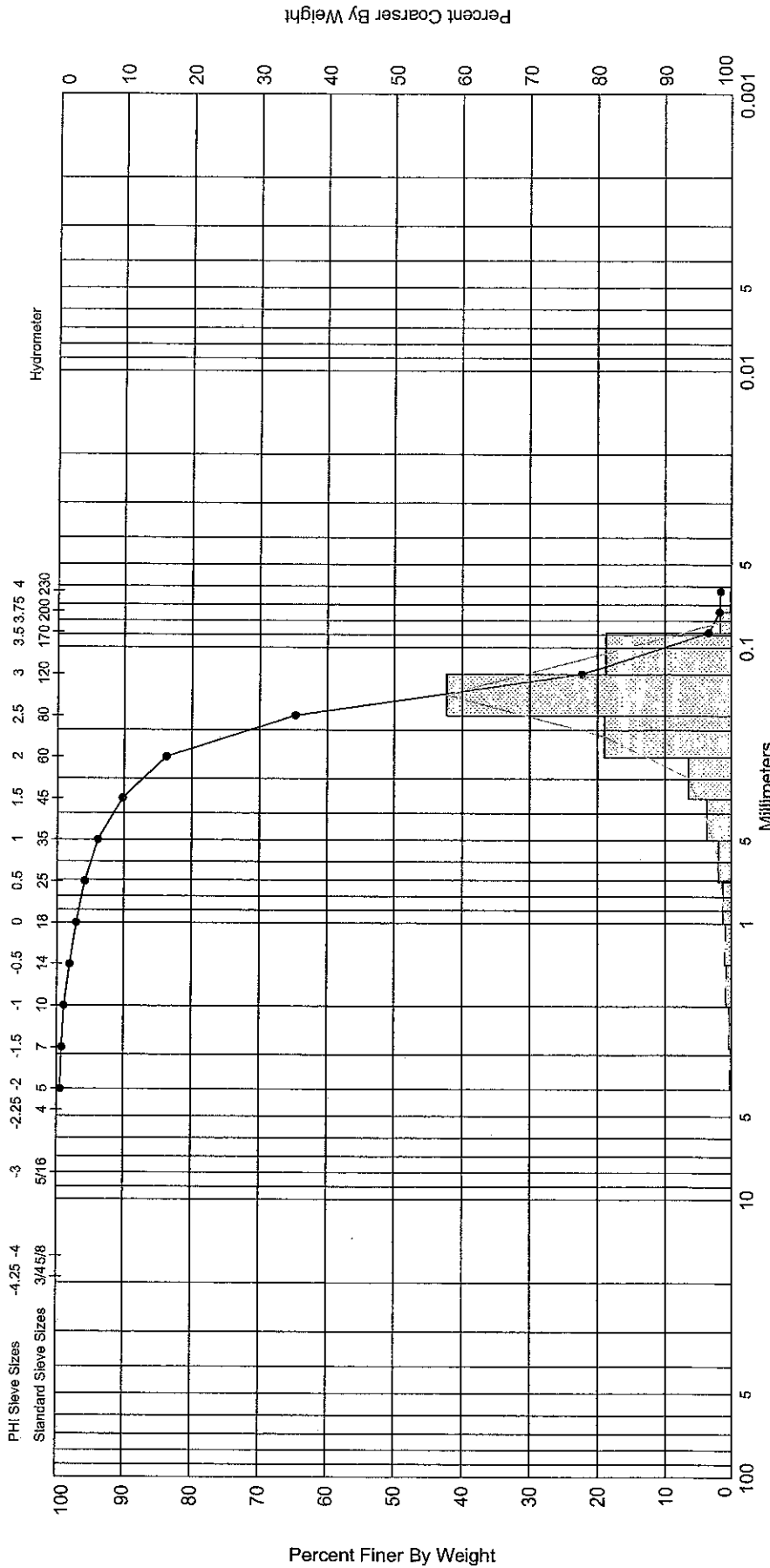
Dry Weight (g): <b>30.16</b>	Wash Weight (g): <b>29.78</b>	Pan Retained (g): <b>0.06</b>	Sieve Loss (%): <b>0.16</b>	Fines (%): #200 - 1.77 #230 - 1.61	Organics (%): <b>0.76</b>	Carbonates (%): <b>13.36</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
5	-2.00	4.00	0.17	0.55	0.17	0.55	
7	-1.50	2.83	0.06	0.21	0.23	0.76	
10	-1.00	2.00	0.10	0.34	0.34	1.10	
14	-0.50	1.41	0.25	0.84	0.59	1.94	
18	0.00	1.00	0.29	0.95	0.87	2.89	
25	0.50	0.71	0.38	1.26	1.25	4.15	
35	1.00	0.50	0.59	1.96	1.84	6.11	
45	1.50	0.35	1.12	3.70	2.96	9.81	
60	2.00	0.25	1.96	6.50	4.92	16.31	
80	2.50	0.18	5.74	19.04	10.66	35.35	
120	3.00	0.13	12.78	42.37	23.44	77.72	
170	3.50	0.09	5.68	18.82	29.12	96.54	
200	3.75	0.07	0.51	1.69	29.63	98.23	
230	4.00	0.06	0.05	0.16	29.68	98.39	

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<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
3.46	3.17	2.97	2.67	2.23	1.98	0.72
<b>Moment</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
<b>Statistics</b>	2.46	0.18	0.8	-1.95	8.32	

GRANULARMETRIC REPORT: MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample Information		Sample Information	
Sample	NE1-A4-33	Project Name:	MMS Field Study 2005 CT - 39075
Symbol	●	Analysis Date:	11-23-05
Elev. (ft)		Analyzed By:	SEA Inc.
USCS	SP	Easting (ft):	578,281
% Fines	13.36	Northing (ft):	2,176,366
% Organics	0.76	Horizontal System:	NAD 1983
% Carbonates	13.36	Vertical System:	MSL
Median	2.67		
Mean	2.46		
Skew	-1.95		
Kurt	8.32		
Sort	0.8		
Comments:			
Depths and elevations based on measured values			
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-01

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>569,956</b>	Northing (ft): <b>2,112,582</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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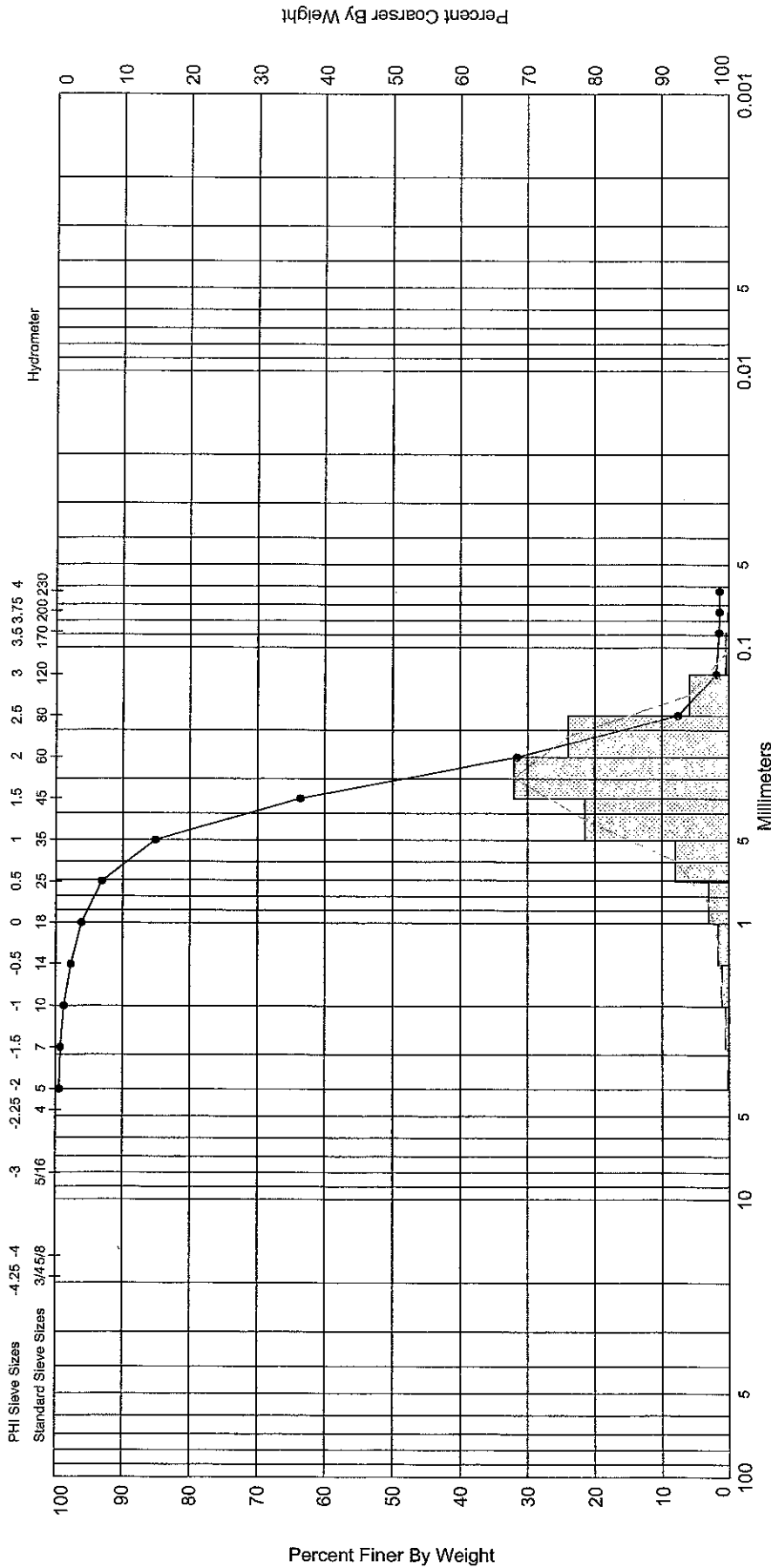
Dry Weight (g): <b>30.07</b>	Wash Weight (g): <b>29.73</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.16</b>	Fines (%): #200 - 1.32 #230 - 1.30	Organics (%): <b>0.41</b>	Carbonates (%): <b>6.41</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.17	0.57	0.17	0.57
7	-1.50	2.83	0.05	0.15	0.22	0.72
10	-1.00	2.00	0.16	0.53	0.38	1.25
14	-0.50	1.41	0.31	1.03	0.68	2.28
18	0.00	1.00	0.47	1.55	1.15	3.83
25	0.50	0.71	0.91	3.04	2.06	6.87
35	1.00	0.50	2.42	8.04	4.48	14.91
45	1.50	0.35	6.46	21.47	10.94	36.38
60	2.00	0.25	9.64	32.04	20.57	68.42
80	2.50	0.18	7.20	23.94	27.77	92.36
120	3.00	0.13	1.76	5.85	29.53	98.21
170	3.50	0.09	0.12	0.41	29.66	98.62
200	3.75	0.07	0.02	0.06	29.67	98.68
230	4.00	0.06	0.01	0.02	29.68	98.70

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.73	2.33	2.14	1.71	1.23	1.03	0.19
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.6	0.33	0.72	-0.99	5.2	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse		Fine	Medium	Coarse	Fine		

Sample	NE1-A6-01	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines	#200 - 1.32	% Organics	0.41	% Carbonates	6.41	Median	1.71	Mean	1.6	Skew	-0.99	Kurt	5.2	Sort	0.72	Sample Information	MMS Field Study 2005 CT - 39075
Comments:	Depths and elevations based on measured values																								
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																									
Analysis Date: 11-23-05																									
Analyzed By: SEA Inc.																									
Easting (ft): 569,956																									
Northing (ft): 2,112,582																									
Horizontal System: NAD 1983																									
Vertical System: MSL																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-02

Analysis Date: 11-23-05

Analyzed By: SEA Inc,

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>570,417</b>	Northing (ft): <b>2,115,564</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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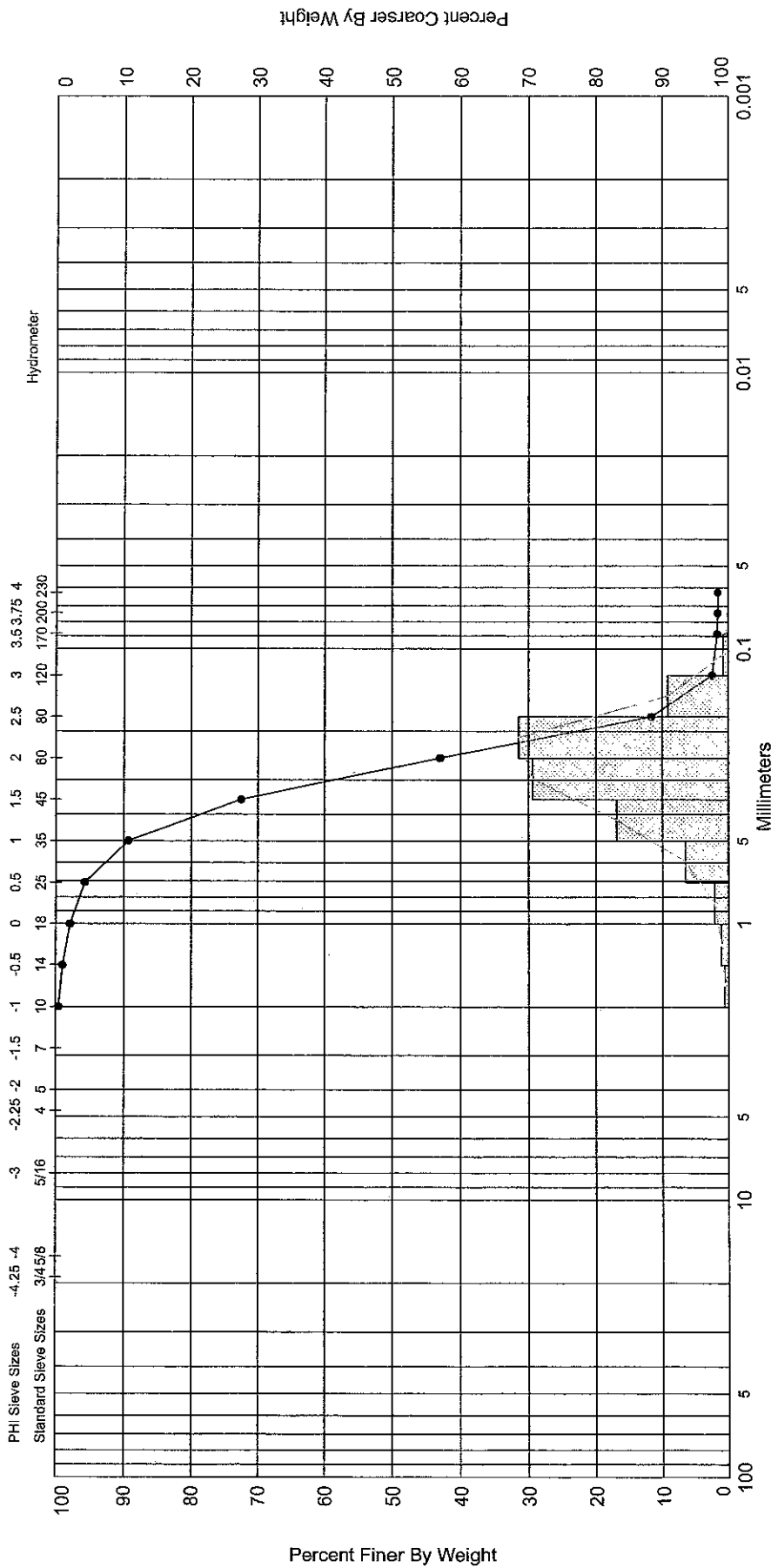
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.61 #230 - 1.59	Organics (%):	Carbonates (%):	Shells (%):
30.06	29.70	0.01	0.38		0.36	5.55	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.13	0.42	0.13	0.42	
14	-0.50	1.41	0.17	0.57	0.30	0.99	
18	0.00	1.00	0.33	1.09	0.62	2.08	
25	0.50	0.71	0.63	2.10	1.25	4.18	
35	1.00	0.50	1.95	6.50	3.21	10.68	
45	1.50	0.35	5.07	16.85	8.27	27.53	
60	2.00	0.25	8.83	29.37	17.10	56.90	
80	2.50	0.18	9.45	31.44	26.55	88.34	
120	3.00	0.13	2.76	9.19	29.32	97.53	
170	3.50	0.09	0.24	0.78	29.55	98.31	
200	3.75	0.07	0.02	0.08	29.58	98.39	
230	4.00	0.06	0.01	0.02	29.58	98.41	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.86	2.43	2.29	1.88	1.42	1.16	0.56
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.78	0.29	0.66	-0.76	4.22	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	NE1-A6-02	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines	1.61	#200	1.88	Median	1.78	Mean	-0.76	Skew	4.22	Kurt	0.66	Sort
Comments:																				
Depths and elevations based on measured values																				
Scientific Environmental Applications											Sample Information									
5575 Willoughby Drive											Project Name: MMS Field Study 2005 CT - 39075									
Melbourne, FL 32934											Analysis Date: 11-23-05									
ph 321 254-2708											Analyzed By: SEA Inc,									
fax 321 254-2708											Easting (ft): 570,417									
											Northing (ft): 2,115,564									
											Horizontal System: NAD 1983									
											Vertical System: MSL									

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-03

Analysis Date: 11-23-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">570,986</p>	Northing (ft): <p style="text-align: center;">2,113,604</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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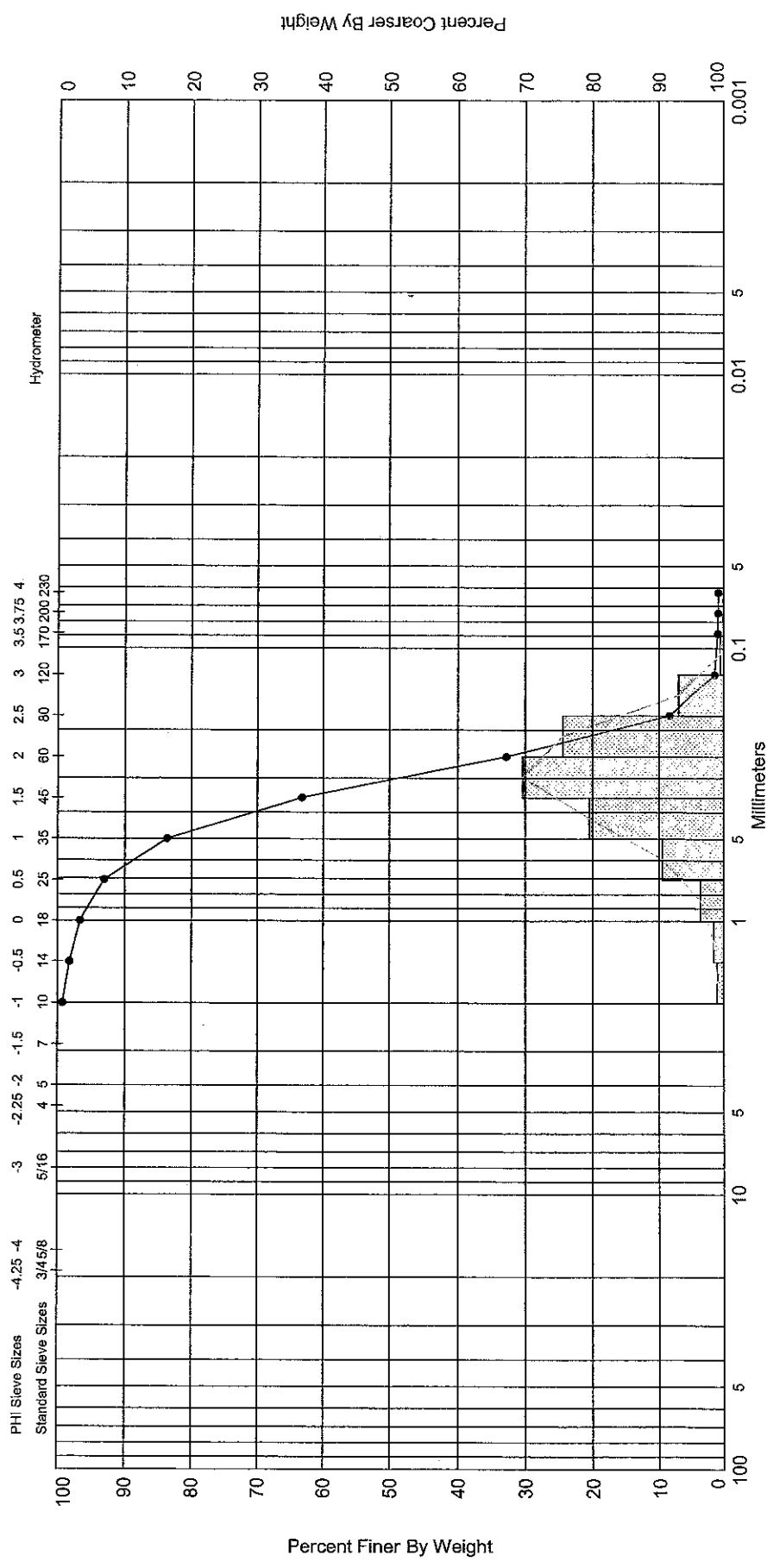
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.81 #230 - 0.79	Organics (%):	Carbonates (%):	Shells (%):
30.04	29.73	0.00	-0.26		0.37	5.81	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.23	0.75	0.22	0.75	
14	-0.50	1.41	0.30	1.01	0.53	1.76	
18	0.00	1.00	0.47	1.56	1.00	3.32	
25	0.50	0.71	1.07	3.55	2.06	6.87	
35	1.00	0.50	2.85	9.48	4.91	16.35	
45	1.50	0.35	6.16	20.50	11.07	36.85	
60	2.00	0.25	9.12	30.36	20.19	67.21	
80	2.50	0.18	7.34	24.42	27.53	91.63	
120	3.00	0.13	2.10	7.00	29.63	98.63	
170	3.50	0.09	0.15	0.50	29.78	99.13	
200	3.75	0.07	0.02	0.06	29.80	99.19	
230	4.00	0.06	0.01	0.02	29.81	99.21	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
2.74	2.34	2.16	1.72	1.21	0.98	0.24	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.62	0.33	0.7	-0.62	3.77		

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay						
Coarse	Fine	Coarse	Medium	Fine							
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-A6-03	●—		SP	#200 - 0.81 #230 - 0.79	0.37	5.81	1.72	1.62	-0.62	3.77	0.7
Comments:											
Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											
Sample Information						Sample Information					
Project Name:						MMS Field Study 2005 CT - 39075					
Analysis Date:						11-23-05					
Analyzed By:						SEA Inc.					
Easting (ft):						570,986					
Northing (ft):						2,113,604					
Horizontal System:						NAD 1983					
Vertical System:						MSL					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE1-A6-04  
 Analysis Date: 11-23-05  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>576,497</b>	Northing (ft): <b>2,104,257</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.11</b>	Wash Weight (g): <b>29.84</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.23</b>	Fines (%): #200 - 1.14 #230 - 1.13	Organics (%): <b>0.59</b>	Carbonates (%): <b>11.99</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.11	0.35	0.11	0.35
10	-1.00	2.00	0.12	0.40	0.23	0.75
14	-0.50	1.41	0.37	1.23	0.59	1.98
18	0.00	1.00	0.37	1.24	0.97	3.22
25	0.50	0.71	0.74	2.46	1.71	5.68
35	1.00	0.50	2.26	7.52	3.97	13.20
45	1.50	0.35	6.25	20.76	10.22	33.96
60	2.00	0.25	8.76	29.09	18.98	63.05
80	2.50	0.18	7.57	25.14	26.55	88.19
120	3.00	0.13	3.04	10.11	29.59	98.30
170	3.50	0.09	0.16	0.51	29.75	98.81
200	3.75	0.07	0.02	0.05	29.76	98.86
230	4.00	0.06	0.00	0.01	29.77	98.87

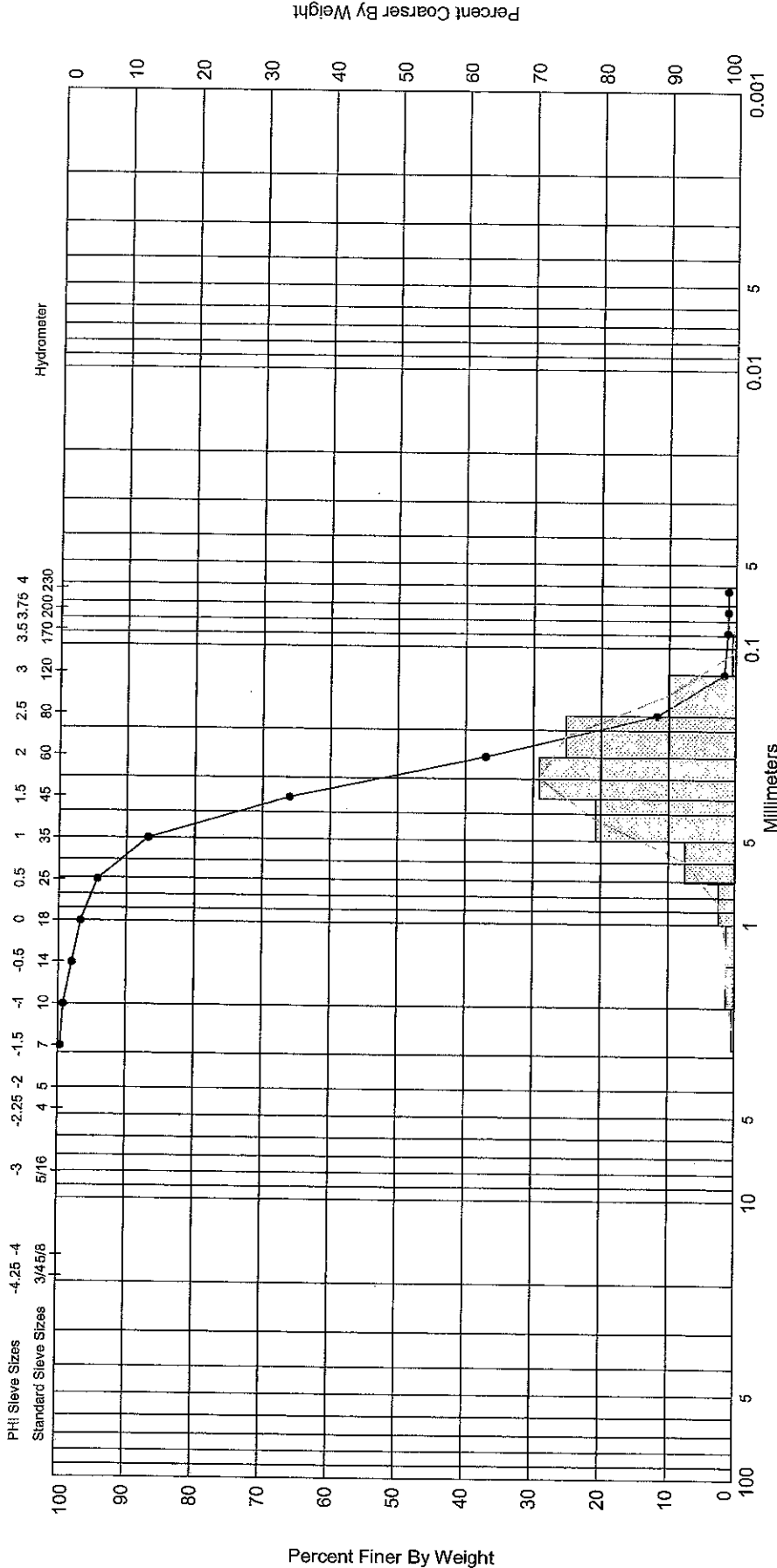
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.84	2.42	2.24	1.78	1.28	1.07	0.36

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.69	0.31	0.73	-0.88	4.64

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Gravel		Sand			Silt and Clay						
	Coarse	Fine	Coarse	Medium	Fine						
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-A6-04	●		SP	#200 - 1.14	0.59	11.99	1.78	1.69	-0.88	4.64	0.73
				#230 - 1.13							
Comments:											
Depths and elevations based on measured values											
Sample Information						Sample Information					
Project Name:						MMS Field Study 2005 CT - 39075					
Analysis Date:						11-23-05					
Analyzed By:						SEA Inc.					
Easting (ft):						576,497					
Northing (ft):						2,104,257					
Horizontal System:						NAD 1983					
Vertical System:						MSL					
Scientific Environmental Applications						Scientific Environmental Applications					
5575 Willoughby Drive						5575 Willoughby Drive					
Melbourne, FL 32934						Melbourne, FL 32934					
ph 321 254-2708						ph 321 254-2708					
fax 321 254-2708						fax 321 254-2708					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE1-A6-05  
 Analysis Date: 11-23-05  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>576,596</b>	Northing (ft): <b>2,096,862</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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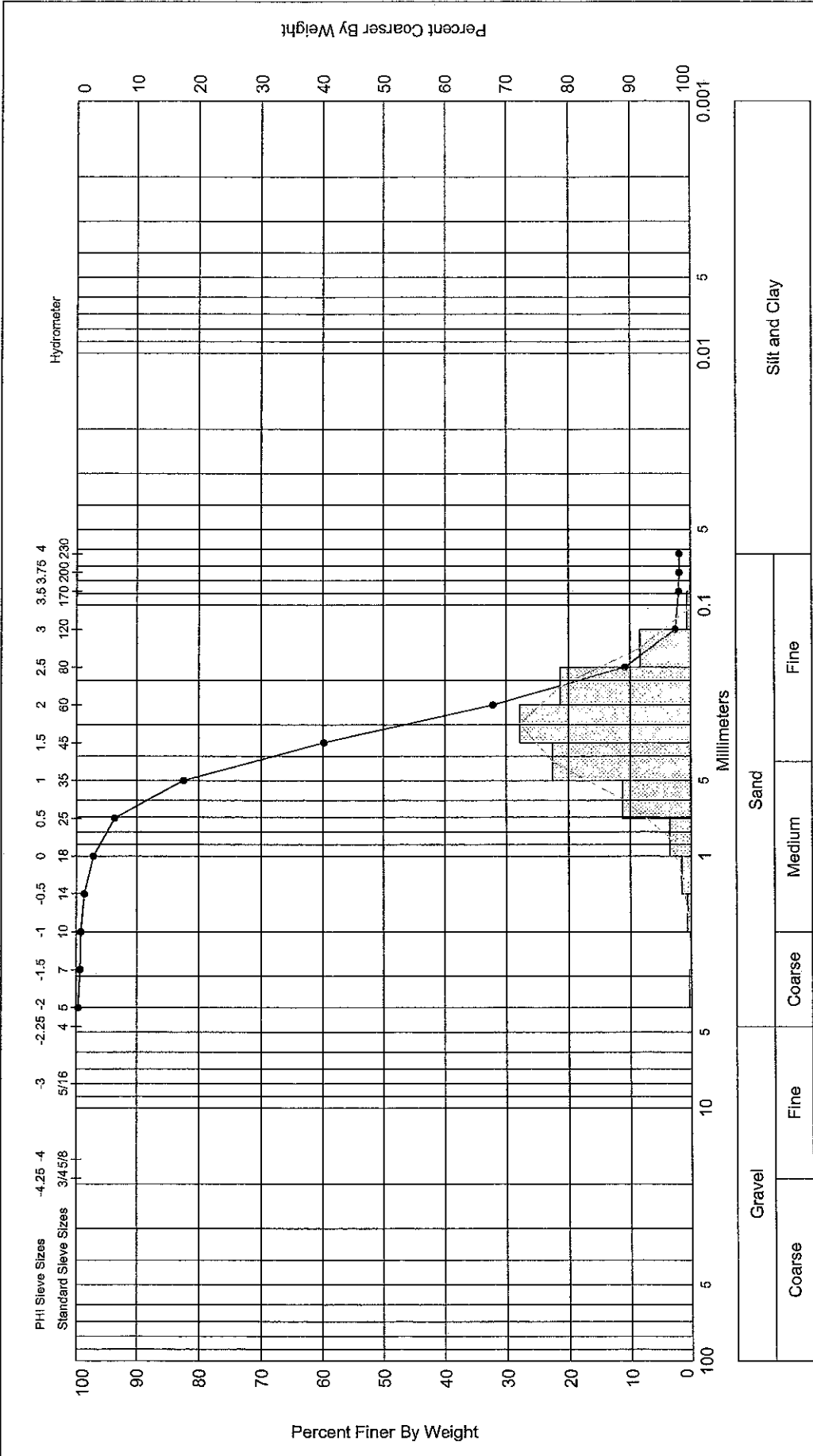
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.83 #230 - 1.82	Organics (%):	Carbonates (%):	Shells (%):
30.29	29.90	0.00	0.50		0.41	7.44	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.10	0.32	0.10	0.32	
7	-1.50	2.83	0.09	0.31	0.19	0.63	
10	-1.00	2.00	0.04	0.12	0.23	0.75	
14	-0.50	1.41	0.17	0.57	0.40	1.32	
18	0.00	1.00	0.45	1.49	0.85	2.81	
25	0.50	0.71	1.07	3.54	1.93	6.35	
35	1.00	0.50	3.40	11.23	5.33	17.58	
45	1.50	0.35	6.84	22.57	12.16	40.15	
60	2.00	0.25	8.41	27.76	20.57	67.91	
80	2.50	0.18	6.44	21.27	27.02	89.18	
120	3.00	0.13	2.53	8.34	29.54	97.52	
170	3.50	0.09	0.18	0.59	29.72	98.11	
200	3.75	0.07	0.02	0.06	29.74	98.17	
230	4.00	0.06	0.00	0.01	29.74	98.18	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.85	2.38	2.17	1.68	1.16	0.93	0.31
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.6	0.33	0.73	-0.67	4.39	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL\_DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines #200 - 1.83	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information		
NE1-A6-05	●		SP	1.82	0.41	7.44	1.68	1.6	-0.67	4.39	0.73	MMS Field Study 2005 CT - 39075		
Comments: Depths and elevations based on measured values														
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708														
			Analysis Date:			11-23-05			Project Name:			MMS Field Study 2005 CT - 39075		
			Analyzed By:			SEA Inc.			Easting (ft):			576,596		
			Northing (ft):			2,096,862			Horizontal System:			NAD 1983		
			Vertical System:			MSL								

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE1-A6-06  
 Analysis Date: 12-04-05  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>580,449</b>	Northing (ft): <b>2,094,387</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.66</b>	Wash Weight (g): <b>30.29</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.23</b>	Fines (%): #200 - 1.03 #230 - 1.01	Organics (%): <b>0.48</b>	Carbonates (%): <b>9.49</b>	Shells (%):
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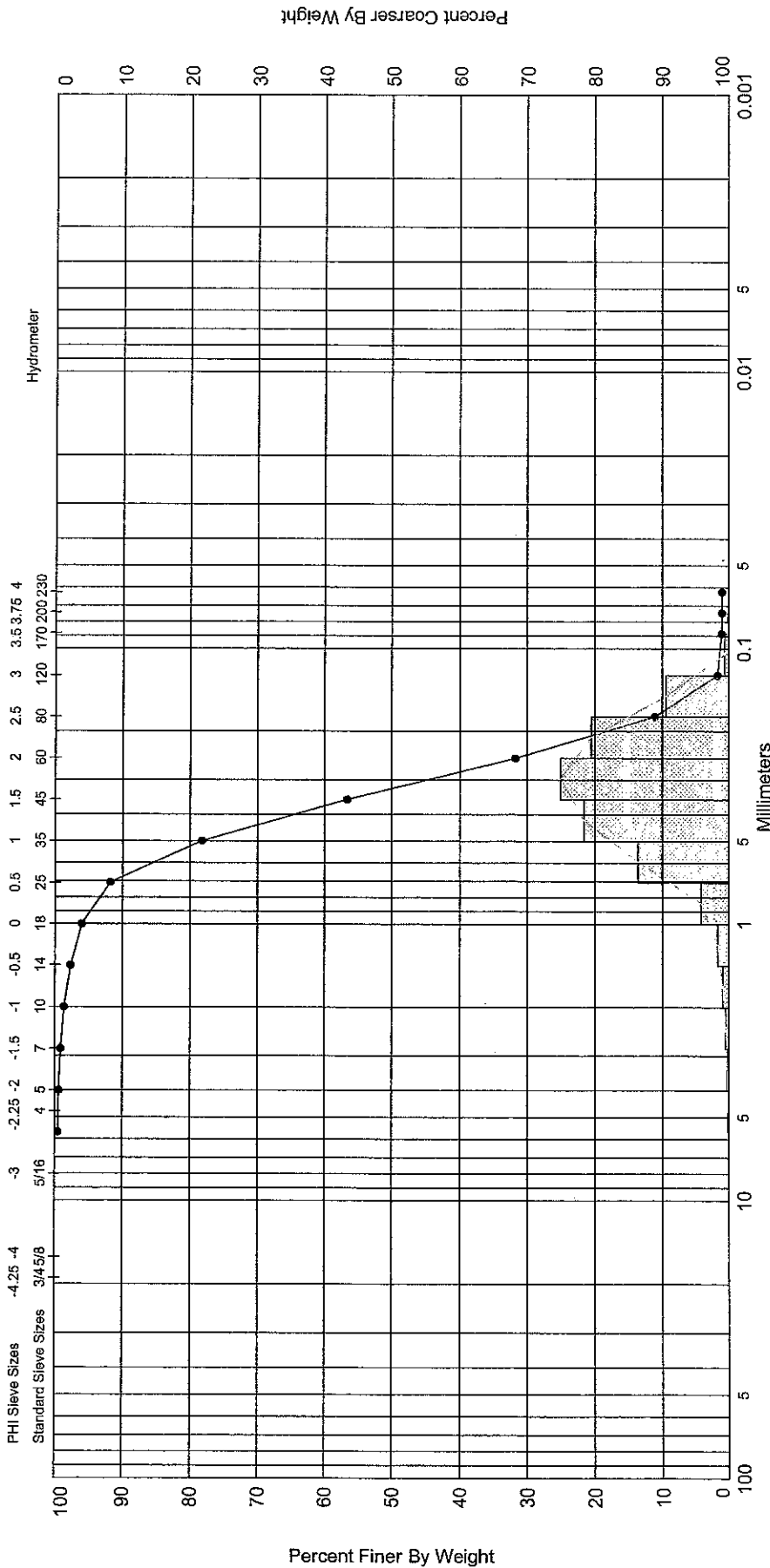
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.14	0.47	0.14	0.47
5	-2.00	4.00	0.04	0.12	0.18	0.59
7	-1.50	2.83	0.09	0.28	0.27	0.87
10	-1.00	2.00	0.15	0.49	0.42	1.36
14	-0.50	1.41	0.29	0.95	0.71	2.31
18	0.00	1.00	0.52	1.68	1.22	3.99
25	0.50	0.71	1.28	4.19	2.51	8.18
35	1.00	0.50	4.17	13.60	6.67	21.78
45	1.50	0.35	6.62	21.57	13.29	43.35
60	2.00	0.25	7.66	24.98	20.95	68.33
80	2.50	0.18	6.30	20.55	27.25	88.88
120	3.00	0.13	2.89	9.43	30.14	98.31
170	3.50	0.09	0.19	0.60	30.33	98.91
200	3.75	0.07	0.02	0.06	30.35	98.97
230	4.00	0.06	0.01	0.02	30.35	98.99

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.38	2.16	1.63	1.07	0.79	0.12

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.54	0.34	0.8	-0.72	4.41

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	NE1-A6-06	Symbol	—●—	Elev. (ft)	SP	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information		
							#200 - 1.03	0.48	9.49	1.63	1.54	-0.72	4.41	0.8	Project Name:	MMS Field Study 2005 CT - 39075	
Comments:															Analysis Date:	12-04-05	
Depths and elevations based on measured values															Analyzed By:	SEA Inc.	
															Easting (ft):	580,449	
															Northing (ft):	2,094,387	
															Horizontal System:	NAD 1983	
															Vertical System:	MSL	

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 5575 Willoughby Drive  
 Melbourne, FL 32934  
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 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE1-A6-07  
 Analysis Date: 12-04-05  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>586,515</b>	Northing (ft): <b>2,093,945</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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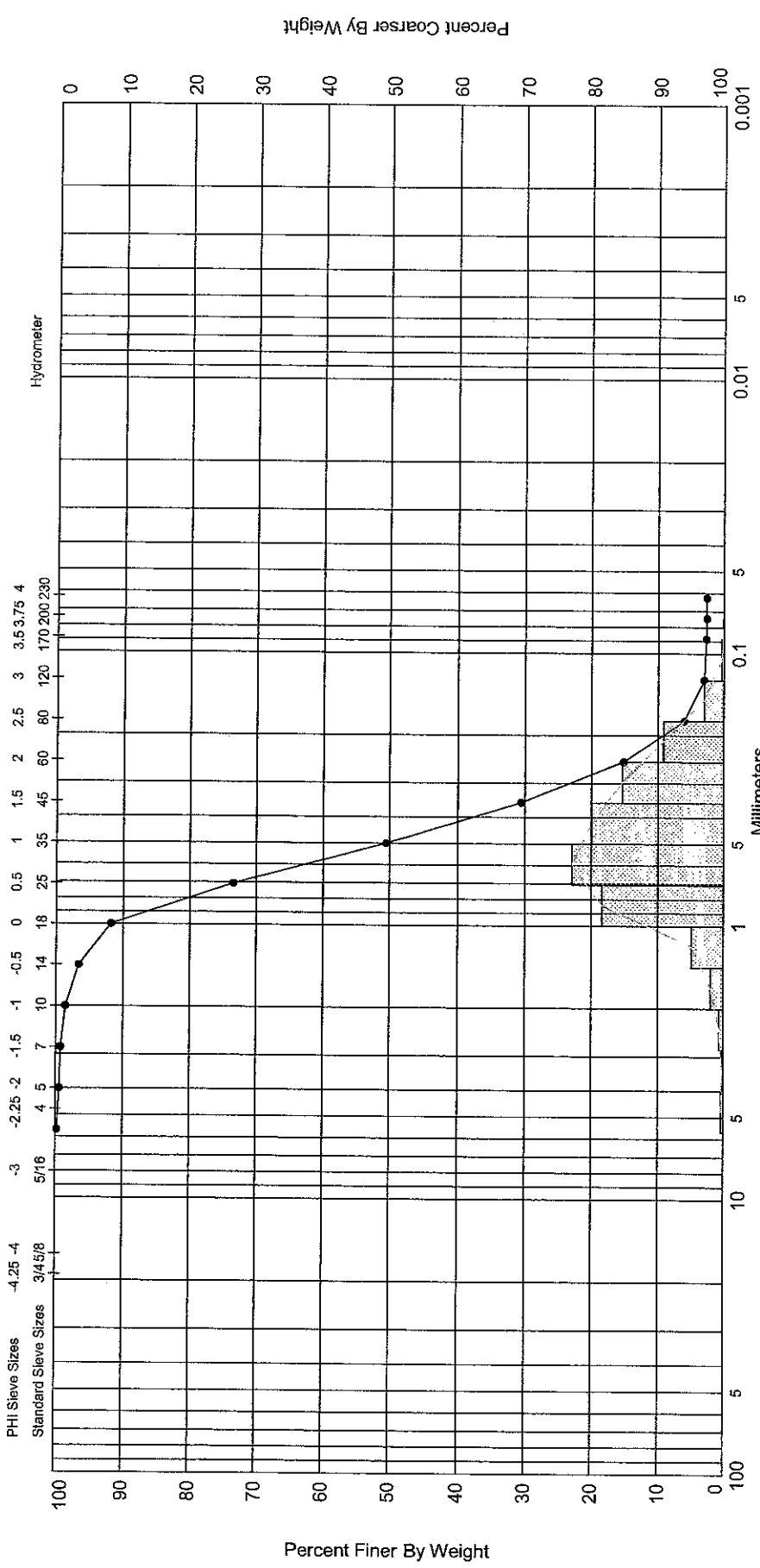
Dry Weight (g): <b>30.66</b>	Wash Weight (g): <b>30.31</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>1.44</b>	Fines (%): #200 - 2.62 #230 - 2.61	Organics (%): <b>0.66</b>	Carbonates (%): <b>13.93</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.07	0.22	0.07	0.22
5	-2.00	4.00	0.10	0.33	0.17	0.55
7	-1.50	2.83	0.06	0.19	0.23	0.74
10	-1.00	2.00	0.21	0.67	0.43	1.41
14	-0.50	1.41	0.60	1.95	1.03	3.36
18	0.00	1.00	1.48	4.81	2.51	8.17
25	0.50	0.71	5.65	18.42	8.16	26.59
35	1.00	0.50	7.02	22.90	15.18	49.49
45	1.50	0.35	6.12	19.96	21.30	69.45
60	2.00	0.25	4.71	15.35	26.01	84.80
80	2.50	0.18	2.82	9.20	28.83	94.00
120	3.00	0.13	0.92	2.99	29.74	96.99
170	3.50	0.09	0.10	0.33	29.84	97.32
200	3.75	0.07	0.02	0.06	29.86	97.38
230	4.00	0.06	0.00	0.01	29.87	97.39

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.67	1.97	1.68	1.01	0.46	0.21	-0.33
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.01	0.50	0.84	-0.13	3.44	

GRANULOMETRIC REPORT: MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
NE1-A6-07	●		SP	#200 - 2.62 #230 - 2.61	0.66	13.93	1.01	1.01	-0.13	3.44	0.84	Project Name:	MMS Field Study 2005 CT - 39075
Comments:												Analysis Date:	12-04-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	586,515
												Northing (ft):	2,093,945
												Horizontal System:	NAD 1983
												Vertical System:	MSL

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-08

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>582,662</b>	Northing (ft): <b>2,091,219</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.84 #230 - 0.80	Organics (%):	Carbonates (%):	Shells (%):
30.68	30.43	0.00	0.00		0.45	8.10	

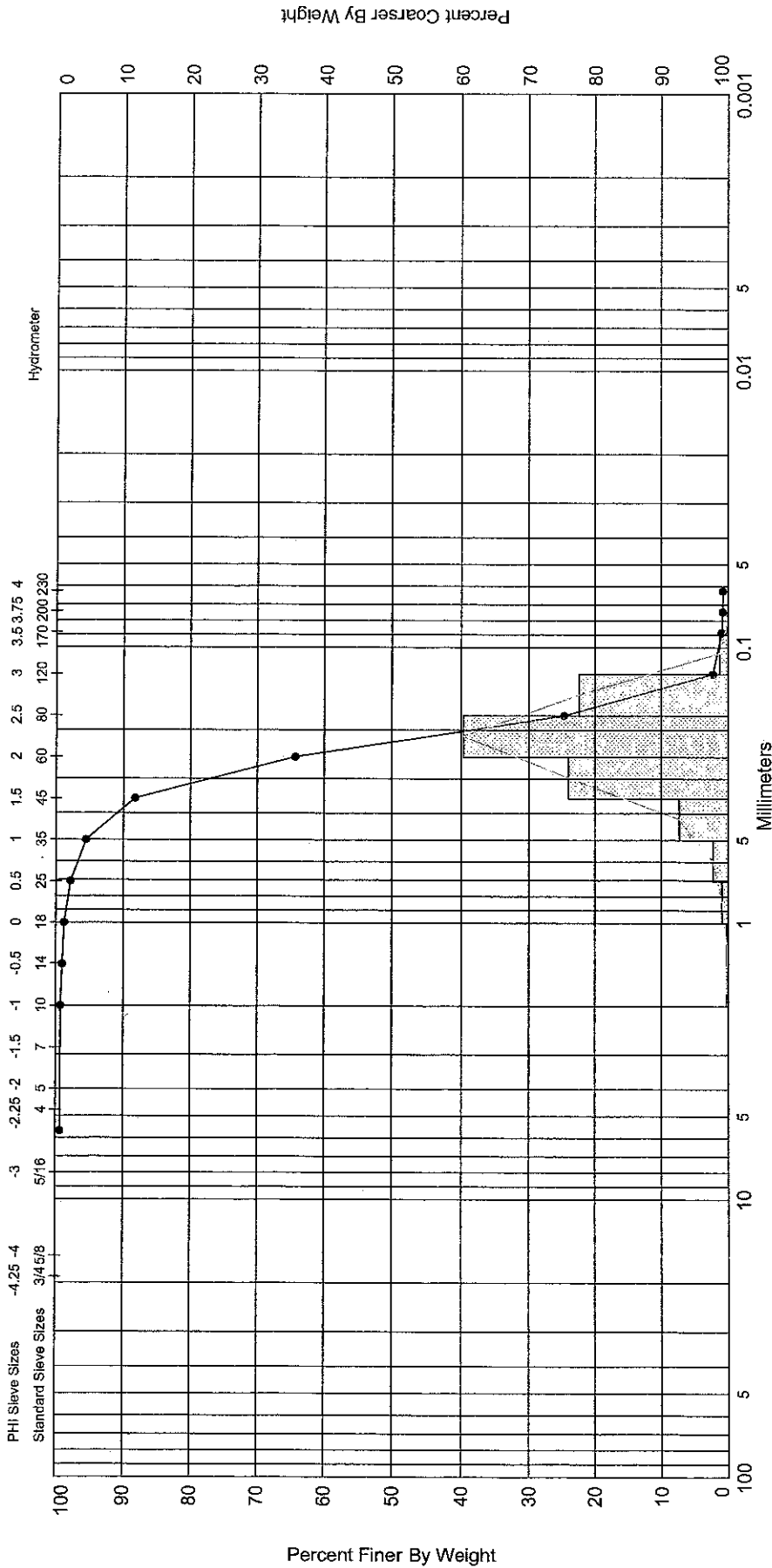
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.20	0.65	0.20	0.65
10	-1.00	2.00	0.02	0.05	0.22	0.70
14	-0.50	1.41	0.08	0.25	0.29	0.95
18	0.00	1.00	0.09	0.28	0.38	1.23
25	0.50	0.71	0.29	0.93	0.66	2.16
35	1.00	0.50	0.69	2.25	1.35	4.41
45	1.50	0.35	2.26	7.36	3.61	11.77
60	2.00	0.25	7.34	23.94	10.96	35.71
80	2.50	0.18	12.17	39.68	23.13	75.39
120	3.00	0.13	6.86	22.35	29.98	97.74
170	3.50	0.09	0.40	1.29	30.38	99.03
200	3.75	0.07	0.04	0.13	30.42	99.16
230	4.00	0.06	0.01	0.04	30.43	99.20

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.69	2.50	2.18	1.78	1.59	1.04
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.08	0.24	0.57	-0.99	6.1	

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08





Gravel	Sand		Silt and Clay			
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information		
NE1-A6-08	●		SP	#200 - 0.84 #230 - 0.80	0.45	8.10	2.18	2.08	-0.99	6.1	0.57	Project Name:	MMS Field Study 2005 CT - 39075	
Comments:												Analysis Date:	12-04-05	
Depths and elevations based on measured values												Analyzed By:	SEA Inc.	
												Easting (ft):	582,662	
												Northing (ft):	2,091,219	
												Horizontal System:	NAD 1983	
												Vertical System:	MSL	

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-09

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

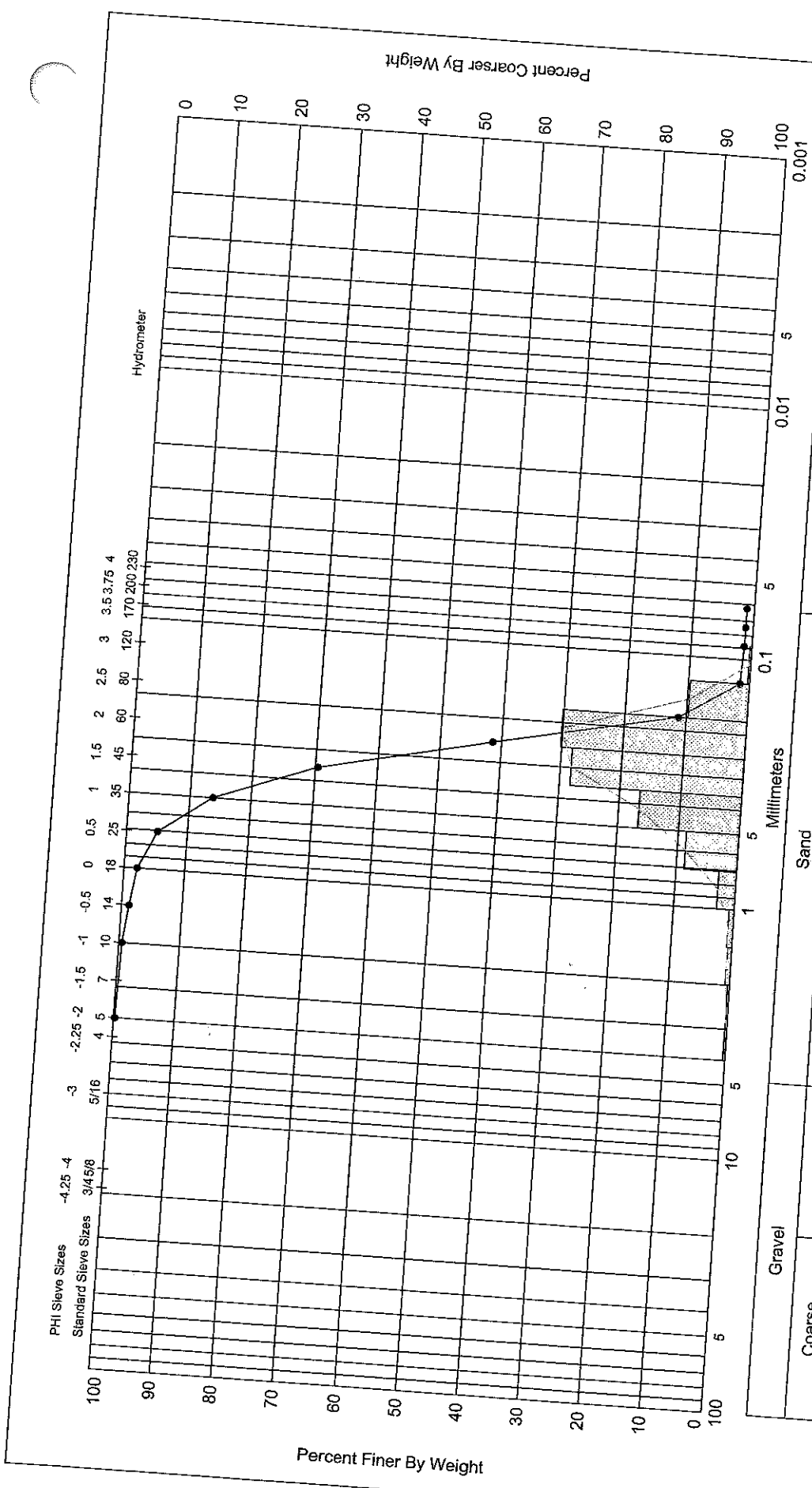
Easting (ft): <b>586,528</b>	Northing (ft): <b>2,087,035</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.24 #230 - 1.24	Organics (%):	Carbonates (%):	Shells (%):
30.11	29.77	0.00	0.08		0.61	12.59	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.06	0.19	0.06	0.19	
10	-1.00	2.00	0.10	0.33	0.16	0.52	
14	-0.50	1.41	0.22	0.74	0.38	1.26	
18	0.00	1.00	0.27	0.88	0.65	2.14	
25	0.50	0.71	0.90	2.97	1.54	5.11	
35	1.00	0.50	2.61	8.67	4.15	13.78	
45	1.50	0.35	5.00	16.61	9.15	30.39	
60	2.00	0.25	8.48	28.17	17.64	58.56	
80	2.50	0.18	9.08	30.15	26.72	88.71	
120	3.00	0.13	2.93	9.71	29.64	98.42	
170	3.50	0.09	0.09	0.30	29.73	98.72	
200	3.75	0.07	0.01	0.04	29.74	98.76	
230	4.00	0.06	0.00	0.00	29.74	98.76	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.42	2.27	1.85	1.34	1.07	0.48
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.73	0.30	0.71	-0.97	4.73	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	NE1-A6-09	Silt and Clay									
Symbol	Elev. (ft)	Gravel		Sand		Fine				Silt and Clay	
		Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort		
USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort			
SP	#200 - 1.24	0.61	12.59	1.85	1.73	-0.97	4.73	0.71			
	#230 - 1.24										

Comments:		Sample Information	
Depths and elevations based on measured values		Project Name:	MMS Field Study 2005 CT - 39075
		Analysis Date:	12-04-05
		Analyzed By:	SEA Inc.
		Easting (ft):	586,528
		Northing (ft):	2,087,035
		Horizontal System:	NAD 1983
		Vertical System:	MSL
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-10

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft):  
588,073

Northing (ft):  
2,087,511

Coordinate System:  
FL State Plane East NAD 83

Elevation (ft):

USCS:

SP

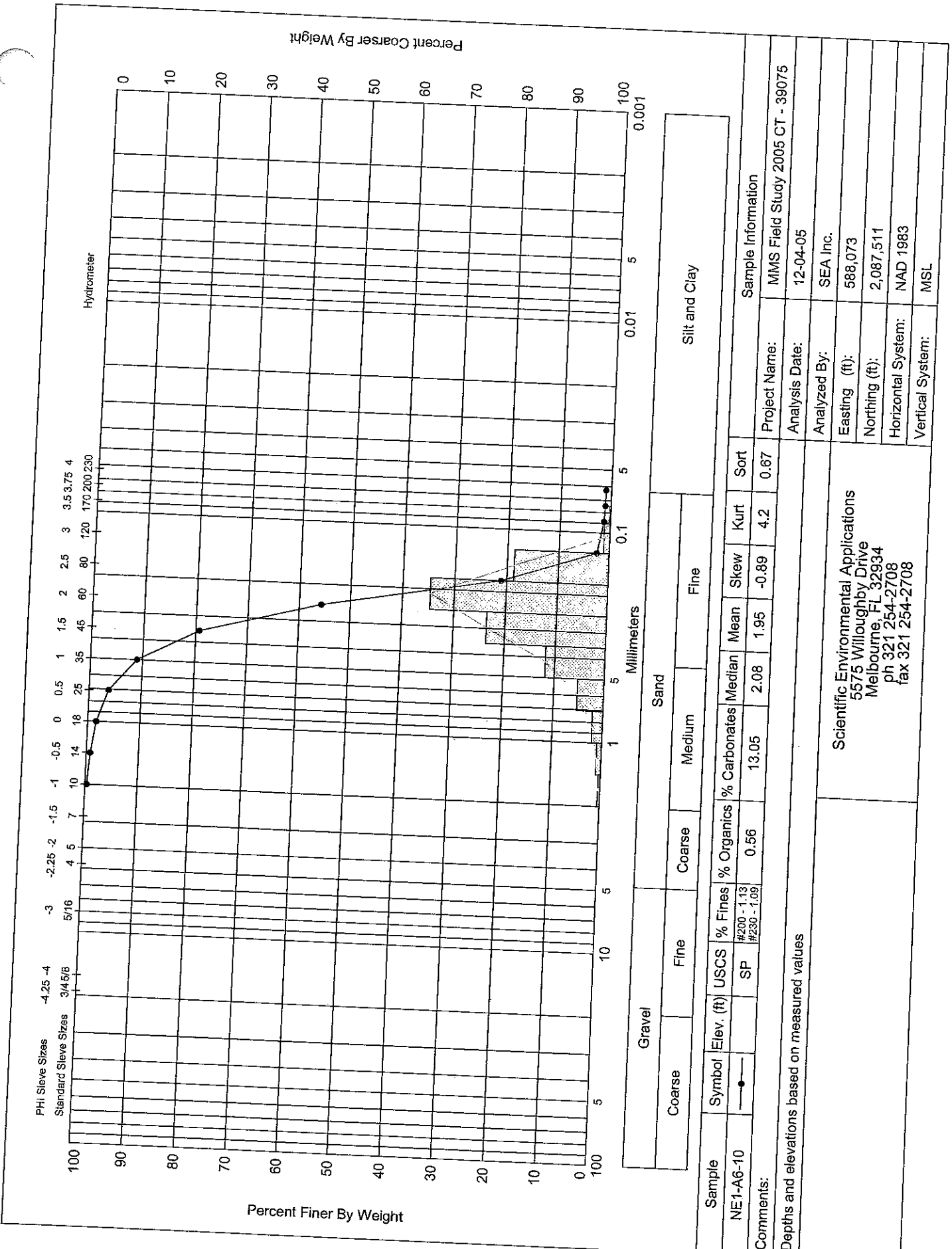
Munsell:

Comments:

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.13 #230 - 1.09	Organics (%):	Carbonates (%):	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
30.29	29.94	0.00	-0.08		0.56	13.05	
10	-1.00	2.00	0.10	0.34	0.10	0.34	
14	-0.50	1.41	0.12	0.39	0.22	0.73	
18	0.00	1.00	0.27	0.89	0.49	1.62	
25	0.50	0.71	0.63	2.09	1.13	3.71	
35	1.00	0.50	1.58	5.23	2.71	8.94	
45	1.50	0.35	3.57	11.77	6.28	20.71	
60	2.00	0.25	7.14	23.58	13.42	44.29	
80	2.50	0.18	10.48	34.61	23.90	78.90	
120	3.00	0.13	5.65	18.66	29.56	97.56	
170	3.50	0.09	0.35	1.15	29.90	98.71	
200	3.75	0.07	0.05	0.16	29.95	98.87	
230	4.00	0.06	0.01	0.04	29.97	98.91	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.64	2.44	2.08	1.59	1.30	0.62
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.95	0.26	0.67	-0.89	4.2	



Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	12-04-05
Analyzed By:	SEA Inc.
Easting (ft):	588,073
Northing (ft):	2,087,511
Horizontal System:	NAD 1983
Vertical System:	MSL

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Depths and elevations based on measured values

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-11

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>565,271</b>	Northing (ft): <b>2,111,624</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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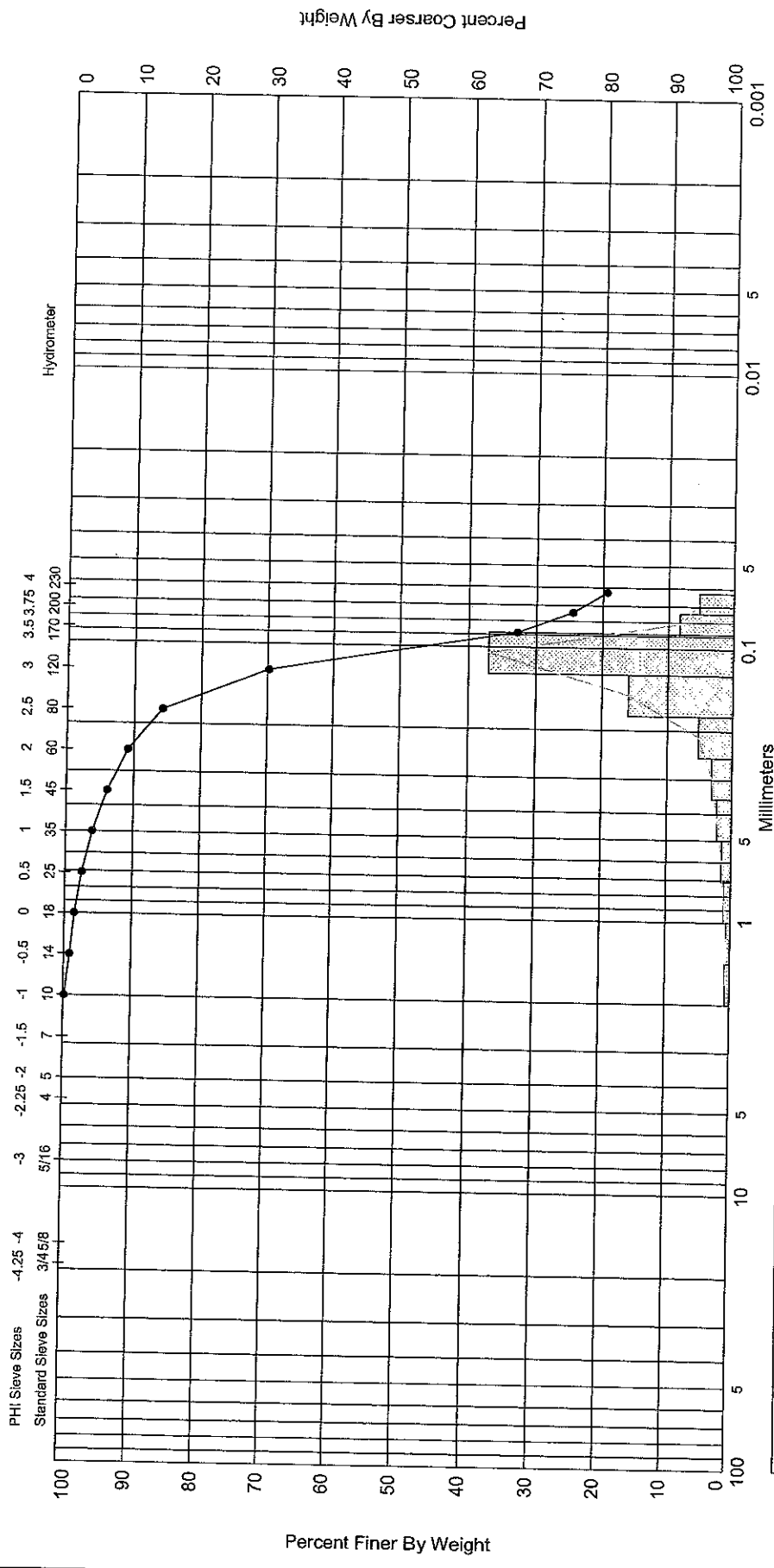
USCS: <b>SM</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.34</b>	Wash Weight (g): <b>24.78</b>	Pan Retained (g): <b>0.40</b>	Sieve Loss (%): <b>-0.28</b>	Fines (%): #200 - 24.50 #230 - 19.36	Organics (%): <b>2.25</b>	Carbonates (%): <b>11.17</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.05	0.16	0.05	0.16	
14	-0.50	1.41	0.21	0.69	0.26	0.85	
18	0.00	1.00	0.20	0.64	0.45	1.49	
25	0.50	0.71	0.30	0.99	0.75	2.48	
35	1.00	0.50	0.43	1.41	1.18	3.89	
45	1.50	0.35	0.67	2.19	1.85	6.08	
60	2.00	0.25	0.92	3.02	2.76	9.10	
80	2.50	0.18	1.56	5.13	4.32	14.23	
120	3.00	0.13	4.85	15.98	9.17	30.21	
170	3.50	0.09	11.23	37.01	20.39	67.22	
200	3.75	0.07	2.51	8.28	22.91	75.50	
230	4.00	0.06	1.56	5.14	24.47	80.64	

[Empty space for notes or additional data]

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.73	3.27	2.84	2.56	1.25
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.9	0.13	0.83	-2.03	7.8	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information		
												Project Name:	Analysis Date:	
NE1-A6-11	●		SM	#200 - 24.50 #230 - 19.36	2.25	11.17	3.27	2.9	-2.03	7.8	0.83	MMS Field Study 2005 CT - 39075	12-04-05	
Comments: Depths and elevations based on measured values													Analyzed By:	SEA Inc.
													Easting (ft):	565,271
													Northing (ft):	2,111,624
													Horizontal System:	NAD 1983
													Vertical System:	MSL
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-12

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>571,105</b>	Northing (ft): <b>2,099,148</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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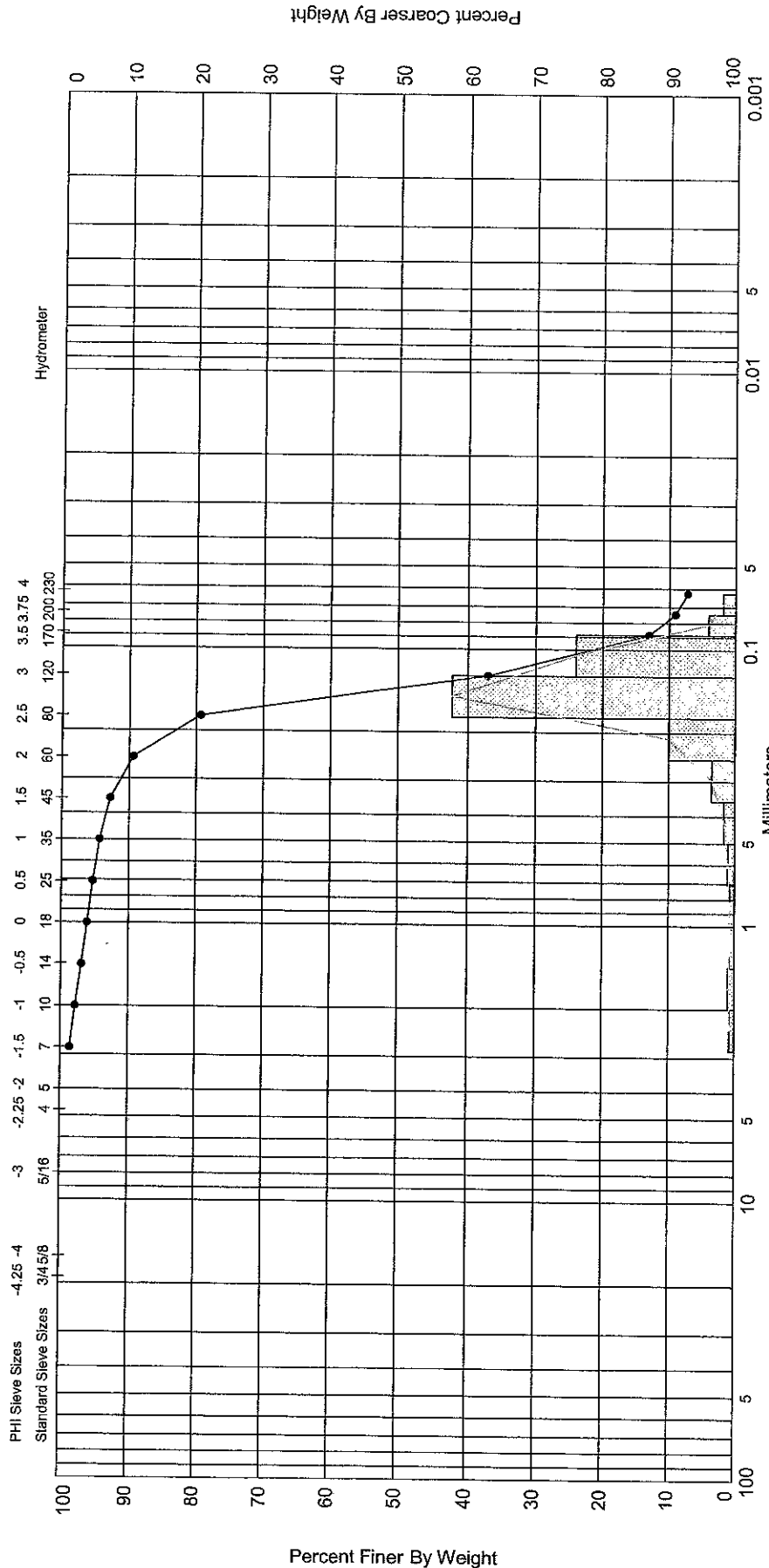
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 9.07 #230 - 7.24	Organics (%):	Carbonates (%):	Shells (%):
30.68	28.45	0.06	-0.21		2.06	9.74	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.41	1.35	0.41	1.35	
10	-1.00	2.00	0.23	0.76	0.65	2.11	
14	-0.50	1.41	0.28	0.90	0.92	3.01	
18	0.00	1.00	0.24	0.80	1.17	3.81	
25	0.50	0.71	0.24	0.79	1.41	4.60	
35	1.00	0.50	0.31	1.01	1.72	5.61	
45	1.50	0.35	0.48	1.58	2.20	7.19	
60	2.00	0.25	1.05	3.44	3.26	10.63	
80	2.50	0.18	3.08	10.05	6.34	20.68	
120	3.00	0.13	12.97	42.28	19.31	62.96	
170	3.50	0.09	7.35	23.97	26.67	86.93	
200	3.75	0.07	1.23	4.00	27.89	90.93	
230	4.00	0.06	0.56	1.83	28.46	92.76	

GRANULARMETRIC REPORT: MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.44	3.25	2.85	2.55	2.27	0.70
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.62	0.16	0.81	-2.22	10.2	





Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A6-12	●	—	SP	#200 - 9.07	2.06	9.74	2.85	2.62	-2.22	10.2	0.81	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	12-04-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	571,105		
												Northing (ft):	2,099,148		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A6-13

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>594,281</b>	Northing (ft): <b>2,086,051</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.19</b>	Wash Weight (g): <b>29.59</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.10</b>	Fines (%): #200 - 1.93 #230 - 1.91	Organics (%): <b>0.74</b>	Carbonates (%): <b>13.85</b>	Shells (%):
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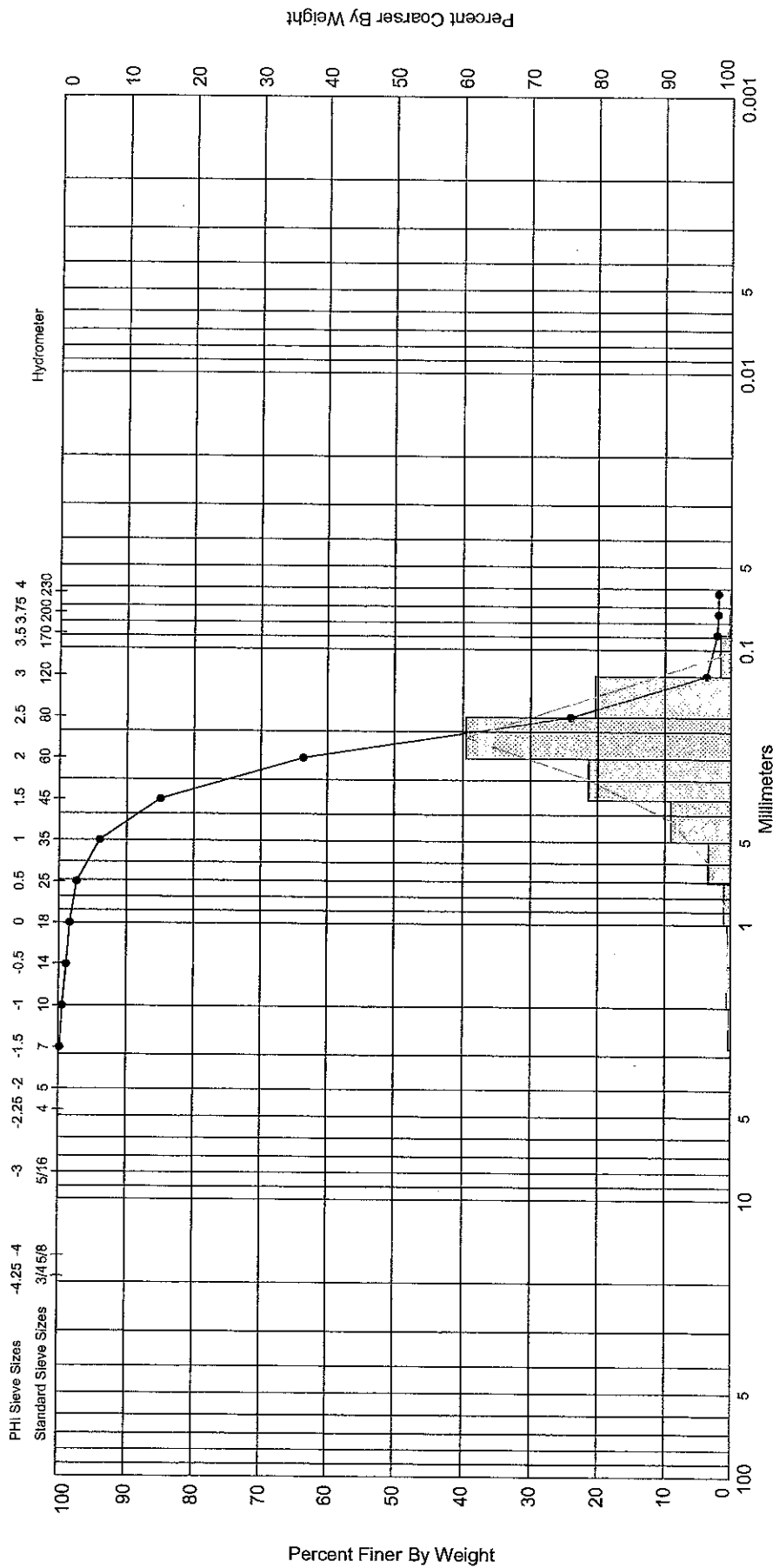
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.06	0.20	0.06	0.20
10	-1.00	2.00	0.10	0.34	0.16	0.54
14	-0.50	1.41	0.16	0.54	0.33	1.08
18	0.00	1.00	0.15	0.50	0.48	1.58
25	0.50	0.71	0.30	1.00	0.78	2.58
35	1.00	0.50	1.02	3.39	1.80	5.97
45	1.50	0.35	2.73	9.06	4.54	15.03
60	2.00	0.25	6.46	21.38	10.99	36.41
80	2.50	0.18	11.93	39.52	22.92	75.93
120	3.00	0.13	6.15	20.36	29.07	96.29
170	3.50	0.09	0.48	1.60	29.55	97.89
200	3.75	0.07	0.05	0.18	29.60	98.07
230	4.00	0.06	0.01	0.02	29.61	98.09

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.70	2.49	2.17	1.73	1.52	0.86

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.05	0.24	0.65	-1.4	6.87

GRANULOMETRIC REPORT: MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample		Sample Information								
Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-A6-13	—●—	SP	#200 - 1.93 #230 - 1.91	0.74	13.85	2.17	2.05	-1.4	6.87	0.65
Comments:										
Depths and elevations based on measured values										
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708										
Project Name:		MMS Field Study 2005 CT - 39075								
Analysis Date:		12-04-05								
Analyzed By:		SEA Inc.								
Easting (ft):		594,281								
Northing (ft):		2,086,051								
Horizontal System:		NAD 1983								
Vertical System:		MSL								

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-01

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>684,166</b>	Northing (ft): <b>1,892,434</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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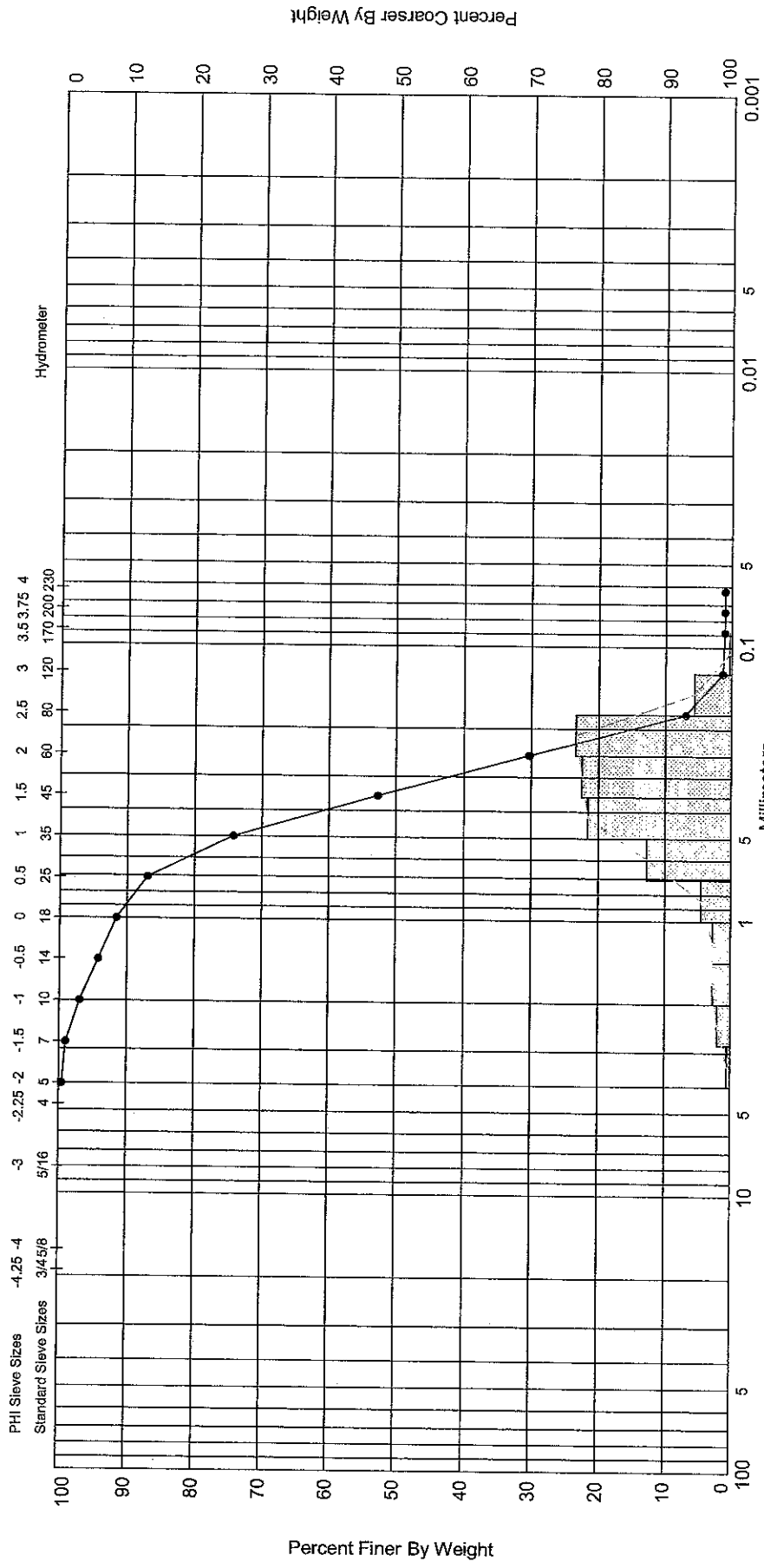
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.05 #230 - 1.05	Organics (%):	Carbonates (%):	Shells (%):
30.20	29.93	0.00	0.17		0.62	13.50	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.13	0.43	0.13	0.43	
7	-1.50	2.83	0.16	0.54	0.29	0.97	
10	-1.00	2.00	0.62	2.04	0.91	3.01	
14	-0.50	1.41	0.81	2.70	1.72	5.71	
18	0.00	1.00	0.83	2.75	2.55	8.46	
25	0.50	0.71	1.36	4.51	3.91	12.97	
35	1.00	0.50	3.86	12.77	7.77	25.74	
45	1.50	0.35	6.50	21.52	14.27	47.26	
60	2.00	0.25	6.78	22.45	21.05	69.71	
80	2.50	0.18	7.05	23.36	28.10	93.07	
120	3.00	0.13	1.68	5.57	29.78	98.64	
170	3.50	0.09	0.08	0.28	29.87	98.92	
200	3.75	0.07	0.01	0.03	29.88	98.95	
230	4.00	0.06	0.00	0.00	29.88	98.95	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.67	2.31	2.11	1.56	0.97	0.62	-0.63
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.4	0.38	0.91	-0.98	4.05	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel	Sand			Silt and Clay		
	Coarse	Medium	Fine			

Sample	NE1-A8-01	Symbol	●	Elev. (ft)	SP	USCS	% Fines	#200 - 1.05	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
									0.62	13.50	1.56	1.4	-0.98	4.05	0.91	Project Name:
																MMS Field Study 2005 CT - 39075
Comments:																
Depths and elevations based on measured values																
Analyzed By: SEA Inc.																
Easting (ft): 684,166																
Northing (ft): 1,892,434																
Horizontal System: NAD 1983																
Vertical System: MSL																
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-02

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>664,277</b>	Northing (ft): <b>1,908,061</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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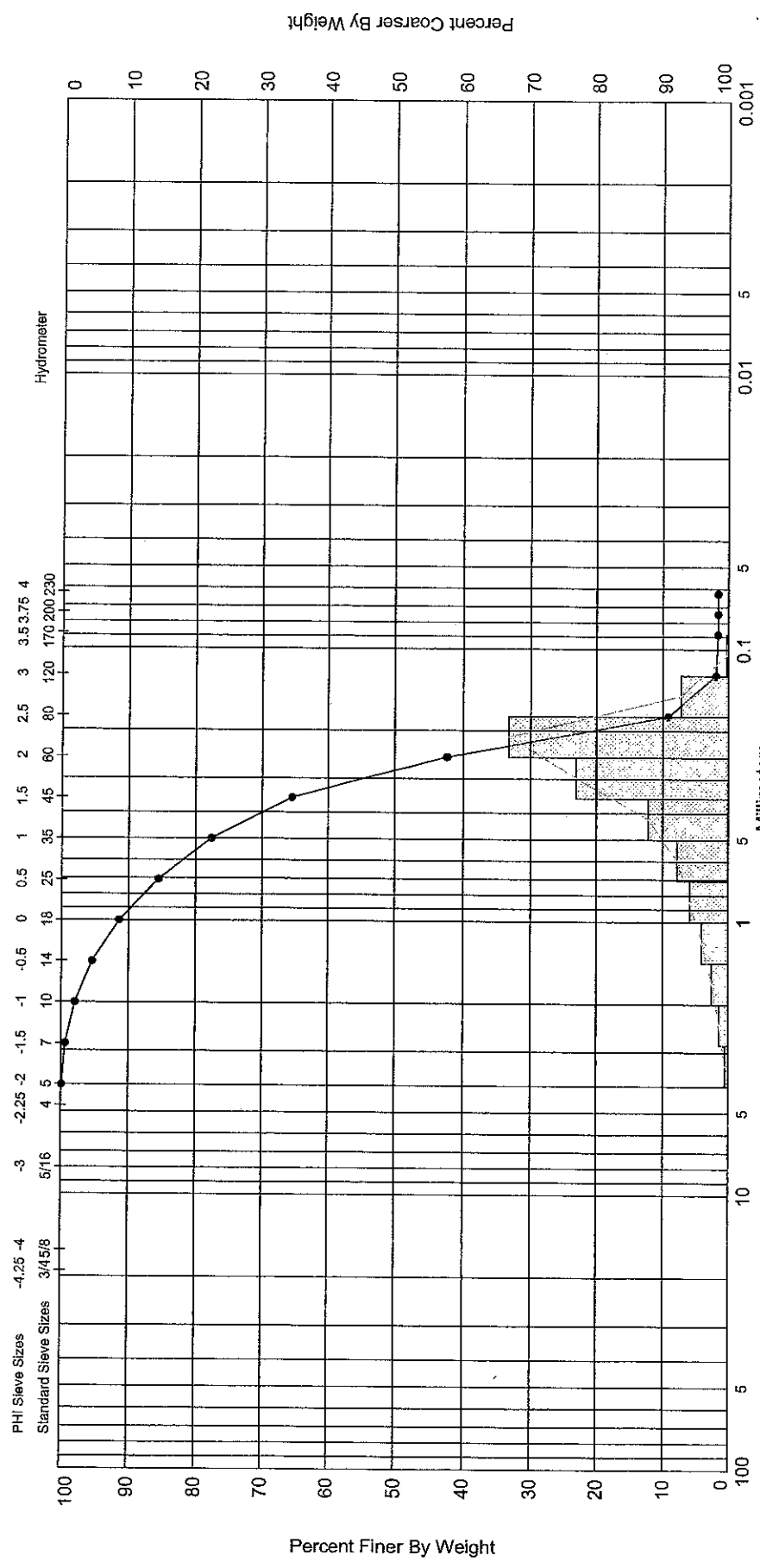
Dry Weight (g): <b>30.19</b>	Wash Weight (g): <b>29.80</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.33</b>	Fines (%): #200 - <b>1.61</b> #230 - <b>1.60</b>	Organics (%): <b>0.56</b>	Carbonates (%): <b>11.16</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.03	0.10	0.03	0.10
7	-1.50	2.83	0.16	0.54	0.19	0.64
10	-1.00	2.00	0.43	1.43	0.62	2.07
14	-0.50	1.41	0.76	2.52	1.39	4.59
18	0.00	1.00	1.22	4.05	2.61	8.64
25	0.50	0.71	1.76	5.82	4.37	14.46
35	1.00	0.50	2.38	7.89	6.75	22.35
45	1.50	0.35	3.69	12.23	10.44	34.58
60	2.00	0.25	6.96	23.06	17.40	57.64
80	2.50	0.18	10.01	33.16	27.41	90.80
120	3.00	0.13	2.20	7.27	29.60	98.07
170	3.50	0.09	0.09	0.28	29.69	98.35
200	3.75	0.07	0.01	0.04	29.70	98.39
230	4.00	0.06	0.00	0.01	29.70	98.40

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.79	2.40	2.26	1.83	1.11	0.60	-0.45
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.55	0.34	0.95	-1.16	3.96	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL\_DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A8-02	●		SP	#200 - 1.61 #230 - 1.80	0.56	11.16	1.83	1.55	-1.16	3.96	0.95	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	12-04-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	664,277		
												Northing (ft):	1,908,061		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-03

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>667,706</b>	Northing (ft): <b>1,904,377</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.67 #230 - 0.66	Organics (%):	Carbonates (%):	Shells (%):
30.13	29.90	0.00	-0.10		0.31	5.51	

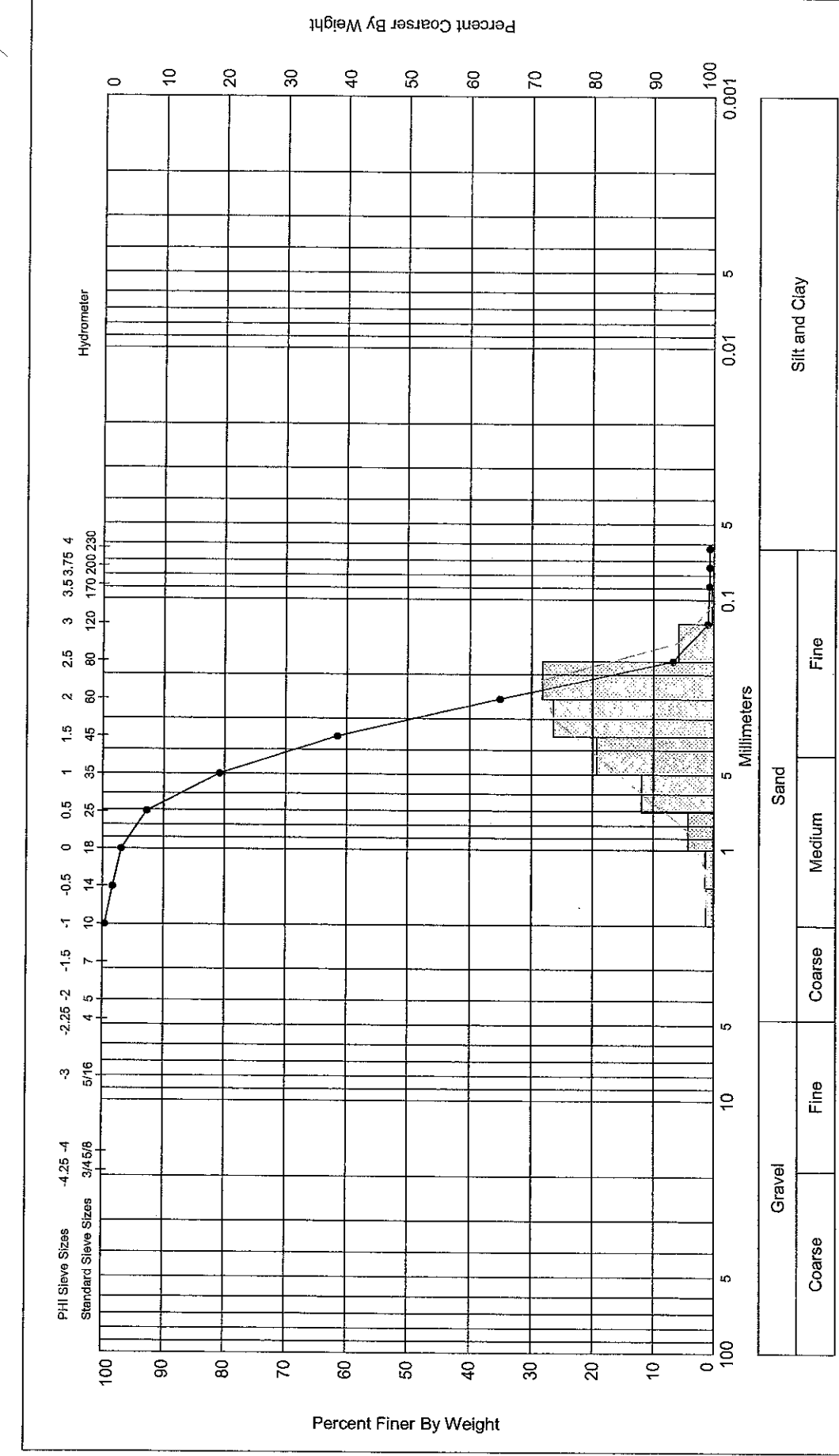
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.12	0.39	0.12	0.39
14	-0.50	1.41	0.39	1.28	0.50	1.67
18	0.00	1.00	0.41	1.37	0.92	3.04
25	0.50	0.71	1.26	4.19	2.18	7.23
35	1.00	0.50	3.61	11.97	5.79	19.20
45	1.50	0.35	5.82	19.31	11.61	38.51
60	2.00	0.25	7.96	26.41	19.56	64.92
80	2.50	0.18	8.52	28.27	28.08	93.19
120	3.00	0.13	1.75	5.82	29.83	99.01
170	3.50	0.09	0.09	0.29	29.92	99.30
200	3.75	0.07	0.01	0.03	29.93	99.33
230	4.00	0.06	0.00	0.01	29.93	99.34

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.66	2.34	2.18	1.72	1.15	0.87	0.23

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.6	0.33	0.72	-0.7	3.51

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE1-A8-03	—●—		SP	#200 - 0.67	0.31	5.51	1.6	1.72	-0.7	3.51	0.72	Project Name:	MMS Field Study 2005 CT - 39075			
				#230 - 0.66								Analysis Date:	12-04-05			
Comments:												Analyzed By:	SEA Inc.			
Depths and elevations based on measured values												Easting (ft):	667,706			
												Northing (ft):	1,904,377			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-04

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>673,527</b>	Northing (ft): <b>1,896,210</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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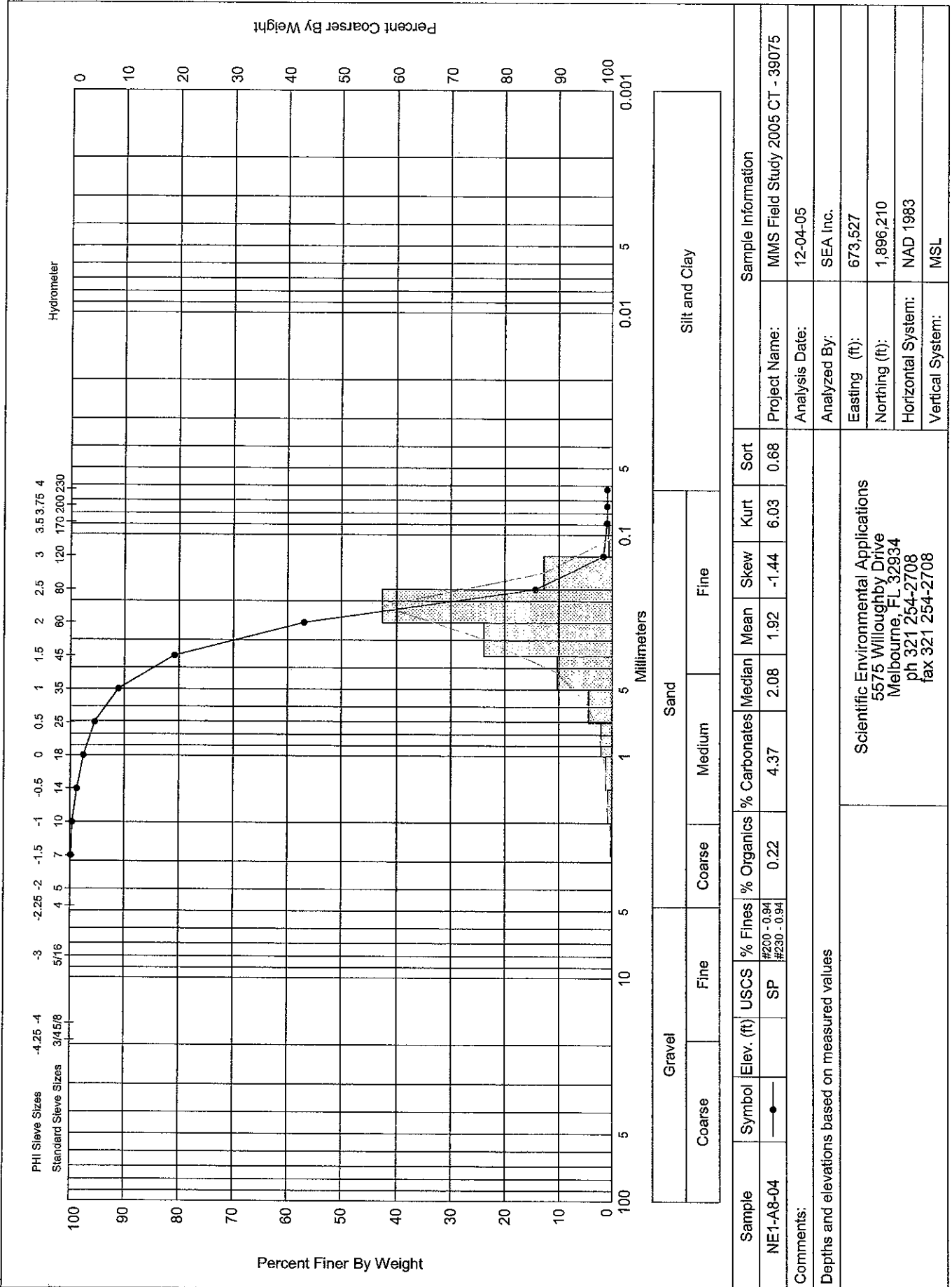
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.77</b>	Wash Weight (g): <b>30.48</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.03</b>	Fines (%): #200 - 0.94 #230 - 0.94	Organics (%): <b>0.22</b>	Carbonates (%): <b>4.37</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.04	0.14	0.04	0.14	
10	-1.00	2.00	0.07	0.22	0.11	0.36	
14	-0.50	1.41	0.27	0.87	0.38	1.23	
18	0.00	1.00	0.37	1.20	0.74	2.43	
25	0.50	0.71	0.65	2.12	1.40	4.55	
35	1.00	0.50	1.34	4.35	2.74	8.90	
45	1.50	0.35	3.16	10.27	5.90	19.17	
60	2.00	0.25	7.35	23.90	13.25	43.07	
80	2.50	0.18	13.08	42.52	26.33	85.59	
120	3.00	0.13	3.93	12.77	30.26	98.36	
170	3.50	0.09	0.20	0.66	30.46	99.02	
200	3.75	0.07	0.01	0.04	30.47	99.06	
230	4.00	0.06	0.00	0.00	30.47	99.06	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.87	2.48	2.38	2.08	1.62	1.35	0.55
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.92	0.26	0.68	-1.44	6.03	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL\_DEP ROSS.GDT 5/12/08



Comments:

Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	12-04-05
Analyzed By:	SEA Inc.
Easting (ft):	673,527
Northing (ft):	1,896,210
Horizontal System:	NAD 1983
Vertical System:	MSL

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-05

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>674,918</b>	Northing (ft): <b>1,901,344</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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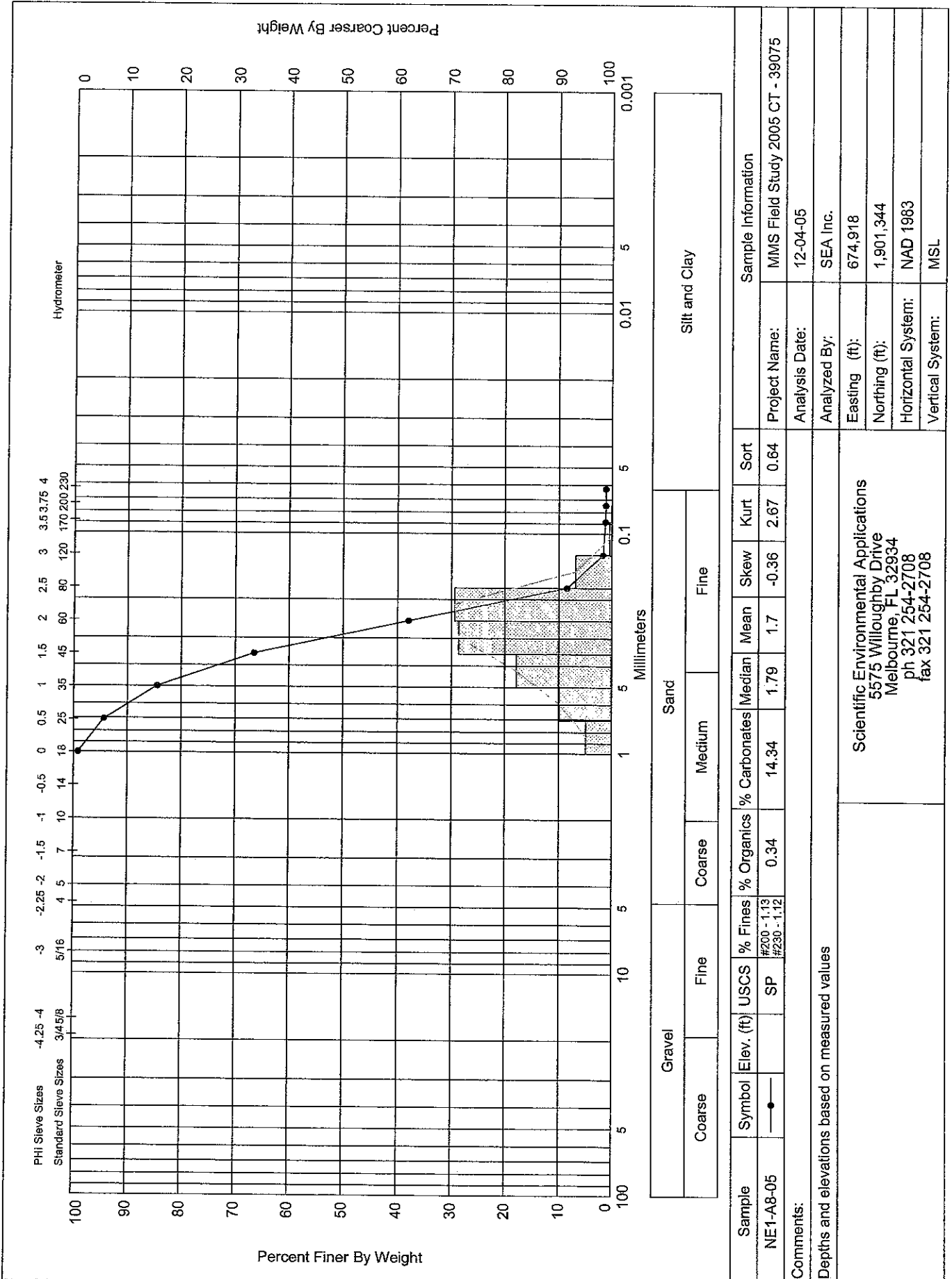
Dry Weight (g): <b>30.09</b>	Wash Weight (g): <b>29.89</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.47</b>	Fines (%): #200 - 1.13 #230 - 1.12	Organics (%): <b>0.34</b>	Carbonates (%): <b>14.34</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
18	0.00	1.00	0.25	0.83	0.25	0.83
25	0.50	0.71	1.45	4.81	1.70	5.64
35	1.00	0.50	2.99	9.94	4.69	15.58
45	1.50	0.35	5.38	17.87	10.06	33.45
60	2.00	0.25	8.62	28.65	18.68	62.10
80	2.50	0.18	8.85	29.41	27.53	91.51
120	3.00	0.13	2.07	6.87	29.60	98.38
170	3.50	0.09	0.13	0.43	29.73	98.81
200	3.75	0.07	0.02	0.06	29.74	98.87
230	4.00	0.06	0.00	0.01	29.75	98.88

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.75	2.37	2.22	1.79	1.26	1.01	0.43
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.7	0.31	0.64	-0.36	2.67	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
NE1-A8-05	●	—	SP	#200 - 1.13 #230 - 1.12	0.34	14.34	1.79	1.7	-0.36	2.67	0.64	Project Name:	MMS Field Study 2005 CT - 39075
Comments:												Analysis Date:	12-04-05
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	674,918
												Northing (ft):	1,901,344
												Horizontal System:	NAD 1983
												Vertical System:	MSL

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-06

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>667,388</b>	Northing (ft): <b>1,905,323</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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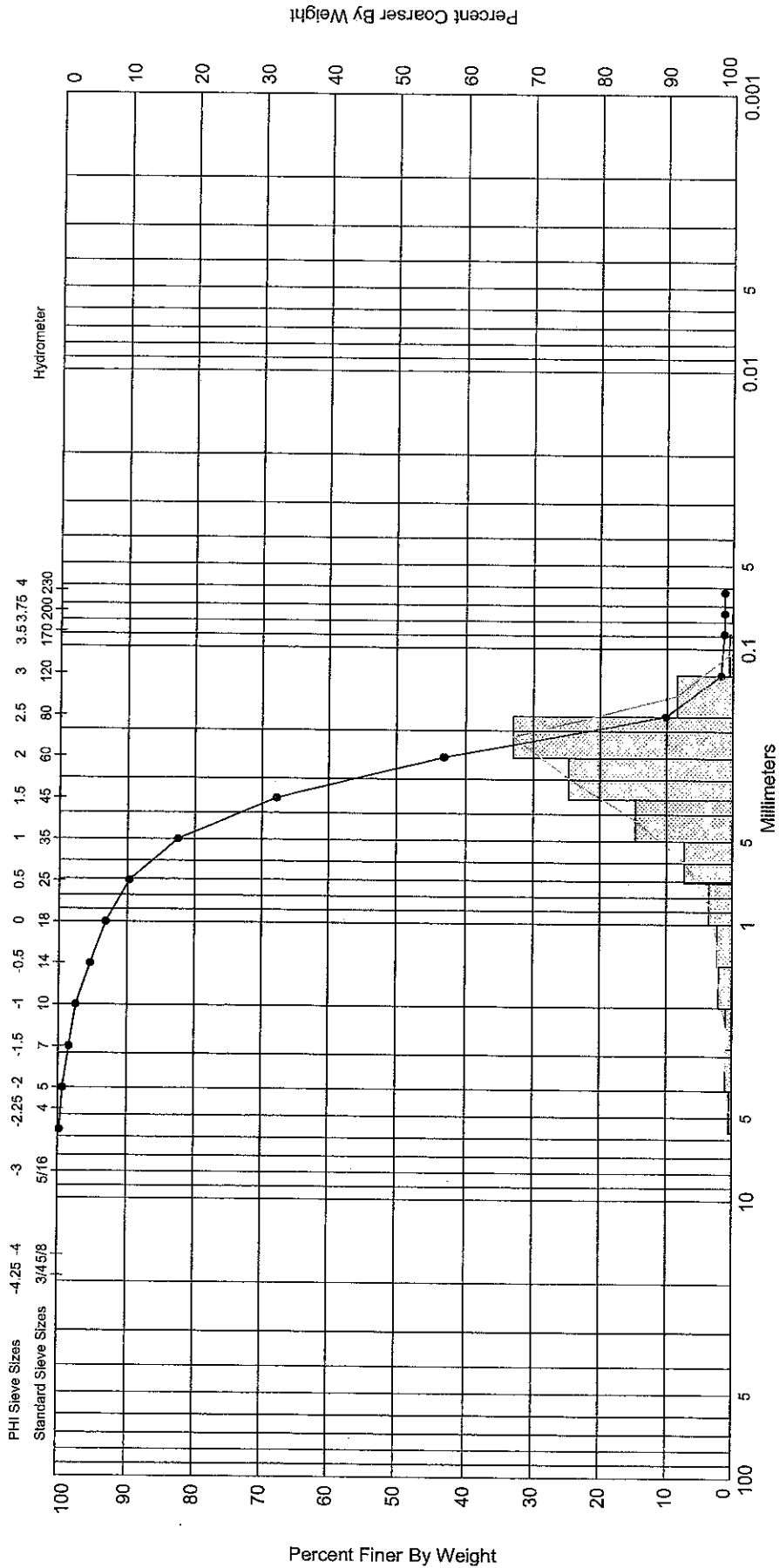
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.22</b>	Wash Weight (g): <b>29.92</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.20</b>	Fines (%): #200 - 1.21 #230 - 1.20	Organics (%): <b>0.71</b>	Carbonates (%): <b>24.34</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.07	0.22	0.07	0.22
5	-2.00	4.00	0.13	0.41	0.19	0.63
7	-1.50	2.83	0.28	0.93	0.47	1.56
10	-1.00	2.00	0.28	0.93	0.75	2.49
14	-0.50	1.41	0.62	2.05	1.37	4.54
18	0.00	1.00	0.68	2.25	2.05	6.79
25	0.50	0.71	1.05	3.48	3.10	10.27
35	1.00	0.50	2.20	7.27	5.30	17.54
45	1.50	0.35	4.43	14.65	9.73	32.19
60	2.00	0.25	7.45	24.66	17.18	56.85
80	2.50	0.18	9.96	32.97	27.14	89.82
120	3.00	0.13	2.55	8.44	29.70	98.26
170	3.50	0.09	0.14	0.47	29.84	98.73
200	3.75	0.07	0.02	0.06	29.86	98.79
230	4.00	0.06	0.00	0.01	29.86	98.80

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.81	2.41	2.28	1.86	1.25	0.89	-0.40
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.63	0.32	0.92	-1.51	5.8	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	NE1-A8-06	Symbol	—●—	Elev. (ft)	SP	USCS	% Fines #200 - 1.21	% Organics #230 - 1.20	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information						
									24.34	1.86	1.63	-1.51	5.8	0.92	Project Name:	MMS Field Study 2005 CT - 39075					
Comments:																Analysis Date:	12-04-05				
Depths and elevations based on measured values																Analyzed By:	SEA Inc.				
																Easting (ft):	667,388				
																Northing (ft):	1,905,323				
																Horizontal System:	NAD 1983				
																Vertical System:	MSL				
																Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-07

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>666,986</b>	Northing (ft): <b>1,902,904</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.22 #230 - 1.20	Organics (%):	Carbonates (%):	Shells (%):
30.50	30.15	0.00	0.06		0.48	13.71	

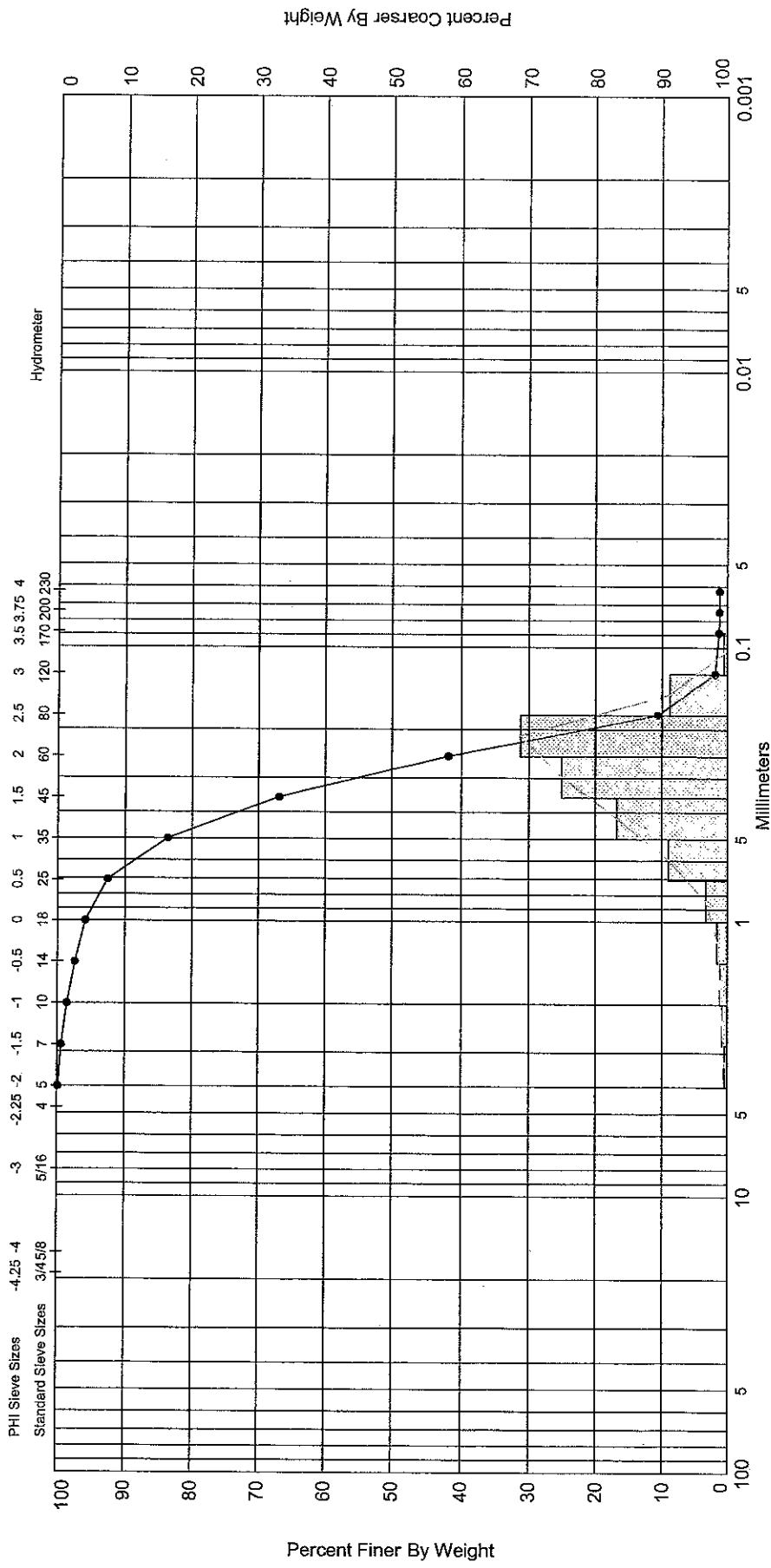
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.04	0.12	0.04	0.12
7	-1.50	2.83	0.15	0.48	0.18	0.60
10	-1.00	2.00	0.25	0.82	0.43	1.42
14	-0.50	1.41	0.35	1.14	0.78	2.56
18	0.00	1.00	0.47	1.53	1.25	4.09
25	0.50	0.71	1.00	3.27	2.25	7.36
35	1.00	0.50	2.75	9.01	4.99	16.37
45	1.50	0.35	5.09	16.70	10.08	33.07
60	2.00	0.25	7.65	25.07	17.73	58.14
80	2.50	0.18	9.53	31.24	27.26	89.38
120	3.00	0.13	2.67	8.74	29.93	98.12
170	3.50	0.09	0.18	0.58	30.10	98.70
200	3.75	0.07	0.03	0.08	30.13	98.78
230	4.00	0.06	0.01	0.02	30.13	98.80

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.41	2.27	1.84	1.26	0.98	0.14
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.68	0.31	0.81	-1.24	5.36	

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE1-A8-07	●	---	SP	#200 - 1.22 #230 - 1.20	0.48	13.71	1.84	1.68	-1.24	5.36	0.81	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	12-04-05			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (ft):	666,986			
												Northing (ft):	1,902,904			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-08

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>675,768</b>	Northing (ft): <b>1,898,156</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.63</b>	Wash Weight (g): <b>30.33</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.41</b>	Fines (%): #200 - 1.40 #230 - 1.40	Organics (%): <b>0.46</b>	Carbonates (%): <b>14.22</b>	Shells (%):
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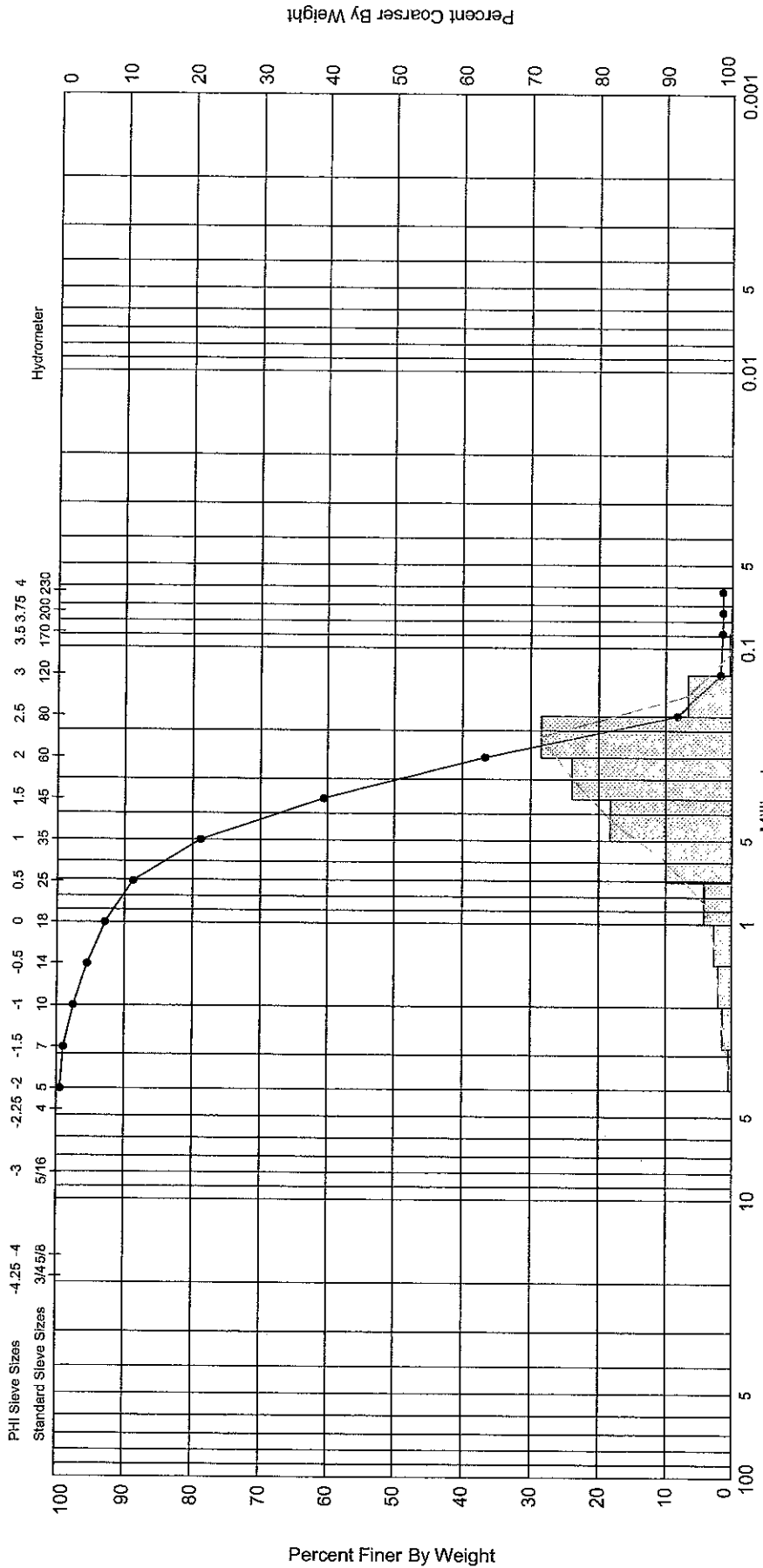
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.16	0.52	0.16	0.52
7	-1.50	2.83	0.14	0.46	0.30	0.98
10	-1.00	2.00	0.45	1.45	0.74	2.43
14	-0.50	1.41	0.62	2.03	1.37	4.46
18	0.00	1.00	0.81	2.66	2.18	7.12
25	0.50	0.71	1.27	4.14	3.45	11.26
35	1.00	0.50	3.05	9.94	6.49	21.20
45	1.50	0.35	5.58	18.22	12.07	39.42
60	2.00	0.25	7.32	23.89	19.39	63.31
80	2.50	0.18	8.70	28.39	28.09	91.70
120	3.00	0.13	2.02	6.58	30.10	98.28
170	3.50	0.09	0.09	0.29	30.19	98.57
200	3.75	0.07	0.01	0.03	30.20	98.60
230	4.00	0.06	0.00	0.00	30.20	98.60

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.75	2.36	2.21	1.72	1.10	0.74	-0.40

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.52	0.35	0.88	-1.11	4.42

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEF ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A8-08	●	—	SP	#200 - 1.40 #230 - 1.40	0.46	14.22	1.72	1.52	-1.11	4.42	0.88	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	12-04-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	675,768		
												Northing (ft):	1,898,156		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-09

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>687,403</b>	Northing (ft): <b>1,893,395</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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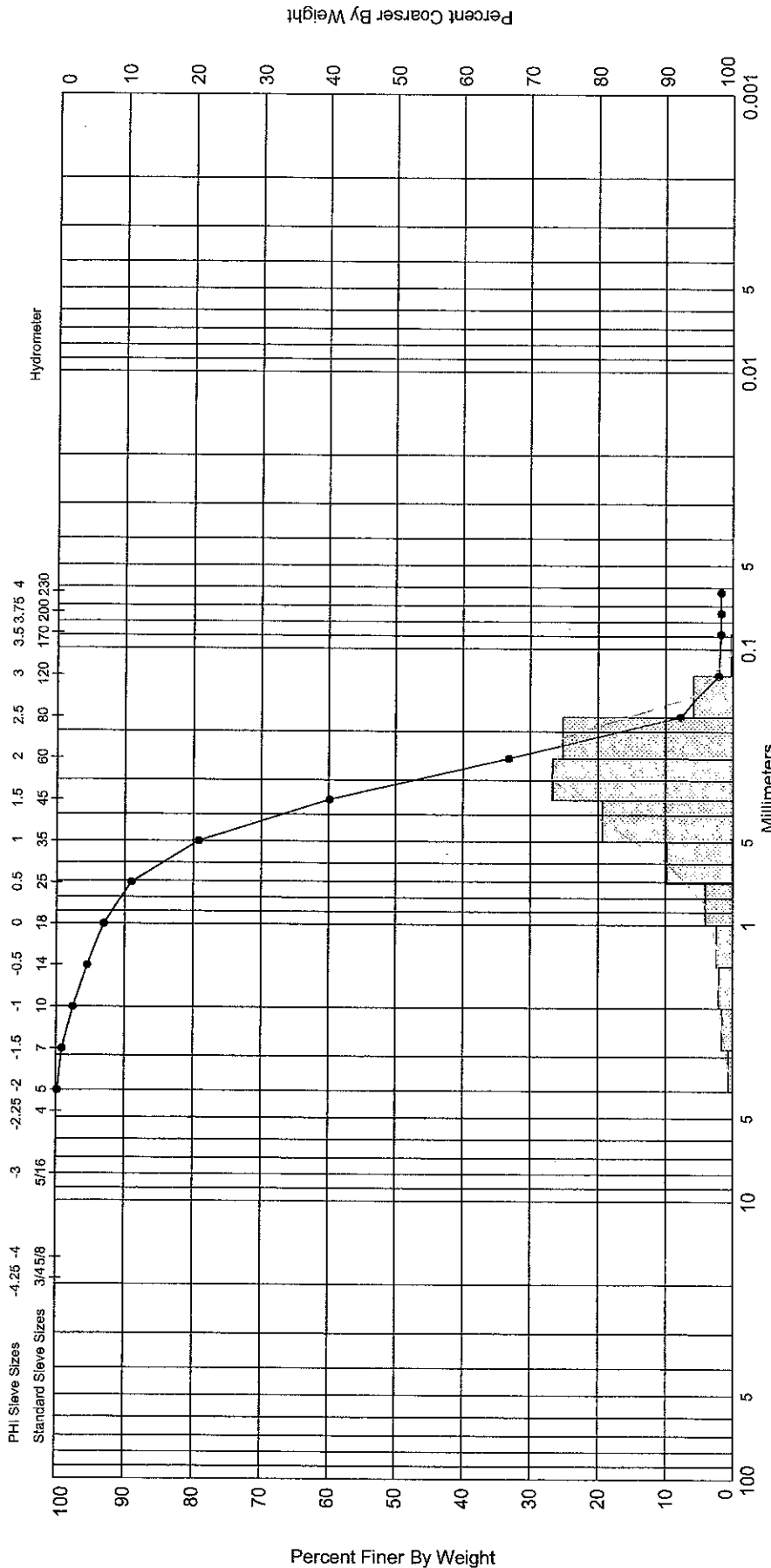
Dry Weight (g): <b>30.44</b>	Wash Weight (g): <b>30.11</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.62</b>	Fines (%): #200 - 1.74 #230 - 1.73	Organics (%): <b>0.90</b>	Carbonates (%): <b>18.91</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.05	0.16	0.05	0.16
7	-1.50	2.83	0.20	0.65	0.25	0.81
10	-1.00	2.00	0.49	1.60	0.73	2.41
14	-0.50	1.41	0.64	2.09	1.37	4.50
18	0.00	1.00	0.74	2.42	2.11	6.92
25	0.50	0.71	1.24	4.06	3.35	10.98
35	1.00	0.50	3.00	9.84	6.34	20.82
45	1.50	0.35	5.88	19.33	12.23	40.15
60	2.00	0.25	8.13	26.71	20.36	66.86
80	2.50	0.18	7.69	25.26	28.05	92.12
120	3.00	0.13	1.77	5.80	29.81	97.92
170	3.50	0.09	0.09	0.30	29.91	98.22
200	3.75	0.07	0.01	0.04	29.92	98.26
230	4.00	0.06	0.00	0.01	29.92	98.27

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.75	2.34	2.16	1.68	1.11	0.76	-0.40
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.5	0.35	0.88	-1.2	4.75	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NET-A8-09	●	—	SP	#200 - 1.74	0.90	18.91	1.68	1.5	-1.2	4.75	0.88	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	12-04-05			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (ft):	687,403			
												Northing (ft):	1,893,395			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-10

Analysis Date: 12-04-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>682,311</b>	Northing (ft): <b>1,891,960</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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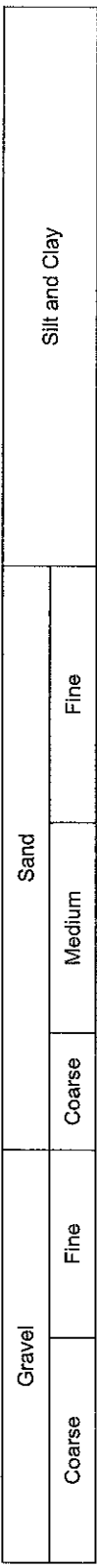
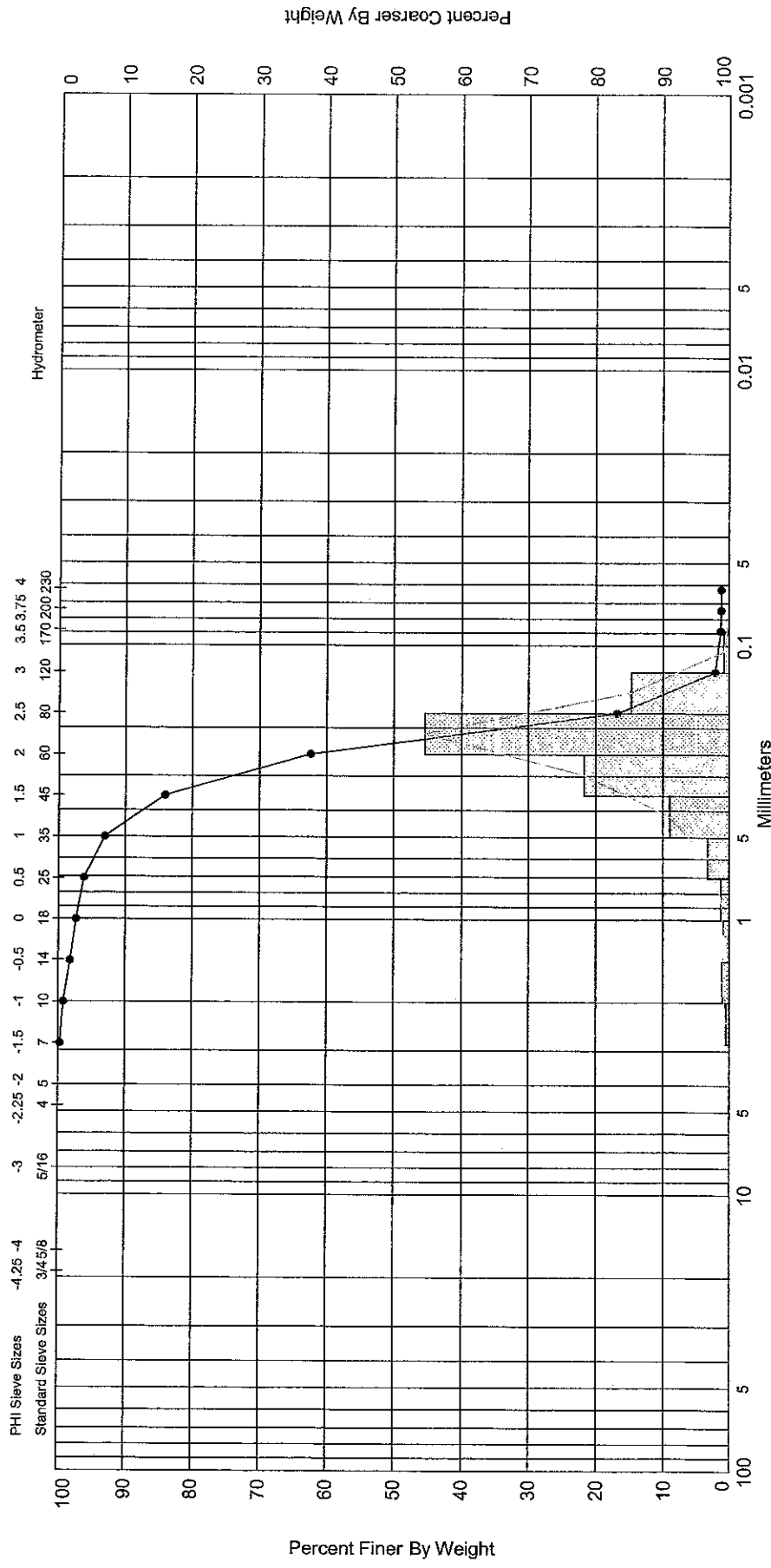
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.57</b>	Wash Weight (g): <b>30.14</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.24</b>	Fines (%): #200 - 1.18 #230 - 1.16	Organics (%): <b>0.78</b>	Carbonates (%): <b>12.78</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.08	0.26	0.08	0.26
10	-1.00	2.00	0.15	0.49	0.23	0.75
14	-0.50	1.41	0.30	0.98	0.53	1.73
18	0.00	1.00	0.28	0.90	0.80	2.63
25	0.50	0.71	0.36	1.17	1.16	3.80
35	1.00	0.50	0.96	3.14	2.12	6.94
45	1.50	0.35	2.75	9.01	4.87	15.95
60	2.00	0.25	6.64	21.71	11.51	37.66
80	2.50	0.18	13.92	45.54	25.43	83.20
120	3.00	0.13	4.51	14.75	29.95	97.95
170	3.50	0.09	0.24	0.79	30.19	98.74
200	3.75	0.07	0.02	0.08	30.21	98.82
230	4.00	0.06	0.01	0.02	30.22	98.84

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.90	2.53	2.41	2.14	1.71	1.50	0.69
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.98	0.25	0.67	-1.75	7.87	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE1-A8-10	●	—	SP	#200 - 1.18 #230 - 1.16	0.78	12.78	2.14	1.98	-1.75	7.87	0.67	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	12-04-05	Analyzed By:	SEA Inc.	Easting (ft):	682,311	Northing (ft):	1,891,960	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Depths and elevations based on measured values																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-11

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>668,694</b>	Northing (ft): <b>1,897,487</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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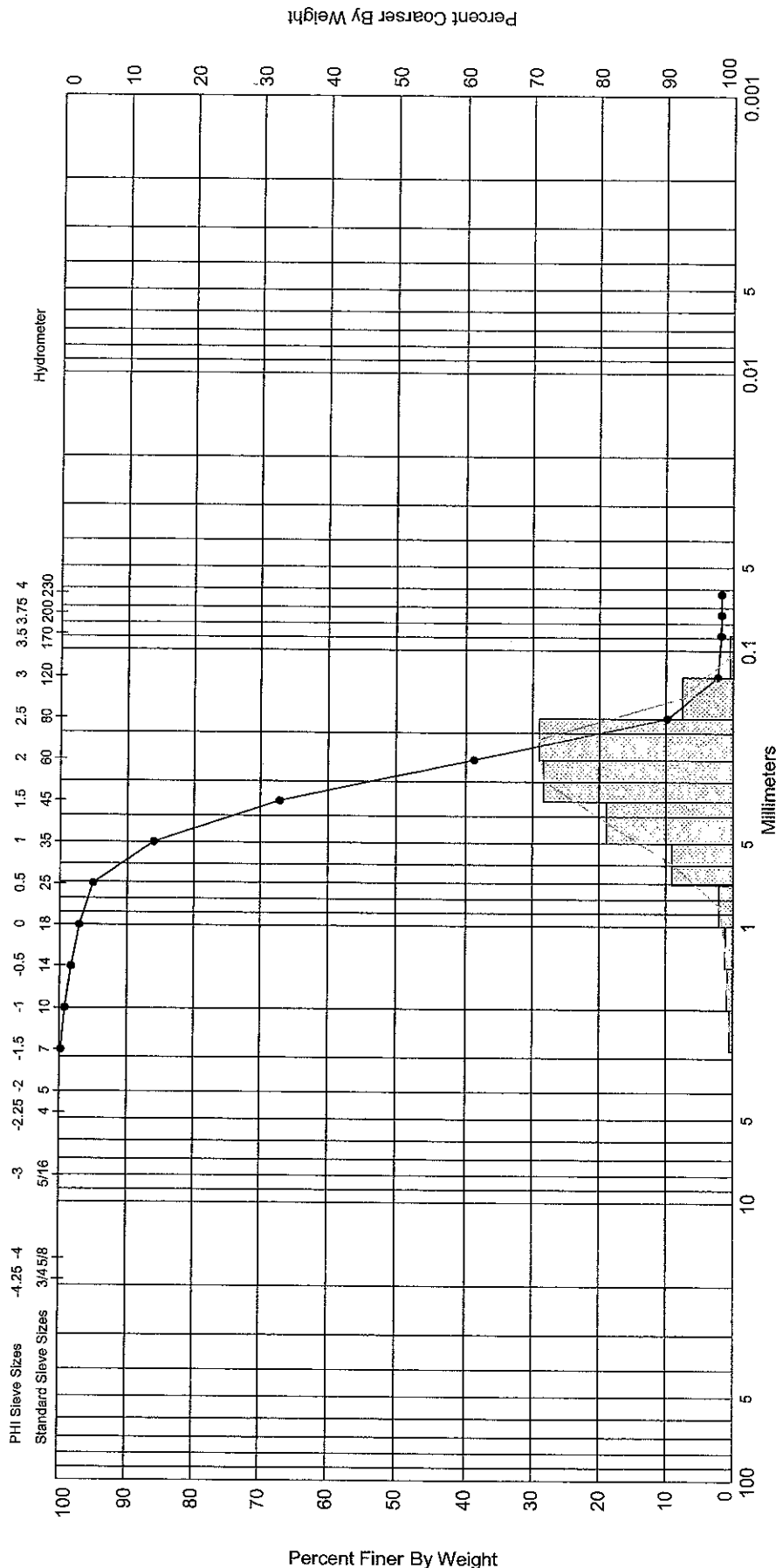
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.74 #230 - 1.72	Organics (%):	Carbonates (%):	Shells (%):
30.18	29.70	0.00	0.08		0.75	11.77	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.06	0.21	0.06	0.21	
10	-1.00	2.00	0.17	0.57	0.24	0.78	
14	-0.50	1.41	0.27	0.89	0.51	1.67	
18	0.00	1.00	0.35	1.16	0.86	2.83	
25	0.50	0.71	0.62	2.04	1.47	4.87	
35	1.00	0.50	2.74	9.07	4.21	13.94	
45	1.50	0.35	5.71	18.91	9.92	32.85	
60	2.00	0.25	8.57	28.38	18.49	61.23	
80	2.50	0.18	8.74	28.97	27.23	90.20	
120	3.00	0.13	2.28	7.54	29.51	97.74	
170	3.50	0.09	0.14	0.47	29.65	98.21	
200	3.75	0.07	0.02	0.05	29.66	98.26	
230	4.00	0.06	0.01	0.02	29.67	98.28	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.39	2.24	1.80	1.29	1.05	0.51
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.69	0.31	0.71	-0.99	4.95	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL\_DEF ROSS.GDT 5/12/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A8-11	●	—	SP	#200 - 1.74 #230 - 1.72	0.75	11.77	1.8	1.69	-0.99	4.95	0.71	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	12-29-05		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	668,694		
												Northing (ft):	1,897,487		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-12

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>666,051</b>	Northing (ft): <b>1,912,965</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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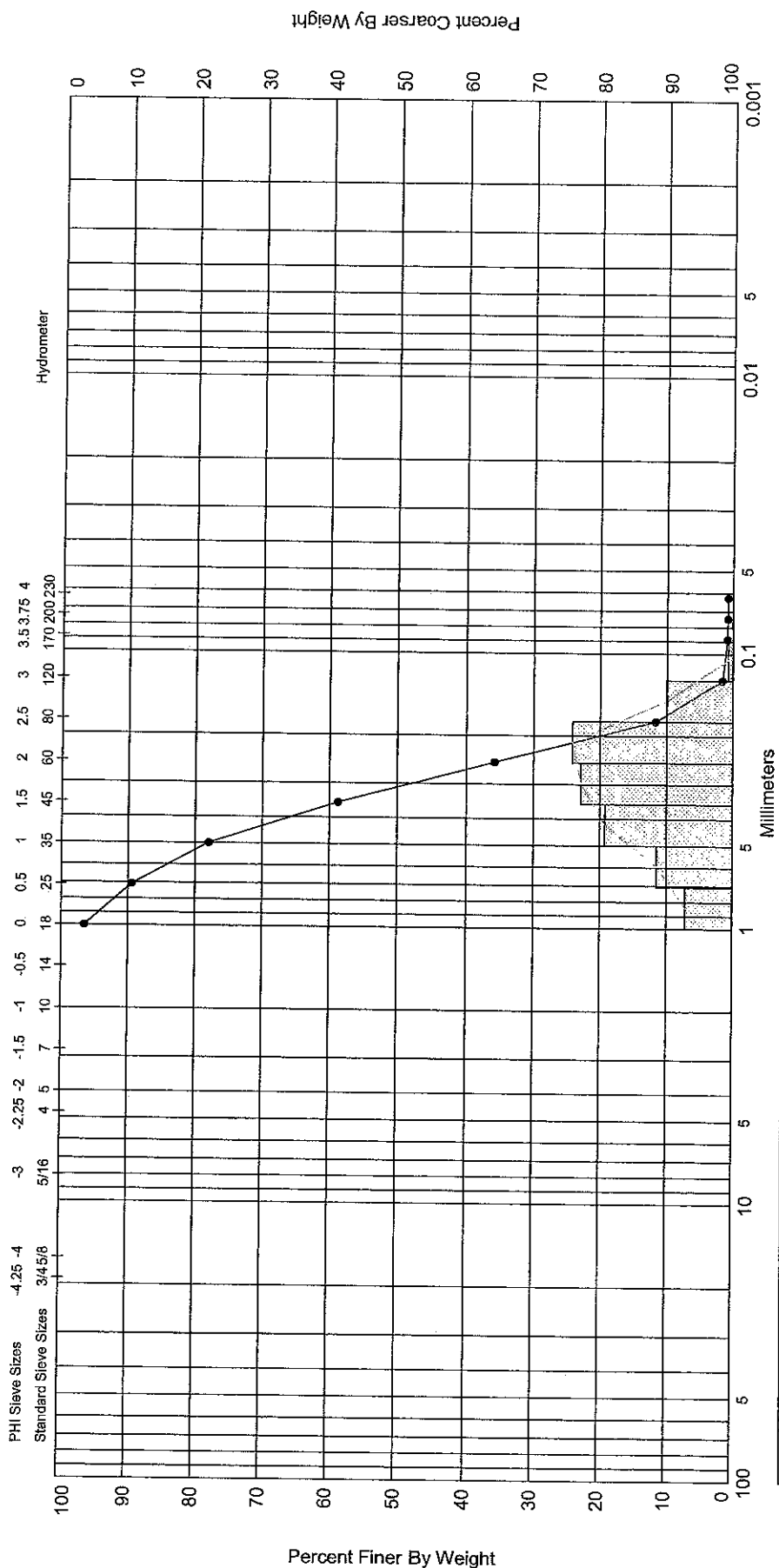
Dry Weight (g): <b>30.63</b>	Wash Weight (g): <b>30.39</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.01</b>	Fines (%): <b>#200 - 0.83</b> <b>#230 - 0.80</b>	Organics (%): <b>0.83</b>	Carbonates (%): <b>23.50</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
18	0.00	1.00	1.06	3.47	1.06	3.47
25	0.50	0.71	2.18	7.13	3.25	10.60
35	1.00	0.50	3.50	11.43	6.75	22.03
45	1.50	0.35	5.90	19.25	12.64	41.28
60	2.00	0.25	7.01	22.89	19.66	64.17
80	2.50	0.18	7.40	24.17	27.06	88.34
120	3.00	0.13	3.09	10.07	30.15	98.41
170	3.50	0.09	0.21	0.70	30.36	99.11
200	3.75	0.07	0.02	0.06	30.38	99.17
230	4.00	0.06	0.01	0.03	30.39	99.20

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.83	2.41	2.22	1.69	1.08	0.74	0.11
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.6	0.33	0.71	0.04	2.34	

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	NE1-A8-12	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines #200 - 0.83	% Organics #230 - 0.80	% Carbonates	23.50	Median	1.69	Mean	1.6	Skew	0.04	Kurt	2.34	Sort	0.71
Comments:																					
Depths and elevations based on measured values																					
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																					
Sample Information												MMS Field Study 2005 CT - 39075									
Analysis Date:												01-02-06									
Analyzed By:												SEA Inc.									
Easting (ft):												666,051									
Northing (ft):												1,912,965									
Horizontal System:												NAD 1983									
Vertical System:												MSL									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A8-13

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>671,317</b>	Northing (ft): <b>1,910,651</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.31</b>	Wash Weight (g): <b>29.96</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.06</b>	Fines (%): #200 - 1.20 #230 - 1.11	Organics (%): <b>0.98</b>	Carbonates (%): <b>23.73</b>	Shells (%):
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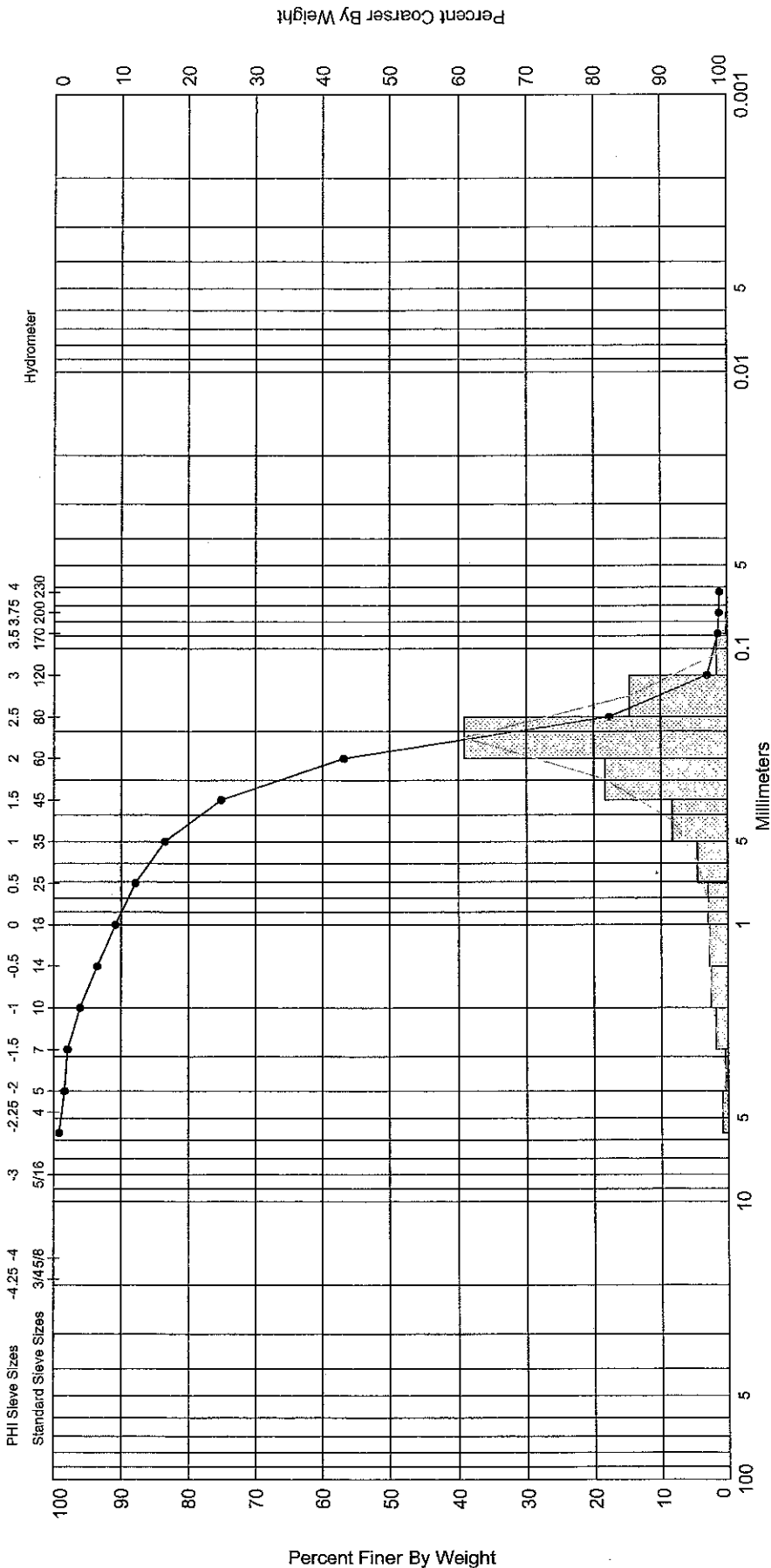
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.25	0.83	0.25	0.83
5	-2.00	4.00	0.24	0.80	0.49	1.63
7	-1.50	2.83	0.13	0.42	0.62	2.05
10	-1.00	2.00	0.55	1.83	1.18	3.88
14	-0.50	1.41	0.77	2.54	1.95	6.42
18	0.00	1.00	0.83	2.73	2.77	9.15
25	0.50	0.71	0.89	2.94	3.66	12.09
35	1.00	0.50	1.34	4.43	5.01	16.52
45	1.50	0.35	2.53	8.33	7.53	24.85
60	2.00	0.25	5.57	18.37	13.10	43.22
80	2.50	0.18	11.84	39.06	24.94	82.28
120	3.00	0.13	4.46	14.70	29.39	96.98
170	3.50	0.09	0.49	1.62	29.89	98.60
200	3.75	0.07	0.06	0.20	29.95	98.80
230	4.00	0.06	0.03	0.09	29.98	98.89

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.56	2.41	2.09	1.50	0.94	-0.78

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.74	0.30	1.02	-1.54	5.51

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Sand			Median	Mean	Skew	Kurt	Sort	Sample Information						
							Coarse	Medium	Fine						Project Name:	Analysis Date:	Analyzed By:	Easting (ft):	Northing (ft):	Horizontal System:	Vertical System:
NE1-A8-13	●		SP	#200 - 1.20 #230 - 1.11	0.98	23.73	Coarse	Medium	Fine	2.09	1.74	-1.54	5.51	1.02	MMS Field Study 2005 CT - 39075	01-02-06	SEA Inc.	671,317	1,910,651	NAD 1983	MSL
Comments:																					
Depths and elevations based on measured values																					
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																					

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-01

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>678,056</b>	Northing (ft): <b>1,827,369</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.42</b>	Wash Weight (g): <b>29.69</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.61</b>	Fines (%): #200 - 1.79 #230 - 1.76	Organics (%): <b>0.53</b>	Carbonates (%): <b>14.54</b>	Shells (%):
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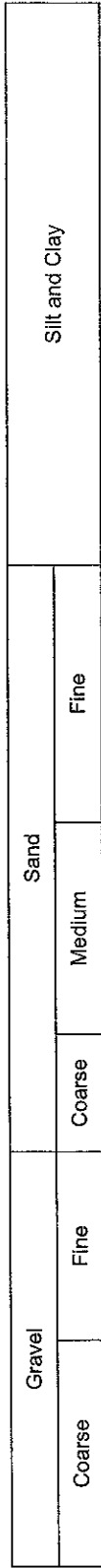
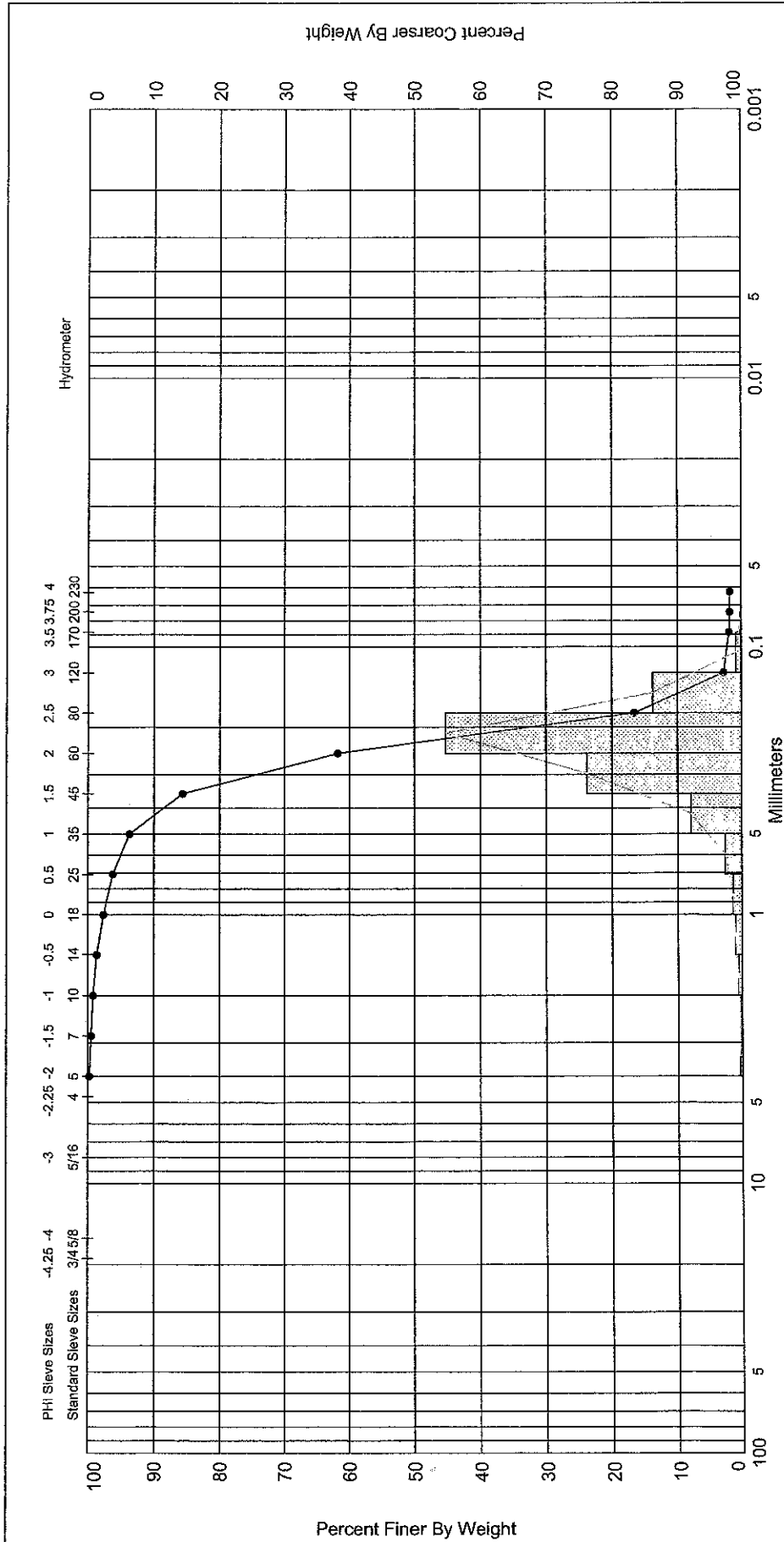
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.07	0.24	0.07	0.24
7	-1.50	2.83	0.08	0.28	0.16	0.52
10	-1.00	2.00	0.09	0.30	0.25	0.82
14	-0.50	1.41	0.16	0.54	0.41	1.36
18	0.00	1.00	0.30	0.99	0.71	2.35
25	0.50	0.71	0.42	1.38	1.13	3.73
35	1.00	0.50	0.79	2.59	1.92	6.32
45	1.50	0.35	2.44	8.01	4.36	14.33
60	2.00	0.25	7.25	23.85	11.61	38.18
80	2.50	0.18	13.75	45.22	25.36	83.40
120	3.00	0.13	4.21	13.84	29.57	97.24
170	3.50	0.09	0.26	0.85	29.83	98.09
200	3.75	0.07	0.04	0.12	29.87	98.21
230	4.00	0.06	0.01	0.03	29.88	98.24

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	2.52	2.41	2.13	1.72	1.54	0.75

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.99	0.25	0.66	-1.87	9.18

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE1-A9-01	—●—		SP	#200 - 1.79 #230 - 1.76	0.53	14.54	2.13	1.99	-1.87	9.18	0.66	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	12-29-05	Analyzed By:	SEA Inc.	Easting (ft):	678,056	Northing (ft):	1,827,369	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:													Depths and elevations based on measured values												
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-02

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>678,636</b>	Northing (ft): <b>1,817,315</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.24</b>	Wash Weight (g): <b>29.90</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.32</b>	Fines (%): #200 - 0.86 #230 - 0.83	Organics (%): <b>0.66</b>	Carbonates (%): <b>18.93</b>	Shells (%):
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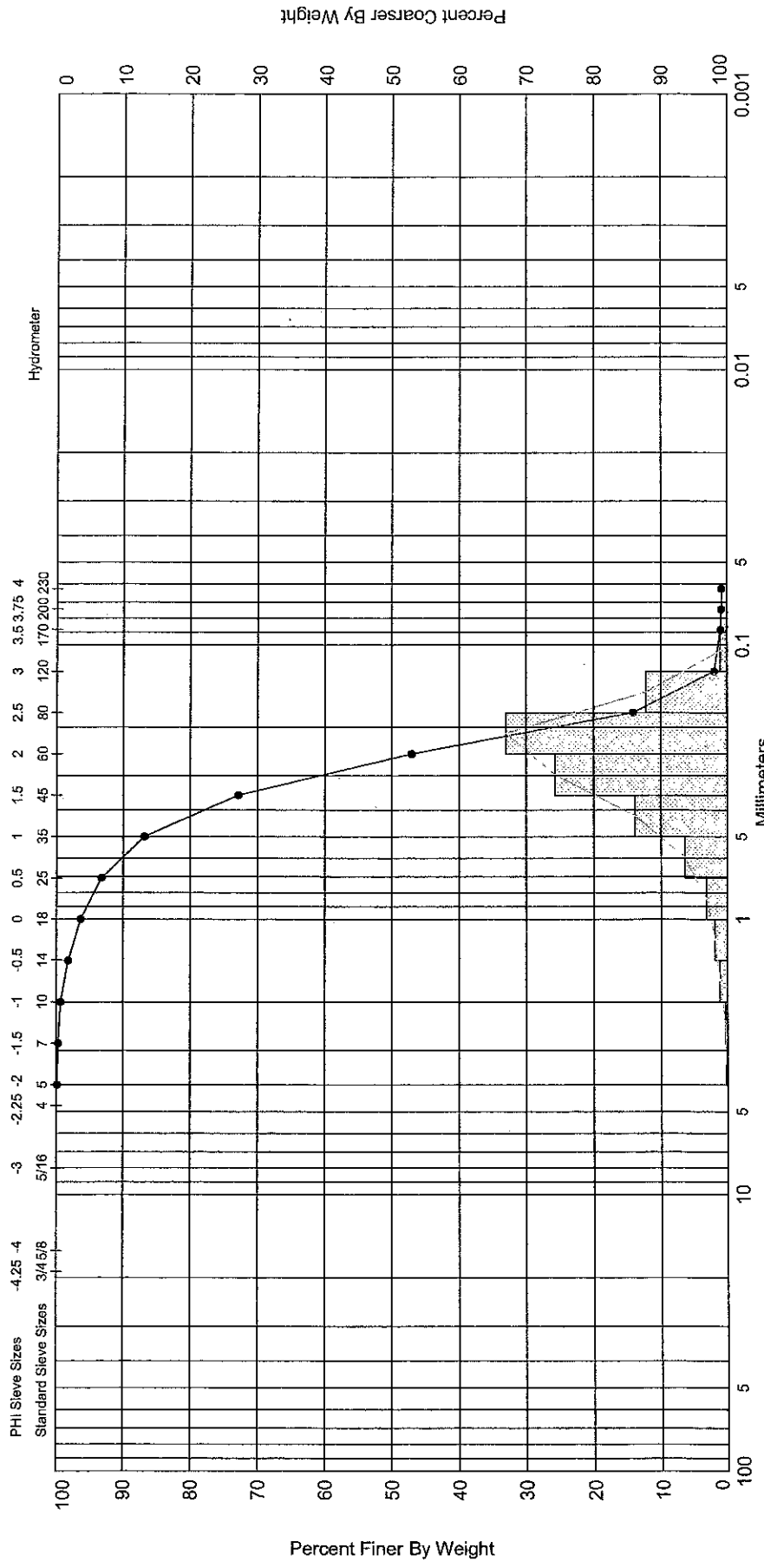
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.04	0.12	0.04	0.12
7	-1.50	2.83	0.04	0.14	0.08	0.26
10	-1.00	2.00	0.11	0.36	0.19	0.62
14	-0.50	1.41	0.33	1.10	0.52	1.72
18	0.00	1.00	0.56	1.85	1.08	3.57
25	0.50	0.71	0.96	3.17	2.04	6.74
35	1.00	0.50	1.96	6.47	4.00	13.21
45	1.50	0.35	4.21	13.91	8.20	27.12
60	2.00	0.25	7.78	25.71	15.98	52.83
80	2.50	0.18	9.96	32.95	25.94	85.78
120	3.00	0.13	3.71	12.27	29.65	98.05
170	3.50	0.09	0.30	0.98	29.95	99.03
200	3.75	0.07	0.03	0.11	29.98	99.14
230	4.00	0.06	0.01	0.03	29.99	99.17

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.88	2.47	2.34	1.94	1.42	1.10	0.23

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.79	0.29	0.77	-1.15	4.92

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample		USCS		% Fines		% Organics		% Carbonates		Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-A9-02	●	SP	SP	#200 - 0.86	#230 - 0.83	0.66	18.93	1.94	1.79	-1.15	4.92	0.77			Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	12-29-05
Comments:															Analyzed By:	SEA Inc.		
Depths and elevations based on measured values															Easting (ft):	678,636		
															Northing (ft):	1,817,315		
															Horizontal System:	NAD 1983		
															Vertical System:	MSL		
															Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-03

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">677,426</p>	Northing (ft): <p style="text-align: center;">1,824,242</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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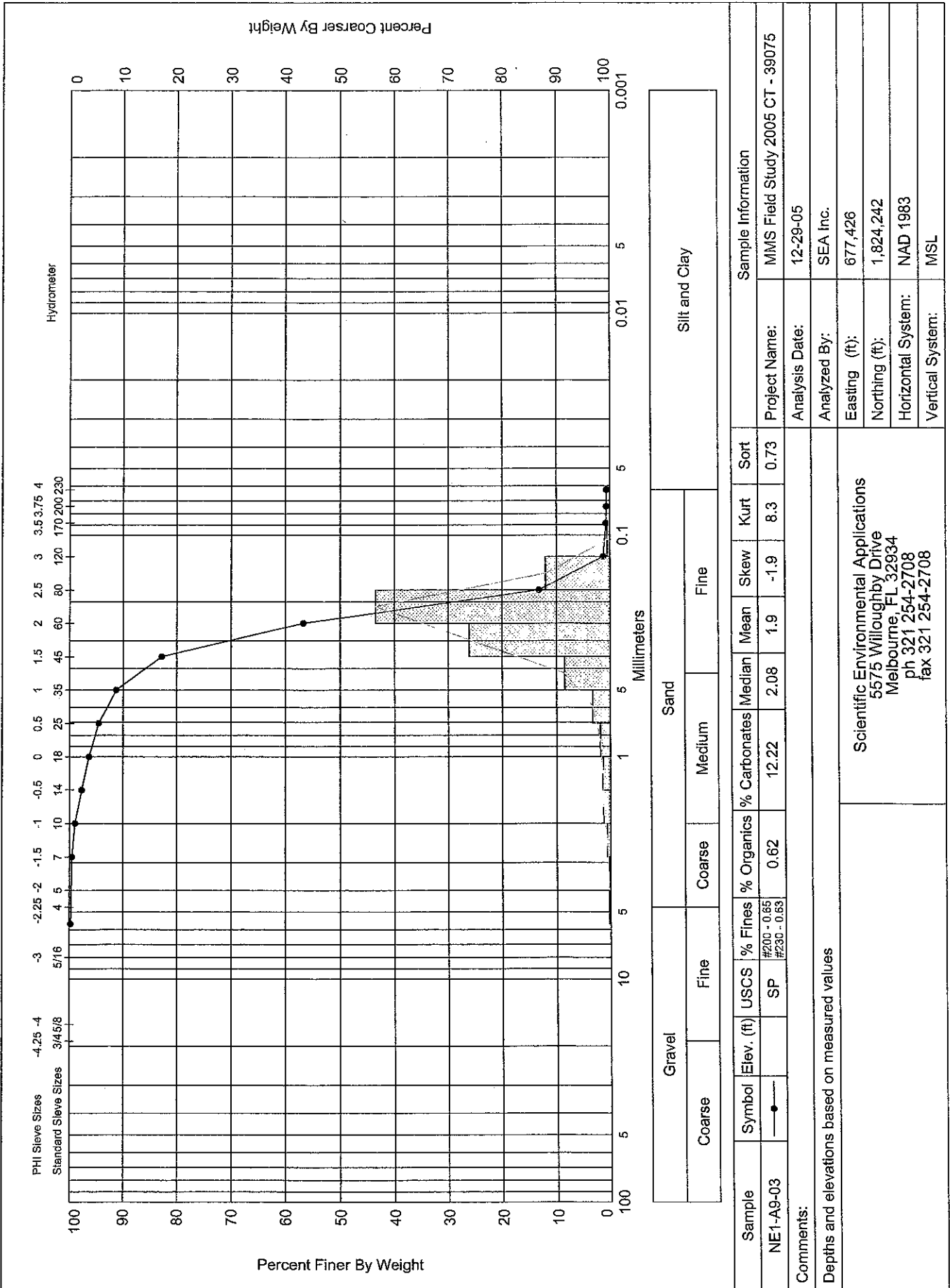
Dry Weight (g): <p style="text-align: center;">30.14</p>	Wash Weight (g): <p style="text-align: center;">29.89</p>	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">-0.21</p>	Fines (%): #200 - 0.65 #230 - 0.63	Organics (%): <p style="text-align: center;">0.62</p>	Carbonates (%): <p style="text-align: center;">12.22</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.07	0.24	0.07	0.24
7	-1.50	2.83	0.07	0.25	0.15	0.49
10	-1.00	2.00	0.18	0.60	0.33	1.09
14	-0.50	1.41	0.37	1.22	0.69	2.31
18	0.00	1.00	0.40	1.32	1.09	3.63
25	0.50	0.71	0.54	1.80	1.63	5.43
35	1.00	0.50	0.99	3.29	2.63	8.72
45	1.50	0.35	2.56	8.50	5.19	17.22
60	2.00	0.25	7.85	26.04	13.04	43.26
80	2.50	0.18	13.14	43.58	26.17	86.84
120	3.00	0.13	3.60	11.93	29.77	98.77
170	3.50	0.09	0.16	0.51	29.93	99.28
200	3.75	0.07	0.02	0.07	29.95	99.35
230	4.00	0.06	0.01	0.02	29.95	99.37

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.84	2.47	2.36	2.08	1.65	1.43	0.38

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.9	0.27	0.73	-1.9	8.3

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample Information	
Sample	NE1-A9-03
Symbol	—●—
Elev. (ft)	
USCS	SP
% Fines	#200 - 0.85 #230 - 0.83
% Organics	0.62
% Carbonates	12.22
Median	2.08
Mean	1.9
Skew	-1.9
Kurt	8.3
Sort	0.73
Project Name: MMS Field Study 2005 CT - 39075	
Analysis Date: 12-29-05	
Analyzed By: SEA Inc.	
Easting (ft): 677,426	
Northing (ft): 1,824,242	
Horizontal System: NAD 1983	
Vertical System: MSL	
Comments:	
Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-04

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>682,643</b>	Northing (ft): <b>1,835,015</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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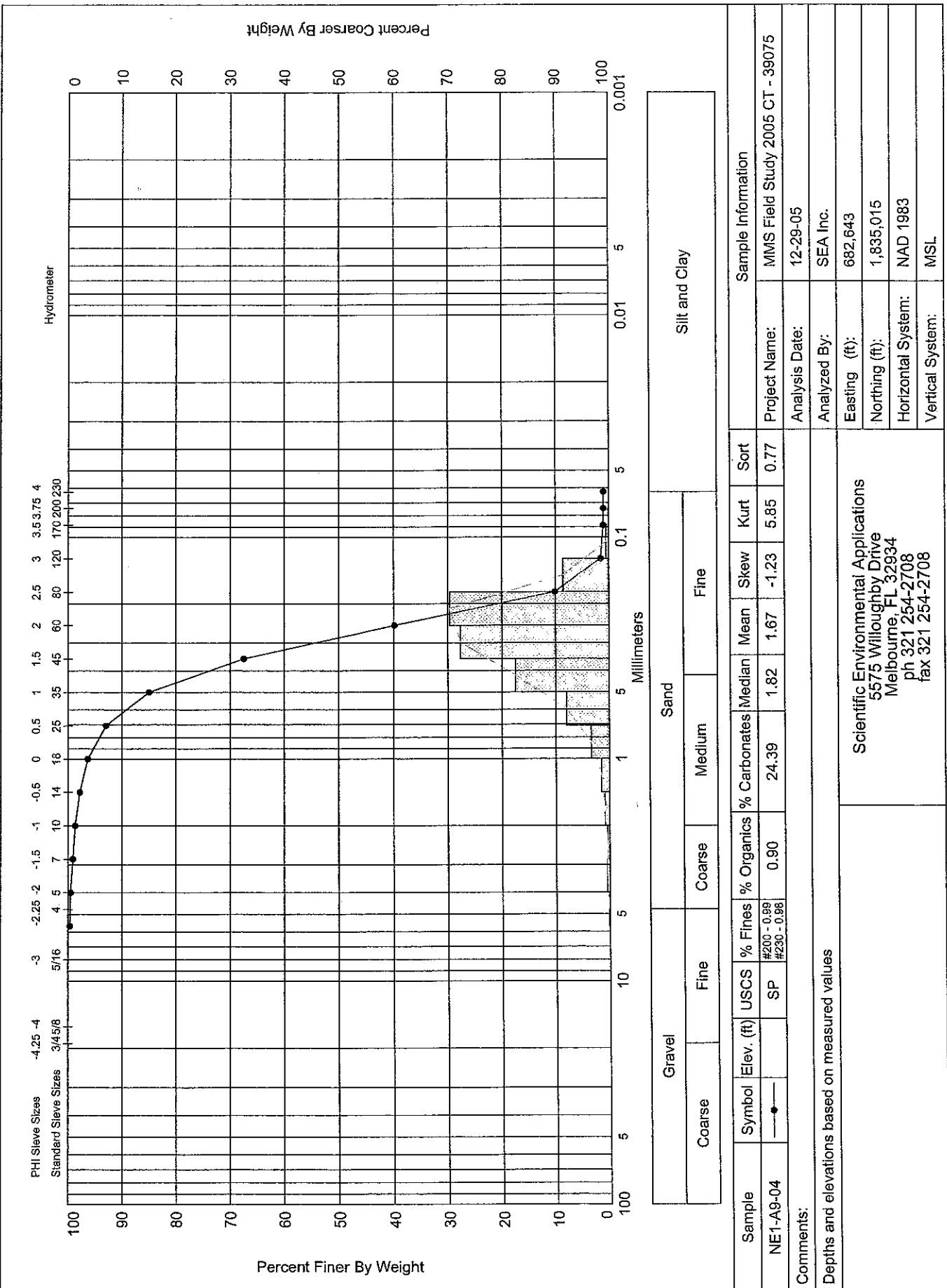
Dry Weight (g): <b>30.23</b>	Wash Weight (g): <b>29.88</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.18</b>	Fines (%): #200 - 0.99 #230 - 0.98	Organics (%): <b>0.90</b>	Carbonates (%): <b>24.39</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.11	0.36	0.11	0.36
5	-2.00	4.00	0.04	0.12	0.15	0.48
7	-1.50	2.83	0.13	0.44	0.28	0.92
10	-1.00	2.00	0.13	0.41	0.40	1.33
14	-0.50	1.41	0.26	0.85	0.66	2.18
18	0.00	1.00	0.45	1.47	1.10	3.65
25	0.50	0.71	1.03	3.39	2.13	7.04
35	1.00	0.50	2.43	8.04	4.56	15.08
45	1.50	0.35	5.27	17.44	9.83	32.52
60	2.00	0.25	8.36	27.66	18.19	60.18
80	2.50	0.18	8.98	29.69	27.17	89.87
120	3.00	0.13	2.60	8.59	29.77	98.46
170	3.50	0.09	0.15	0.49	29.92	98.95
200	3.75	0.07	0.02	0.06	29.93	99.01
230	4.00	0.06	0.00	0.01	29.94	99.02

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.80	2.40	2.25	1.82	1.28	1.03	0.20

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.67	0.31	0.77	-1.23	5.85

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	Sort

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-A9-04	—●—		SP	#200 - 0.85 #230 - 0.85	0.90	24.39	1.82	1.67	-1.23	5.85	0.77

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	12-29-05
Analyzed By:	SEA Inc.
Easting (ft):	682,643
Northing (ft):	1,835,015
Horizontal System:	NAD 1983
Vertical System:	MSL

Comments:  
Depths and elevations based on measured values

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-05

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>681,680</b>	Northing (ft): <b>1,830,905</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.33</b>	Wash Weight (g): <b>30.10</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.32</b>	Fines (%): #200 - 0.61 #230 - 0.44	Organics (%): <b>0.87</b>	Carbonates (%): <b>15.91</b>	Shells (%):
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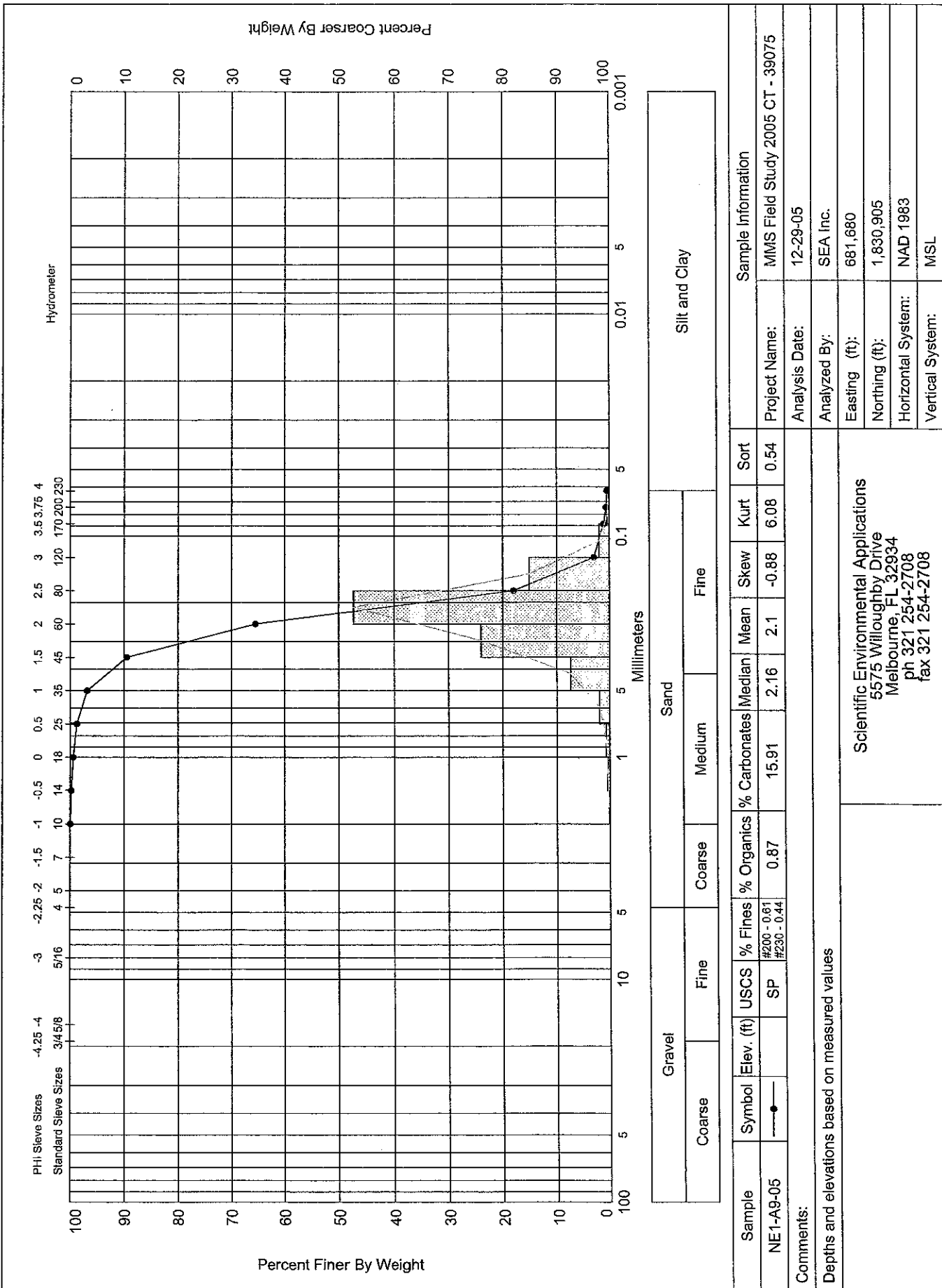
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.02	0.06	0.02	0.06
14	-0.50	1.41	0.05	0.16	0.07	0.22
18	0.00	1.00	0.12	0.39	0.18	0.61
25	0.50	0.71	0.20	0.67	0.39	1.28
35	1.00	0.50	0.56	1.85	0.95	3.13
45	1.50	0.35	2.23	7.36	3.18	10.49
60	2.00	0.25	7.27	23.98	10.46	34.47
80	2.50	0.18	14.42	47.55	24.88	82.02
120	3.00	0.13	4.58	15.09	29.45	97.11
170	3.50	0.09	0.56	1.85	30.01	98.96
200	3.75	0.07	0.13	0.43	30.15	99.39
230	4.00	0.06	0.05	0.17	30.20	99.56

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.57	2.43	2.16	1.80	1.61	1.13
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.1	0.23	0.54	-0.88	6.08	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08

SIEVE ANALYSIS MMS EAST.GPJ FL DEP ROSS.GDT 3/31/06



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-06

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>681,432</b>	Northing (ft): <b>1,836,420</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.35</b>	Wash Weight (g): <b>30.05</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.10</b>	Fines (%): #200 - <b>0.88</b> #230 - <b>0.87</b>	Organics (%): <b>0.82</b>	Carbonates (%): <b>27.46</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.38	1.27	0.38	1.27
10	-1.00	2.00	0.77	2.55	1.16	3.82
14	-0.50	1.41	1.29	4.26	2.45	8.08
18	0.00	1.00	1.58	5.22	4.03	13.30
25	0.50	0.71	2.30	7.56	6.33	20.86
35	1.00	0.50	3.83	12.61	10.16	33.47
45	1.50	0.35	6.22	20.49	16.37	53.96
60	2.00	0.25	6.80	22.40	23.17	76.36
80	2.50	0.18	5.34	17.59	28.51	93.95
120	3.00	0.13	1.45	4.77	29.96	98.72
170	3.50	0.09	0.11	0.35	30.06	99.07
200	3.75	0.07	0.01	0.05	30.08	99.12
230	4.00	0.06	0.00	0.01	30.08	99.13

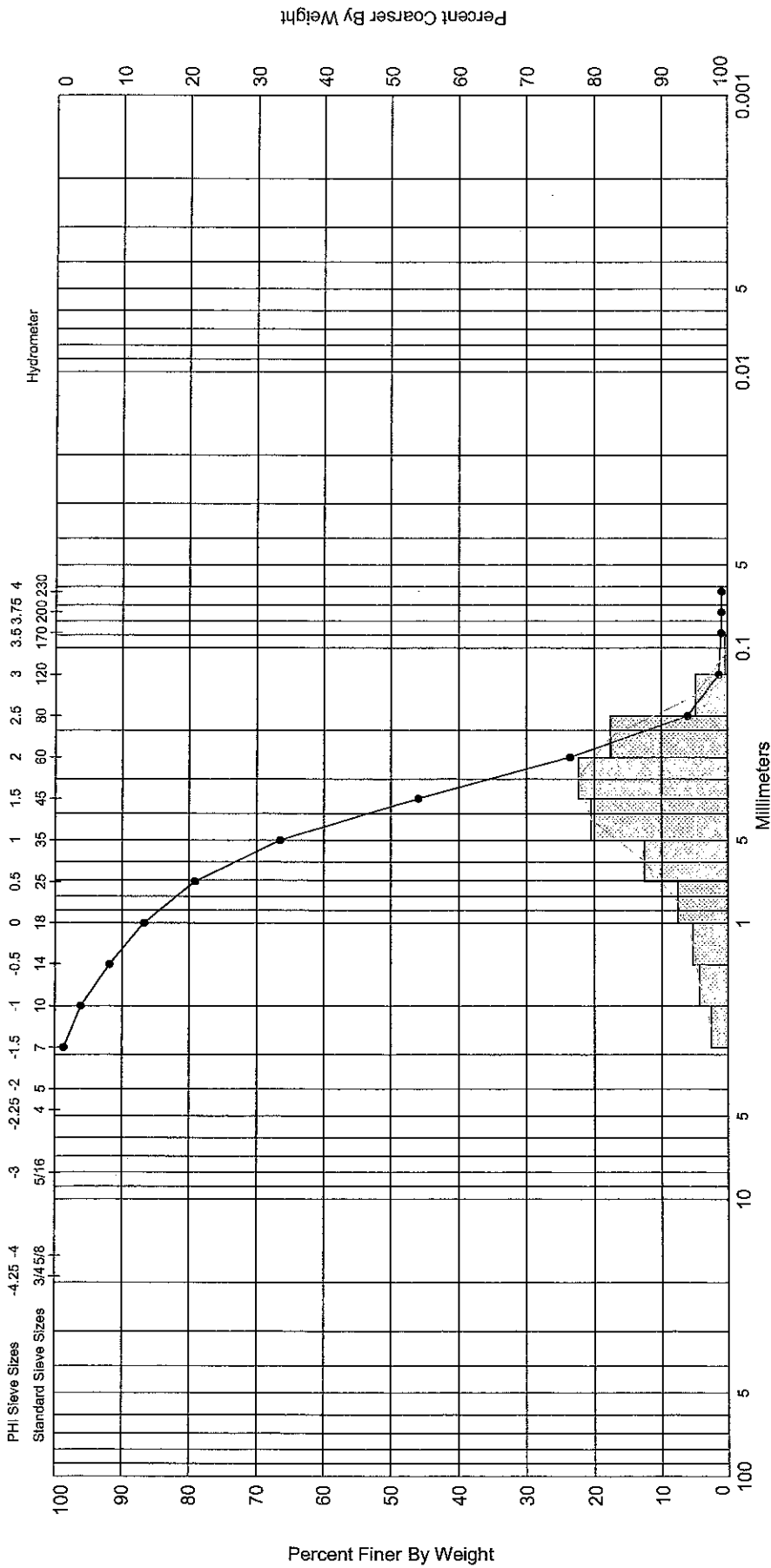
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.61	2.22	1.97	1.40	0.66	0.18	-0.86

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.21	0.43	0.96	-0.58	2.92

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 0.85	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information					
NE1-A9-06	●		SP		#200 - 0.85 #230 - 0.87	0.82	27.46	1.4	1.21	-0.58	2.92	0.96	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	12-29-05	Analyzed By:	SEA Inc.
Comments:													Easting (ft):	681,432				
Depths and elevations based on measured values													Northing (ft):	1,836,420				
													Horizontal System:	NAD 1983				
													Vertical System:	MSL				
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-07

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>679,557</b>	Northing (ft): <b>1,829,637</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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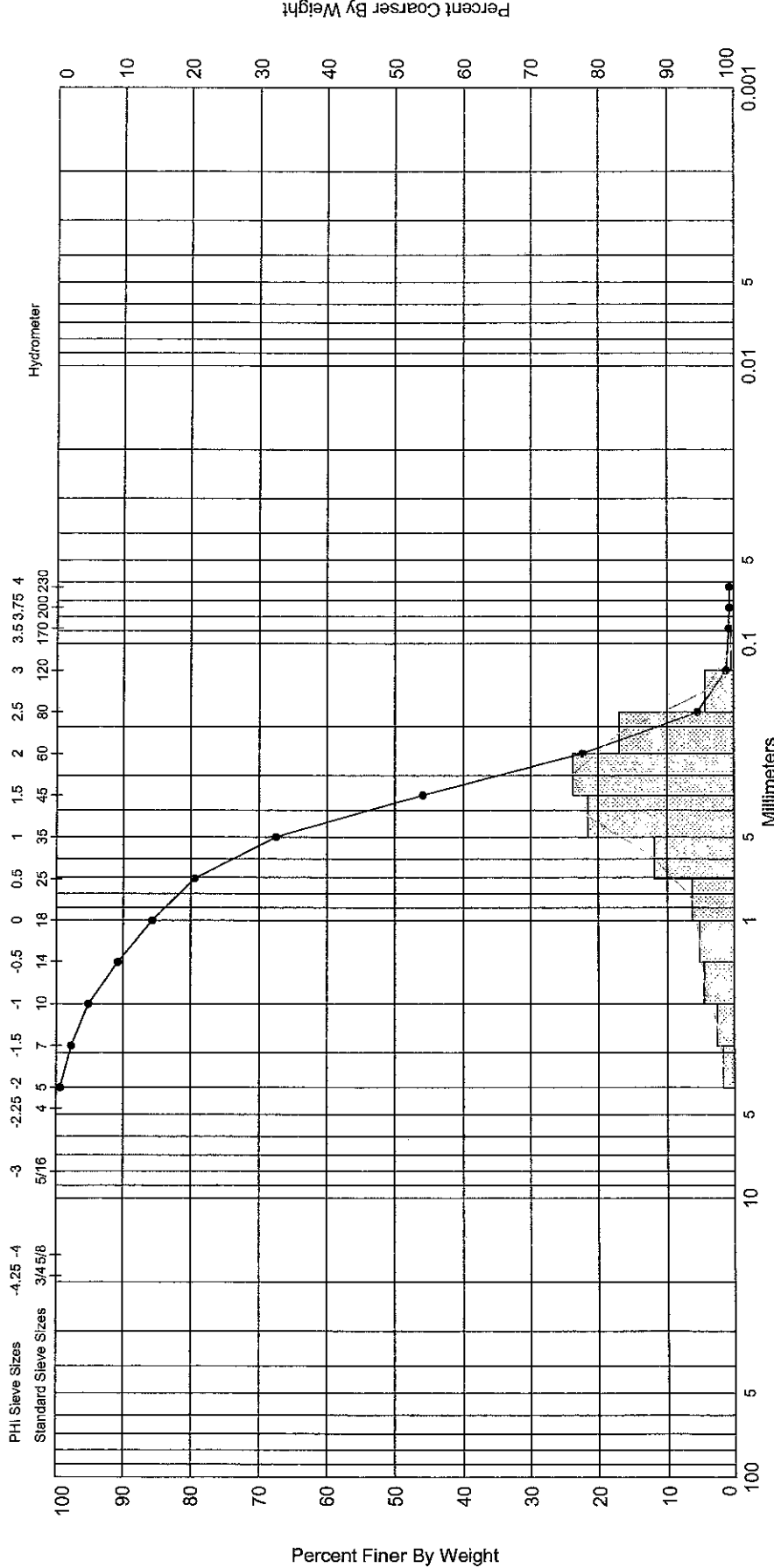
Dry Weight (g): <b>30.43</b>	Wash Weight (g): <b>30.20</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.08</b>	Fines (%): <b>#200 - 0.67</b> <b>#230 - 0.66</b>	Organics (%): <b>0.95</b>	Carbonates (%): <b>34.76</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.18	0.59	0.18	0.59
7	-1.50	2.83	0.50	1.64	0.68	2.23
10	-1.00	2.00	0.78	2.55	1.45	4.78
14	-0.50	1.41	1.35	4.43	2.80	9.21
18	0.00	1.00	1.55	5.10	4.35	14.31
25	0.50	0.71	1.90	6.23	6.25	20.54
35	1.00	0.50	3.63	11.91	9.88	32.45
45	1.50	0.35	6.55	21.52	16.42	53.97
60	2.00	0.25	7.21	23.70	23.63	77.67
80	2.50	0.18	5.15	16.92	28.78	94.59
120	3.00	0.13	1.30	4.27	30.08	98.86
170	3.50	0.09	0.13	0.42	30.20	99.28
200	3.75	0.07	0.02	0.05	30.22	99.33
230	4.00	0.06	0.00	0.01	30.22	99.34

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.19	1.94	1.41	0.69	0.14	-0.98
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.19	0.44	1.02	-0.83	3.36	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay							
Coarse	Fine	Coarse	Medium	Fine	Sort						
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-A9-07	●		SP	#200 - 0.67 #230 - 0.66	0.95	34.76	1.41	1.19	-0.83	3.36	1.02
Comments: Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											
Sample Information						MMS Field Study 2005 CT - 39075					
Analysis Date:						12-29-05					
Analyzed By:						SEA Inc.					
Easting (ft):						679,557					
Northing (ft):						1,829,637					
Horizontal System:						NAD 1983					
Vertical System:						MSL					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-08

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">678,815</p>	Northing (ft): <p style="text-align: center;">1,818,425</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">30.79</p>	Wash Weight (g): <p style="text-align: center;">30.49</p>	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">0.00</p>	Fines (%): #200 - 1.04 #230 - 1.00	Organics (%): <p style="text-align: center;">0.90</p>	Carbonates (%): <p style="text-align: center;">24.77</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.11	0.36	0.11	0.36
5	-2.00	4.00	0.08	0.25	0.19	0.61
7	-1.50	2.83	0.25	0.80	0.43	1.41
10	-1.00	2.00	0.52	1.69	0.95	3.10
14	-0.50	1.41	0.95	3.08	1.90	6.18
18	0.00	1.00	1.32	4.29	3.23	10.47
25	0.50	0.71	1.75	5.68	4.97	16.15
35	1.00	0.50	2.35	7.62	7.32	23.77
45	1.50	0.35	3.51	11.38	10.83	35.15
60	2.00	0.25	6.64	21.55	17.46	56.70
80	2.50	0.18	9.15	29.73	26.62	86.43
120	3.00	0.13	3.53	11.48	30.15	97.91
170	3.50	0.09	0.29	0.94	30.44	98.85
200	3.75	0.07	0.03	0.11	30.47	98.96
230	4.00	0.06	0.01	0.04	30.48	99.00

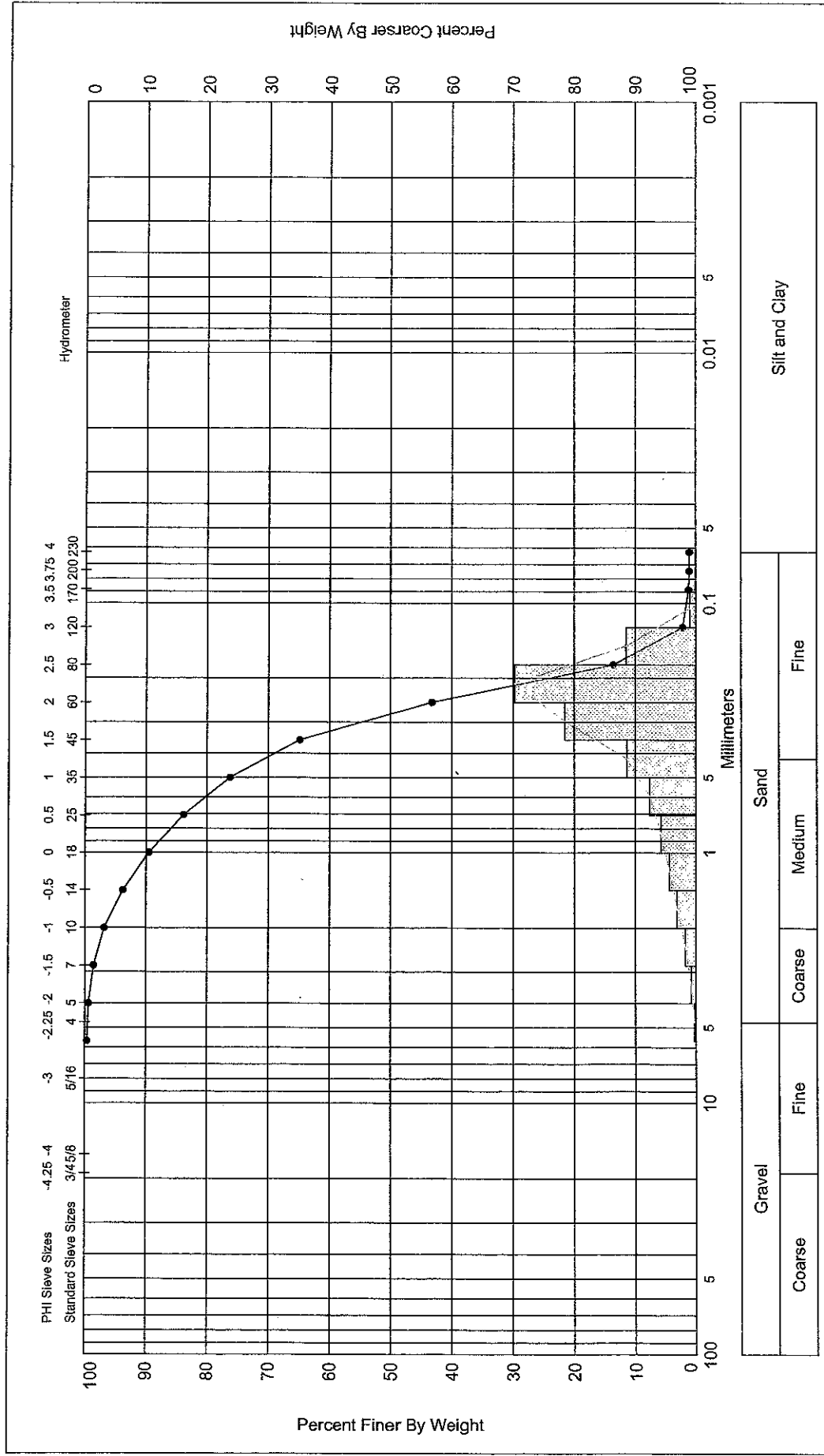
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
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2.87	2.46	2.31	1.84	1.05	0.49	-0.69
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Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.54	0.34	1.04	-1.09	3.83

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL\_DEP\_ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information						
							Coarse	Medium	Fine	Coarse	Medium	Fine	Project Name:	Analysis Date:	Analyzed By:	Eastng (ft):	Northng (ft):	Horizontal System:	Vertical System:
NE1-A9-08	●		SP	0.90	24.77	1.84	1.54	-1.09	3.83	1.04			MMS Field Study 2005 CT - 39075	12-29-05	SEA Inc.	678,815	1,818,425	NAD 1983	MSL
Comments: Depths and elevations based on measured values													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708						

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-09

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>677,294</b>	Northing (ft): <b>1,823,205</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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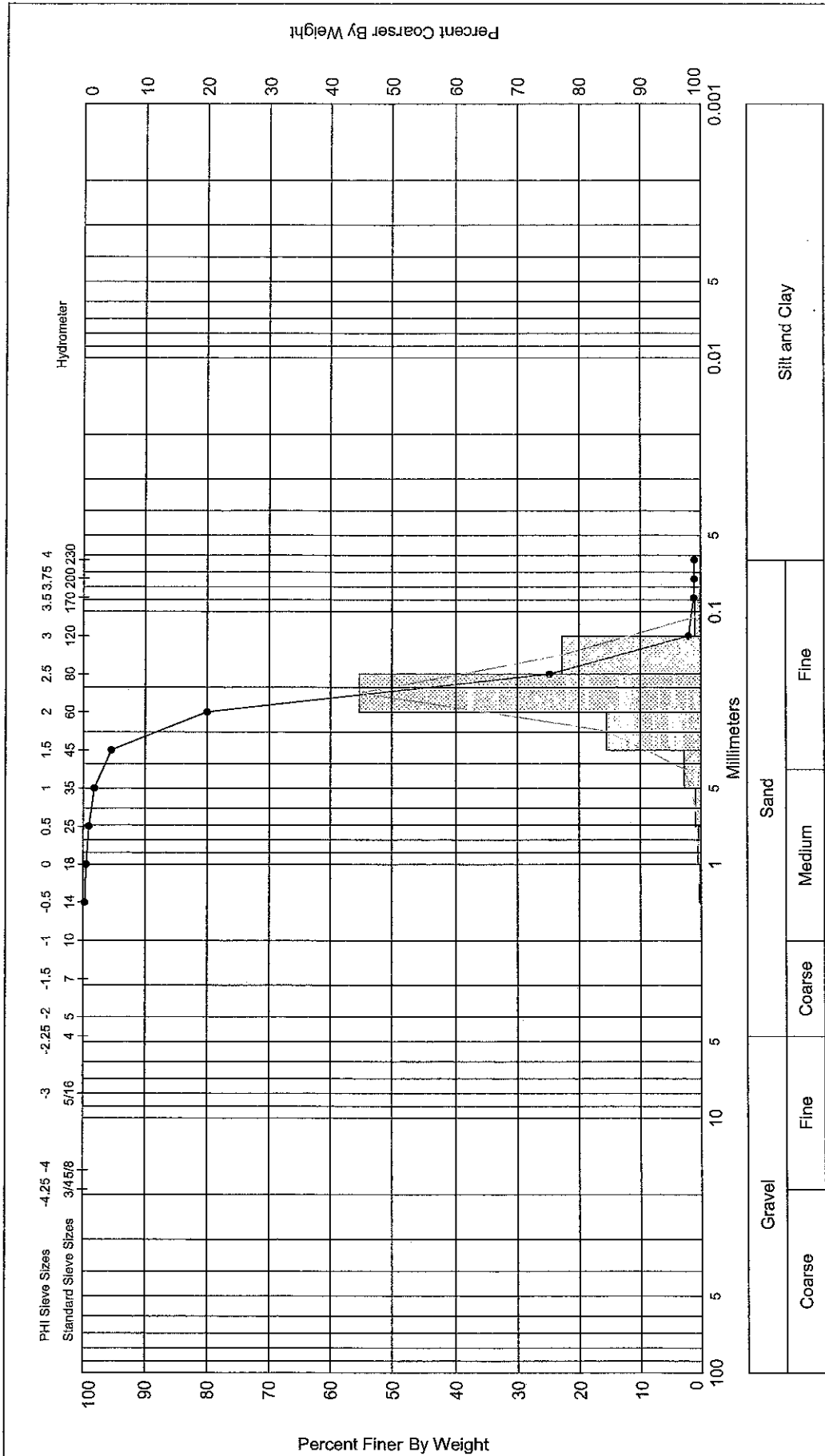
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.04 #230 - 1.02	Organics (%):	Carbonates (%):	Shells (%):
30.73	30.33	0.00	-0.26		0.49	7.97	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
14	-0.50	1.41	0.07	0.24	0.07	0.24	
18	0.00	1.00	0.07	0.24	0.15	0.48	
25	0.50	0.71	0.13	0.43	0.28	0.91	
35	1.00	0.50	0.27	0.86	0.54	1.77	
45	1.50	0.35	0.84	2.72	1.38	4.49	
60	2.00	0.25	4.76	15.48	6.13	19.97	
80	2.50	0.18	16.97	55.22	23.10	75.19	
120	3.00	0.13	7.00	22.78	30.10	97.97	
170	3.50	0.09	0.28	0.90	30.38	98.87	
200	3.75	0.07	0.03	0.09	30.41	98.96	
230	4.00	0.06	0.01	0.02	30.41	98.98	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.69	2.50	2.27	2.05	1.87	1.52
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.24	0.21	0.43	-1.22	7.58	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information					
							Coarse	Medium	Fine	Coarse	Medium	Fine	Project Name:	Analysis Date:	Analyzed By:	Easting (ft):	Northing (ft):	Horizontal System:
NE1-A9-09	●	—	SP	#200 - 1.04 #230 - 1.02	0.49	7.97	2.27	2.24	-1.22	7.58	0.43	MMS Field Study 2005 CT - 39075	12-29-05	SEA Inc.	677,294	1,823,205	NAD 1983	MSL
Comments: Depths and elevations based on measured values																		
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-10

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">677,250</p>	Northing (ft): <p style="text-align: center;">1,826,224</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.71 #230 - 0.69	Organics (%):	Carbonates (%):	Shells (%):
30.82	30.59	0.00	-0.05		0.86	10.36	

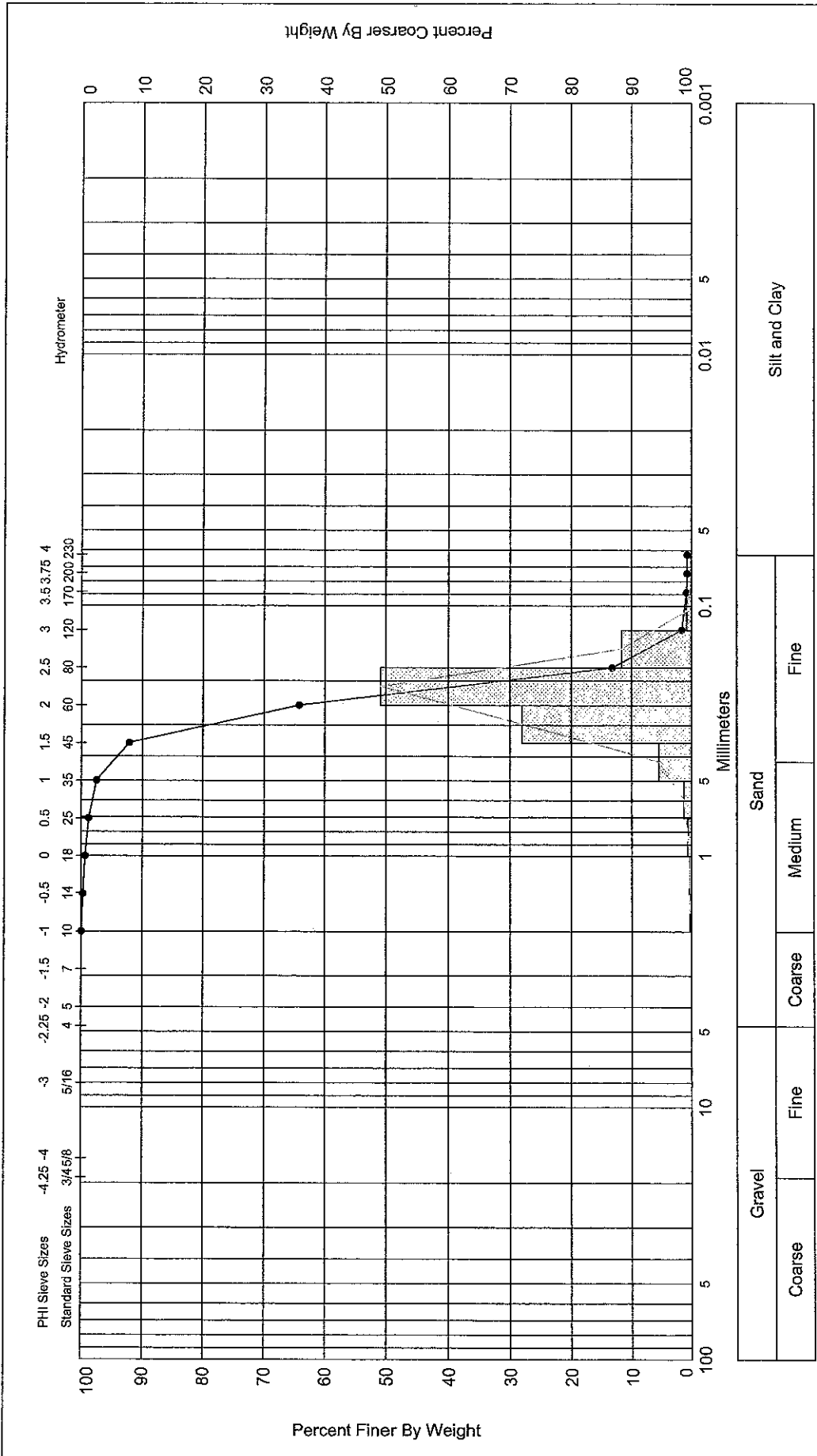
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.01	0.05	0.01	0.05
14	-0.50	1.41	0.07	0.22	0.08	0.27
18	0.00	1.00	0.11	0.36	0.19	0.63
25	0.50	0.71	0.18	0.58	0.37	1.21
35	1.00	0.50	0.39	1.27	0.76	2.48
45	1.50	0.35	1.66	5.37	2.42	7.85
60	2.00	0.25	8.63	27.99	11.04	35.84
80	2.50	0.18	15.67	50.84	26.71	86.68
120	3.00	0.13	3.61	11.71	30.32	98.39
170	3.50	0.09	0.24	0.79	30.57	99.18
200	3.75	0.07	0.03	0.11	30.60	99.29
230	4.00	0.06	0.01	0.02	30.61	99.31

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.86	2.47	2.39	2.14	1.81	1.65	1.23
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.08	0.24	0.48	-1.3	8.12	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample Information	
Sample	NE1-A9-10
Symbol	SP
Elev. (ft)	
USCS	SP
% Fines	#200 - 0.71
% Organics	0.86
% Carbonates	10.36
Median	2.14
Mean	2.08
Skew	-1.3
Kurt	8.12
Sort	0.48

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	12-29-05
Analyzed By:	SEA Inc.
Easting (ft):	677,250
Northing (ft):	1,826,224
Horizontal System:	NAD 1983
Vertical System:	MSL

Comments:	
Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-11

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">681,031</p>	Northing (ft): <p style="text-align: center;">1,825,474</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">30.41</p>	Wash Weight (g): <p style="text-align: center;">29.84</p>	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">-0.16</p>	Fines (%): #200 - 1.73 #230 - 1.70	Organics (%): <p style="text-align: center;">0.76</p>	Carbonates (%): <p style="text-align: center;">18.26</p>	Shells (%):
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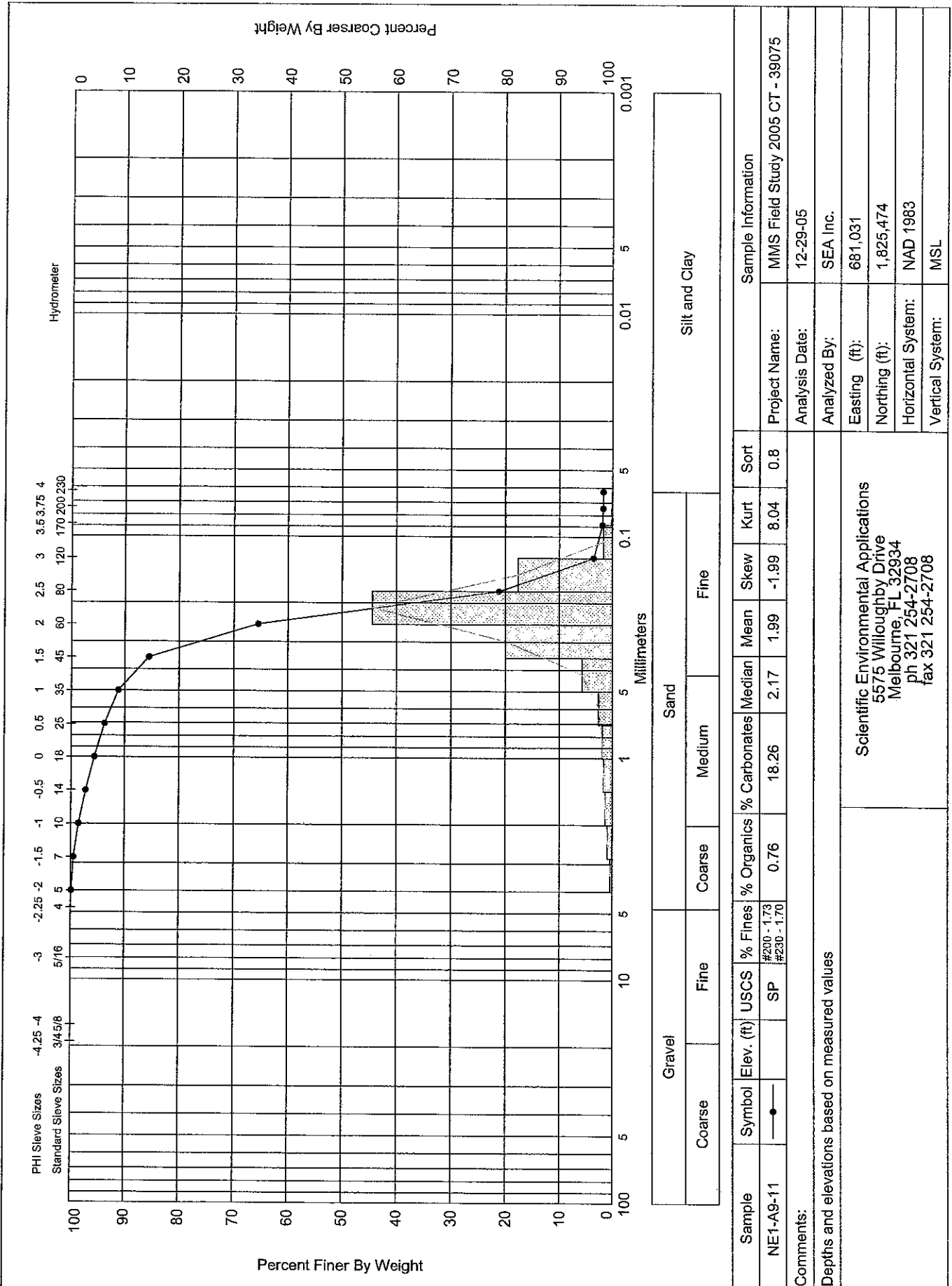
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.04	0.12	0.04	0.12
7	-1.50	2.83	0.12	0.39	0.15	0.51
10	-1.00	2.00	0.28	0.92	0.43	1.43
14	-0.50	1.41	0.40	1.31	0.83	2.74
18	0.00	1.00	0.49	1.62	1.33	4.36
25	0.50	0.71	0.58	1.89	1.90	6.25
35	1.00	0.50	0.78	2.56	2.68	8.81
45	1.50	0.35	1.72	5.67	4.40	14.48
60	2.00	0.25	6.08	20.00	10.48	34.48
80	2.50	0.18	13.49	44.37	23.97	78.85
120	3.00	0.13	5.36	17.61	29.33	96.46
170	3.50	0.09	0.50	1.66	29.83	98.12
200	3.75	0.07	0.05	0.15	29.88	98.27
230	4.00	0.06	0.01	0.03	29.89	98.30

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.65	2.46	2.17	1.76	1.54	0.17

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.99	0.25	0.8	-1.99	8.04

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Comments:

Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Sample Information

Project Name: MMS Field Study 2005 CT - 39075

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Easting (ft): 681,031

Northing (ft): 1,825,474

Horizontal System: NAD 1983

Vertical System: MSL

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE1-A9-12  
 Analysis Date: 12-29-05  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>680,682</b>	Northing (ft): <b>1,838,692</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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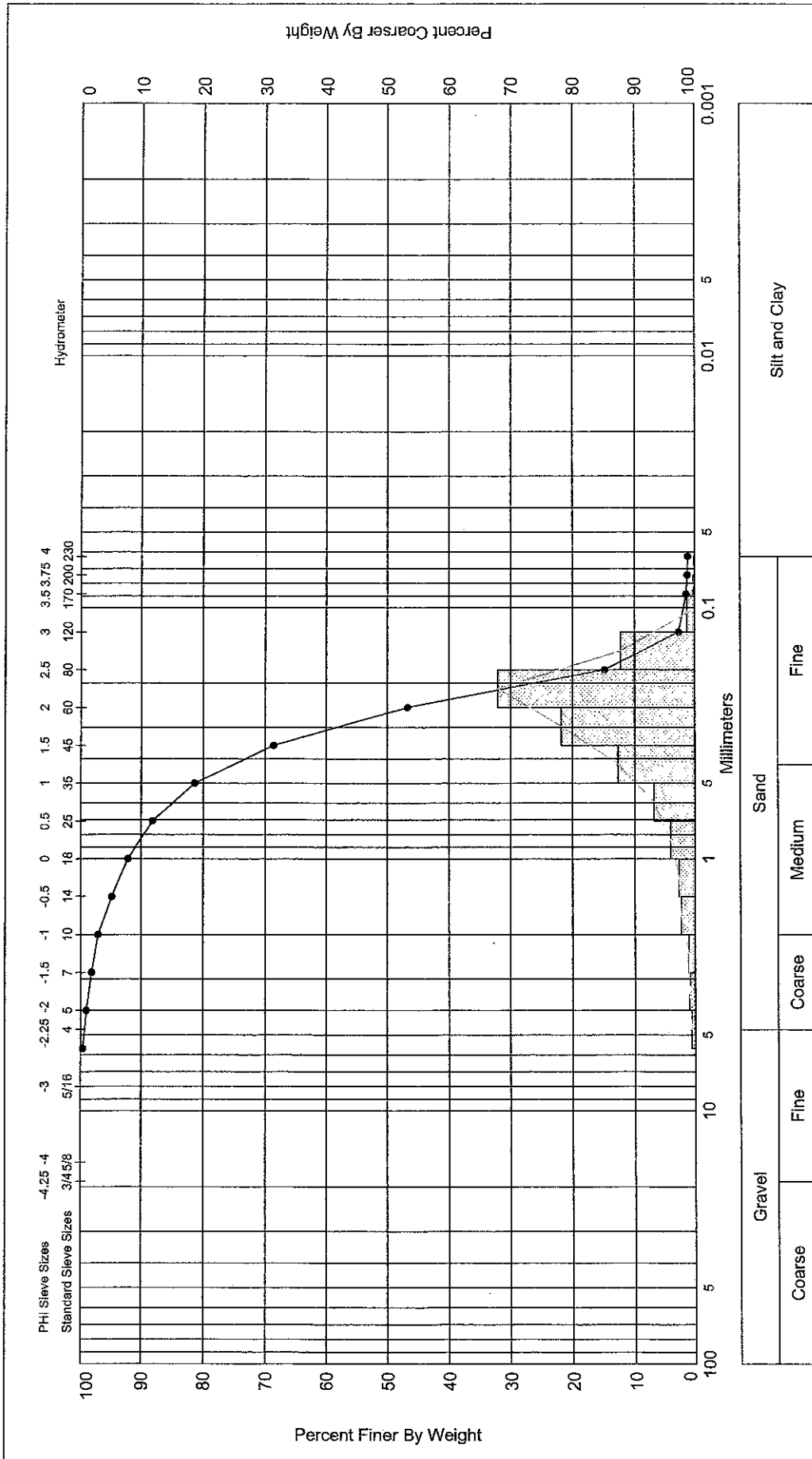
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.33</b>	Wash Weight (g): <b>29.98</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.06</b>	Fines (%): #200 - <b>1.19</b> #230 - <b>1.12</b>	Organics (%): <b>0.95</b>	Carbonates (%): <b>27.37</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.12	0.40	0.12	0.40	
5	-2.00	4.00	0.17	0.57	0.29	0.97	
7	-1.50	2.83	0.27	0.88	0.56	1.85	
10	-1.00	2.00	0.31	1.03	0.87	2.88	
14	-0.50	1.41	0.70	2.29	1.57	5.17	
18	0.00	1.00	0.80	2.63	2.37	7.80	
25	0.50	0.71	1.22	4.02	3.59	11.82	
35	1.00	0.50	2.08	6.84	5.66	18.66	
45	1.50	0.35	3.86	12.71	9.52	31.37	
60	2.00	0.25	6.60	21.77	16.12	53.14	
80	2.50	0.18	9.70	31.98	25.82	85.12	
120	3.00	0.13	3.71	12.24	29.53	97.36	
170	3.50	0.09	0.38	1.24	29.91	98.60	
200	3.75	0.07	0.06	0.21	29.97	98.81	
230	4.00	0.06	0.02	0.07	29.99	98.88	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.90	2.48	2.34	1.93	1.25	0.81	-0.54

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.65	0.32	0.99	-1.36	5.18

GRANULOMETRIC REPORT: MMS\_EAST.GPJ FL\_DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information		
												Project Name:	Analysis Date:	
NE1-A9-12	●		SP	#200 - 1.18 #230 - 1.12	0.95	27.37	1.93	1.65	-1.36	5.18	0.99	MMS Field Study 2005 CT - 39075	12-29-05	
Comments:													Analyzed By:	SEA Inc.
Depths and elevations based on measured values													Easting (ft):	680,682
													Northing (ft):	1,838,692
													Horizontal System:	NAD 1983
													Vertical System:	MSL
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-A9-13

Analysis Date: 12-29-05

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>683,794</b>	Northing (ft): <b>1,829,743</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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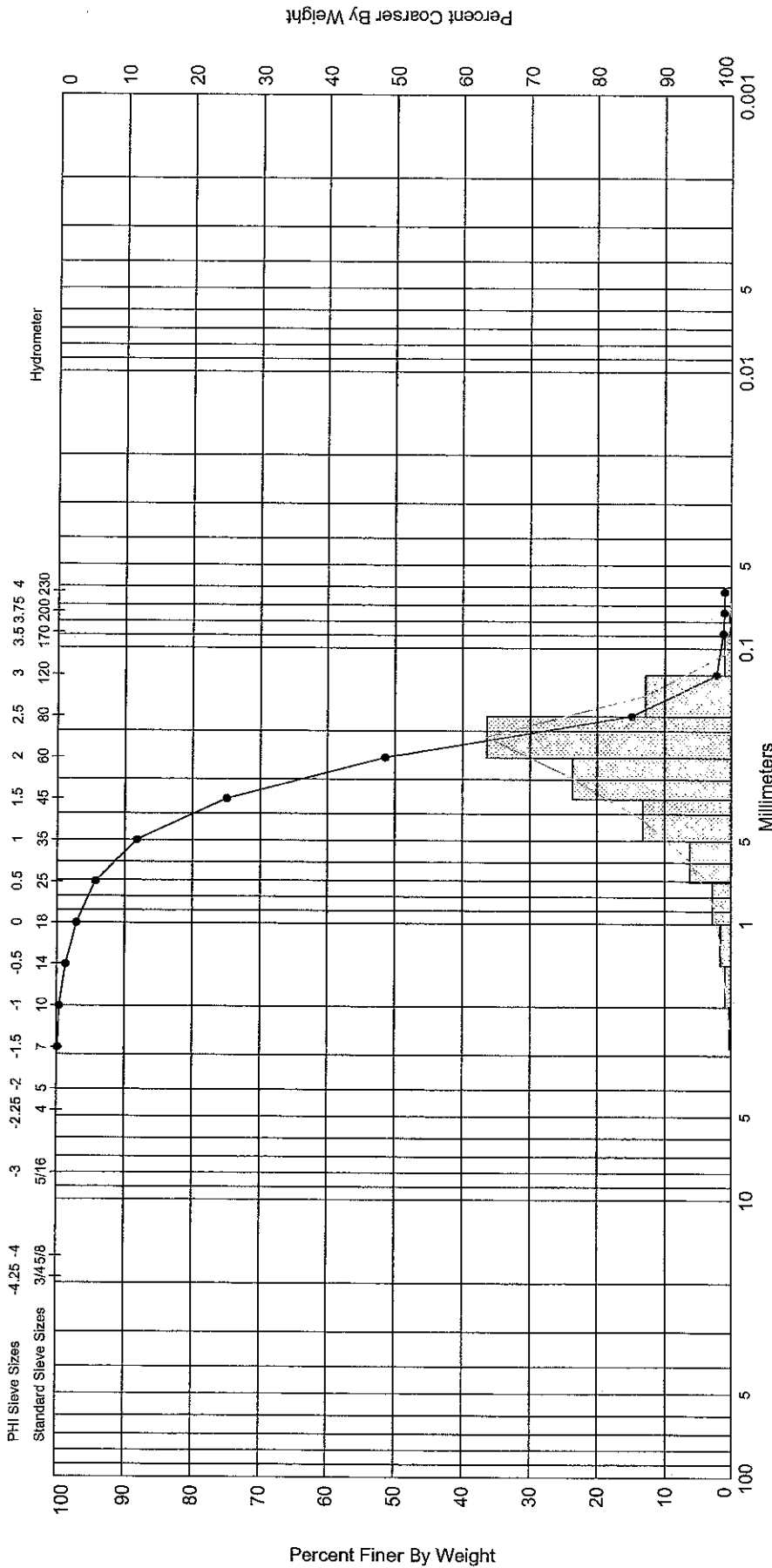
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.01 #230 - 0.96	Organics (%):	Carbonates (%):	Shells (%):
30.28	29.94	0.00	-0.16		0.87	23.91	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.04	0.13	0.04	0.13	
10	-1.00	2.00	0.07	0.24	0.11	0.37	
14	-0.50	1.41	0.28	0.91	0.39	1.28	
18	0.00	1.00	0.47	1.56	0.86	2.84	
25	0.50	0.71	0.85	2.80	1.71	5.64	
35	1.00	0.50	1.87	6.17	3.58	11.81	
45	1.50	0.35	4.00	13.22	7.58	25.03	
60	2.00	0.25	7.15	23.60	14.72	48.63	
80	2.50	0.18	11.03	36.42	25.75	85.05	
120	3.00	0.13	3.88	12.81	29.63	97.86	
170	3.50	0.09	0.30	0.98	29.93	98.84	
200	3.75	0.07	0.05	0.15	29.97	98.99	
230	4.00	0.06	0.02	0.05	29.99	99.04	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.89	2.49	2.36	2.02	1.50	1.16	0.39
Moment Statistics	Mean Phi	Mean mm	Sorting		Skewness	Kurtosis
	1.84	0.28	0.74		-1.1	4.71

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay		
Coarse		Fine	Coarse	Medium	Fine		

Sample	NE1-A9-13	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines	#200 - 1.01	% Organics	0.87	% Carbonates	23.91	Median	2.02	Mean	1.84	Skew	-1.1	Kurt	4.71	Sort	0.74	Sample Information	Project Name:	MMS Field Study 2005 CT - 39075
									#230 - 0.86															Analysis Date:	12-29-05	
																								Analyzed By:	SEA Inc.	
																								Easting (ft):	683,794	
																								Horizontal System:	NAD 1983	
																								Vertical System:	MSL	

Comments:  
 Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-01

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">689,351</p>	Northing (ft): <p style="text-align: center;">1,771,149</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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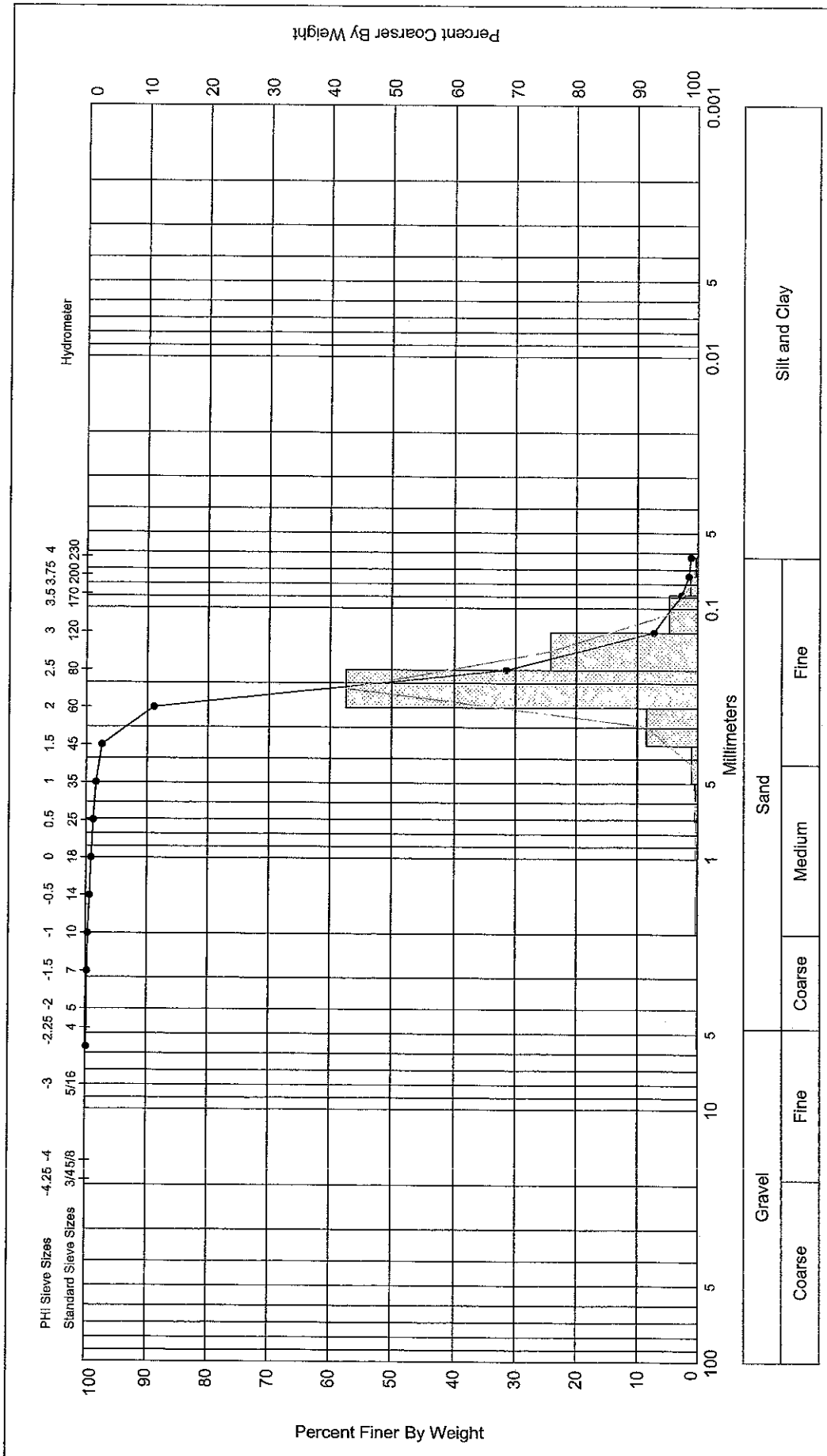
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.46 #230 - 1.10	Organics (%):	Carbonates (%):	Shells (%):
30.41	30.06	0.02	-0.11		0.48	7.20	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.05	0.17	0.05	0.17	
7	-1.50	2.83	0.02	0.06	0.07	0.23	
10	-1.00	2.00	0.04	0.12	0.11	0.35	
14	-0.50	1.41	0.08	0.27	0.19	0.62	
18	0.00	1.00	0.08	0.25	0.27	0.87	
25	0.50	0.71	0.10	0.33	0.37	1.20	
35	1.00	0.50	0.13	0.42	0.49	1.62	
45	1.50	0.35	0.28	0.93	0.78	2.55	
60	2.00	0.25	2.60	8.55	3.38	11.10	
80	2.50	0.18	17.46	57.43	20.84	68.53	
120	3.00	0.13	7.35	24.18	28.19	92.71	
170	3.50	0.09	1.42	4.65	29.60	97.36	
200	3.75	0.07	0.36	1.18	29.96	98.54	
230	4.00	0.06	0.11	0.36	30.07	98.90	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.25	2.82	2.63	2.34	2.12	2.04	1.64
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.35	0.20	0.5	-1.76	15.79	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample		Sample Information																					
NE1-B11-01	—	Symbol	—	Elev. (ft)	—	USCS	SP	% Fines	0.48	% Organics	7.20	% Carbonates	2.34	Median	2.35	Mean	-1.76	Skew	15.79	Kurt	0.5	Sort	
Comments:		Depths and elevations based on measured values																					
Sample Information		Project Name:												MMS Field Study 2005 CT - 39075									
Sample Information		Analysis Date:												01-02-06									
Sample Information		Analyzed By:												SEA Inc.									
Sample Information		Easting (ft):												689,351									
Sample Information		Northing (ft):												1,771,149									
Sample Information		Horizontal System:												NAD 1983									
Sample Information		Vertical System:												MSL									
Scientific Environmental Applications		5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-02

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>690,576</b>	Northing (ft): <b>1,768,998</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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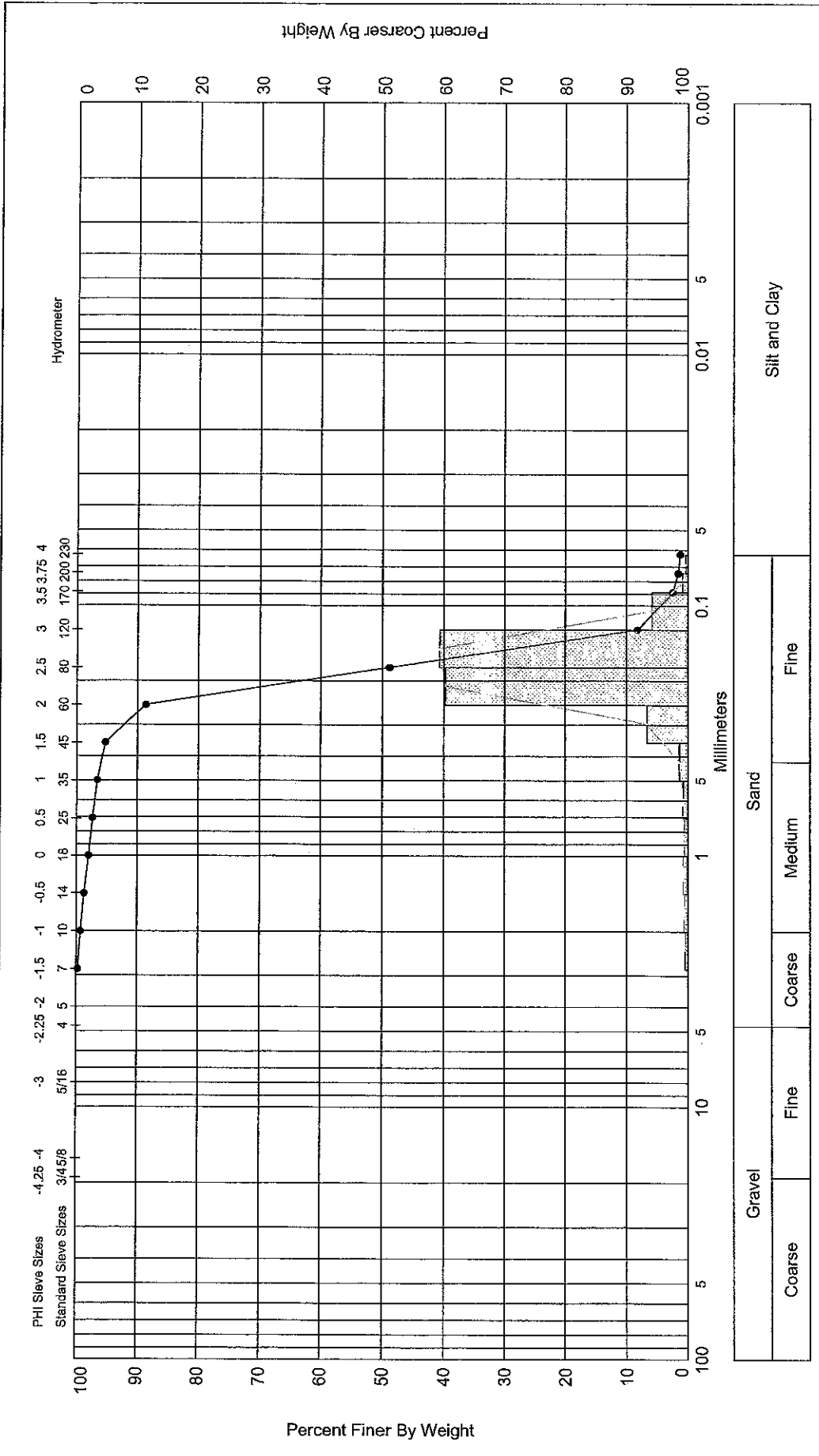
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.35</b>	Wash Weight (g): <b>29.98</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.05</b>	Fines (%): #200 - <b>1.52</b> #230 - <b>1.20</b>	Organics (%): <b>0.52</b>	Carbonates (%): <b>9.14</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.07	0.24	0.07	0.24	
10	-1.00	2.00	0.14	0.45	0.21	0.69	
14	-0.50	1.41	0.18	0.59	0.39	1.28	
18	0.00	1.00	0.22	0.71	0.61	1.99	
25	0.50	0.71	0.19	0.63	0.80	2.62	
35	1.00	0.50	0.23	0.76	1.03	3.38	
45	1.50	0.35	0.40	1.33	1.43	4.71	
60	2.00	0.25	2.02	6.66	3.45	11.37	
80	2.50	0.18	12.05	39.72	15.51	51.09	
120	3.00	0.13	12.36	40.72	27.86	91.81	
170	3.50	0.09	1.77	5.82	29.63	97.63	
200	3.75	0.07	0.26	0.85	29.89	98.48	
230	4.00	0.06	0.10	0.32	29.98	98.80	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.27	2.90	2.79	2.49	2.17	2.06	1.52
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.4	0.19	0.62	-2.47	13.53	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand			Silt and Clay						
Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort				
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE1-B11-02	●—		SP	#200 - 1.52 #230 - 1.20	0.52	9.14	2.49	2.4	-2.47	13.53	0.62
Sample Information											
Project Name:						MMS Field Study 2005 CT - 39075					
Analysis Date:						01-02-06					
Analyzed By:						SEA Inc.					
Easting (ft):						690,576					
Northing (ft):						1,768,998					
Horizontal System:						NAD 1983					
Vertical System:						MSL					
Comments:											
Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-03

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>690,894</b>	Northing (ft): <b>1,763,538</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.33</b>	Wash Weight (g): <b>29.85</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.37</b>	Fines (%): #200 - 1.28 #230 - 1.22	Organics (%): <b>0.46</b>	Carbonates (%): <b>8.05</b>	Shells (%):
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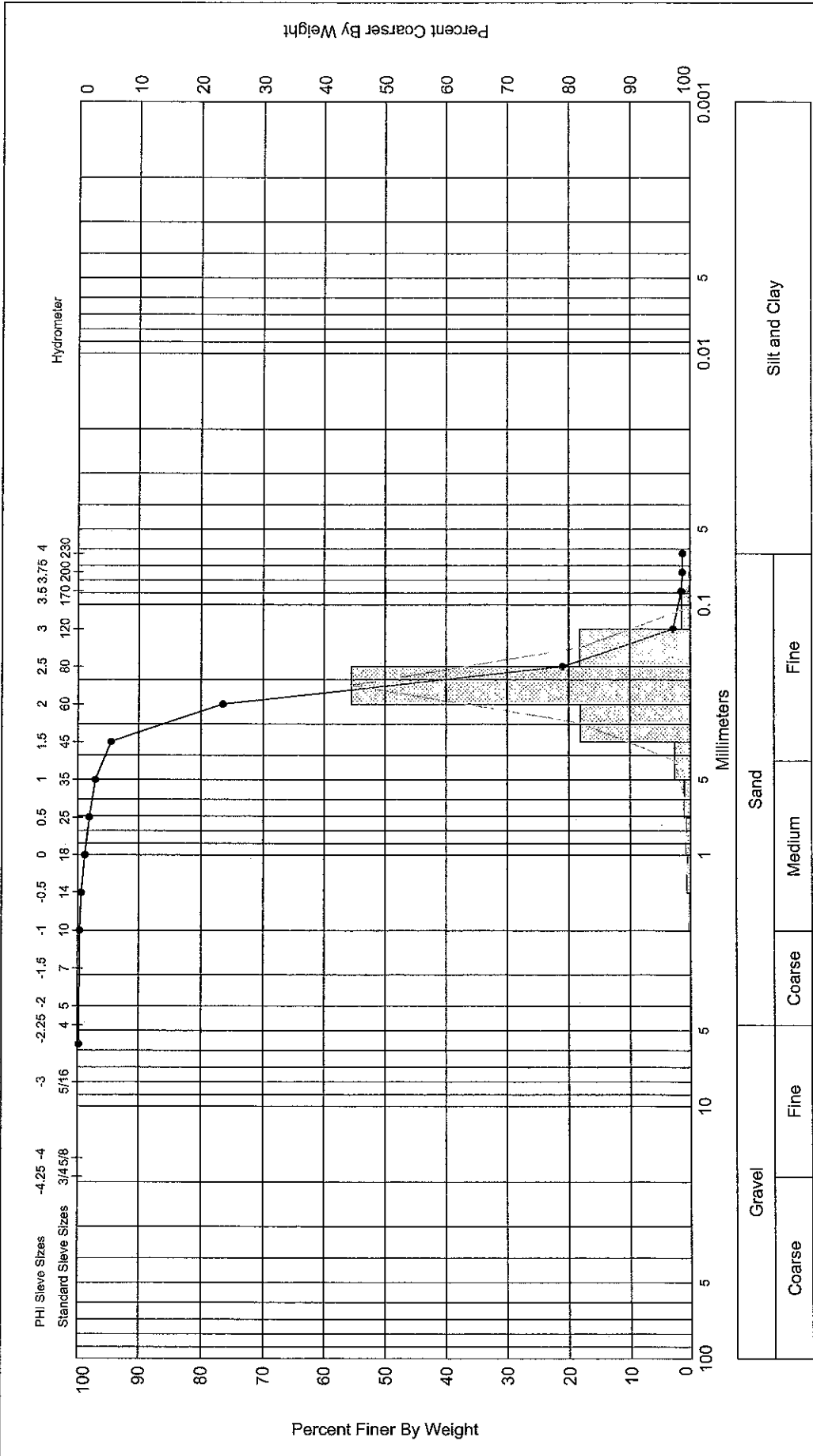
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.07	0.22	0.07	0.22
10	-1.00	2.00	0.03	0.10	0.10	0.32
14	-0.50	1.41	0.08	0.26	0.18	0.58
18	0.00	1.00	0.17	0.57	0.35	1.15
25	0.50	0.71	0.22	0.71	0.57	1.86
35	1.00	0.50	0.29	0.97	0.86	2.83
45	1.50	0.35	0.78	2.56	1.63	5.39
60	2.00	0.25	5.50	18.12	7.13	23.51
80	2.50	0.18	16.84	55.52	23.97	79.03
120	3.00	0.13	5.51	18.17	29.48	97.20
170	3.50	0.09	0.41	1.36	29.89	98.56
200	3.75	0.07	0.05	0.16	29.94	98.72
230	4.00	0.06	0.02	0.06	29.96	98.78

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.64	2.46	2.24	2.01	1.79	1.42

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.17	0.22	0.51	-1.99	12.59

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample Information		Sample Information	
Sample	NE1-B11-03	Project Name:	MMS Field Study 2005 CT - 39075
Symbol	—●—	Analysis Date:	01-02-06
Elev. (ft)		Analyzed By:	SEA Inc.
USCS	SP	Easting (ft):	690,894
% Fines	#200 - 1.28	Northing (ft):	1,763,538
% Organics	0.46	Horizontal System:	NAD 1983
% Carbonates	8.05	Vertical System:	MSL
Mean	2.17		
Median	2.24		
Skew	-1.99		
Kurt	12.59		
Sort	0.51		

Comments:  
Depths and elevations based on measured values

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-04

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>689,072</b>	Northing (ft): <b>1,780,063</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.17</b>	Wash Weight (g): <b>29.64</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.35</b>	Fines (%): #200 - 1.84 #230 - 1.44	Organics (%): <b>0.57</b>	Carbonates (%): <b>7.65</b>	Shells (%):
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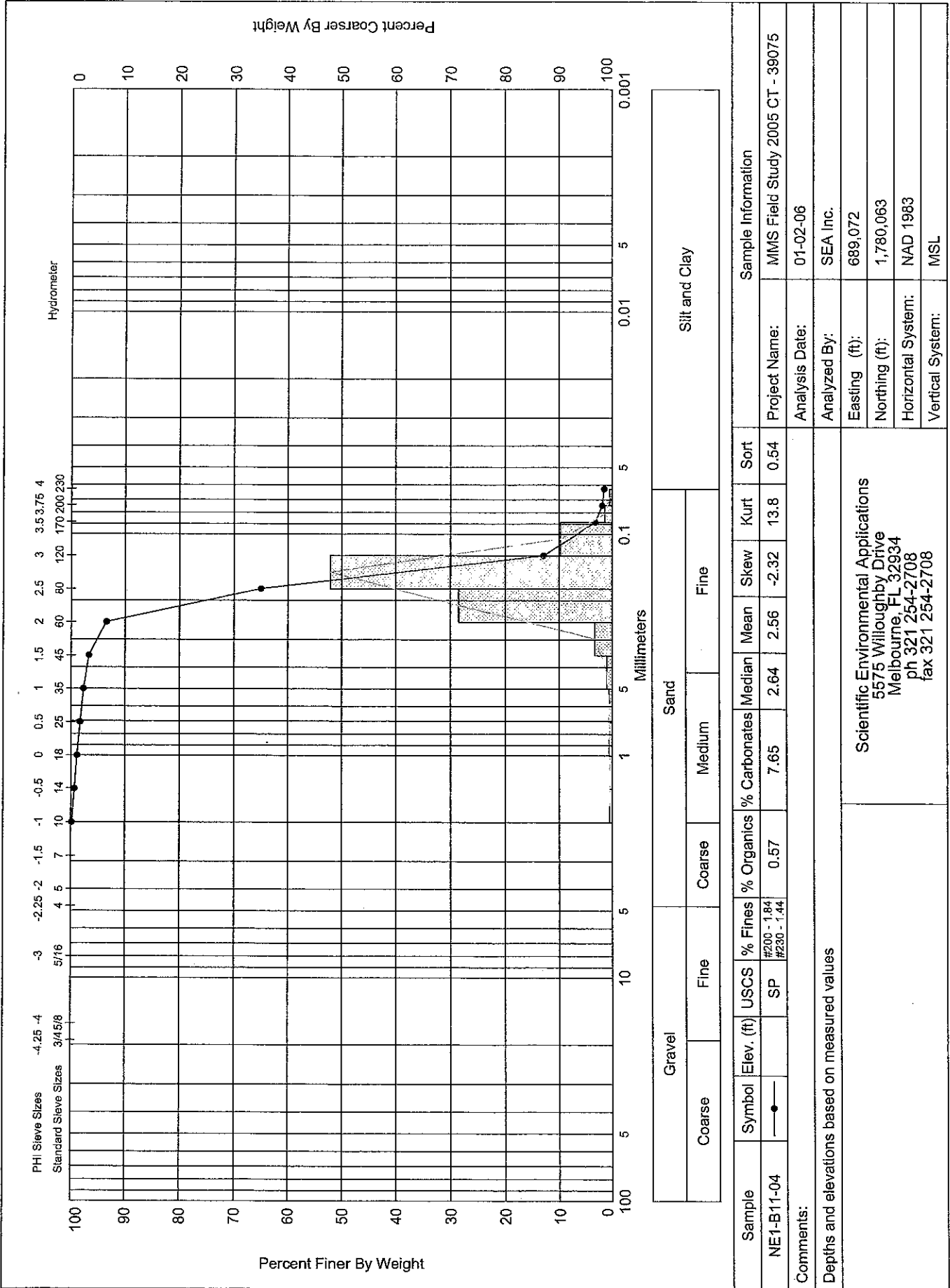
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.05	0.17	0.05	0.17
14	-0.50	1.41	0.15	0.49	0.20	0.66
18	0.00	1.00	0.14	0.47	0.34	1.13
25	0.50	0.71	0.16	0.53	0.50	1.66
35	1.00	0.50	0.18	0.59	0.68	2.25
45	1.50	0.35	0.30	0.99	0.98	3.24
60	2.00	0.25	0.99	3.29	1.97	6.53
80	2.50	0.18	8.60	28.50	10.57	35.03
120	3.00	0.13	15.71	52.08	26.28	87.11
170	3.50	0.09	2.93	9.72	29.21	96.83
200	3.75	0.07	0.40	1.33	29.62	98.16
230	4.00	0.06	0.12	0.40	29.74	98.56

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.97	2.88	2.64	2.32	2.17	1.77

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.56	0.17	0.54	-2.32	13.8

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample Information	
Sample	NE1-B11-04
Symbol	—●—
Elev. (ft)	SP
USCS	#200 - 1.84 #230 - 1.44
% Fines	0.57
% Organics	7.65
% Carbonates	2.64
Median	2.56
Mean	-2.32
Skew	13.8
Kurt	0.54
Sort	MMS Field Study 2005 CT - 39075
Project Name:	
Analysis Date: 01-02-06	
Analyzed By: SEA Inc.	
Easting (ft): 689,072	
Northing (ft): 1,780,063	
Horizontal System: NAD 1983	
Vertical System: MSL	

Comments:  
 Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-05

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>688,013</b>	Northing (ft): <b>1,774,632</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.43</b>	Wash Weight (g): <b>30.10</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): #200 - 1.24 #230 - 1.16	Organics (%): <b>0.95</b>	Carbonates (%): <b>24.33</b>	Shells (%):
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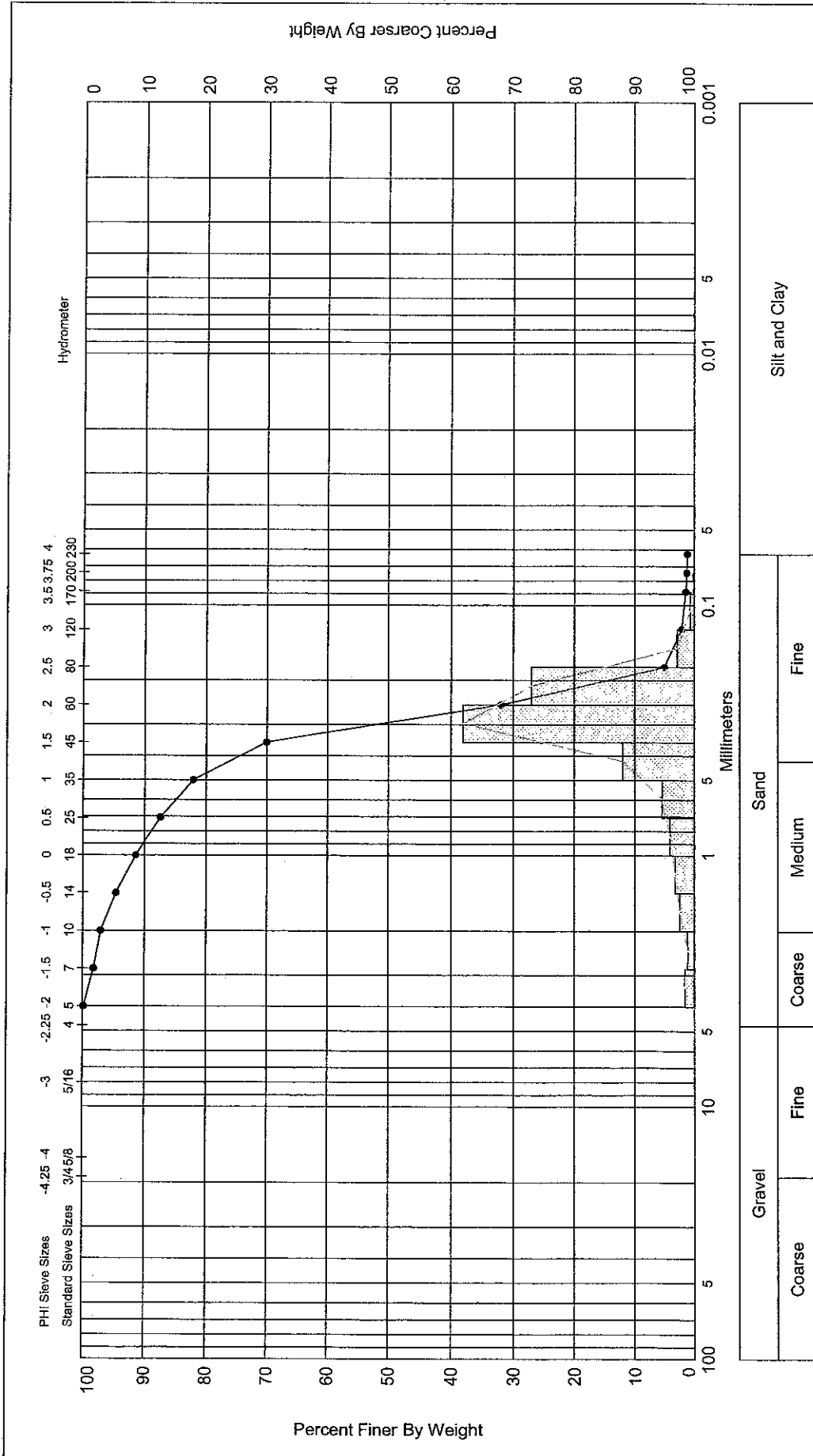
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.05	0.16	0.05	0.16
7	-1.50	2.83	0.48	1.58	0.53	1.74
10	-1.00	2.00	0.34	1.12	0.87	2.86
14	-0.50	1.41	0.74	2.44	1.61	5.30
18	0.00	1.00	0.98	3.23	2.60	8.53
25	0.50	0.71	1.22	4.00	3.81	12.53
35	1.00	0.50	1.64	5.39	5.45	17.92
45	1.50	0.35	3.66	12.02	9.11	29.94
60	2.00	0.25	11.59	38.09	20.70	68.03
80	2.50	0.18	8.22	27.01	28.92	95.04
120	3.00	0.13	0.87	2.86	29.79	97.90
170	3.50	0.09	0.21	0.68	30.00	98.58
200	3.75	0.07	0.06	0.18	30.05	98.76
230	4.00	0.06	0.02	0.08	30.08	98.84

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.50	2.30	2.13	1.76	1.29	0.82	-0.56

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.53	0.35	0.91	-1.54	5.6

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample		Sample Information									
NE1-B11-05	●—	Project Name:	MMS Field Study 2005 CT - 39075								
Comments:		Analysis Date:	01-02-06								
Depths and elevations based on measured values		Analyzed By:	SEA Inc.								
		Easting (ft):	688,013								
		Northing (ft):	1,774,632								
		Horizontal System:	NAD 1983								
		Vertical System:	MSL								
		Scientific Environmental Applications	5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708								

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-06

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>687,424</b>	Northing (ft): <b>1,779,971</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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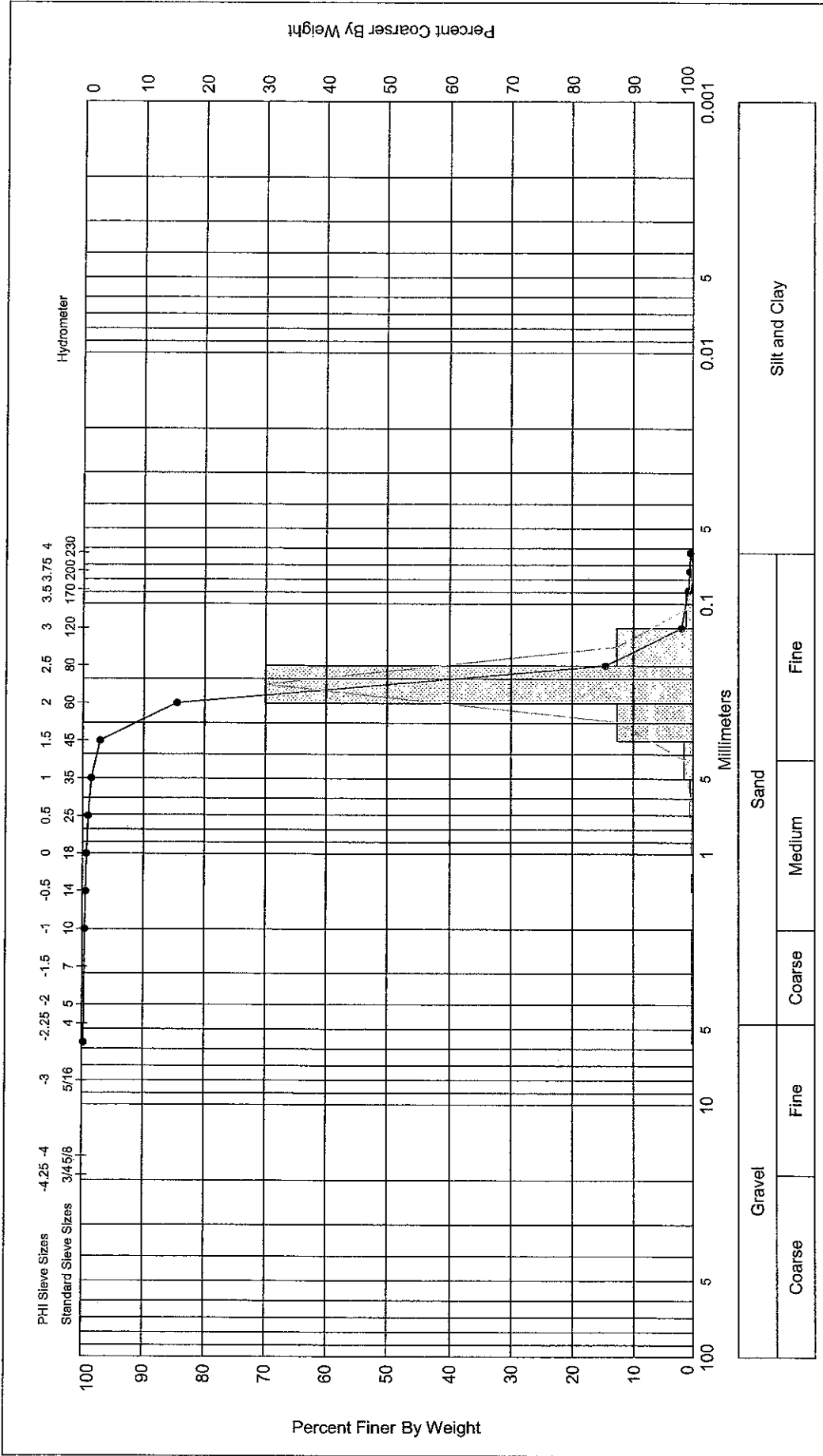
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.22</b>	Wash Weight (g): <b>30.03</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.19</b>	Fines (%): #200 - 0.50 #230 - 0.42	Organics (%): <b>0.71</b>	Carbonates (%): <b>6.49</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.07	0.24	0.07	0.24	
10	-1.00	2.00	0.04	0.14	0.11	0.38	
14	-0.50	1.41	0.04	0.13	0.15	0.51	
18	0.00	1.00	0.04	0.14	0.19	0.65	
25	0.50	0.71	0.07	0.24	0.26	0.89	
35	1.00	0.50	0.14	0.46	0.40	1.35	
45	1.50	0.35	0.43	1.42	0.83	2.77	
60	2.00	0.25	3.82	12.64	4.65	15.41	
80	2.50	0.18	21.16	70.03	25.81	85.44	
120	3.00	0.13	3.83	12.69	29.65	98.13	
170	3.50	0.09	0.35	1.15	30.00	99.28	
200	3.75	0.07	0.07	0.22	30.06	99.50	
230	4.00	0.06	0.02	0.08	30.09	99.58	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.88	2.49	2.43	2.25	2.07	2.00	1.59
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.21	0.22	0.4	-2.47	24.24	

GRANULARMETRIC REPORT MMS\_EAST.GPJ\_FL\_DEP\_ROSS.GDT 5/12/08



Sample		Sample Information															
Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	Analysis Date:	Analyzed By:	Easting (ft):	Northing (ft):	Horizontal System:	Vertical System:
NE1-B11-06		SP	#200 - 0.50 #230 - 0.42	0.71	6.49	2.25	2.21	-2.47	24.24	0.4	MMS Field Study 2005 CT - 39075	01-02-06	SEA Inc.	687.424	1,779.971	NAD 1983	MSL
Comments:																	
Depths and elevations based on measured values																	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-07

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>691,664</b>	Northing (ft): <b>1,759,200</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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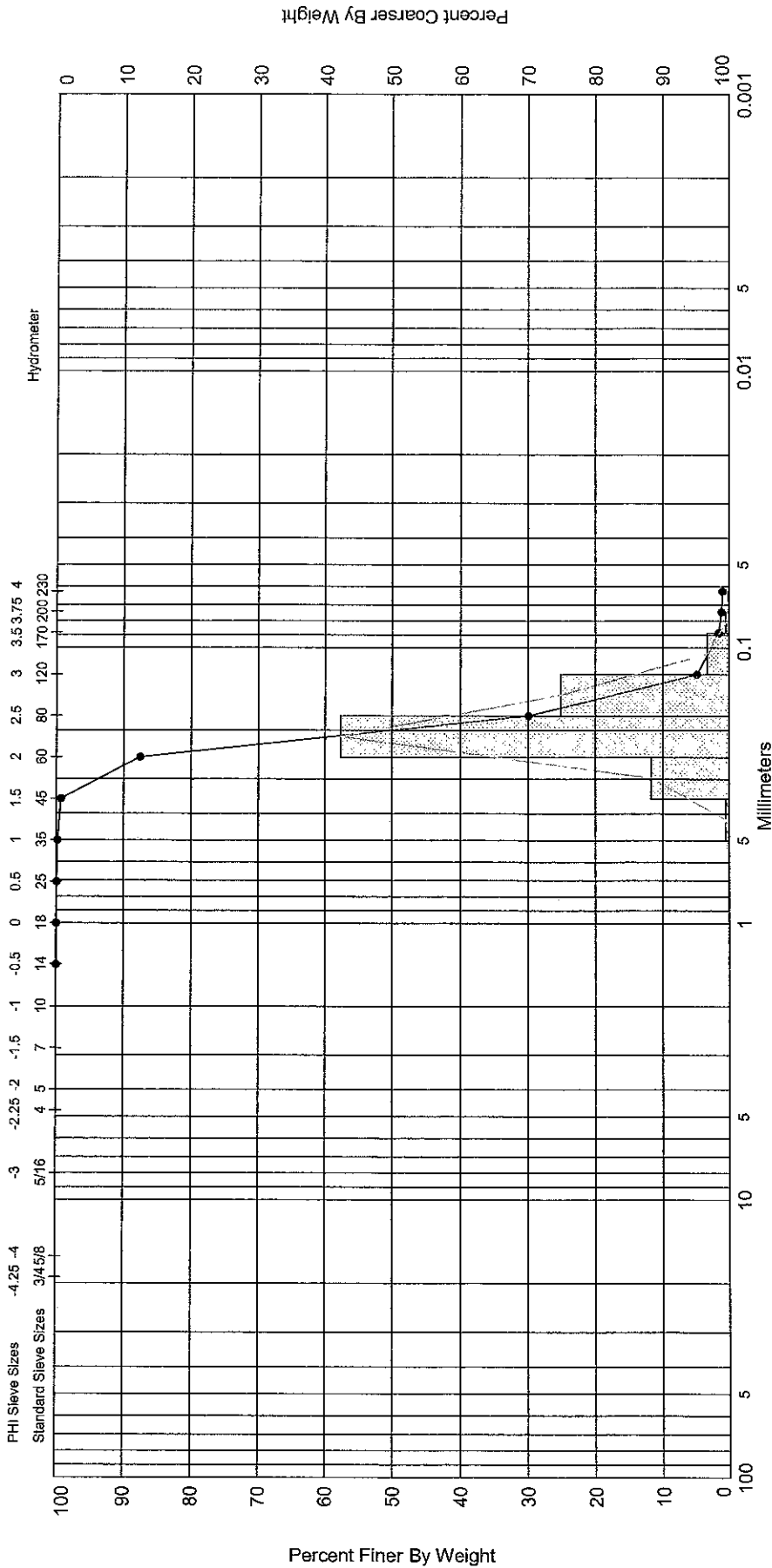
Dry Weight (g): <b>30.46</b>	Wash Weight (g): <b>30.15</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.08</b>	Fines (%): <b>#200 - 1.10</b> <b>#230 - 0.96</b>	Organics (%): <b>0.45</b>	Carbonates (%): <b>4.95</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
14	-0.50	1.41	0.01	0.04	0.01	0.04
18	0.00	1.00	0.00	0.01	0.02	0.05
25	0.50	0.71	0.01	0.04	0.03	0.09
35	1.00	0.50	0.03	0.10	0.06	0.19
45	1.50	0.35	0.15	0.49	0.21	0.68
60	2.00	0.25	3.58	11.76	3.79	12.44
80	2.50	0.18	17.56	57.66	21.35	70.10
120	3.00	0.13	7.65	25.13	29.01	95.23
170	3.50	0.09	0.99	3.24	29.99	98.47
200	3.75	0.07	0.13	0.43	30.12	98.90
230	4.00	0.06	0.04	0.14	30.17	99.04

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.00	2.78	2.60	2.33	2.11	2.03	1.68
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.35	0.20	0.37	0.22	4.82	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE1-B11-07	●		SP	#200 - 1.10 #230 - 0.96	0.45	4.95	2.33	2.35	0.22	4.82	0.37	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	01-02-06	Analyzed By:	SEA Inc.	Easting (ft):	691,664	Northing (ft):	1,759,200	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:													Scientific Environmental Applications 5575 Wfloughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Depths and elevations based on measured values																									

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-08

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>687,103</b>	Northing (ft): <b>1,781,850</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.41</b>	Wash Weight (g): <b>30.03</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.07</b>	Fines (%): #200 - 1.36 #230 - 1.19	Organics (%): <b>0.76</b>	Carbonates (%): <b>6.98</b>	Shells (%):
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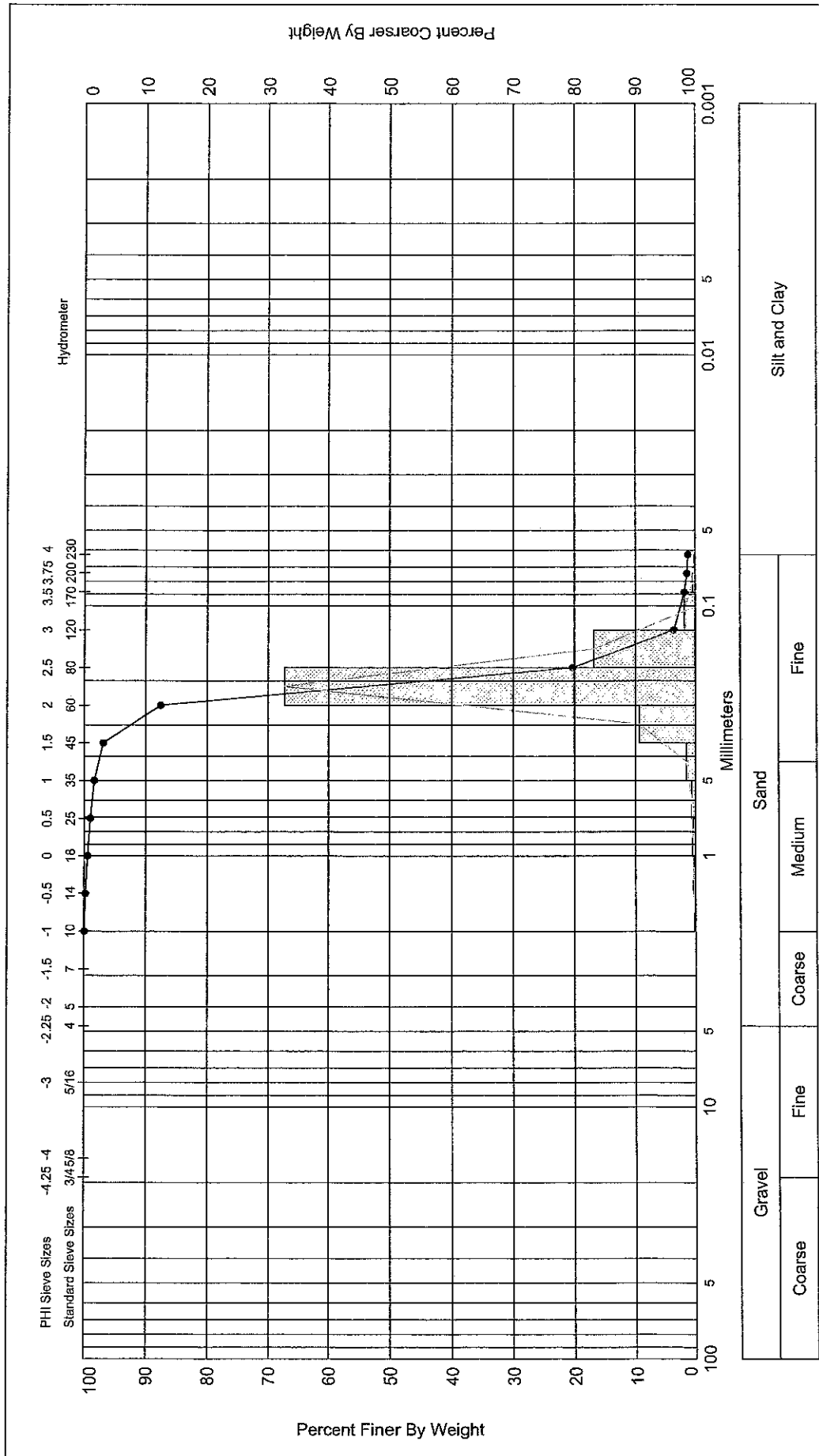
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.01	0.05	0.01	0.05
14	-0.50	1.41	0.05	0.18	0.07	0.23
18	0.00	1.00	0.10	0.34	0.17	0.57
25	0.50	0.71	0.13	0.44	0.31	1.01
35	1.00	0.50	0.19	0.62	0.50	1.63
45	1.50	0.35	0.44	1.46	0.94	3.09
60	2.00	0.25	2.84	9.33	3.77	12.42
80	2.50	0.18	20.47	67.31	24.24	79.73
120	3.00	0.13	5.09	16.73	29.33	96.46
170	3.50	0.09	0.53	1.75	29.86	98.21
200	3.75	0.07	0.13	0.43	29.99	98.64
230	4.00	0.06	0.05	0.17	30.04	98.81

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.63	2.46	2.28	2.09	2.03	1.60

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.27	0.21	0.43	-1.78	14.35

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-B11-08	●	—	SP	#200 - 1.36 #230 - 1.19	0.76	6.98	2.28	2.27	-1.78	14.35	0.43	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	01-02-06
Comments:												Analyzed By:	SEA Inc.		
Depths and elevations based on measured values												Easting (ft):	687,103		
												Northing (ft):	1,781,850		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-09

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>689,199</b>	Northing (ft): <b>1,768,137</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.30</b>	Wash Weight (g): <b>30.04</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.20</b>	Fines (%): #200 - 0.78 #230 - 0.69	Organics (%): <b>0.79</b>	Carbonates (%): <b>21.43</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.11	0.36	0.11	0.36
7	-1.50	2.83	0.37	1.22	0.48	1.58
10	-1.00	2.00	0.43	1.40	0.90	2.98
14	-0.50	1.41	0.71	2.33	1.61	5.31
18	0.00	1.00	0.62	2.04	2.23	7.35
25	0.50	0.71	0.70	2.30	2.93	9.65
35	1.00	0.50	0.89	2.95	3.82	12.60
45	1.50	0.35	2.21	7.30	6.03	19.90
60	2.00	0.25	11.57	38.18	17.60	58.08
80	2.50	0.18	9.72	32.07	27.32	90.15
120	3.00	0.13	2.31	7.63	29.63	97.78
170	3.50	0.09	0.36	1.20	30.00	98.98
200	3.75	0.07	0.07	0.24	30.07	99.22
230	4.00	0.06	0.03	0.09	30.10	99.31

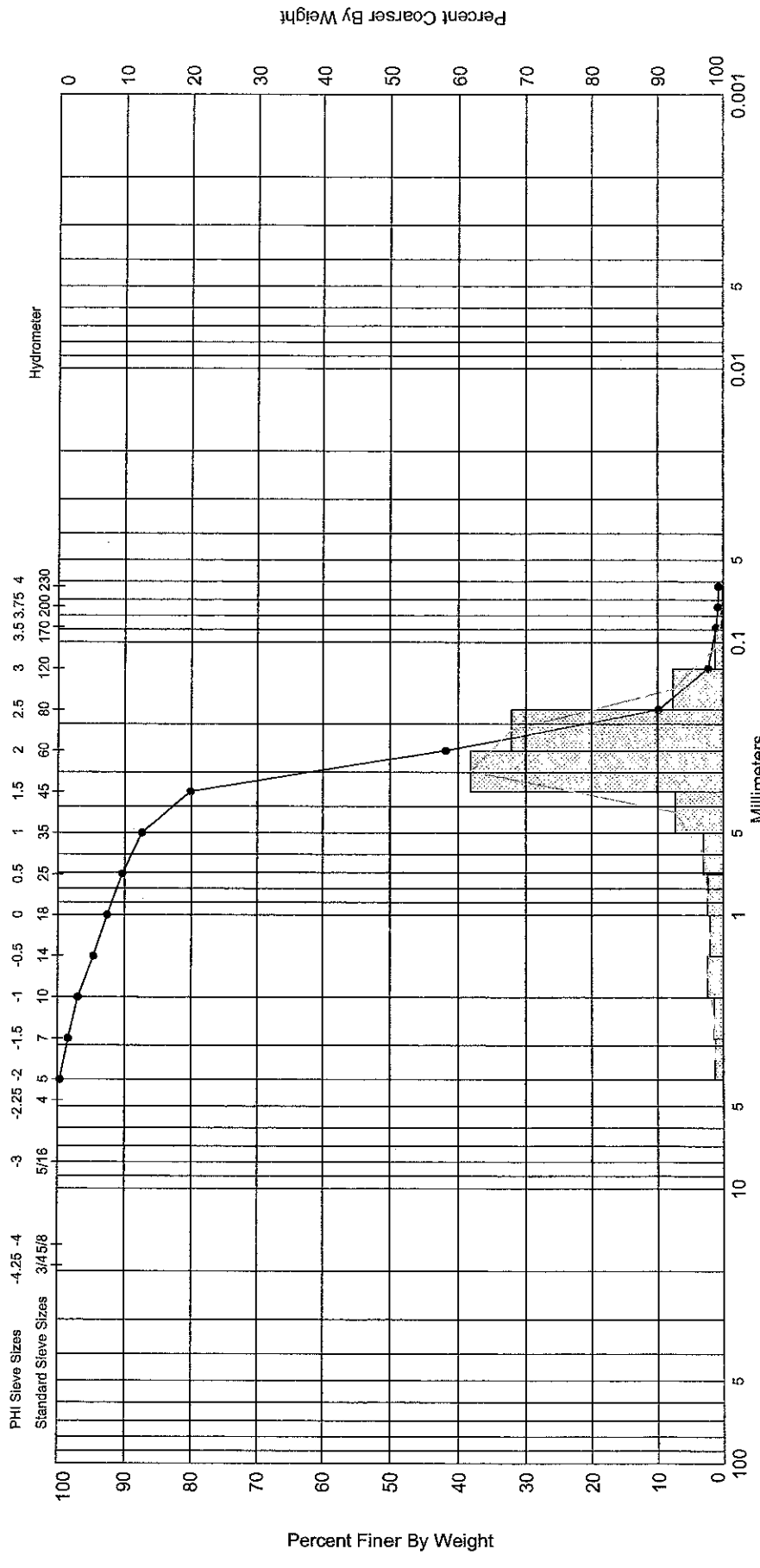
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.40	2.26	1.89	1.57	1.23	-0.57

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.71	0.31	0.9	-1.78	6.8

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08





Sample	Symbol	Elev. (ft)	USCS	Gravel		Sand			Silt and Clay			Sample Information						
				Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort	Project Name:	Analysis Date:	Analyzed By:	Easting (ft):	Northing (ft):	Horizontal System:	Vertical System:
NE1-B11-09	●	—	SP	0.79	0.79	21.43	1.89	1.71	-1.78	6.8	0.9	MMS Field Study 2005 CT - 39075	01-02-06	SEA Inc.	689,199	1,768,137	NAD 1983	MSL
Comments: Depths and elevations based on measured values												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708						

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-10

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">691,074</p>	Northing (ft): <p style="text-align: center;">1,764,926</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.38 #230 - 1.28	Organics (%):	Carbonates (%):	Shells (%):
30.14	29.76	0.00	0.01		0.50	7.52	

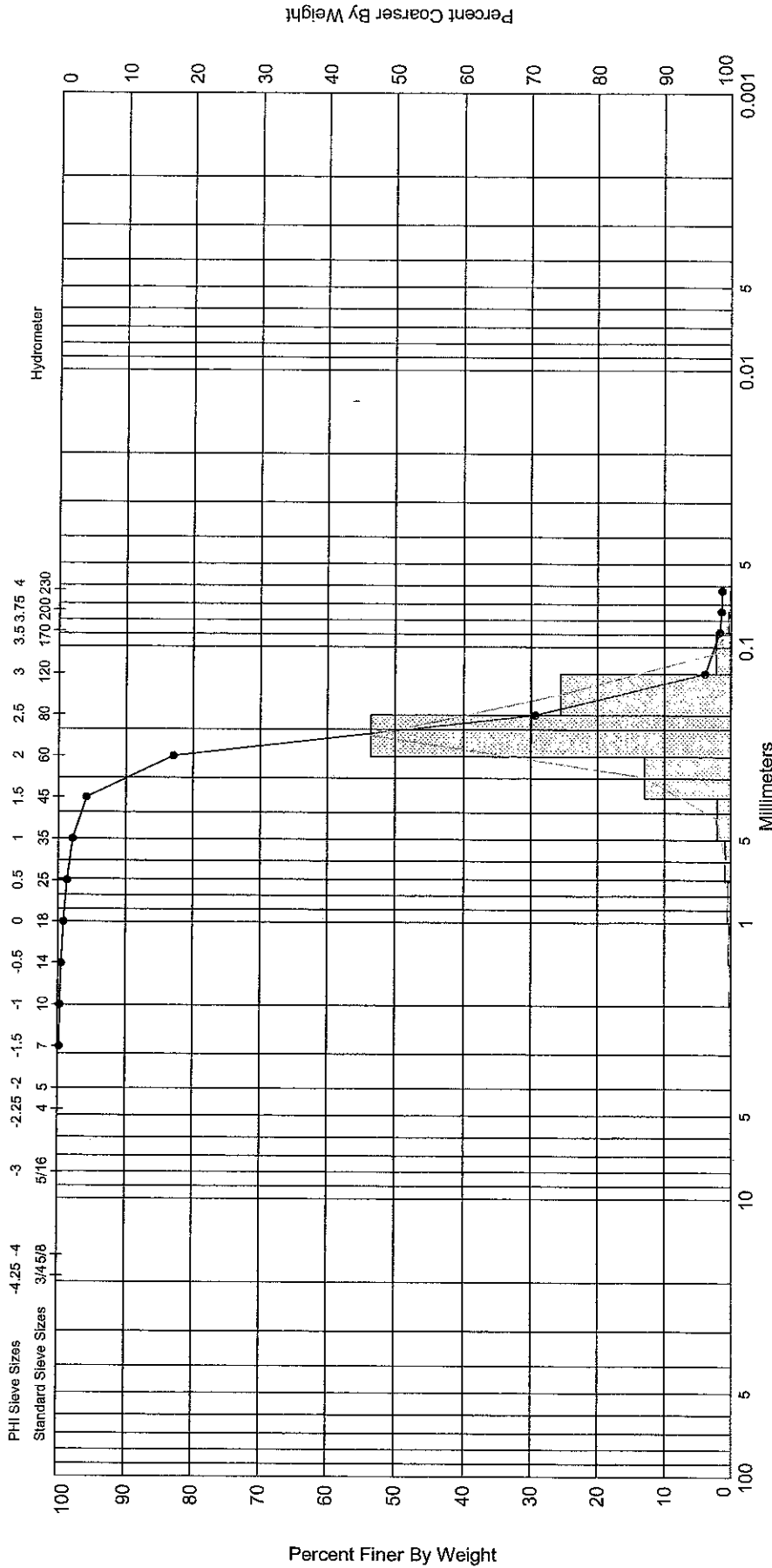
  

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.07	0.24	0.07	0.24
10	-1.00	2.00	0.02	0.05	0.09	0.29
14	-0.50	1.41	0.06	0.20	0.15	0.49
18	0.00	1.00	0.10	0.32	0.24	0.81
25	0.50	0.71	0.16	0.51	0.40	1.32
35	1.00	0.50	0.24	0.81	0.64	2.13
45	1.50	0.35	0.61	2.03	1.25	4.16
60	2.00	0.25	3.90	12.94	5.15	17.10
80	2.50	0.18	16.13	53.52	21.28	70.62
120	3.00	0.13	7.69	25.52	28.97	96.14
170	3.50	0.09	0.67	2.21	29.64	98.35
200	3.75	0.07	0.08	0.27	29.72	98.62
230	4.00	0.06	0.03	0.10	29.75	98.72

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.98	2.76	2.59	2.31	2.07	1.96	1.53
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.27	0.21	0.48	-1.65	11.13	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Coarse	Fine

Sample	Symbol	Elev. (ft)	USCS	% Finer	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE1-B11-10	—	—	SP	#200 - 1.38 #230 - 1.28	0.50	7.52	2.31	2.27	-1.65	11.13	0.48	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	01-02-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (ft):	691,074		
												Northing (ft):	1,764,926		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-11

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>691,814</b>	Northing (ft): <b>1,775,757</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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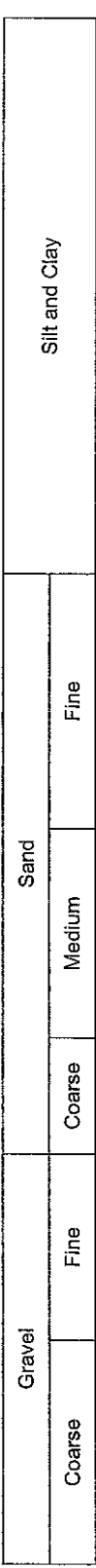
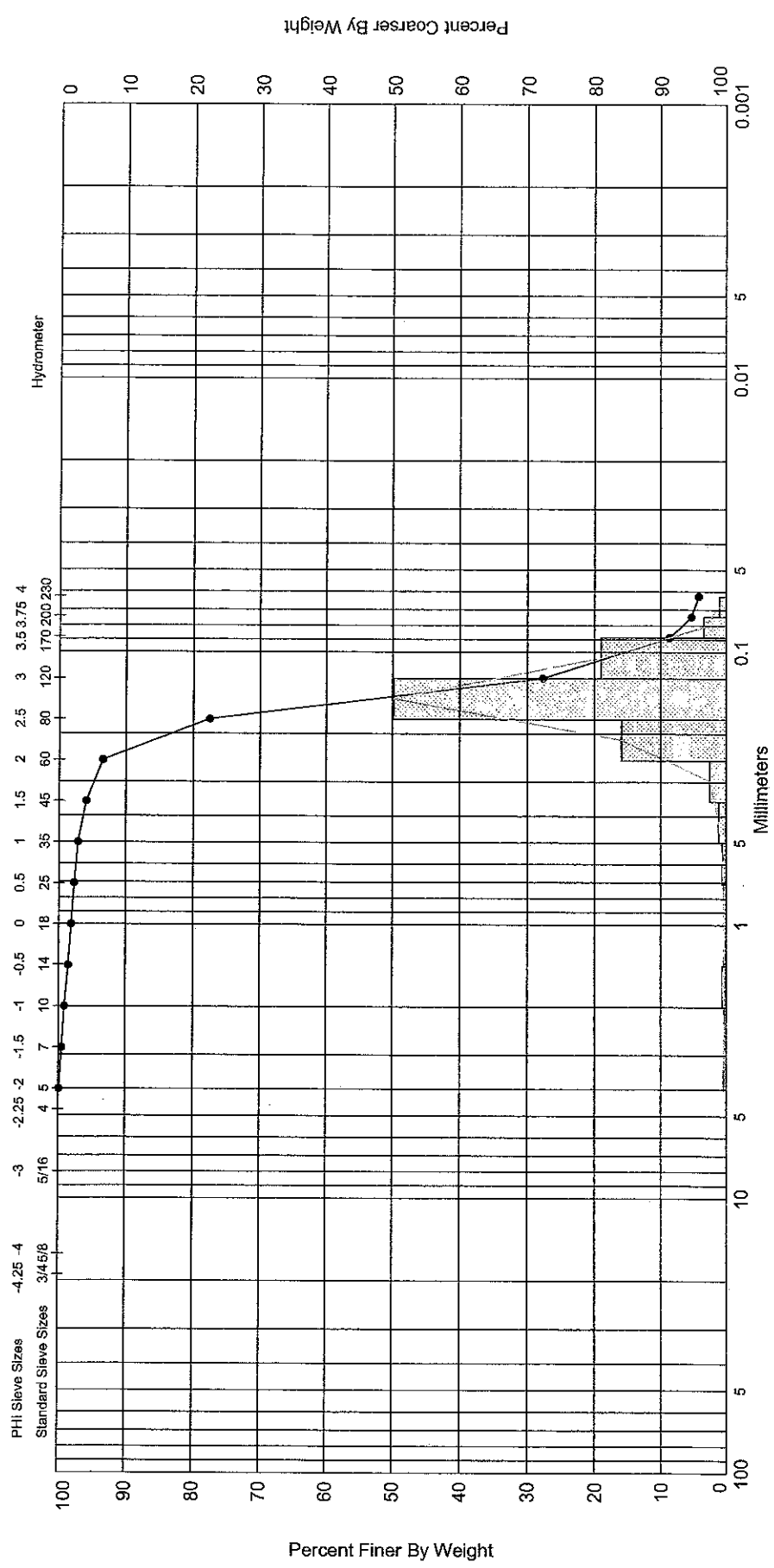
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 5.27 #230 - 4.21	Organics (%):	Carbonates (%):	Shells (%):
30.27	28.98	0.04	-0.15		1.10	15.05	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.03	0.09	0.03	0.09	
7	-1.50	2.83	0.13	0.42	0.15	0.51	
10	-1.00	2.00	0.12	0.38	0.27	0.89	
14	-0.50	1.41	0.17	0.57	0.44	1.46	
18	0.00	1.00	0.13	0.44	0.58	1.90	
25	0.50	0.71	0.13	0.43	0.70	2.33	
35	1.00	0.50	0.17	0.57	0.88	2.90	
45	1.50	0.35	0.35	1.17	1.23	4.07	
60	2.00	0.25	0.76	2.50	1.99	6.57	
80	2.50	0.18	4.81	15.89	6.80	22.46	
120	3.00	0.13	15.09	49.86	21.89	72.32	
170	3.50	0.09	5.75	19.00	27.64	91.32	
200	3.75	0.07	1.03	3.41	28.67	94.73	
230	4.00	0.06	0.32	1.06	28.99	95.79	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.81	3.31	3.07	2.78	2.53	2.30	1.69
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.67	0.16	0.71	-2.99	16.64	

GRANULOMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
NE1-B11-11	●	—	SP	#200 - 5.27 #230 - 4.21	1.10	15.05	2.78	2.67	-2.99	16.64	0.71	Project Name:	MMS Field Study 2005 CT - 39075
Comments:												Analysis Date:	01-02-06
Depths and elevations based on measured values												Analyzed By:	SEA Inc.
												Easting (ft):	691,814
												Northing (ft):	1,775,757
												Horizontal System:	NAD 1983
												Vertical System:	MSL
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-12

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>692,302</b>	Northing (ft): <b>1,754,176</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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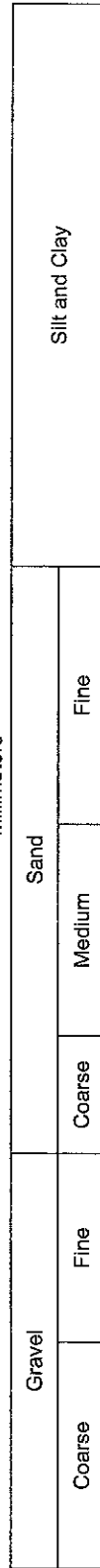
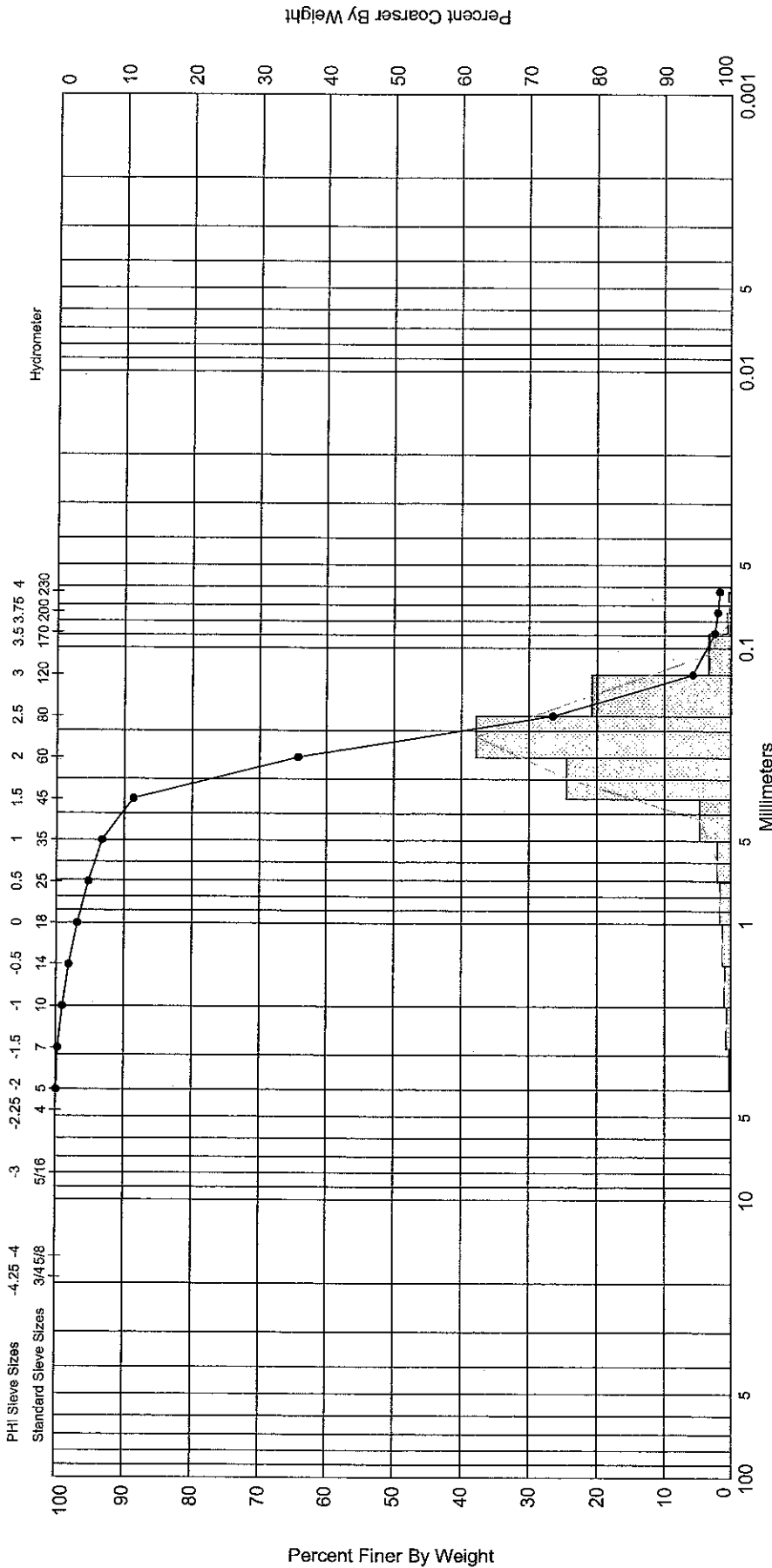
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.94 #230 - 1.67	Organics (%):	Carbonates (%):	Shells (%):
30.34	29.85	0.01	-0.01		0.94	13.86	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.02	0.07	0.02	0.07	
7	-1.50	2.83	0.06	0.21	0.09	0.28	
10	-1.00	2.00	0.20	0.67	0.29	0.95	
14	-0.50	1.41	0.27	0.90	0.56	1.85	
18	0.00	1.00	0.38	1.26	0.94	3.11	
25	0.50	0.71	0.49	1.62	1.44	4.73	
35	1.00	0.50	0.60	1.98	2.04	6.71	
45	1.50	0.35	1.41	4.65	3.45	11.36	
60	2.00	0.25	7.42	24.44	10.86	35.80	
80	2.50	0.18	11.46	37.77	22.32	73.57	
120	3.00	0.13	6.28	20.71	28.61	94.28	
170	3.50	0.09	1.00	3.30	29.61	97.58	
200	3.75	0.07	0.15	0.48	29.75	98.06	
230	4.00	0.06	0.08	0.27	29.84	98.33	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.11	2.75	2.53	2.19	1.78	1.59	0.57
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.07	0.24	0.76	-1.74	8.14	

GRANULARMETRIC REPORT MMS\_EAST.GPJ FL DEP ROSS.GDT 5/12/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
NE1-B11-12	●	—	SP	#200 - 1.94 #230 - 1.67	0.94	13.86	2.19	2.07	-1.74	8.14	0.76	MMS Field Study 2005 CT - 39075
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Analysis Date: 01-02-06												
Analyzed By: SEA Inc.												
Easting (ft): 692,302												
Northing (ft): 1,754,176												
Horizontal System: NAD 1983												
Vertical System: MSL												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE1-B11-13

Analysis Date: 01-02-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>684,203</b>	Northing (ft): <b>1,779,666</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>30.38</b>	Wash Weight (g): <b>28.05</b>	Pan Retained (g): <b>0.10</b>	Sieve Loss (%): <b>0.03</b>	Fines (%): <b>#200 - 10.06</b> <b>#230 - 7.99</b>	Organics (%): <b>4.23</b>	Carbonates (%): <b>24.04</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.05	0.16	0.05	0.16
7	-1.50	2.83	0.05	0.16	0.10	0.32
10	-1.00	2.00	0.28	0.93	0.38	1.25
14	-0.50	1.41	0.28	0.92	0.66	2.17
18	0.00	1.00	0.20	0.64	0.85	2.81
25	0.50	0.71	0.24	0.78	1.09	3.59
35	1.00	0.50	0.42	1.40	1.51	4.99
45	1.50	0.35	0.93	3.06	2.44	8.05
60	2.00	0.25	1.50	4.92	3.94	12.97
80	2.50	0.18	4.18	13.77	8.12	26.74
120	3.00	0.13	11.60	38.19	19.72	64.93
170	3.50	0.09	6.10	20.09	25.82	85.02
200	3.75	0.07	1.50	4.92	27.32	89.94
230	4.00	0.06	0.63	2.07	27.95	92.01

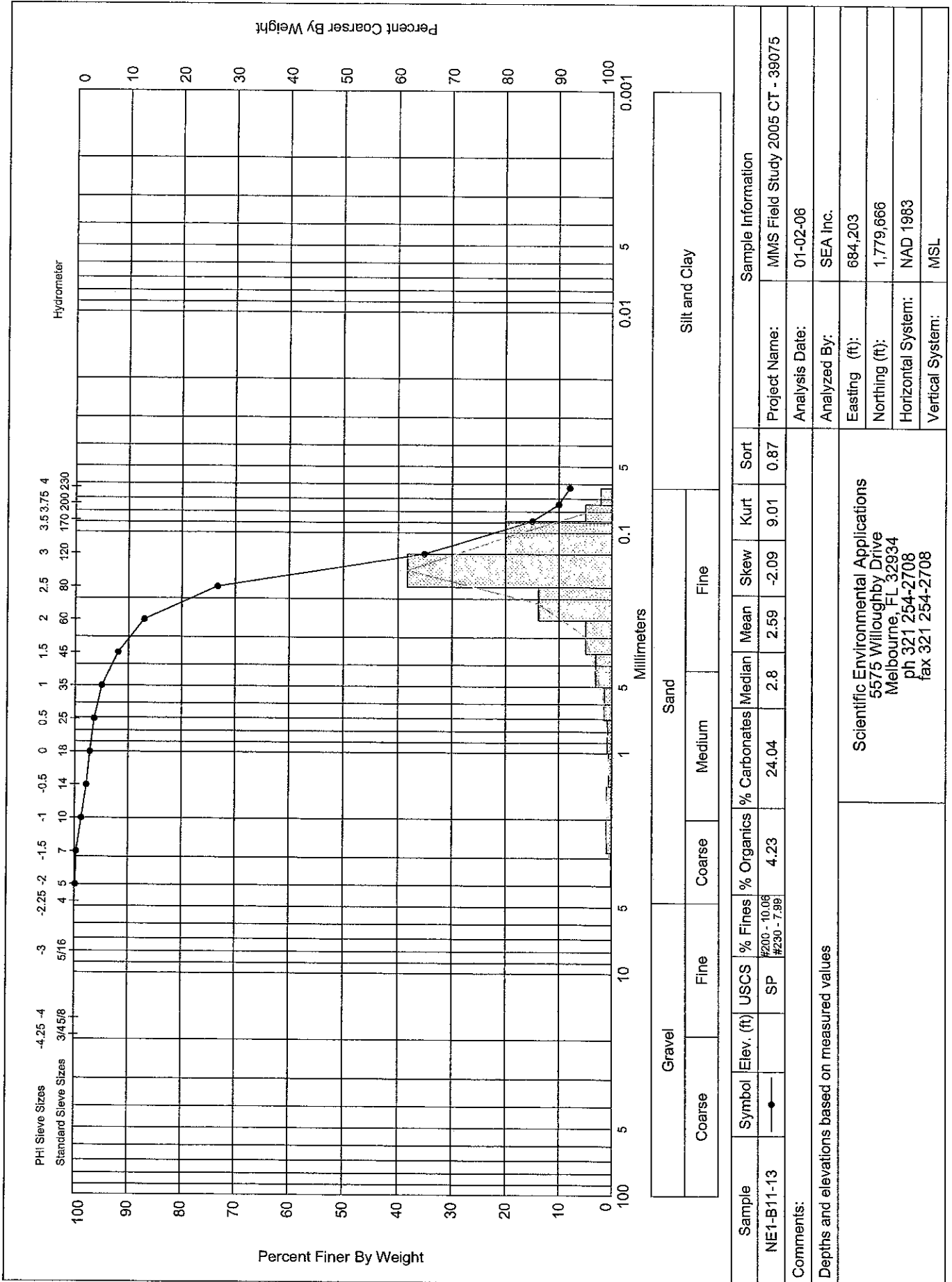
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.47	3.25	2.80	2.44	2.11	1.00

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.59	0.17	0.87	-2.09	9.01

GRANULARMETRIC REPORT MMS EAST.GPJ FL DEP ROSS.GDT 5/12/08





Gravel		Sand			Silt and Clay		
	Coarse	Fine	Medium			Fine	

Sample	NE1-B11-13	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines #200 - 10.06	4.23	% Organics #230 - 7.99	24.04	Median	2.8	Mean	-2.09	Skew	9.01	Kurt	0.87	Sort	
Sample Information	MMS Field Study 2005 CT - 39075																				
Analysis Date:	01-02-06																				
Analyzed By:	SEA Inc.																				
Easting (ft):	684,203																				
Northing (ft):	1,779,666																				
Horizontal System:	NAD 1983																				
Vertical System:	MSL																				
Comments:	Depths and elevations based on measured values																				
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																					

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-01

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">577,619</p>	Northing (ft): <p style="text-align: center;">2,178,913</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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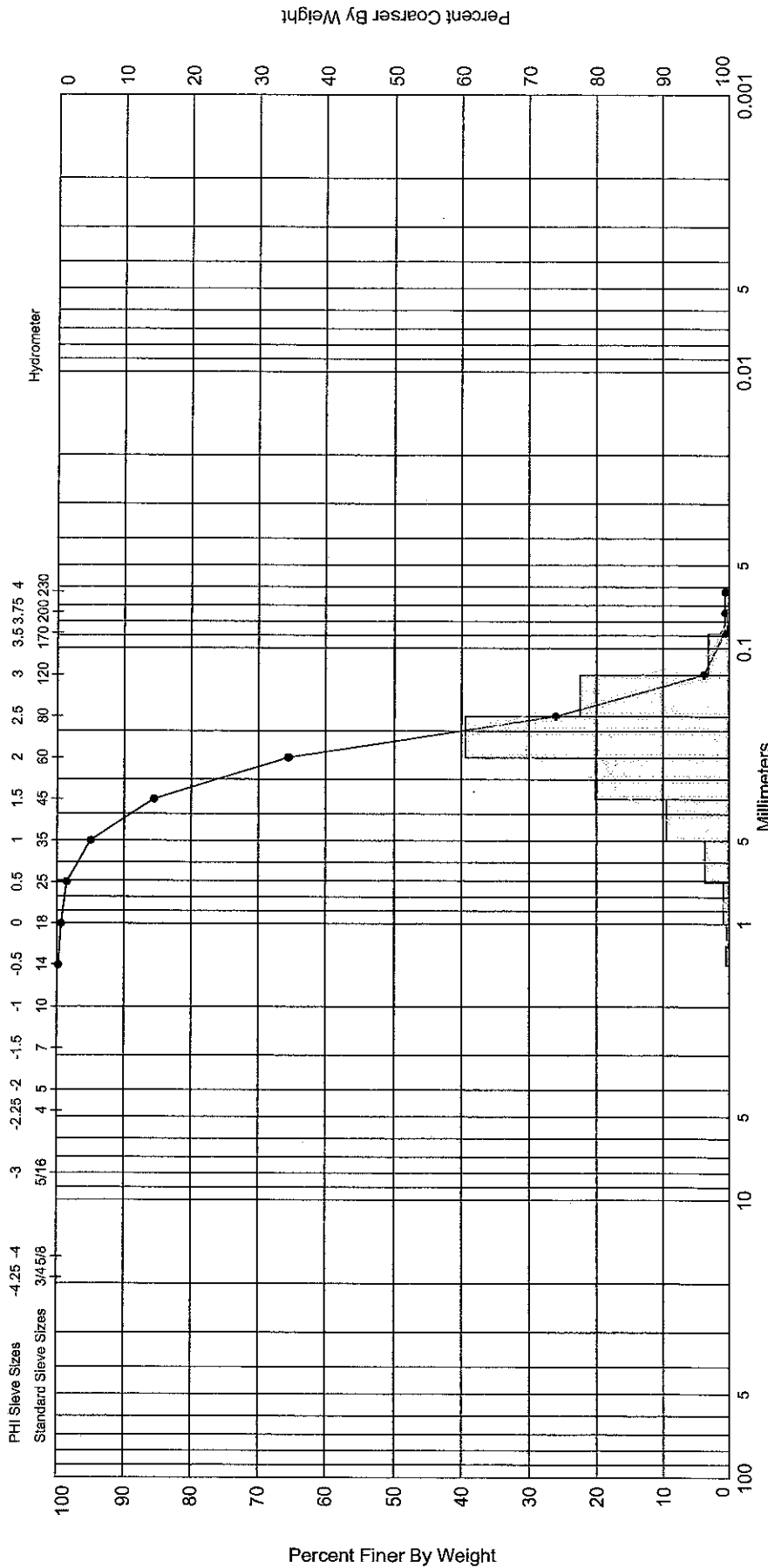
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">20.51</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">-0.68</p>	Fines (%): #200 - 0.53 #230 - 0.52	Organics (%): <p style="text-align: center;">0.54</p>	Carbonates (%): <p style="text-align: center;">6.64</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
14	-0.50	1.41	0.04	0.20	0.04	0.20
18	0.00	1.00	0.08	0.40	0.12	0.60
25	0.50	0.71	0.17	0.82	0.29	1.42
35	1.00	0.50	0.74	3.58	1.03	5.00
45	1.50	0.35	1.93	9.43	2.96	14.43
60	2.00	0.25	4.13	20.13	7.09	34.56
80	2.50	0.18	8.08	39.39	15.16	73.95
120	3.00	0.13	4.58	22.36	19.75	96.31
170	3.50	0.09	0.61	2.97	20.36	99.28
200	3.75	0.07	0.04	0.19	20.40	99.47
230	4.00	0.06	0.00	0.01	20.40	99.48

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.72	2.52	2.20	1.76	1.54	1.00
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.11	0.23	0.6	-0.74	3.95	



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A4-01	●		SP	#200 - 0.53 #230 - 0.52	0.54	6.64	2.2	2.11	-0.74	3.95	0.6	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-19-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	577,619		
												Northing (Y, ft):	2,178,913		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-02

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,672</b>	Northing (ft): <b>2,184,420</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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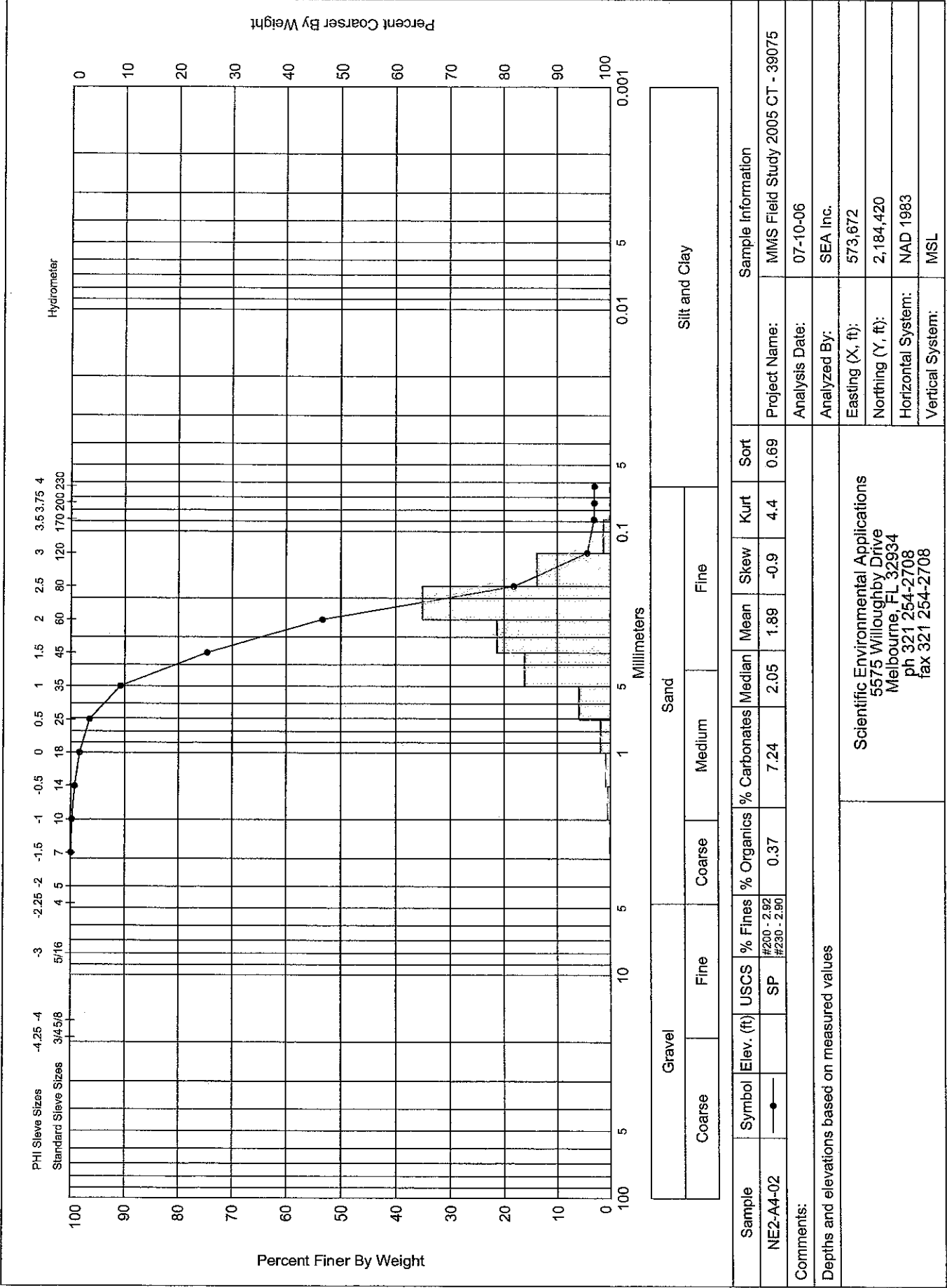
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>24.05</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.35</b>	Fines (%): #200 - 2.92 #230 - 2.90	Organics (%): <b>0.37</b>	Carbonates (%): <b>7.24</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.02	0.07	0.02	0.07	
10	-1.00	2.00	0.03	0.13	0.05	0.20	
14	-0.50	1.41	0.13	0.53	0.18	0.73	
18	0.00	1.00	0.21	0.88	0.39	1.61	
25	0.50	0.71	0.44	1.83	0.83	3.44	
35	1.00	0.50	1.39	5.78	2.22	9.22	
45	1.50	0.35	3.89	16.15	6.10	25.37	
60	2.00	0.25	5.13	21.34	11.24	46.71	
80	2.50	0.18	8.46	35.16	19.69	81.87	
120	3.00	0.13	3.33	13.85	23.02	95.72	
170	3.50	0.09	0.31	1.27	23.33	96.99	
200	3.75	0.07	0.02	0.09	23.35	97.08	
230	4.00	0.06	0.01	0.02	23.36	97.10	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.58	2.40	2.05	1.49	1.21	0.63

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.89	0.27	0.69	-0.9	4.4

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-03

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,998</b>	Northing (ft): <b>2,181,928</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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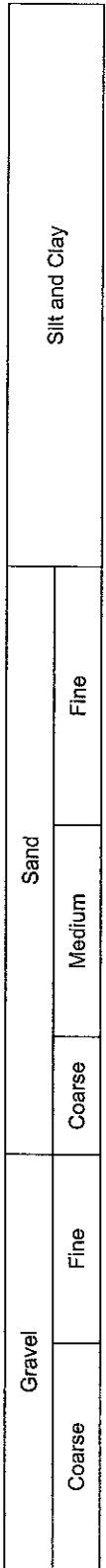
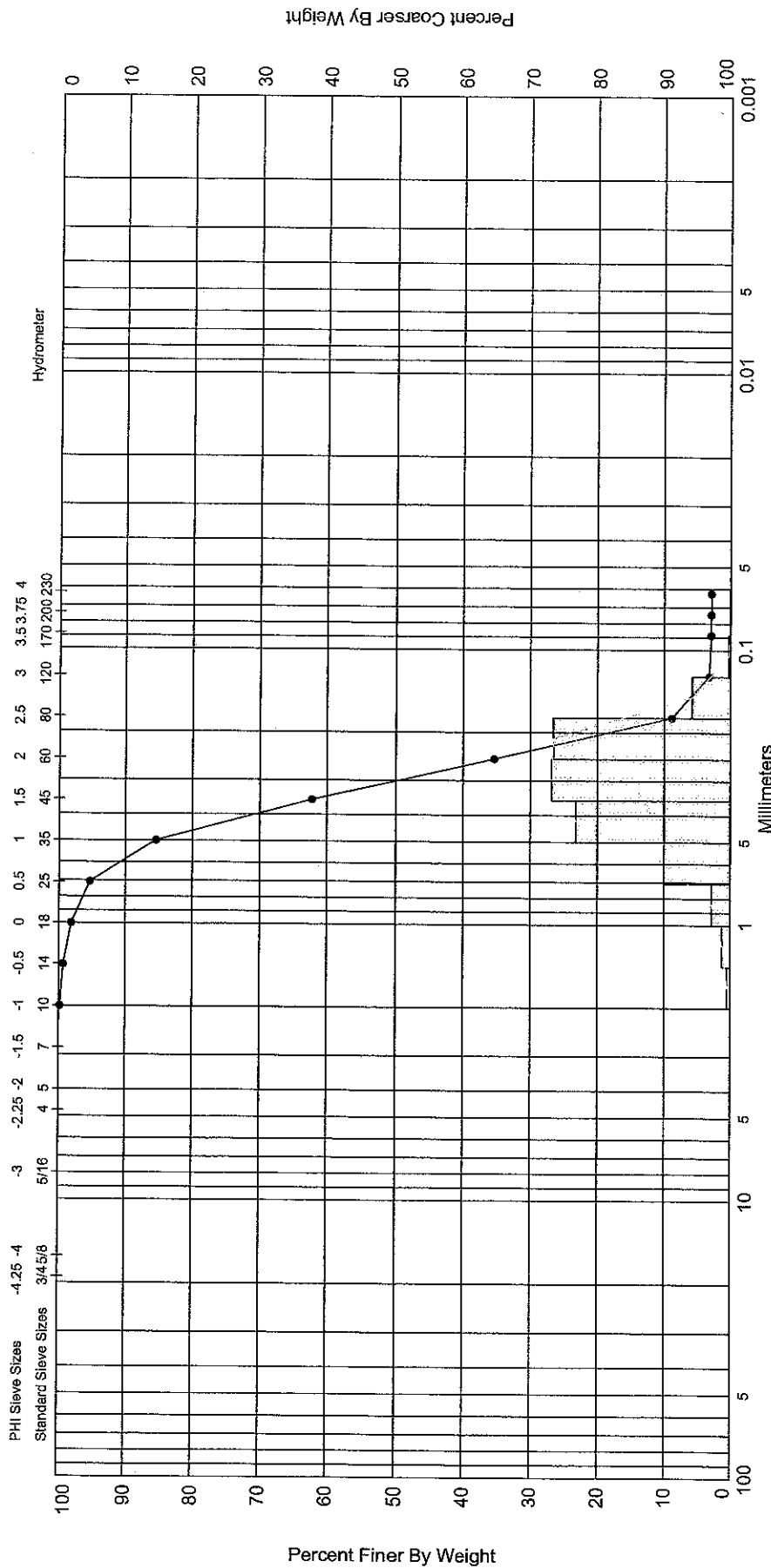
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>19.12</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%):	Fines (%): #200 - 2.86 #230 - 2.84	Organics (%): <b>0.50</b>	Carbonates (%): <b>7.04</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.03	0.17	0.03	0.17	
14	-0.50	1.41	0.09	0.47	0.12	0.64	
18	0.00	1.00	0.23	1.19	0.35	1.83	
25	0.50	0.71	0.53	2.79	0.88	4.62	
35	1.00	0.50	1.91	9.97	2.79	14.59	
45	1.50	0.35	4.44	23.22	7.23	37.81	
60	2.00	0.25	5.12	26.77	12.35	64.58	
80	2.50	0.18	5.08	26.57	17.43	91.15	
120	3.00	0.13	1.09	5.69	18.51	96.84	
170	3.50	0.09	0.05	0.28	18.57	97.12	
200	3.75	0.07	0.00	0.02	18.57	97.14	
230	4.00	0.06	0.00	0.02	18.57	97.16	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.84	2.37	2.20	1.73	1.22	1.03	0.52
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.64	0.32	0.66	-0.56	3.48	

GRANULOMETRIC REPORT: MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information	
Sample	NE2-A4-03
Symbol	●
Elev. (ft)	
USCS	SP
% Fines	2.66
% Organics	0.50
% Carbonates	7.04
Median	1.73
Mean	1.64
Skew	-0.56
Kurt	3.48
Sort	0.66
Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-10-06
Analyzed By:	SEA Inc.
Easting (X, ft):	573,998
Northing (Y, ft):	2,181,928
Horizontal System:	NAD 1983
Vertical System:	MSL
Comments:	
Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-04

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>575,166</b>	Northing (ft): <b>2,177,639</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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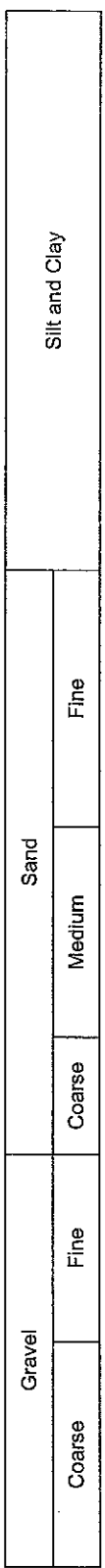
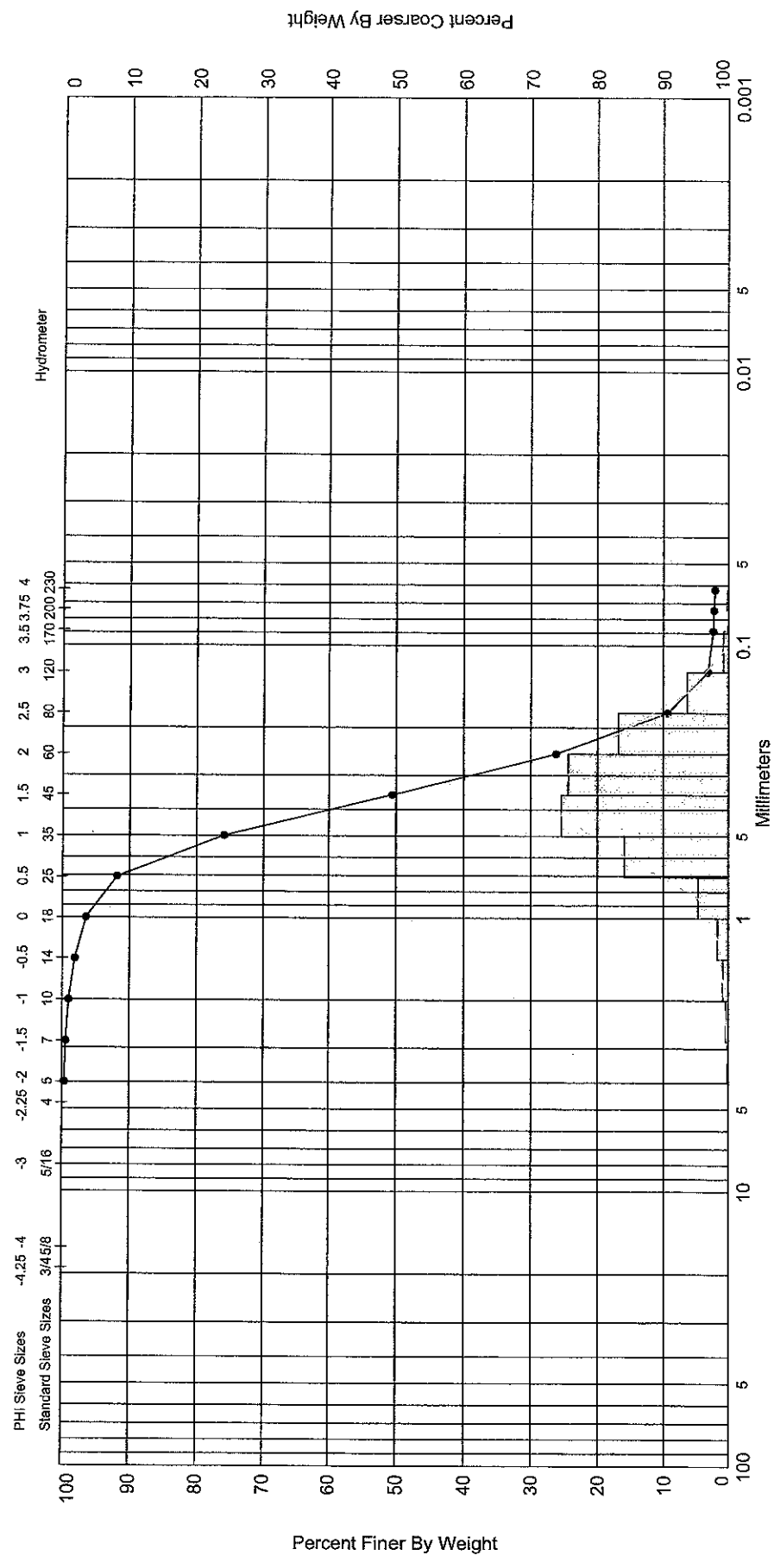
Dry Weight (g): <b>24.04</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.52</b>	Fines (%): #200 - 2.20 #230 - 2.05	Organics (%): <b>0.61</b>	Carbonates (%): <b>10.42</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.09	0.35	0.09	0.35
7	-1.50	2.83	0.05	0.20	0.13	0.55
10	-1.00	2.00	0.10	0.41	0.23	0.96
14	-0.50	1.41	0.21	0.88	0.44	1.84
18	0.00	1.00	0.40	1.65	0.84	3.49
25	0.50	0.71	1.12	4.67	1.96	8.16
35	1.00	0.50	3.84	15.96	5.80	24.12
45	1.50	0.35	6.09	25.35	11.89	49.47
60	2.00	0.25	5.85	24.34	17.75	73.81
80	2.50	0.18	4.04	16.80	21.78	90.61
120	3.00	0.13	1.51	6.28	23.29	96.89
170	3.50	0.09	0.19	0.78	23.48	97.67
200	3.75	0.07	0.03	0.13	23.51	97.80
230	4.00	0.06	0.04	0.15	23.55	97.95

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.85	2.30	2.04	1.51	1.02	0.75	0.16
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.46	0.36	0.76	-0.39	3.98	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample		Sample Information										
NE2-A4-04	Symbol (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	MMS Field Study 2005 CT - 39075
	SP		#200 - 2.20	0.61	10.42	1.51	1.46	-0.39	3.98	0.76	Analysis Date:	07-10-06
			#230 - 2.05								Analyzed By:	SEA Inc.
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications												
5575 Willoughby Drive												
Melbourne, FL 32934												
ph 321 254-2708												
fax 321 254-2708												
Easting (X, ft): 575,166												
Northing (Y, ft): 2,177,639												
Horizontal System: NAD 1983												
Vertical System: MSL												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-05

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>568,307</b>	Northing (ft): <b>2,174,673</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>20.57</b>	Wash Weight (g):	Pan Retained (g): <b>0.04</b>	Sieve Loss (%):	Fines (%): #200 - 0.75 #230 - 0.50	Organics (%): <b>0.90</b>	Carbonates (%): <b>7.18</b>	Shells (%):
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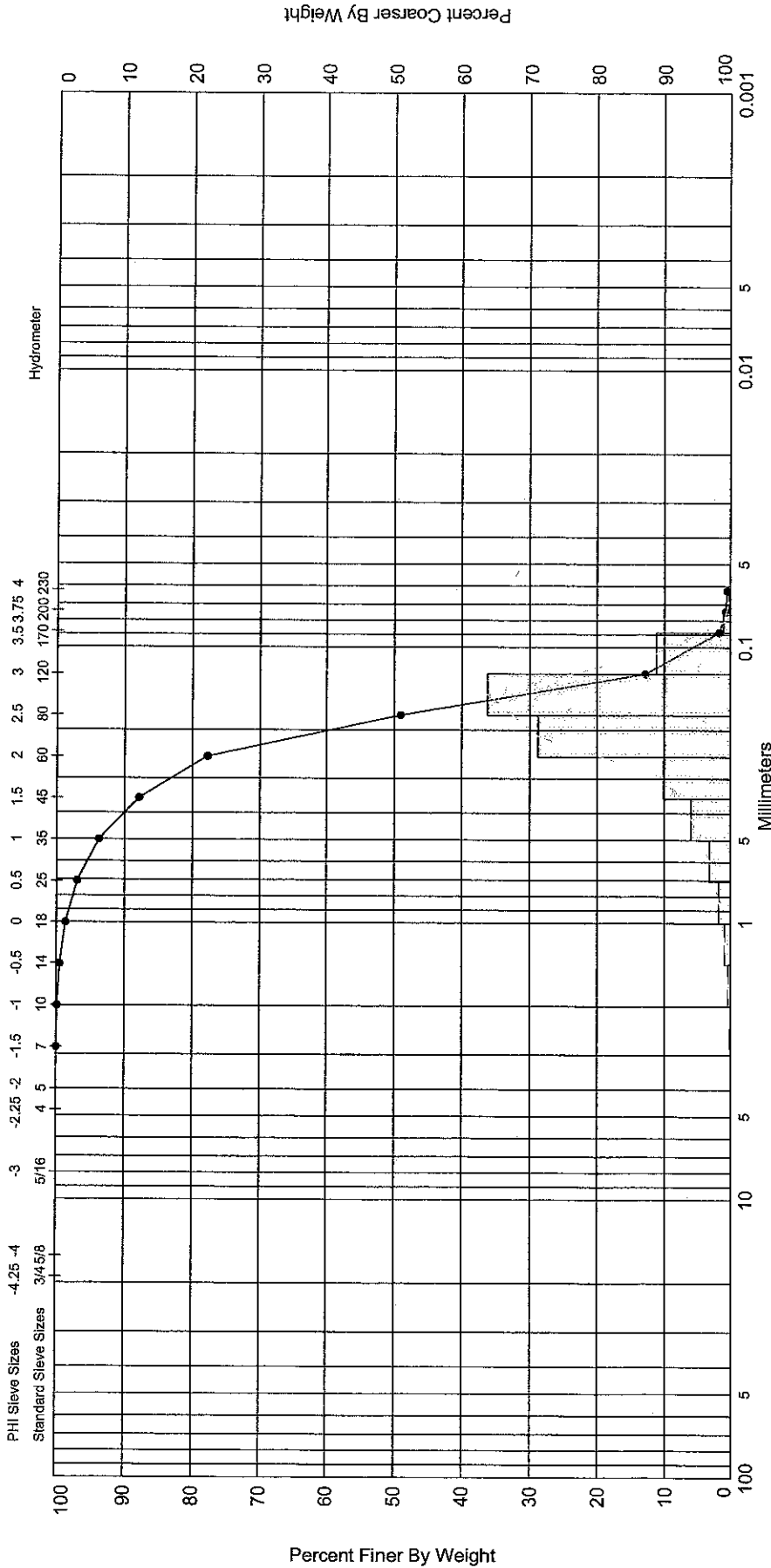
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.01	0.03	0.01	0.03
10	-1.00	2.00	0.01	0.07	0.02	0.10
14	-0.50	1.41	0.08	0.37	0.10	0.47
18	0.00	1.00	0.17	0.85	0.27	1.32
25	0.50	0.71	0.36	1.75	0.63	3.07
35	1.00	0.50	0.65	3.16	1.28	6.23
45	1.50	0.35	1.21	5.89	2.49	12.12
60	2.00	0.25	2.08	10.09	4.57	22.21
80	2.50	0.18	5.91	28.74	10.48	50.95
120	3.00	0.13	7.44	36.20	17.92	87.15
170	3.50	0.09	2.30	11.16	20.22	98.31
200	3.75	0.07	0.20	0.99	20.42	99.30
230	4.00	0.06	0.04	0.20	20.46	99.50

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.35	2.96	2.83	2.48	2.05	1.69	0.81

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.33	0.20	0.74	-1.31	5.38

GRANULOMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A4-05	●		SP	#200 - 0.70 #230 - 0.50	0.90	7.16	2.48	2.33	-1.31	5.38	0.74	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-17-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	568,307		
												Northing (Y, ft):	2,174,673		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-06

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>576,599</b>	Northing (ft): <b>2,171,944</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>22.79</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.02</b>	Fines (%): #200 - 0.87 #230 - 0.78	Organics (%): <b>0.88</b>	Carbonates (%): <b>8.71</b>	Shells (%):
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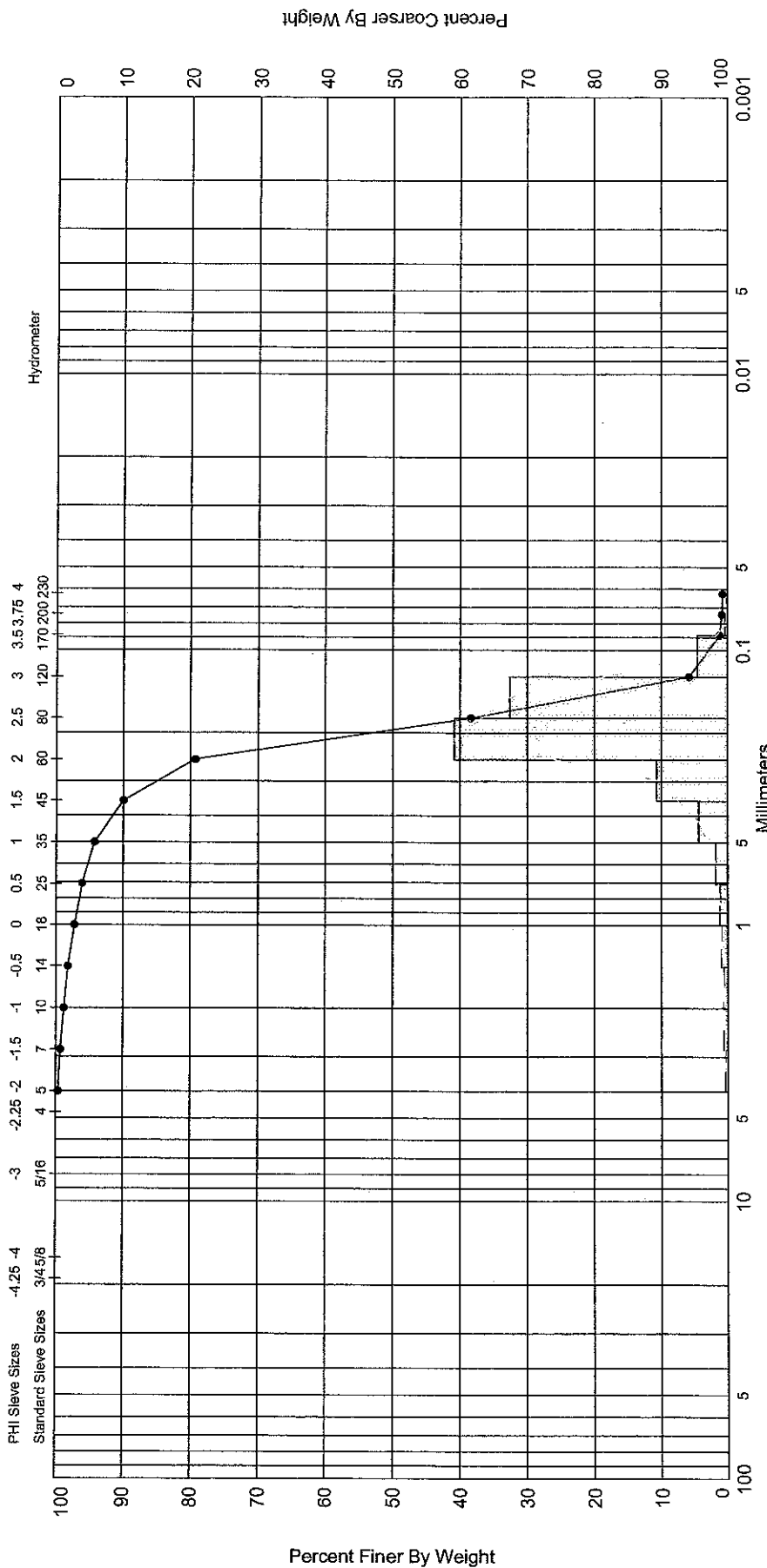
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.08	0.35	0.08	0.35
7	-1.50	2.83	0.07	0.32	0.15	0.67
10	-1.00	2.00	0.12	0.52	0.27	1.19
14	-0.50	1.41	0.14	0.59	0.41	1.78
18	0.00	1.00	0.22	0.96	0.62	2.74
25	0.50	0.71	0.26	1.15	0.89	3.89
35	1.00	0.50	0.42	1.82	1.30	5.71
45	1.50	0.35	0.99	4.35	2.29	10.06
60	2.00	0.25	2.44	10.69	4.73	20.75
80	2.50	0.18	9.32	40.88	14.05	61.63
120	3.00	0.13	7.43	32.59	21.48	94.22
170	3.50	0.09	1.04	4.55	22.51	98.77
200	3.75	0.07	0.08	0.36	22.59	99.13
230	4.00	0.06	0.02	0.09	22.62	99.22

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.09	2.84	2.71	2.36	2.05	1.78	0.80

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.23	0.21	0.72	-2.15	10.18

GRANULARMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information		Gravel		Sand			Silt and Clay				
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE2-A4-06	—●—		SP	#200 - 0.87 #230 - 0.78	0.88	8.71	2.36	2.23	-2.15	10.18	0.72
Comments: Depths and elevations based on measured values											
Project Name: MMS Field Study 2005 CT - 39075 Analysis Date: 07-17-06 Analyzed By: SEA Inc. Easting (X, ft): 576,599 Northing (Y, ft): 2,171,944 Horizontal System: NAD 1983 Vertical System: MSL											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-07

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>569,011</b>	Northing (ft): <b>2,172,386</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
25.58		0.01		#230 - 1.43	1.08	9.93	

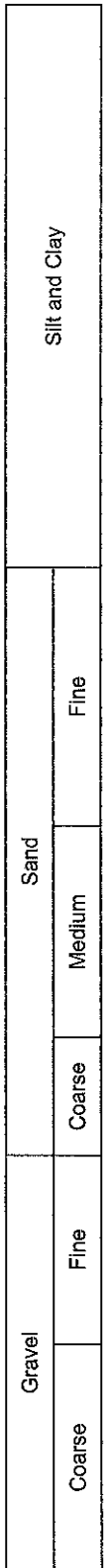
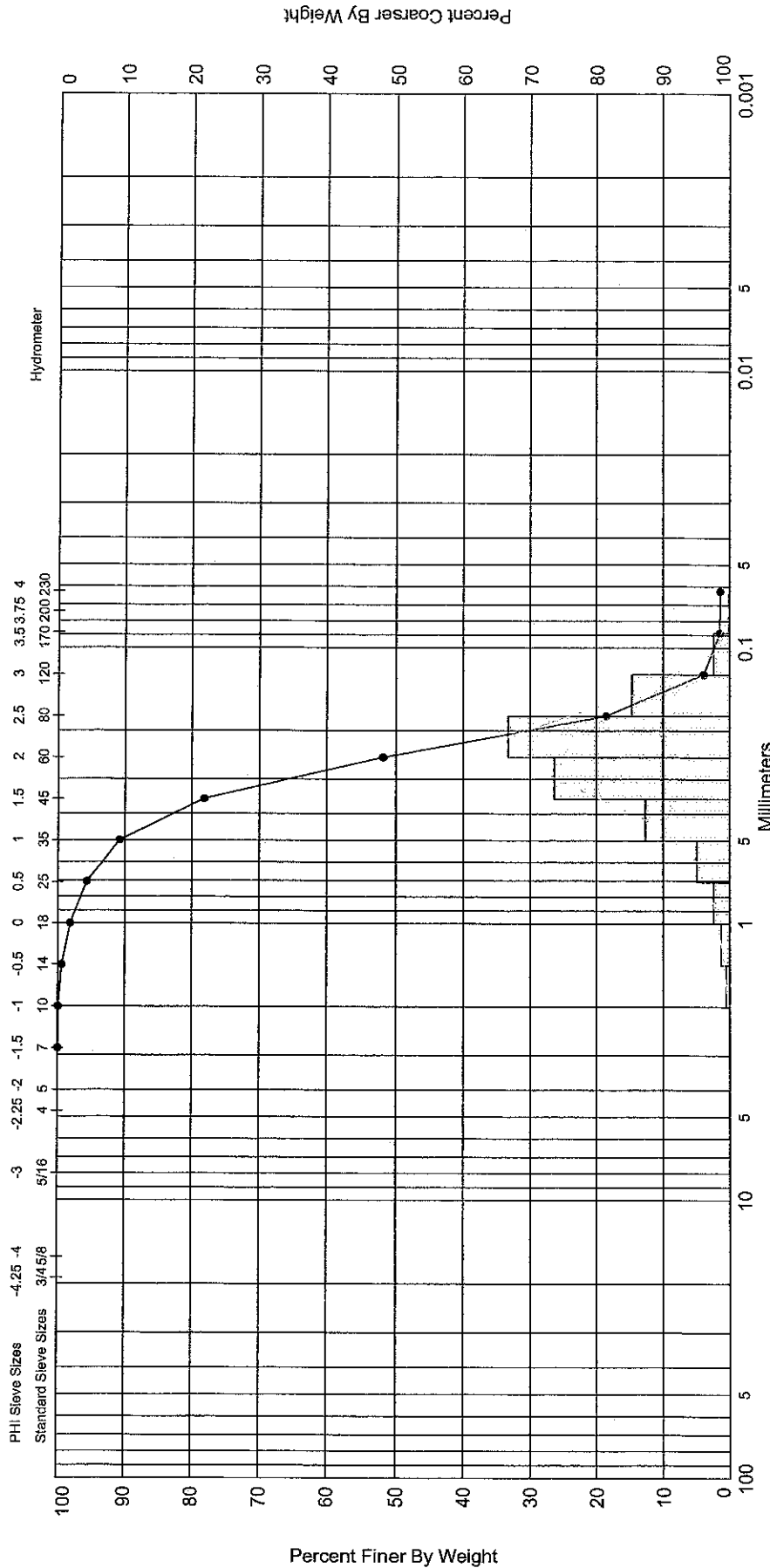
  

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.01	0.03	0.01	0.03
10	-1.00	2.00	0.01	0.03	0.02	0.06
14	-0.50	1.41	0.14	0.53	0.15	0.59
18	0.00	1.00	0.33	1.27	0.48	1.86
25	0.50	0.71	0.63	2.45	1.10	4.31
35	1.00	0.50	1.26	4.91	2.36	9.22
45	1.50	0.35	3.23	12.63	5.59	21.85
60	2.00	0.25	6.74	26.36	12.33	48.21
80	2.50	0.18	8.51	33.27	20.85	81.48
120	3.00	0.13	3.75	14.64	24.59	96.12
170	3.50	0.09	0.61	2.39	25.20	98.51
230	4.00	0.06	0.02	0.06	25.22	98.57

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.59	2.40	2.03	1.56	1.27	0.57
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.91	0.27	0.7	-0.91	4.4	

GRANULOMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample		Sample Information															
Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	Analysis Date:	Analyzed By:	Easting (X, ft):	Northing (Y, ft):	Horizontal System:	Vertical System:
NE2-A4-07		SP	#230 - 1.43	1.08	9.93	2.03	1.91	-0.91	4.4	0.7	MMS Field Study 2005 CT - 39075	07-17-06	SEA Inc.	569,011	2,172,386	NAD 1983	MSL
Comments:																	
Depths and elevations based on measured values																	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-08

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>571,095</b>	Northing (ft): <b>2,181,880</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>33.33</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 0.57 #230 - 0.56	Organics (%): <b>0.58</b>	Carbonates (%): <b>9.98</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.12	0.36	0.12	0.36
7	-1.50	2.83	0.13	0.38	0.25	0.74
10	-1.00	2.00	0.50	1.51	0.75	2.25
14	-0.50	1.41	1.01	3.03	1.76	5.28
18	0.00	1.00	2.38	7.12	4.14	12.40
25	0.50	0.71	3.03	9.09	7.17	21.49
35	1.00	0.50	5.67	17.00	12.83	38.49
45	1.50	0.35	9.39	28.17	22.22	66.66
60	2.00	0.25	6.50	19.51	28.73	86.17
80	2.50	0.18	3.48	10.45	32.21	96.62
120	3.00	0.13	0.84	2.52	33.05	99.14
170	3.50	0.09	0.09	0.26	33.14	99.40
200	3.75	0.07	0.01	0.03	33.15	99.43
230	4.00	0.06	0.00	0.01	33.15	99.44

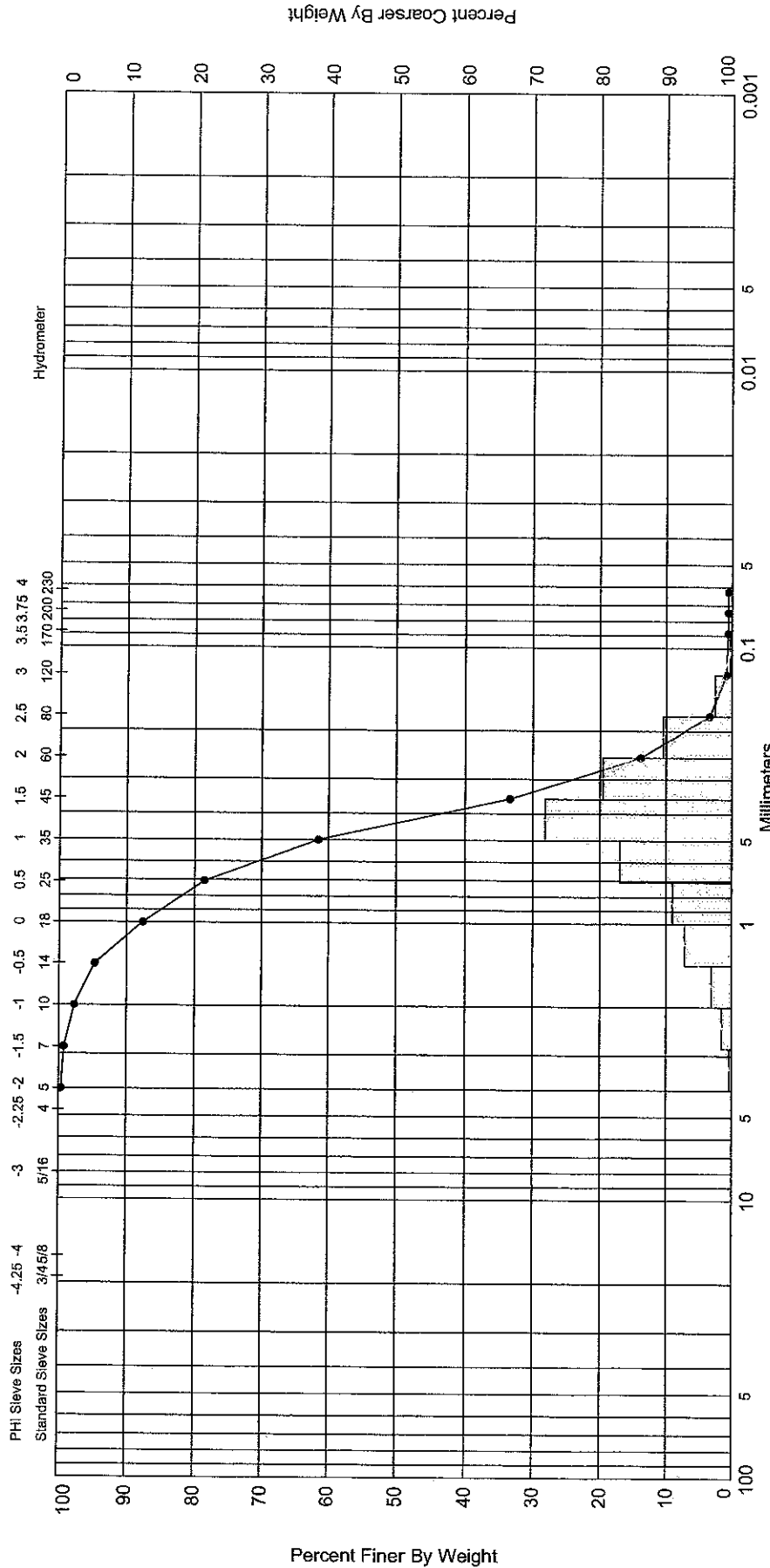
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.42	1.94	1.71	1.20	0.60	0.20	-0.55

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.09	0.47	0.87	-0.52	3.26

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A4-08	●	—	SP	#200 - 0.57 #230 - 0.56	0.58	9.98	1.2	1.09	-0.52	3.26	0.87	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-17-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	571,095		
												Northing (Y, ft):	2,181,880		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-09

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>575,709</b>	Northing (ft): <b>2,171,207</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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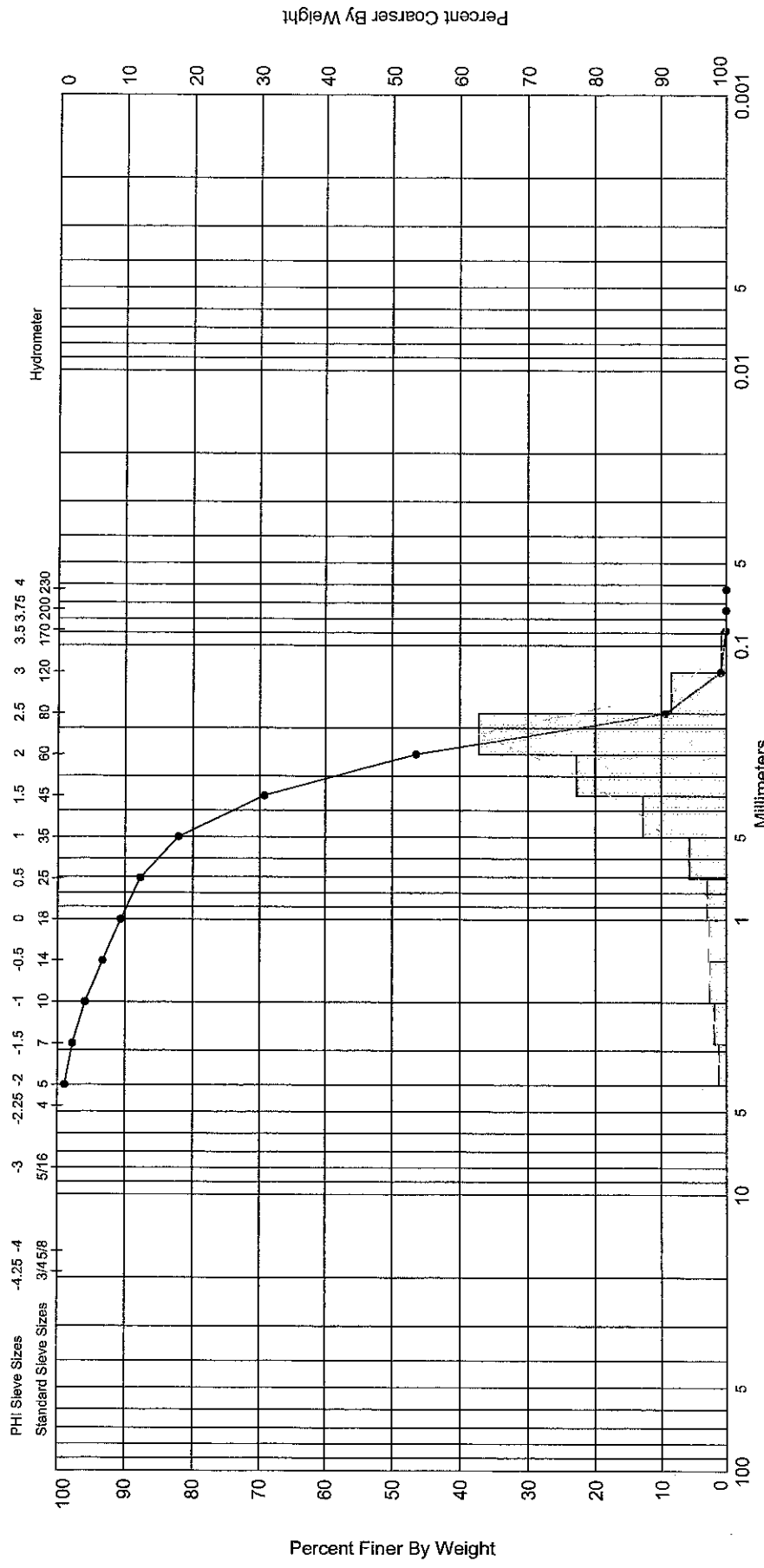
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>22.90</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.03</b>	Fines (%): #200 - 0.05 #230 - 0.02	Organics (%): <b>0.81</b>	Carbonates (%): <b>16.31</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
5	-2.00	4.00	0.25	1.07	0.25	1.07	
7	-1.50	2.83	0.26	1.15	0.51	2.22	
10	-1.00	2.00	0.43	1.86	0.93	4.08	
14	-0.50	1.41	0.59	2.58	1.52	6.66	
18	0.00	1.00	0.62	2.71	2.14	9.37	
25	0.50	0.71	0.67	2.91	2.81	12.28	
35	1.00	0.50	1.29	5.62	4.10	17.90	
45	1.50	0.35	2.94	12.82	7.03	30.72	
60	2.00	0.25	5.21	22.75	12.24	53.47	
80	2.50	0.18	8.52	37.21	20.76	90.68	
120	3.00	0.13	1.94	8.46	22.70	99.14	
170	3.50	0.09	0.17	0.76	22.88	99.90	
200	3.75	0.07	0.01	0.05	22.89	99.95	
230	4.00	0.06	0.01	0.03	22.89	99.98	

<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
2.76	2.41	2.29	1.92	1.28	0.83	-0.82

<b>Moment Statistics</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>
	1.61	0.33	0.96	-1.4	5

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A4-09	—●—		SP	#200 - 0.05 #230 - 0.02	0.81	16.31	1.92	1.61	-1.4	5	0.96	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-17-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	575,709		
												Northing (Y, ft):	2,171,207		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-10

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">576,065</p>	Northing (ft): <p style="text-align: center;">2,175,146</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">28.02</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">0.13</p>	Fines (%): #200 - 0.03 #230 - 0.00	Organics (%): <p style="text-align: center;">0.66</p>	Carbonates (%): <p style="text-align: center;">5.84</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.01	0.04	0.01	0.04
14	-0.50	1.41	0.03	0.09	0.04	0.13
18	0.00	1.00	0.07	0.23	0.10	0.36
25	0.50	0.71	0.16	0.56	0.26	0.92
35	1.00	0.50	0.41	1.45	0.67	2.37
45	1.50	0.35	1.62	5.80	2.29	8.17
60	2.00	0.25	5.36	19.11	7.64	27.28
80	2.50	0.18	12.24	43.67	19.88	70.95
120	3.00	0.13	7.28	25.98	27.16	96.93
170	3.50	0.09	0.81	2.90	27.98	99.83
200	3.75	0.07	0.04	0.14	28.01	99.97
230	4.00	0.06	0.01	0.03	28.02	100.00

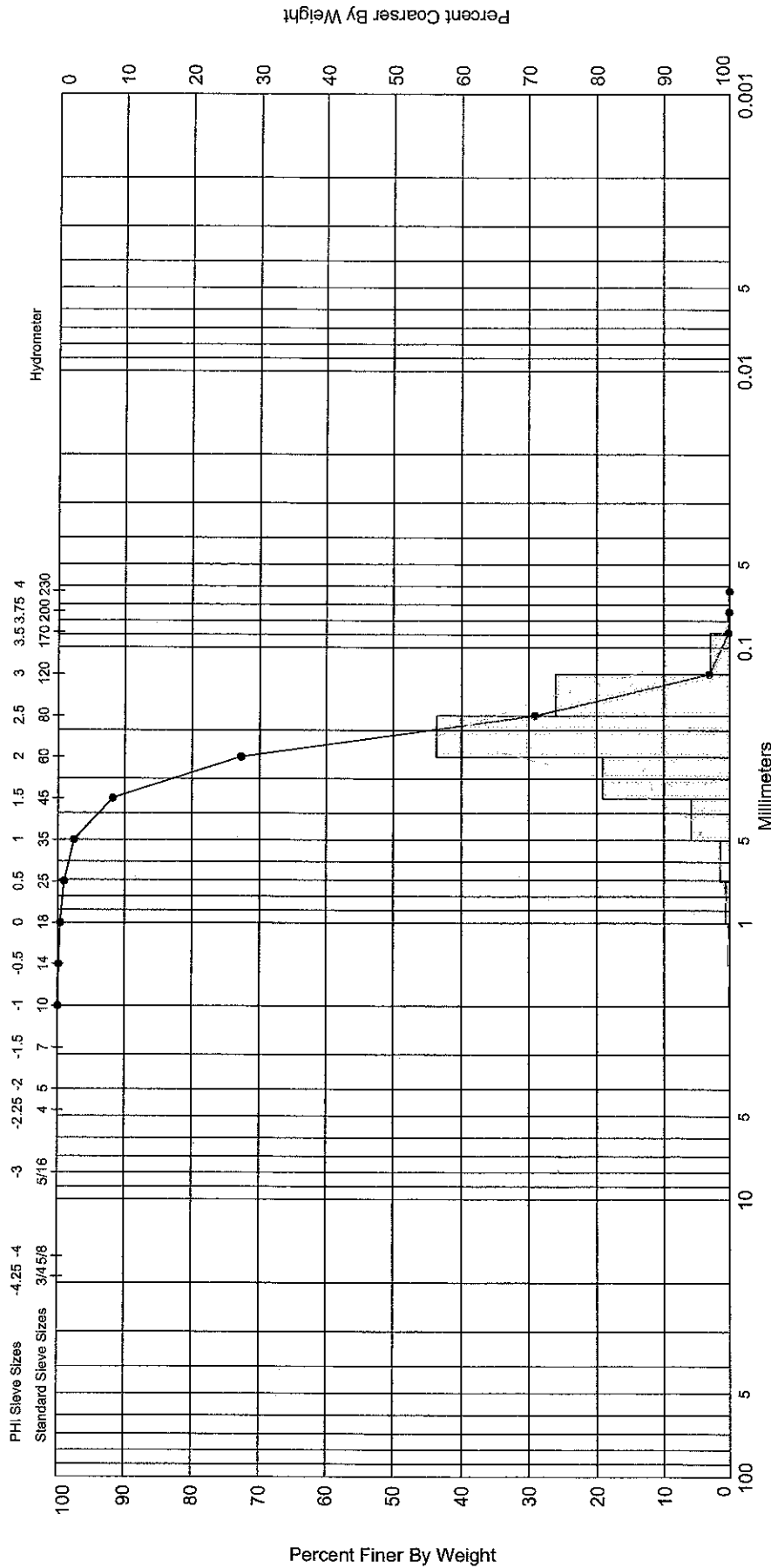
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
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2.96	2.75	2.58	2.26	1.94	1.70	1.23
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Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.22	0.21	0.53	-0.95	5.48

GRANULARMETRIC REPORT MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine	Coarse	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-AA-10	—●—		SP	#200 - 0.03 #230 - 0.00	0.66	5.84	2.26	2.22	-0.95	5.48	0.53	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-19-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	576,065		
												Northing (Y, ft):	2,175,146		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-11

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>566,660</b>	Northing (ft): <b>2,174,441</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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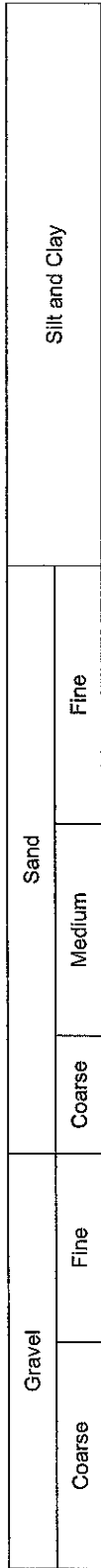
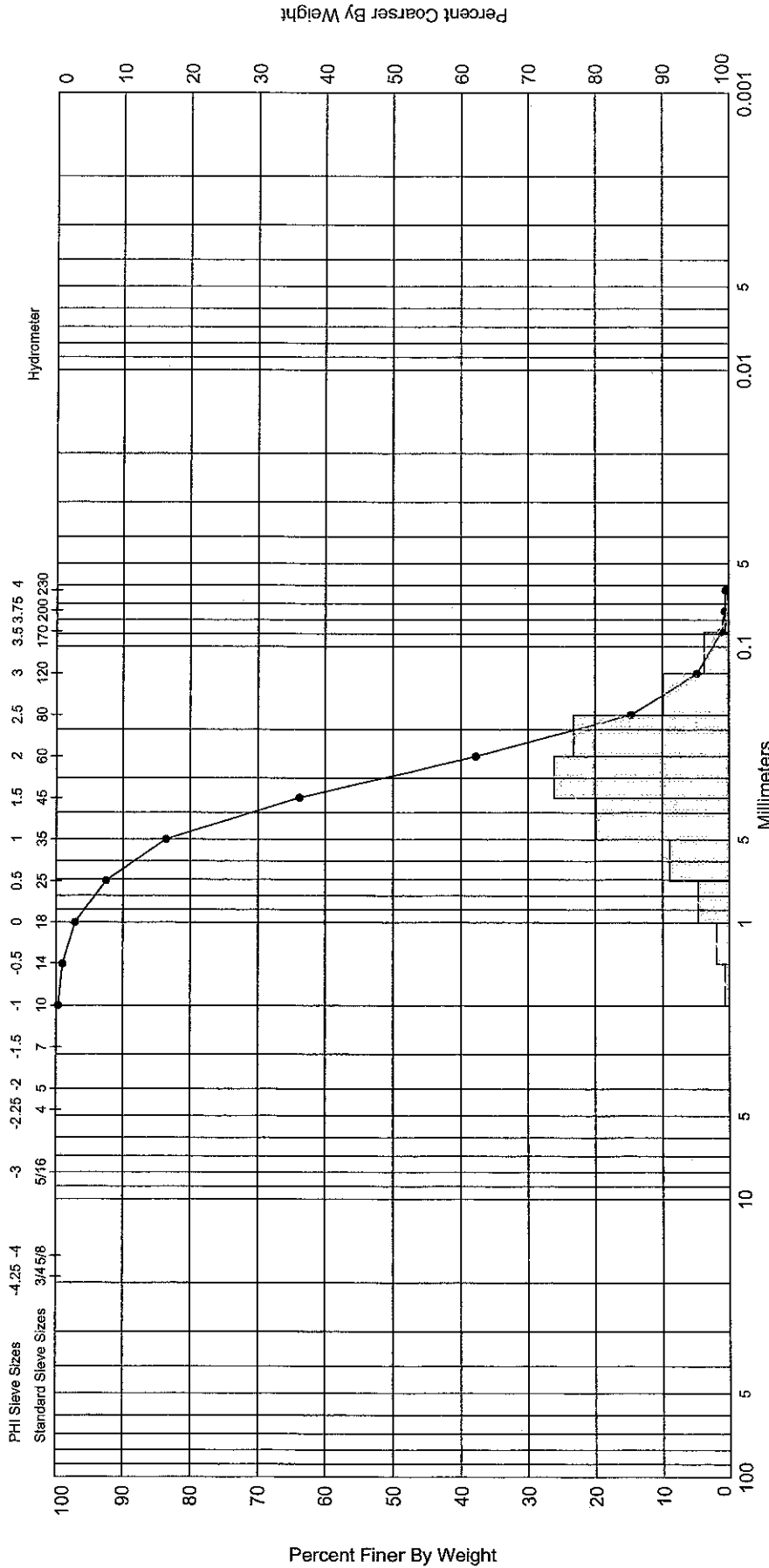
Dry Weight (g): <b>29.07</b>	Wash Weight (g):	Pan Retained (g): <b>0.03</b>	Sieve Loss (%):	Fines (%): #200 - 0.62 #230 - 0.49	Organics (%): <b>0.79</b>	Carbonates (%): <b>5.88</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.09	0.31	0.09	0.31
14	-0.50	1.41	0.19	0.65	0.28	0.96
18	0.00	1.00	0.55	1.88	0.83	2.84
25	0.50	0.71	1.35	4.63	2.17	7.47
35	1.00	0.50	2.60	8.94	4.77	16.41
45	1.50	0.35	5.76	19.81	10.53	36.22
60	2.00	0.25	7.57	26.03	18.09	62.25
80	2.50	0.18	6.73	23.15	24.82	85.40
120	3.00	0.13	2.86	9.85	27.68	95.25
170	3.50	0.09	1.06	3.66	28.75	98.91
200	3.75	0.07	0.14	0.47	28.89	99.38
230	4.00	0.06	0.04	0.13	28.93	99.51

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.47	2.28	1.76	1.22	0.98	0.23
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.71	0.31	0.79	-0.31	3.23	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample		Symbol		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Median		Mean		Skew		Kurt		Sort		Sample Information	
NE2-A4-11	—●—					SP		#200 - 0.62		0.79		5.88		1.76		1.71		-0.31		3.23		0.79	MMS Field Study 2005 CT - 39075	07-17-06	
Comments:																									
Depths and elevations based on measured values																									
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																									
Analyzed By: SEA Inc.																									
Easting (X, ft): 566,660																									
Northing (Y, ft): 2,174,441																									
Horizontal System: NAD 1983																									
Vertical System: MSL																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-12

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,173</b>	Northing (ft): <b>2,191,222</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>26.15</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.19</b>	Fines (%): #200 - 0.83 #230 - 0.81	Organics (%): <b>0.77</b>	Carbonates (%): <b>16.40</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.13	0.49	0.13	0.49
5	-2.00	4.00	0.23	0.88	0.36	1.37
7	-1.50	2.83	0.21	0.78	0.56	2.15
10	-1.00	2.00	0.30	1.15	0.86	3.30
14	-0.50	1.41	0.84	3.22	1.71	6.52
18	0.00	1.00	1.27	4.86	2.98	11.38
25	0.50	0.71	2.41	9.23	5.39	20.61
35	1.00	0.50	5.19	19.83	10.58	40.44
45	1.50	0.35	5.60	21.42	16.18	61.86
60	2.00	0.25	3.76	14.39	19.94	76.25
80	2.50	0.18	3.08	11.79	23.03	88.04
120	3.00	0.13	2.40	9.18	25.43	97.22
170	3.50	0.09	0.48	1.82	25.91	99.04
200	3.75	0.07	0.04	0.13	25.94	99.17
230	4.00	0.06	0.01	0.02	25.95	99.19

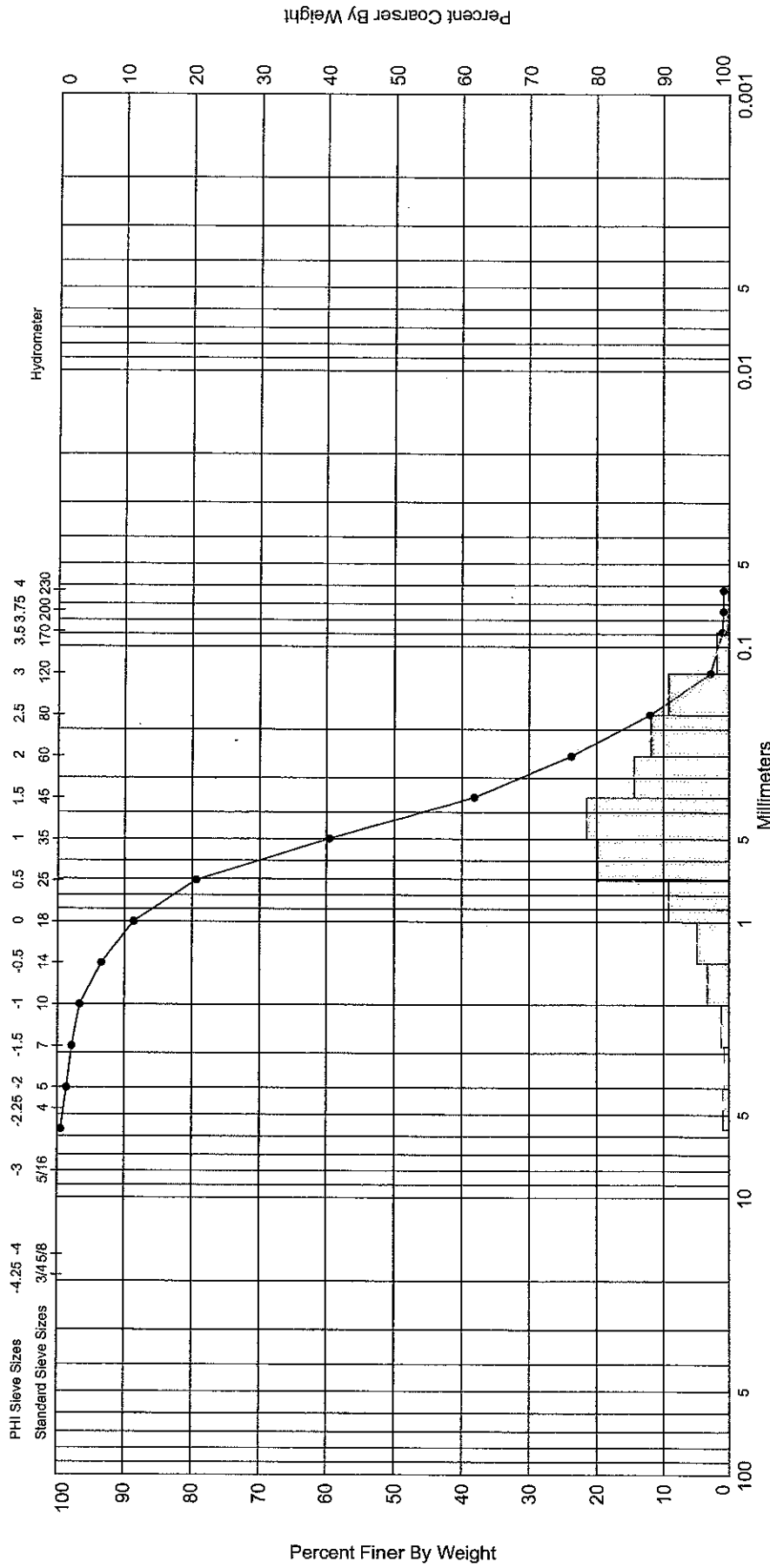
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.88	2.33	1.96	1.22	0.61	0.25	-0.74

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.19	0.44	1.04	-0.44	3.5

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand				Silt and Clay					
Coarse		Fine		Medium		Coarse		Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-12	—●—		SP	#200 - 0.83 #230 - 0.81	0.77	16.40	1.22	1.19	-0.44	3.5	1.04	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-17-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	573,173			
												Northing (Y, ft):	2,191,222			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-13

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">576,951</p>	Northing (ft): <p style="text-align: center;">2,188,461</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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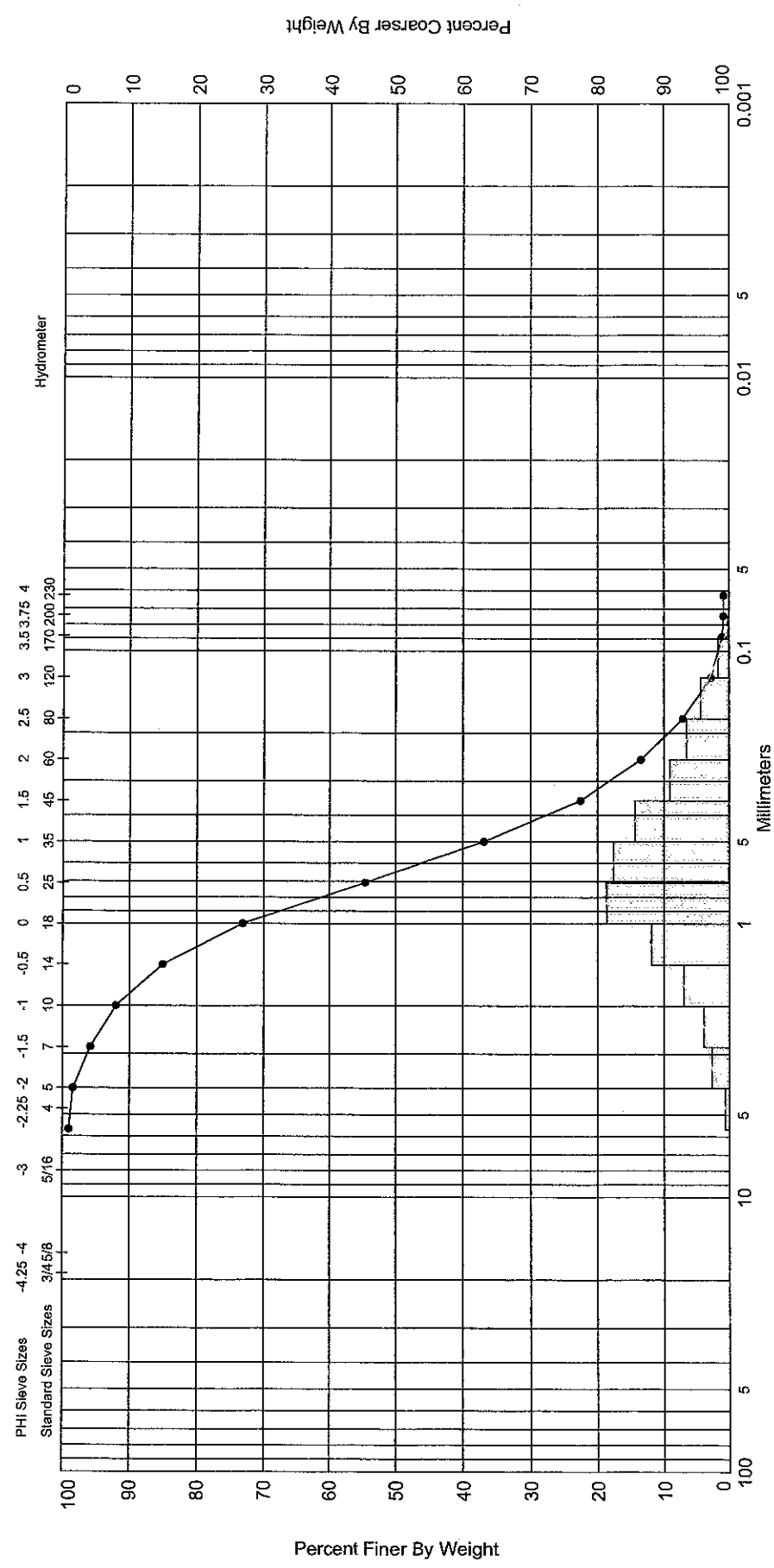
Dry Weight (g): <p style="text-align: center;">31.54</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">-0.16</p>	Fines (%): #200 - 0.90 #230 - 0.86	Organics (%): <p style="text-align: center;">1.43</p>	Carbonates (%): <p style="text-align: center;">31.20</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.30	0.94	0.30	0.94
5	-2.00	4.00	0.19	0.60	0.48	1.54
7	-1.50	2.83	0.83	2.63	1.31	4.17
10	-1.00	2.00	1.21	3.83	2.52	8.00
14	-0.50	1.41	2.19	6.93	4.71	14.93
18	0.00	1.00	3.76	11.92	8.47	26.85
25	0.50	0.71	5.88	18.63	14.34	45.48
35	1.00	0.50	5.53	17.55	19.88	63.03
45	1.50	0.35	4.54	14.38	24.41	77.41
60	2.00	0.25	2.88	9.13	27.29	86.54
80	2.50	0.18	2.02	6.40	29.31	92.94
120	3.00	0.13	1.36	4.31	30.67	97.25
170	3.50	0.09	0.53	1.67	31.20	98.92
200	3.75	0.07	0.06	0.18	31.25	99.10
230	4.00	0.06	0.01	0.04	31.27	99.14

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.74	1.86	1.42	0.63	-0.08	-0.46	-1.39
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.63	0.65	1.12	0.12	2.84	

GRANULOMETRIC REPORT: MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-13	—●—		SP	#200 - 0.86	1.43	31.20	0.63	0.63	0.12	2.84	1.12	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-26-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	576,951			
												Northing (Y, ft):	2,188,461			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
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 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-A4-14  
 Analysis Date: 07-17-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

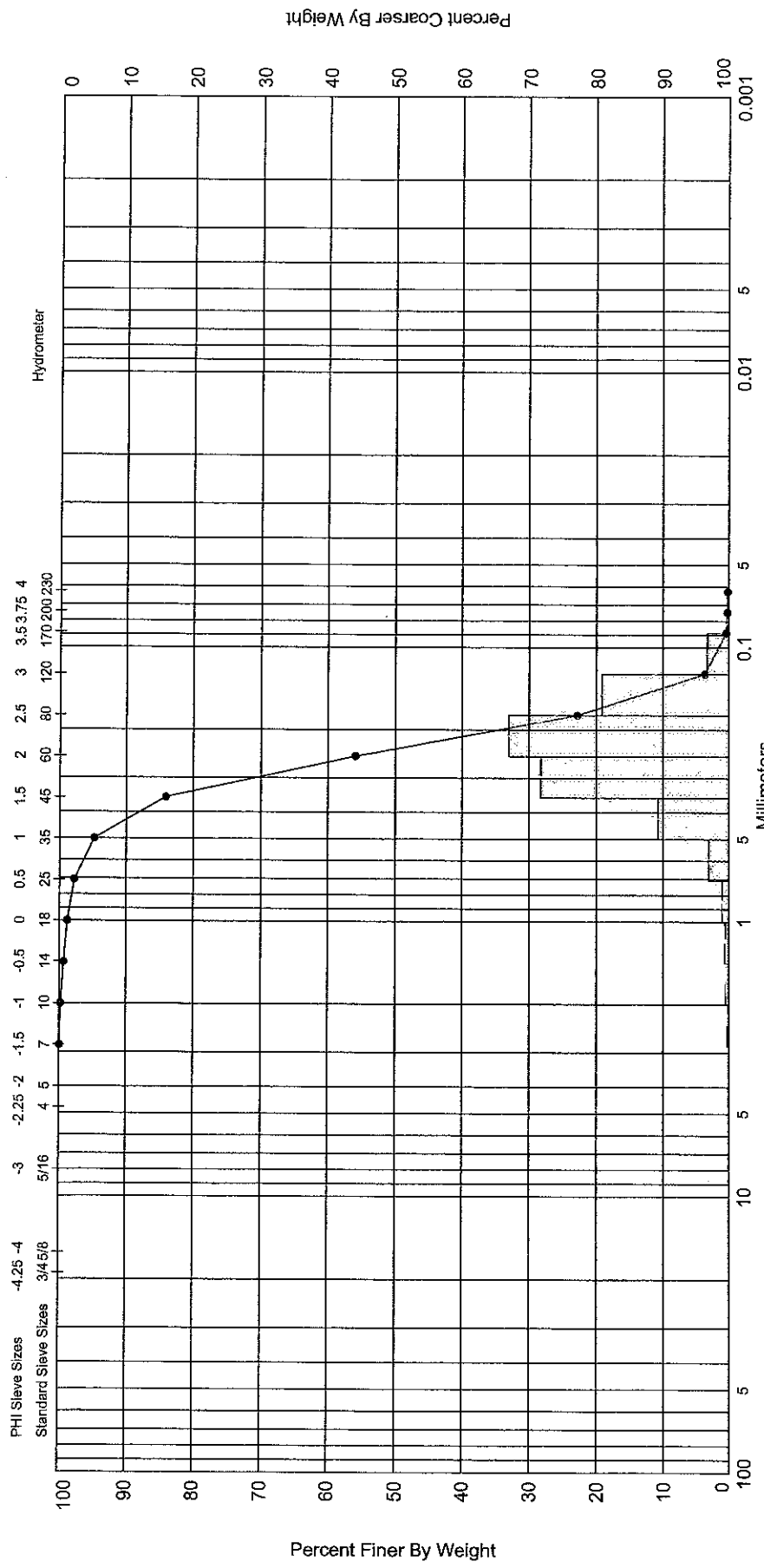
Easting (ft): <b>570,617</b>	Northing (ft): <b>2,195,313</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.23 #230 - 0.19	Organics (%):	Carbonates (%):	Shells (%):
27.21		0.01	-0.20		0.59	8.51	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.01	0.05	0.01	0.05	
10	-1.00	2.00	0.04	0.15	0.05	0.20	
14	-0.50	1.41	0.12	0.44	0.17	0.64	
18	0.00	1.00	0.15	0.53	0.32	1.17	
25	0.50	0.71	0.28	1.01	0.59	2.18	
35	1.00	0.50	0.83	3.04	1.42	5.22	
45	1.50	0.35	2.91	10.69	4.33	15.91	
60	2.00	0.25	7.68	28.24	12.01	44.15	
80	2.50	0.18	8.99	33.05	21.00	77.20	
120	3.00	0.13	5.21	19.15	26.21	96.35	
170	3.50	0.09	0.88	3.23	27.09	99.58	
200	3.75	0.07	0.05	0.19	27.14	99.77	
230	4.00	0.06	0.01	0.04	27.15	99.81	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.68	2.47	2.09	1.66	1.50	0.96
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.03	0.24	0.65	-0.92	5.46	

GRANULARMETRIC REPORT: MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-14	●	—	SP	#200 - 0.23 #230 - 0.19	0.59	8.51	2.09	2.03	-0.92	5.46	0.65	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-17-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	570,617			
												Northing (Y, ft):	2,195,313			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-15

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>571,423</b>	Northing (ft): <b>2,191,541</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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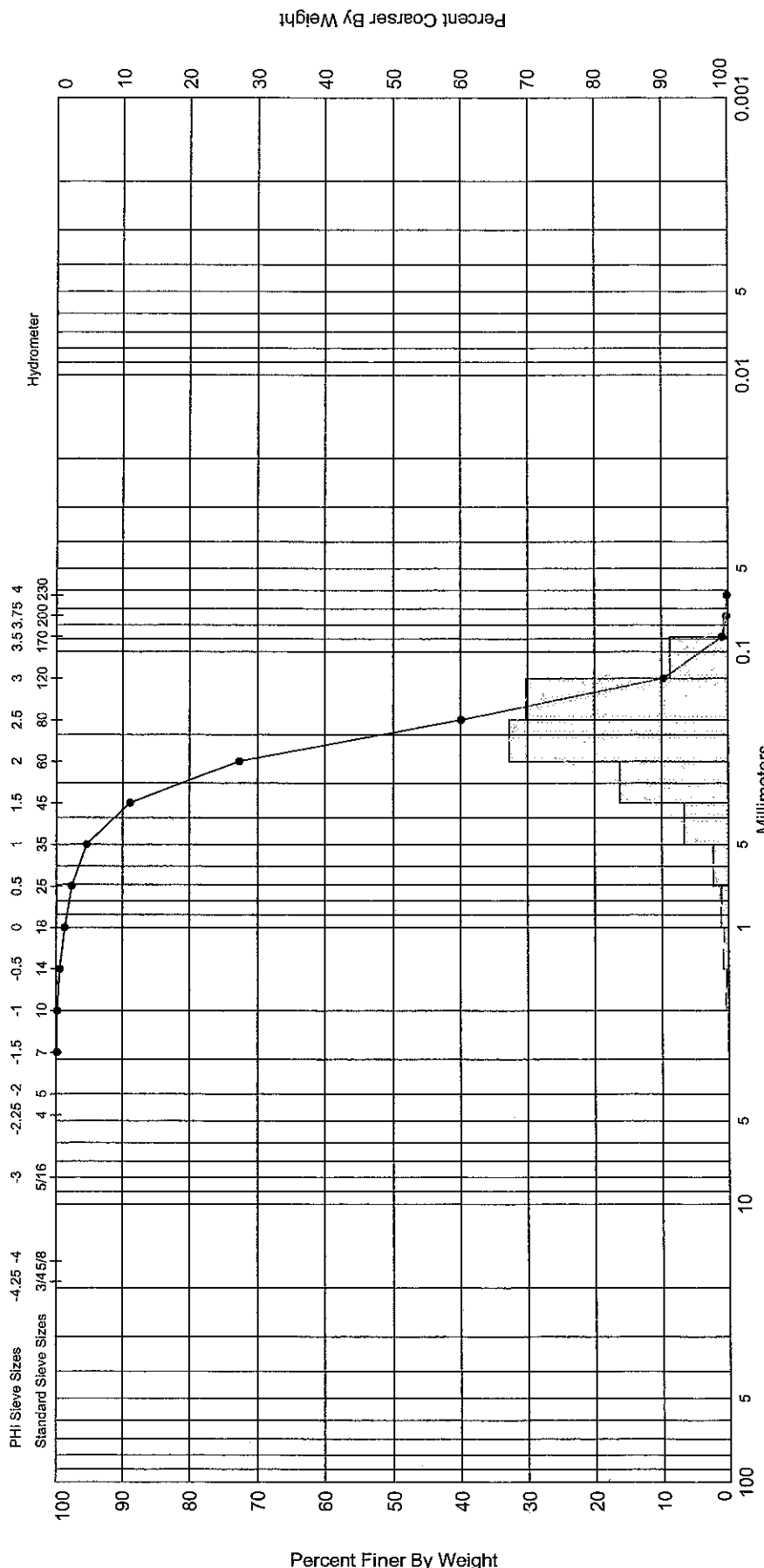
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.24 #230 - 0.14	Organics (%):	Carbonates (%):	Shells (%):
21.20		0.01	0.22		0.85	7.58	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.02	0.11	0.02	0.11	
10	-1.00	2.00	0.01	0.03	0.03	0.14	
14	-0.50	1.41	0.08	0.37	0.11	0.51	
18	0.00	1.00	0.16	0.73	0.26	1.24	
25	0.50	0.71	0.23	1.07	0.49	2.31	
35	1.00	0.50	0.48	2.28	0.97	4.59	
45	1.50	0.35	1.39	6.56	2.36	11.15	
60	2.00	0.25	3.44	16.20	5.80	27.35	
80	2.50	0.18	6.94	32.75	12.74	60.10	
120	3.00	0.13	6.41	30.24	19.15	90.34	
170	3.50	0.09	1.86	8.76	21.01	99.10	
200	3.75	0.07	0.14	0.66	21.15	99.76	
230	4.00	0.06	0.02	0.10	21.17	99.86	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.27	2.90	2.75	2.35	1.93	1.65	1.03
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.26	0.21	0.68	-1.11	5.4	

GRANULOMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE2-A4-15	●		SP	#200 - 0.24 #230 - 0.14	0.85	7.58	2.35	2.26	-1.11	5.4	0.68	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	07-19-06	Analyzed By:	SEA Inc.	Easting (X, ft):	571,423	Northing (Y, ft):	2,191,541	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Depths and elevations based on measured values																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-16

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>569,863</b>	Northing (ft): <b>2,191,933</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>20.40</b>	Wash Weight (g):	Pan Retained (g): <b>0.06</b>	Sieve Loss (%):	Fines (%): #200 - 0.39 #230 - 0.08	Organics (%): <b>1.64</b>	Carbonates (%): <b>11.29</b>	Shells (%):
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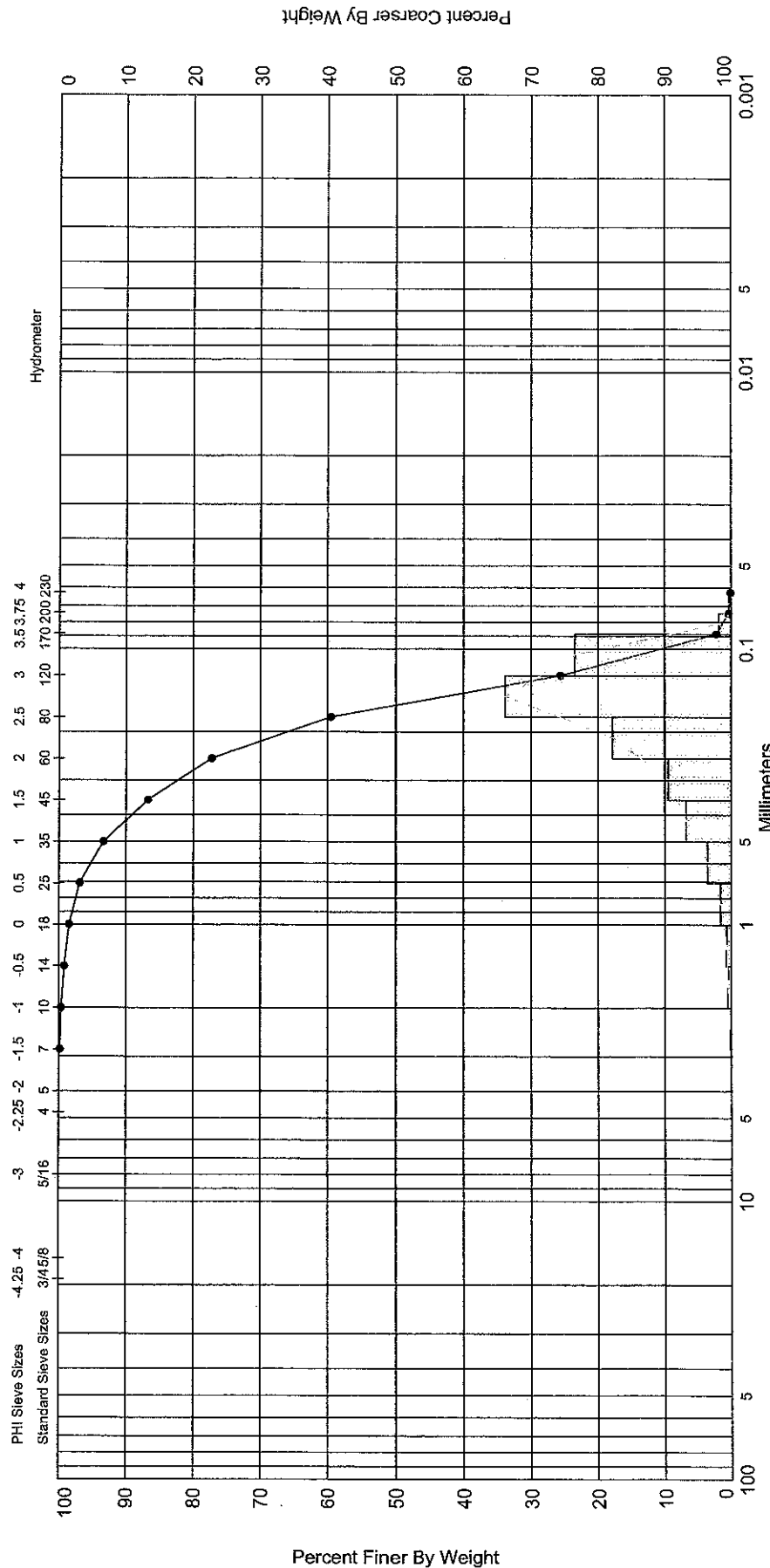
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.03	0.17	0.03	0.17
10	-1.00	2.00	0.04	0.17	0.07	0.34
14	-0.50	1.41	0.10	0.47	0.16	0.81
18	0.00	1.00	0.14	0.71	0.31	1.52
25	0.50	0.71	0.32	1.57	0.63	3.09
35	1.00	0.50	0.72	3.55	1.35	6.64
45	1.50	0.35	1.36	6.65	2.71	13.29
60	2.00	0.25	1.93	9.47	4.64	22.76
80	2.50	0.18	3.63	17.78	8.27	40.54
120	3.00	0.13	6.90	33.80	15.17	74.34
170	3.50	0.09	4.79	23.47	19.95	97.81
200	3.75	0.07	0.37	1.80	20.32	99.61
230	4.00	0.06	0.06	0.31	20.39	99.92

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	3.21	3.01	2.64	2.06	1.64	0.77
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.44	0.18	0.81	-1.27	4.85	

GRANULARMETRIC REPORT MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-16	—●—		SP	#200 - 0.85 #230 - 0.08	1.64	11.29	2.64	2.44	-1.27	4.85	0.81	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-19-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	569,863			
												Northing (Y, ft):	2,191,933			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-17

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

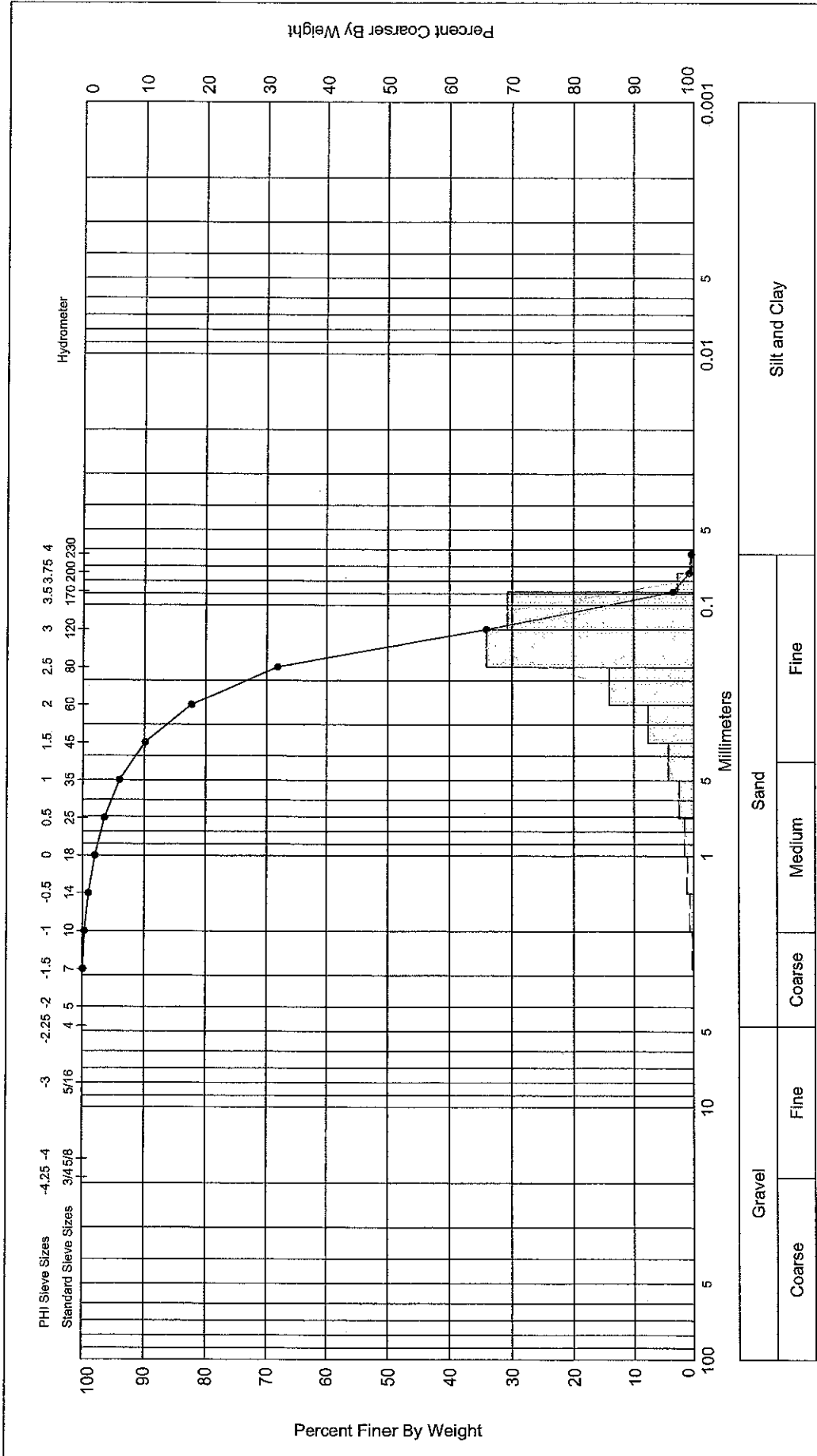
Easting (ft): <p style="text-align: center;">571,698</p>	Northing (ft): <p style="text-align: center;">2,194,408</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.71 #230 - 0.37	Organics (%):	Carbonates (%):	Shells (%):
20.92		0.06	0.05		1.48	13.48	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.01	0.06	0.01	0.06	
10	-1.00	2.00	0.05	0.26	0.07	0.32	
14	-0.50	1.41	0.13	0.64	0.20	0.96	
18	0.00	1.00	0.23	1.08	0.43	2.04	
25	0.50	0.71	0.32	1.51	0.74	3.55	
35	1.00	0.50	0.50	2.40	1.24	5.95	
45	1.50	0.35	0.88	4.18	2.12	10.13	
60	2.00	0.25	1.59	7.59	3.71	17.72	
80	2.50	0.18	2.95	14.10	6.65	31.82	
120	3.00	0.13	7.13	34.08	13.79	65.90	
170	3.50	0.09	6.43	30.72	20.21	96.62	
200	3.75	0.07	0.56	2.67	20.77	99.29	
230	4.00	0.06	0.07	0.34	20.84	99.63	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.47	3.29	3.15	2.77	2.26	1.89	0.80
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.57	0.17	0.83	-1.69	6.37	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information		
							Coarse	Medium	Fine	Coarse	Medium	Fine	Project Name:	Analysis Date:	
NE2-A4-17	—●—		SP	#200 - 0.71 #230 - 0.37	1.48	13.48	2.77	2.57	-1.69	6.37	0.83	MMS Field Study 2005 CT - 39075	07-17-06	MMS	SEA Inc.
Comments: Depths and elevations based on measured values													Easting (X, ft): 571,698 Northing (Y, ft): 2,194,408 Horizontal System: NAD 1983 Vertical System: MSL		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-18

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">569,295</p>	Northing (ft): <p style="text-align: center;">2,189,491</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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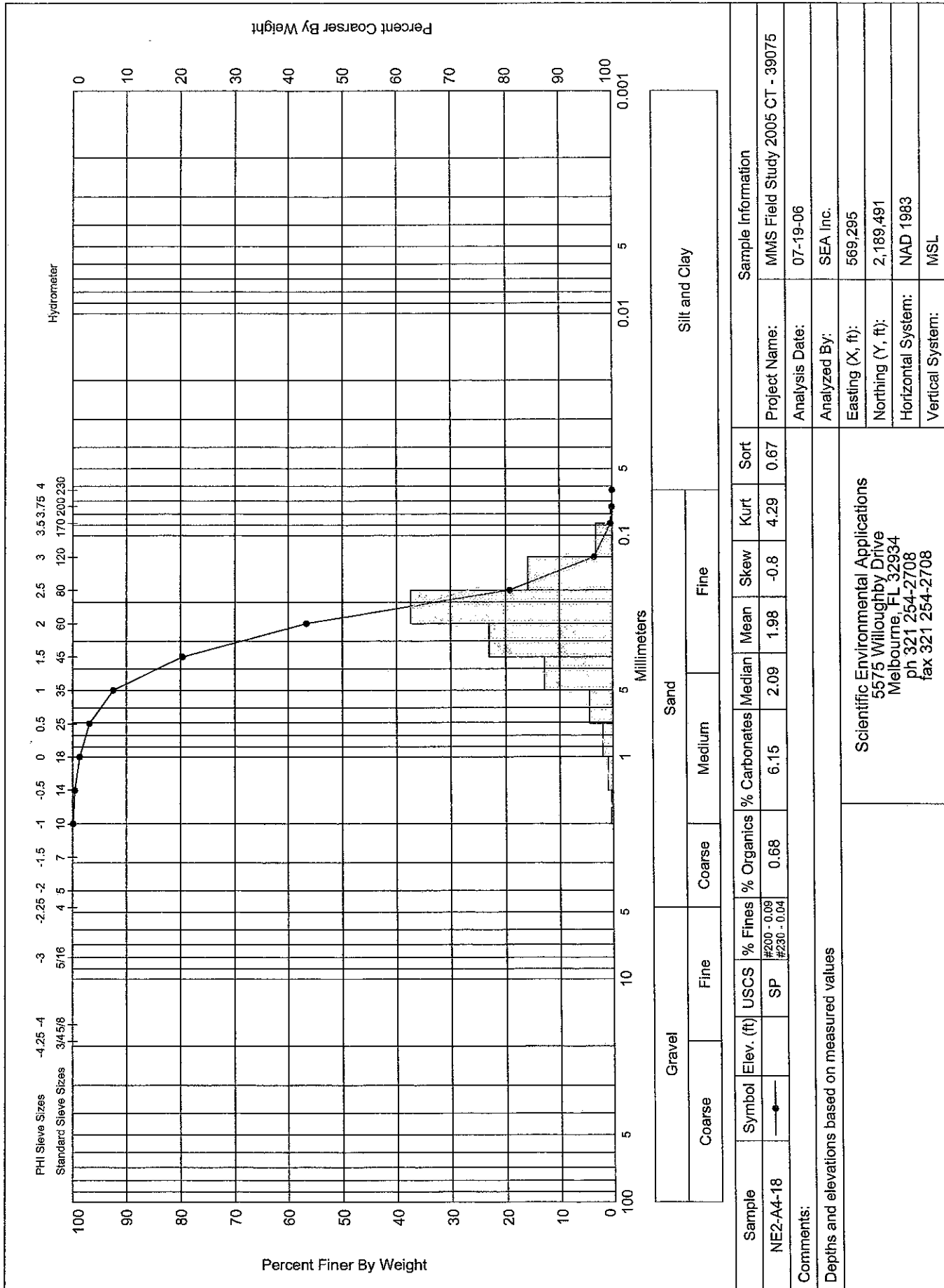
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">32.68</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">0.37</p>	Fines (%): #200 - 0.09 #230 - 0.04	Organics (%): <p style="text-align: center;">0.68</p>	Carbonates (%): <p style="text-align: center;">6.15</p>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.03	0.09	0.03	0.09	
14	-0.50	1.41	0.11	0.32	0.14	0.41	
18	0.00	1.00	0.30	0.92	0.44	1.33	
25	0.50	0.71	0.60	1.85	1.04	3.18	
35	1.00	0.50	1.44	4.42	2.48	7.60	
45	1.50	0.35	4.18	12.80	6.67	20.40	
60	2.00	0.25	7.51	22.99	14.18	43.39	
80	2.50	0.18	12.21	37.37	26.39	80.76	
120	3.00	0.13	5.18	15.84	31.57	96.60	
170	3.50	0.09	1.00	3.06	32.57	99.66	
200	3.75	0.07	0.08	0.25	32.65	99.91	
230	4.00	0.06	0.02	0.05	32.67	99.96	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.60	2.42	2.09	1.60	1.33	0.71
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.98	0.25	0.67	-0.8	4.29	

GRANULOMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-19-06
Analyzed By:	SEA Inc.
Easting (X, ft):	569,295
Northing (Y, ft):	2,189,491
Horizontal System:	NAD 1983
Vertical System:	MSL

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE2-A4-18	●	—	SP	#200 - 0.09	0.68	6.15	2.09	1.98	-0.8	4.29	0.67
				#230 - 0.04							

Comments:  
Depths and elevations based on measured values

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-19

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>569,877</b>	Northing (ft): <b>2,191,090</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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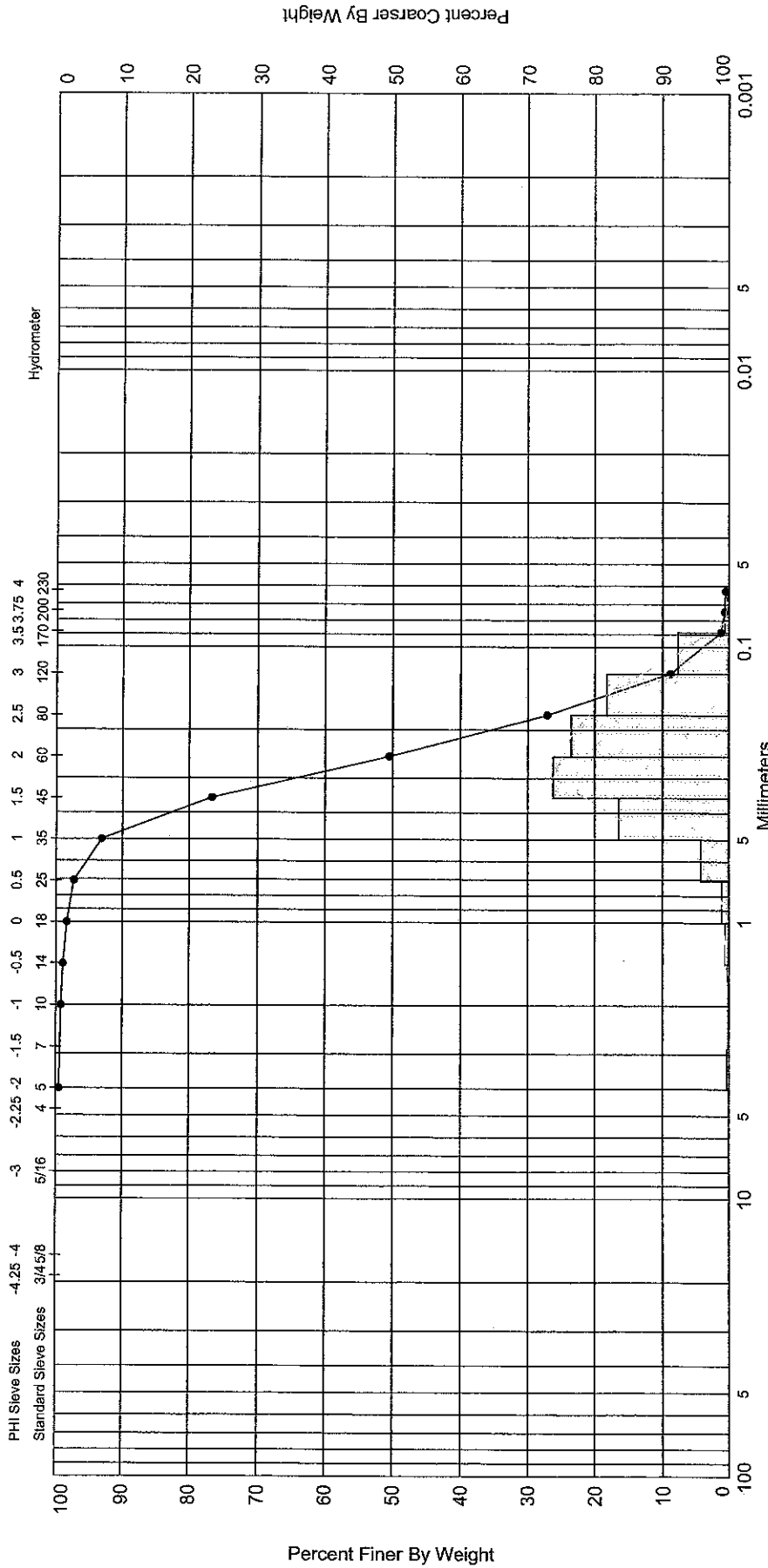
Dry Weight (g): <b>25.55</b>	Wash Weight (g):	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.16</b>	Fines (%): #200 - 0.62 #230 - 0.48	Organics (%): <b>0.94</b>	Carbonates (%): <b>7.94</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.13	0.50	0.13	0.50
10	-1.00	2.00	0.07	0.27	0.20	0.77
14	-0.50	1.41	0.07	0.29	0.27	1.06
18	0.00	1.00	0.14	0.56	0.41	1.62
25	0.50	0.71	0.27	1.05	0.68	2.67
35	1.00	0.50	1.08	4.24	1.77	6.91
45	1.50	0.35	4.20	16.46	5.97	23.37
60	2.00	0.25	6.68	26.15	12.65	49.52
80	2.50	0.18	5.99	23.46	18.64	72.98
120	3.00	0.13	4.64	18.15	23.28	91.13
170	3.50	0.09	1.96	7.68	25.24	98.81
200	3.75	0.07	0.15	0.57	25.39	99.38
230	4.00	0.06	0.04	0.14	25.42	99.52

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.25	2.80	2.56	2.01	1.53	1.28	0.77
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.99	0.25	0.74	-0.43	4.21	

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-19	●	—	SP	#200 - 0.82 #230 - 0.48	0.94	7.94	2.01	1.99	-0.43	4.21	0.74	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-19-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	569,877			
												Northing (Y, ft):	2,191,090			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-20

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>570,972</b>	Northing (ft): <b>2,194,009</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>25.94</b>	Wash Weight (g):	Pan Retained (g): <b>0.03</b>	Sieve Loss (%):	Fines (%): #200 - 0.89 #230 - 0.73	Organics (%): <b>0.97</b>	Carbonates (%): <b>12.69</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.07	0.25	0.07	0.25
7	-1.50	2.83	0.24	0.91	0.30	1.16
10	-1.00	2.00	0.32	1.22	0.62	2.38
14	-0.50	1.41	0.67	2.58	1.29	4.96
18	0.00	1.00	0.72	2.77	2.01	7.73
25	0.50	0.71	1.35	5.20	3.36	12.93
35	1.00	0.50	2.86	11.02	6.21	23.95
45	1.50	0.35	3.58	13.78	9.79	37.73
60	2.00	0.25	3.61	13.92	13.40	51.65
80	2.50	0.18	4.95	19.09	18.35	70.74
120	3.00	0.13	5.54	21.37	23.89	92.11
170	3.50	0.09	1.70	6.56	25.60	98.67
200	3.75	0.07	0.11	0.44	25.71	99.11
230	4.00	0.06	0.04	0.16	25.75	99.27

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.22	2.81	2.60	1.94	1.04	0.64	-0.49
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.71	0.31	1.09	-0.78	3.3	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-21

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>568,551</b>	Northing (ft): <b>2,186,378</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>35.02</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.14</b>	Fines (%): #200 - 0.75 #230 - 0.76	Organics (%): <b>0.33</b>	Carbonates (%): <b>7.03</b>	Shells (%):
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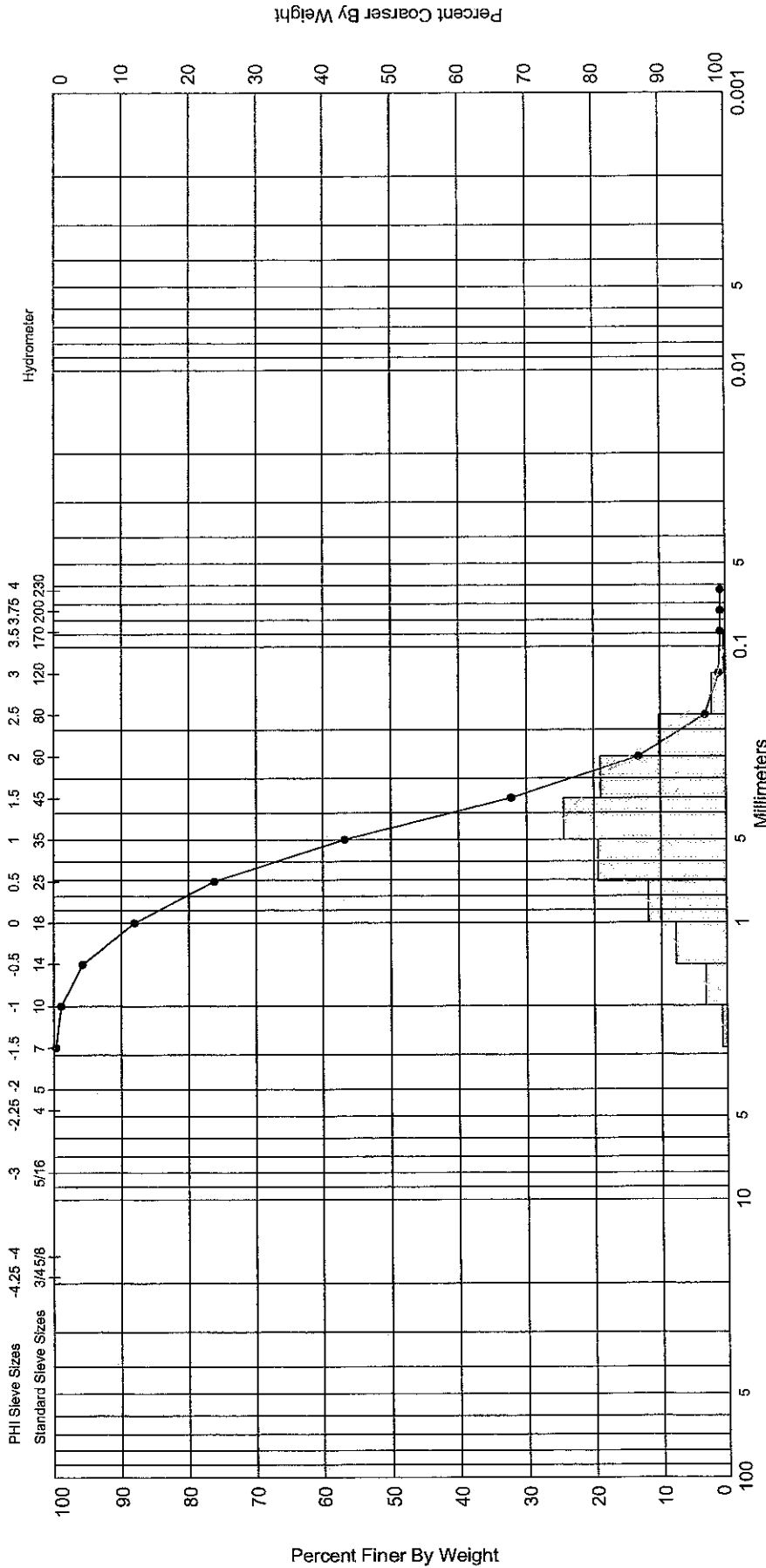
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.12	0.35	0.12	0.35
10	-1.00	2.00	0.26	0.73	0.38	1.08
14	-0.50	1.41	1.10	3.14	1.48	4.22
18	0.00	1.00	2.72	7.76	4.20	11.98
25	0.50	0.71	4.15	11.85	8.35	23.83
35	1.00	0.50	6.79	19.39	15.14	43.22
45	1.50	0.35	8.58	24.51	23.72	67.73
60	2.00	0.25	6.66	19.00	30.38	86.73
80	2.50	0.18	3.56	10.16	33.93	96.89
120	3.00	0.13	0.73	2.09	34.67	98.98
170	3.50	0.09	0.08	0.24	34.75	99.22
200	3.75	0.07	0.01	0.01	34.76	99.23
230	4.00	0.06	0.00	0.01	34.76	99.24

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.41	1.93	1.69	1.14	0.53	0.17	-0.45

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.06	0.48	0.83	-0.26	2.75

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A4-21	—●—		SP	#200 - 0.75 #230 - 0.76	0.33	7.03	1.14	1.06	-0.26	2.75	0.83	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-26-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	568,551		
												Northing (Y, ft):	2,186,378		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-22

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>568,950</b>	Northing (ft): <b>2,190,547</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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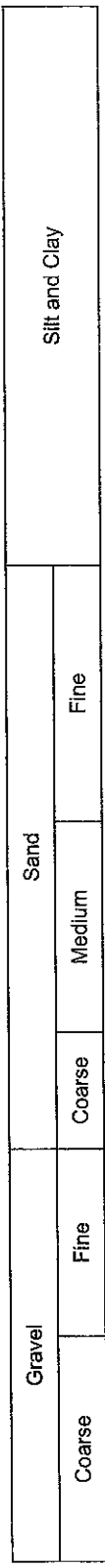
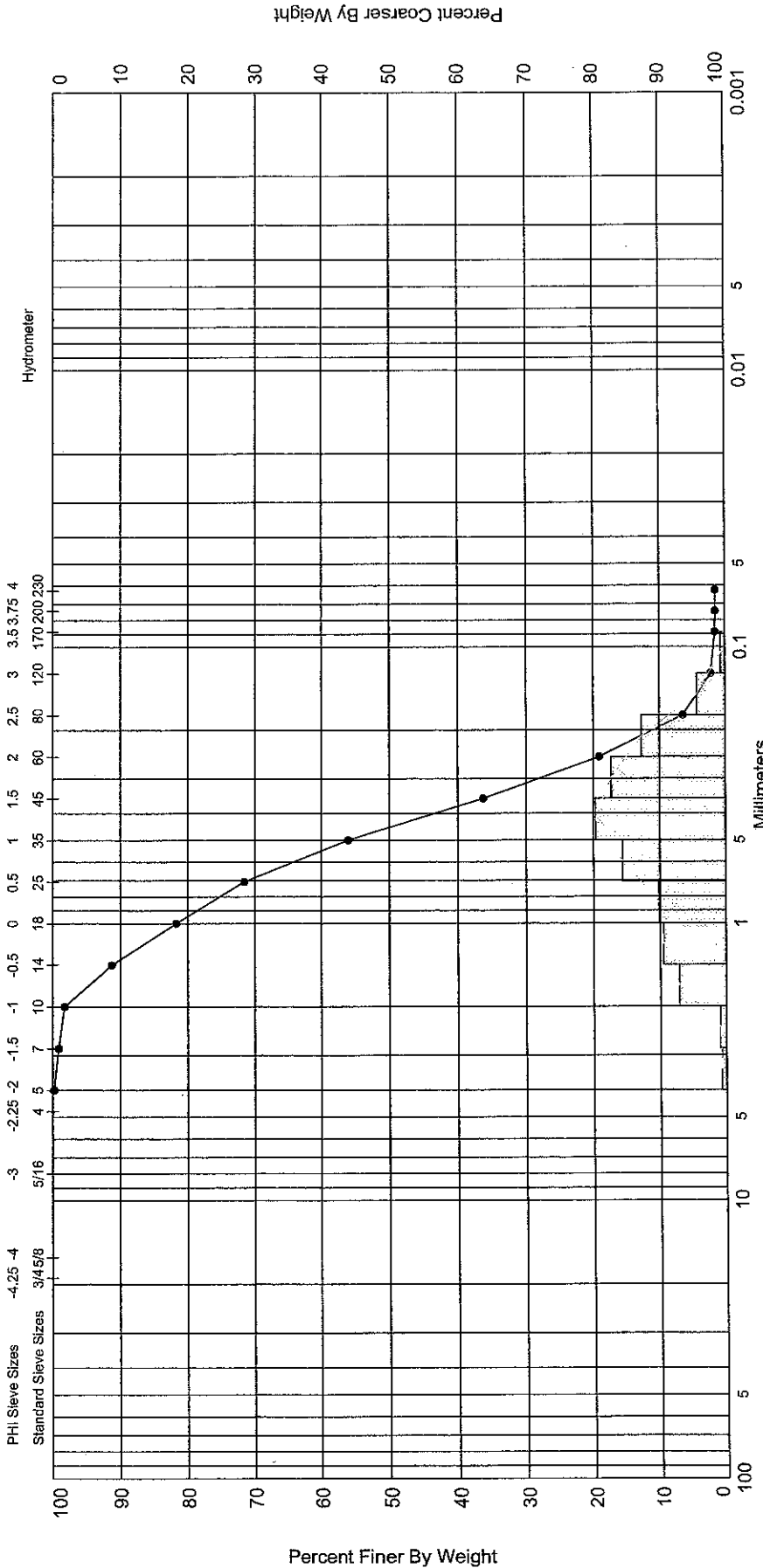
Dry Weight (g): <b>31.51</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%):	Fines (%): #200 - <b>1.41</b> #230 - <b>1.39</b>	Organics (%): <b>0.45</b>	Carbonates (%): <b>7.27</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.06	0.18	0.06	0.18
7	-1.50	2.83	0.21	0.68	0.27	0.86
10	-1.00	2.00	0.27	0.85	0.54	1.71
14	-0.50	1.41	2.22	7.03	2.75	8.74
18	0.00	1.00	2.99	9.50	5.75	18.24
25	0.50	0.71	3.20	10.15	8.94	28.39
35	1.00	0.50	4.92	15.63	13.87	44.02
45	1.50	0.35	6.20	19.68	20.07	63.70
60	2.00	0.25	5.44	17.25	25.50	80.95
80	2.50	0.18	4.00	12.69	29.50	93.64
120	3.00	0.13	1.34	4.27	30.85	97.91
170	3.50	0.09	0.20	0.63	31.04	98.54
200	3.75	0.07	0.02	0.05	31.06	98.59
230	4.00	0.06	0.01	0.02	31.07	98.61

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.66	2.12	1.83	1.15	0.33	-0.12	-0.77
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.03	0.49	1.01	-0.29	2.49	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information	
Sample	NEZ-A4-22
Symbol	●
Elev. (ft)	
USCS	SP
% Fines	#200 - 1.41: 4.45, #230 - 1.39: 4.45
% Organics	0.45
% Carbonates	7.27
Mean	1.15
Median	1.03
Skew	-0.29
Kurt	2.49
Sort	1.01
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-19-06
Analyzed By:	SEA Inc.
Easting (X, ft):	568,950
Northing (Y, ft):	2,190,547
Horizontal System:	NAD 1983
Vertical System:	MSL
Comments: Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-23

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>572,330</b>	Northing (ft): <b>2,190,460</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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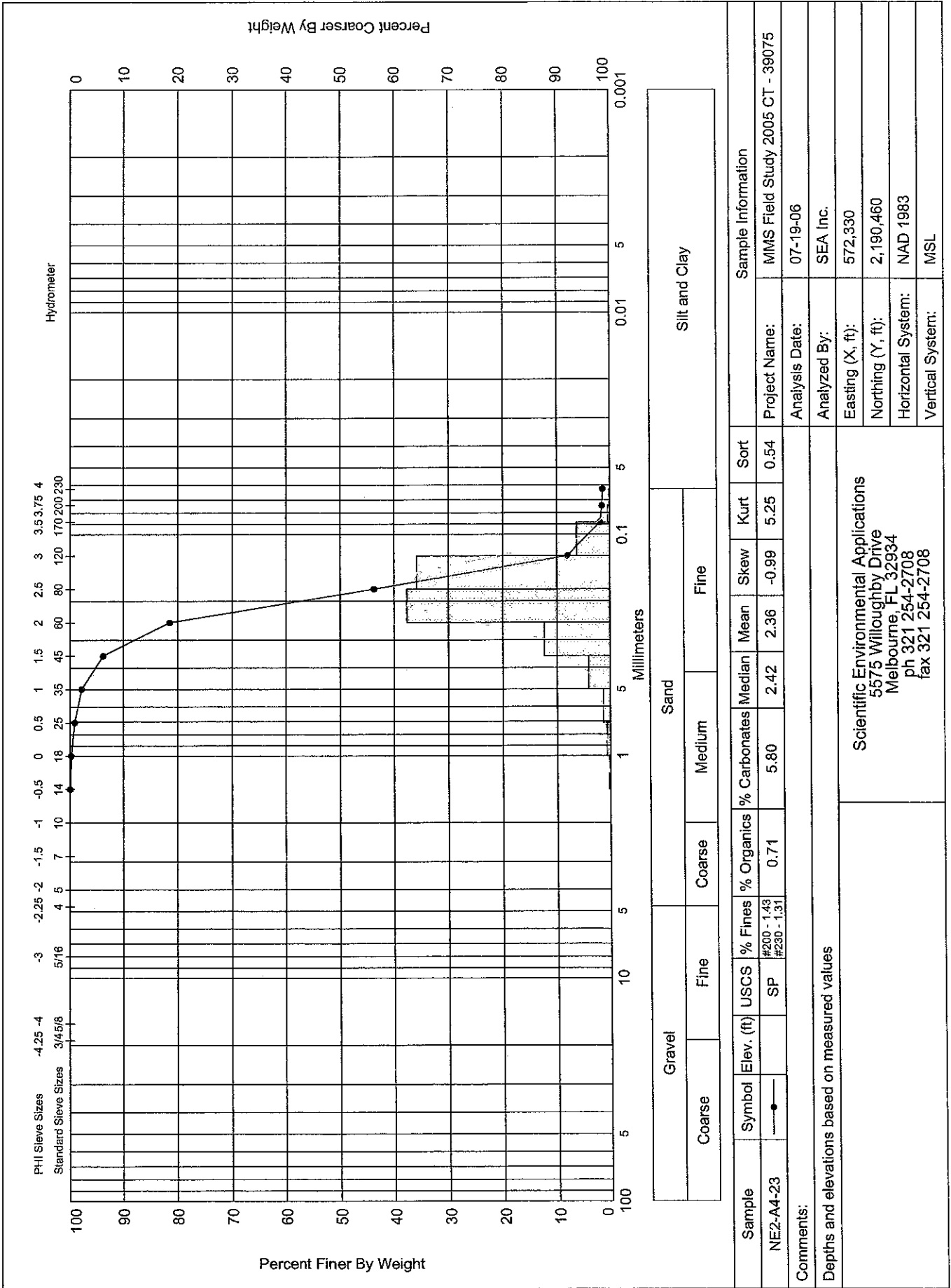
Dry Weight (g): <b>24.98</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.19</b>	Fines (%): #200 - 1.43 #230 - 1.31	Organics (%): <b>0.71</b>	Carbonates (%): <b>5.80</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
14	-0.50	1.41	0.01	0.04	0.01	0.04
18	0.00	1.00	0.05	0.18	0.06	0.22
25	0.50	0.71	0.16	0.63	0.21	0.85
35	1.00	0.50	0.33	1.30	0.54	2.15
45	1.50	0.35	1.01	4.04	1.55	6.19
60	2.00	0.25	3.09	12.38	4.64	18.57
80	2.50	0.18	9.40	37.64	14.05	56.21
120	3.00	0.13	8.95	35.82	23.00	92.03
170	3.50	0.09	1.55	6.20	24.55	98.23
200	3.75	0.07	0.08	0.34	24.63	98.57
230	4.00	0.06	0.03	0.12	24.66	98.69

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.24	2.89	2.76	2.42	2.09	1.90	1.35
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.36	0.19	0.54	-0.99	5.25	

GRANULOMETRIC REPORT: MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Comments:

Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Sample Information

Project Name: MMS Field Study 2005 CT - 39075

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Easting (X, ft): 572,330

Northing (Y, ft): 2,190,460

Horizontal System: NAD 1983

Vertical System: MSL

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-24

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>574,477</b>	Northing (ft): <b>2,186,945</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>21.48</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.03</b>	Fines (%): #200 - <b>0.61</b> #230 - <b>0.54</b>	Organics (%): <b>0.70</b>	Carbonates (%): <b>5.52</b>	Shells (%):
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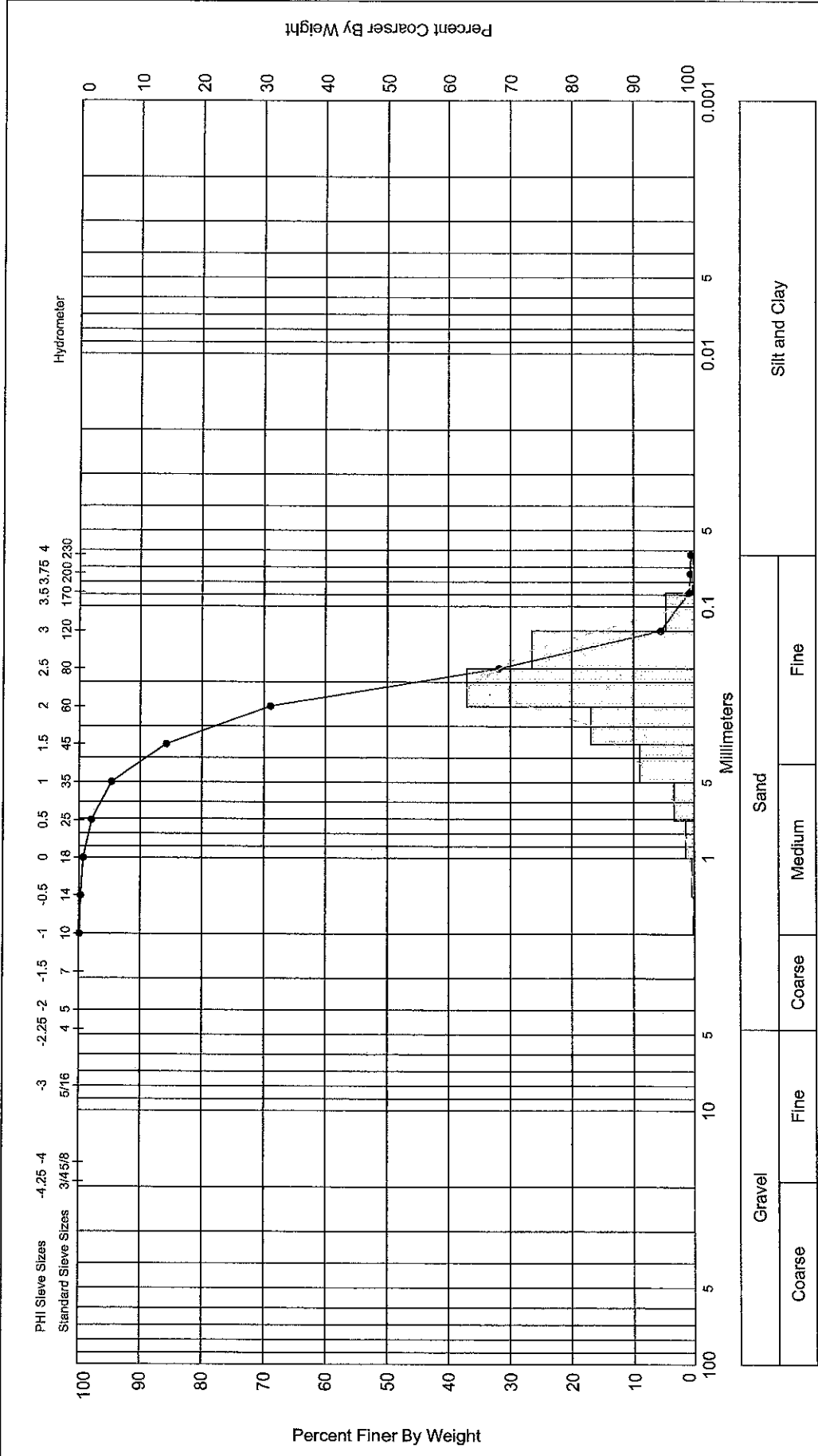
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.02	0.08	0.02	0.08
14	-0.50	1.41	0.04	0.19	0.06	0.27
18	0.00	1.00	0.09	0.40	0.15	0.67
25	0.50	0.71	0.29	1.35	0.43	2.02
35	1.00	0.50	0.70	3.25	1.13	5.27
45	1.50	0.35	1.92	8.95	3.06	14.22
60	2.00	0.25	3.62	16.85	6.68	31.07
80	2.50	0.18	7.96	37.07	14.64	68.14
120	3.00	0.13	5.68	26.45	20.32	94.59
170	3.50	0.09	0.99	4.62	21.32	99.21
200	3.75	0.07	0.04	0.18	21.36	99.39
230	4.00	0.06	0.02	0.07	21.37	99.46

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.04	2.80	2.63	2.26	1.82	1.55	0.96
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.16	0.22	0.64	-0.94	4.47	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample	Symbol	Elev. (ft)	USCS		% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
			SP	SP									Project Name:	Analysis Date:
NE2-A4-24	—●—				#200 - 0.61 #230 - 0.54	0.70	5.52	2.26	2.16	-0.94	4.47	0.64	MMS Field Study 2005 CT - 39075	07-19-06
Comments: Depths and elevations based on measured values													Analyzed By:	SEA Inc.
													Easting (X, ft):	574,477
													Northing (Y, ft):	2,186,945
													Horizontal System:	NAD 1983
													Vertical System:	MSL
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-25

Analysis Date: 07-26-06

Analyzed By: SEA Inc

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">572,569</p>	Northing (ft): <p style="text-align: center;">2,189,108</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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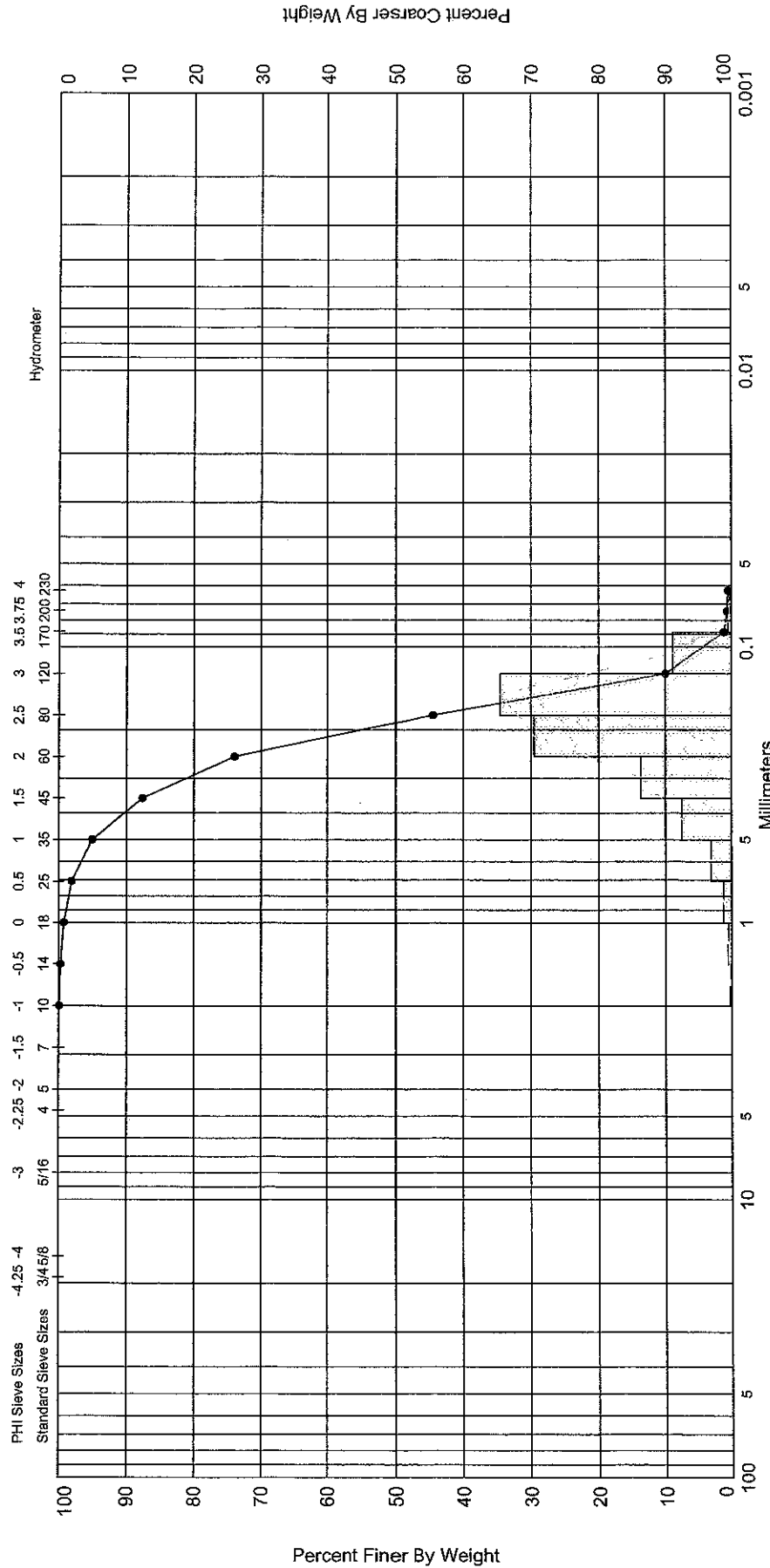
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">25.84</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.02</p>	Sieve Loss (%): <p style="text-align: center;">0.30</p>	Fines (%): #200 - 0.63 #230 - 0.47	Organics (%): <p style="text-align: center;">1.17</p>	Carbonates (%): <p style="text-align: center;">7.46</p>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
10	-1.00	2.00	0.02	0.09	0.02	0.09	
14	-0.50	1.41	0.05	0.18	0.07	0.27	
18	0.00	1.00	0.13	0.48	0.19	0.75	
25	0.50	0.71	0.29	1.14	0.49	1.89	
35	1.00	0.50	0.78	3.03	1.27	4.92	
45	1.50	0.35	1.93	7.45	3.20	12.37	
60	2.00	0.25	3.54	13.71	6.74	26.08	
80	2.50	0.18	7.62	29.48	14.36	55.56	
120	3.00	0.13	8.91	34.47	23.27	90.03	
170	3.50	0.09	2.30	8.89	25.56	98.92	
200	3.75	0.07	0.12	0.45	25.68	99.37	
230	4.00	0.06	0.04	0.16	25.72	99.53	

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<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
3.28	2.91	2.78	2.41	1.96	1.63	1.01
<b>Moment</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
<b>Statistics</b>	2.29	0.20	0.68	-1.01	4.5	

GRANULOMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 0.63	#230 - 0.47	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-25	—●—		SP				1.17	7.46	2.41	2.29	-1.01	4.5	0.68	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:														Analysis Date:	07-26-06			
Depths and elevations based on measured values														Analyzed By:	SEA Inc			
														Easting (X, ft):	572,569			
														Northing (Y, ft):	2,189,108			
														Horizontal System:	NAD 1983			
														Vertical System:	MSL			
														Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-26

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>574,245</b>	Northing (ft): <b>2,188,752</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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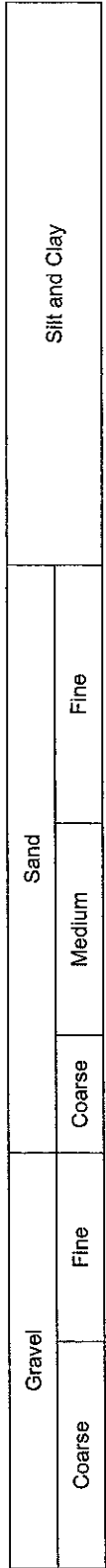
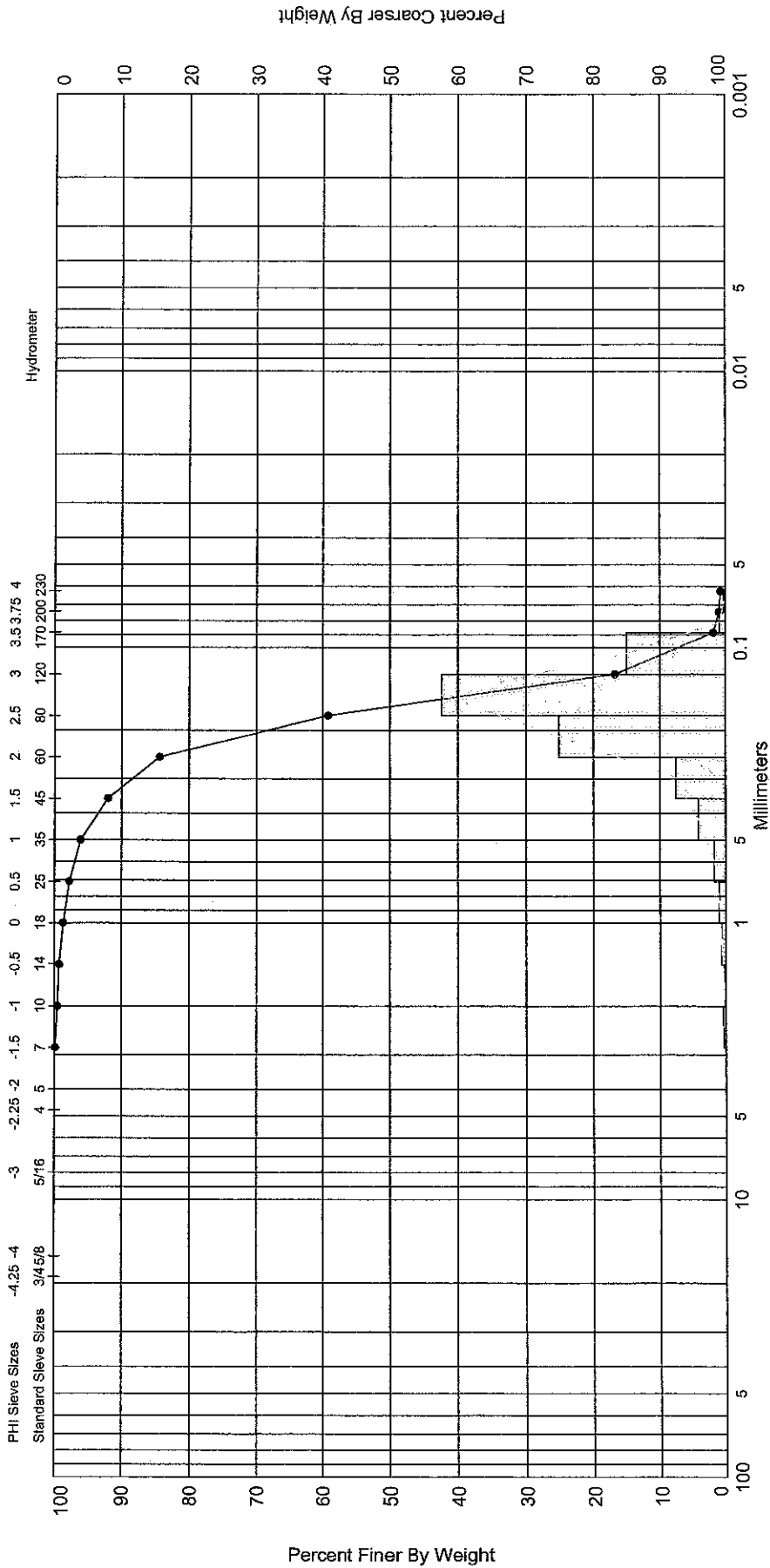
Dry Weight (g): <b>26.54</b>	Wash Weight (g):	Pan Retained (g): <b>0.03</b>	Sieve Loss (%): <b>0.43</b>	Fines (%): #200 - 0.95 #230 - 0.72	Organics (%): <b>1.08</b>	Carbonates (%): <b>8.59</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.03	0.12	0.03	0.12
10	-1.00	2.00	0.08	0.31	0.11	0.43
14	-0.50	1.41	0.06	0.24	0.18	0.67
18	0.00	1.00	0.16	0.60	0.33	1.27
25	0.50	0.71	0.25	0.93	0.58	2.20
35	1.00	0.50	0.45	1.71	1.04	3.91
45	1.50	0.35	1.09	4.10	2.12	8.01
60	2.00	0.25	2.02	7.62	4.15	15.63
80	2.50	0.18	6.68	25.16	10.82	40.79
120	3.00	0.13	11.26	42.41	22.08	83.20
170	3.50	0.09	3.98	14.99	26.06	98.19
200	3.75	0.07	0.23	0.86	26.28	99.05
230	4.00	0.06	0.06	0.23	26.34	99.28

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	3.03	2.90	2.61	2.19	2.01	1.13
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.47	0.18	0.68	-1.75	8.12	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Median	Mean	Skew	Kurt	Sort	Sample Information		
NE2-A4-26	●			SP		#200 - 0.95	#230 - 0.72	1.08	8.59	2.61	2.47	-1.75	8.12	0.68	MMS Field Study 2005 CT - 39075				
Comments:																			
Depths and elevations based on measured values																			
Analyzed By: SEA Inc. Easting (X, ft): 574,245 Northing (Y, ft): 2,188,752 Horizontal System: NAD 1983 Vertical System: MSL																			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-27

Analysis Date: 07-26-06

Analyzed By:

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>572,827</b>	Northing (ft): <b>2,187,222</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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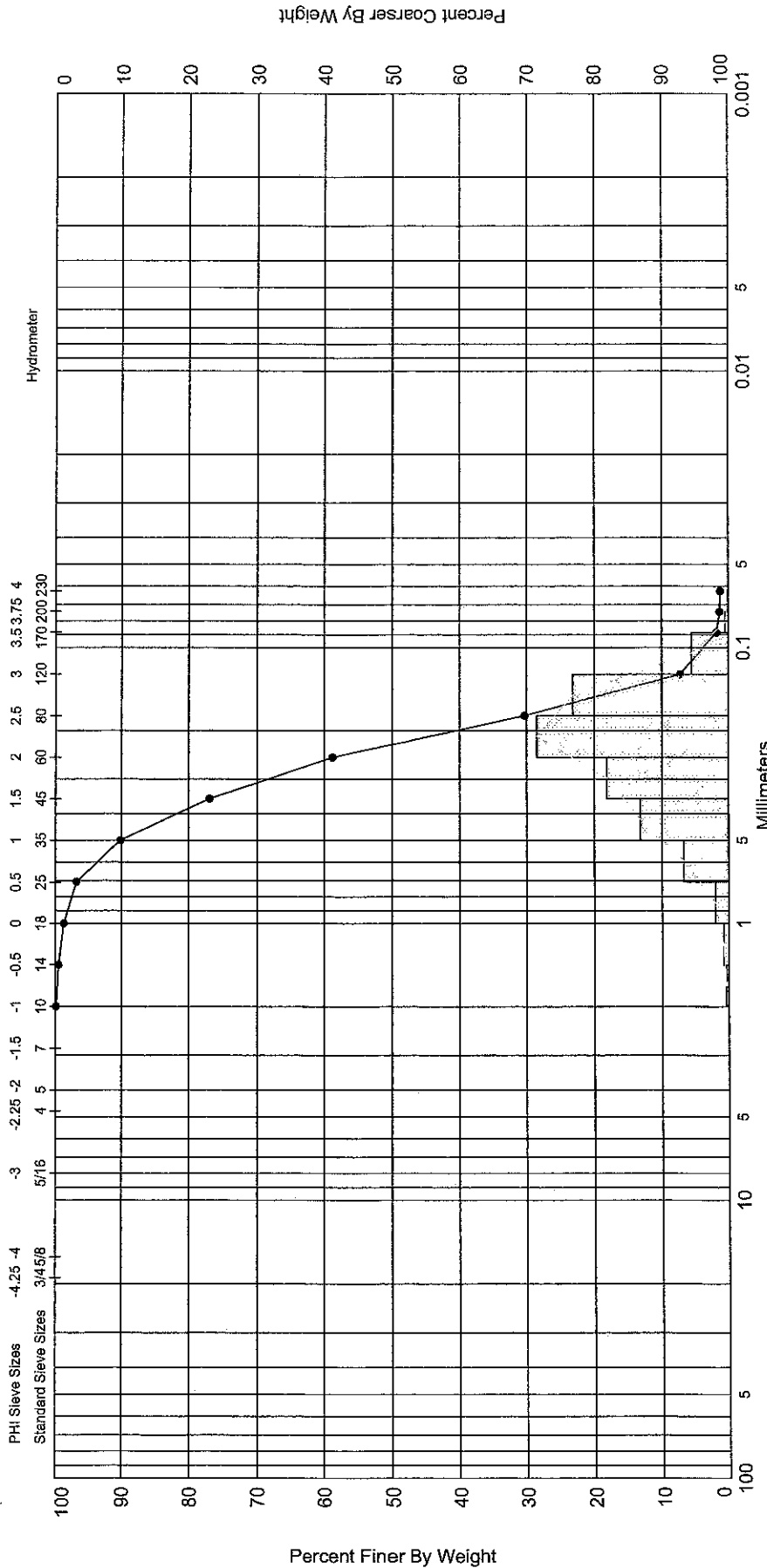
Dry Weight (g): <b>30.27</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%):	Fines (%): #200 - 1.27 #230 - 1.18	Organics (%): <b>0.81</b>	Carbonates (%): <b>8.16</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.04	0.12	0.04	0.12
14	-0.50	1.41	0.11	0.36	0.15	0.48
18	0.00	1.00	0.24	0.80	0.39	1.28
25	0.50	0.71	0.58	1.92	0.97	3.20
35	1.00	0.50	2.02	6.67	2.99	9.87
45	1.50	0.35	4.00	13.21	6.98	23.08
60	2.00	0.25	5.50	18.16	12.48	41.24
80	2.50	0.18	8.61	28.45	21.09	69.69
120	3.00	0.13	7.00	23.11	28.08	92.80
170	3.50	0.09	1.66	5.48	29.74	98.28
200	3.75	0.07	0.14	0.45	29.88	98.73
230	4.00	0.06	0.03	0.09	29.91	98.82

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.20	2.81	2.61	2.15	1.55	1.23	0.63
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.03	0.24	0.76	-0.64	3.35	

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	NE2-A4-27	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines	#200 - 1.27	#230 - 1.18	% Organics	0.81	% Carbonates	8.16	Median	2.15	Mean	2.03	Skew	-0.64	Kurt	3.35	Sort	0.76	Sample Information	Project Name:	MMS Field Study 2005 CT - 39075
Comments:	Depths and elevations based on measured values																										
	Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																										
	Analyzed By:																										
	Easting (X, ft): 572,827																										
	Northing (Y, ft): 2,187,222																										
	Horizontal System: NAD 1983																										
	Vertical System: MSL																										
	Analysis Date: 07-26-06																										

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-28

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">573,573</p>	Northing (ft): <p style="text-align: center;">2,189,342</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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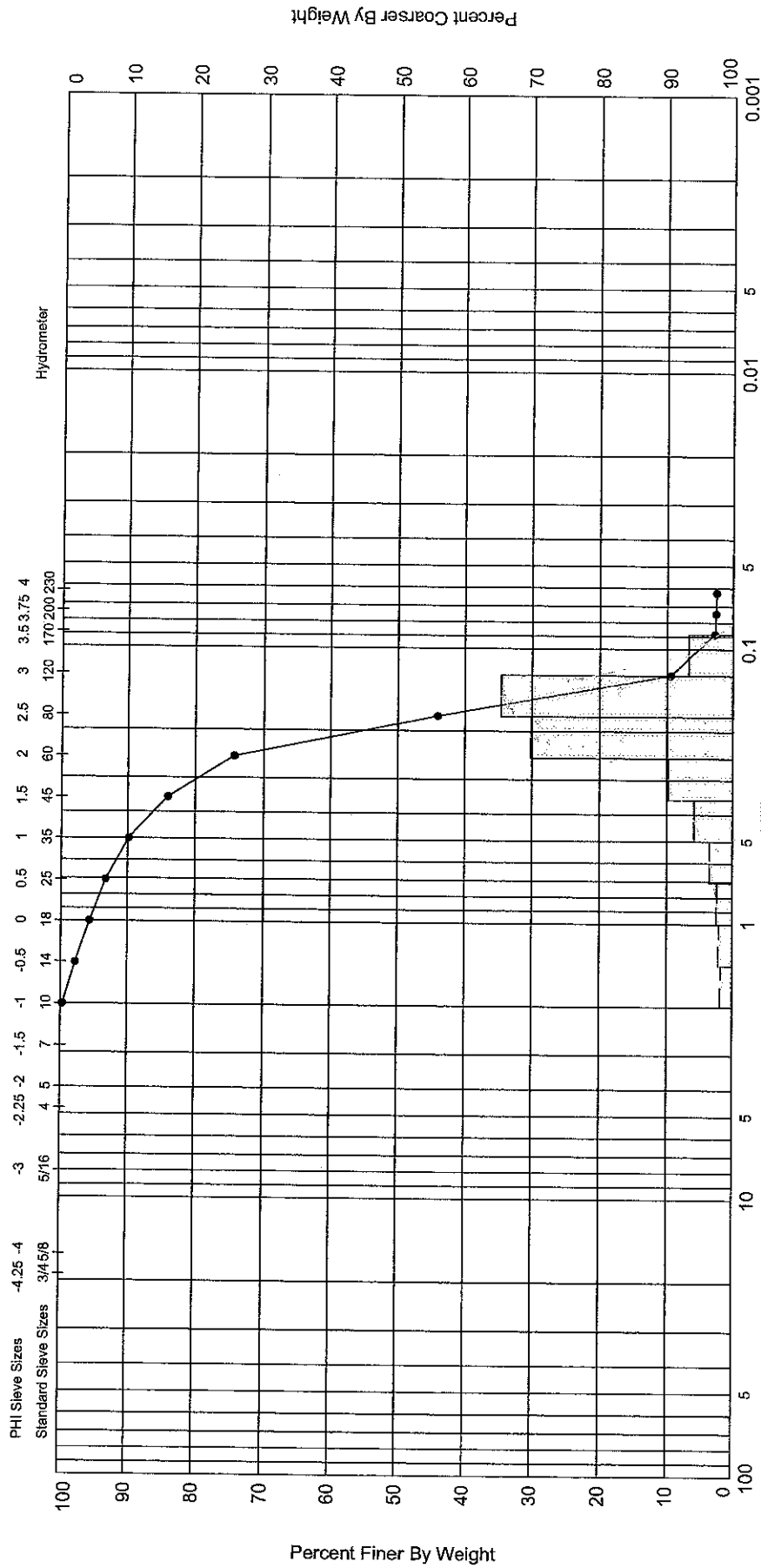
Dry Weight (g): <p style="text-align: center;">15.30</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">-0.25</p>	Fines (%): #200 - 2.63 #230 - 2.55	Organics (%): <p style="text-align: center;">1.59</p>	Carbonates (%): <p style="text-align: center;">12.85</p>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
10	-1.00	2.00	0.04	0.29	0.04	0.29	
14	-0.50	1.41	0.29	1.86	0.33	2.15	
18	0.00	1.00	0.32	2.10	0.65	4.25	
25	0.50	0.71	0.37	2.42	1.02	6.67	
35	1.00	0.50	0.54	3.50	1.56	10.17	
45	1.50	0.35	0.88	5.77	2.44	15.94	
60	2.00	0.25	1.51	9.84	3.94	25.78	
80	2.50	0.18	4.61	30.14	8.55	55.92	
120	3.00	0.13	5.30	34.61	13.85	90.53	
170	3.50	0.09	1.02	6.67	14.87	97.20	
200	3.75	0.07	0.03	0.17	14.89	97.37	
230	4.00	0.06	0.01	0.08	14.91	97.45	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.91	2.78	2.40	1.96	1.50	0.15
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.17	0.22	0.85	-1.51	5.25	

GRANULOMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand			Silt and Clay						
Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort				
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE2-A4-28	●		SP	#200 - 2.63 #230 - 2.58	1.59	12.85	2.4	2.17	-1.51	5.25	0.85
Sample Information											
Project Name:										MMS Field Study 2005 CT - 39075	
Analysis Date:										07-26-06	
Analyzed By:										SEA Inc.	
Easting (X, ft):										573,573	
Northing (Y, ft):										2,189,342	
Horizontal System:										NAD 1983	
Vertical System:										MSL	
Comments:											
Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-29

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,114</b>	Northing (ft): <b>2,188,355</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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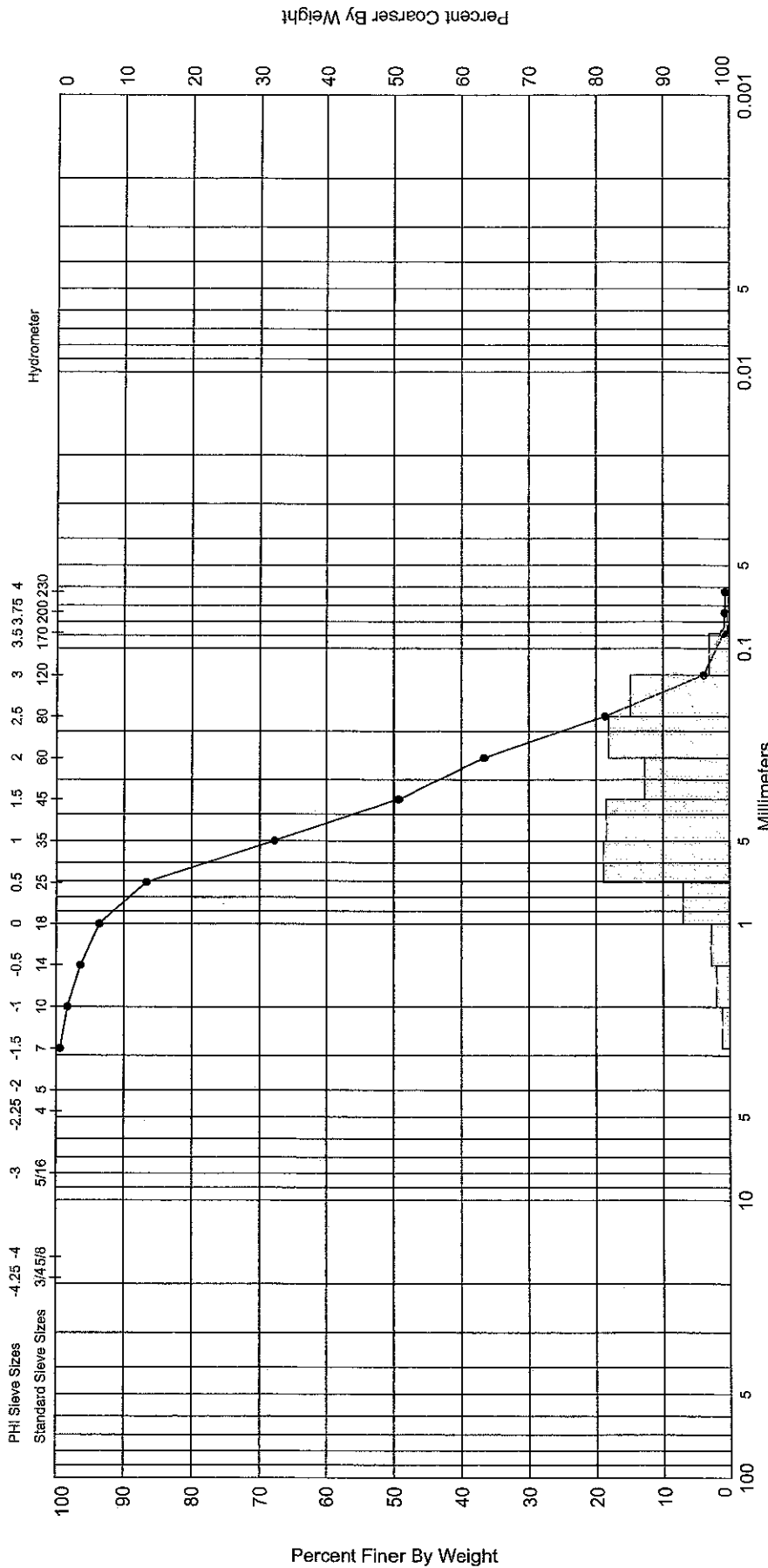
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>29.45</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%):	Fines (%): #200 - 0.65 #230 - 0.62	Organics (%): <b>0.93</b>	Carbonates (%): <b>10.25</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.17	0.58	0.17	0.58
10	-1.00	2.00	0.31	1.06	0.48	1.64
14	-0.50	1.41	0.57	1.94	1.05	3.58
18	0.00	1.00	0.81	2.75	1.86	6.33
25	0.50	0.71	2.06	7.01	3.93	13.34
35	1.00	0.50	5.55	18.85	9.48	32.19
45	1.50	0.35	5.43	18.45	14.91	50.64
60	2.00	0.25	3.73	12.66	18.64	63.30
80	2.50	0.18	5.32	18.08	23.97	81.38
120	3.00	0.13	4.36	14.79	28.32	96.17
170	3.50	0.09	0.88	2.99	29.20	99.16
200	3.75	0.07	0.06	0.19	29.26	99.35
230	4.00	0.06	0.01	0.03	29.27	99.38

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.59	2.32	1.48	0.81	0.57	-0.24
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.49	0.36	0.97	-0.27	2.67	

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Medium	Fine

Sample		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Mean	Median	Skew	Kurt	Sort	Sample Information			
NE2-A4-29				SP		#200 - 0.65	#230 - 0.62	0.93	10.25	1.48	1.49	-0.27	2.67	0.97	Project Name: MMS Field Study 2005 CT - 39075					
Comments:																				
Depths and elevations based on measured values																				
Analyzed By: SEA Inc. Easting (X, ft): 573,114 Northing (Y, ft): 2,188,355 Horizontal System: NAD 1983 Vertical System: MSL																				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-30

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>574,338</b>	Northing (ft): <b>2,188,231</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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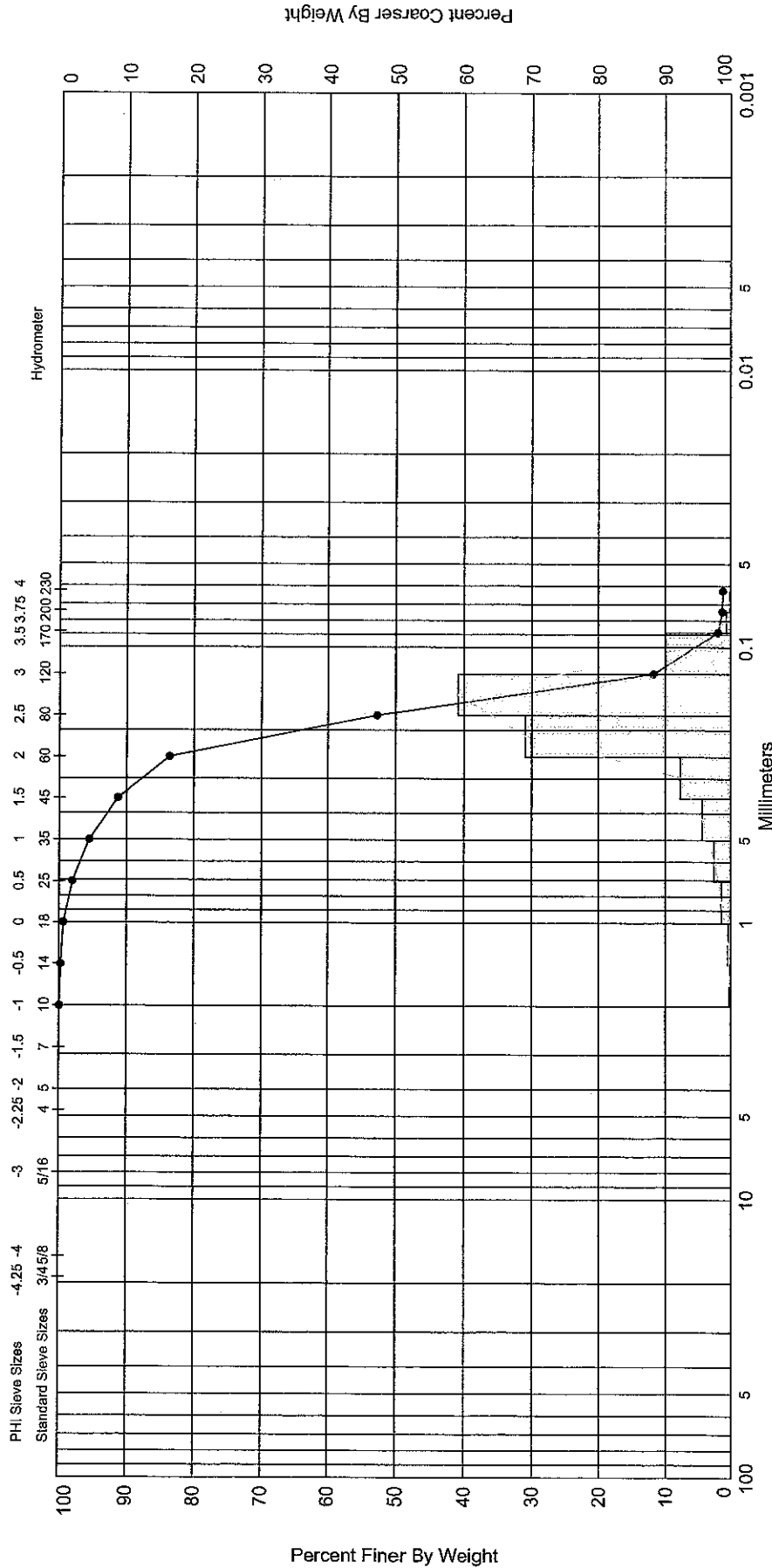
Dry Weight (g): <b>21.66</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.13</b>	Fines (%): #200 - 1.23 #230 - 1.15	Organics (%): <b>1.36</b>	Carbonates (%): <b>10.07</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.01	0.05	0.01	0.05
14	-0.50	1.41	0.04	0.19	0.05	0.24
18	0.00	1.00	0.08	0.36	0.13	0.60
25	0.50	0.71	0.29	1.35	0.42	1.95
35	1.00	0.50	0.54	2.47	0.96	4.42
45	1.50	0.35	0.93	4.31	1.89	8.73
60	2.00	0.25	1.66	7.68	3.55	16.41
80	2.50	0.18	6.69	30.90	10.25	47.31
120	3.00	0.13	8.87	40.95	19.12	88.26
170	3.50	0.09	2.14	9.89	21.26	98.15
200	3.75	0.07	0.13	0.62	21.39	98.77
230	4.00	0.06	0.02	0.08	21.41	98.85

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.34	2.95	2.84	2.53	2.14	1.97	1.07
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.4	0.19	0.64	-1.45	6.14	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand				Silt and Clay				
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A4-30	●	—	SP	#200 - 1.23 #230 - 1.19	1.36	10.07	2.53	2.4	-1.45	6.14	0.64	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-24-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	574,338			
												Northing (Y, ft):	2,188,231			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-31

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>574,287</b>	Northing (ft): <b>2,186,618</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>21.90</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.11</b>	Fines (%): #200 - <b>0.51</b> #230 - <b>0.44</b>	Organics (%): <b>0.93</b>	Carbonates (%): <b>7.13</b>	Shells (%):
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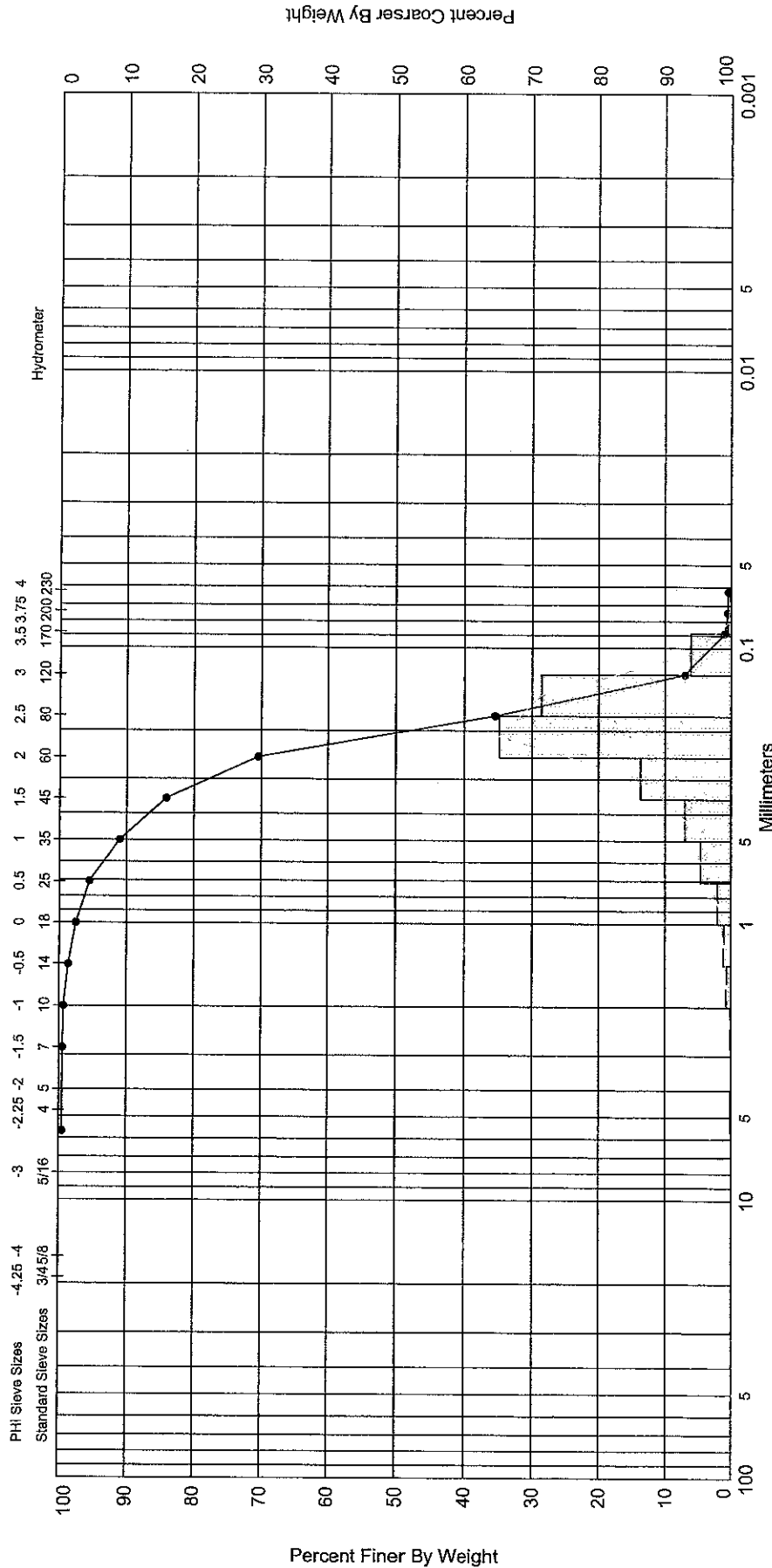
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.10	0.47	0.10	0.47
7	-1.50	2.83	0.01	0.06	0.11	0.53
10	-1.00	2.00	0.02	0.11	0.14	0.64
14	-0.50	1.41	0.15	0.70	0.29	1.34
18	0.00	1.00	0.24	1.09	0.53	2.43
25	0.50	0.71	0.44	1.99	0.97	4.42
35	1.00	0.50	1.00	4.55	1.96	8.97
45	1.50	0.35	1.51	6.90	3.47	15.87
60	2.00	0.25	3.00	13.70	6.47	29.57
80	2.50	0.18	7.64	34.89	14.11	64.46
120	3.00	0.13	6.27	28.63	20.38	93.09
170	3.50	0.09	1.31	5.97	21.69	99.06
200	3.75	0.07	0.10	0.43	21.79	99.49
230	4.00	0.06	0.02	0.07	21.80	99.56

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.16	2.84	2.68	2.29	1.83	1.50	0.56

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.13	0.23	0.76	-1.24	5.37

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A4-31	●	—	SP	#200 - 0.51 #230 - 0.44	0.93	7.13	2.29	2.13	-1.24	5.37	0.76	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-24-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	574,287		
												Northing (Y, ft):	2,186,618		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-32

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>572,020</b>	Northing (ft): <b>2,188,194</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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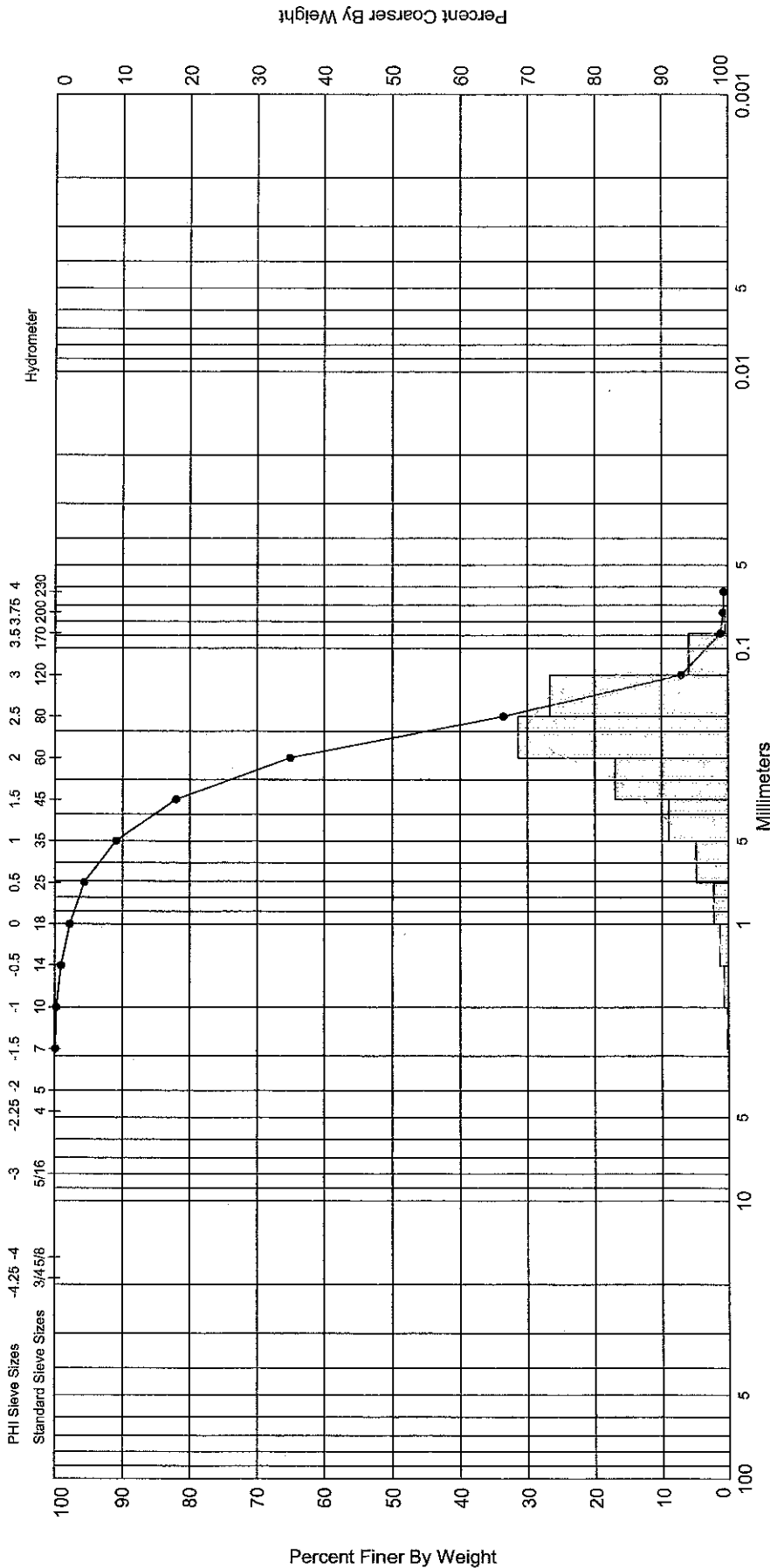
Dry Weight (g): <b>25.73</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.30</b>	Fines (%): #200 - <b>0.71</b> #230 - <b>0.63</b>	Organics (%): <b>0.78</b>	Carbonates (%): <b>7.58</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.02	0.09	0.02	0.09
10	-1.00	2.00	0.04	0.15	0.06	0.24
14	-0.50	1.41	0.17	0.66	0.23	0.90
18	0.00	1.00	0.32	1.25	0.55	2.15
25	0.50	0.71	0.55	2.12	1.10	4.27
35	1.00	0.50	1.23	4.78	2.33	9.05
45	1.50	0.35	2.30	8.93	4.63	17.98
60	2.00	0.25	4.37	16.99	9.00	34.97
80	2.50	0.18	8.09	31.42	17.08	66.39
120	3.00	0.13	6.86	26.66	23.94	93.05
170	3.50	0.09	1.50	5.84	25.44	98.89
200	3.75	0.07	0.10	0.40	25.55	99.29
230	4.00	0.06	0.02	0.08	25.57	99.37

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.17	2.83	2.66	2.24	1.71	1.39	0.58
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.1	0.23	0.77	-1.1	4.63	

GRANULOMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 6/13/08





Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE2-A4-32	●		SP	#200 - 0.71 #230 - 0.63	0.78	7.58	2.24	2.1	-1.1	4.63	0.77	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	07-24-06	Analyzed By:	SEA Inc.	Easting (X, ft):	572,020	Northing (Y, ft):	2,188,194	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:																									
Depths and elevations based on measured values																									
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A4-33

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

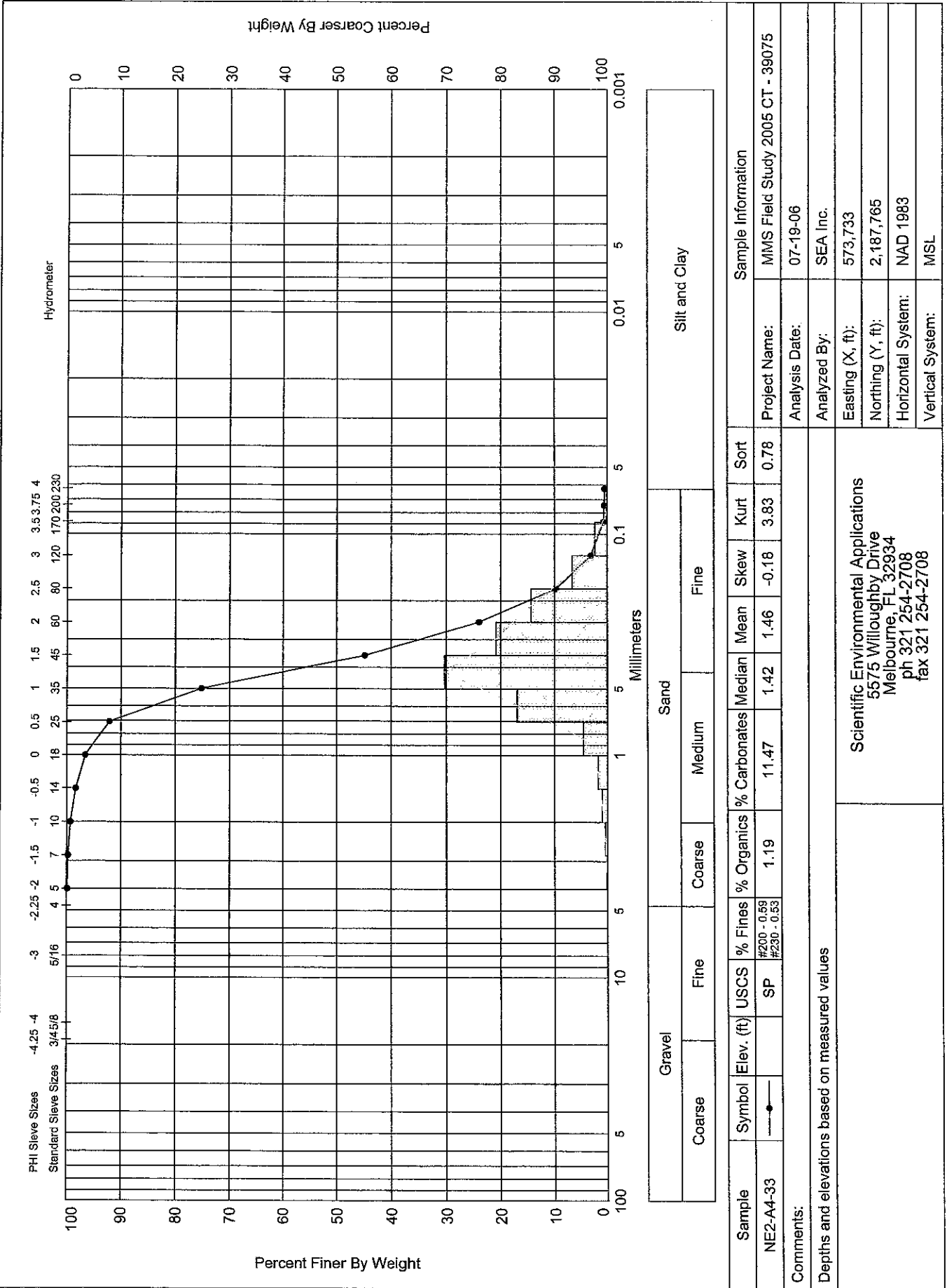
Easting (ft): <b>573,733</b>	Northing (ft): <b>2,187,765</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.59 #230 - 0.53	Organics (%):	Carbonates (%):	Shells (%):
29.98		0.01	0.16		1.19	11.47	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.03	0.11	0.03	0.11	
7	-1.50	2.83	0.05	0.15	0.08	0.26	
10	-1.00	2.00	0.12	0.41	0.20	0.67	
14	-0.50	1.41	0.29	0.98	0.50	1.65	
18	0.00	1.00	0.53	1.76	1.02	3.41	
25	0.50	0.71	1.34	4.47	2.36	7.88	
35	1.00	0.50	5.07	16.92	7.44	24.80	
45	1.50	0.35	9.10	30.34	16.53	55.14	
60	2.00	0.25	6.25	20.84	22.78	75.98	
80	2.50	0.18	4.29	14.32	27.07	90.30	
120	3.00	0.13	1.98	6.60	29.05	96.90	
170	3.50	0.09	0.70	2.34	29.75	99.24	
200	3.75	0.07	0.05	0.17	29.80	99.41	
230	4.00	0.06	0.02	0.06	29.82	99.47	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.86	2.28	1.98	1.42	1.00	0.74	0.18
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.46	0.36	0.78	-0.18	3.83	

GRANULOMETRIC REPORT, MMS, EAST SPRING 2006.GPJ, FL DEP ROSS.GDT, 5/13/08



Comments:  
 Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Gravel			Sand				Silt and Clay				
Coarse	Fine		Coarse	Medium	Fine						

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-19-06
Analyzed By:	SEA Inc.
Easting (X, ft):	573,733
Northing (Y, ft):	2,187,765
Horizontal System:	NAD 1983
Vertical System:	MSL

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-01

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

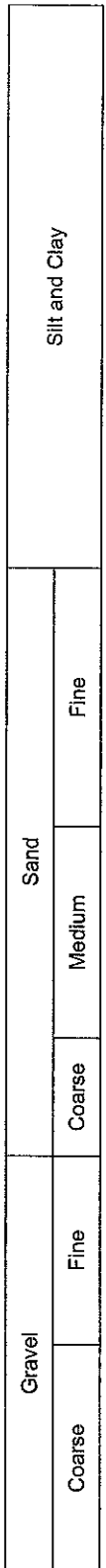
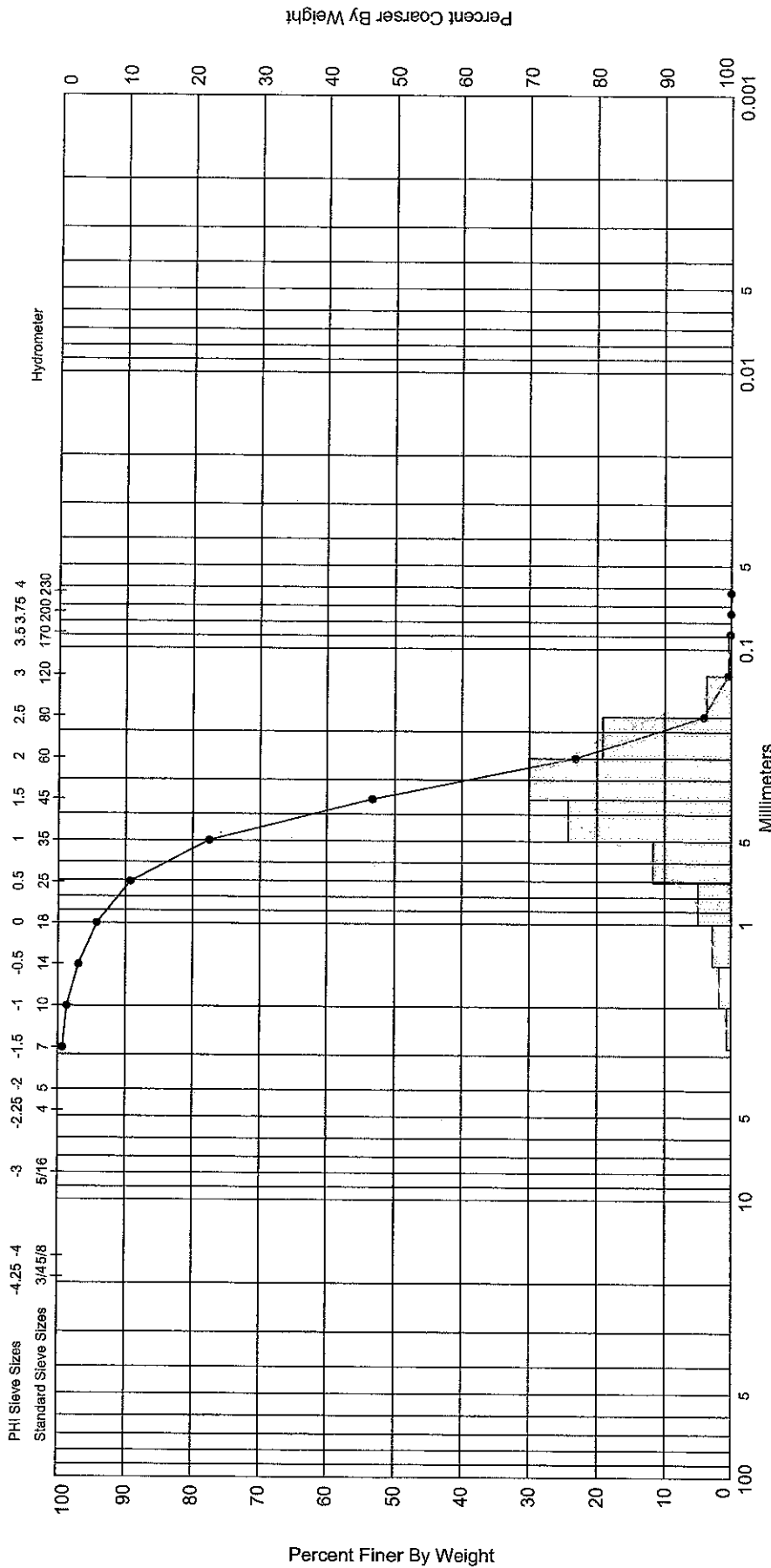
Easting (ft): <p style="text-align: center;">568,746</p>	Northing (ft): <p style="text-align: center;">2,115,355</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.05 #230 - 0.02	Organics (%):	Carbonates (%):	Shells (%):
23.42		0.00	0.16		0.79	12.79	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.16	0.67	0.16	0.67	
10	-1.00	2.00	0.15	0.65	0.31	1.32	
14	-0.50	1.41	0.41	1.75	0.72	3.07	
18	0.00	1.00	0.63	2.68	1.35	5.75	
25	0.50	0.71	1.16	4.96	2.51	10.71	
35	1.00	0.50	2.75	11.72	5.25	22.43	
45	1.50	0.35	5.69	24.28	10.94	46.71	
60	2.00	0.25	7.04	30.05	17.98	76.76	
80	2.50	0.18	4.48	19.14	22.46	95.90	
120	3.00	0.13	0.85	3.65	23.32	99.55	
170	3.50	0.09	0.08	0.33	23.39	99.88	
200	3.75	0.07	0.02	0.07	23.41	99.95	
230	4.00	0.06	0.01	0.03	23.42	99.98	

	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.48	2.19	1.97	1.55	1.05	0.73	-0.14
Moment	Mean Phi		Mean mm		Sorting	Skewness	Kurtosis
Statistics	1.44		0.37		0.76	-0.76	4.04

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT: 5/13/08



Sample		Sample Information											
NE2-A6-01	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	MMS Field Study 2005 CT - 39075
	—●—		SP	#200 - 0.05	0.79	12.79	1.55	1.44	-0.76	4.04	0.76	Analysis Date:	07-10-06
Comments:													
Depths and elevations based on measured values													
Analyzed By: SEA Inc. Easting (X, ft): 568,746 Northing (Y, ft): 2,115,355 Horizontal System: NAD 1983 Vertical System: MSL													

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-02

Analysis Date: 07-10-06

Analyzed By: SEA Inc,

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>567,733</b>	Northing (ft): <b>2,104,017</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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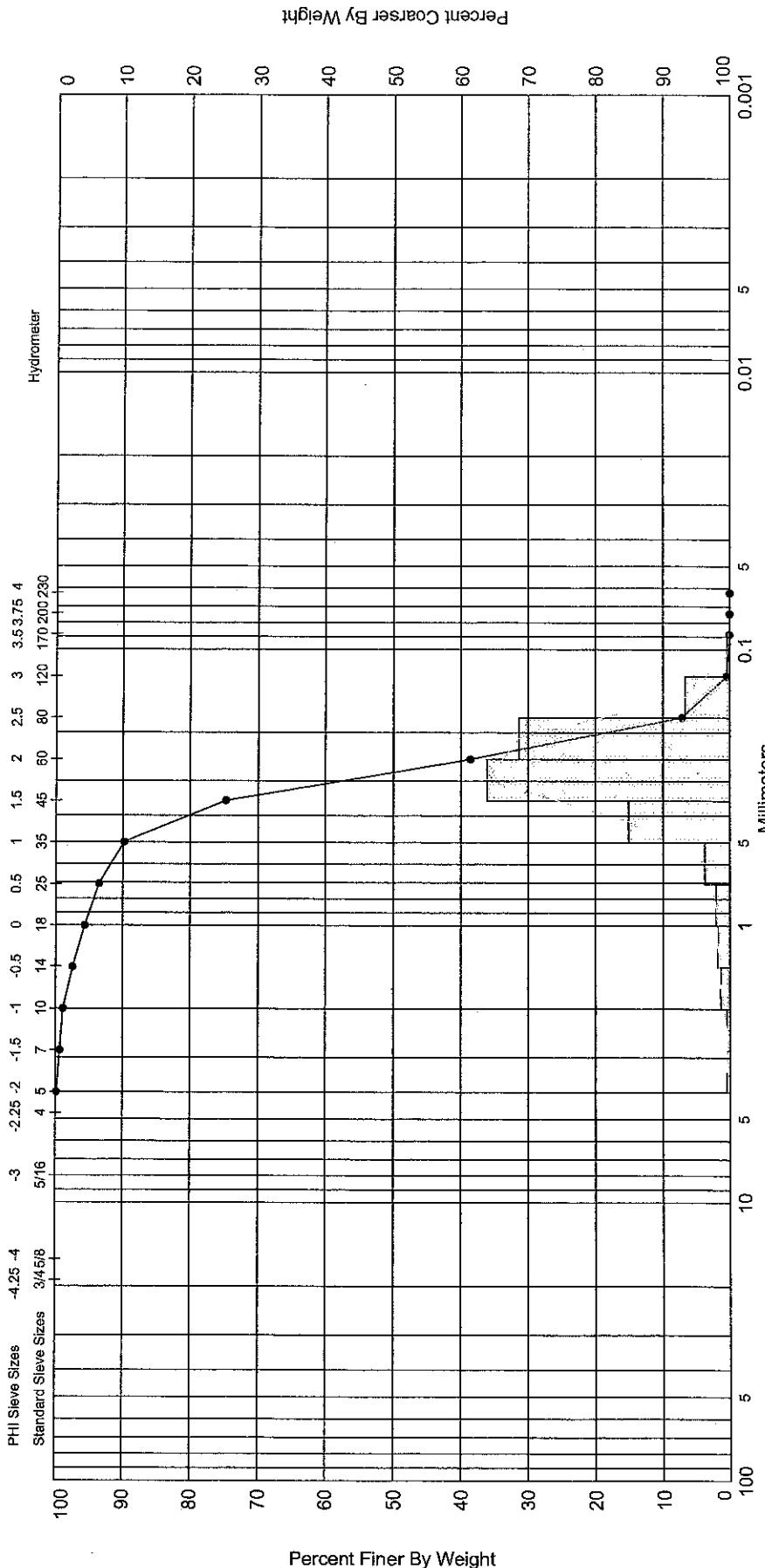
Dry Weight (g): <b>24.74</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.38</b>	Fines (%): #200 - <b>0.03</b> #230 - <b>0.01</b>	Organics (%): <b>0.58</b>	Carbonates (%): <b>9.42</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.04	0.16	0.04	0.16
7	-1.50	2.83	0.12	0.48	0.16	0.64
10	-1.00	2.00	0.12	0.47	0.27	1.11
14	-0.50	1.41	0.34	1.39	0.62	2.50
18	0.00	1.00	0.45	1.83	1.07	4.33
25	0.50	0.71	0.52	2.09	1.58	6.42
35	1.00	0.50	0.94	3.79	2.52	10.21
45	1.50	0.35	3.74	15.10	6.26	25.31
60	2.00	0.25	8.94	36.12	15.19	61.43
80	2.50	0.18	7.76	31.38	22.96	92.81
120	3.00	0.13	1.66	6.69	24.61	99.50
170	3.50	0.09	0.11	0.42	24.72	99.92
200	3.75	0.07	0.01	0.05	24.73	99.97
230	4.00	0.06	0.00	0.02	24.73	99.99

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.66	2.36	2.22	1.84	1.49	1.19	0.16
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.73	0.30	0.74	-1.67	7.34	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL\_DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A6-02	●		SP	#200 - 0.03 #230 - 0.01	0.58	9.42	1.84	1.73	-1.67	7.34	0.74	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-10-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	567,733		
												Northing (Y, ft):	2,104,017		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-03

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>568,716</b>	Northing (ft): <b>2,111,379</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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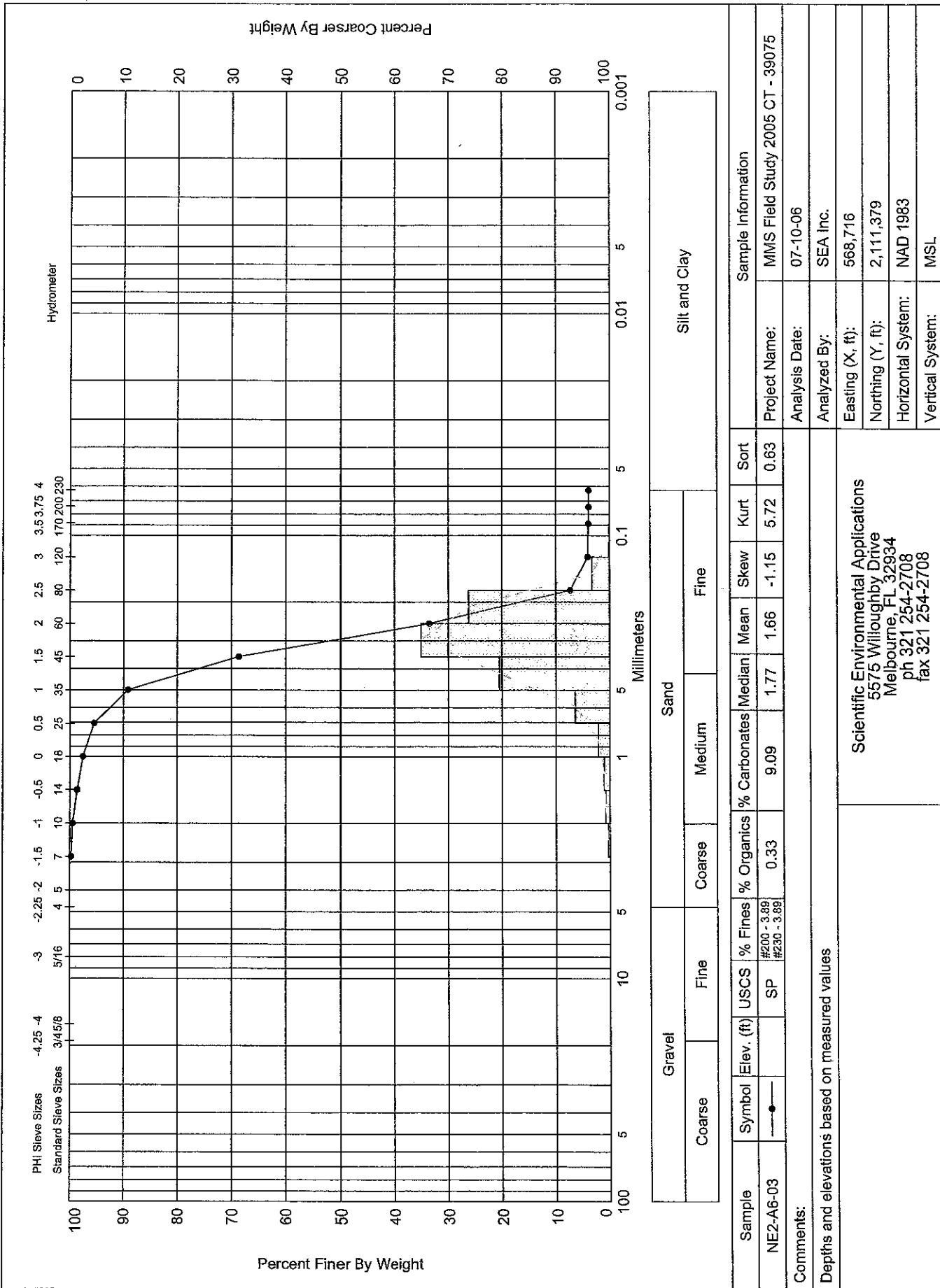
Dry Weight (g): <b>23.81</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.26</b>	Fines (%): #200 - 3.89 #230 - 3.89	Organics (%): <b>0.33</b>	Carbonates (%): <b>9.09</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.05	0.23	0.05	0.23
10	-1.00	2.00	0.07	0.30	0.13	0.53
14	-0.50	1.41	0.19	0.80	0.32	1.33
18	0.00	1.00	0.25	1.06	0.57	2.39
25	0.50	0.71	0.50	2.12	1.07	4.51
35	1.00	0.50	1.51	6.35	2.58	10.86
45	1.50	0.35	4.88	20.50	7.46	31.36
60	2.00	0.25	8.36	35.11	15.82	66.47
80	2.50	0.18	6.25	26.23	22.07	92.70
120	3.00	0.13	0.77	3.24	22.84	95.94
170	3.50	0.09	0.03	0.13	22.87	96.07
200	3.75	0.07	0.01	0.04	22.88	96.11
230	4.00	0.06	0.00	0.00	22.88	96.11

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.85	2.33	2.16	1.77	1.34	1.13	0.54
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.66	0.32	0.63	-1.15	5.72	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Comments:

Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-04

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>578,501</b>	Northing (ft): <b>2,100,440</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>23.34</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.23</b>	Fines (%): #200 - 1.47 #230 - 1.44	Organics (%): <b>0.40</b>	Carbonates (%): <b>7.32</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.02	0.10	0.02	0.10	
10	-1.00	2.00	0.02	0.08	0.04	0.18	
14	-0.50	1.41	0.07	0.28	0.11	0.46	
18	0.00	1.00	0.15	0.65	0.26	1.11	
25	0.50	0.71	0.31	1.32	0.57	2.43	
35	1.00	0.50	0.81	3.47	1.38	5.90	
45	1.50	0.35	2.26	9.68	3.63	15.58	
60	2.00	0.25	4.17	17.88	7.81	33.46	
80	2.50	0.18	10.59	45.36	18.39	78.82	
120	3.00	0.13	4.25	18.23	22.65	97.05	
170	3.50	0.09	0.31	1.34	22.96	98.39	
200	3.75	0.07	0.03	0.14	22.99	98.53	
230	4.00	0.06	0.01	0.03	23.00	98.56	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.64	2.46	2.18	1.76	1.51	0.87
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.06	0.24	0.62	-1.25	5.73	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 6/13/08



# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-05

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>576,525</b>	Northing (ft): <b>2,105,088</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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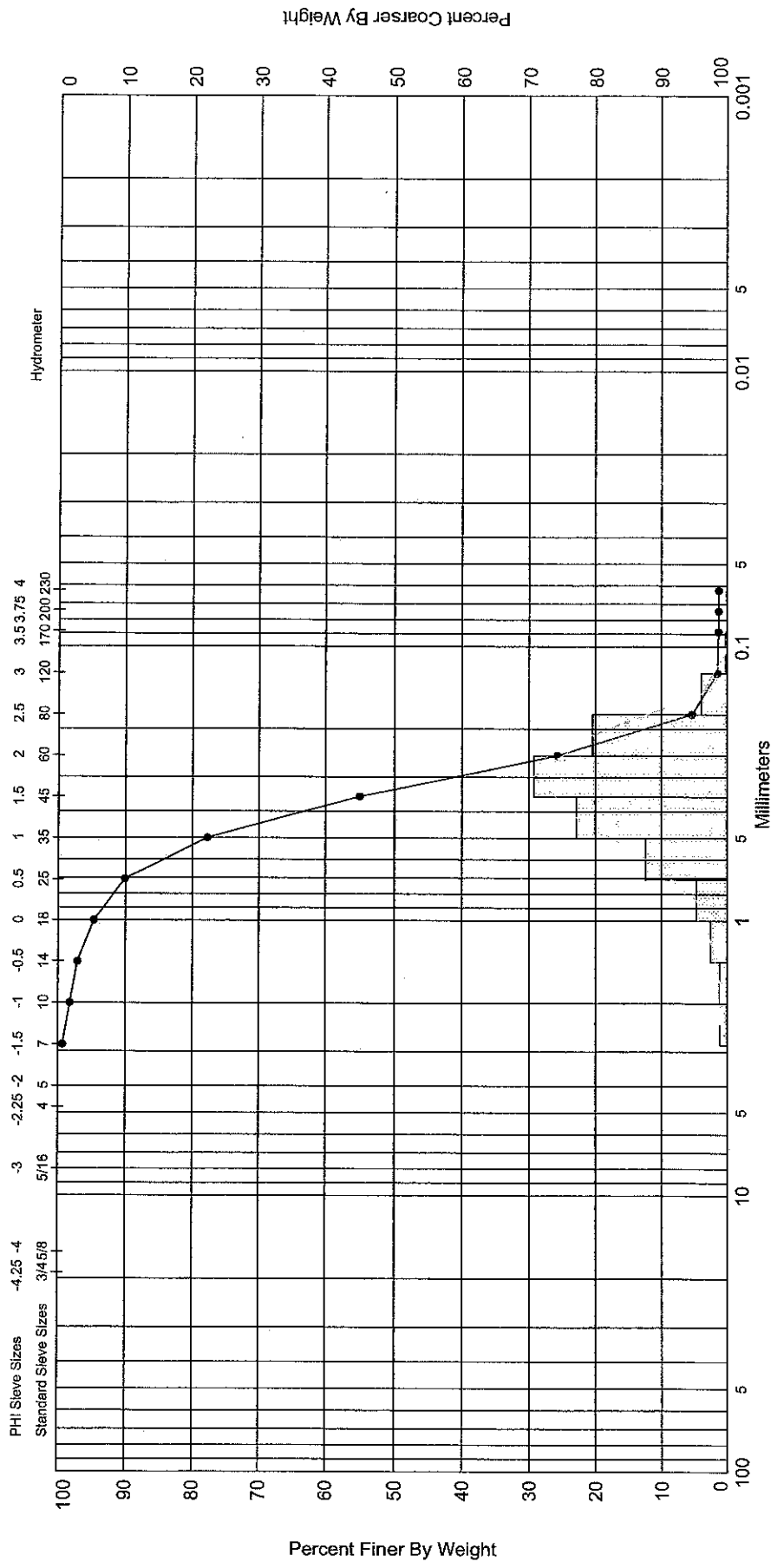
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>27.29</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.50</b>	Fines (%): #200 - 1.22 #230 - 1.20	Organics (%): <b>0.43</b>	Carbonates (%): <b>9.56</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.18	0.67	0.18	0.67	
10	-1.00	2.00	0.29	1.06	0.47	1.73	
14	-0.50	1.41	0.30	1.11	0.77	2.84	
18	0.00	1.00	0.67	2.44	1.44	5.28	
25	0.50	0.71	1.26	4.63	2.70	9.91	
35	1.00	0.50	3.38	12.37	6.08	22.28	
45	1.50	0.35	6.22	22.80	12.30	45.08	
60	2.00	0.25	7.98	29.24	20.28	74.32	
80	2.50	0.18	5.57	20.42	25.85	94.74	
120	3.00	0.13	1.05	3.84	26.90	98.58	
170	3.50	0.09	0.04	0.16	26.94	98.74	
200	3.75	0.07	0.01	0.04	26.95	98.78	
230	4.00	0.06	0.01	0.02	26.96	98.80	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.24	2.02	1.58	1.06	0.75	-0.06
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.45	0.37	0.76	-0.84	4.24	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A6-05	—●—		SP	#200 - 1.22 #230 - 1.20	0.43	9.56	1.58	1.45	-0.84	4.24	0.76	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-10-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	576,525		
												Northing (Y, ft):	2,105,088		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-06

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>587,851</b>	Northing (ft): <b>2,086,826</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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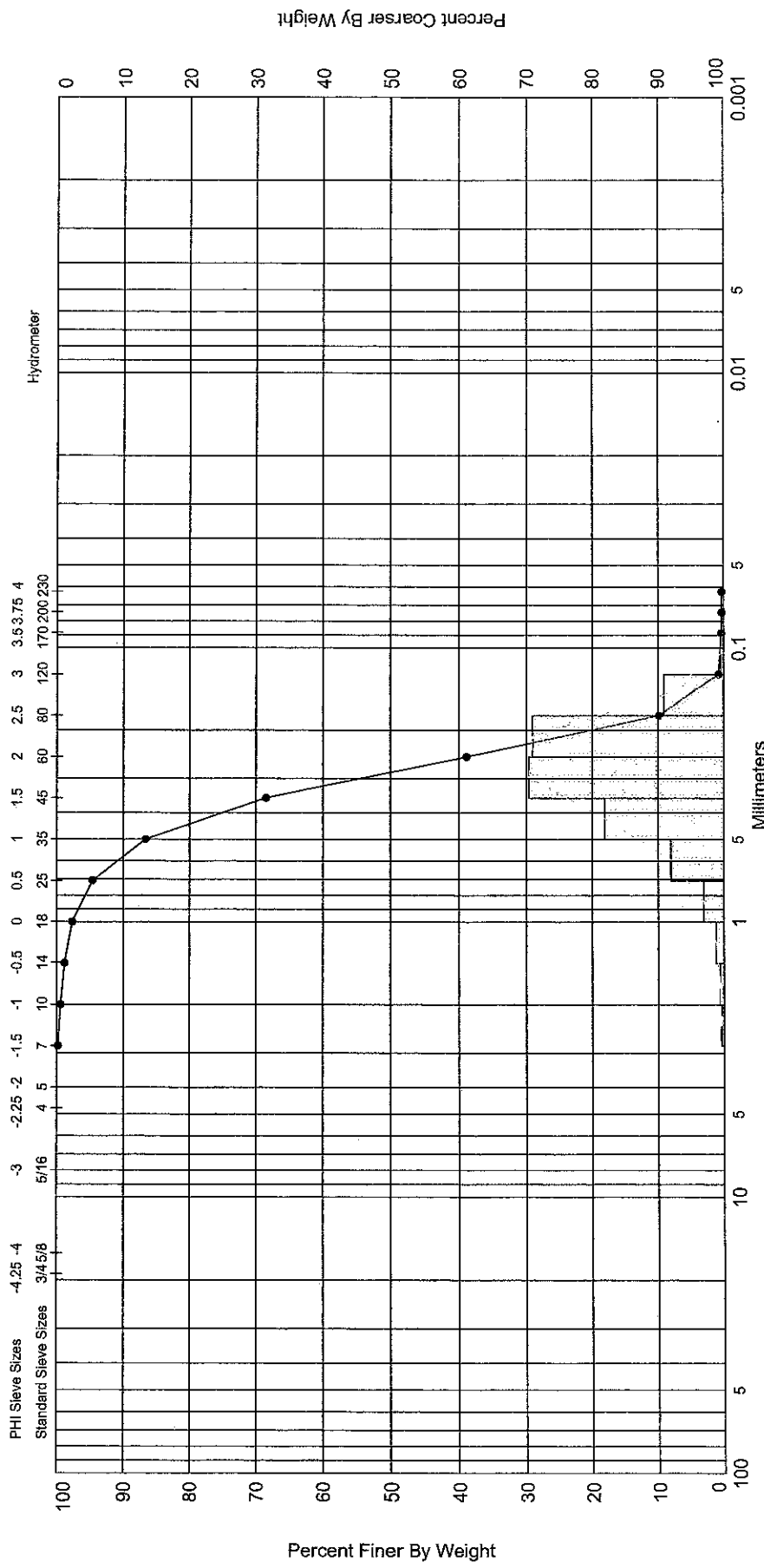
Dry Weight (g): <b>24.11</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.23</b>	Fines (%): #200 - 0.28 #230 - 0.27	Organics (%): <b>0.67</b>	Carbonates (%): <b>13.13</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.05	0.19	0.05	0.19
10	-1.00	2.00	0.10	0.39	0.14	0.58
14	-0.50	1.41	0.14	0.58	0.28	1.16
18	0.00	1.00	0.28	1.14	0.55	2.30
25	0.50	0.71	0.73	3.03	1.29	5.33
35	1.00	0.50	1.94	8.06	3.23	13.39
45	1.50	0.35	4.37	18.11	7.60	31.50
60	2.00	0.25	7.14	29.63	14.74	61.13
80	2.50	0.18	7.00	29.02	21.73	90.15
120	3.00	0.13	2.20	9.11	23.93	99.26
170	3.50	0.09	0.10	0.41	24.03	99.67
200	3.75	0.07	0.01	0.05	24.04	99.72
230	4.00	0.06	0.00	0.01	24.04	99.73

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.77	2.39	2.24	1.81	1.32	1.07	0.45
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.72	0.30	0.7	-0.9	4.53	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE2-A6-06	—●—		SP	#200 - 0.28 #230 - 0.21	0.67	13.13	1.81	1.72	-0.9	4.53	0.7	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	07-24-06	Analyzed By:	SEA Inc.	Easting (X, ft):	587,851	Northing (Y, ft):	2,086,826	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Depths and elevations based on measured values																									

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-07

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>576,010</b>	Northing (ft): <b>2,100,804</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.06 #230 - 0.04	Organics (%):	Carbonates (%):	Shells (%):
20.99		0.01	1.44		0.61	10.73	

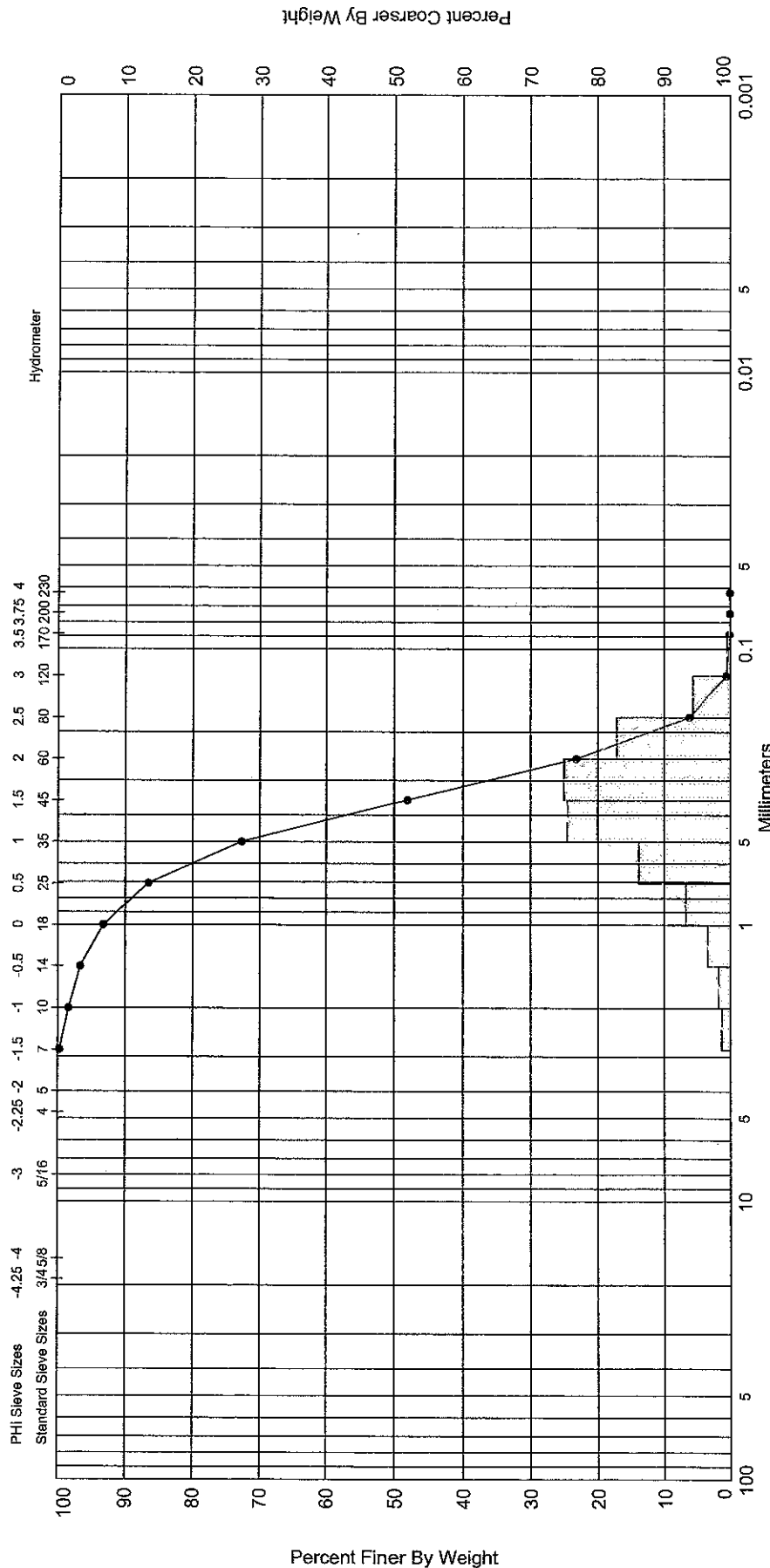
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.06	0.27	0.06	0.27
10	-1.00	2.00	0.28	1.33	0.34	1.60
14	-0.50	1.41	0.36	1.73	0.70	3.33
18	0.00	1.00	0.71	3.37	1.41	6.70
25	0.50	0.71	1.42	6.75	2.82	13.45
35	1.00	0.50	2.91	13.84	5.73	27.29
45	1.50	0.35	5.15	24.52	10.88	51.81
60	2.00	0.25	5.25	24.98	16.12	76.79
80	2.50	0.18	3.59	17.10	19.71	93.89
120	3.00	0.13	1.16	5.52	20.87	99.41
170	3.50	0.09	0.09	0.45	20.97	99.86
200	3.75	0.07	0.02	0.08	20.98	99.94
230	4.00	0.06	0.00	0.02	20.99	99.96

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.60	2.21	1.96	1.46	0.92	0.59	-0.25
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.38	0.38	0.83	-0.65	3.61	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 0.075	#230 - 0.0425	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE2-A6-07	●		SP		0.61	10.73	1.46	1.38	-0.65	3.61	0.83			Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	07-24-06	Analyzed By:	SEA Inc.	Easting (X, ft):	576,010	Northing (Y, ft):	2,100,804	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:																											
Depths and elevations based on measured values																											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																											

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-08

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>585,204</b>	Northing (ft): <b>2,092,195</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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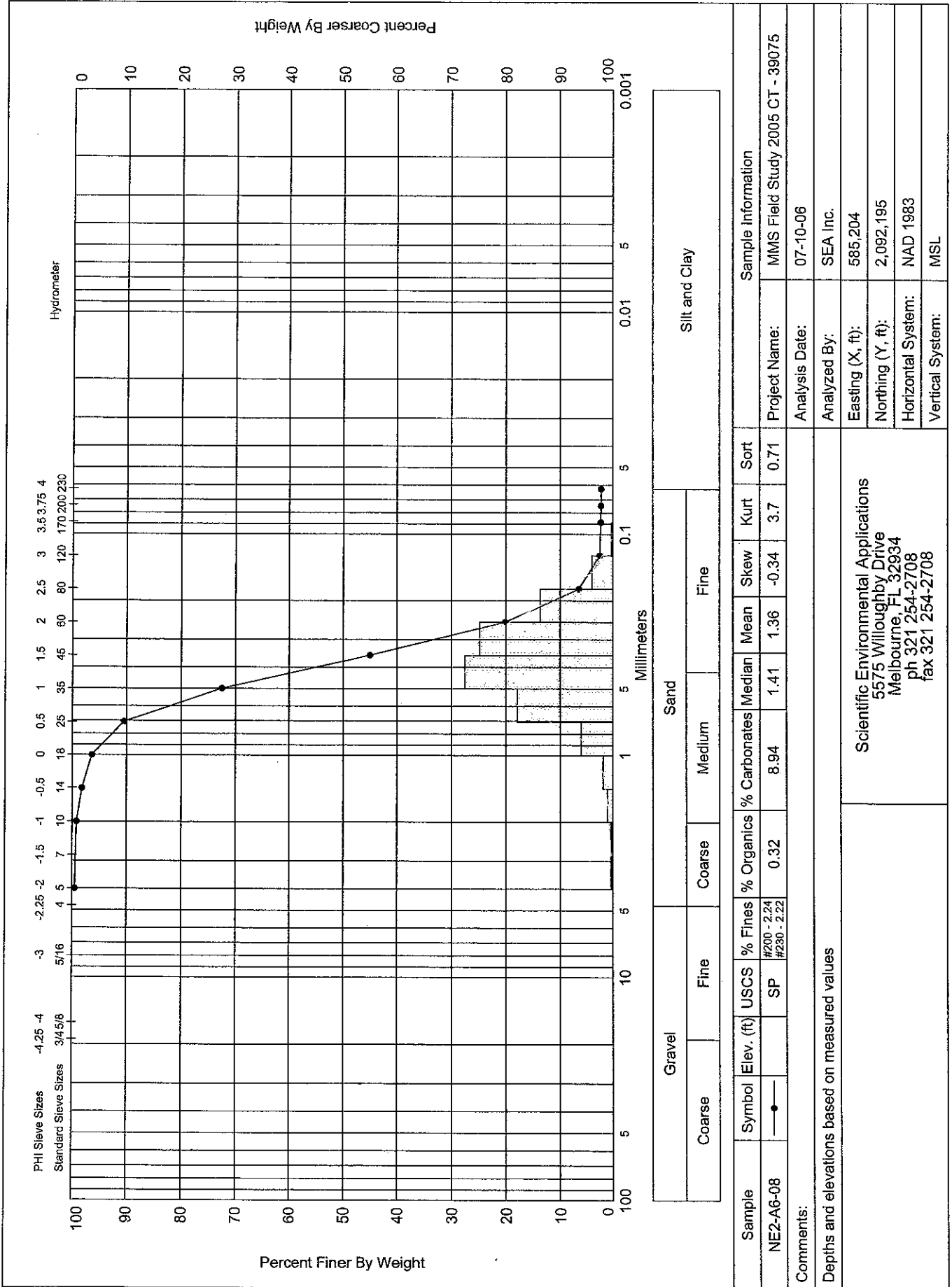
Dry Weight (g): <b>25.02</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 2.24 #230 - 2.22	Organics (%): <b>0.32</b>	Carbonates (%): <b>8.94</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.12	0.49	0.12	0.49
10	-1.00	2.00	0.08	0.31	0.20	0.80
14	-0.50	1.41	0.25	0.98	0.44	1.78
18	0.00	1.00	0.46	1.85	0.91	3.63
25	0.50	0.71	1.49	5.94	2.39	9.57
35	1.00	0.50	4.48	17.90	6.87	27.47
45	1.50	0.35	6.89	27.55	13.76	55.02
60	2.00	0.25	6.21	24.82	19.97	79.84
80	2.50	0.18	3.44	13.76	23.42	93.60
120	3.00	0.13	0.98	3.92	24.40	97.52
170	3.50	0.09	0.05	0.19	24.45	97.71
200	3.75	0.07	0.01	0.05	24.46	97.76
230	4.00	0.06	0.01	0.02	24.46	97.78

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.68	2.15	1.90	1.41	0.93	0.68	0.12
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.36	0.39	0.71	-0.34	3.7	

GRANULOMETRIC REPORT - MMS - EAST SPRING 2006.GPJ - FL DEP ROSS.GDT - 5/13/08



Comments:

Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Sample Information

Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-10-06
Analyzed By:	SEA Inc.
Easting (X, ft):	585,204
Northing (Y, ft):	2,092,195
Horizontal System:	NAD 1983
Vertical System:	MSL

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-09

Analysis Date: 06-28-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>587,621</b>	Northing (ft): <b>2,093,797</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>27.08</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.08</b>	Fines (%): #200 - <b>0.42</b> #230 - <b>0.39</b>	Organics (%): <b>0.63</b>	Carbonates (%): <b>10.97</b>	Shells (%):
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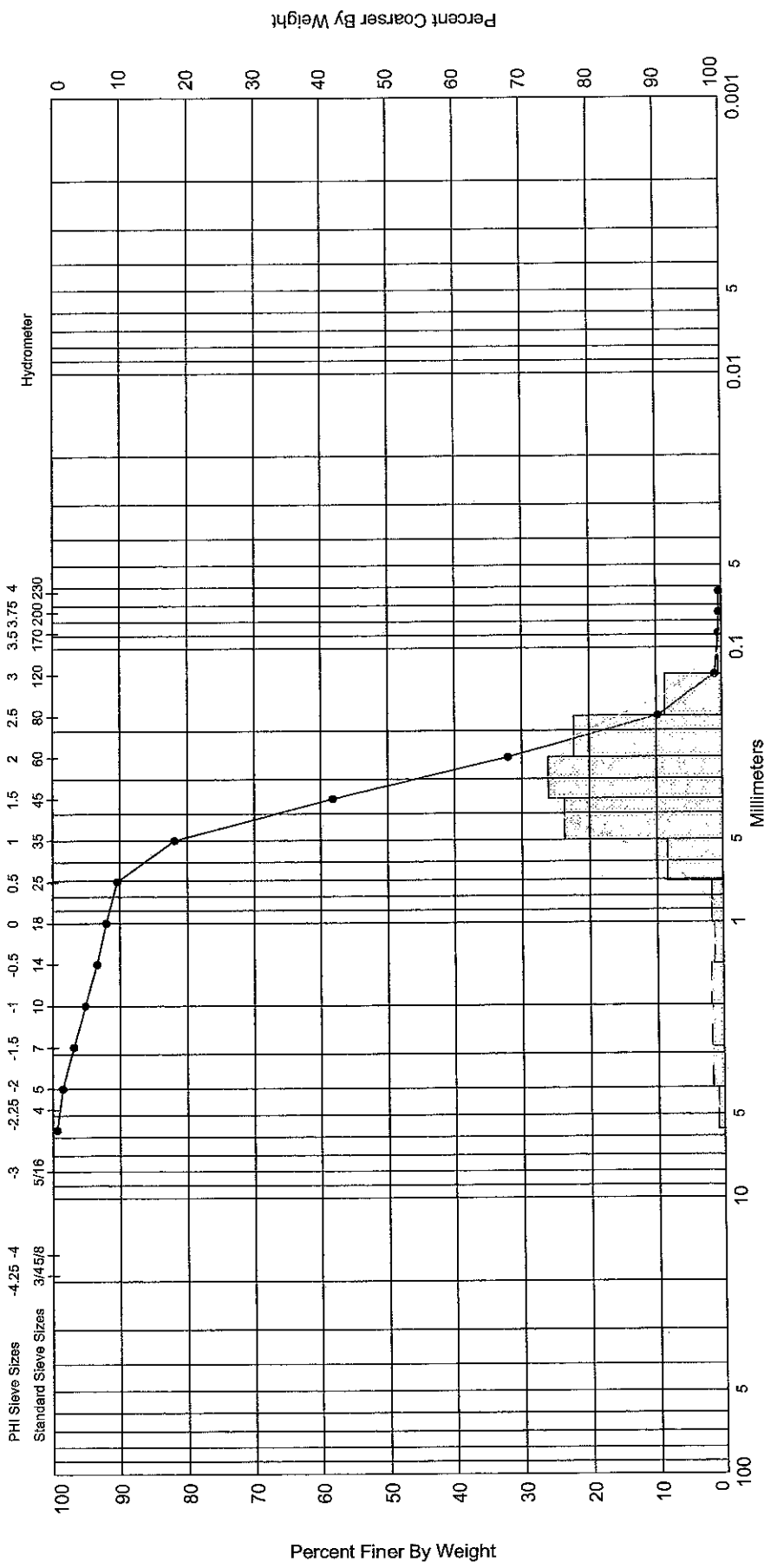
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.16	0.61	0.16	0.61
5	-2.00	4.00	0.23	0.85	0.40	1.46
7	-1.50	2.83	0.45	1.65	0.84	3.11
10	-1.00	2.00	0.46	1.69	1.30	4.80
14	-0.50	1.41	0.49	1.79	1.79	6.59
18	0.00	1.00	0.37	1.37	2.16	7.96
25	0.50	0.71	0.45	1.65	2.60	9.61
35	1.00	0.50	2.30	8.48	4.90	18.09
45	1.50	0.35	6.42	23.72	11.32	41.81
60	2.00	0.25	7.08	26.13	18.40	67.94
80	2.50	0.18	6.03	22.28	24.43	90.22
120	3.00	0.13	2.37	8.73	26.80	98.95
170	3.50	0.09	0.16	0.57	26.95	99.52
200	3.75	0.07	0.02	0.06	26.97	99.58
230	4.00	0.06	0.01	0.03	26.98	99.61

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.77	2.36	2.16	1.66	1.15	0.88	-0.94

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.49	0.36	0.97	-1.5	6.09

GRANULARMETRIC REPORT: MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A6-09	●		SP	#200 - 0.42 #230 - 0.39	0.63	10.97	1.66	1.49	-1.5	6.09	0.97	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	06-28-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	587,621			
												Northing (Y, ft):	2,093,797			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-10

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>579,273</b>	Northing (ft): <b>2,098,863</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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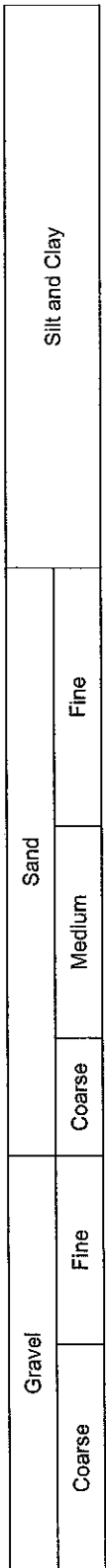
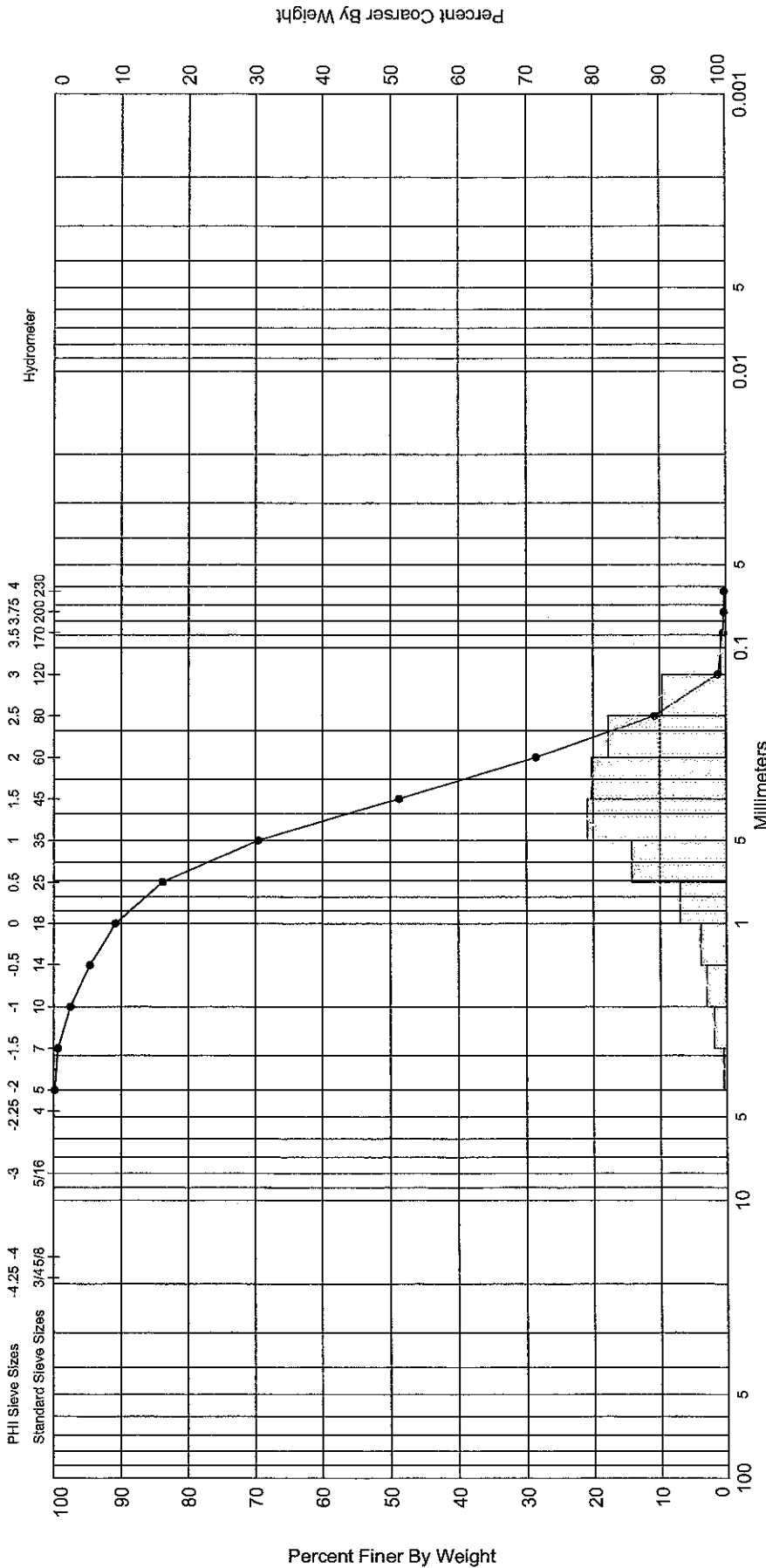
Dry Weight (g): <b>22.18</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.08</b>	Fines (%): #200 - 0.30 #230 - 0.27	Organics (%): <b>0.95</b>	Carbonates (%): <b>16.08</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.04	0.16	0.04	0.16
7	-1.50	2.83	0.10	0.46	0.14	0.62
10	-1.00	2.00	0.41	1.84	0.55	2.46
14	-0.50	1.41	0.64	2.89	1.19	5.35
18	0.00	1.00	0.85	3.81	2.03	9.16
25	0.50	0.71	1.55	7.00	3.59	16.16
35	1.00	0.50	3.16	14.25	6.75	30.41
45	1.50	0.35	4.62	20.84	11.37	51.25
60	2.00	0.25	4.49	20.22	15.86	71.47
80	2.50	0.18	3.93	17.71	19.79	89.18
120	3.00	0.13	2.14	9.63	21.92	98.81
170	3.50	0.09	0.18	0.80	22.10	99.61
200	3.75	0.07	0.02	0.09	22.12	99.70
230	4.00	0.06	0.01	0.03	22.13	99.73

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.80	2.35	2.10	1.47	0.81	0.49	-0.56
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.37	0.39	0.97	-0.65	3.31	

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information		Sample Information	
Sample	NE2-A6-10	Project Name:	MMS Field Study 2005 CT - 39075
Symbol	●	Analysis Date:	07-24-06
Elev. (ft)		Analyzed By:	SEA Inc.
USCS	SP	Easting (X, ft):	579,273
% Fines	#200 - 0.30	Northing (Y, ft):	2,098,863
% Fines	#230 - 0.27	Horizontal System:	NAD 1983
% Organics	0.95	Vertical System:	MSL
% Carbonates	16.08		
Mean	1.37		
Median	1.47		
Skew	-0.65		
Kurt	3.31		
Sort	0.97		

Comments:  
Depths and elevations based on measured values

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-11

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>581,938</b>	Northing (ft): <b>2,087,802</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SM</b>	Munsell:	Comments:
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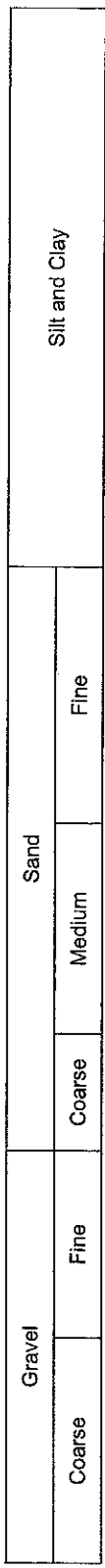
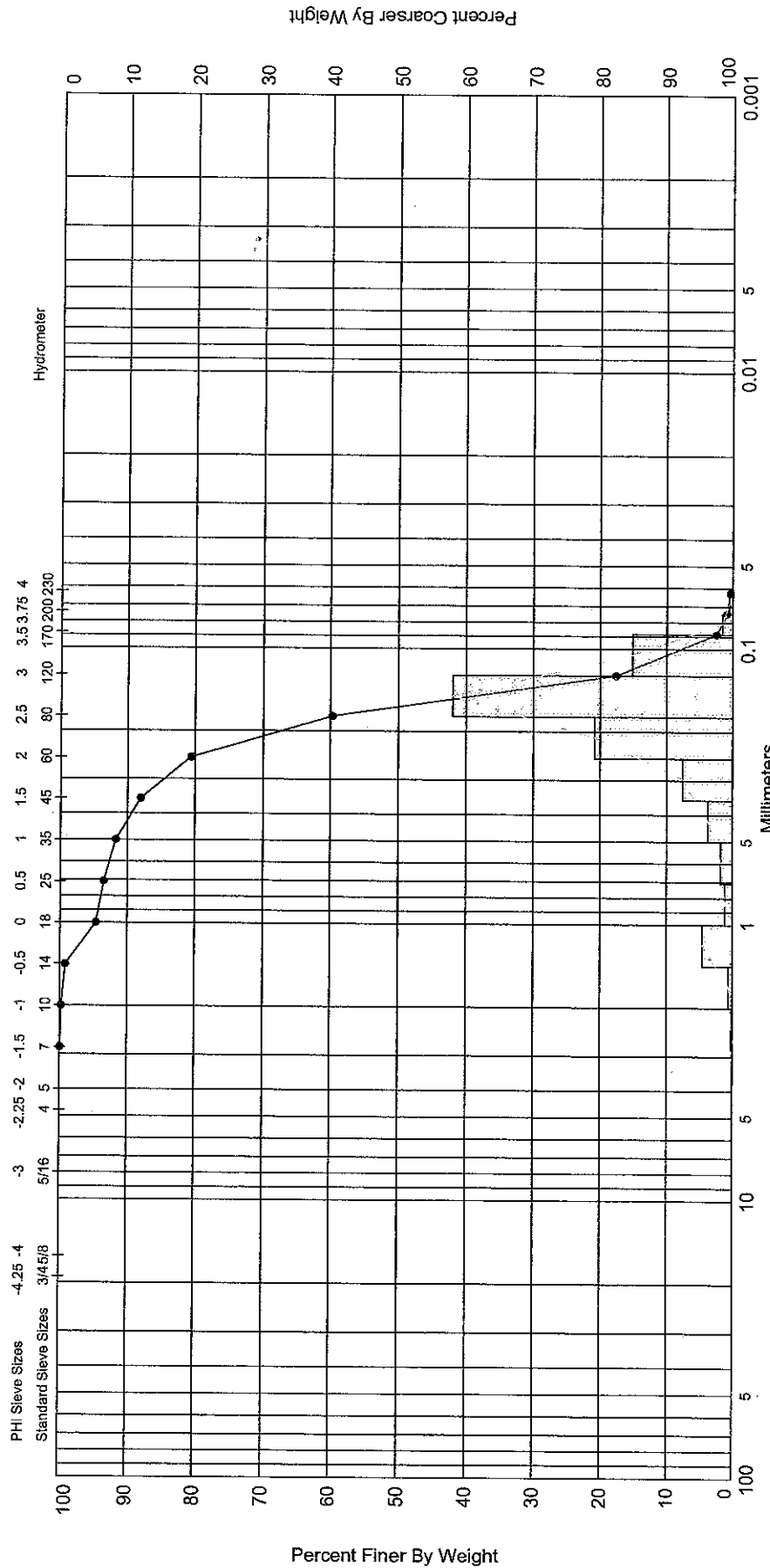
Dry Weight (g): <b>25.20</b>	Wash Weight (g):	Pan Retained (g): <b>0.09</b>	Sieve Loss (%): <b>-0.28</b>	Fines (%): #200 - <b>0.87</b> #230 - <b>0.37</b>	Organics (%): <b>1.21</b>	Carbonates (%): <b>9.80</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
7	-1.50	2.83	0.02	0.06	0.02	0.06	
10	-1.00	2.00	0.04	0.16	0.06	0.22	
14	-0.50	1.41	0.14	0.57	0.20	0.79	
18	0.00	1.00	1.15	4.55	1.35	5.34	
25	0.50	0.71	0.29	1.15	1.64	6.49	
35	1.00	0.50	0.45	1.78	2.08	8.27	
45	1.50	0.35	0.93	3.70	3.02	11.97	
60	2.00	0.25	1.90	7.52	4.91	19.49	
80	2.50	0.18	5.25	20.84	10.16	40.33	
120	3.00	0.13	10.59	42.04	20.76	82.37	
170	3.50	0.09	3.82	15.14	24.57	97.51	
200	3.75	0.07	0.41	1.62	24.98	99.13	
230	4.00	0.06	0.13	0.50	25.11	99.63	

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<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
3.42	3.05	2.91	2.62	2.13	1.77	-0.04
<b>Moment</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
<b>Statistics</b>	2.38	0.19	0.89	-1.69	5.88	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
NE2-A6-11	●	—	SM	#200 - 0.87 #230 - 0.37	1.21	9.80	2.62	2.38	-1.69	5.88	0.89	Project Name: MMS Field Study 2005 CT - 39075 Analysis Date: 07-24-06 Analyzed By: SEA Inc. Easting (X, ft): 581,938 Northing (Y, ft): 2,087,802 Horizontal System: NAD 1983 Vertical System: MSL
Comments: Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-12

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>573,855</b>	Northing (ft): <b>2,114,798</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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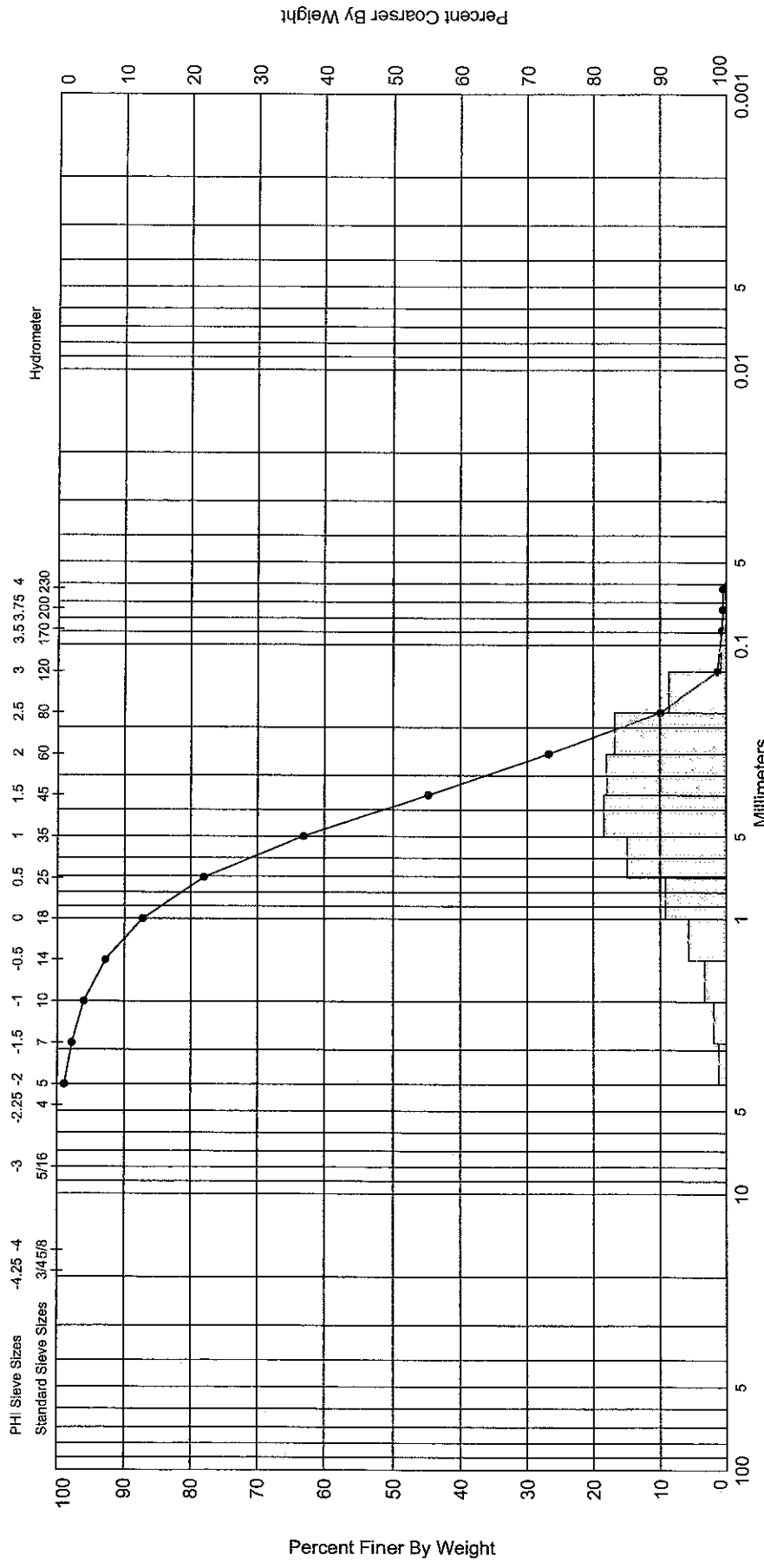
Dry Weight (g): <b>22.67</b>	Wash Weight (g):	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>-0.21</b>	Fines (%): #200 - <b>0.47</b> #230 - <b>0.44</b>	Organics (%): <b>0.63</b>	Carbonates (%): <b>10.25</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.24	1.04	0.23	1.04
7	-1.50	2.83	0.26	1.12	0.49	2.16
10	-1.00	2.00	0.41	1.81	0.90	3.97
14	-0.50	1.41	0.72	3.18	1.62	7.15
18	0.00	1.00	1.27	5.62	2.90	12.77
25	0.50	0.71	2.09	9.20	4.98	21.97
35	1.00	0.50	3.39	14.93	8.37	36.90
45	1.50	0.35	4.16	18.36	12.53	55.26
60	2.00	0.25	4.08	17.99	16.61	73.25
80	2.50	0.18	3.81	16.82	20.42	90.07
120	3.00	0.13	1.96	8.63	22.38	98.70
170	3.50	0.09	0.17	0.74	22.54	99.44
200	3.75	0.07	0.02	0.09	22.56	99.53
230	4.00	0.06	0.01	0.03	22.57	99.56

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.79	2.32	2.05	1.36	0.60	0.18	-0.84
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.23	0.43	1.02	-0.47	2.97	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	#200	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A6-12	—●—		SP	0.47	0.44	0.63	10.25	1.36	1.23	-0.47	2.97	1.02	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:													Analysis Date:	07-24-06			
Depths and elevations based on measured values													Analyzed By:	SEA Inc.			
													Easting (X, ft):	573,855			
													Northing (Y, ft):	2,114,798			
													Horizontal System:	NAD 1983			
													Vertical System:	MSL			
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A6-13

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

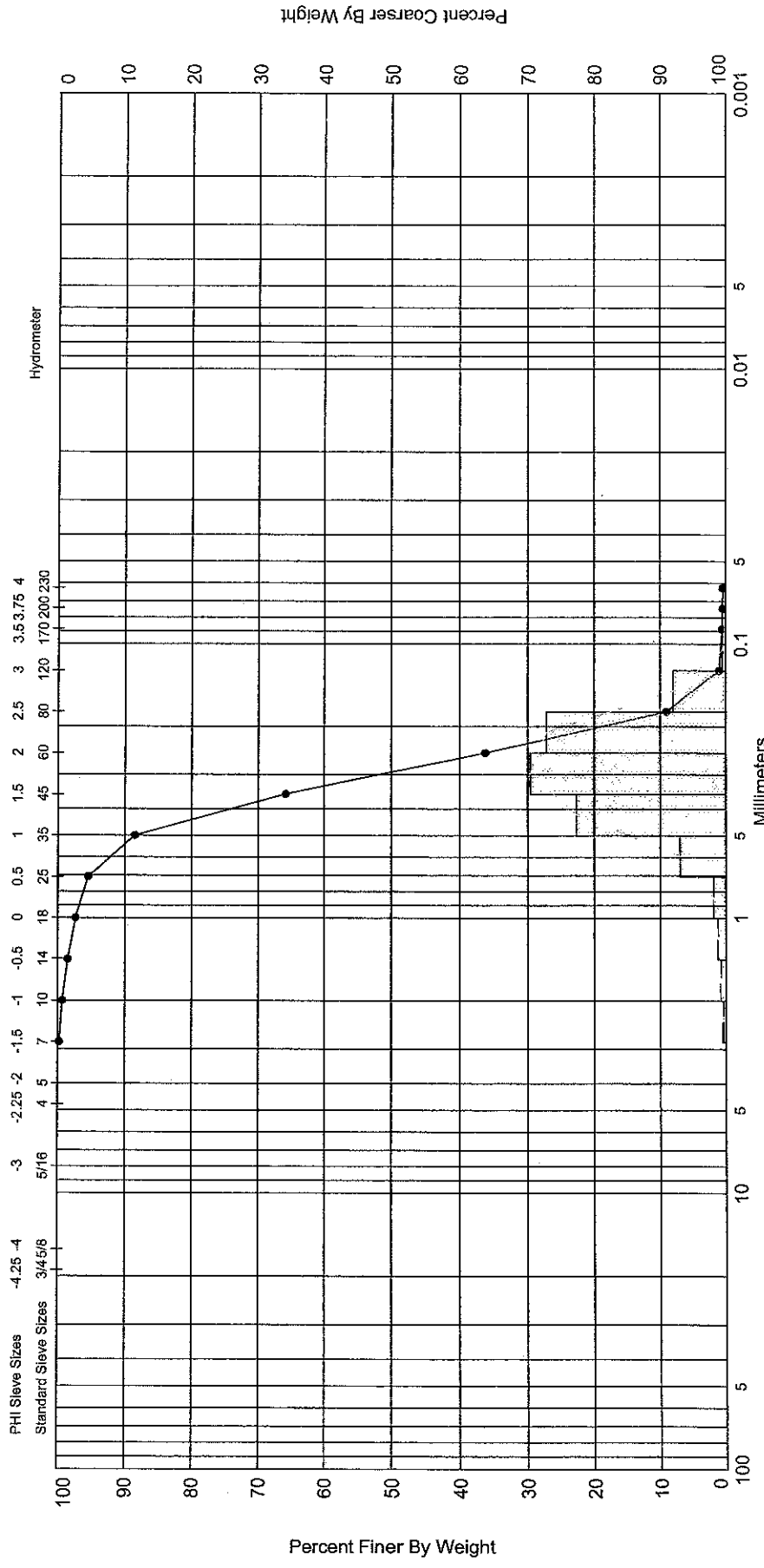
Easting (ft): <b>590,514</b>	Northing (ft): <b>2,096,277</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.49 #230 - 0.46	Organics (%):	Carbonates (%):	Shells (%):
22.10		0.00	-0.10		0.72	12.17	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.05	0.23	0.05	0.23	
10	-1.00	2.00	0.10	0.44	0.15	0.67	
14	-0.50	1.41	0.18	0.80	0.32	1.47	
18	0.00	1.00	0.26	1.18	0.58	2.65	
25	0.50	0.71	0.42	1.88	1.00	4.53	
35	1.00	0.50	1.54	6.95	2.53	11.48	
45	1.50	0.35	5.01	22.65	7.54	34.13	
60	2.00	0.25	6.55	29.63	14.09	63.76	
80	2.50	0.18	6.01	27.18	20.10	90.94	
120	3.00	0.13	1.78	8.04	21.87	98.98	
170	3.50	0.09	0.10	0.47	21.97	99.45	
200	3.75	0.07	0.01	0.06	21.99	99.51	
230	4.00	0.06	0.01	0.03	21.99	99.54	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.75	2.37	2.21	1.77	1.30	1.10	0.53
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.7	0.31	0.68	-0.92	5.07	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Median		Mean		Skew		Kurt		Sort		Sample Information	
NE2-A6-13	SP			#200 - 0.49	#230 - 0.48	0.72	12.17	1.77	1.7	-0.92	5.07	0.68											
Comments:																							
Depths and elevations based on measured values																							
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																							
Analyzed By: SEA Inc.																							
Easting (X, ft): 590,514																							
Northing (Y, ft): 2,096,277																							
Horizontal System: NAD 1983																							
Vertical System: MSL																							
Analysis Date: 07-24-06																							
Project Name: MMS Field Study 2005 CT - 39075																							

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-01

Analysis Date: 07-19-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>685,627</b>	Northing (ft): <b>1,893,557</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>20.87</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.17</b>	Fines (%): #200 - 0.17 #230 - 0.17	Organics (%): <b>0.86</b>	Carbonates (%): <b>21.94</b>	Shells (%):
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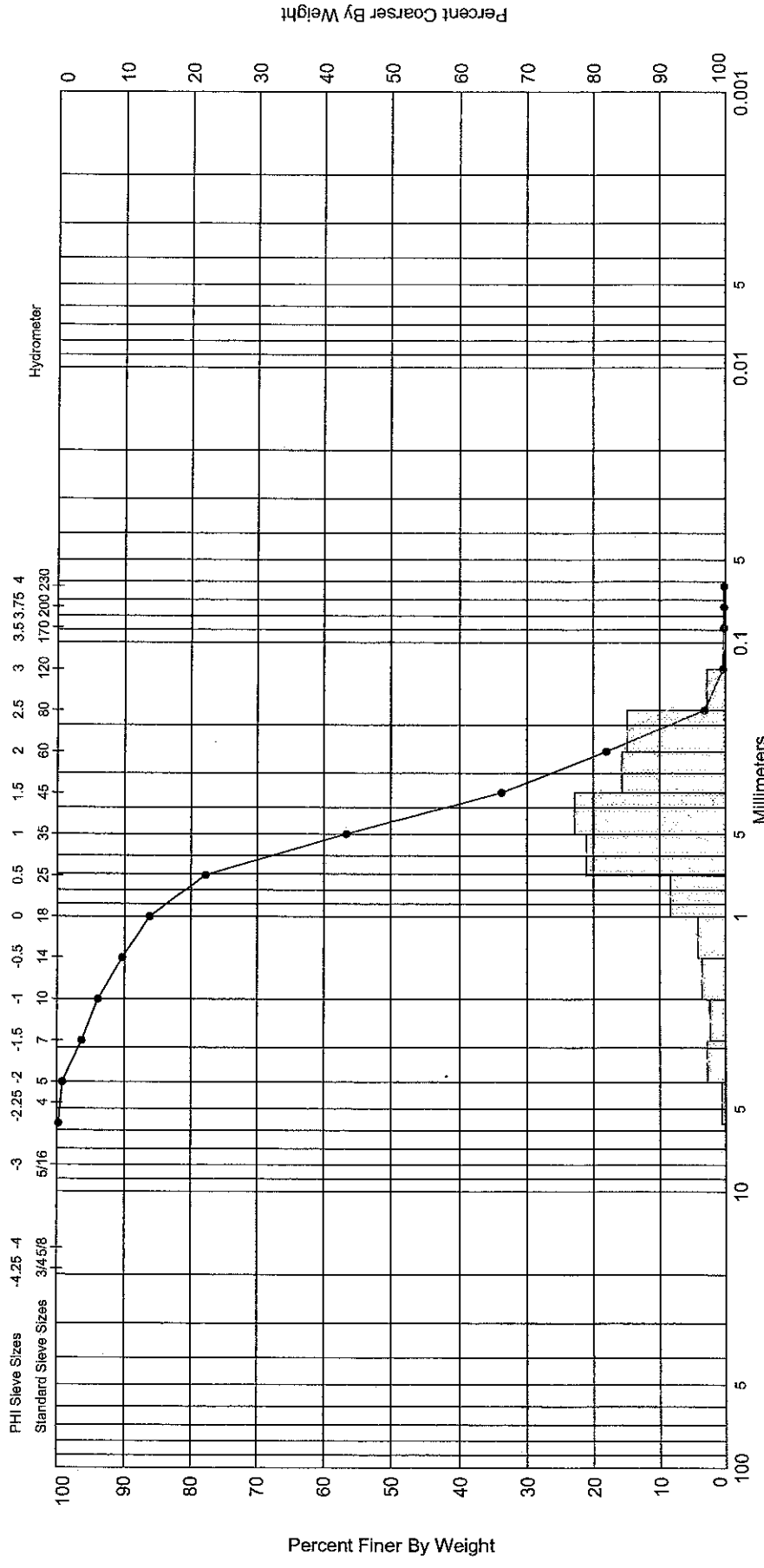
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.05	0.24	0.05	0.24
5	-2.00	4.00	0.12	0.58	0.17	0.82
7	-1.50	2.83	0.59	2.80	0.76	3.62
10	-1.00	2.00	0.50	2.41	1.26	6.03
14	-0.50	1.41	0.76	3.63	2.02	9.66
18	0.00	1.00	0.86	4.14	2.88	13.80
25	0.50	0.71	1.76	8.42	4.64	22.22
35	1.00	0.50	4.41	21.11	9.05	43.33
45	1.50	0.35	4.77	22.87	13.82	66.20
60	2.00	0.25	3.28	15.73	17.10	81.93
80	2.50	0.18	3.11	14.91	20.21	96.84
120	3.00	0.13	0.59	2.81	20.80	99.65
170	3.50	0.09	0.03	0.16	20.83	99.81
200	3.75	0.07	0.00	0.02	20.84	99.83
230	4.00	0.06	0.00	0.00	20.84	99.83

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.44	2.07	1.78	1.15	0.57	0.13	-1.21

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.02	0.49	1.03	-0.83	3.68

GRANULARMETRIC REPORT MMS - EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A8-01	●		SP	#200: 0.17 #230: 0.17	0.86	21.94	1.15	1.02	-0.83	3.68	1.03	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-19-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	685,627		
												Northing (Y, ft):	1,893,557		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-02

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>674,181</b>	Northing (ft): <b>1,901,743</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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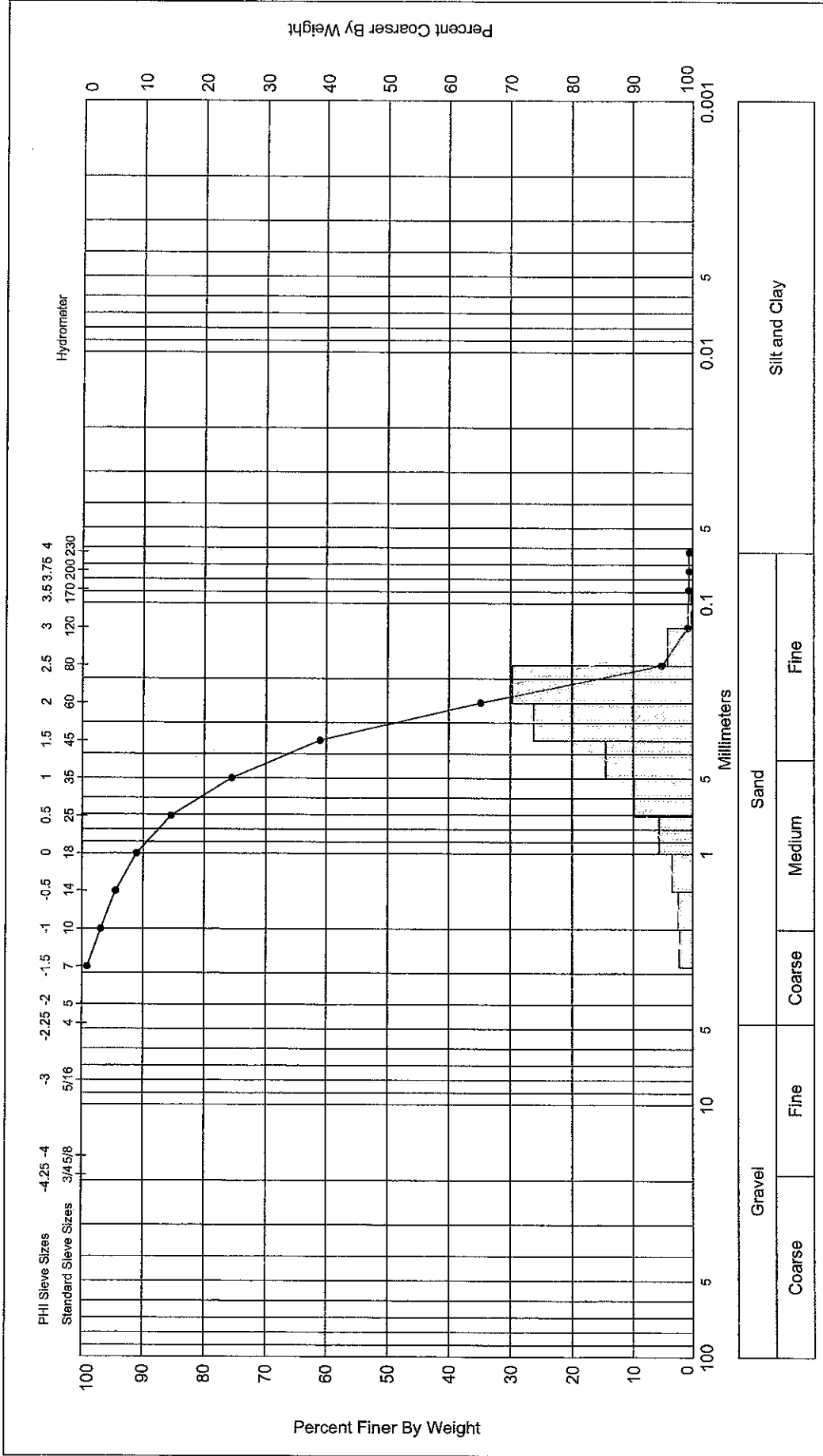
Dry Weight (g): <b>20.48</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.33</b>	Fines (%): #200 - 0.62 #230 - 0.61	Organics (%): <b>0.84</b>	Carbonates (%): <b>23.98</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.18	0.87	0.18	0.87
10	-1.00	2.00	0.46	2.24	0.64	3.11
14	-0.50	1.41	0.49	2.40	1.13	5.51
18	0.00	1.00	0.71	3.45	1.84	8.96
25	0.50	0.71	1.15	5.64	2.99	14.60
35	1.00	0.50	2.02	9.87	5.01	24.47
45	1.50	0.35	2.97	14.48	7.97	38.95
60	2.00	0.25	5.37	26.22	13.34	65.17
80	2.50	0.18	6.07	29.66	19.42	94.83
120	3.00	0.13	0.88	4.30	20.30	99.13
170	3.50	0.09	0.04	0.21	20.34	99.34
200	3.75	0.07	0.01	0.04	20.35	99.38
230	4.00	0.06	0.00	0.01	20.35	99.39

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.32	2.17	1.71	1.02	0.57	-0.61
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.46	0.36	0.9	-1.03	3.79	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample		Symbol		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Median		Mean		Skew		Kurt		Sort		Sample Information	
NE2-A8-02		●		—		SP		#200 - 0.62 #230 - 0.61		0.84		23.98		1.71		1.46		-1.03		3.79		0.9		MMS Field Study 2005 CT - 39075	
Comments:																									
Depths and elevations based on measured values																									
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																									
Analyzed By: SEA Inc. Easting (X, ft): 674,181 Northing (Y, ft): 1,901,743 Horizontal System: NAD 1983 Vertical System: MSL																									
Analysis Date: 07-10-06 Project Name: MMS Field Study 2005 CT - 39075																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-03

Analysis Date: 06-28-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>677,053</b>	Northing (ft): <b>1,893,672</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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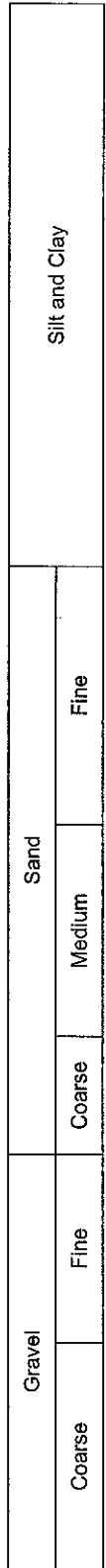
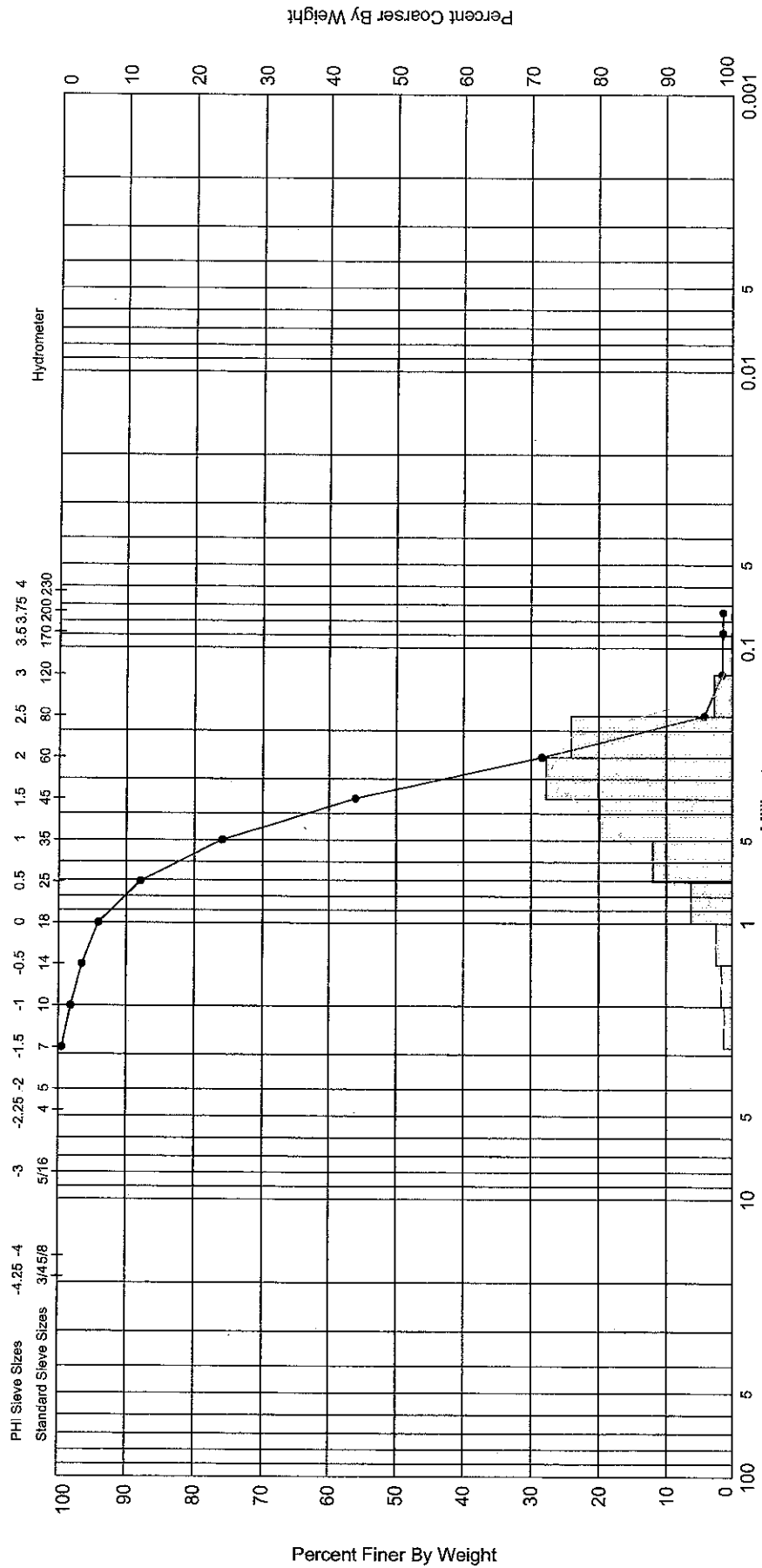
Dry Weight (g): <b>22.77</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.10</b>	Fines (%): #200 - <b>1.43</b> #230 - <b>0.66</b>	Organics (%): <b>0.53</b>	Carbonates (%): <b>11.51</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.12	0.53	0.12	0.53
10	-1.00	2.00	0.29	1.29	0.41	1.82
14	-0.50	1.41	0.38	1.65	0.79	3.47
18	0.00	1.00	0.56	2.45	1.35	5.92
25	0.50	0.71	1.41	6.20	2.76	12.12
35	1.00	0.50	2.73	11.97	5.49	24.09
45	1.50	0.35	4.51	19.82	10.00	43.91
60	2.00	0.25	6.32	27.75	16.32	71.66
80	2.50	0.18	5.49	24.09	21.80	95.75
120	3.00	0.13	0.61	2.69	22.42	98.44
170	3.50	0.09	0.02	0.11	22.44	98.55
200	3.75	0.07	0.01	0.02	22.45	98.57

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.48	2.26	2.07	1.61	1.02	0.66	-0.19
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.44	0.37	0.8	-0.94	3.97	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample	Symbol	Elev. (ft)	USCS	% Fines #200 - 143 #230 - 0.86	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A8-03	—●—		SP	0.53	11.51	1.61	1.44	-0.94	3.97	0.8		Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	06-28-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	677,053		
												Northing (Y, ft):	1,893,672		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-04

Analysis Date: 06-28-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

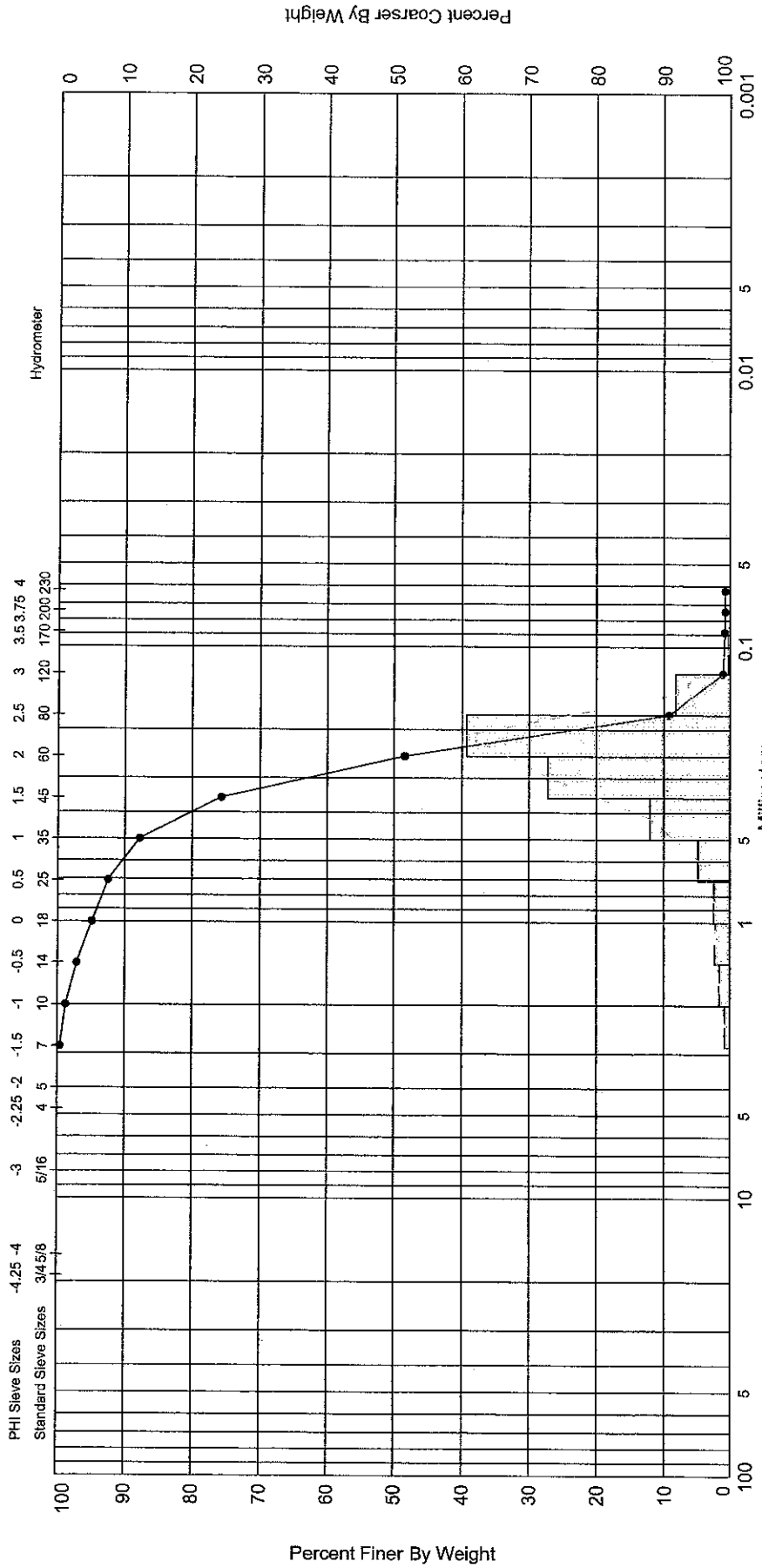
Easting (ft): <b>681,518</b>	Northing (ft): <b>1,896,911</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.73 #230 - 0.71	Organics (%):	Carbonates (%):	Shells (%):
25.15		0.00	0.03		0.69	14.79	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.09	0.37	0.09	0.37	
10	-1.00	2.00	0.21	0.82	0.30	1.19	
14	-0.50	1.41	0.41	1.61	0.71	2.80	
18	0.00	1.00	0.57	2.27	1.28	5.07	
25	0.50	0.71	0.60	2.39	1.88	7.46	
35	1.00	0.50	1.20	4.77	3.08	12.23	
45	1.50	0.35	3.04	12.08	6.12	24.31	
60	2.00	0.25	6.83	27.17	12.95	51.48	
80	2.50	0.18	9.88	39.28	22.83	90.76	
120	3.00	0.13	2.07	8.22	24.90	98.98	
170	3.50	0.09	0.06	0.25	24.96	99.23	
200	3.75	0.07	0.01	0.04	24.97	99.27	
230	4.00	0.06	0.00	0.02	24.98	99.29	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.76	2.41	2.30	1.97	1.51	1.16	-0.02
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.77	0.29	0.77	-1.52	5.82	

GRANULOMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay						
Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort				
					-1.52	5.82	0.77				
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE2-A8-04	●		SP	#200 - 0.75 #230 - 0.71	0.69	14.79	1.97	1.77	-1.52	5.82	0.77
Comments:											
Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											
Sample Information				Project Name: MMS Field Study 2005 CT - 39075 Analysis Date: 06-28-06 Analyzed By: SEA Inc. Easting (X, ft): 681,518 Northing (Y, ft): 1,896,911 Horizontal System: NAD 1983 Vertical System: MSL							

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-05

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>679,868</b>	Northing (ft): <b>1,891,086</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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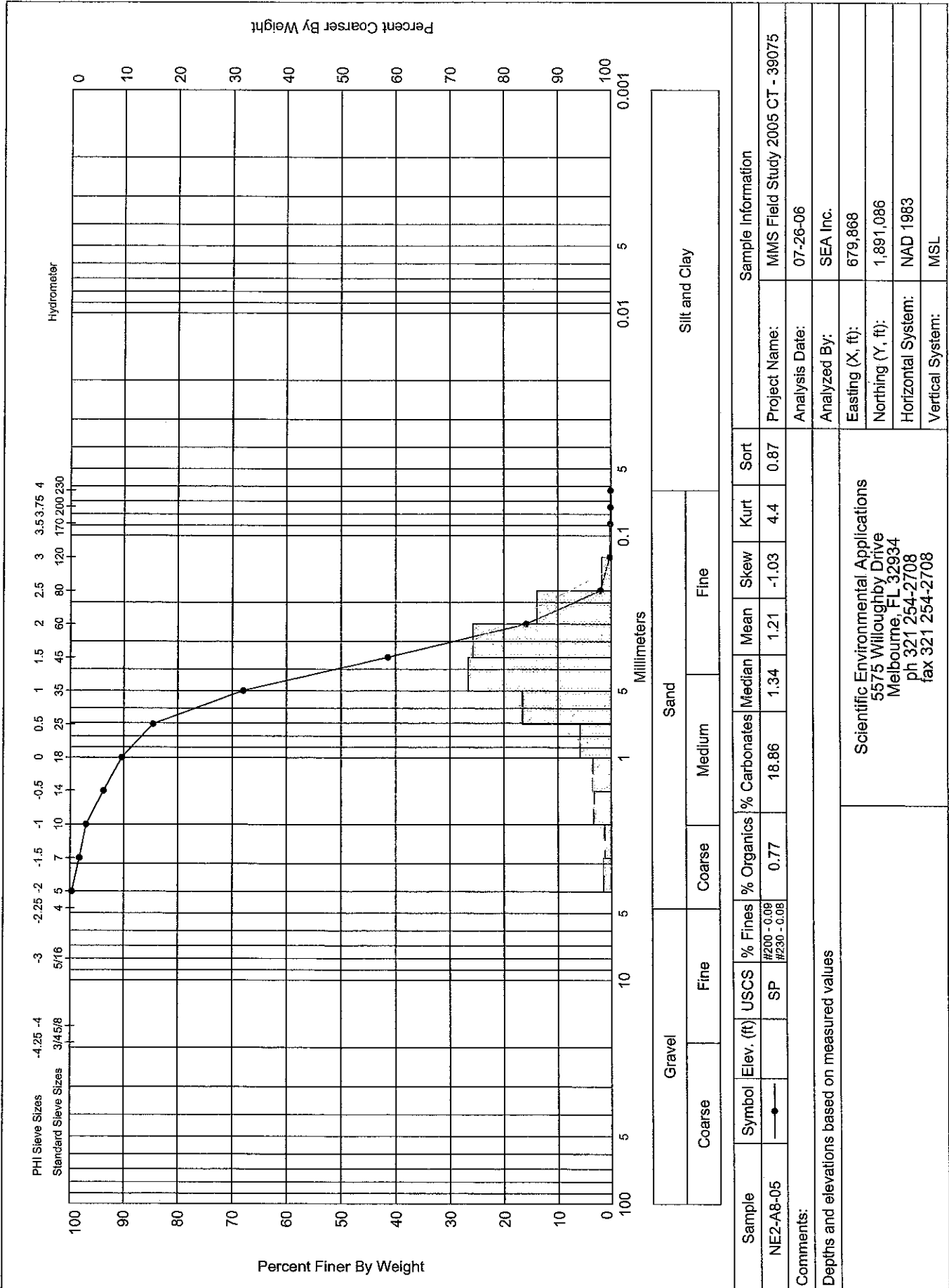
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>20.57</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.47</b>	Fines (%): #200 - <b>0.09</b> #230 - <b>0.08</b>	Organics (%): <b>0.77</b>	Carbonates (%): <b>18.86</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.06	0.31	0.06	0.31
7	-1.50	2.83	0.29	1.40	0.35	1.71
10	-1.00	2.00	0.25	1.23	0.60	2.94
14	-0.50	1.41	0.67	3.25	1.27	6.19
18	0.00	1.00	0.71	3.45	1.98	9.64
25	0.50	0.71	1.19	5.77	3.17	15.41
35	1.00	0.50	3.41	16.55	6.57	31.96
45	1.50	0.35	5.46	26.53	12.03	58.49
60	2.00	0.25	5.29	25.70	17.31	84.19
80	2.50	0.18	2.85	13.87	20.17	98.06
120	3.00	0.13	0.34	1.67	20.51	99.73
170	3.50	0.09	0.03	0.15	20.54	99.88
200	3.75	0.07	0.01	0.03	20.55	99.91
230	4.00	0.06	0.00	0.01	20.55	99.92

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.39	2.00	1.82	1.34	0.79	0.52	-0.68
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.21	0.43	0.87	-1.03	4.4	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A8-05	●		SP	#200 - 0.075 #230 - 0.08	0.77	18.86	1.34	1.21	-1.03	4.4	0.87	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-26-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	679,868		
												Northing (Y, ft):	1,891,086		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-06

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>671,098</b>	Northing (ft): <b>1,901,894</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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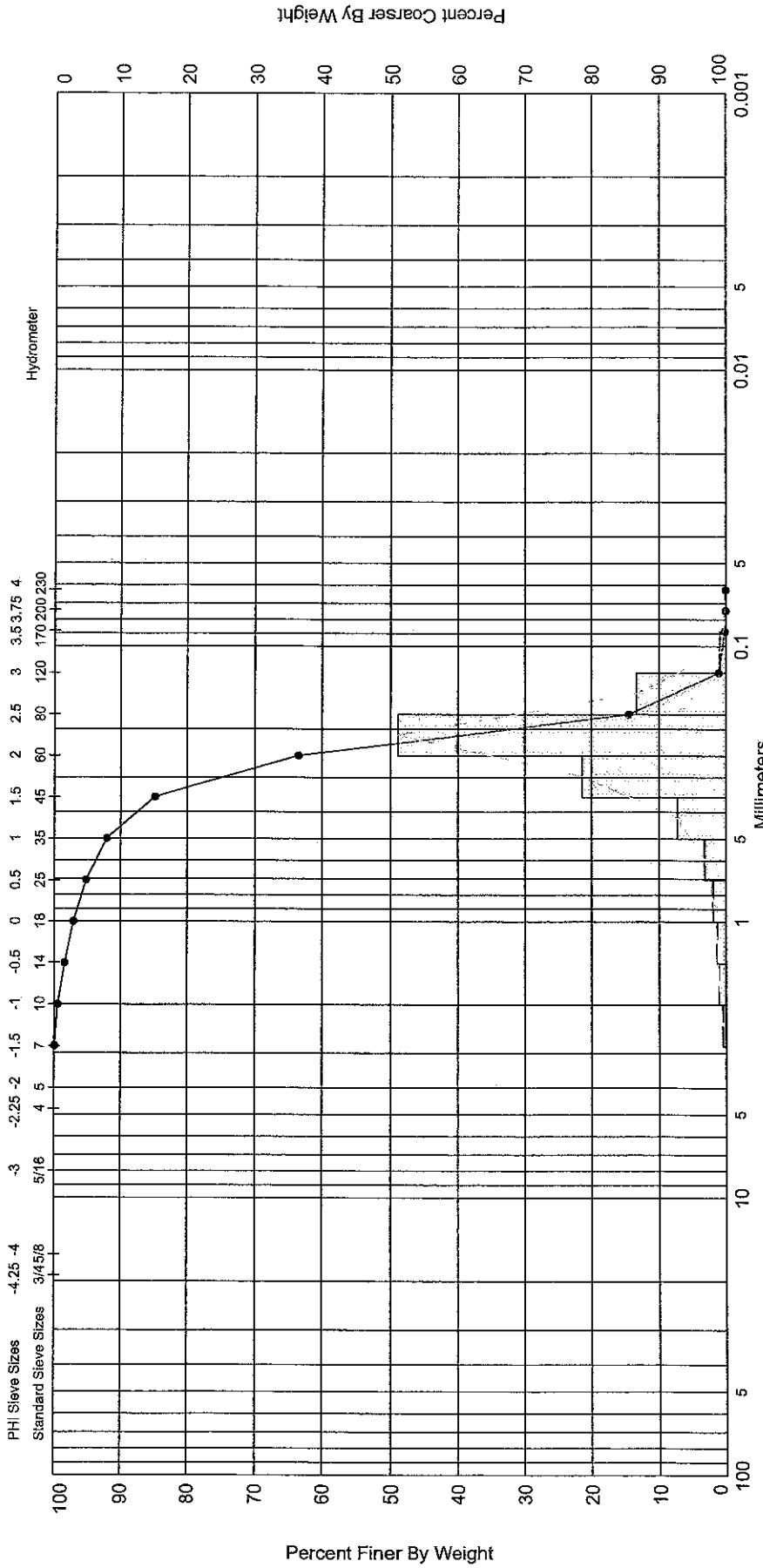
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
20.63		0.00	0.20	#200 - 0.04 #230 - 0.02	0.88	15.13	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.01	0.05	0.01	0.05	
10	-1.00	2.00	0.10	0.47	0.11	0.52	
14	-0.50	1.41	0.21	1.04	0.32	1.56	
18	0.00	1.00	0.27	1.32	0.59	2.88	
25	0.50	0.71	0.39	1.90	0.99	4.78	
35	1.00	0.50	0.65	3.14	1.63	7.92	
45	1.50	0.35	1.50	7.25	3.13	15.17	
60	2.00	0.25	4.41	21.38	7.54	36.55	
80	2.50	0.18	10.11	49.00	17.65	85.55	
120	3.00	0.13	2.76	13.38	20.41	98.93	
170	3.50	0.09	0.19	0.91	20.60	99.84	
200	3.75	0.07	0.03	0.12	20.62	99.96	
230	4.00	0.06	0.00	0.02	20.62	99.98	

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.85	2.48	2.39	2.14	1.73	1.52	0.54
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.98	0.25	0.69	-1.83	7.66	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL\_DEP\_ROSS.GDT 5/13/08





Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine	Clay	Plasticity	Other
0	0	15.13	0	0	0	0	0

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-A8-06	—●—		SP	#200 - 0.04 #230 - 0.02	0.88	15.13	2.14	1.98	-1.83	7.66	0.69	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	07-26-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	671,098			
												Northing (Y, ft):	1,901,894			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-07

Analysis Date: 07-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">686,769</p>	Northing (ft): <p style="text-align: center;">1,897,503</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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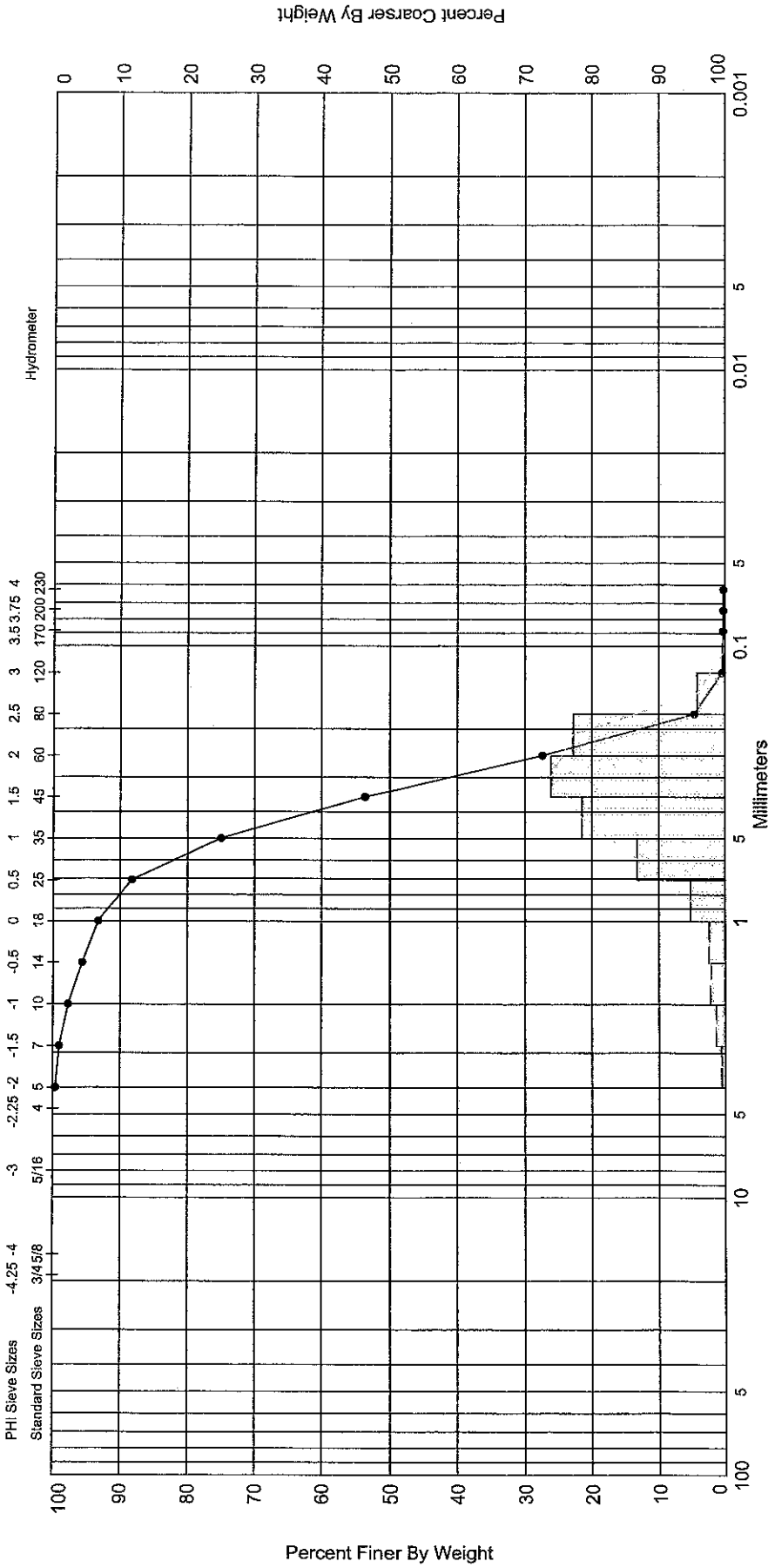
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.23 #230 - 0.22	Organics (%):	Carbonates (%):	Shells (%):
20.20		0.00	0.06		0.66	16.29	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
5	-2.00	4.00	0.07	0.36	0.07	0.36	
7	-1.50	2.83	0.11	0.54	0.18	0.90	
10	-1.00	2.00	0.27	1.34	0.45	2.24	
14	-0.50	1.41	0.43	2.12	0.88	4.36	
18	0.00	1.00	0.47	2.33	1.35	6.69	
25	0.50	0.71	1.03	5.10	2.38	11.79	
35	1.00	0.50	2.67	13.22	5.05	25.01	
45	1.50	0.35	4.34	21.46	9.39	46.47	
60	2.00	0.25	5.27	26.10	14.66	72.57	
80	2.50	0.18	4.62	22.88	19.28	95.45	
120	3.00	0.13	0.83	4.12	20.11	99.57	
170	3.50	0.09	0.03	0.17	20.14	99.74	
200	3.75	0.07	0.01	0.03	20.15	99.77	
230	4.00	0.06	0.00	0.01	20.15	99.78	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.49	2.25	2.05	1.57	1.00	0.66	-0.36
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.42	0.37	0.85	-1.02	4.41	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP. ROSS.GDT 5/13/06



Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates
NE2-A8-07	—●—		SP	#200 - 0.25 #230 - 0.22	0.66	16.29
				Median	Mean	Skew
				1.57	1.42	-1.02
				Kurt	Sort	
				4.41	0.85	
Sample Information						
Project Name:			MMS Field Study 2005 CT - 39075			
Analysis Date:			07-26-06			
Analyzed By:			SEA Inc.			
Easting (X, ft):			686,769			
Northing (Y, ft):			1,897,503			
Horizontal System:			NAD 1983			
Vertical System:			MSL			
Comments:						
Depths and elevations based on measured values						
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708						

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-08

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">691,342</p>	Northing (ft): <p style="text-align: center;">1,897,107</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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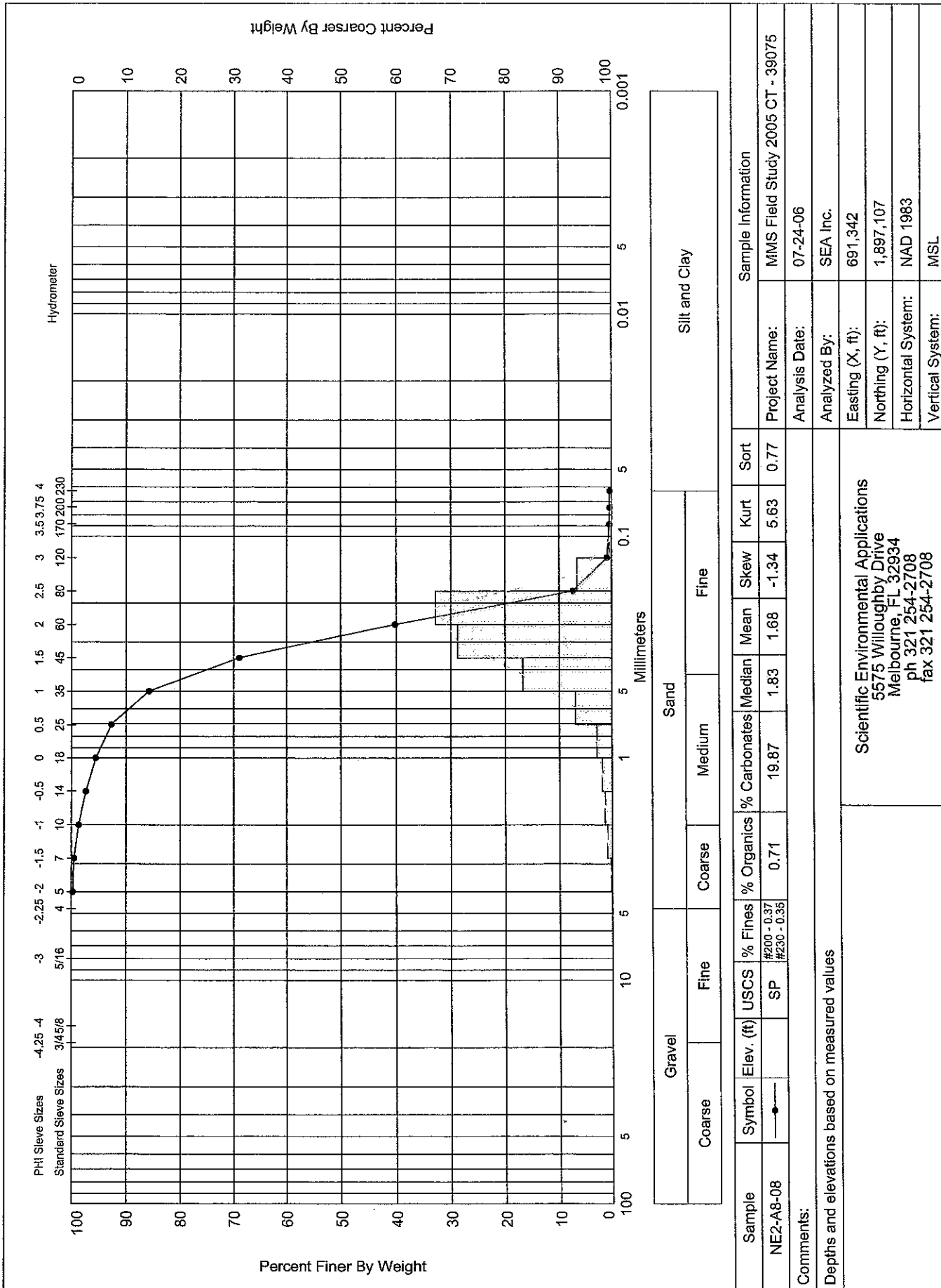
Dry Weight (g): <p style="text-align: center;">22.82</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">0.41</p>	Fines (%): #200 - 0.37 #230 - 0.35	Organics (%): <p style="text-align: center;">0.71</p>	Carbonates (%): <p style="text-align: center;">19.87</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.06	0.26	0.06	0.26
7	-1.50	2.83	0.05	0.21	0.11	0.47
10	-1.00	2.00	0.20	0.87	0.30	1.34
14	-0.50	1.41	0.30	1.31	0.60	2.65
18	0.00	1.00	0.42	1.82	1.02	4.47
25	0.50	0.71	0.65	2.86	1.67	7.33
35	1.00	0.50	1.58	6.92	3.25	14.25
45	1.50	0.35	3.83	16.79	7.08	31.04
60	2.00	0.25	6.56	28.75	13.64	59.79
80	2.50	0.18	7.49	32.84	21.13	92.63
120	3.00	0.13	1.48	6.47	22.61	99.10
170	3.50	0.09	0.11	0.48	22.72	99.58
200	3.75	0.07	0.01	0.05	22.73	99.63
230	4.00	0.06	0.00	0.02	22.73	99.65

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.68	2.37	2.23	1.83	1.32	1.05	0.09
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.68	0.31	0.77	-1.34	5.63	

GRANULOMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-24-06
Analyzed By:	SEA Inc.
Easting (X, ft):	691,342
Northing (Y, ft):	1,897,107
Horizontal System:	NAD 1983
Vertical System:	MSL

Comments:	
Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granularmetric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-09

Analysis Date: 07-24-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">666,556</p>	Northing (ft): <p style="text-align: center;">1,904,444</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">20.18</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">0.62</p>	Fines (%): #200 - 0.43 #230 - 0.40	Organics (%): <p style="text-align: center;">1.14</p>	Carbonates (%): <p style="text-align: center;">18.02</p>	Shells (%):
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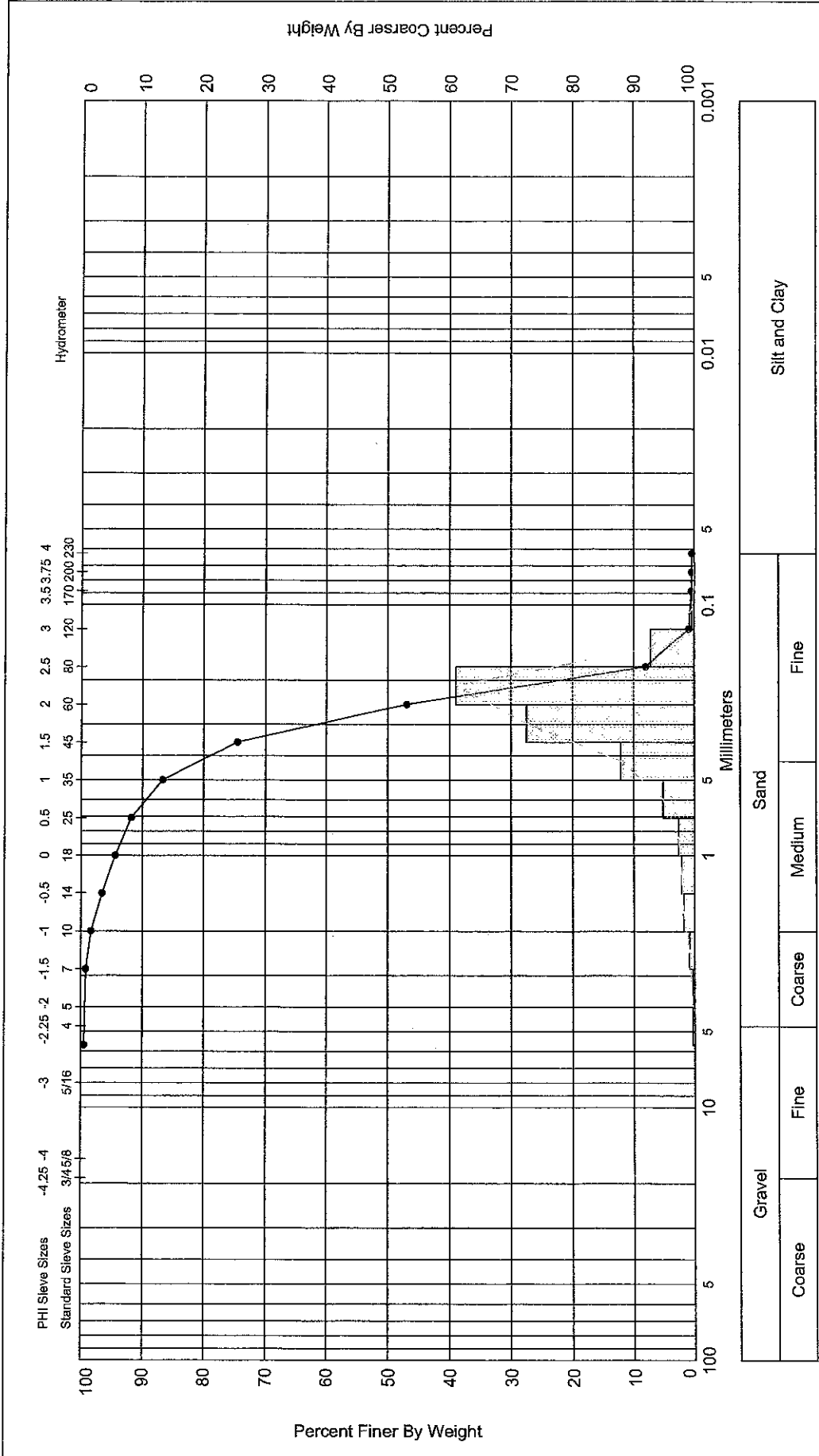
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.11	0.52	0.10	0.52
7	-1.50	2.83	0.06	0.30	0.16	0.82
10	-1.00	2.00	0.17	0.84	0.33	1.66
14	-0.50	1.41	0.36	1.79	0.69	3.45
18	0.00	1.00	0.43	2.11	1.12	5.56
25	0.50	0.71	0.53	2.62	1.65	8.18
35	1.00	0.50	1.04	5.13	2.69	13.31
45	1.50	0.35	2.45	12.15	5.14	25.46
60	2.00	0.25	5.55	27.51	10.69	52.97
80	2.50	0.18	7.86	38.94	18.55	91.91
120	3.00	0.13	1.45	7.20	20.00	99.11
170	3.50	0.09	0.09	0.42	20.09	99.53
200	3.75	0.07	0.01	0.04	20.10	99.57
230	4.00	0.06	0.01	0.03	20.10	99.60

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.71	2.40	2.28	1.95	1.48	1.11	-0.13

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.73	0.30	0.8	-1.57	6.25

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 8/13/08



Sample	Symbol	Elev. (ft)	USCS	% Fines #200 - 0.43 #230 - 0.40	% Organics	% Carbonates	Sand			Skew	Kurt	Sort	Sample Information				
							Coarse	Medium	Fine				Project Name:	Analysis Date:	Analyzed By:	Easting (X, ft):	Northing (Y, ft):
NE2-A8-09	—●—		SP	1.14	18.02	1.95	1.73	-1.57	6.25	0.8	MMS Field Study 2005 CT - 39075	07-24-06	SEA Inc.	666,556	1,904,444	NAD 1983	MSL
Comments: Depths and elevations based on measured values													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-10

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>668,288</b>	Northing (ft): <b>1,906,620</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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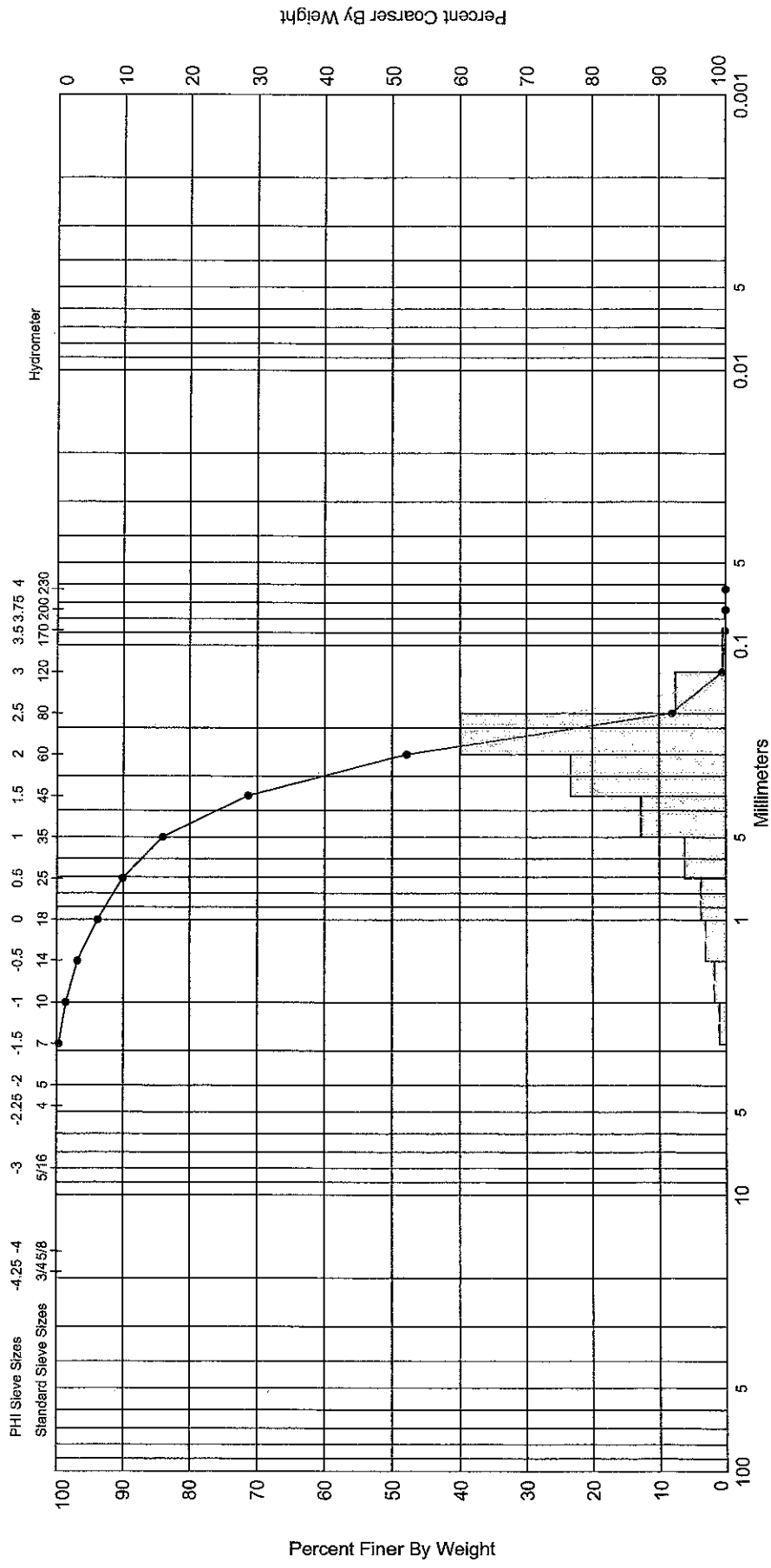
Dry Weight (g): <b>25.47</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.24</b>	Fines (%): #200 - <b>0.01</b> #230 - <b>0.00</b>	Organics (%): <b>0.95</b>	Carbonates (%): <b>18.98</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.08	0.31	0.08	0.31
10	-1.00	2.00	0.27	1.04	0.34	1.35
14	-0.50	1.41	0.45	1.76	0.79	3.11
18	0.00	1.00	0.77	3.03	1.56	6.14
25	0.50	0.71	0.95	3.74	2.52	9.88
35	1.00	0.50	1.55	6.10	4.07	15.98
45	1.50	0.35	3.24	12.71	7.31	28.69
60	2.00	0.25	5.94	23.32	13.25	52.01
80	2.50	0.18	10.16	39.89	23.41	91.90
120	3.00	0.13	1.93	7.59	25.34	99.49
170	3.50	0.09	0.11	0.43	25.45	99.92
200	3.75	0.07	0.02	0.07	25.47	99.99
230	4.00	0.06	0.00	0.01	25.47	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.70	2.40	2.29	1.96	1.35	1.00	-0.19
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.71	0.31	0.83	-1.34	4.77	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample Information		Sample Information	
Sample	NE2-A8-10	Project Name:	MMS Field Study 2005 CT - 39075
Symbol	—●—	Analysis Date:	07-10-06
Elev. (ft)		Analyzed By:	SEA Inc.
USCS	SP	Eastng (X, ft):	668,288
% Fines	#200 - 0.01	Northng (Y, ft):	1,906,620
% Organics	0.95	Horizontal System:	NAD 1983
% Carbonates	18.98	Vertical System:	MSL
Median	1.96		
Mean	1.71		
Skew	-1.34		
Kurt	4.77		
Sort	0.83		
Comments:			
Depths and elevations based on measured values			
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-11

Analysis Date: 07-10-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">664,599</p>	Northing (ft): <p style="text-align: center;">1,912,074</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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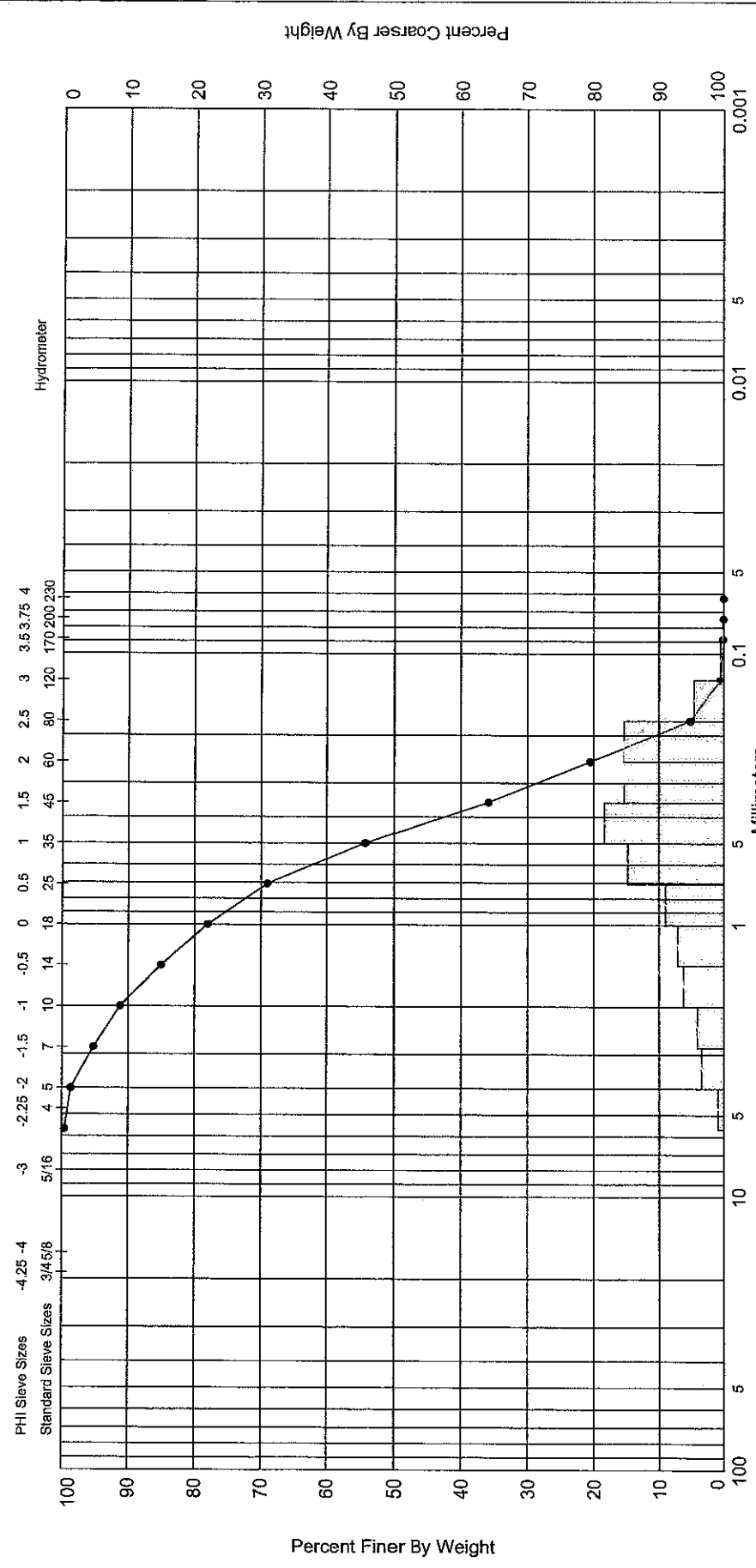
Dry Weight (g): <p style="text-align: center;">25.31</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">0.08</p>	Fines (%): #200 - 0.05 #230 - 0.02	Organics (%): <p style="text-align: center;">1.76</p>	Carbonates (%): <p style="text-align: center;">42.84</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.10	0.40	0.10	0.40
5	-2.00	4.00	0.23	0.92	0.33	1.32
7	-1.50	2.83	0.86	3.41	1.20	4.73
10	-1.00	2.00	1.03	4.07	2.23	8.80
14	-0.50	1.41	1.55	6.11	3.77	14.91
18	0.00	1.00	1.79	7.07	5.56	21.98
25	0.50	0.71	2.28	9.00	7.84	30.98
35	1.00	0.50	3.74	14.79	11.58	45.77
45	1.50	0.35	4.64	18.34	16.22	64.11
60	2.00	0.25	3.89	15.35	20.10	79.46
80	2.50	0.18	3.90	15.42	24.01	94.88
120	3.00	0.13	1.16	4.57	25.16	99.45
170	3.50	0.09	0.11	0.43	25.27	99.88
200	3.75	0.07	0.02	0.07	25.29	99.95
230	4.00	0.06	0.01	0.03	25.29	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.15	1.85	1.12	0.17	-0.42	-1.47

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.92	0.53	1.19	-0.56	2.69

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	NE2-A8-11	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines #200 - 0.075	100	% Organics #230 - 0.075	1.76	% Carbonates	42.84	Median	1.12	Mean	0.92	Skew	-0.56	Kurt	2.69	Sort	1.19	Sample Information			
Comments:																							Project Name:	MMS Field Study 2005 CT - 39075			
Depths and elevations based on measured values																							Analysis Date:	07-10-06			
Scientific Environmental Applications																							Analyzed By:	SEA Inc.			
5575 Willoughby Drive																							Easting (X, ft):	664,599			
Melbourne, FL 32934																							Northing (Y, ft):	1,912,074			
ph 321 254-2708																							Horizontal System:	NAD 1983			
fax 321 254-2708																							Vertical System:	MSL			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-12

Analysis Date: 06-28-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>675,501</b>	Northing (ft): <b>1,891,041</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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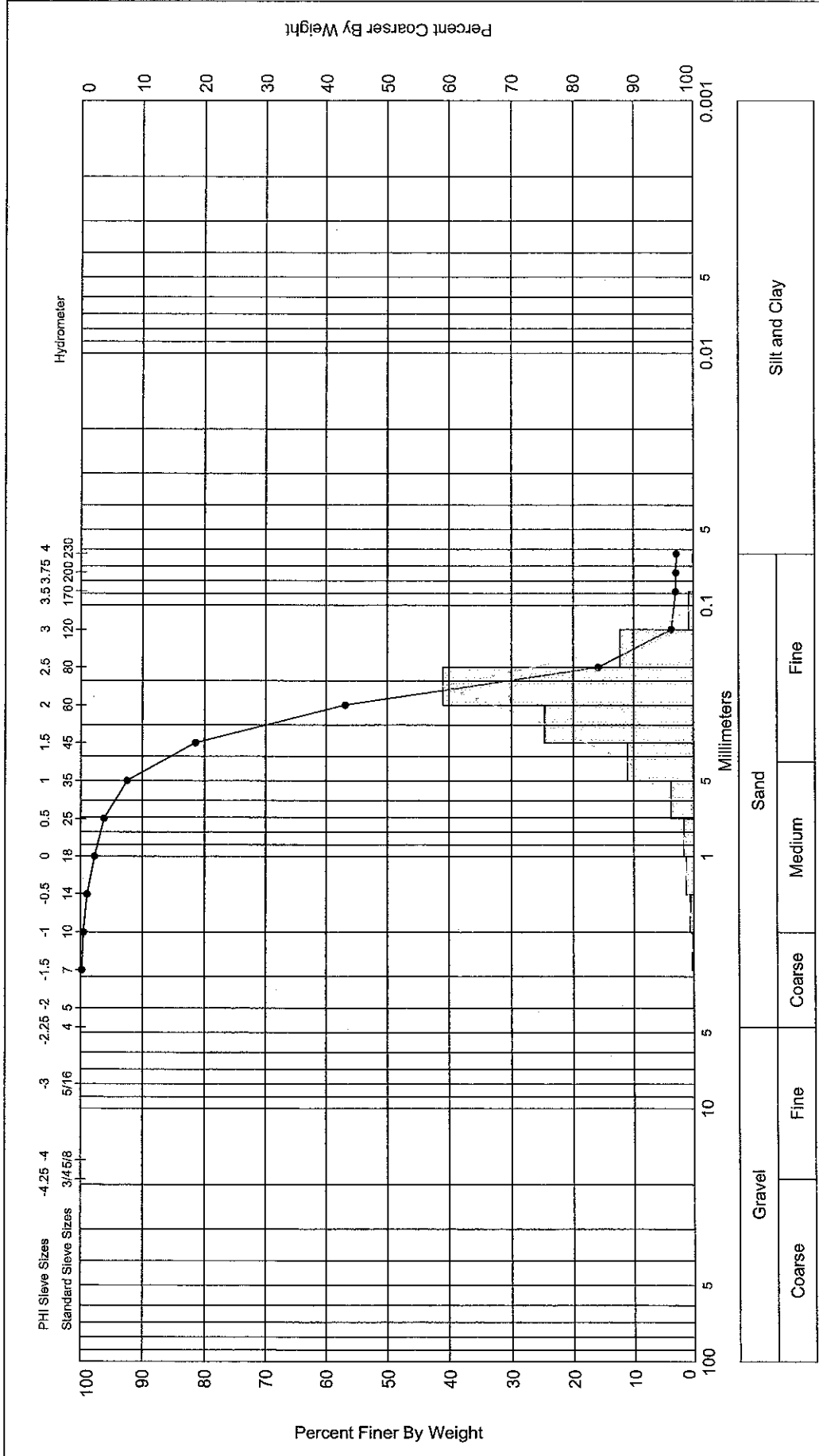
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>20.59</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.01</b>	Fines (%): #200 - <b>2.85</b> #230 - <b>2.76</b>	Organics (%): <b>0.81</b>	Carbonates (%): <b>11.87</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.04	0.18	0.04	0.18
10	-1.00	2.00	0.05	0.25	0.09	0.43
14	-0.50	1.41	0.12	0.59	0.21	1.02
18	0.00	1.00	0.25	1.23	0.46	2.25
25	0.50	0.71	0.33	1.58	0.79	3.83
35	1.00	0.50	0.77	3.72	1.56	7.55
45	1.50	0.35	2.27	11.00	3.82	18.55
60	2.00	0.25	5.06	24.59	8.89	43.14
80	2.50	0.18	8.45	41.03	17.33	84.17
120	3.00	0.13	2.51	12.19	19.84	96.36
170	3.50	0.09	0.15	0.74	20.00	97.10
200	3.75	0.07	0.01	0.05	20.01	97.15
230	4.00	0.06	0.02	0.09	20.03	97.24

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.50	2.39	2.08	1.63	1.38	0.66
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.93	0.26	0.66	-1.37	6.26	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/19/08



Sample Information		Sample Information	
Sample	NE2-A8-12	Project Name:	MMS Field Study 2005 CT - 39075
Symbol	—●—	Analysis Date:	06-28-06
Elev. (ft)		Analyzed By:	SEA Inc.
USCS	SP	Eastng (X, ft):	675,501
% Fines	#200 - 2.75	Northing (Y, ft):	1,891,041
% Organics	0.81	Horizontal System:	NAD 1983
% Carbonates	11.87	Vertical System:	MSL
Mean	1.93		
Median	2.08		
Skew	-1.37		
Kurt	6.26		
Sort	0.66		

Comments:  
 Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A8-13

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>678,434</b>	Northing (ft): <b>1,888,339</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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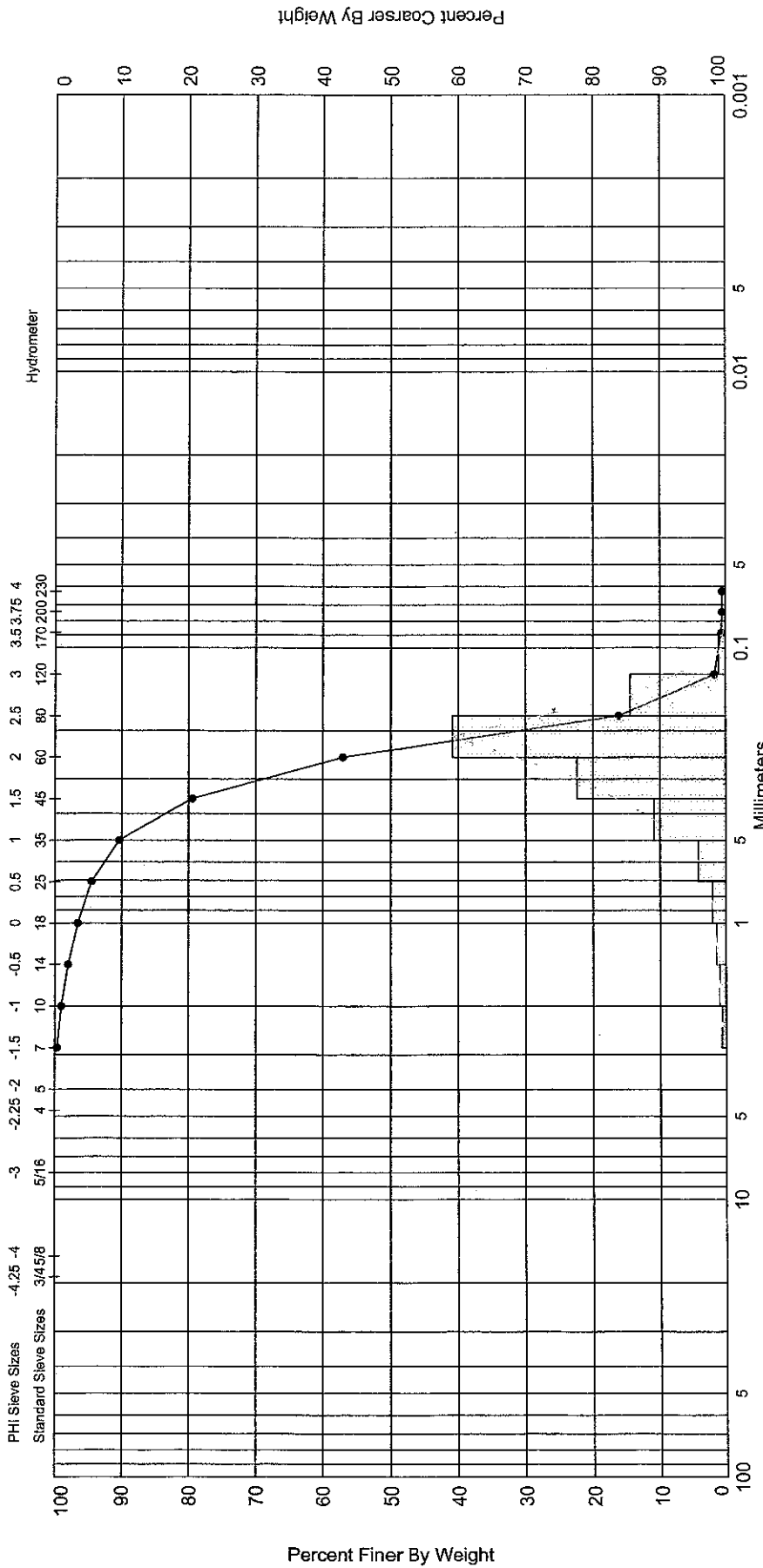
Dry Weight (g): <b>22.76</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.06</b>	Fines (%): #200 - 0.57 #230 - 0.55	Organics (%): <b>0.93</b>	Carbonates (%): <b>13.19</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.08	0.34	0.08	0.34
10	-1.00	2.00	0.15	0.65	0.23	0.99
14	-0.50	1.41	0.23	1.01	0.45	2.00
18	0.00	1.00	0.33	1.45	0.78	3.45
25	0.50	0.71	0.46	2.03	1.25	5.48
35	1.00	0.50	0.95	4.18	2.20	9.66
45	1.50	0.35	2.48	10.91	4.68	20.57
60	2.00	0.25	5.09	22.36	9.77	42.93
80	2.50	0.18	9.30	40.86	19.07	83.79
120	3.00	0.13	3.30	14.51	22.37	98.30
170	3.50	0.09	0.24	1.06	22.61	99.36
200	3.75	0.07	0.02	0.07	22.63	99.43
230	4.00	0.06	0.00	0.02	22.63	99.45

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.89	2.51	2.39	2.09	1.60	1.29	0.38

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.91	0.27	0.74	-1.48	6.22

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand				Silt and Clay			
Coarse	Fine	Coarse	Medium	Fine					

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A8-13	—●—		SP	#200 - 0.57 #230 - 0.55	0.93	13.19	2.09	1.91	-1.48	6.22	0.74	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-17-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	678,434		
												Northing (Y, ft):	1,888,339		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-A9-01  
 Analysis Date: 06-29-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>679,209</b>	Northing (ft): <b>1,834,013</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>19.43</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.61</b>	Fines (%): #200 - <b>0.01</b> #230 - <b>0.00</b>	Organics (%): <b>0.58</b>	Carbonates (%): <b>16.11</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.02	0.10	0.02	0.10
14	-0.50	1.41	0.12	0.62	0.14	0.72
18	0.00	1.00	0.23	1.18	0.37	1.90
25	0.50	0.71	0.42	2.16	0.79	4.06
35	1.00	0.50	1.10	5.68	1.89	9.74
45	1.50	0.35	3.08	15.87	4.97	25.61
60	2.00	0.25	6.44	33.14	11.41	58.75
80	2.50	0.18	6.74	34.69	18.15	93.44
120	3.00	0.13	1.20	6.17	19.35	99.61
170	3.50	0.09	0.07	0.34	19.42	99.95
200	3.75	0.07	0.01	0.04	19.42	99.99
230	4.00	0.06	0.00	0.01	19.42	100.00

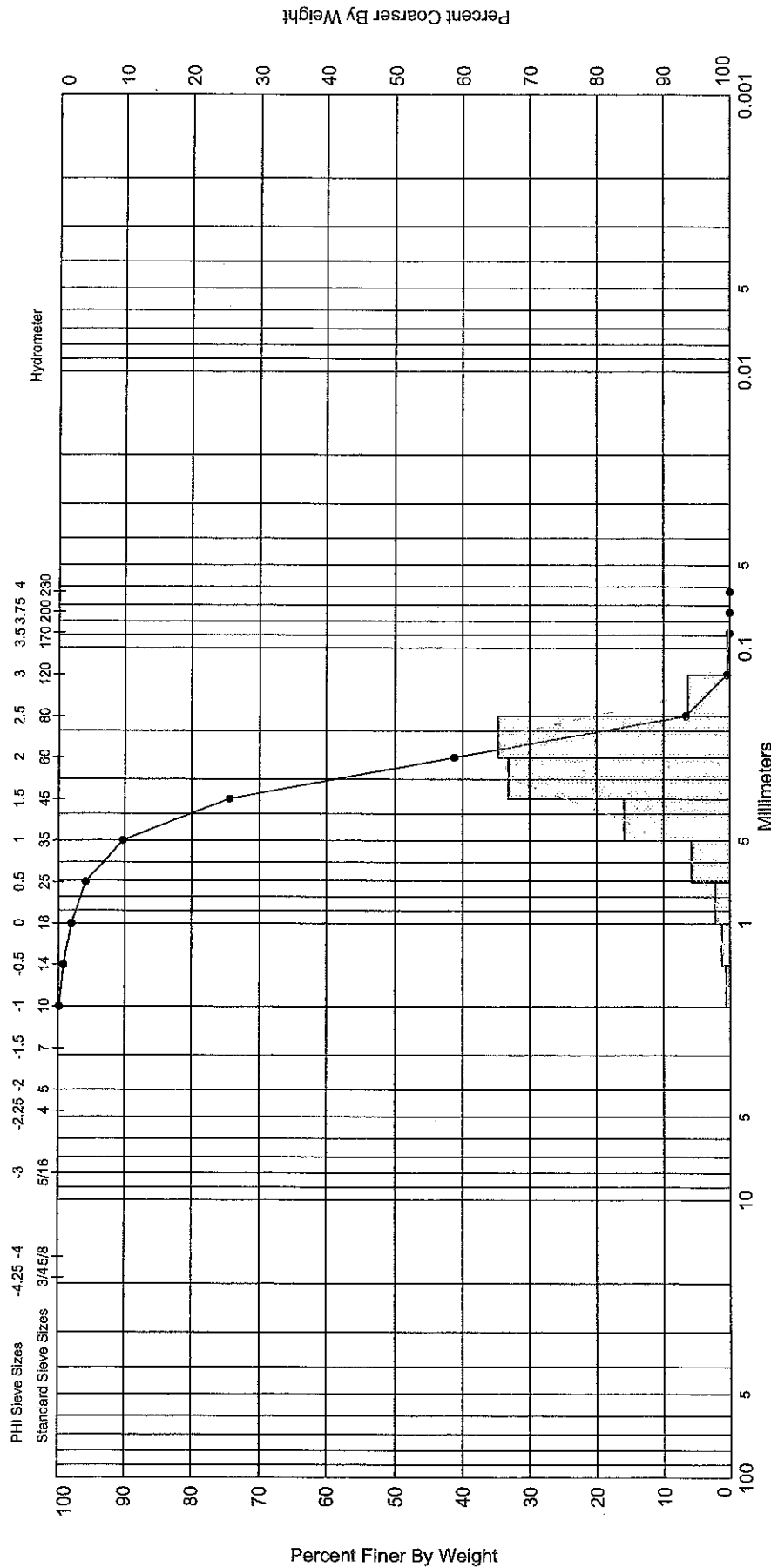
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.63	2.36	2.23	1.87	1.48	1.20	0.58

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.78	0.29	0.62	-1.06	4.94

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	NE2-A9-01	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines	#200 - 0.01	% Organics	0.58	% Carbonates	16.11	Median	1.87	Mean	1.78	Skew	-1.06	Kurt	4.94	Sort	0.62	Sample Information	
Comments:																									
Depths and elevations based on measured values																									
Scientific Environmental Applications																									
5575 Willoughby Drive																									
Melbourne, FL 32934																									
ph 321 254-2708																									
fax 321 254-2708																									
Project Name: MMS Field Study 2005 CT - 39075																									
Analysis Date: 06-29-06																									
Analyzed By: SEA Inc.																									
Easting (X, ft): 679,209																									
Northing (Y, ft): 1,834,013																									
Horizontal System: NAD 1983																									
Vertical System: MSL																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-A9-02  
 Analysis Date: 06-29-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>680,826</b>	Northing (ft): <b>1,838,014</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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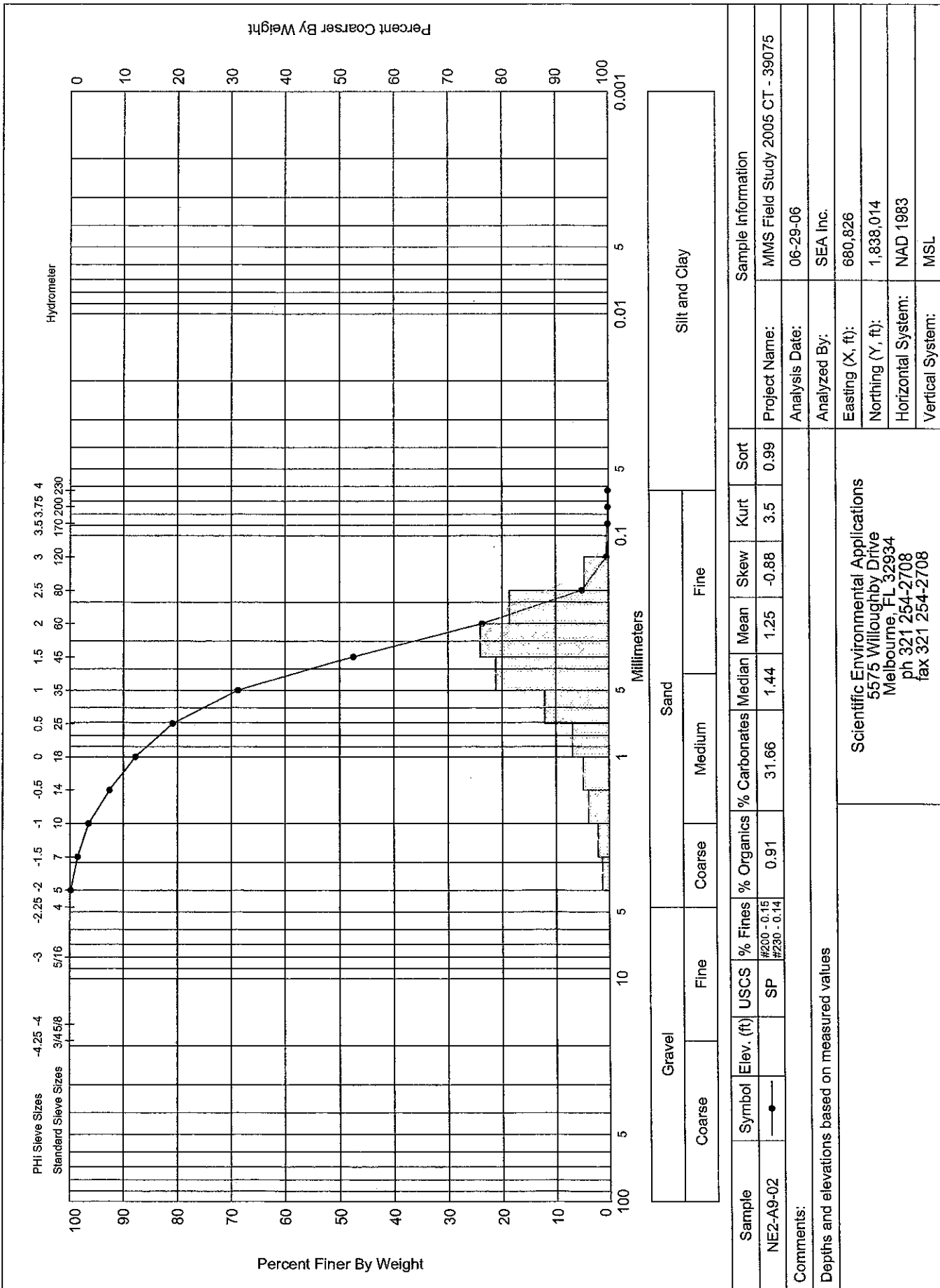
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>17.82</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.32</b>	Fines (%): #200 - 0.15 #230 - 0.14	Organics (%): <b>0.91</b>	Carbonates (%): <b>31.66</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.03	0.17	0.03	0.17
7	-1.50	2.83	0.23	1.31	0.26	1.48
10	-1.00	2.00	0.37	2.06	0.63	3.54
14	-0.50	1.41	0.69	3.87	1.32	7.41
18	0.00	1.00	0.87	4.87	2.19	12.28
25	0.50	0.71	1.23	6.88	3.41	19.16
35	1.00	0.50	2.15	12.06	5.56	31.22
45	1.50	0.35	3.77	21.15	9.33	52.37
60	2.00	0.25	4.28	23.99	13.61	76.36
80	2.50	0.18	3.31	18.60	16.92	94.96
120	3.00	0.13	0.82	4.60	17.74	99.56
170	3.50	0.09	0.05	0.26	17.79	99.82
200	3.75	0.07	0.01	0.03	17.80	99.85
230	4.00	0.06	0.00	0.01	17.80	99.86

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.50	2.21	1.97	1.44	0.74	0.27	-0.81
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.25	0.42	0.99	-0.88	3.5	

GRANULOMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-A9-02	●		SP	#200 - 0.15 #230 - 0.14	0.91	31.66	1.44	1.25	-0.88	3.5	0.99	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	06-29-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	680,826		
												Northing (Y, ft):	1,838,014		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
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 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-A9-03  
 Analysis Date: 06-29-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

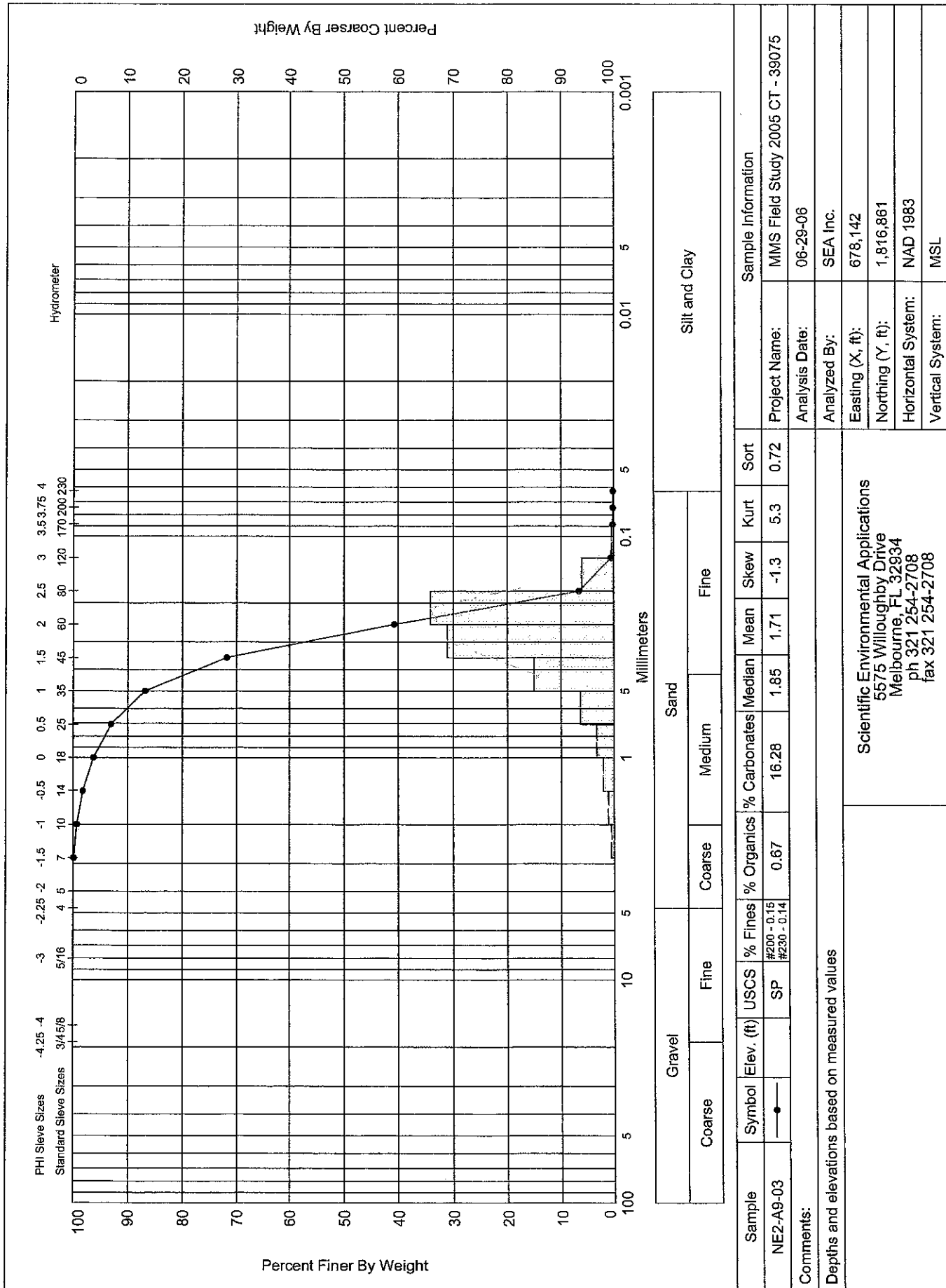
Easting (ft): <b>678,142</b>	Northing (ft): <b>1,816,861</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>19.66</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.21</b>	Fines (%): #200 - <b>0.15</b> #230 - <b>0.14</b>	Organics (%): <b>0.67</b>	Carbonates (%): <b>16.28</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
7	-1.50	2.83	0.02	0.10	0.02	0.10	
10	-1.00	2.00	0.11	0.55	0.13	0.65	
14	-0.50	1.41	0.21	1.07	0.34	1.72	
18	0.00	1.00	0.39	1.99	0.73	3.71	
25	0.50	0.71	0.63	3.20	1.36	6.91	
35	1.00	0.50	1.23	6.28	2.59	13.19	
45	1.50	0.35	2.95	15.00	5.54	28.19	
60	2.00	0.25	6.11	31.09	11.66	59.28	
80	2.50	0.18	6.72	34.16	18.37	93.44	
120	3.00	0.13	1.18	6.01	19.56	99.45	
170	3.50	0.09	0.07	0.35	19.63	99.80	
200	3.75	0.07	0.01	0.05	19.63	99.85	
230	4.00	0.06	0.00	0.01	19.64	99.86	

<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
2.63	2.36	2.23	1.85	1.39	1.09	0.20
<b>Moment</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
<b>Statistics</b>	1.71	0.31	0.72	-1.3	5.3	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Comments:

Depths and elevations based on measured values

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Sample	NE2-A9-03	Symbol	—●—
Elev. (ft)		USCS	SP
% Fines		#200 - 0.15	0.67
% Organics		#230 - 0.14	16.28
% Carbonates		Median	1.85
Median		Mean	1.71
Skew		Kurt	5.3
Sort		Sort	0.72
Sample Information			
Project Name:	MMS Field Study 2005 CT - 39075		
Analysis Date:	06-29-06		
Analyzed By:	SEA Inc.		
Easting (X, ft):	678,142		
Northing (Y, ft):	1,816,861		
Horizontal System:	NAD 1983		
Vertical System:	MSL		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-A9-04  
 Analysis Date: 07-05-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>678,613</b>	Northing (ft): <b>1,827,867</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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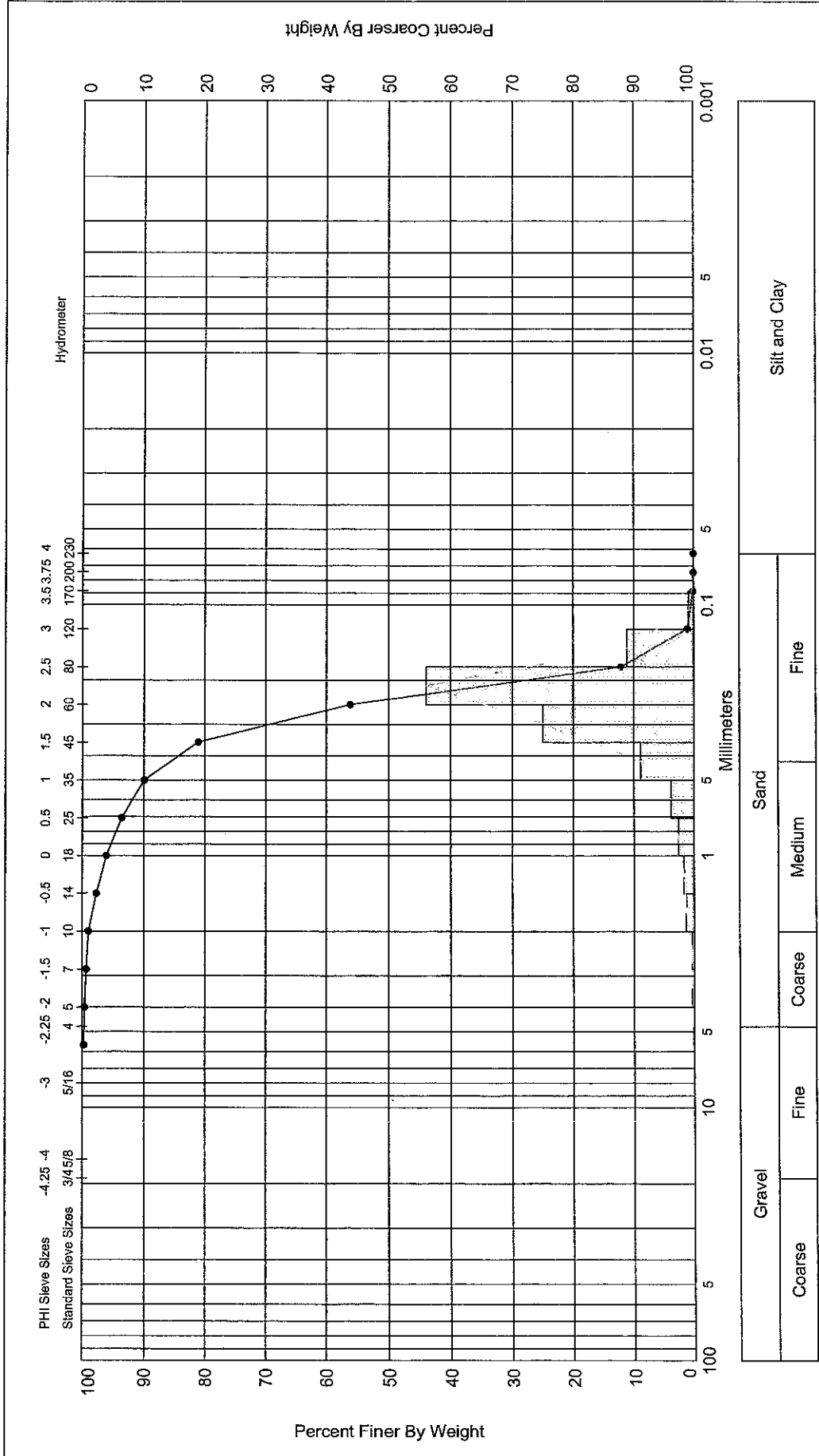
Dry Weight (g): <b>20.49</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.18</b>	Fines (%): #200 - 0.05 #230 - 0.05	Organics (%): <b>0.71</b>	Carbonates (%): <b>15.56</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.06	0.28	0.06	0.28
5	-2.00	4.00	0.02	0.09	0.08	0.37
7	-1.50	2.83	0.06	0.27	0.13	0.64
10	-1.00	2.00	0.07	0.33	0.20	0.97
14	-0.50	1.41	0.26	1.27	0.46	2.24
18	0.00	1.00	0.33	1.62	0.79	3.86
25	0.50	0.71	0.51	2.51	1.31	6.37
35	1.00	0.50	0.76	3.69	2.06	10.06
45	1.50	0.35	1.81	8.82	3.87	18.88
60	2.00	0.25	5.13	25.02	8.99	43.90
80	2.50	0.18	9.02	44.01	18.01	87.91
120	3.00	0.13	2.27	11.06	20.28	98.97
170	3.50	0.09	0.18	0.87	20.46	99.84
200	3.75	0.07	0.02	0.11	20.48	99.95
230	4.00	0.06	0.00	0.00	20.48	99.95

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.46	2.35	2.07	1.62	1.34	0.23

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.88	0.27	0.75	-1.75	7.43

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information	
							Coarse	Medium	Fine	Coarse	Medium	Fine	Project Name:	Analysis Date:
NE2-A9-04	—●—		SP	#200 - 0.05 #230 - 0.05	0.71	15.56	2.07	1.88	-1.75	7.43	0.75	MMS Field Study 2005 CT - 39075	07-05-06	MMS
Comments:													SEA Inc.	678,613
Depths and elevations based on measured values													Eastings (X, ft):	1,827,867
													Northing (Y, ft):	NAD 1983
													Horizontal System:	MSL
													Vertical System:	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-05

Analysis Date: 06-28-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">681,284</p>	Northing (ft): <p style="text-align: center;">1,835,450</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">22.09</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">-0.32</p>	Fines (%): #200 - 0.29 #230 - 0.28	Organics (%): <p style="text-align: center;">1.06</p>	Carbonates (%): <p style="text-align: center;">31.19</p>	Shells (%):
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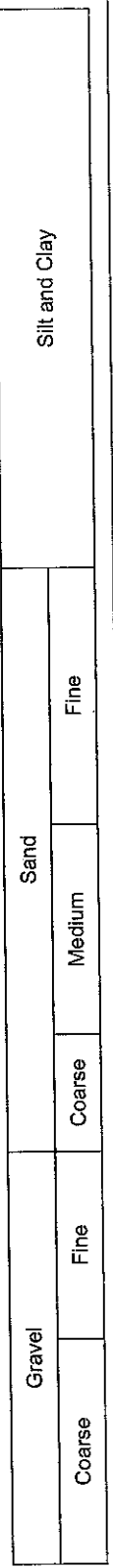
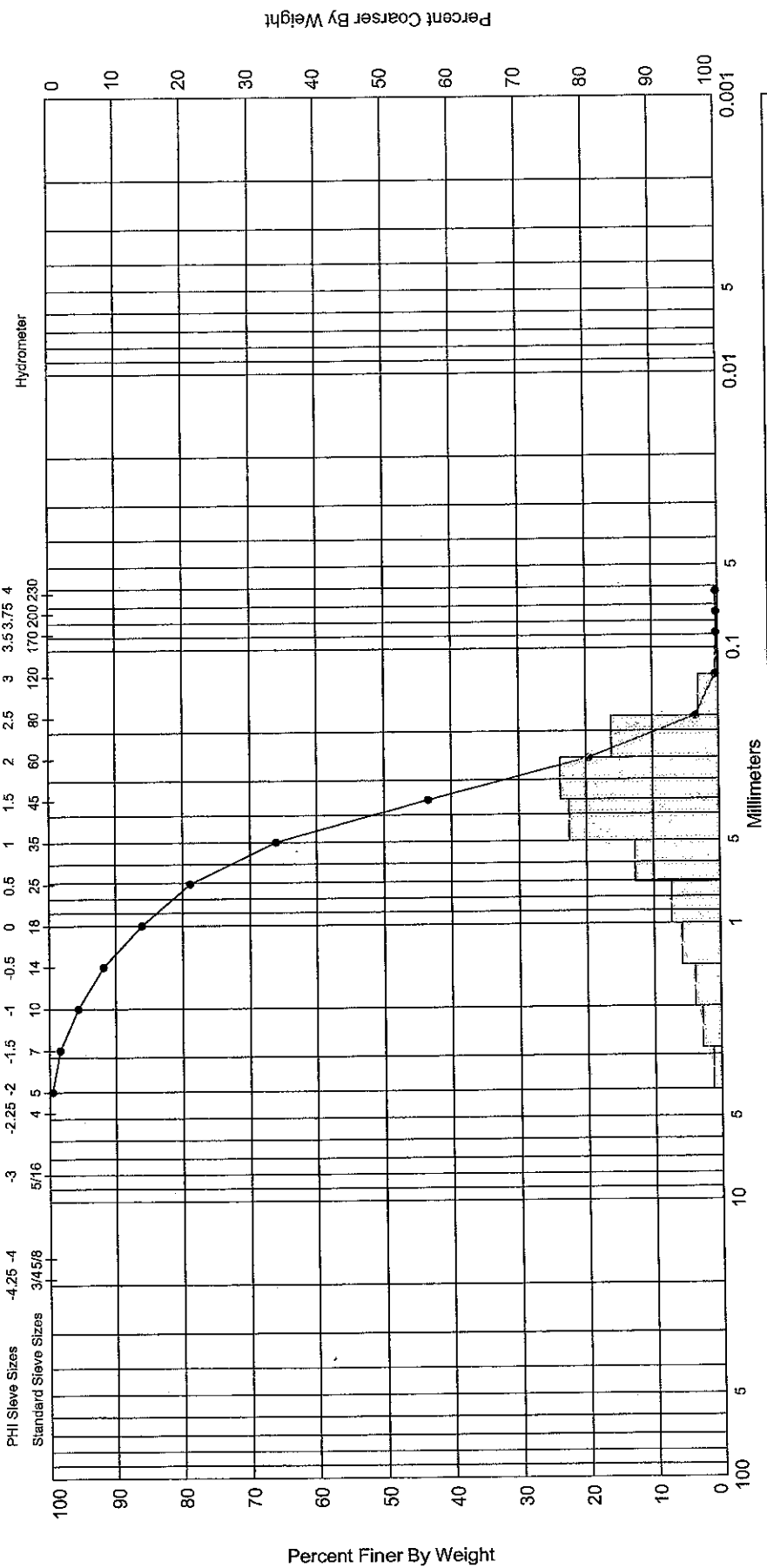
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.09	0.42	0.09	0.42
7	-1.50	2.83	0.27	1.21	0.36	1.63
10	-1.00	2.00	0.61	2.74	0.97	4.37
14	-0.50	1.41	0.84	3.81	1.81	8.18
18	0.00	1.00	1.26	5.71	3.07	13.89
25	0.50	0.71	1.61	7.27	4.68	21.16
35	1.00	0.50	2.82	12.78	7.50	33.94
45	1.50	0.35	4.99	22.57	12.48	56.51
60	2.00	0.25	5.28	23.91	17.77	80.42
80	2.50	0.18	3.57	16.14	21.33	96.56
120	3.00	0.13	0.66	3.01	22.00	99.57
170	3.50	0.09	0.03	0.12	22.02	99.69
200	3.75	0.07	0.01	0.02	22.03	99.71
230	4.00	0.06	0.00	0.01	22.03	99.72

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.45	2.11	1.89	1.36	0.65	0.15	-0.92

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.16	0.45	0.98	-0.83	3.35

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample Information		Sample Information	
Sample	NE2-A9-05	Project Name:	MMS Field Study 2005 CT - 39075
Symbol	●	Analysis Date:	06-28-06
Elev. (ft)	---	Analyzed By:	SEA Inc.
USCS	SP	Easting (X, ft):	681,284
% Fines	#200 - 0.29	Northing (Y, ft):	1,835,450
% Organics	#230 - 0.28	Horizontal System:	NAD 1983
% Carbonates	---	Vertical System:	MSL
Mean	1.16	Comments:	
Median	1.36	Depths and elevations based on measured values	
Skew	-0.83	Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	
Kurt	3.35		
Sort	0.98		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-06

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>678,915</b>	Northing (ft): <b>1,829,461</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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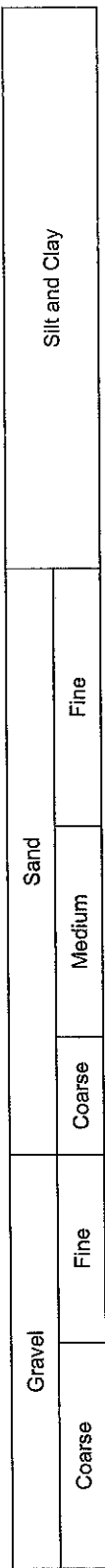
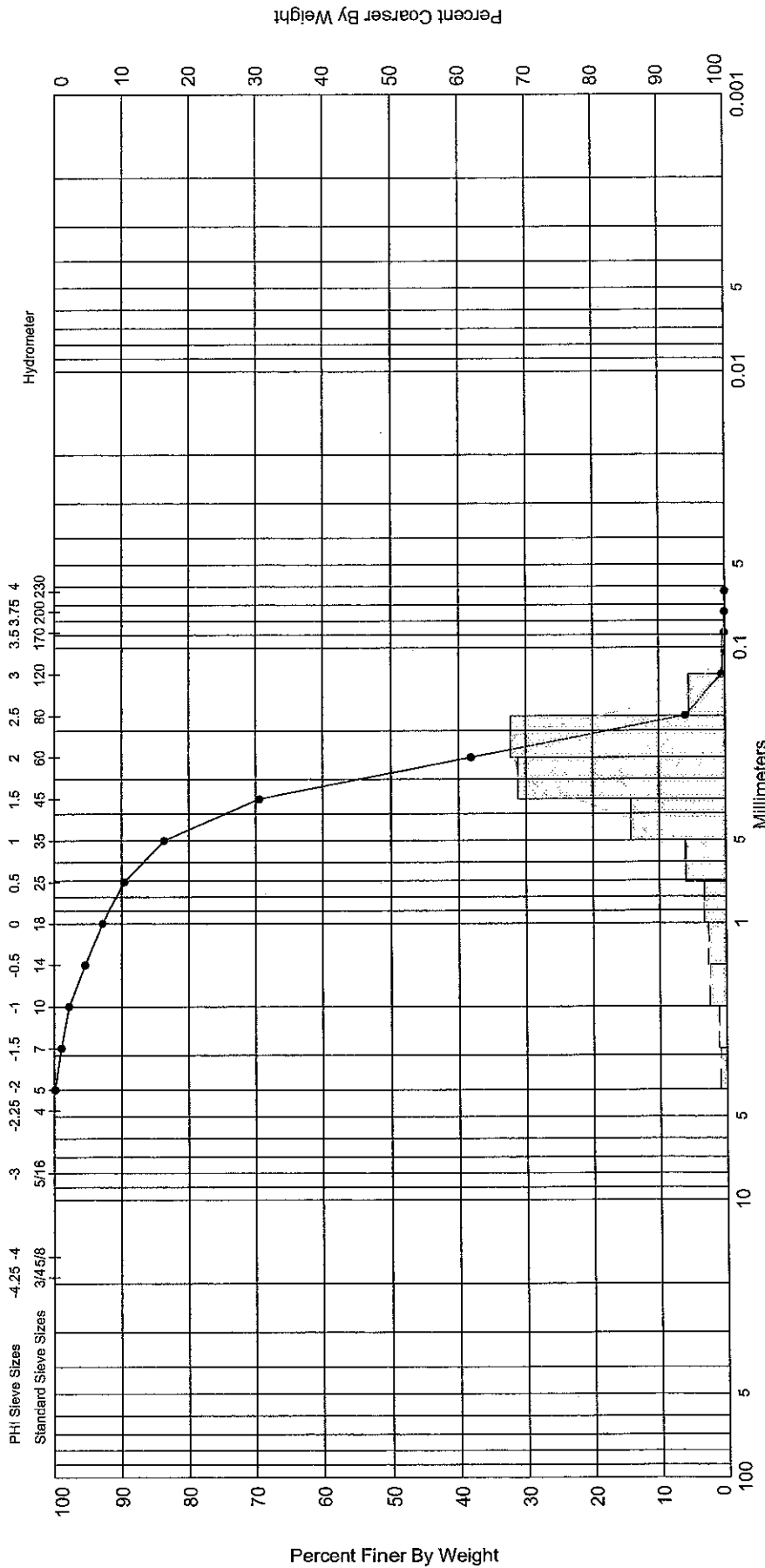
Dry Weight (g): <b>19.46</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.10</b>	Fines (%): #200 - <b>0.07</b> #230 - <b>0.04</b>	Organics (%): <b>0.77</b>	Carbonates (%): <b>18.47</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.02	0.11	0.02	0.11
7	-1.50	2.83	0.18	0.94	0.20	1.05
10	-1.00	2.00	0.22	1.13	0.42	2.18
14	-0.50	1.41	0.47	2.40	0.89	4.58
18	0.00	1.00	0.51	2.59	1.39	7.17
25	0.50	0.71	0.63	3.22	2.02	10.39
35	1.00	0.50	1.16	5.95	3.18	16.34
45	1.50	0.35	2.77	14.22	5.95	30.56
60	2.00	0.25	6.08	31.24	12.03	61.80
80	2.50	0.18	6.28	32.28	18.31	94.08
120	3.00	0.13	1.05	5.41	19.36	99.49
170	3.50	0.09	0.08	0.39	19.44	99.88
200	3.75	0.07	0.01	0.05	19.45	99.93
230	4.00	0.06	0.01	0.03	19.45	99.96

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.59	2.34	2.20	1.81	1.30	0.97	-0.42
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.61	0.33	0.88	-1.55	5.69	

GRANULOMETRIC REPORT MMS - EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample		Soil Properties						Sample Information									
Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	Analysis Date:	Analyzed By:	Easting (X, ft):	Northing (Y, ft):	Horizontal System:	Vertical System:
NE2-A9-06	—●—	SP	#200 - 0.075 #230 - 0.04	0.77	18.47	1.81	1.61	-1.55	5.69	0.88	MMS Field Study 2005 CT - 39075	07-05-06	SEA Inc.	678,915	1,829,461	NAD 1983	MSL
<b>Comments:</b>																	
Depths and elevations based on measured values																	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-07

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">681,631</p>	Northing (ft): <p style="text-align: center;">1,832,850</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">22.20</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">-0.08</p>	Fines (%): #200 - 0.92 #230 - 0.66	Organics (%): <p style="text-align: center;">0.72</p>	Carbonates (%): <p style="text-align: center;">26.19</p>	Shells (%):
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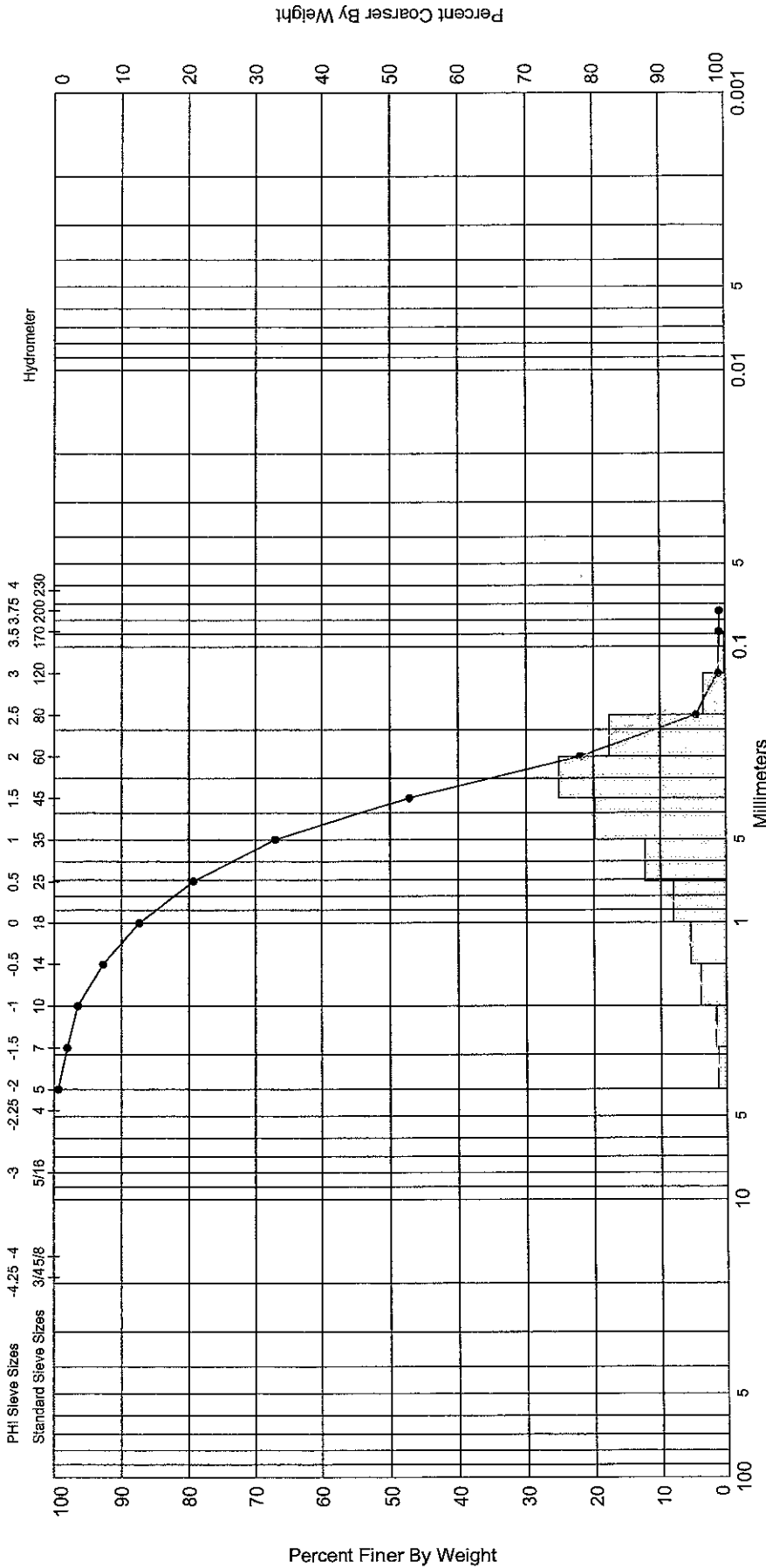
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.15	0.66	0.15	0.66
7	-1.50	2.83	0.29	1.29	0.43	1.95
10	-1.00	2.00	0.34	1.55	0.78	3.50
14	-0.50	1.41	0.84	3.78	1.61	7.28
18	0.00	1.00	1.19	5.37	2.81	12.65
25	0.50	0.71	1.79	8.05	4.59	20.70
35	1.00	0.50	2.72	12.27	7.32	32.97
45	1.50	0.35	4.41	19.85	11.72	52.82
60	2.00	0.25	5.59	25.20	17.32	78.02
80	2.50	0.18	3.90	17.59	21.22	95.61
120	3.00	0.13	0.72	3.26	21.94	98.87
170	3.50	0.09	0.04	0.18	21.98	99.05
200	3.75	0.07	0.01	0.03	21.99	99.08

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.48	2.17	1.94	1.43	0.68	0.21	-0.80

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.21	0.43	0.96	-0.81	3.39

GRANULARMETRIC REPORT MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Median		Mean		Skew		Kurt		Sort	
NE2-A9-07	SP			#200 - 0.82		0.72	26.19	1.43	1.21	-0.81	3.39	0.96									
				#230 - 0.66																	

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-05-06
Analyzed By:	SEA Inc.
Easting (X, ft):	681,631
Northing (Y, ft):	1,832,850
Horizontal System:	NAD 1983
Vertical System:	MSL

Comments:	
Depths and elevations based on measured values	

Scientific Environmental Applications	
5575 Willoughby Drive	
Melbourne, FL 32934	
ph 321 254-2708	
fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-08

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">677,630</p>	Northing (ft): <p style="text-align: center;">1,820,297</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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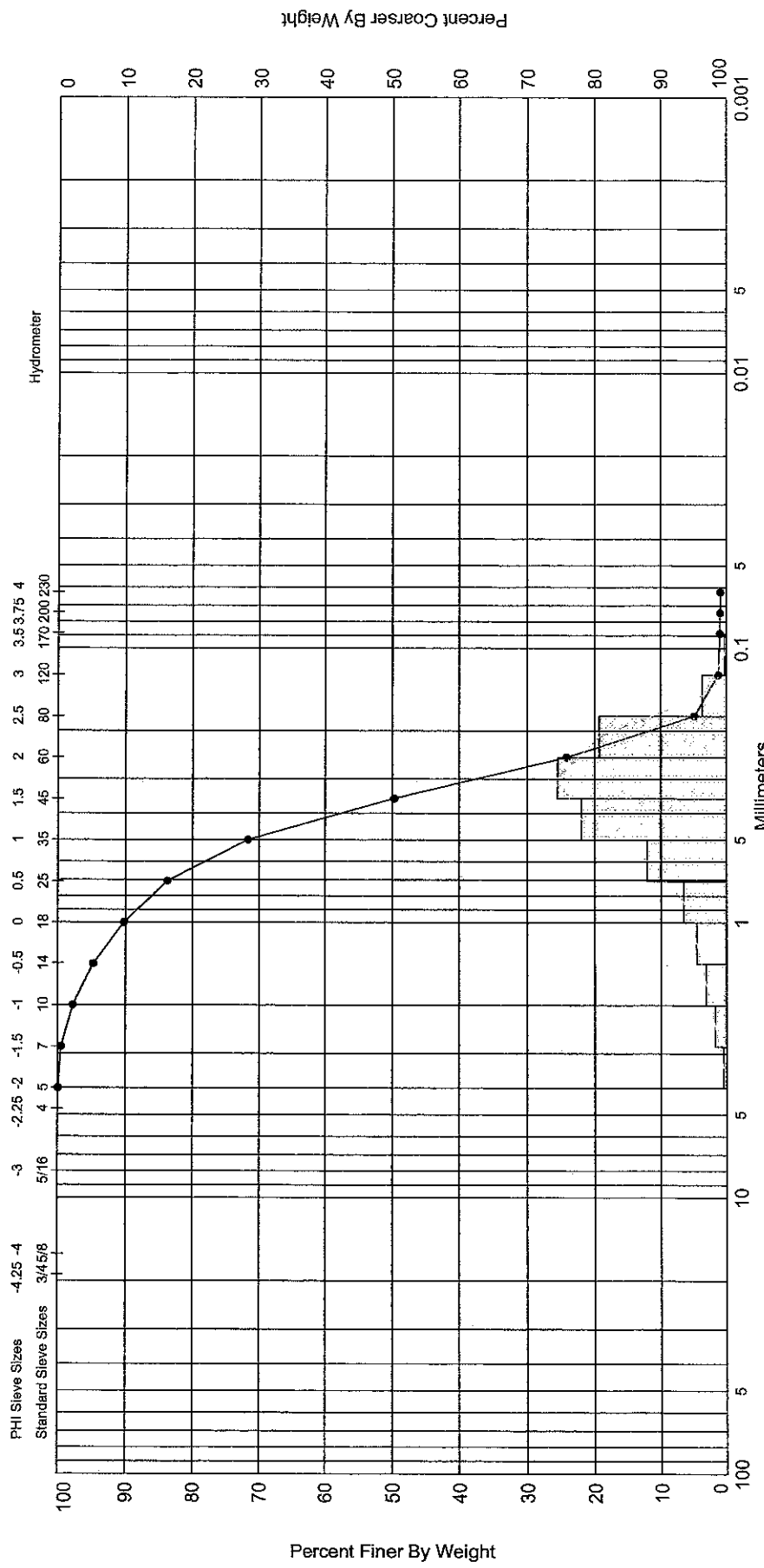
Dry Weight (g): <p style="text-align: center;">18.99</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.00</p>	Sieve Loss (%): <p style="text-align: center;">0.00</p>	Fines (%): #200 - 0.93 #230 - 0.92	Organics (%): <p style="text-align: center;">1.01</p>	Carbonates (%): <p style="text-align: center;">29.28</p>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.01	0.07	0.01	0.07
7	-1.50	2.83	0.09	0.46	0.10	0.53
10	-1.00	2.00	0.32	1.70	0.42	2.23
14	-0.50	1.41	0.57	3.02	1.00	5.25
18	0.00	1.00	0.86	4.55	1.86	9.80
25	0.50	0.71	1.22	6.43	3.08	16.23
35	1.00	0.50	2.30	12.10	5.38	28.33
45	1.50	0.35	4.17	21.96	9.55	50.29
60	2.00	0.25	4.85	25.55	14.41	75.84
80	2.50	0.18	3.67	19.31	18.07	95.15
120	3.00	0.13	0.69	3.62	18.76	98.77
170	3.50	0.09	0.05	0.26	18.81	99.03
200	3.75	0.07	0.01	0.04	18.82	99.07
230	4.00	0.06	0.00	0.01	18.82	99.08

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.50	2.21	1.98	1.49	0.86	0.48	-0.54
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.32	0.40	0.91	-0.9	3.66	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	NE2-A9-08	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines #200 - 0.83	1.01	% Organics #250 - 0.82	29.28	Median	1.49	Mean	1.32	Skew	-0.9	Kurt	3.66	Sort	0.91
Comments:																					
Depths and elevations based on measured values																					
Scientific Environmental Applications											Sample Information										
5575 Willoughby Drive											Project Name: MMS Field Study 2005 CT - 39075										
Melbourne, FL 32934											Analysis Date: 07-05-06										
ph 321 254-2708											Analyzed By: SEA Inc.										
fax 321 254-2708											Easting (X, ft): 677,630										
											Northing (Y, ft): 1,820,297										
											Horizontal System: NAD 1983										
											Vertical System: MSL										

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-09

Analysis Date: 07-17-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>677,399</b>	Northing (ft): <b>1,824,612</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>20.44</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.26</b>	Fines (%): #200 - <b>0.89</b> #230 - <b>0.85</b>	Organics (%): <b>0.38</b>	Carbonates (%): <b>6.31</b>	Shells (%):
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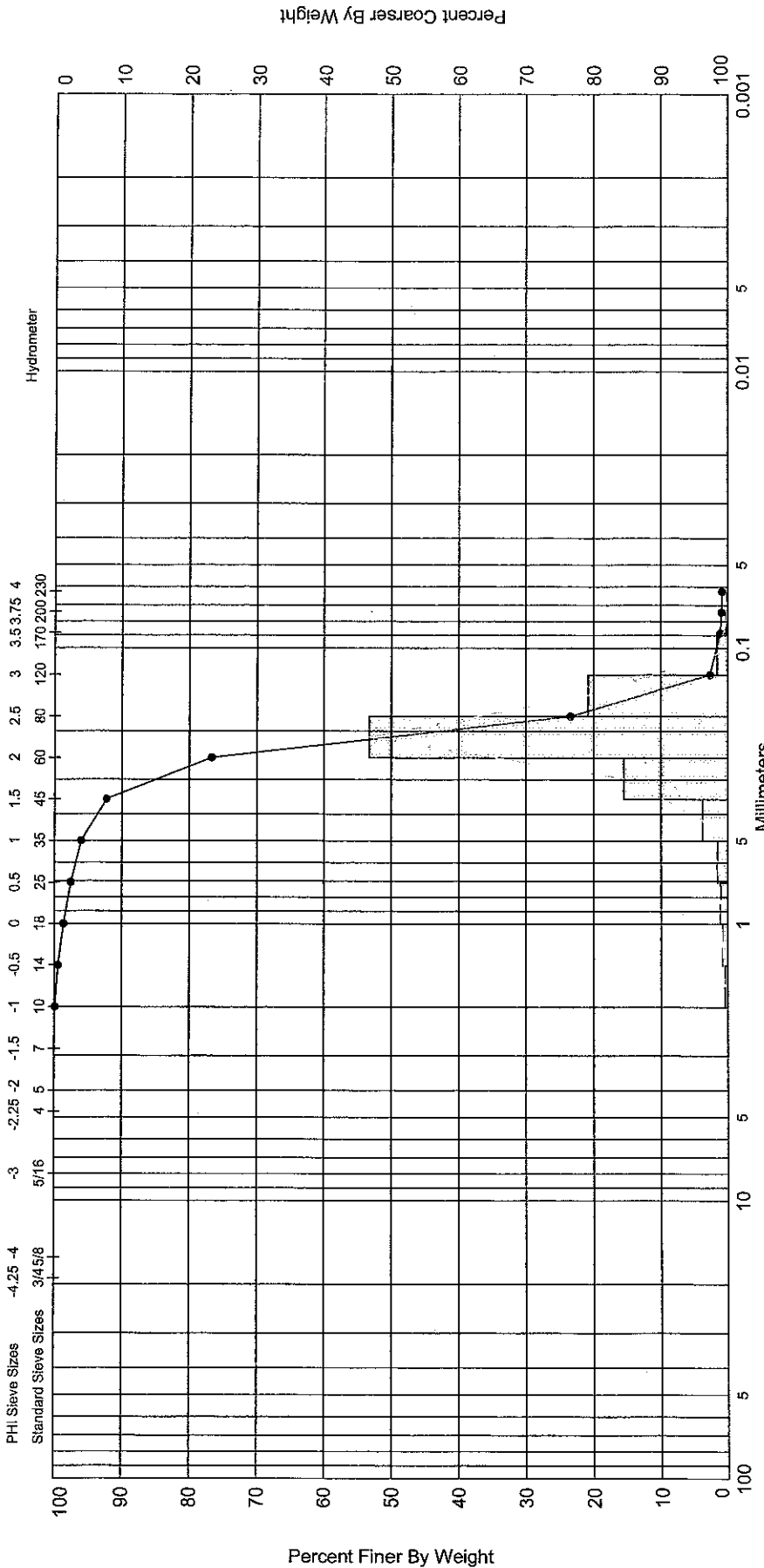
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
10	-1.00	2.00	0.02	0.09	0.02	0.09
14	-0.50	1.41	0.09	0.45	0.11	0.54
18	0.00	1.00	0.16	0.80	0.28	1.34
25	0.50	0.71	0.22	1.06	0.49	2.40
35	1.00	0.50	0.32	1.55	0.81	3.95
45	1.50	0.35	0.77	3.79	1.58	7.74
60	2.00	0.25	3.19	15.61	4.77	23.35
80	2.50	0.18	10.88	53.21	15.65	76.56
120	3.00	0.13	4.25	20.80	19.91	97.36
170	3.50	0.09	0.32	1.54	20.22	98.90
200	3.75	0.07	0.04	0.21	20.26	99.11
230	4.00	0.06	0.01	0.04	20.27	99.15

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	2.68	2.49	2.25	2.02	1.76	1.14
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.18	0.22	0.56	-1.84	9.21	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NEZ-A9-09	●		SP	#200 - 0.89 #230 - 0.85	0.38	6.31	2.25	2.18	-1.84	9.21	0.56	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	07-17-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	677,399		
												Northing (Y, ft):	1,824,612		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-10

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>677,494</b>	Northing (ft): <b>1,827,109</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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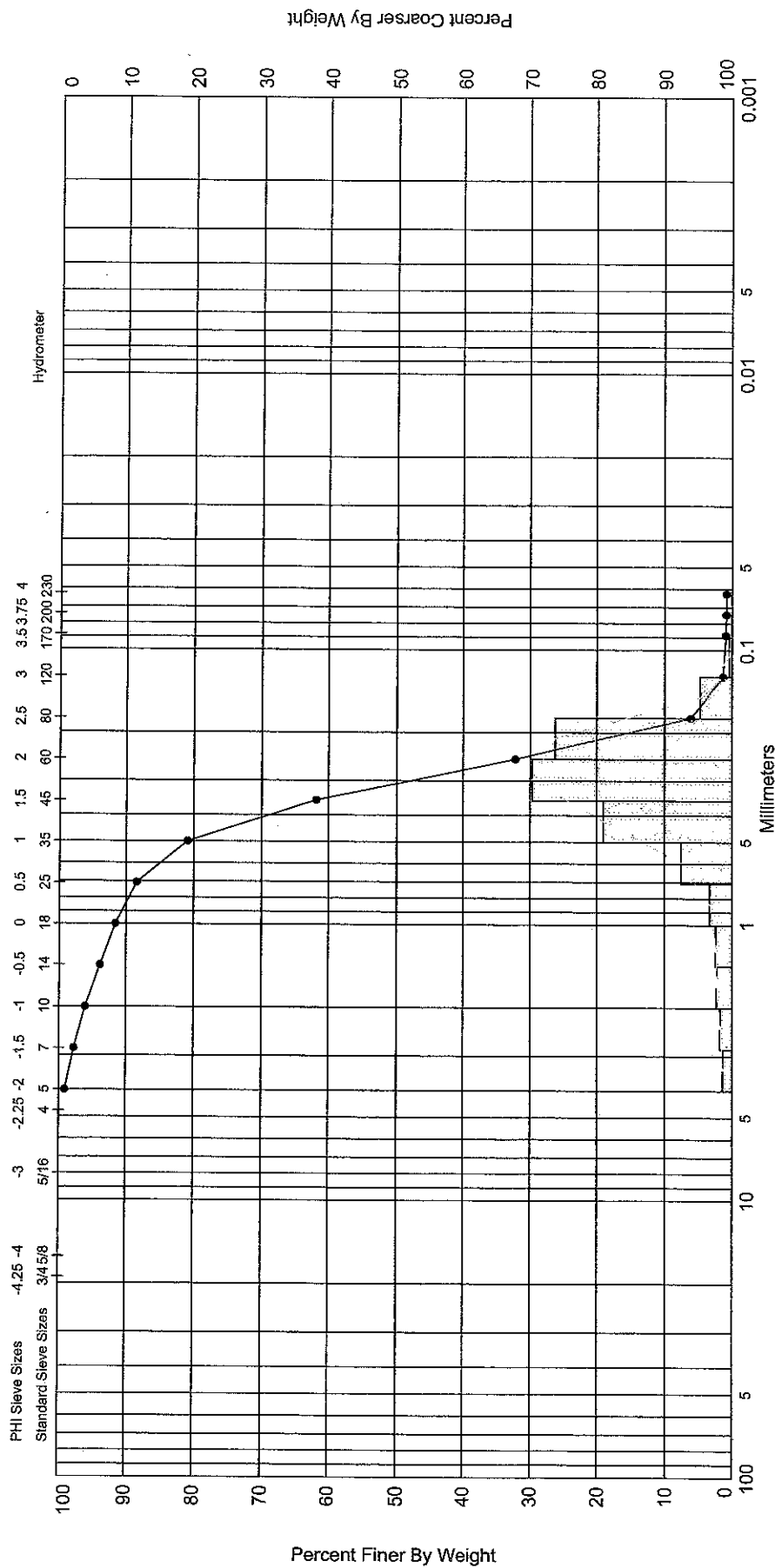
Dry Weight (g): <b>19.45</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.05</b>	Fines (%): #200 - 0.84 #230 - 0.81	Organics (%): <b>0.65</b>	Carbonates (%): <b>21.67</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.18	0.90	0.17	0.90
7	-1.50	2.83	0.26	1.34	0.44	2.24
10	-1.00	2.00	0.33	1.68	0.76	3.92
14	-0.50	1.41	0.42	2.18	1.19	6.10
18	0.00	1.00	0.45	2.33	1.64	8.43
25	0.50	0.71	0.62	3.18	2.26	11.61
35	1.00	0.50	1.46	7.50	3.72	19.11
45	1.50	0.35	3.70	19.04	7.42	38.15
60	2.00	0.25	5.77	29.68	13.19	67.83
80	2.50	0.18	5.09	26.18	18.29	94.01
120	3.00	0.13	0.91	4.67	19.19	98.68
170	3.50	0.09	0.08	0.40	19.27	99.08
200	3.75	0.07	0.02	0.08	19.29	99.16
230	4.00	0.06	0.01	0.03	19.29	99.19

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.61	2.31	2.14	1.70	1.15	0.79	-0.75
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.48	0.36	0.9	-1.35	5.31	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/06



Gravel		Sand			Silt and Clay						
Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort				
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE2-A9-10	●—		SP	#200 - 0.84 #230 - 0.81	0.65	21.67	1.7	1.48	-1.35	5.31	0.9
Comments:											
Depths and elevations based on measured values											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											
Sample Information				Sample Information							
Project Name:				MMS Field Study 2005 CT - 39075							
Analysis Date:				07-05-06							
Analyzed By:				SEA Inc.							
Easting (X, ft):				677,494							
Northing (Y, ft):				1,827,109							
Horizontal System:				NAD 1983							
Vertical System:				MSL							

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-11

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>677,844</b>	Northing (ft): <b>1,835,375</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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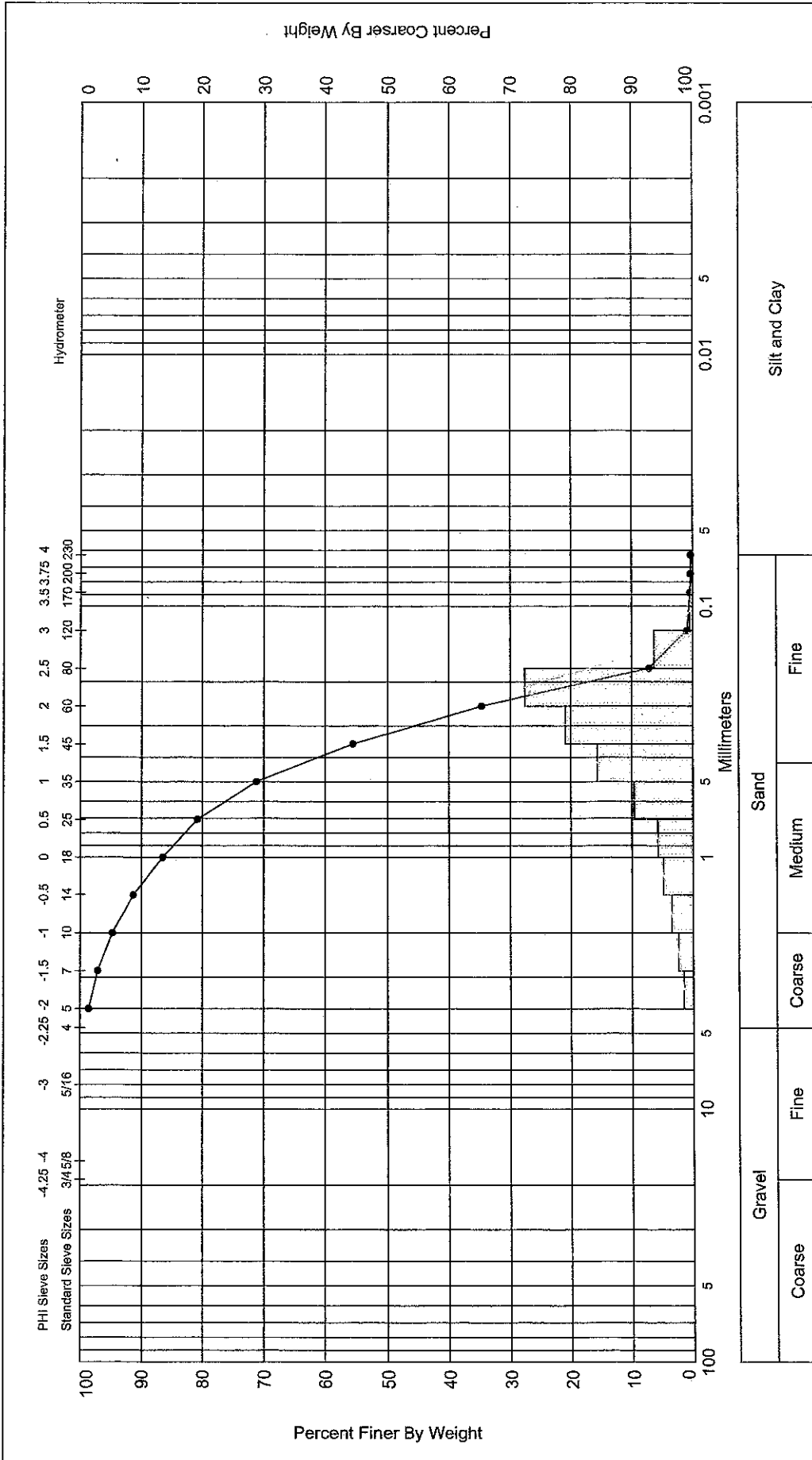
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>19.69</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.16</b>	Fines (%): #200 - 0.35 #230 - 0.33	Organics (%): <b>0.79</b>	Carbonates (%): <b>20.03</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.28	1.40	0.28	1.40
7	-1.50	2.83	0.29	1.47	0.56	2.87
10	-1.00	2.00	0.46	2.34	1.03	5.21
14	-0.50	1.41	0.68	3.45	1.70	8.66
18	0.00	1.00	0.95	4.83	2.66	13.49
25	0.50	0.71	1.13	5.71	3.78	19.20
35	1.00	0.50	1.89	9.61	5.67	28.81
45	1.50	0.35	3.09	15.68	8.76	44.49
60	2.00	0.25	4.11	20.87	12.87	65.36
80	2.50	0.18	5.42	27.52	18.28	92.88
120	3.00	0.13	1.23	6.22	19.51	99.10
170	3.50	0.09	0.10	0.49	19.61	99.59
200	3.75	0.07	0.01	0.06	19.62	99.65
230	4.00	0.06	0.00	0.02	19.62	99.67

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.67	2.34	2.18	1.63	0.80	0.22	-1.04
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.34	0.40	1.04	-0.88	3.38	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample		Sample Information																
Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	Analysis Date:	Analyzed By:	Easting (X, ft):	Northing (Y, ft):	Horizontal System:	Vertical System:	
NE2-A9-11	—●—	SP	#200 - 0.35 #230 - 0.33	0.79	20.03	1.63	1.34	-0.88	3.38	1.04	MMS Field Study 2005 CT - 38075	07-05-06	SEA Inc.	677,844	1,835,375	NAD 1983	MSL	
Comments:																		
Depths and elevations based on measured values																		
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-12

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>675,999</b>	Northing (ft): <b>1,831,332</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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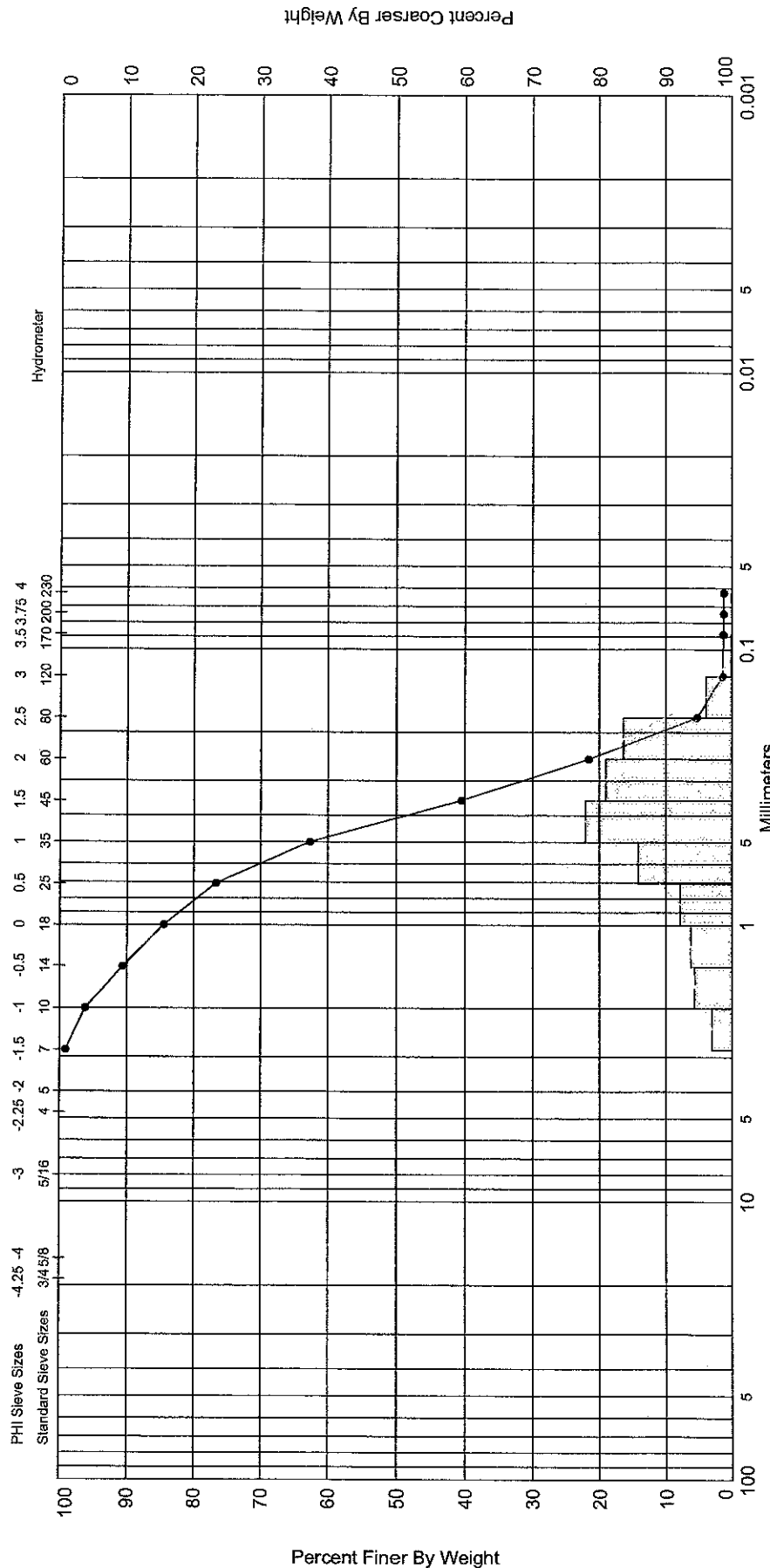
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.18 #230 - 1.14	Organics (%):	Carbonates (%):	Shells (%):
19.56		0.00	-0.06		1.26	26.66	

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.18	0.89	0.17	0.89
10	-1.00	2.00	0.57	2.89	0.74	3.78
14	-0.50	1.41	1.09	5.57	1.83	9.35
18	0.00	1.00	1.20	6.16	3.03	15.51
25	0.50	0.71	1.53	7.81	4.56	23.32
35	1.00	0.50	2.76	14.09	7.32	37.41
45	1.50	0.35	4.31	22.06	11.63	59.47
60	2.00	0.25	3.71	18.98	15.34	78.45
80	2.50	0.18	3.20	16.36	18.54	94.81
120	3.00	0.13	0.75	3.83	19.29	98.64
170	3.50	0.09	0.03	0.13	19.32	98.77
200	3.75	0.07	0.01	0.05	19.32	98.82
230	4.00	0.06	0.01	0.04	19.33	98.86

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.17	1.91	1.29	0.56	0.03	-0.89
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.12	0.46	0.98	-0.52	2.71	

GRANULARMETRIC REPORT: MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay				
		Coarse	Medium	Fine					
Sample	NE2-A9-12								
Symbol	●—								
Elev. (ft)									
USCS	SP								
% Fines #200 - 1.18	1.18								
% Fines #230 - 1.14	1.14								
% Organics	1.26								
% Carbonates	26.66								
Median	1.29								
Mean	1.12								
Skew	-0.52								
Kurt	2.71								
Sort	0.98								

Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	07-05-06
Analyzed By:	SEA Inc.
Easting (X, ft):	675,999
Northing (Y, ft):	1,831,332
Horizontal System:	NAD 1983
Vertical System:	MSL

Comments:	
Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-A9-13

Analysis Date: 07-05-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>680,594</b>	Northing (ft): <b>1,810,565</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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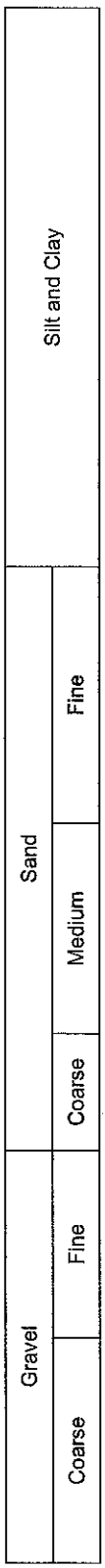
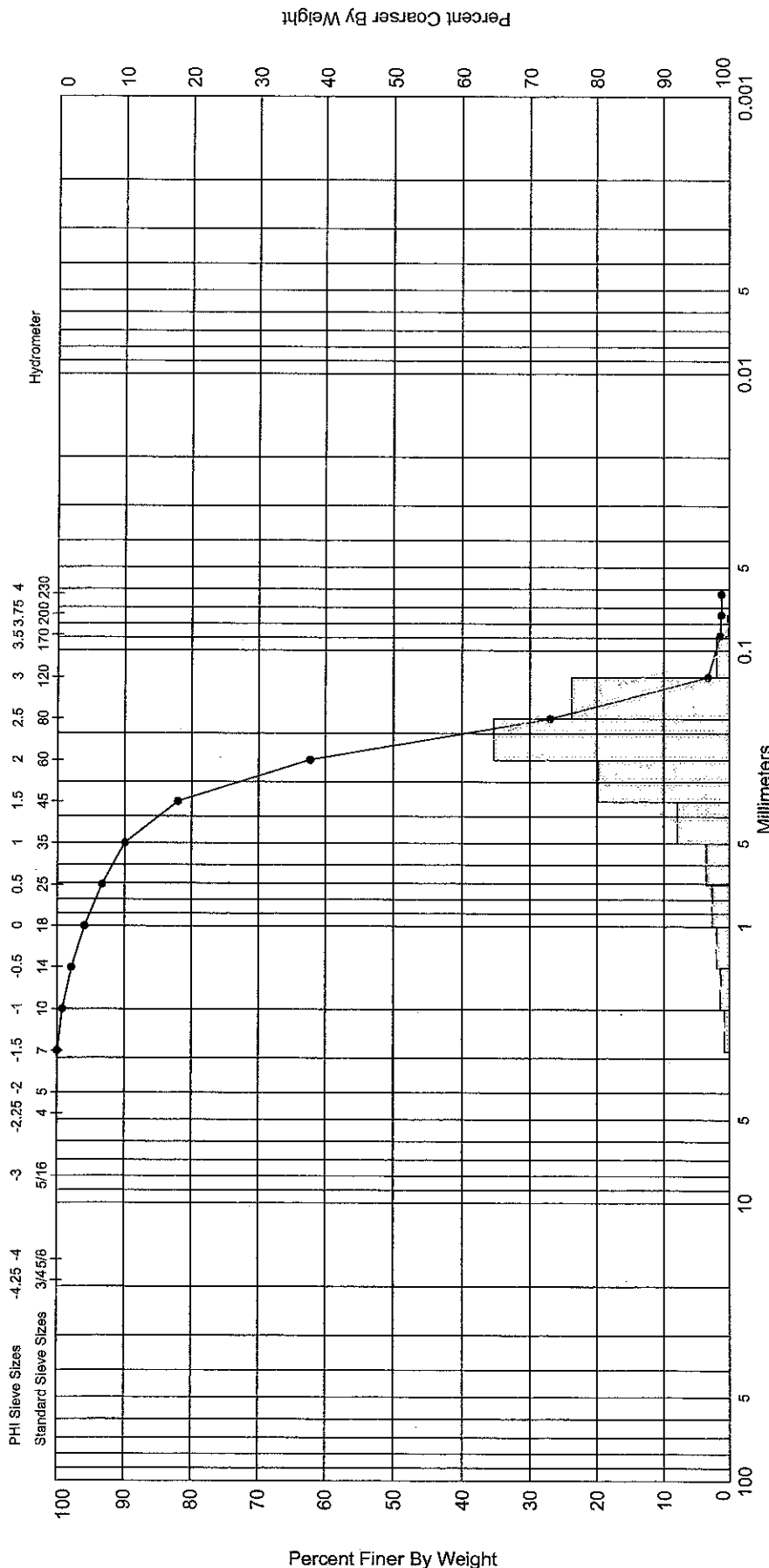
Dry Weight (g): <b>18.15</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.16</b>	Fines (%): #200 - 1.17 #230 - 1.14	Organics (%): <b>0.66</b>	Carbonates (%): <b>13.84</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
7	-1.50	2.83	0.01	0.04	0.01	0.04
10	-1.00	2.00	0.13	0.73	0.14	0.77
14	-0.50	1.41	0.24	1.31	0.38	2.08
18	0.00	1.00	0.35	1.92	0.73	4.00
25	0.50	0.71	0.47	2.57	1.19	6.57
35	1.00	0.50	0.64	3.50	1.83	10.07
45	1.50	0.35	1.43	7.89	3.26	17.96
60	2.00	0.25	3.59	19.77	6.85	37.73
80	2.50	0.18	6.42	35.38	13.27	73.11
120	3.00	0.13	4.30	23.69	17.57	96.80
170	3.50	0.09	0.34	1.86	17.91	98.66
200	3.75	0.07	0.03	0.17	17.94	98.83
230	4.00	0.06	0.01	0.03	17.94	98.86

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.73	2.54	2.17	1.68	1.38	0.19
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.99	0.25	0.81	-1.54	5.82	

GRANULARMETRIC REPORT MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample		Symbol		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Median		Mean		Skew		Kurt		Sort		Sample Information	
NE2-A9-13		●		—		SP		#200 - 1.17 #230 - 1.14		0.66		13.84		2.17		1.99		-1.54		5.82		0.81		Project Name: MMS Field Study 2005 CT - 39075	
Comments:																									
Depths and elevations based on measured values																									
Analyzed By: SEA Inc. Easting (X, ft): 680,594 Northing (Y, ft): 1,810,565 Horizontal System: NAD 1983 Vertical System: MSL																									
Analysis Date: 07-05-06 Project Name: MMS Field Study 2005 CT - 39075																									

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-01

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>690,583</b>	Northing (ft): <b>1,767,350</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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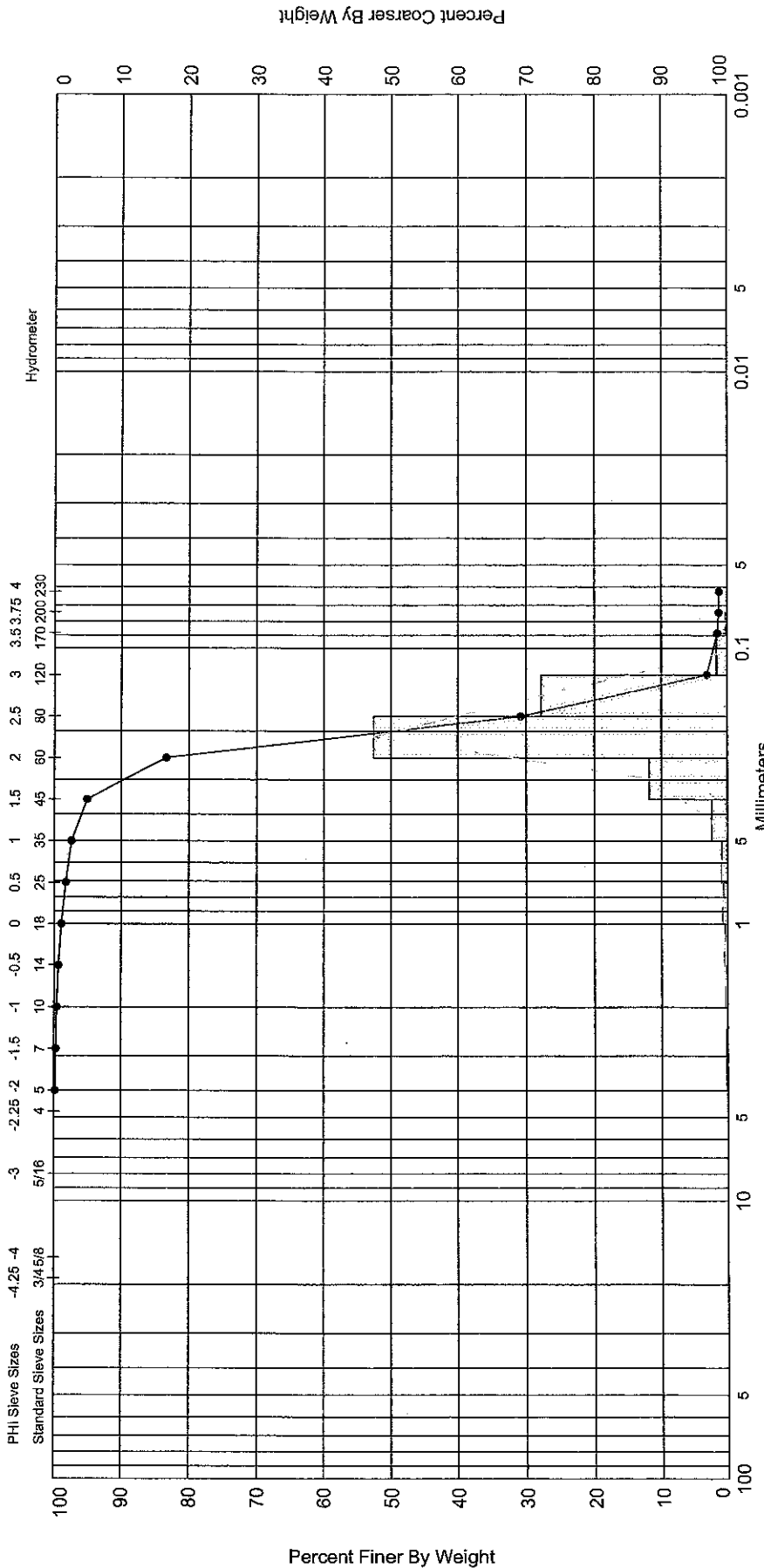
Dry Weight (g): <b>19.47</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.11</b>	Fines (%): #200 - 1.25 #230 - 1.20	Organics (%): <b>0.42</b>	Carbonates (%): <b>6.54</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.03	0.17	0.03	0.17
7	-1.50	2.83	0.02	0.10	0.05	0.27
10	-1.00	2.00	0.02	0.10	0.07	0.37
14	-0.50	1.41	0.05	0.27	0.13	0.64
18	0.00	1.00	0.08	0.41	0.21	1.05
25	0.50	0.71	0.13	0.66	0.33	1.71
35	1.00	0.50	0.17	0.85	0.50	2.56
45	1.50	0.35	0.45	2.31	0.95	4.87
60	2.00	0.25	2.30	11.80	3.25	16.67
80	2.50	0.18	10.23	52.53	13.47	69.20
120	3.00	0.13	5.41	27.77	18.88	96.97
170	3.50	0.09	0.31	1.57	19.19	98.54
200	3.75	0.07	0.04	0.21	19.23	98.75
230	4.00	0.06	0.01	0.05	19.24	98.80

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.96	2.77	2.60	2.32	2.08	1.97	1.51
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.27	0.21	0.52	-2.31	14.41	

GRANULOMETRIC REPORT MMS EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine	Skew	Kurt	Sort

Sample	Symbol	Elev. (ft)	USCS	% Fines #200 - 1.25	% Organics #230 - 1.20	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information				
NE2-B11-01	●		SP		0.42	6.54	2.32	2.27	-2.31	14.41	0.52	Project Name:	MMS Field Study 2005 CT - 39075			
Comments:												Analysis Date:	06-26-06			
Depths and elevations based on measured values												Analyzed By:	SEA Inc.			
												Easting (X, ft):	690,583			
												Northing (Y, ft):	1,767,350			
												Horizontal System:	NAD 1983			
												Vertical System:	MSL			
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708				

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-B11-02  
 Analysis Date: 06-26-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>689,852</b>	Northing (ft): <b>1,763,368</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>17.72</b>	Wash Weight (g):	Pan Retained (g): <b>0.07</b>	Sieve Loss (%): <b>-0.05</b>	Fines (%): #200 - <b>0.89</b> #230 - <b>0.62</b>	Organics (%): <b>1.67</b>	Carbonates (%): <b>36.62</b>	Shells (%):
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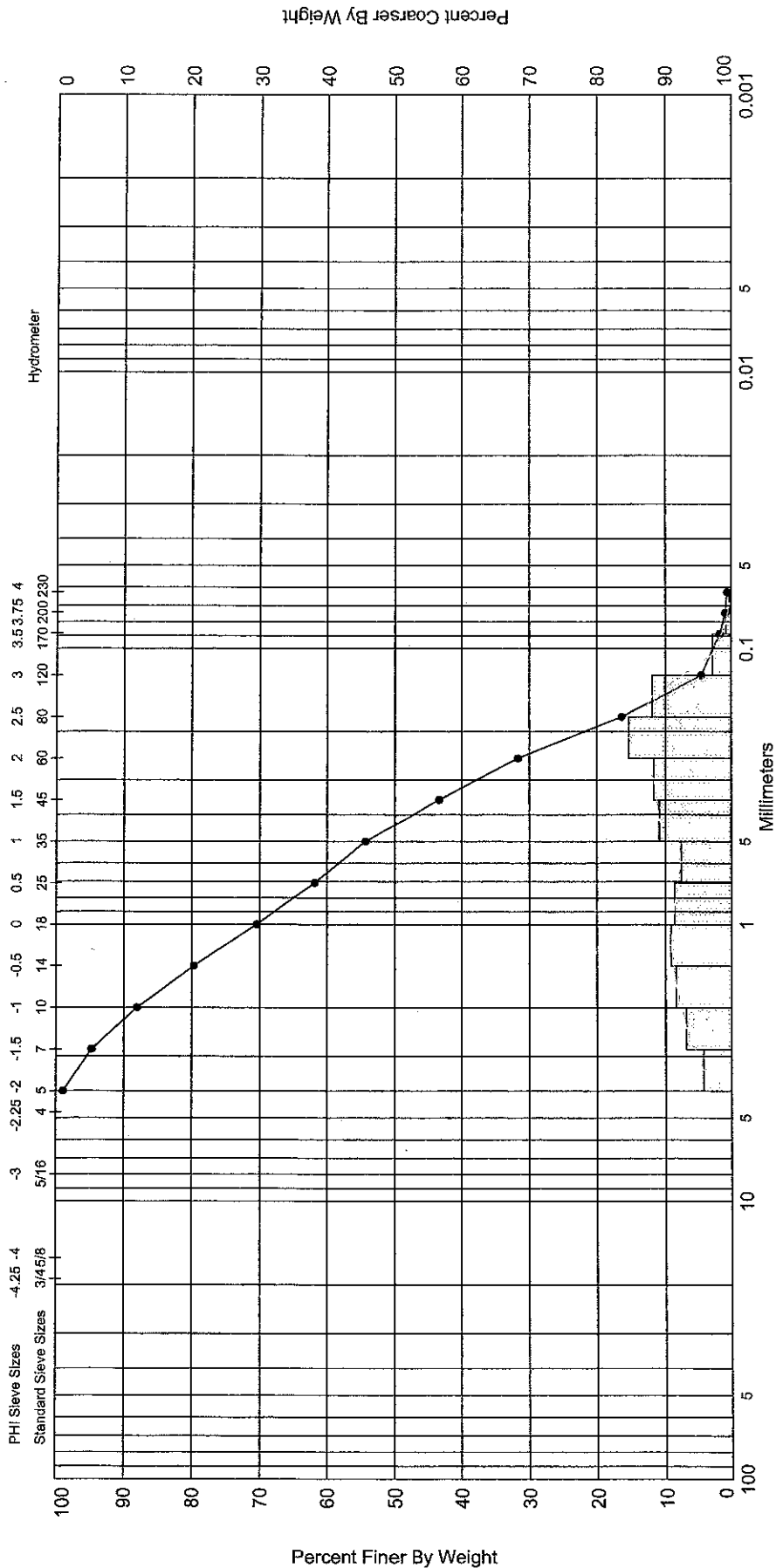
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.19	1.06	0.19	1.06
7	-1.50	2.83	0.74	4.19	0.93	5.25
10	-1.00	2.00	1.19	6.73	2.12	11.98
14	-0.50	1.41	1.48	8.35	3.60	20.33
18	0.00	1.00	1.63	9.19	5.23	29.52
25	0.50	0.71	1.53	8.62	6.76	38.14
35	1.00	0.50	1.35	7.59	8.10	45.73
45	1.50	0.35	1.93	10.90	10.03	56.63
60	2.00	0.25	2.07	11.70	12.11	68.33
80	2.50	0.18	2.71	15.29	14.82	83.62
120	3.00	0.13	2.11	11.89	16.92	95.51
170	3.50	0.09	0.50	2.80	17.42	98.31
200	3.75	0.07	0.14	0.80	17.56	99.11
230	4.00	0.06	0.05	0.27	17.61	99.38

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.98	2.52	2.22	1.20	-0.25	-0.76	-1.53

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	0.96	0.51	1.42	-0.19	1.94

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL\_DEP\_ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine			

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information													
NE2-B11-02	●—		SP	#200 - 0.89 #230 - 0.62	1.67	36.62	1.2	0.96	-0.19	1.94	1.42	Project Name:	MMS Field Study 2005 CT - 39075	Analysis Date:	06-26-06	Analyzed By:	SEA Inc.	Easting (X, ft):	689,852	Northing (Y, ft):	1,763,368	Horizontal System:	NAD 1983	Vertical System:	MSL
Comments:																									
Depths and elevations based on measured values																									
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-03

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>691,343</b>	Northing (ft): <b>1,761,266</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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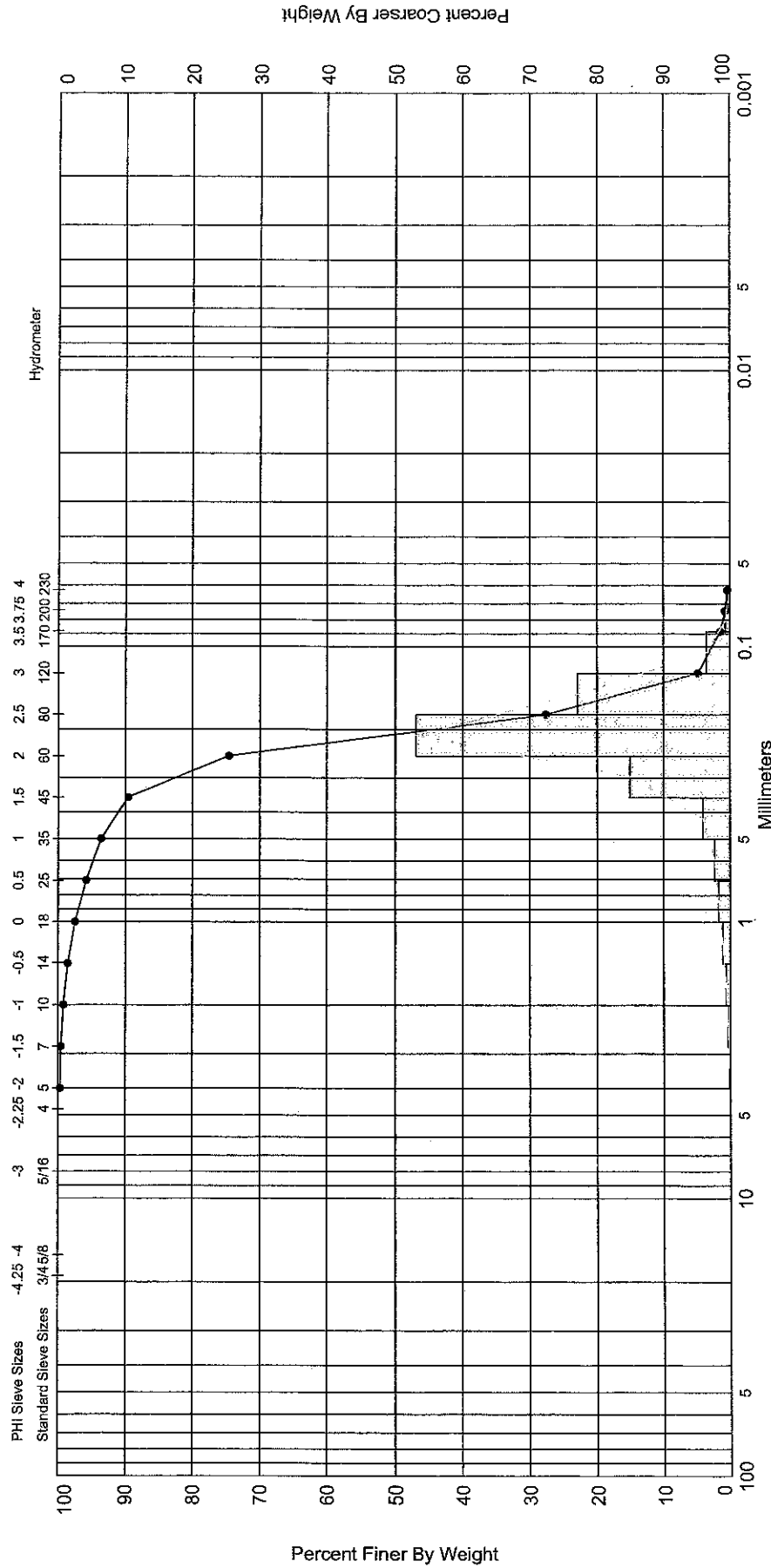
Dry Weight (g): <b>15.51</b>	Wash Weight (g):	Pan Retained (g): <b>0.06</b>	Sieve Loss (%): <b>-0.37</b>	Fines (%): #200 - <b>0.69</b> #230 - <b>0.37</b>	Organics (%): <b>1.01</b>	Carbonates (%): <b>9.16</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.05	0.32	0.05	0.32
7	-1.50	2.83	0.02	0.12	0.07	0.44
10	-1.00	2.00	0.06	0.36	0.12	0.80
14	-0.50	1.41	0.10	0.63	0.22	1.43
18	0.00	1.00	0.17	1.08	0.39	2.51
25	0.50	0.71	0.26	1.66	0.65	4.17
35	1.00	0.50	0.35	2.22	0.99	6.39
45	1.50	0.35	0.63	4.05	1.62	10.44
60	2.00	0.25	2.33	15.02	3.95	25.46
80	2.50	0.18	7.28	46.95	11.23	72.41
120	3.00	0.13	3.54	22.81	14.77	95.22
170	3.50	0.09	0.53	3.43	15.30	98.65
200	3.75	0.07	0.10	0.66	15.40	99.31
230	4.00	0.06	0.05	0.32	15.45	99.63

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.00	2.75	2.56	2.26	1.98	1.69	0.69
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.15	0.23	0.7	-1.76	8.53	

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand			Silt and Clay		
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-B11-03	●	—	SP	#200 - 0.69 #230 - 0.37	1.01	9.16	2.26	2.15	-1.76	8.53	0.7	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	06-26-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	691,343		
												Northing (Y, ft):	1,761,266		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-04

Analysis Date: 06-29-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>687,889</b>	Northing (ft): <b>1,776,953</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>16.66</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.35</b>	Fines (%): #200 - <b>0.04</b> #230 - <b>0.02</b>	Organics (%): <b>0.69</b>	Carbonates (%): <b>23.20</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.22	1.34	0.22	1.34
7	-1.50	2.83	0.38	2.25	0.60	3.59
10	-1.00	2.00	0.36	2.17	0.96	5.76
14	-0.50	1.41	0.48	2.89	1.44	8.65
18	0.00	1.00	0.59	3.51	2.03	12.16
25	0.50	0.71	0.60	3.62	2.63	15.78
35	1.00	0.50	0.73	4.35	3.35	20.13
45	1.50	0.35	1.55	9.27	4.90	29.40
60	2.00	0.25	5.42	32.51	10.32	61.91
80	2.50	0.18	5.57	33.44	15.89	95.35
120	3.00	0.13	0.67	4.01	16.56	99.36
170	3.50	0.09	0.08	0.50	16.64	99.86
200	3.75	0.07	0.02	0.10	16.66	99.96
230	4.00	0.06	0.00	0.02	16.66	99.98

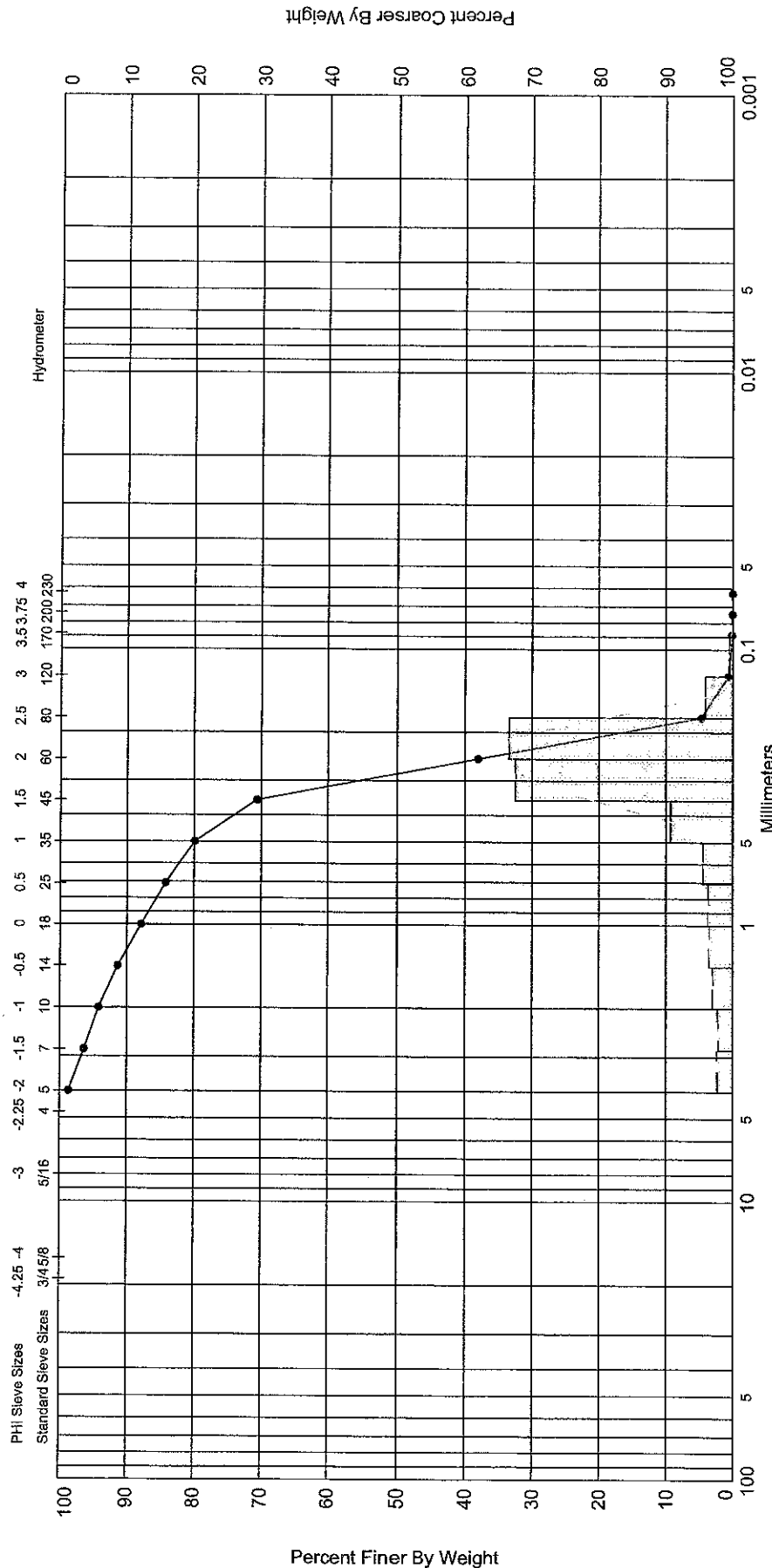
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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.49	2.33	2.20	1.82	1.26	0.53	-1.18

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	1.48	0.36	1.02	-1.44	4.75

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	NE2-B11-04	Symbol	—●—	Elev. (ft)	SP	USCS	% Fines #200 - 0.04 #230 - 0.02	% Organics	0.69	% Carbonates	23.20	Median	1.82	Mean	1.48	Skew	-1.44	Kurt	4.75	Sort	1.02	Sample Information	
Comments:		Depths and elevations based on measured values																					
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																				Project Name:		MMS Field Study 2005 CT - 39075	
																				Analysis Date:		06-29-06	
																				Analyzed By:		SEA Inc.	
																				Easting (X, ft):		687,889	
																				Northing (Y, ft):		1,776,953	
																				Horizontal System:		NAD 1983	
																				Vertical System:		MSL	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-05

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>688,143</b>	Northing (ft): <b>1,777,772</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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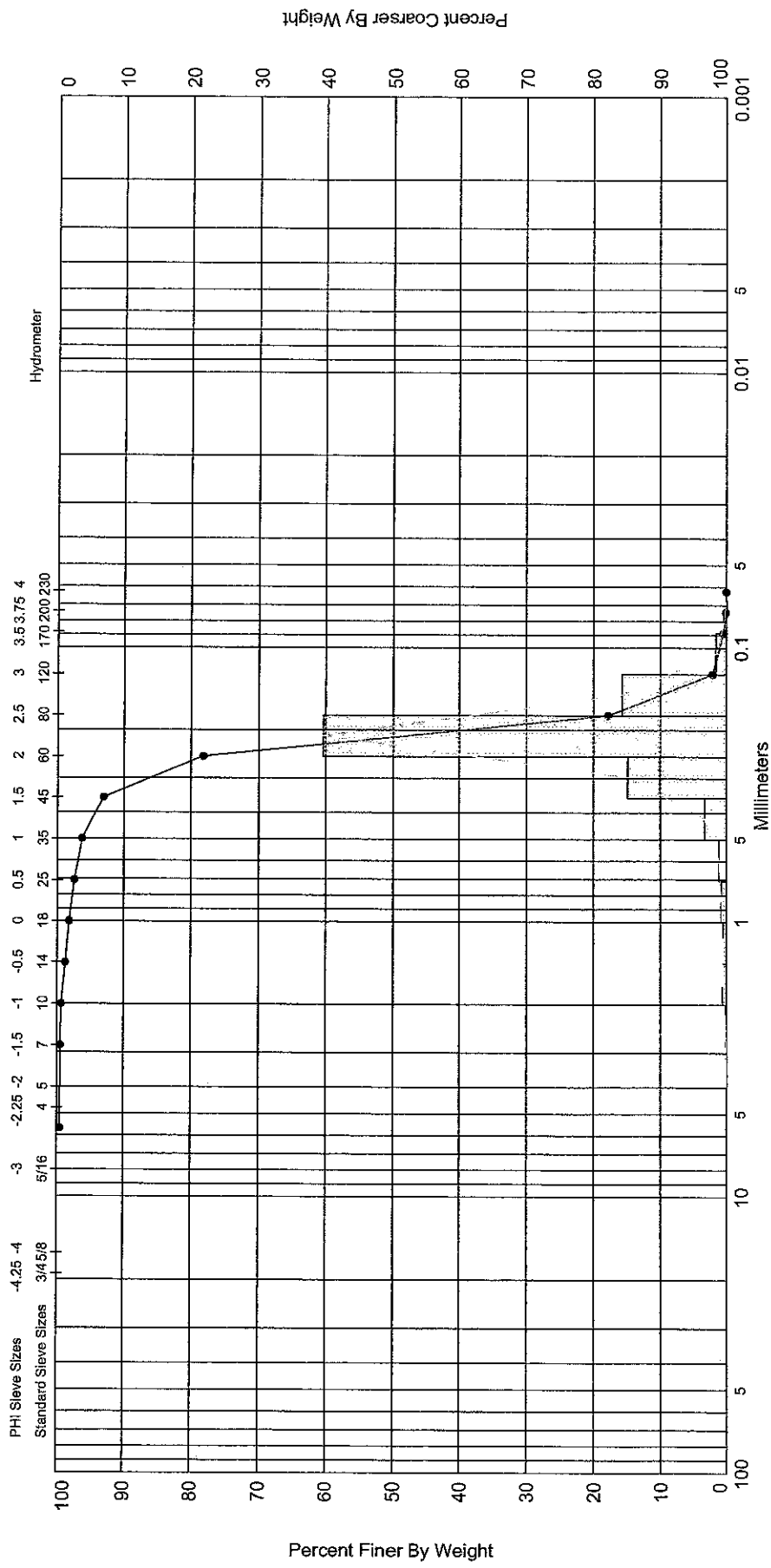
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>17.27</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): #200 - <b>0.11</b> #230 - <b>0.03</b>	Organics (%): <b>0.68</b>	Carbonates (%): <b>8.19</b>	Shells (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3.5	-2.50	5.66	0.08	0.45	0.08	0.45
7	-1.50	2.83	0.01	0.05	0.09	0.50
10	-1.00	2.00	0.02	0.13	0.11	0.63
14	-0.50	1.41	0.10	0.59	0.21	1.22
18	0.00	1.00	0.10	0.58	0.31	1.80
25	0.50	0.71	0.13	0.78	0.44	2.58
35	1.00	0.50	0.20	1.13	0.64	3.71
45	1.50	0.35	0.56	3.24	1.20	6.95
60	2.00	0.25	2.57	14.89	3.77	21.84
80	2.50	0.18	10.43	60.38	14.20	82.22
120	3.00	0.13	2.72	15.74	16.92	97.96
170	3.50	0.09	0.27	1.58	17.19	99.54
200	3.75	0.07	0.06	0.35	17.25	99.89
230	4.00	0.06	0.01	0.08	17.27	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.91	2.56	2.44	2.23	2.03	1.80	1.20
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.15	0.23	0.55	-2.17	13	

GRANULOMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand				Silt and Clay						
Coarse	Fine	Coarse	Medium	Fine								
Sample	Symbol	Elev. (ft)	USCS	% Fines #200 - 0.11 #230 - 0.05	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
NE2-B11-05	—●—		SP	0.68	8.19	2.23	2.15	-2.17	13	0.55	MMS Field Study 2005 CT - 39075	
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Analyzed By: SEA Inc.												
Easting (X, ft): 688,143												
Northing (Y, ft): 1,777,772												
Horizontal System: NAD 1983												
Vertical System: MSL												
Analysis Date: 06-26-06												
Project Name: MMS Field Study 2005 CT - 39075												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-06

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>689,451</b>	Northing (ft): <b>1,772,252</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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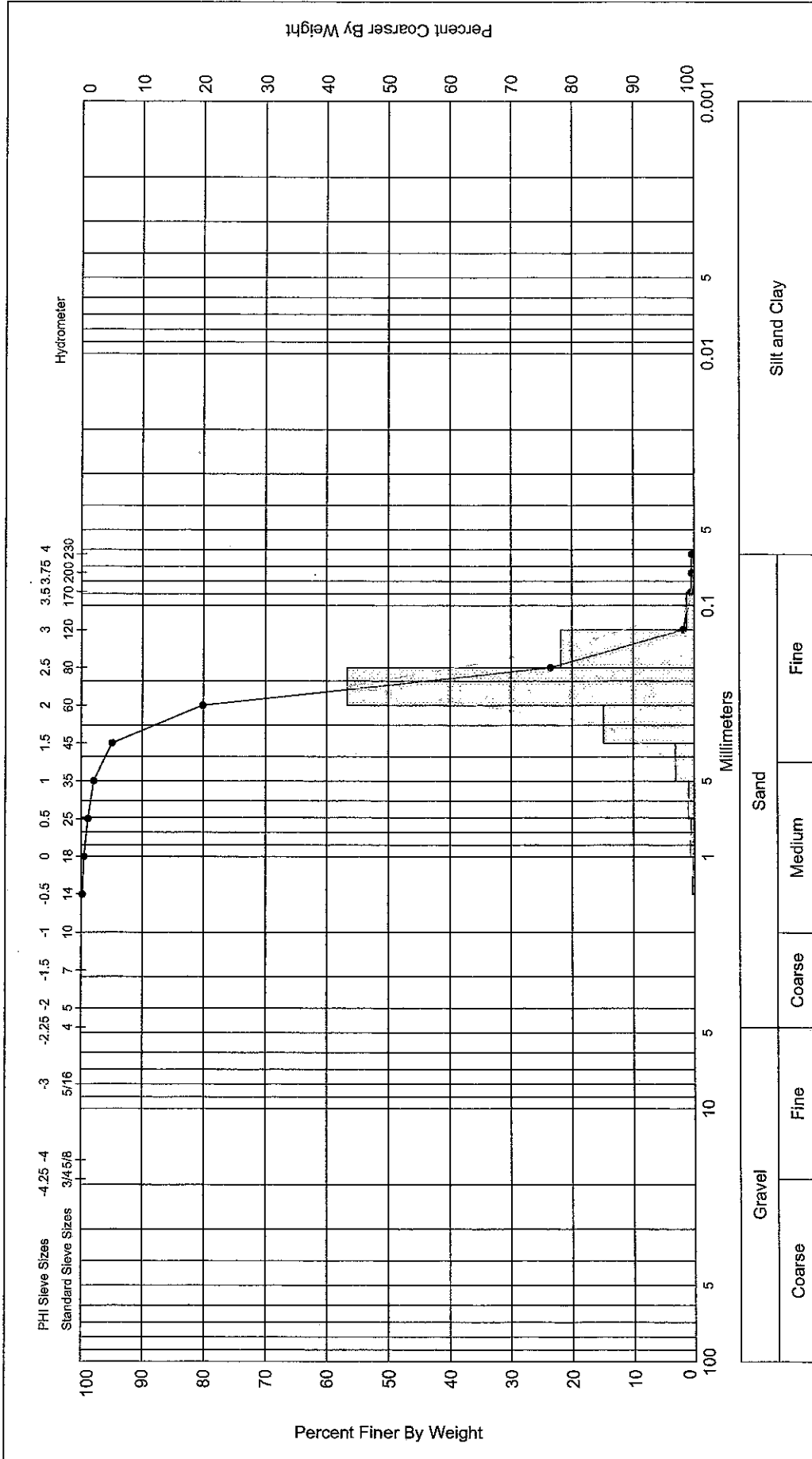
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>19.35</b>	Wash Weight (g):	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>-0.19</b>	Fines (%): #200 - <b>0.41</b> #230 - <b>0.39</b>	Organics (%): <b>0.40</b>	Carbonates (%): <b>5.94</b>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
14	-0.50	1.41	0.04	0.18	0.04	0.18	
18	0.00	1.00	0.06	0.28	0.09	0.46	
25	0.50	0.71	0.12	0.63	0.21	1.09	
35	1.00	0.50	0.18	0.93	0.39	2.02	
45	1.50	0.35	0.59	3.03	0.98	5.05	
60	2.00	0.25	2.87	14.85	3.85	19.90	
80	2.50	0.18	10.96	56.62	14.80	76.52	
120	3.00	0.13	4.21	21.74	19.01	98.26	
170	3.50	0.09	0.24	1.22	19.25	99.48	
200	3.75	0.07	0.02	0.11	19.27	99.59	
230	4.00	0.06	0.00	0.02	19.27	99.61	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.93	2.67	2.49	2.27	2.05	1.87	1.49
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.23	0.21	0.45	-1.33	7.93	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information	
Sample	NE2-B11-06
Symbol	SP
Elev. (ft)	
USCS	SP
% Fines #200 - 0.41	0.41
% Fines #230 - 0.39	0.39
% Organics	0.40
% Carbonates	5.94
Mean	2.23
Median	2.27
Skew	-1.33
Kurt	7.93
Sort	0.45
Project Name: MMS Field Study 2005 CT - 39075	
Analysis Date: 06-26-06	
Analyzed By: SEA Inc.	
Easting (X, ft): 689,451	
Northing (Y, ft): 1,772,252	
Horizontal System: NAD 1983	
Vertical System: MSL	
Comments: Depths and elevations based on measured values	
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708	

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-07

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>689,088</b>	Northing (ft): <b>1,779,948</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>17.31</b>	Wash Weight (g):	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>-0.08</b>	Fines (%): #200 - <b>0.34</b> #230 - <b>0.16</b>	Organics (%): <b>0.85</b>	Carbonates (%): <b>8.23</b>	Shells (%):
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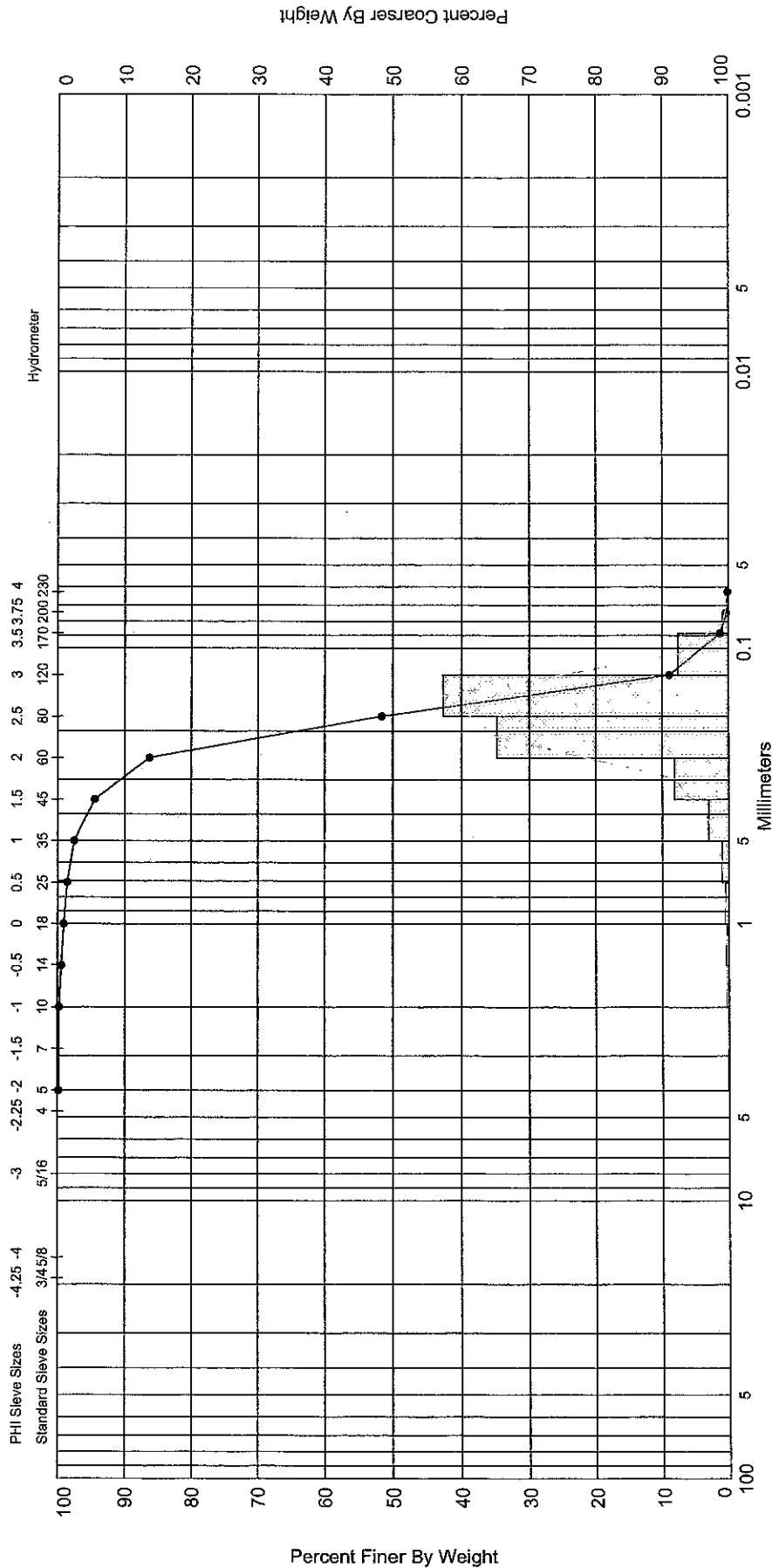
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
5	-2.00	4.00	0.03	0.15	0.03	0.15
10	-1.00	2.00	0.01	0.08	0.04	0.23
14	-0.50	1.41	0.06	0.34	0.10	0.57
18	0.00	1.00	0.06	0.35	0.16	0.92
25	0.50	0.71	0.09	0.54	0.25	1.46
35	1.00	0.50	0.18	1.05	0.43	2.51
45	1.50	0.35	0.52	3.03	0.96	5.54
60	2.00	0.25	1.41	8.14	2.37	13.68
80	2.50	0.18	6.01	34.72	8.38	48.40
120	3.00	0.13	7.39	42.70	15.77	91.10
170	3.50	0.09	1.32	7.60	17.09	98.70
200	3.75	0.07	0.17	0.96	17.26	99.66
230	4.00	0.06	0.03	0.18	17.29	99.84

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.26	2.92	2.81	2.52	2.16	2.03	1.41

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.43	0.19	0.58	-1.74	9.76

GRANULARMETRIC REPORT MMS\_EAST SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
NE2-B11-07	●		SP	#200 - 0.34 #230 - 0.16	0.85	8.23	2.52	2.43	-1.74	9.76	0.58
Comments:											
Depths and elevations based on measured values											
Sample Information											
Project Name: MMS Field Study 2005 CT - 39075											
Analysis Date: 06-26-06											
Analyzed By: SEA Inc.											
Easting (X, ft): 689,088											
Northing (Y, ft): 1,779,948											
Horizontal System: NAD 1983											
Vertical System: MSL											
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708											

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-08

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">691,500</p>	Northing (ft): <p style="text-align: center;">1,764,745</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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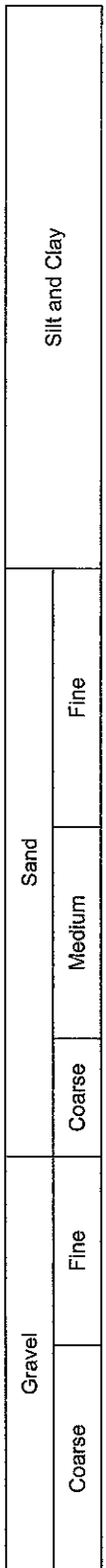
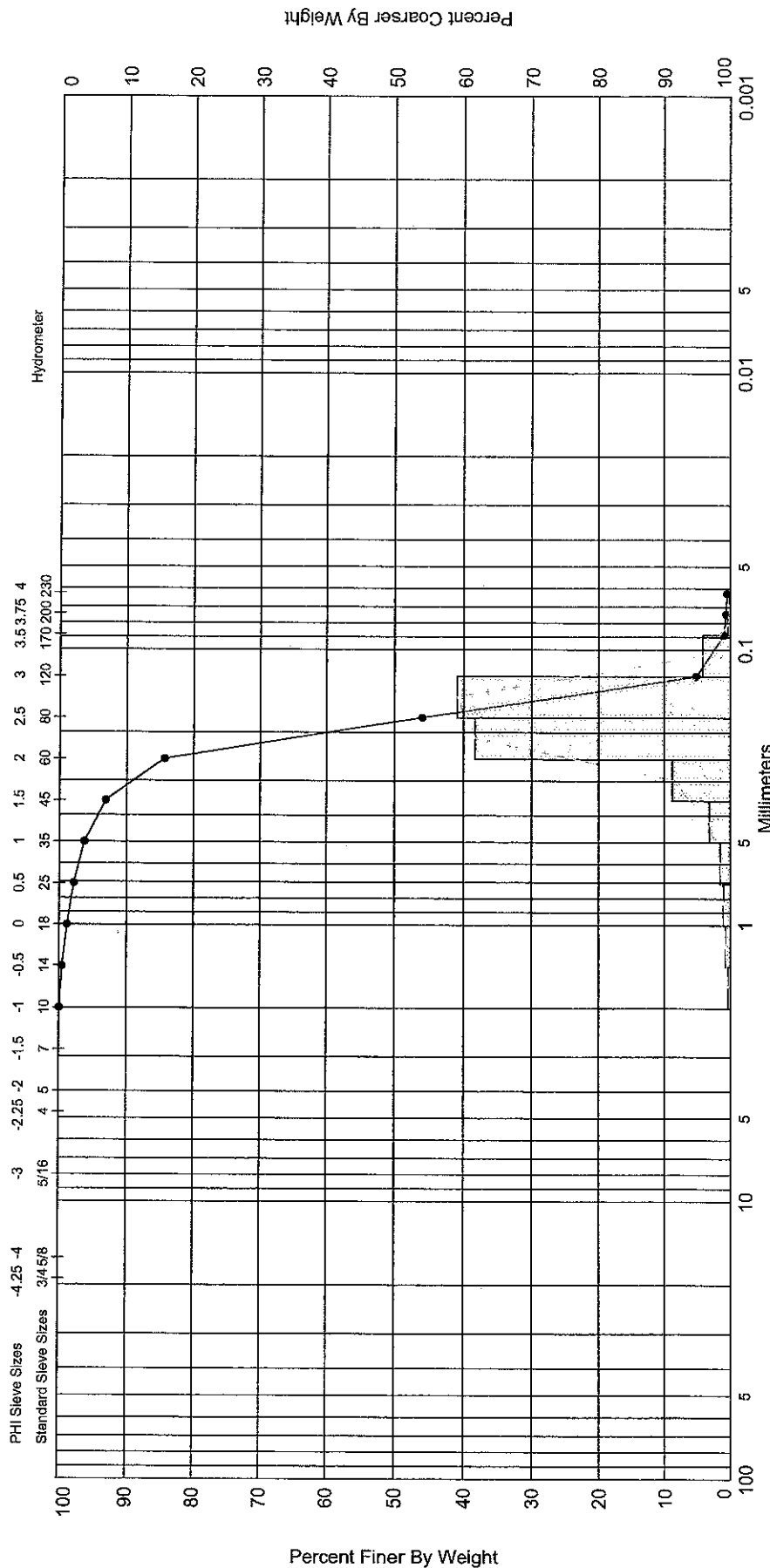
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.64 #230 - 0.51	Organics (%):	Carbonates (%):	Shells (%):
17.35		0.01	-0.07		0.59	8.54	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.01	0.03	0.00	0.03	
14	-0.50	1.41	0.07	0.38	0.07	0.41	
18	0.00	1.00	0.13	0.74	0.20	1.15	
25	0.50	0.71	0.18	1.02	0.38	2.17	
35	1.00	0.50	0.27	1.54	0.64	3.71	
45	1.50	0.35	0.55	3.16	1.19	6.87	
60	2.00	0.25	1.53	8.79	2.72	15.66	
80	2.50	0.18	6.64	38.28	9.36	53.94	
120	3.00	0.13	7.11	40.99	16.47	94.93	
170	3.50	0.09	0.71	4.11	17.19	99.04	
200	3.75	0.07	0.06	0.32	17.24	99.36	
230	4.00	0.06	0.02	0.13	17.26	99.49	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.01	2.87	2.76	2.45	2.12	2.00	1.20
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.35	0.20	0.59	-1.9	8.88	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08





Sample		Sample Information																
Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Project Name:	Analysis Date:	Analyzed By:	Easting (X, ft):	Northing (Y, ft):	Horizontal System:	Vertical System:	
NE2-B11-08	—●—	SP	#200 - 0.64 #230 - 0.51	0.59	8.54	2.45	2.35	-1.9	8.88	0.59	MMS Field Study 2005 CT - 39075	06-26-06	SEA Inc.	691,500	1,764,745	NAD 1983	MSL	
Comments: Depths and elevations based on measured values																		
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																		

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-09

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <b>690,792</b>	Northing (ft): <b>1,759,163</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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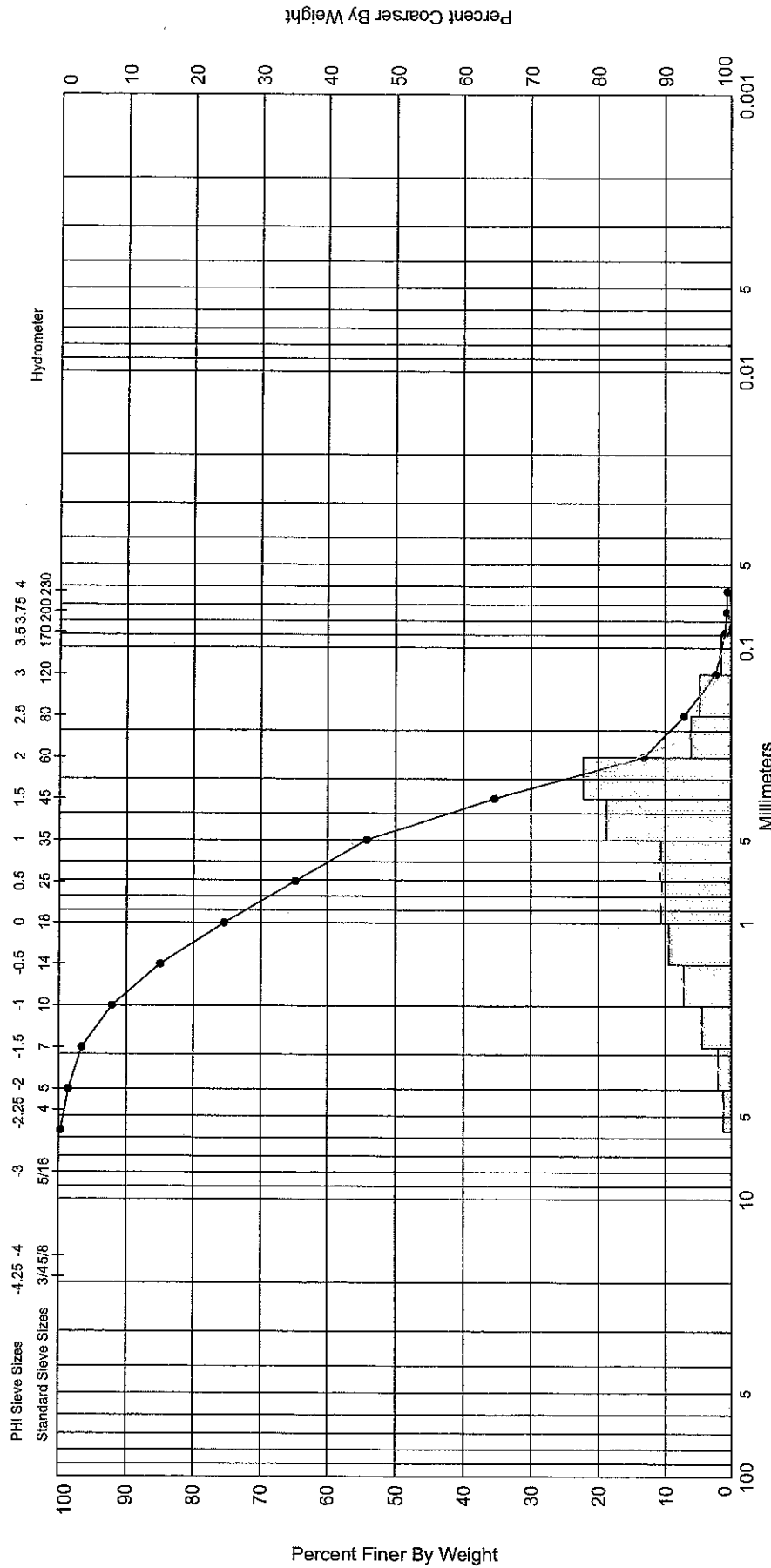
USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 0.66 #230 - 0.54	Organics (%):	Carbonates (%):	Shells (%):
15.62		0.02	-0.20		1.47	43.57	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3.5	-2.50	5.66	0.04	0.27	0.04	0.27	
5	-2.00	4.00	0.18	1.16	0.22	1.43	
7	-1.50	2.83	0.31	1.96	0.53	3.39	
10	-1.00	2.00	0.70	4.47	1.23	7.86	
14	-0.50	1.41	1.13	7.22	2.36	15.08	
18	0.00	1.00	1.48	9.50	3.84	24.58	
25	0.50	0.71	1.65	10.58	5.49	35.16	
35	1.00	0.50	1.66	10.66	7.15	45.82	
45	1.50	0.35	2.93	18.79	10.09	64.61	
60	2.00	0.25	3.47	22.20	13.56	86.81	
80	2.50	0.18	0.95	6.06	14.50	92.87	
120	3.00	0.13	0.75	4.78	15.25	97.65	
170	3.50	0.09	0.22	1.43	15.47	99.08	
200	3.75	0.07	0.04	0.26	15.51	99.34	
230	4.00	0.06	0.02	0.12	15.53	99.46	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.72	1.94	1.73	1.11	0.02	-0.45	-1.32
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	0.86	0.55	1.18	-0.39	2.67	

GRANULARMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand				Silt and Clay				
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine

Sample	NE2-B11-09	Symbol	—●—	Elev. (ft)		USCS	SP	% Fines	0.86	% Organics	1.47	% Carbonates	43.57	Median	1.11	Mean	0.86	Skew	-0.39	Kurt	2.67	Sort	1.18	
Comments:		Depths and elevations based on measured values																						
Sample Information		MMS Field Study 2005 CT - 39075																						
Analysis Date:		06-26-06																						
Analyzed By:		SEA Inc.																						
Easting (X, ft):		690,792																						
Northing (Y, ft):		1,759,163																						
Horizontal System:		NAD 1983																						
Vertical System:		MSL																						

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-B11-10  
 Analysis Date: 06-26-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

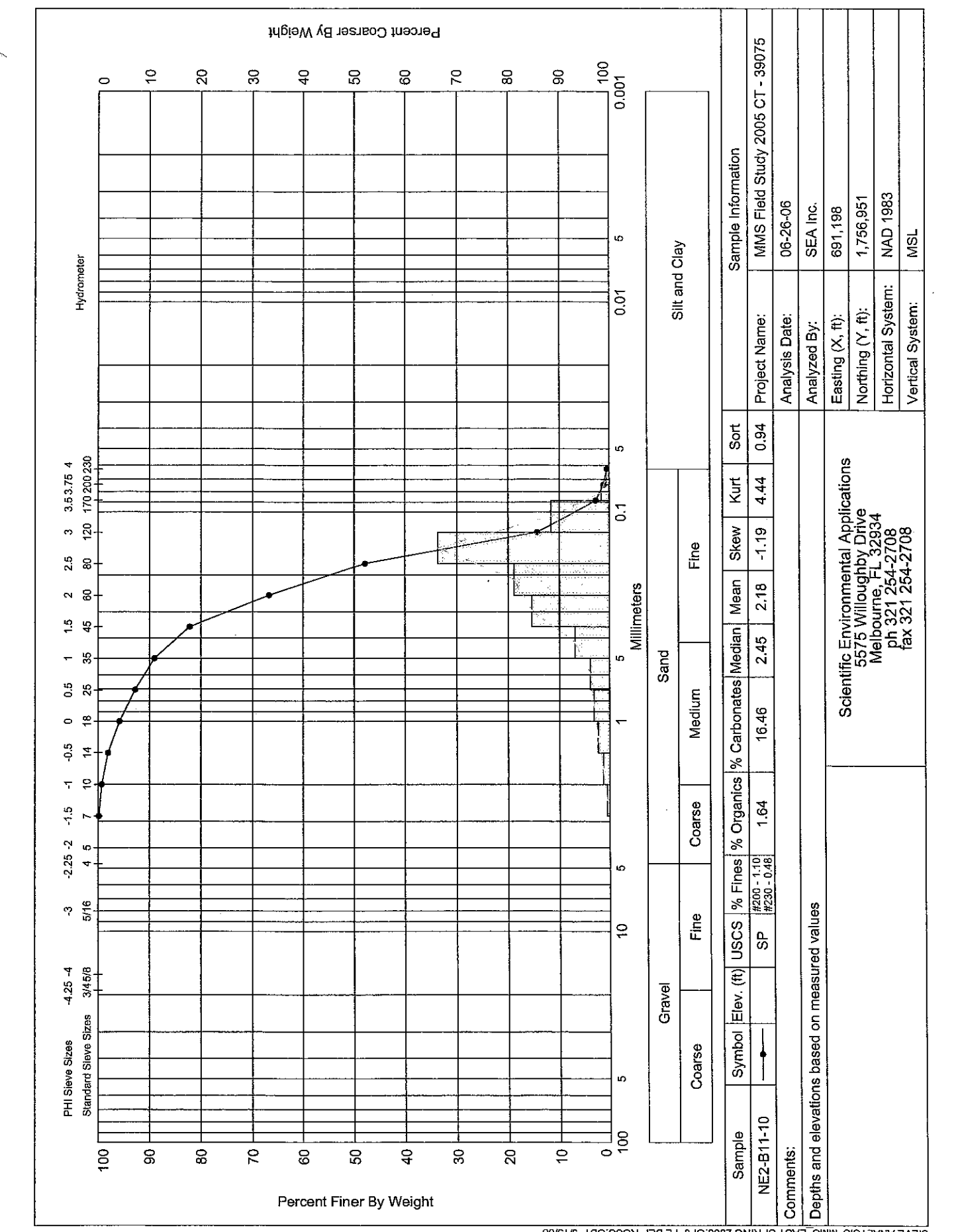
Easting (ft): <b>691,198</b>	Northing (ft): <b>1,756,951</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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Dry Weight (g): <b>15.13</b>	Wash Weight (g):	Pan Retained (g): <b>0.07</b>	Sieve Loss (%): <b>0.01</b>	Fines (%): #200 - 1.10 #230 - 0.48	Organics (%): <b>1.64</b>	Carbonates (%): <b>16.46</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
7	-1.50	2.83	0.03	0.17	0.03	0.17	
10	-1.00	2.00	0.08	0.55	0.11	0.72	
14	-0.50	1.41	0.19	1.25	0.30	1.97	
18	0.00	1.00	0.34	2.24	0.64	4.21	
25	0.50	0.71	0.46	3.02	1.09	7.23	
35	1.00	0.50	0.57	3.77	1.66	11.00	
45	1.50	0.35	1.04	6.86	2.70	17.86	
60	2.00	0.25	2.32	15.35	5.03	33.21	
80	2.50	0.18	2.85	18.81	7.87	52.02	
120	3.00	0.13	5.09	33.66	12.96	85.68	
170	3.50	0.09	1.77	11.67	14.73	97.35	
200	3.75	0.07	0.24	1.55	14.96	98.90	
230	4.00	0.06	0.09	0.62	15.06	99.52	

<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
3.40	2.98	2.84	2.45	1.73	1.36	0.13
<b>Moment</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
<b>Statistics</b>	2.18	0.22	0.94	-1.19	4.44	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Sample Information	
Project Name:	MMS Field Study 2005 CT - 39075
Analysis Date:	06-26-06
Analyzed By:	SEA Inc.
Easting (X, ft):	691,198
Northing (Y, ft):	1,756,951
Horizontal System:	NAD 1983
Vertical System:	MSL

Sample	NE2-B11-10	USCS	SP	% Fines #200 - 1.10	1.10	% Organics #230 - 0.48	0.48	% Carbonates	0	Mean	2.18	Median	2.45	Skew	-1.19	Kurt	4.44	Sort	0.94
Comments: Depths and elevations based on measured values																			
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-11

Analysis Date: 06-26-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">688,739</p>	Northing (ft): <p style="text-align: center;">1,759,530</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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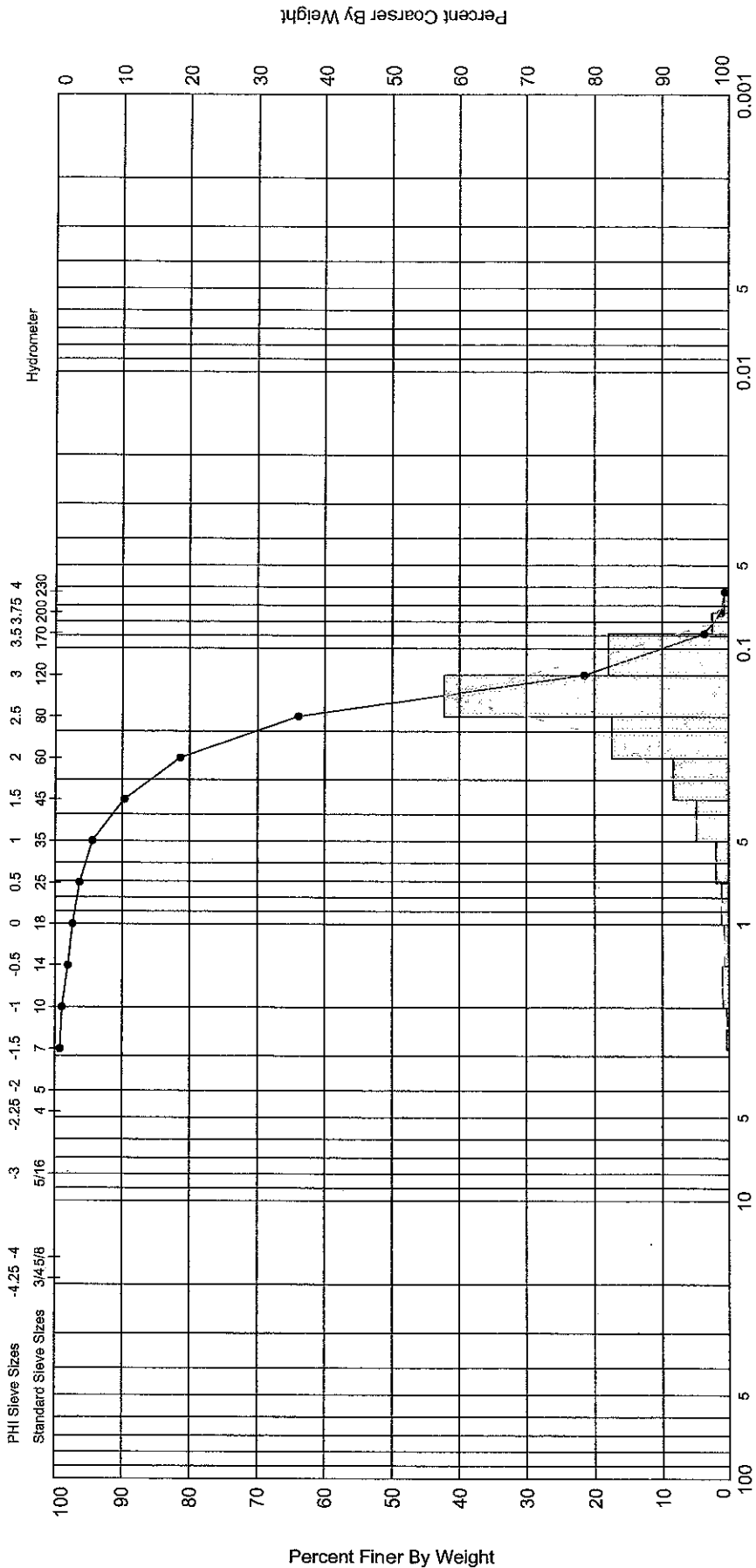
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 1.14 #230 - 0.53	Organics (%):	Carbonates (%):	Shells (%):
15.52		0.08	-0.15		1.45	12.41	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
7	-1.50	2.83	0.11	0.72	0.11	0.72	
10	-1.00	2.00	0.05	0.30	0.16	1.02	
14	-0.50	1.41	0.13	0.86	0.29	1.88	
18	0.00	1.00	0.11	0.69	0.40	2.57	
25	0.50	0.71	0.16	1.05	0.56	3.62	
35	1.00	0.50	0.29	1.85	0.85	5.47	
45	1.50	0.35	0.75	4.85	1.60	10.32	
60	2.00	0.25	1.29	8.32	2.89	18.64	
80	2.50	0.18	2.71	17.46	5.60	36.10	
120	3.00	0.13	6.58	42.39	12.18	78.49	
170	3.50	0.09	2.78	17.91	14.96	96.40	
200	3.75	0.07	0.38	2.46	15.34	98.86	
230	4.00	0.06	0.10	0.61	15.44	99.47	

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	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.46	3.15	2.96	2.66	2.18	1.84	0.87
Moment	Mean Phi		Mean mm		Sorting	Skewness	Kurtosis
Statistics	2.46		0.18		0.78	-1.61	7.04

GRANULOMETRIC REPORT MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt.	Sort	Sample Information
NE2-B11-11	—●—		SP	#200 - 1.14 #290 - 0.53	1.45	12.41	2.66	2.46	-1.61	7.04	0.78	Project Name: MMS Field Study 2005 CT - 39075 Analysis Date: 06-26-06 Analyzed By: SEA Inc. Easting (X, ft): 688,739 Northing (Y, ft): 1,759,530 Horizontal System: NAD 1983 Vertical System: MSL
Comments: Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075  
 Sample Name: NE2-B11-12  
 Analysis Date: 06-26-06  
 Analyzed By: SEA Inc.

Scientific Environmental Applications  
 5575 Willoughby Drive  
 Melbourne, FL 32934  
 ph 321 254-2708  
 fax 321 254-2708

Easting (ft): <b>690,980</b>	Northing (ft): <b>1,780,417</b>	Coordinate System: <b>FL State Plane East NAD 83</b>	Elevation (ft):
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USCS: <b>SP</b>	Munsell:	Comments:
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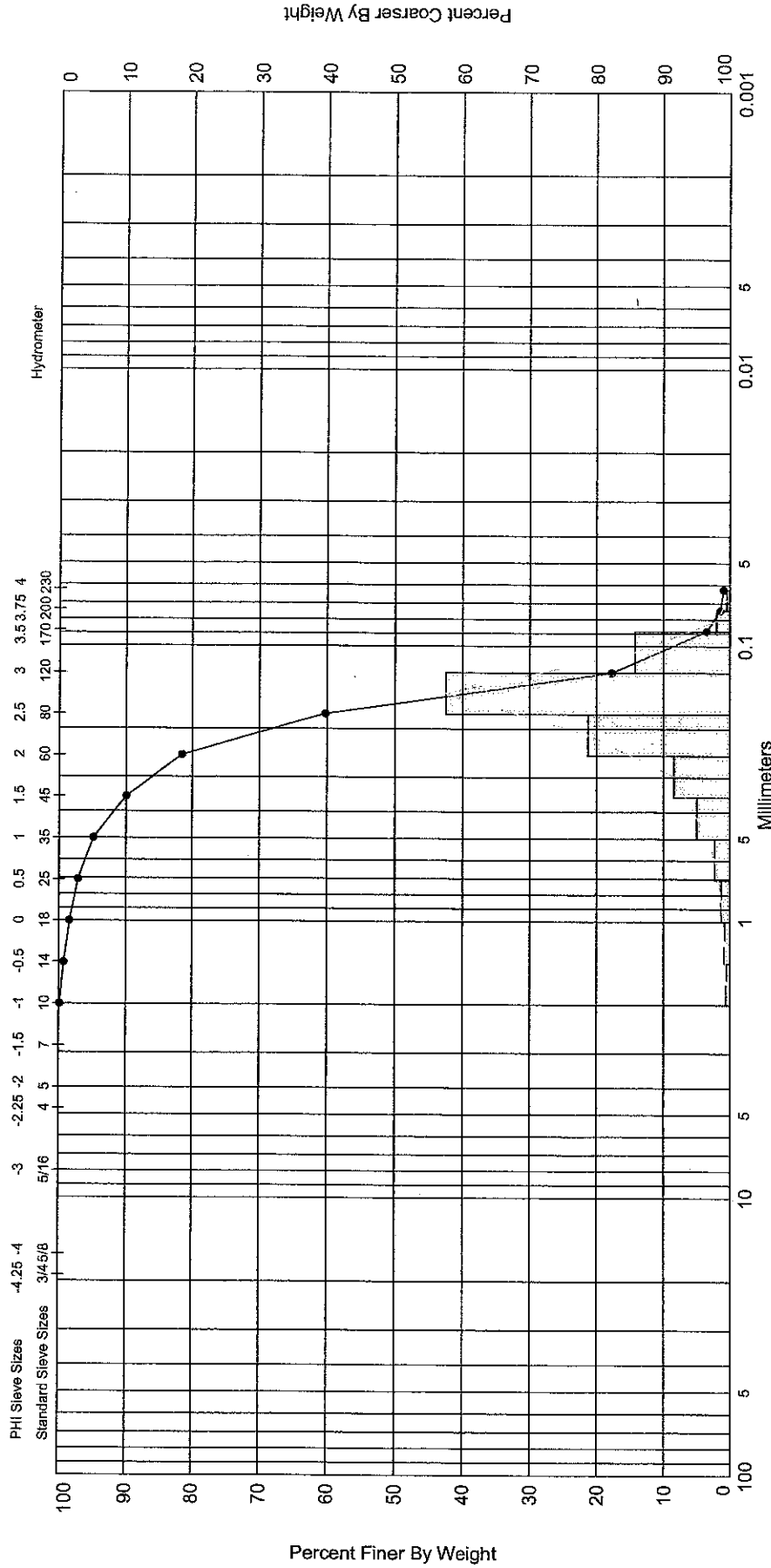
Dry Weight (g): <b>15.56</b>	Wash Weight (g):	Pan Retained (g): <b>0.06</b>	Sieve Loss (%): <b>-0.01</b>	Fines (%): #200 - <b>1.47</b> #230 - <b>0.98</b>	Organics (%): <b>2.00</b>	Carbonates (%): <b>14.05</b>	Shells (%):
<b>Sieve Number</b>	<b>Sieve Size (Phi)</b>	<b>Sieve Size (Millimeters)</b>	<b>Grams Retained</b>	<b>% Weight Retained</b>	<b>Cum. Grams Retained</b>	<b>C. % Weight Retained</b>	
10	-1.00	2.00	0.02	0.12	0.02	0.12	
14	-0.50	1.41	0.09	0.58	0.11	0.70	
18	0.00	1.00	0.13	0.84	0.24	1.54	
25	0.50	0.71	0.21	1.32	0.44	2.86	
35	1.00	0.50	0.35	2.27	0.80	5.13	
45	1.50	0.35	0.77	4.93	1.56	10.06	
60	2.00	0.25	1.31	8.41	2.87	18.47	
80	2.50	0.18	3.31	21.29	6.19	39.76	
120	3.00	0.13	6.62	42.51	12.80	82.27	
170	3.50	0.09	2.22	14.24	15.02	96.51	
200	3.75	0.07	0.32	2.02	15.34	98.53	
230	4.00	0.06	0.08	0.49	15.41	99.02	

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<b>Phi 5</b>	<b>Phi 16</b>	<b>Phi 25</b>	<b>Phi 50</b>	<b>Phi 75</b>	<b>Phi 84</b>	<b>Phi 95</b>
3.45	3.06	2.91	2.62	2.15	1.85	0.97
<b>Moment</b>	<b>Mean Phi</b>	<b>Mean mm</b>	<b>Sorting</b>	<b>Skewness</b>	<b>Kurtosis</b>	
<b>Statistics</b>	2.45	0.18	0.74	-1.49	6.14	

GRANULOMETRIC REPORT: MMS\_EAST\_SPRING 2006.GPJ FL DEP ROSS.GDT 5/13/08





Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
NE2-B11-12	●		SP	#200 - 1.47 #230 - 0.98	2.00	14.05	2.62	2.45	-1.49	6.14	0.74	Project Name:	MMS Field Study 2005 CT - 39075		
Comments:												Analysis Date:	06-26-06		
Depths and elevations based on measured values												Analyzed By:	SEA Inc.		
												Easting (X, ft):	690,980		
												Northing (Y, ft):	1,780,417		
												Horizontal System:	NAD 1983		
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

# Granulometric Report

Depths and elevations based on measured values

Project Name: MMS Field Study 2005 CT - 39075

Sample Name: NE2-B11-13

Analysis Date: 06-28-06

Analyzed By: SEA Inc.

Scientific Environmental Applications  
5575 Willoughby Drive  
Melbourne, FL 32934  
ph 321 254-2708  
fax 321 254-2708

Easting (ft): <p style="text-align: center;">691,422</p>	Northing (ft): <p style="text-align: center;">1,773,714</p>	Coordinate System: <p style="text-align: center;">FL State Plane East NAD 83</p>	Elevation (ft):
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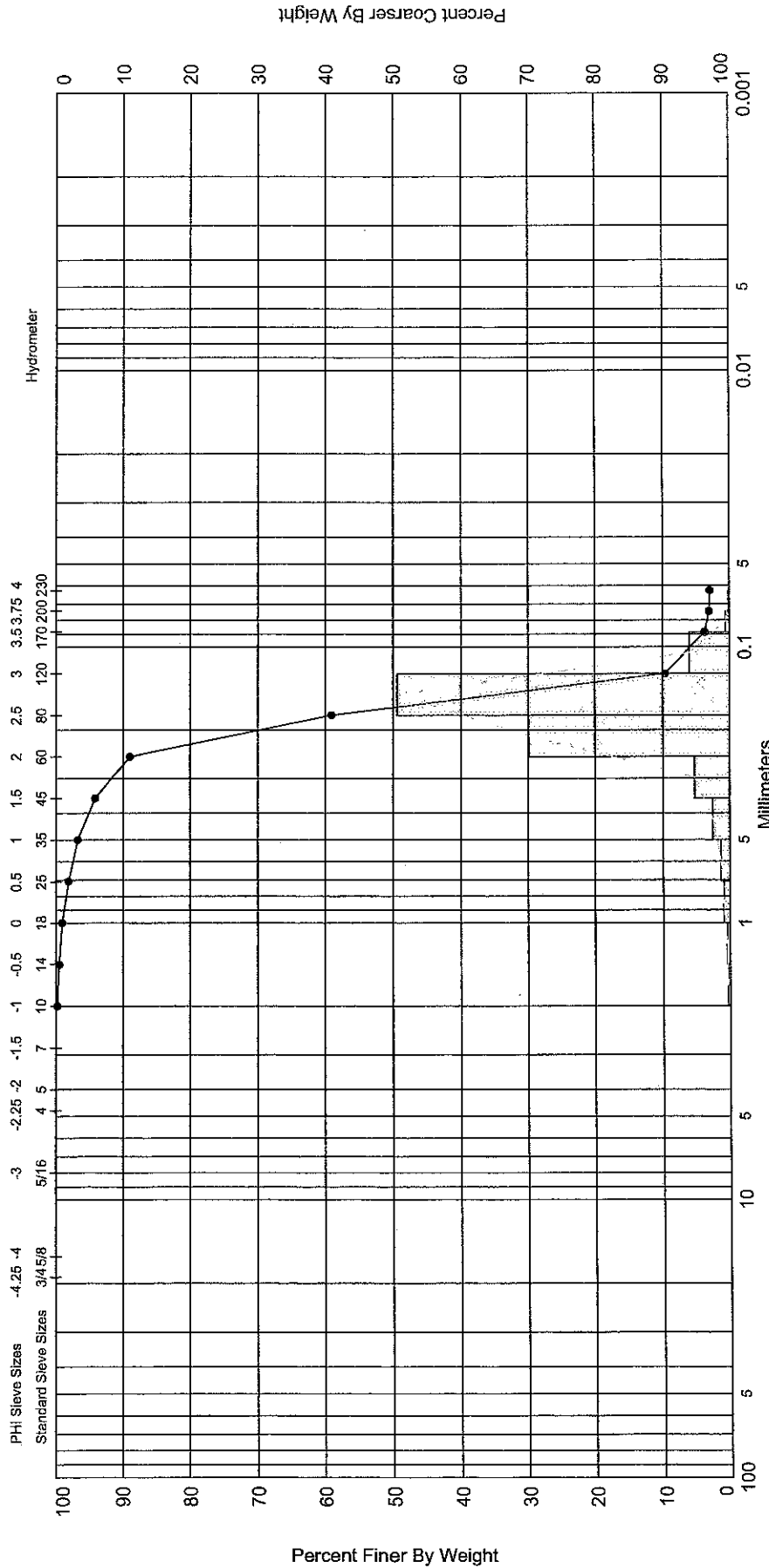
USCS: <p style="text-align: center;">SP</p>	Munsell:	Comments:
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Dry Weight (g): <p style="text-align: center;">16.34</p>	Wash Weight (g):	Pan Retained (g): <p style="text-align: center;">0.01</p>	Sieve Loss (%): <p style="text-align: center;">0.03</p>	Fines (%): #200 - 3.06 #230 - 2.95	Organics (%): <p style="text-align: center;">1.13</p>	Carbonates (%): <p style="text-align: center;">7.60</p>	Shells (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
10	-1.00	2.00	0.04	0.21	0.04	0.21	
14	-0.50	1.41	0.05	0.30	0.08	0.51	
18	0.00	1.00	0.07	0.43	0.15	0.94	
25	0.50	0.71	0.16	0.95	0.31	1.89	
35	1.00	0.50	0.23	1.38	0.53	3.27	
45	1.50	0.35	0.42	2.56	0.95	5.83	
60	2.00	0.25	0.85	5.21	1.81	11.04	
80	2.50	0.18	4.89	29.92	6.69	40.96	
120	3.00	0.13	8.07	49.40	14.77	90.36	
170	3.50	0.09	0.97	5.96	15.74	96.32	
200	3.75	0.07	0.10	0.62	15.84	96.94	
230	4.00	0.06	0.02	0.11	15.86	97.05	

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Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.39	2.94	2.84	2.59	2.23	2.08	1.34
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.45	0.18	0.57	-2.02	9.72	

GRANULARMETRIC REPORT: MMS\_EAST\_SPRING\_2006.GPJ FL DEP ROSS.GDT 5/13/08



Gravel		Sand		Silt and Clay	
Coarse	Fine	Medium	Fine		

Sample	NE2-B11-13	Symbol	SP	Elev. (ft)		USCS		% Fines	3.06	% Organics	1.13	% Carbonates	7.60	Median	2.59	Mean	2.45	Skew	-2.02	Kurt	9.72	Sort	0.57
Comments:	Depths and elevations based on measured values																						
Project Name:	MMS Field Study 2005 CT - 39075																						
Analysis Date:	06-28-06																						
Analyzed By:	SEA Inc.																						
Easting (X, ft):	691,422																						
Northing (Y, ft):	1,773,714																						
Horizontal System:	NAD 1983																						
Vertical System:	MSL																						
Sample Information	Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																						



## Appendix D

### ICONS Core Data

D1. ICONS Core Logs.....	D1-1
D2. Granulometric Report for the ICONS Composite Samples.....	D2-23

Boring Designation CERC 44



<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 44			<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> 4-inch pneumatic	
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b> 0	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68	
<b>8. TOTAL DEPTH OF BORING</b> 11.6 Ft.			<b>16. ELEVATION TOP OF BORING</b> Not Determined	
			<b>17. TOTAL RECOVERY FOR BORING</b>	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	8.0		Dark gray clay, no shell fragments, some fine to very fine grained silt, gray (10YR-5/1), (CL).		Comp	Sample #Comp, Depth = 2.5' Comp (0-2.5')
	11.6		Dark gray clay, very dark gray (10YR-3/1), (CL).			
			End of Boring			

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08

Boring Designation CERC 50

<b>DRILLING LOG</b>		DIVISION	INSTALLATION		SHEET 1 OF 1 SHEETS
1. PROJECT U.S. MMS NE Florida Northeast Florida			9. SIZE AND TYPE OF BIT 4.0 In.		
2. BORING DESIGNATION CERC 50		LOCATION COORDINATES X = 80.17 Y = 27.40		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long)	HORIZONTAL NAD 1983 VERTICAL MSL
3. DRILLING AGENCY Alpine Geophysical Associates Inc		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL 4-inch pneumatic	
4. NAME OF DRILLER Alpine Geophysical Associates Inc				12. TOTAL SAMPLES 0	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES	
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER	
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED 01-01-68 COMPLETED 01-01-68	
8. TOTAL DEPTH OF BORING 2.5 Ft.				16. ELEVATION TOP OF BORING Not Determined	
				17. TOTAL RECOVERY FOR BORING	
				18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.2		Fine sand, abundance of shell fragments in coarse sand to fine gravel range, very pale brown (10YR-8/2), (SP).			
	2.4		Fine sand, abundance of shell fragments in medium gravel range, light gray (10YR-7/2), (SP).			
			End of Boring		Comp	Sample #Comp, Depth = 2.4' Comp (0-2.4')

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08

Boring Designation CERC 53

<b>DRILLING LOG</b>		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT U.S. MMS NE Florida Northeast Florida			9. SIZE AND TYPE OF BIT 4.0 In.	
2. BORING DESIGNATION CERC 53		LOCATION COORDINATES X = 81.25 Y = 30.40		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long)
3. DRILLING AGENCY Alpine Geophysical Associates Inc		CONTRACTOR FILE NO.		HORIZONTAL NAD 1983
4. NAME OF DRILLER Alpine Geophysical Associates Inc		11. MANUFACTURER'S DESIGNATION OF DRILL 4-inch pneumatic		VERTICAL MSL
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL		BEARING
6. THICKNESS OF OVERBURDEN 0.0 Ft.		12. TOTAL SAMPLES 0		DISTURBED UNDISTURBED (UD)
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		13. TOTAL NUMBER CORE BOXES		14. ELEVATION GROUND WATER
8. TOTAL DEPTH OF BORING 3.8 Ft.		15. DATE BORING		STARTED 01-01-68
		16. ELEVATION TOP OF BORING Not Determined		COMPLETED 01-01-68
		17. TOTAL RECOVERY FOR BORING		18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	2.7		Fine to very fine light gray with some black sand, few scattered shell fragments in coarse sand to fine gravel range, light gray (10YR-7/2), (SP).			
	3.8		Gray to brown fine to very fine grained sand, layer of very fine shell fragments at 2.7 ft, grayish brown (10YR-5/2), (SP).		Comp	Sample #Comp, Depth = 3.6' Comp (0-3.6')
			End of Boring			

FLORIDA DEP ROSS ICONS.GPJ FL DEP ROSS.GDT 8/5/08

Boring Designation CERC 54

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 54		<b>LOCATION COORDINATES</b> X = 81.27 Y = 30.40		<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long) NAD 1983
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>		<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> 4-inch pneumatic <input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b> 0	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>13. TOTAL NUMBER CORE BOXES</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>14. ELEVATION GROUND WATER</b>		<b>15. DATE BORING</b> 01-01-68
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		<b>16. ELEVATION TOP OF BORING</b> Not Determined		<b>17. TOTAL RECOVERY FOR BORING</b>
<b>8. TOTAL DEPTH OF BORING</b> 2.7 Ft.		<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	2.2		Tan medium to fine sand, shell fragments in coarse sand to fine gravel range, uniform throughout core, very pale brown (10YR-7/3), (SP).			
	2.7		Gray to tannish gray fine sand, shell fragments in coarse sand to medium gravel range, light gray (10YR-7/2), (SP).		Comp	Sample #Comp, Depth = 2.4' Comp (0-2.4')
			End of Boring			

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08






Boring Designation CERC 55

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 in.	<b>OF 1 SHEETS</b>
<b>2. BORING DESIGNATION</b> CERC 55		<b>LOCATION COORDINATES</b> X = 81.25 Y = 30.41	<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	<b>HORIZONTAL</b> NAD 1983
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>	<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> 4-inch pneumatic	<b>VERTICAL</b> MSL
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b>	<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>13. TOTAL NUMBER CORE BOXES</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.				<b>14. ELEVATION GROUND WATER</b>
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.				<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68
<b>8. TOTAL DEPTH OF BORING</b> 3.8 Ft.				<b>16. ELEVATION TOP OF BORING</b> Not Determined
			<b>17. TOTAL RECOVERY FOR BORING</b>	<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	2.0		Shell fragments in medium to coarse gravel range, medium sand, light gray (10YR-7/1), (SP).			
	3.2		Shells fragments and whole shells in medium to coarse gravel range, matrix of silty sand, light brownish gray (10YR-6/2), (GM).			
	3.8		Shell fragments and whole shells in fine to medium gravel range, matrix of silt and fine silty sand, gray (10YR-6/1), (GM).		Comp	Sample #Comp, Depth = 3.7' Comp (0-3.7')
			End of Boring			

FLORIDA DEP ROSS ICONS.GPJ FL DEP ROSS.GDT 6/5/08

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	<b>OF 1 SHEETS</b>
<b>2. BORING DESIGNATION</b> CERC 65		<b>LOCATION COORDINATES</b> X =81.30 Y =30.36	<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	<b>HORIZONTAL</b> NAD 1983 <b>VERTICAL</b> MSL
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>	<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER 4-inch pneumatic <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc		<b>12. TOTAL SAMPLES</b> <input type="checkbox"/> DISTURBED 0 <input type="checkbox"/> UNDISTURBED (UD)		
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>13. TOTAL NUMBER CORE BOXES</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>14. ELEVATION GROUND WATER</b>		
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68		<b>16. ELEVATION TOP OF BORING</b> Not Determined
<b>8. TOTAL DEPTH OF BORING</b> 2.7 Ft.		<b>17. TOTAL RECOVERY FOR BORING</b>		
<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc				

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.0		Brown to tan medium sand, large shell fragments, medium shell fragments in medium to coarse gravel range, light gray (10YR-7/2), (SP).			
	1.5		Abundance of shell fragments in fine to medium gravel range, medium to fine sand, light gray (10YR-7/2), (SP).			
	2.7		Scattered shell fragments in fine gravel range, gray to tannish gray fine to medium sand, light gray (10YR-7/2), (SP).			
			End of Boring		Comp	Sample #Comp, Depth = 2.7' Comp (0-2.7')

FLORIDA DEP. ROSS ICONS.GPJ FL DEP ROSS.GDT 6/5/08

Boring Designation CERC 66


<b>DRILLING LOG</b>		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT U.S. MMS NE Florida Northeast Florida			9. SIZE AND TYPE OF BIT 4.0 In.	
2. BORING DESIGNATION CERC 66		LOCATION COORDINATES X = 81.27 Y = 30.37		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long)
3. DRILLING AGENCY Alpine Geophysical Associates Inc		CONTRACTOR FILE NO.		HORIZONTAL NAD 1983
4. NAME OF DRILLER Alpine Geophysical Associates Inc		11. MANUFACTURER'S DESIGNATION OF DRILL 4-inch pneumatic		VERTICAL MSL
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER
6. THICKNESS OF OVERBURDEN 0.0 Ft.		12. TOTAL SAMPLES 0		DISTURBED UNDISTURBED (UD)
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		13. TOTAL NUMBER CORE BOXES		
8. TOTAL DEPTH OF BORING 3.2 Ft.		14. ELEVATION GROUND WATER		
		15. DATE BORING 01-01-68		STARTED COMPLETED 01-01-68
		16. ELEVATION TOP OF BORING Not Determined		
		17. TOTAL RECOVERY FOR BORING		
		18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.3		Light gray fine grained sand, very fine shell fragments, light gray (10YR-7/1), (SP).			
	1.7		Fine light gray sand, shell fragments in fine to medium gravel range, light gray (10YR-7/1), (SP).			
	3.2		Light gray fine sand, shell fragments in coarse sand to fine gravel range, light gray (10YR-7/1), (SP).		Comp	Sample #Comp, Depth = 3.1' Comp (0-3.1')
			End of Boring			

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08



Boring Designation CERC 83

<b>DRILLING LOG</b>		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT U.S. MMS NE Florida Northeast Florida			9. SIZE AND TYPE OF BIT 4.0 In.	
2. BORING DESIGNATION CERC 83		LOCATION COORDINATES X = 81.23 Y = 30.33		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long) HORIZONTAL NAD 1983 VERTICAL MSL
3. DRILLING AGENCY Alpine Geophysical Associates Inc		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL 4-inch pneumatic <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER
4. NAME OF DRILLER Alpine Geophysical Associates Inc			12. TOTAL SAMPLES 0	DISTURBED UNDISTURBED (UD)
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	13. TOTAL NUMBER CORE BOXES
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING STARTED 01-01-68 COMPLETED 01-01-68
8. TOTAL DEPTH OF BORING 1.6 Ft.				16. ELEVATION TOP OF BORING Not Determined
				17. TOTAL RECOVERY FOR BORING
				18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.6		Fine to very fine sand, shell fragments in fine to medium gravel range, light gray (10YR-7/2), (SP).			
			End of Boring		Comp	Sample #Comp, Depth = 1.6' Comp (0-1.6')

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/06

<b>DRILLING LOG</b>		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT U.S. MMS NE Florida Northeast Florida			9. SIZE AND TYPE OF BIT 4.0 In.	
2. BORING DESIGNATION CERC 83A=USGS 871		LOCATION COORDINATES X = 81.23 Y = 30.33		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long)
3. DRILLING AGENCY Alpine Geophysical Associates Inc		CONTRACTOR FILE NO.		HORIZONTAL NAD 1983
4. NAME OF DRILLER Alpine Geophysical Associates Inc		11. MANUFACTURER'S DESIGNATION OF DRILL 4-inch pneumatic		VERTICAL MSL
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	12. TOTAL SAMPLES 0
6. THICKNESS OF OVERBURDEN 0.0 Ft.		13. TOTAL NUMBER CORE BOXES		11. <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		14. ELEVATION GROUND WATER		12. DISTURBED 0
8. TOTAL DEPTH OF BORING 3.8 Ft.		15. DATE BORING 01-01-68		UNDISTURBED (UD)
		16. ELEVATION TOP OF BORING Not Determined		13. TOTAL NUMBER CORE BOXES
		17. TOTAL RECOVERY FOR BORING		14. ELEVATION GROUND WATER
		18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc		15. DATE BORING 01-01-68
				COMPLETED 01-01-68

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.0		Light gray coarsely grained sand, small shell fragments present, light gray (10YR-7/2), (SP).			
	3.8		Uniform throughout, light gray very fine silty sand, no clumping, red clay color at 1.7-1.9 ft, light gray (10YR-7/2), (SM).			
			End of Boring		Comp	Sample #Comp, Depth = 3.8' Comp (0-3.8')

FLORIDA DEP. ROSS. ICONS.GPJ, FL DEP. ROSS.GDT 6/5/08

Boring Designation CERC 110




<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 110			<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	
<b>LOCATION COORDINATES</b> X = 81.21 Y = 30.10			<b>HORIZONTAL</b> NAD 1983 <b>VERTICAL</b> MSL	
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>		
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER 4-inch pneumatic <input type="checkbox"/> MANUAL HAMMER	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>12. TOTAL SAMPLES</b> 0	
<b>DEG. FROM VERTICAL</b>			<b>DISTURBED</b>	
<b>BEARING</b>			<b>UNDISTURBED (UD)</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>8. TOTAL DEPTH OF BORING</b> 8.0 Ft.			<b>15. DATE BORING</b> 01-01-68	
			<b>STARTED</b> 01-01-68	
			<b>COMPLETED</b> 01-01-68	
			<b>16. ELEVATION TOP OF BORING</b> Not Determined	
			<b>17. TOTAL RECOVERY FOR BORING</b>	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.5		Dark gray medium to coarse sand, shell fragments in medium to fine gravel range, gray (10YR-6/1), (SP).			
	4.0		Light gray medium to coarse sand, shell fragments in fine gravel range, light gray (10YR-7/1), (SP).		Comp	Sample #Comp, Depth = 1.6' Comp (0-1.6')
	5.6		Tannish gray very fine silt and clay, scattered shell fragments, light brownish gray (10YR-6/2), (ML).			
	7.6		Tan fine silty sand, shell fragments in fine to medium gravel range, light brownish gray (10YR-6/2), (SM).			
	8.0		Dark gray to brown clay, some silt, very dark grayish brown (10YR-3/2), (CL).			
			End of Boring			

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08

Boring Designation CERC 112

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 in.	
<b>2. BORING DESIGNATION</b> CERC 112			<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long) NAD 1983	
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b> 0	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68	
<b>8. TOTAL DEPTH OF BORING</b> 4.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> Not Determined	
			<b>17. TOTAL RECOVERY FOR BORING</b>	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.7		Light brown to tan medium grained sand, fine grained gravel, pale brown (10YR-6/3), (SP).			
	2.5		Fine grained sand, fine to medium gravel, brown (10YR-5/3), (SP).		Comp	Sample #Comp, Depth = 2.5' Comp (0-2.5')
	4.0		Medium grained shells, fine grained silt in large clumps, brown (10YR-5/3), (ML).			
			End of Boring			

FLORIDA DEP ROSS ICONS.GPJ FL DEP ROSS.GDT 6/5/08

Boring Designation CERC 113

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 113		<b>LOCATION COORDINATES</b> X = 81.28 Y = 30.14		<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long) HORIZONTAL NAD 1983 VERTICAL MSL
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>		
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER 4-inch pneumatic	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>12. TOTAL SAMPLES</b> 1 <b>DISTURBED</b> <b>UNDISTURBED (UD)</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>13. TOTAL NUMBER CORE BOXES</b>		
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		<b>14. ELEVATION GROUND WATER</b>		
<b>8. TOTAL DEPTH OF BORING</b> 10.4 Ft.		<b>15. DATE BORING</b> 01-01-68		<b>COMPLETED</b> 01-01-68
		<b>16. ELEVATION TOP OF BORING</b> Not Determined		
		<b>17. TOTAL RECOVERY FOR BORING</b>		
		<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc		




ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.0		Dark gray with brown very fine sand and silt, shell fragments in fine gravel range, grayish brown (10YR-5/2), (SM).		1.0	Sample #1.0, Depth = 1.0'
	4.3		Dark gray with tan very fine sand and silt, shell fragments in fine gravel range, grayish brown (10YR-5/2), (SM).			
	4.5		Dark gray with tan very fine sand and silt, fine to medium sand, shell fragments in medium to coarse gravel range, grayish brown (10YR-5/2), (SM).			
	7.0		Dark gray to brown very fine sand, coarse grained shell fragments in medium to coarse gravel range, grayish brown (10YR-5/2), (SM).			
	8.4		Light gray fine sand, shell fragments in coarse sand to fine gravel range, very pale brown (10YR-8/2), (SM).			
	9.0		Gray fine sand, shell fragments in coarse sand to fine gravel range, pale brown (10YR-6/3), (SM).			
	10.4		Fine sand, trace of shell fragments, pale brown (10YR-6/3), (SP).			
			End of Boring			

FLORIDA DEP. ROSS. ICONS.GPJ. FL DEP. ROSS.GDT. 8/5/08



Boring Designation CERC 115

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 115			<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long) NAD 1983	
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER 4-inch pneumatic <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b> 0	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68	
<b>8. TOTAL DEPTH OF BORING</b> 5.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> Not Determined	
			<b>17. TOTAL RECOVERY FOR BORING</b>	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	2.0		Red to brown clay, medium to large shell fragments, some small whole shells, coarse grained sand, light brownish gray (10YR-6/2), (CL).			
	3.0		Dark gray coarse grained sand, fine grained shell fragments, light brownish gray (10YR-6/2), (SM).		Comp	Sample #Comp, Depth = 2.8' Comp (0-2.8')
	5.0		Tan fine grained sand and silt, few large scattered shell fragments in coarse gravel range, light gray (10YR-7/1), (SM).			
			End of Boring			

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08

Boring Designation CERC 133

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>		<b>SHEET 1</b>
1. <b>PROJECT</b> U.S. MMS NE Florida Northeast Florida			9. <b>SIZE AND TYPE OF BIT</b> 4.0 In.		<b>OF 1 SHEETS</b>
2. <b>BORING DESIGNATION</b> CERC 133		3. <b>LOCATION COORDINATES</b> X = 80.38 Y = 28.72		10. <b>COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	HORIZONTAL NAD 1983 VERTICAL MSL
3. <b>DRILLING AGENCY</b> Alpine Geophysical Associates Inc		4. <b>CONTRACTOR FILE NO.</b>		11. <b>MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER 4-inch pneumatic	
4. <b>NAME OF DRILLER</b> Alpine Geophysical Associates Inc		5. <b>DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		12. <b>TOTAL SAMPLES</b> 0	
6. <b>THICKNESS OF OVERBURDEN</b> 0.0 Ft.		7. <b>DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		13. <b>TOTAL NUMBER CORE BOXES</b>	
8. <b>TOTAL DEPTH OF BORING</b> 14.0 Ft.		5. <b>DEG. FROM VERTICAL</b>		14. <b>ELEVATION GROUND WATER</b>	
		6. <b>BEARING</b>		15. <b>DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68	
		16. <b>ELEVATION TOP OF BORING</b> Not Determined		17. <b>TOTAL RECOVERY FOR BORING</b>	
		18. <b>SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.3		Light gray fine grained sand, shell fragments in medium to fine gravel range, light gray (10YR-7/2), (SP).			
	2.2		Light gray fine grained sand with shell fragments in fine gravel range, light gray (10YR-7/2), (SP).			
	3.1		Light gray fine grained sand, shell fragments in medium to fine gravel range, light gray (10YR-7/2), (SP).			
	5.0		Light gray very fine grained sand, small shell fragments, light gray (10YR-7/2), (SP).		Comp	Sample #Comp, Depth = 5.0' Comp (0-5.0')
	8.4		Tan to light gray very fine silty sand, light brownish gray (10YR-6/2), (SM).			
	12.7		Light gray fine grained silt and clay, shell fragments in medium to coarse gravel range, light brownish gray (10YR-6/2), (ML).			
			End of Boring			

FLORIDA DEP ROSS. ICONS.GPJ FL DEP ROSS.GDT 6/5/08

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	<b>OF 1 SHEETS</b>
<b>2. BORING DESIGNATION</b> CERC 139=USGS 950		<b>LOCATION COORDINATES</b> X = 80.96 Y = 29.59	<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	<b>HORIZONTAL</b> NAD 1983
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>	<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> 4-inch pneumatic	<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc		<b>12. TOTAL SAMPLES</b>	<b>DISTURBED</b>	<b>UNDISTURBED (UD)</b>
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>13. TOTAL NUMBER CORE BOXES</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>14. ELEVATION GROUND WATER</b>		<b>15. DATE BORING</b>
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		<b>16. ELEVATION TOP OF BORING</b> Not Determined		<b>STARTED</b> 01-01-68
<b>8. TOTAL DEPTH OF BORING</b> 6.8 Ft.		<b>17. TOTAL RECOVERY FOR BORING</b>		<b>COMPLETED</b> 01-01-68
		<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.8		Light gray coarse grained sand, whole shells and large shell fragments, smaller shell fragments at 1.4-1.7 ft, light gray (10YR-7/2), (SW).			
	3.0		Fine grained silt, no shell fragments, small amounts of clumping, more tan colored clay, light brownish gray (10YR-6/2), (ML).			
	4.7		Lighter gray color similar to color between 0-1.8', fine grained silt, light gray (10YR-7/2), (ML).			
	5.9		Fine grained silt, large amounts of clumping, more tan colored clay, light brownish gray (10YR-6/2), (ML).			
	6.7		Larger amounts of clumping, thin layers of small shell fragments, fine grained silts, and rock, light brownish gray (10YR-6/2), (ML).			
			End of Boring			

Comp Sample #Comp, Depth = 6.0'  
Comp (0-6.0')

FLORIDA DEP ROSS ICONS.GPJ FL DEP ROSS.GDT 6/5/08

Boring Designation CERC 147 Replica 1

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 147 REPLICA 1			<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long) NAD 1983	
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER 4-inch pneumatic <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b> 0	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68	
<b>8. TOTAL DEPTH OF BORING</b> 11.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> Not Determined	
			<b>17. TOTAL RECOVERY FOR BORING</b>	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	2.7		Fine to very fine shell fragments, dark brown to black medium to fine sand, abundant amount of shell fragments at 1.7 ft, yellowish brown (10YR-5/4), (SP).		Comp 1	Sample #Comp 1, Depth = 0.0' - 3.0' Comp (0-3.0')
	4.6		Brownish black coarse grained sand, small to medium sized shell fragments in less abundance, yellowish brown (10YR-5/4), (SP).			
	5.5		Abundant shell fragments in medium to coarse gravel range, medium sand, (10YR-7.5/1), (SP).			
	11.0		Light gray medium to fine sand, low abundance of shell fragments, light gray (10YR-7/1), (SP).		Comp 2	Sample #Comp 2, Depth = 8.0' - 10.0' Comp (8.0-10.0')
			End of Boring			

FLORIDA DEP. ROSS, ICONS.GPJ, FL DEP. ROSS, G.D.T. 6/5/08

Boring Designation CERC 147 Replica 2

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
				<b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 147 REPLICA 2		<b>LOCATION COORDINATES</b> X = 80.91 Y = 29.37		<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)
				<b>HORIZONTAL</b> NAD 1983
				<b>VERTICAL</b> MSL
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>		<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER 4-inch pneumatic <input type="checkbox"/> MANUAL HAMMER
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc		<b>12. TOTAL SAMPLES</b>		<b>DISTURBED</b> 0
				<b>UNDISTURBED (UD)</b>
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		<b>DEG. FROM VERTICAL</b>		<b>BEARING</b>
				<b>13. TOTAL NUMBER CORE BOXES</b>
				<b>14. ELEVATION GROUND WATER</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.				<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.				<b>16. ELEVATION TOP OF BORING</b> Not Determined
<b>8. TOTAL DEPTH OF BORING</b> 13.0 Ft.				<b>17. TOTAL RECOVERY FOR BORING</b>
				<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
			Light gray medium sand, very fine shell fragments in fine gravel to medium sand range, light gray (10YR-7/1), (SP).			
	9.0					
			Light gray to brown sand, abundant shell fragments in fine to coarse gravel range, coarse shell layer at 9-9.5 ft, light gray (10YR-7/2), (SP).		Comp 1	Sample #Comp 1, Depth = 8.0' - 11.0' Comp (8.0-11.0')
	11.0					
			Medium gray to brown sand, abundant shell fragments in fine to coarse gravel range, coarse shell layer at 12-13 ft, light gray (10YR-7/2), (SM).		Comp 2	Sample #Comp 2, Depth = 12.0' - 13.0' Comp (12.0-13.0')
	13.0					
			End of Boring			

FLORIDA DEP. ROSS, ICONS.GPJ, FL DEP ROSS.GDT, 6/5/08





<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
1. <b>PROJECT</b> U.S. MMS NE Florida Northeast Florida		9. <b>SIZE AND TYPE OF BIT</b> 4.0 In.		<b>OF 1 SHEETS</b>
2. <b>BORING DESIGNATION</b> CERC 168		10. <b>COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)		<b>HORIZONTAL</b> NAD 1983
3. <b>DRILLING AGENCY</b> Alpine Geophysical Associates Inc		11. <b>MANUFACTURER'S DESIGNATION OF DRILL</b> 4-inch pneumatic		<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>
4. <b>NAME OF DRILLER</b> Alpine Geophysical Associates Inc		12. <b>TOTAL SAMPLES</b>		<b>DISTURBED</b> 0
5. <b>DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		13. <b>TOTAL NUMBER CORE BOXES</b>		<b>UNDISTURBED (UD)</b>
6. <b>THICKNESS OF OVERBURDEN</b> 0.0 Ft.		14. <b>ELEVATION GROUND WATER</b>		
7. <b>DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		15. <b>DATE BORING</b>		<b>STARTED</b> 01-01-68
8. <b>TOTAL DEPTH OF BORING</b> 7.7 Ft.		16. <b>ELEVATION TOP OF BORING</b> Not Determined		<b>COMPLETED</b> 01-01-68
		17. <b>TOTAL RECOVERY FOR BORING</b>		
		18. <b>SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OF SAMPLE	REMARKS
	0.0					
	2.7		Light gray with black and white coarse grained sand, medium to large shell fragments and large rock fragments, light gray (10YR-7/2), (SP).		Comp	Sample #Comp, Depth = 1.7' Comp (0-1.7')
	5.0		Gray to brown fine silty sand, shell fragments in fine gravel range, (10YR-6.5/1), (SM).			
	6.3		Mostly coarse grained shell fragments and small amount of fine grained silt, light gray (10YR-7/2), (GM).			
	7.7		Tan fine grained sand, silt, fine grained shell fragments, light gray (10YR-7/2), (SM).			
			End of Boring			

FLORIDA DEP. ROSS, ICONS.GPJ, FL DEP ROSS.GDT 8/5/08

Boring Designation CERC 170

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.	
<b>2. BORING DESIGNATION</b> CERC 170		<b>LOCATION COORDINATES</b> X = 80.94 Y = 29.20		<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long) NAD 1983
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc		<b>CONTRACTOR FILE NO.</b>		<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER 4-inch pneumatic <input type="checkbox"/> MANUAL HAMMER
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>12. TOTAL SAMPLES</b> 0	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 01-01-68 COMPLETED 01-01-68	
<b>8. TOTAL DEPTH OF BORING</b> 6.1 Ft.			<b>16. ELEVATION TOP OF BORING</b> Not Determined	
			<b>17. TOTAL RECOVERY FOR BORING</b>	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.8		Medium grain sand, scattered shell fragments in medium to fine gravel range, (10 YR-5/2), (SP).			
	4.5		Gray fine silty sand, shell fragments in medium to fine gravel range, (10 YR-4/2), (SM).			
	5.2		Dark gray clay, few scattered shell fragments in fine to medium gravel range, (10 YR-3/1), (CL).			
	6.1		Medium gray silty sand, very few shell fragments, (10 YR-5/2), (SP).			
			End of Boring		Comp	Sample #Comp, Depth = 6.1' Comp (0-6.1')

FLORIDA DEP ROSS, ICONS.GPJ, FL DEP ROSS.GDT 6/5/08

Boring Designation CERC 176

<b>DRILLING LOG</b>		DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT ICONS			9. SIZE AND TYPE OF BIT 4.0 In.	
2. BORING DESIGNATION CERC 176		LOCATION COORDINATES X = 81.25 Y = 30.12		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long)
3. DRILLING AGENCY Olsen Associates, Inc		CONTRACTOR FILE NO.		HORIZONTAL NAD 1983
4. NAME OF DRILLER Alpine Ocean Seismic Survey Inc		11. MANUFACTURER'S DESIGNATION OF DRILL Pneumatic		VERTICAL MSL
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	12. TOTAL SAMPLES
6. THICKNESS OF OVERBURDEN 0.0 Ft.		13. TOTAL NUMBER CORE BOXES		DISTURBED
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		14. ELEVATION GROUND WATER		UNDISTURBED (UD)
8. TOTAL DEPTH OF BORING 15.0 Ft.		15. DATE BORING		STARTED
		16. ELEVATION TOP OF BORING -40.0 Ft.		COMPLETED
		17. TOTAL RECOVERY FOR BORING		
		18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-40.0	0.0					
			Medium to fine quartz sand, some shell fragments and whole shells in fine to medium gravel range, very pale brown (10YR-7/3), (SP).			
-53.0	13.0					
-55.0	15.0		Gray clay, (10YR-5/1), (CL).			





FLORIDA DEP. ROSS, ICONS, TEST.GPJ, FL DEP. ROSS.GDT, 6/29/08

0  
5  
10  
15



Boring Designation CERC F111

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>		<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> U.S. MMS NE Florida Northeast Florida			<b>9. SIZE AND TYPE OF BIT</b> 4.0 In.		
<b>2. BORING DESIGNATION</b> CERC F111		<b>LOCATION COORDINATES</b> X =30.12 Y =81.22		<b>10. COORDINATE SYSTEM/DATUM</b> Geographic (Lat/Long)	
<b>3. DRILLING AGENCY</b> Alpine Geophysical Associates Inc			<b>CONTRACTOR FILE NO.</b>		<b>HORIZONTAL</b> NAD 1983
<b>4. NAME OF DRILLER</b> Alpine Geophysical Associates Inc			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> 4-inch pneumatic		<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>		<b>12. TOTAL SAMPLES</b> 0
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>13. TOTAL NUMBER CORE BOXES</b>		<b>DISTURBED</b> 0
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>		<b>UNDISTURBED (UD)</b>
<b>8. TOTAL DEPTH OF BORING</b> 3.8 Ft.			<b>15. DATE BORING</b>		<b>STARTED</b> 01-01-68
			<b>16. ELEVATION TOP OF BORING</b>		<b>COMPLETED</b> 01-01-68
			<b>17. TOTAL RECOVERY FOR BORING</b>		Not Determined
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> Gary Zarillo, PG SEA, Inc		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OF SAMPLE	REMARKS
	0.0					
	1.0		Fine sand, scattered shell fragments in fine gravel range, light gray (10YR-7/2), (SP).			
	1.4		Tan to brownish gray fine to medium sand, very fine shell fragments, light brownish gray (10YR-6/2), (SP).			
	2.2		Very fine silt and clay, shell fragments in coarse sand to medium gravel range, light brownish gray (10YR-6/2), (SM).			
	3.8		Gray silt and clay, scattered shell fragments in fine gravel range, grayish brown (10YR-5/2), (ML).			
			End of Boring		Comp	Sample #Comp, Depth = 3.8' Comp (0-3.8')

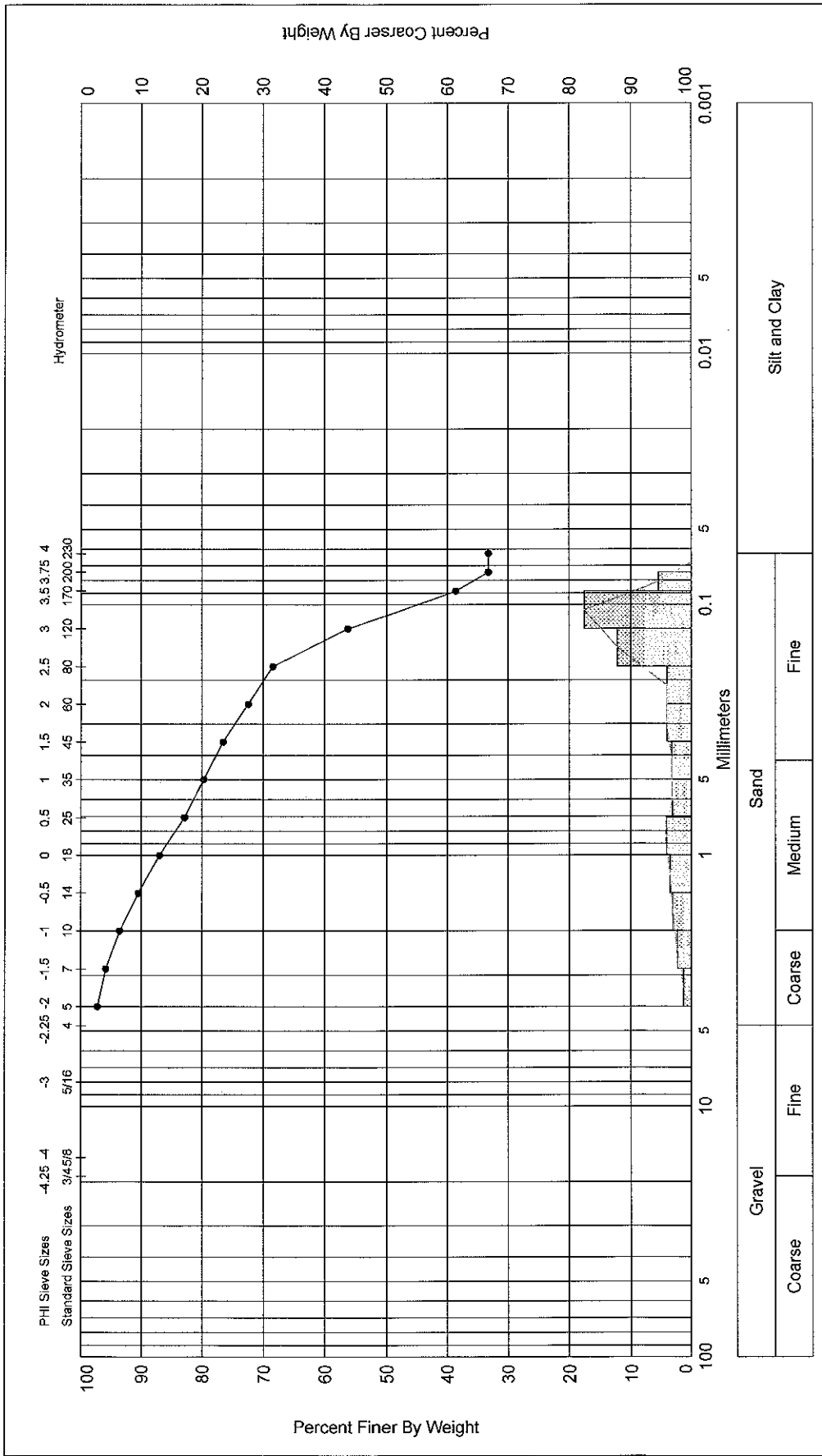
FLORIDA DEP. ROSS ICONS.GPJ FL DEP ROSS.GDT 6/5/08

Boring Designation CERC F161A

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
1. PROJECT U.S. MMS NE Florida Northeast Florida		9. SIZE AND TYPE OF BIT 4.0 In.		<b>OF 1 SHEETS</b>
2. BORING DESIGNATION CERC F161A		10. COORDINATE SYSTEM/DATUM Geographic (Lat/Long)		HORIZONTAL NAD 1983
3. DRILLING AGENCY Alpine Geophysical Associates Inc		11. MANUFACTURER'S DESIGNATION OF DRILL 4-inch pneumatic		VERTICAL MSL
4. NAME OF DRILLER Alpine Geophysical Associates Inc		12. TOTAL SAMPLES		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		13. TOTAL NUMBER CORE BOXES		DISTURBED 0
6. THICKNESS OF OVERBURDEN 0.0 Ft.		14. ELEVATION GROUND WATER		UNDISTURBED (UD)
7. DEPTH DRILLED INTO ROCK 0.0 Ft.		15. DATE BORING		STARTED 01-01-68
8. TOTAL DEPTH OF BORING 5.4 Ft.		16. ELEVATION TOP OF BORING		COMPLETED 01-01-68
		17. TOTAL RECOVERY FOR BORING		18. SIGNATURE AND TITLE OF INSPECTOR Gary Zarillo, PG SEA, Inc
		18. SIGNATURE AND TITLE OF INSPECTOR		

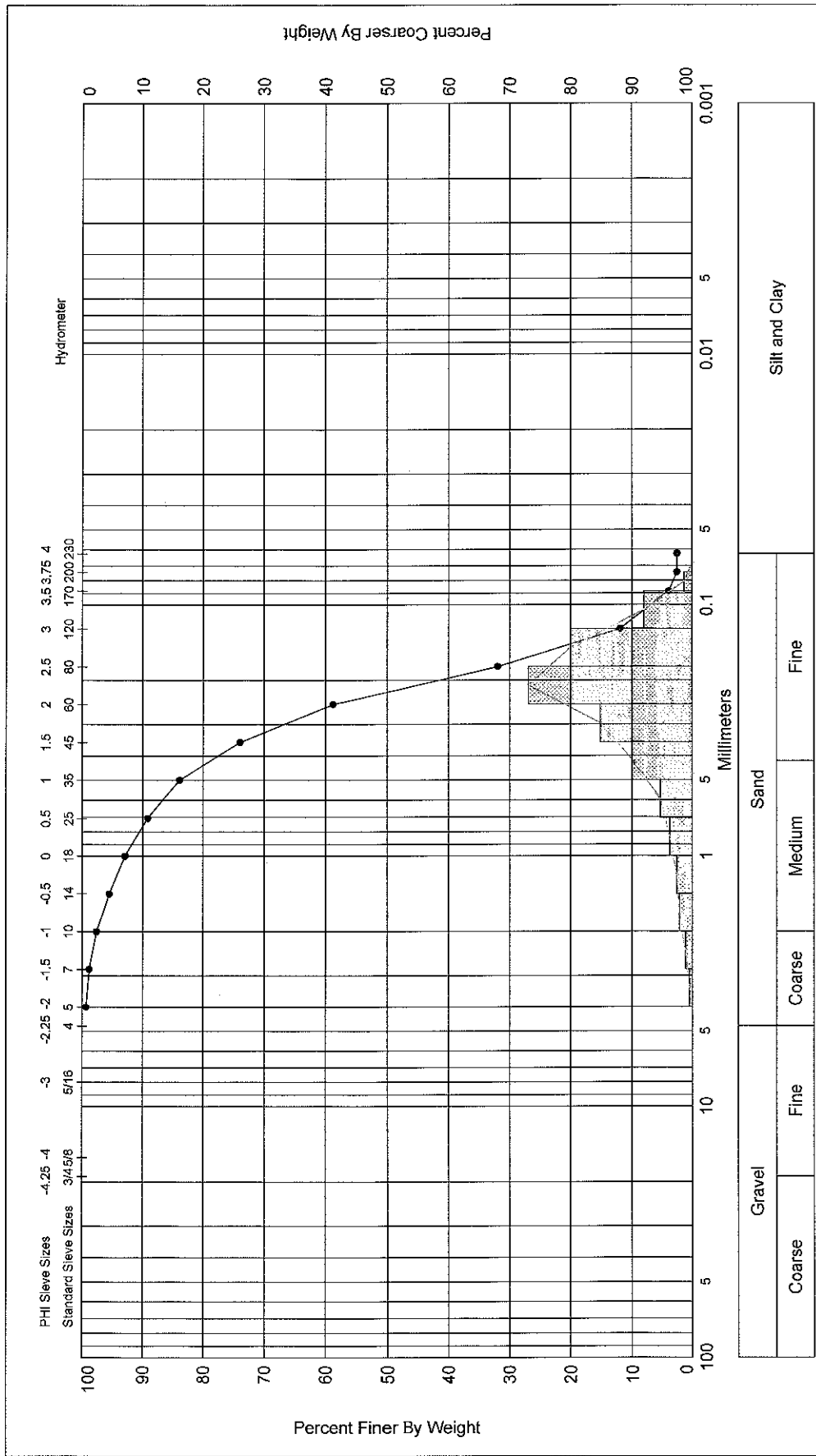
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
	0.0					
	1.0		Reddish brown fine to medium sand, shell fragments in fine to medium gravel range, pale brown (10YR-6/3), (SP).			
	1.7		Dark gray very fine sand, some shell fragments in fine to coarse gravel range, gray (10YR-6/1), (SP).			
	5.4		Gray to dark gray fine silty sand, whole shells and shell fragments in medium to coarse gravel range, gray (10YR-6/1), (SM).			
			End of Boring		Comp	Sample #Comp, Depth = 5.3' Comp (0-5.3')

FLORIDA DEP ROSS ICONS.GPJ FL DEP ROSS.GDT 6/5/08

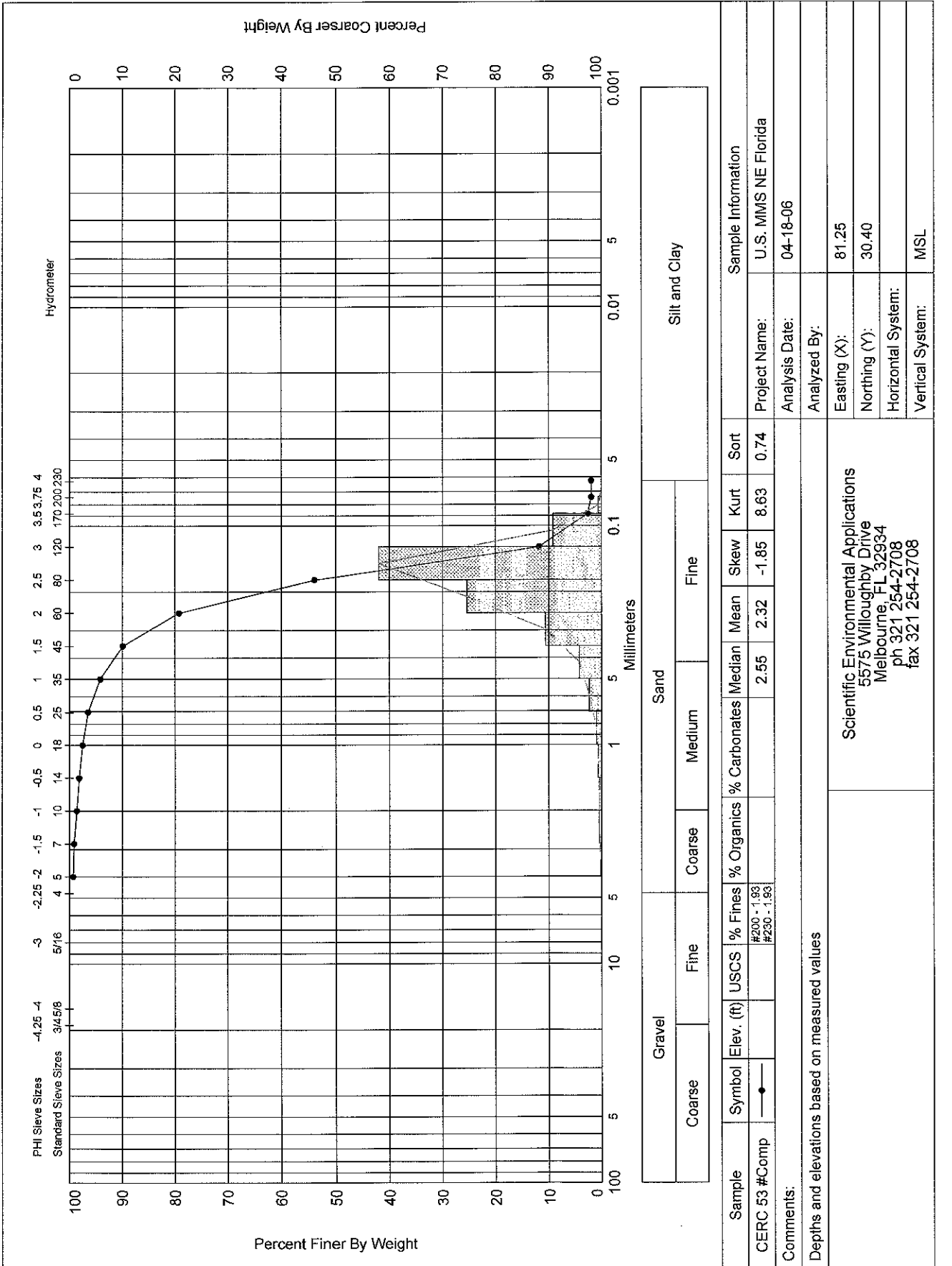


Sample		Symbol Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Mean	Median	Skew	Kurt	Sort	Sample Information		
CERC 44 #Comp		●		—		#200 - 33.15 #230 - 33.15						1.79	3.18	-0.52	2.16	1.52	Project Name:	U.S. MMS NE Florida	
Comments:																	Analysis Date:	04-18-06	
Depths and elevations based on measured values																	Analyzed By:		
																	Easting (X, ft):	81.34	
																	Northing (Y, ft):	30.40	
																	Horizontal System:		
																	Vertical System:	MSL	

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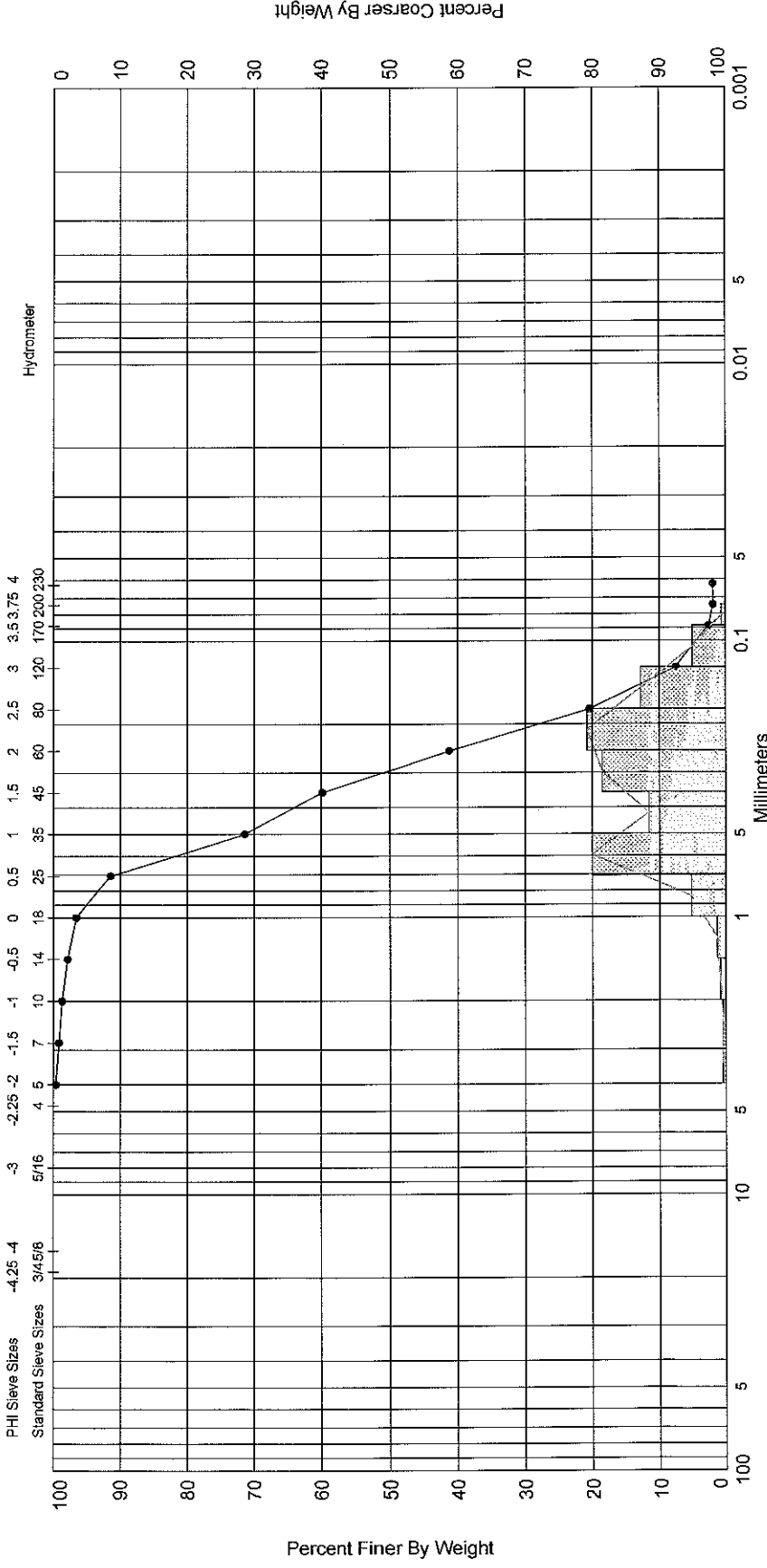


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 50 #Comp	●	—		#200 - 2.52 #230 - 2.52			2.16	1.89	-1.05	4.1	1.03	Project Name:	U.S. MMS NE Florida
Comments:												Analysis Date:	04-18-06
Depths and elevations based on measured values												Analyzed By:	
												Easting (X, ft):	80.17
												Northing (Y, ft):	27.40
												Horizontal System:	
												Vertical System:	MSL

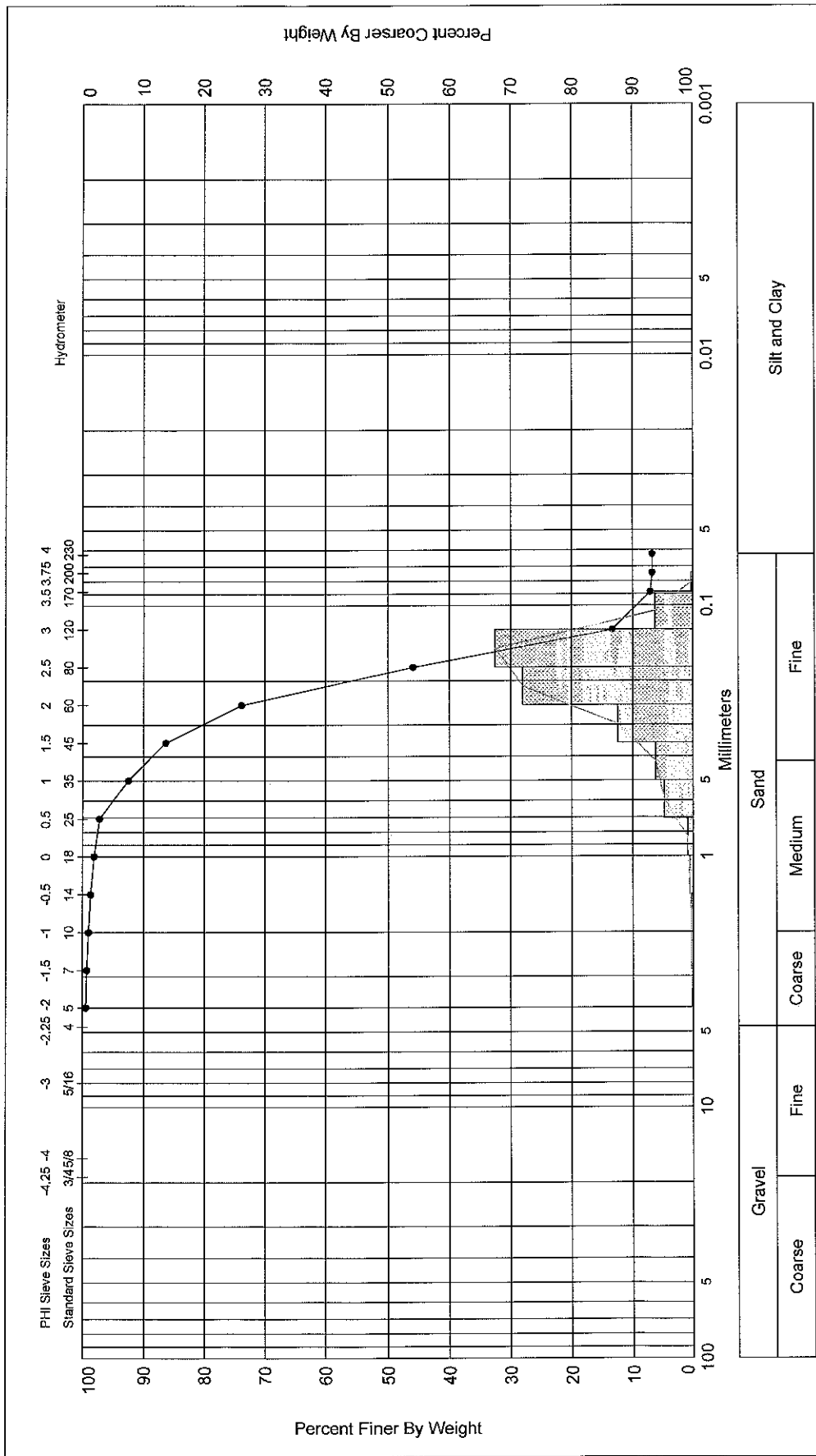


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 53 #Comp	●			#200 - 1.93 #230 - 1.93			2.55	2.32	-1.85	8.63	0.74	Project Name:	U.S. MMS NE Florida
Comments:												Analysis Date:	04-18-06
Depths and elevations based on measured values												Analyzed By:	
												Easting (X):	81.25
												Northing (Y):	30.40
												Horizontal System:	
												Vertical System:	MSL

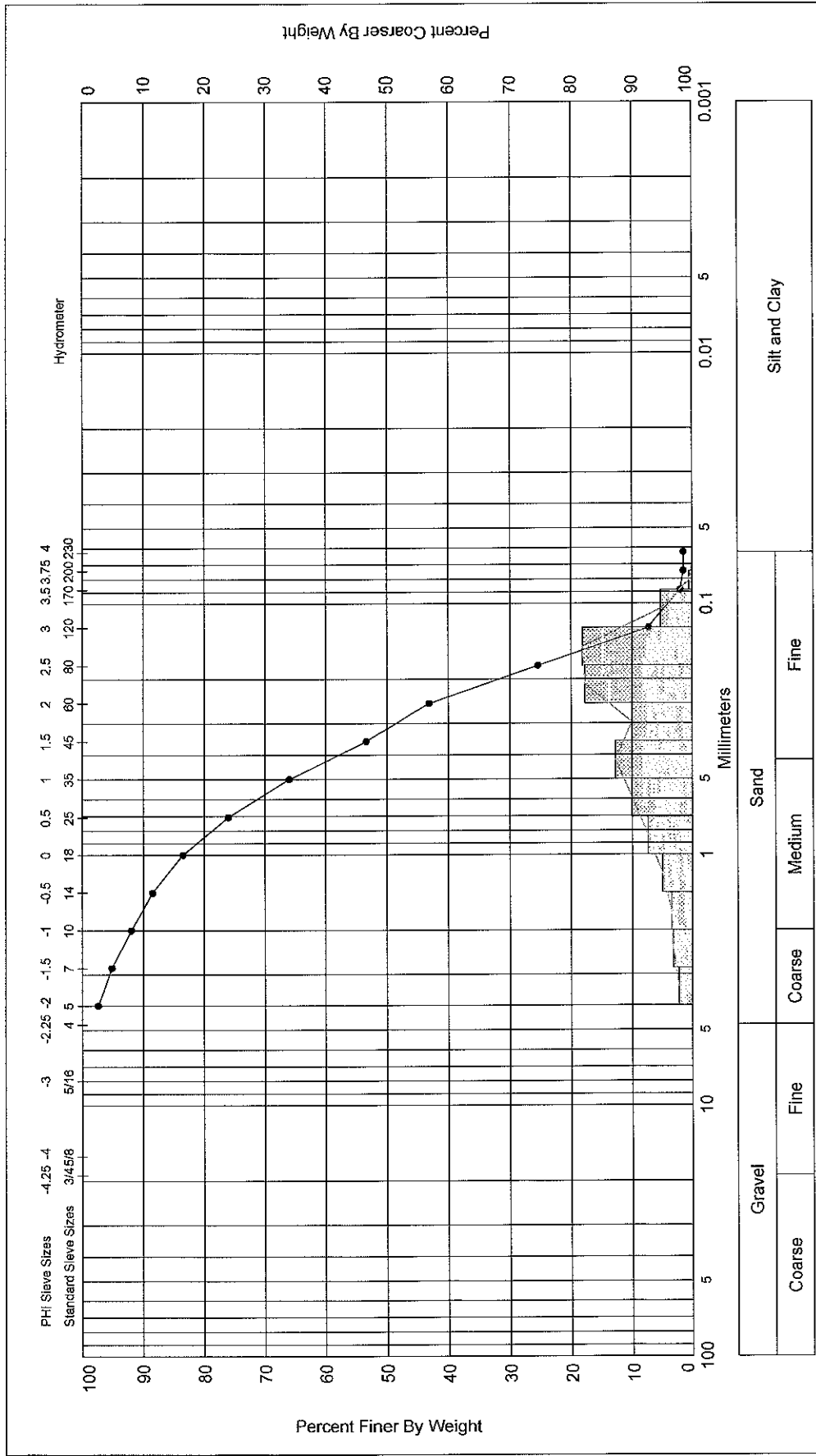
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Gravel		Sand			Silt and Clay								
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine						
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 54 #Comp	●			#200 - 1.89			1.76	1.64	-0.36	3.13	0.93	Project Name:	U.S. MMS NE Florida
Comments:												Analysis Date:	04-18-06
Depths and elevations based on measured values												Analized By:	
												Easting (X, ft):	81.27
												Northing (Y, ft):	30.40
												Horizontal System:	
												Vertical System:	MSL
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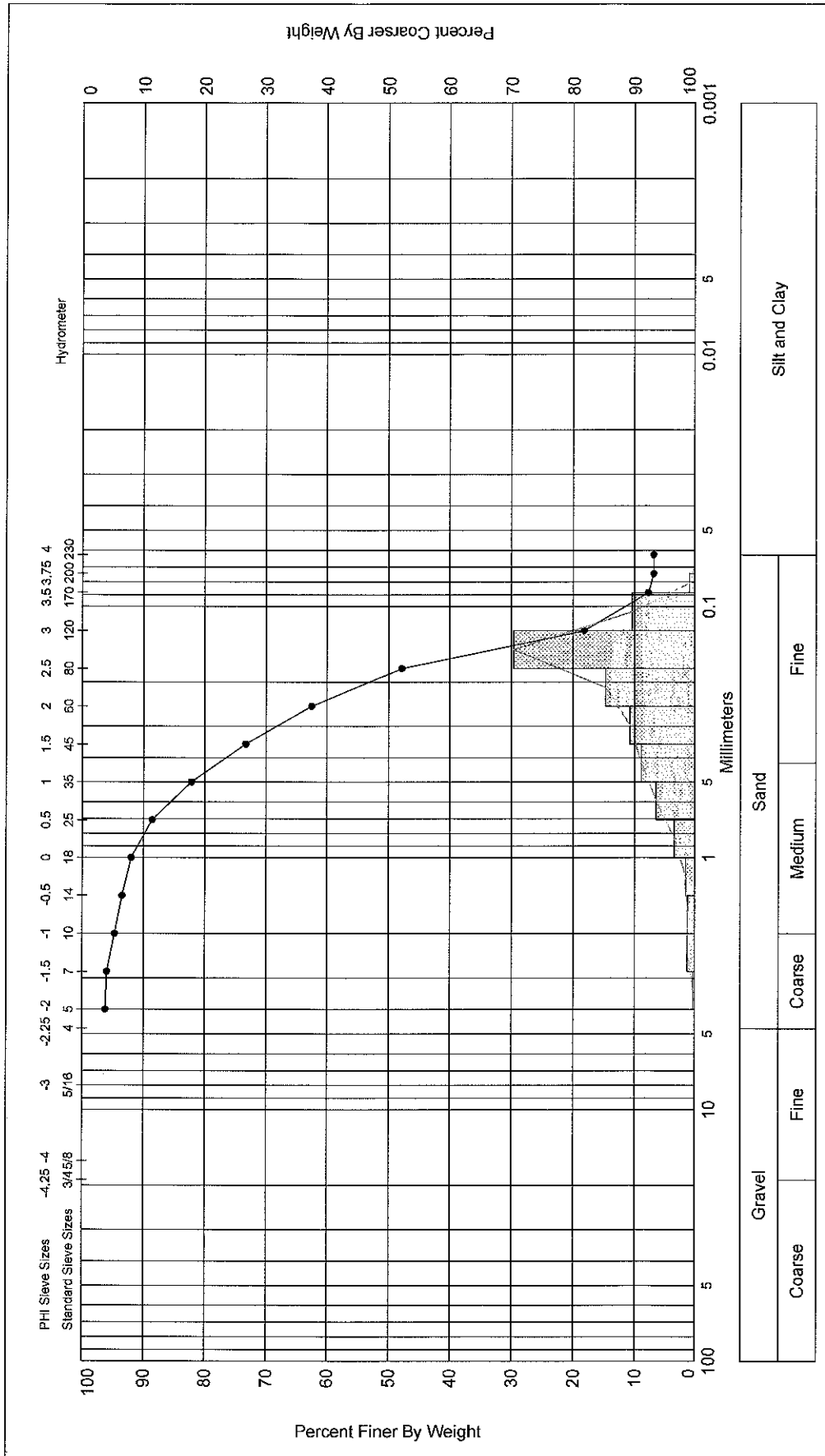


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Mean	Median	Skew	Kurt	Sort	Sample Information	
CERC 55 #Comp	●	—		#200 - 6.75 #230 - 6.75			2.43	2.2	-1.39	6.32	0.74	Project Name:	U.S. MMS NE Florida
Comments:												Analysis Date:	04-18-06
Depths and elevations based on measured values												Analyzed By:	
												Easting (X, ):	81.25
												Northing (Y, ):	30.41
												Horizontal System:	
												Vertical System:	MSL

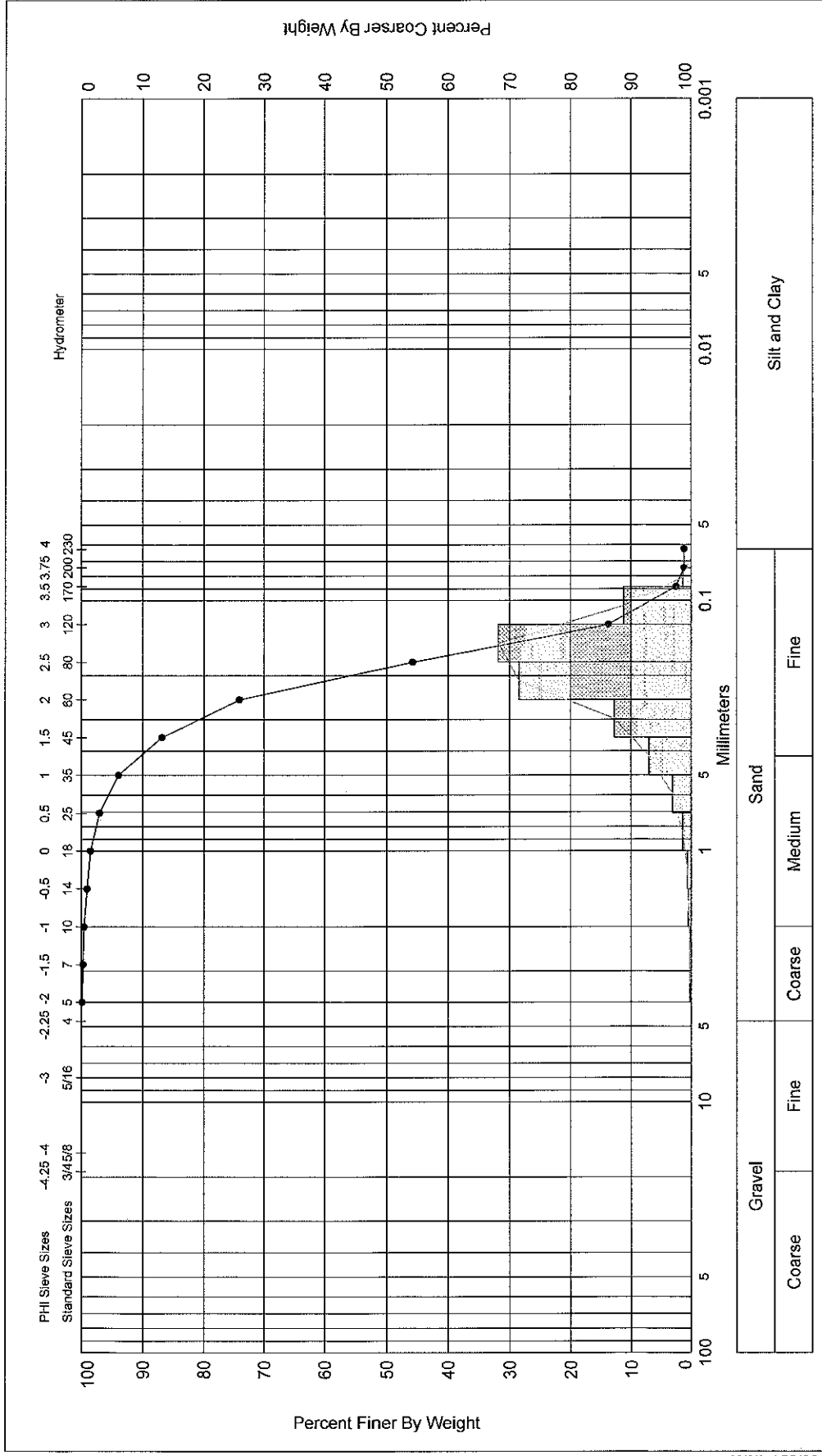


Sample		USCS		% Fines		% Organics		% Carbonates		Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 65 #Comp	—●—			#200 - 1.46	#230 - 1.46					1.66	1.36	-0.44	2.53	1.26	Project Name:	U.S. MMS NE Florida
Comments:															Analysis Date:	04-18-06
Depths and elevations based on measured values															Analyzed By:	
															Easting (X):	
															Northing (Y):	
															Horizontal System:	
															Vertical System:	MSL
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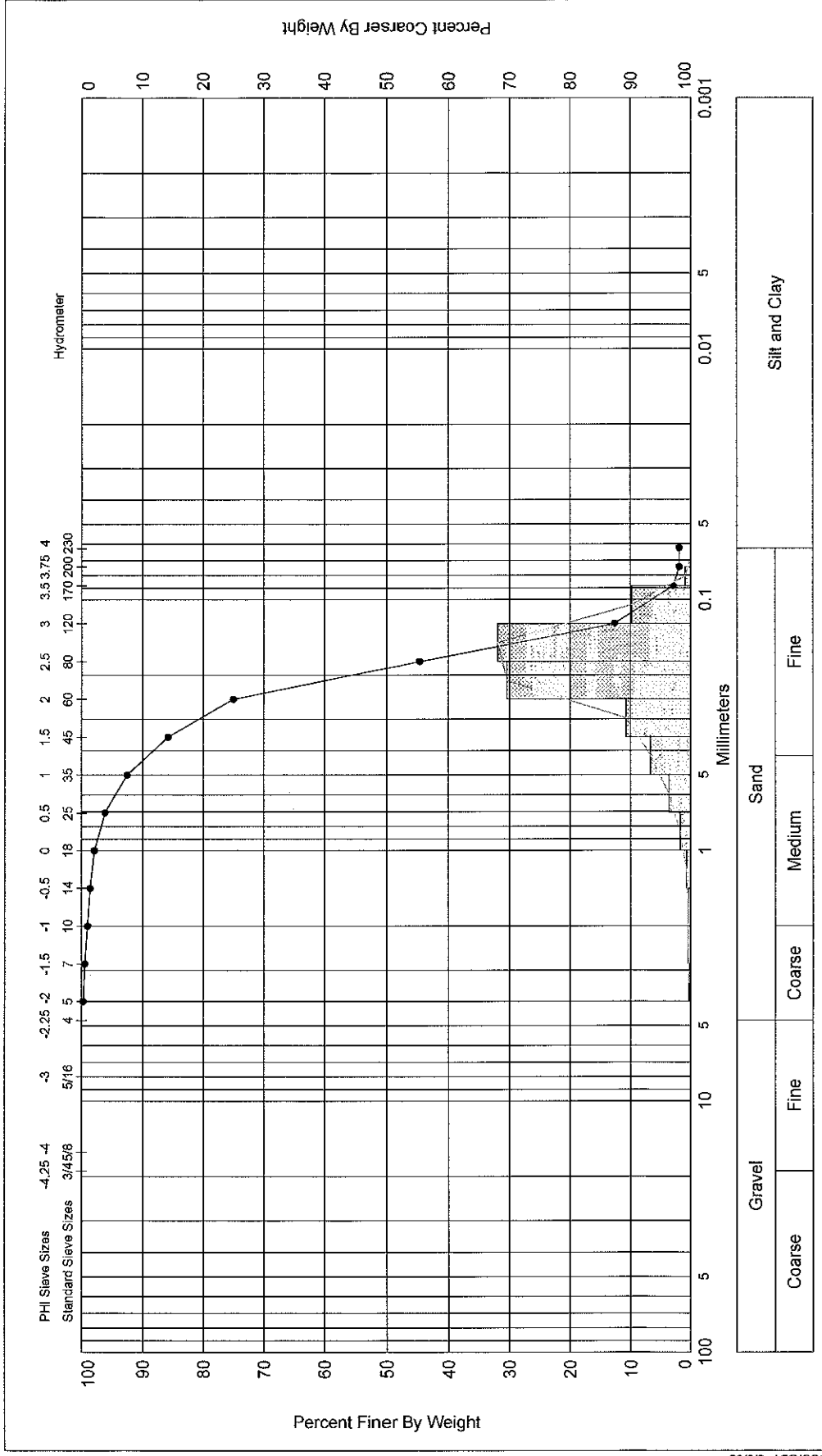




Sample		Symbol		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Mean		Skew		Kurt		Sort	
CERC 66 #Comp		●		---				#200 - 6.81		#230 - 6.81				2.42		-0.62		3.39		1.03	
Comments:																					
Depths and elevations based on measured values																					
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												Silt and Clay									
Sample Information												Project Name: U.S. MMS NE Florida									
Analysis Date: 04-18-06												Analyzed By:									
Easting (X.): 81.27												Northing (Y.): 30.37									
Horizontal System: MSL												Vertical System: MSL									



Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 1.18	#230 - 1.18	% Organics	% Carbonates	Sand			Silt and Clay			Sample Information	
									Coarse	Medium	Fine	Coarse	Medium	Fine	Project Name:	Analysis Date:
CERC 83 #Comp	—●—								2.42	2.28	-1.32	6.12	0.76	U.S. MMS NE Florida	04-18-06	
Comments:																
Depths and elevations based on measured values																
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708																
Easting (X, ): 81.23																
Northing (Y, ): 30.33																
Horizontal System:																
Vertical System: MSL																



Sample Information	
Project Name:	U.S. MMS NE Florida
Analysis Date:	04-18-06
Analyzed By:	
Easting (X):	81.23
Northing (Y):	30.33
Horizontal System:	
Vertical System:	MSL

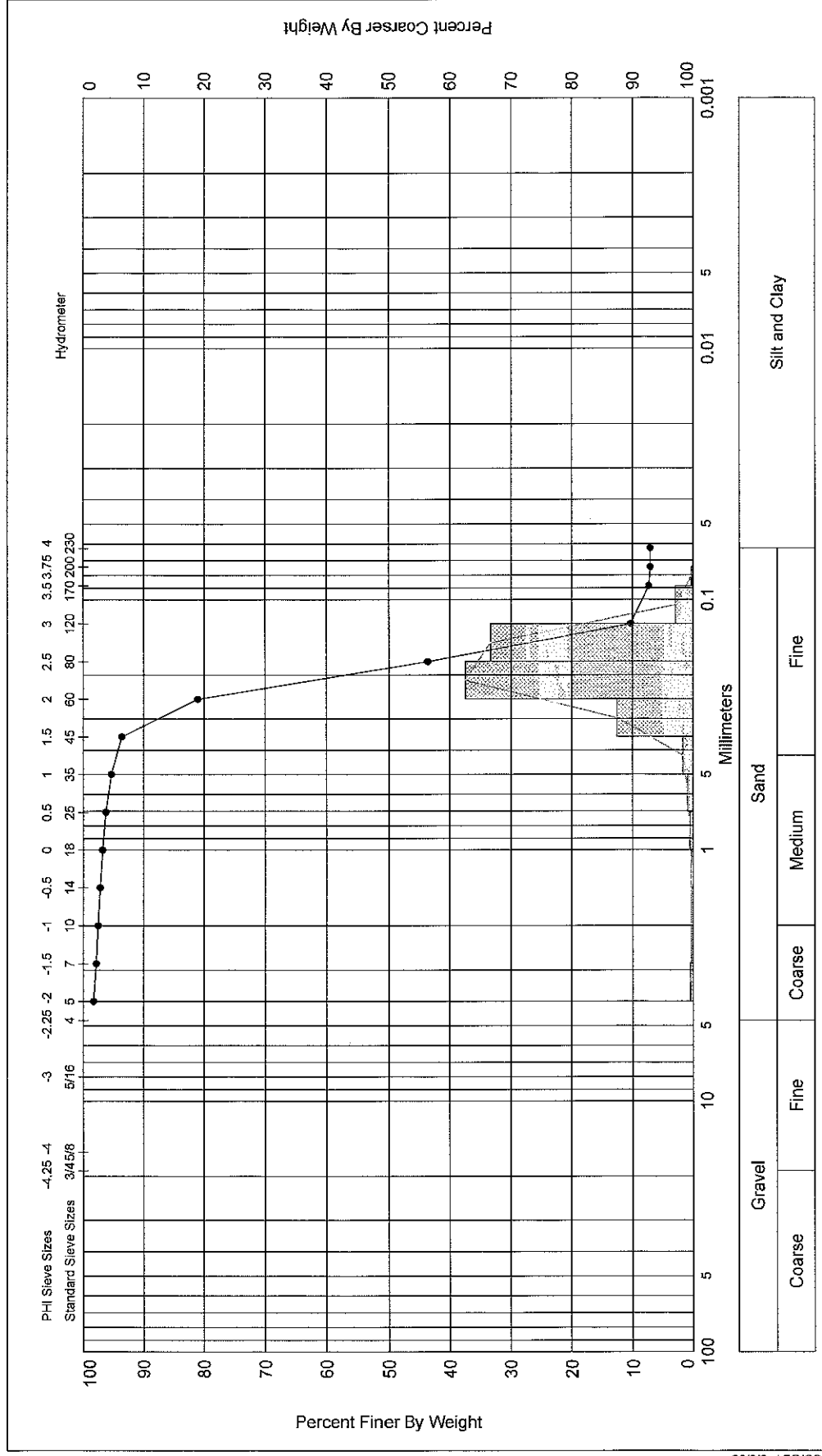
Sample Information										
Sample	CEPC 83A=USGS 871 #Comp	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
Symbol			#200 - 1.91			2.41	2.24	-1.52	6.67	0.8
Elev. (ft)			#230 - 1.91							

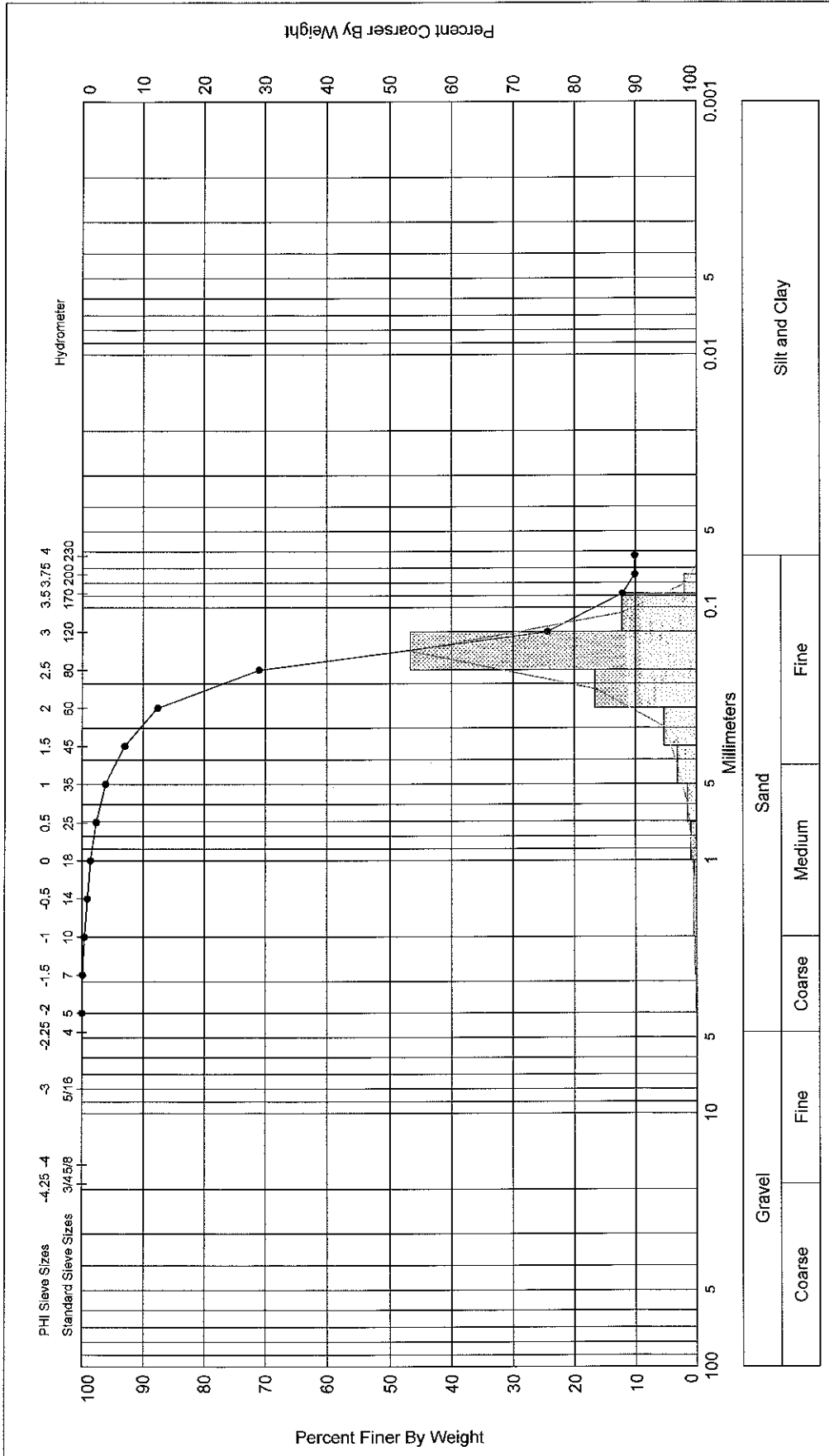
Comments:  
 Depths and elevations based on measured values

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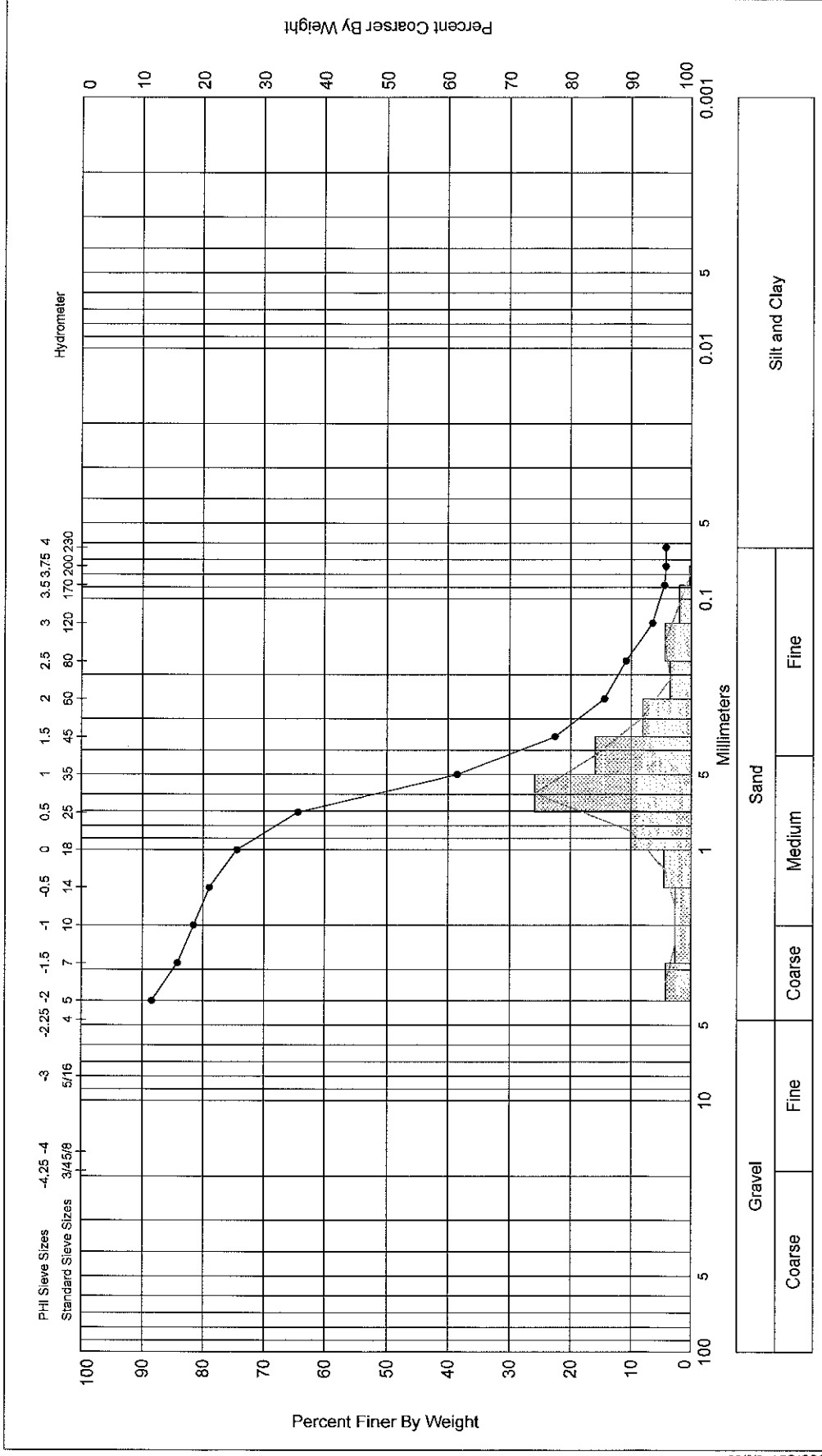




Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 112 #Comp	●	—		#200 - 7.12			2.41	2.22	-2.36	14.36	0.64	Project Name:	U.S. MMS NE Florida
Comments:												Analysis Date:	04-18-06
Depths and elevations based on measured values												Analyzed By:	
												Easting (X):	81.30
												Northing (Y):	30.11
												Horizontal System:	
												Vertical System:	MSL
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Sample		Symbol		Elev. (ft)		USCS		% Fines		% Organics		% Carbonates		Mean		Median		Skew		Kurt		Sort	
CERC 113 #1.0		—●—						#200 - 10.10 #230 - 10.10						2.73		2.52		-2.18		9.91		0.71	
Comments:																							
Depths and elevations based on measured values																							
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												Project Name: U.S. MMS NE Florida											
												Analysis Date: 04-18-06											
												Analyzed By:											
												Easting (X): 81.28											
												Northing (Y): 30.14											
												Horizontal System:											
												Vertical System: MSL											

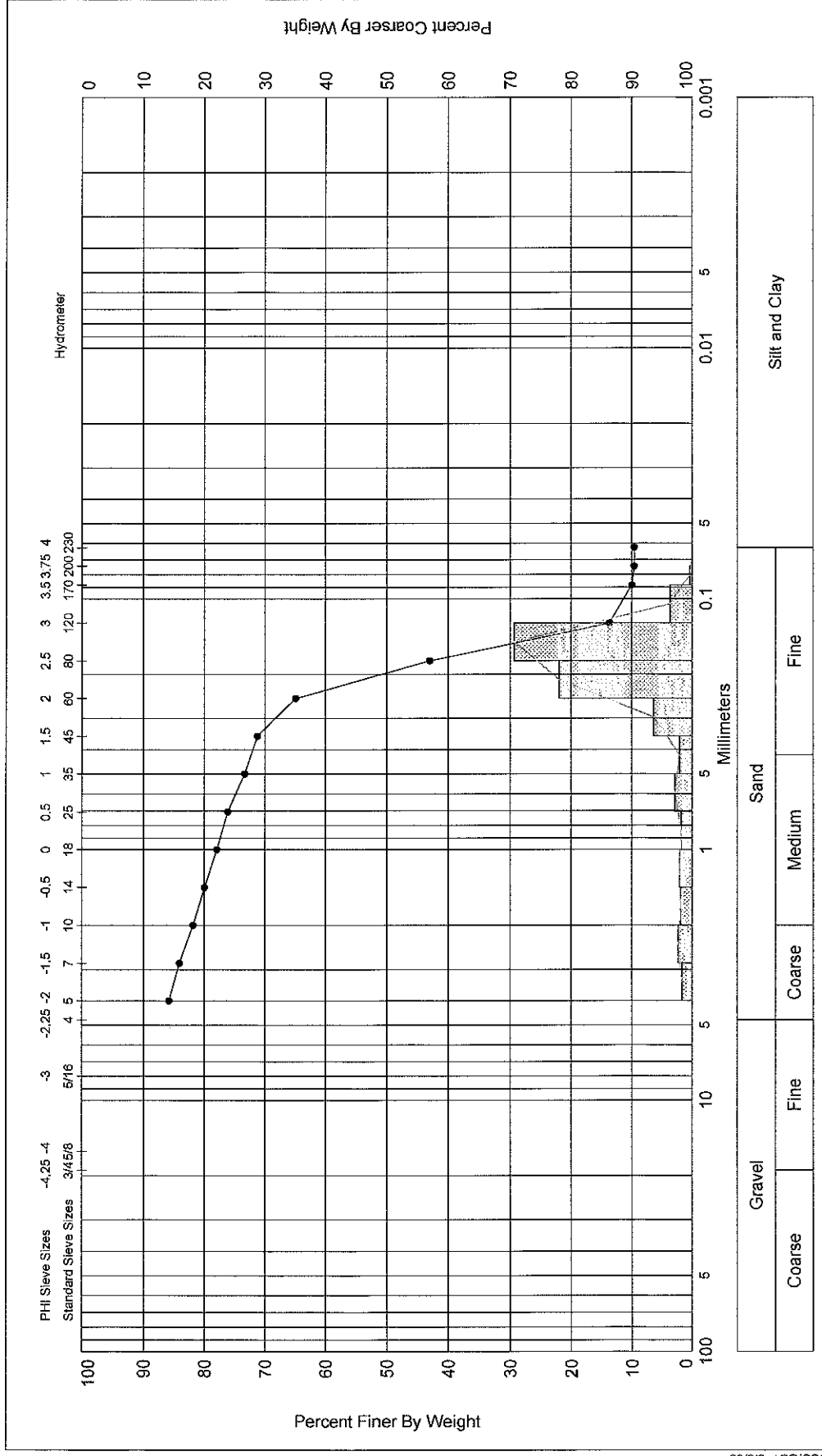


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 115 #Comp	—●—			#200 - 4.22 #230 - 4.22			0.78	0.46	0.7	3.46	1.09	Project Name:	U.S. MMS NE Florida
Comments:												Analysis Date:	04-18-06
Depths and elevations based on measured values												Analyzed By:	
												Easting (X, ft):	8,126
												Northing (Y, ft):	3,029
												Horizontal System:	NAD 1983
												Vertical System:	MSL

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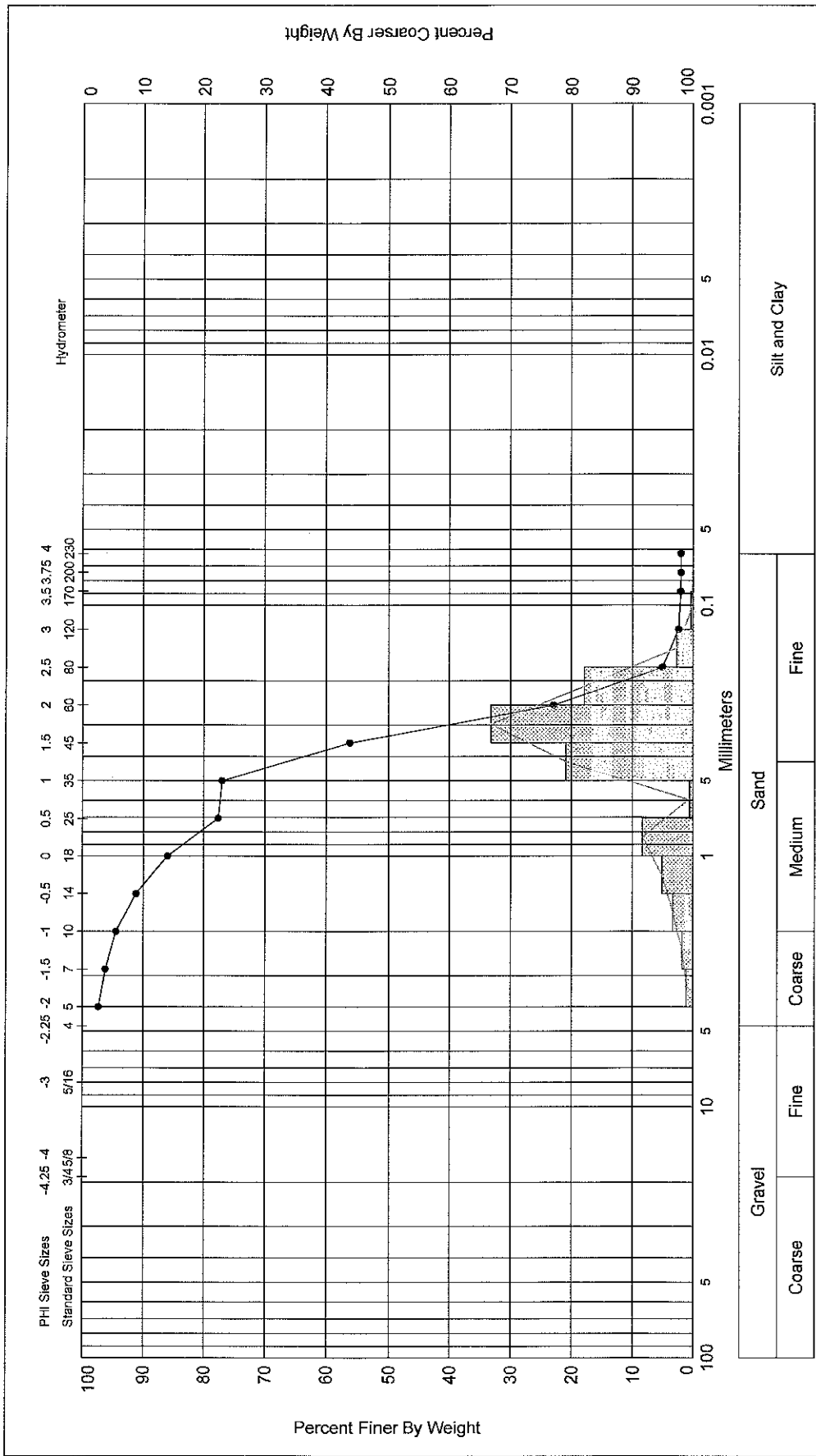




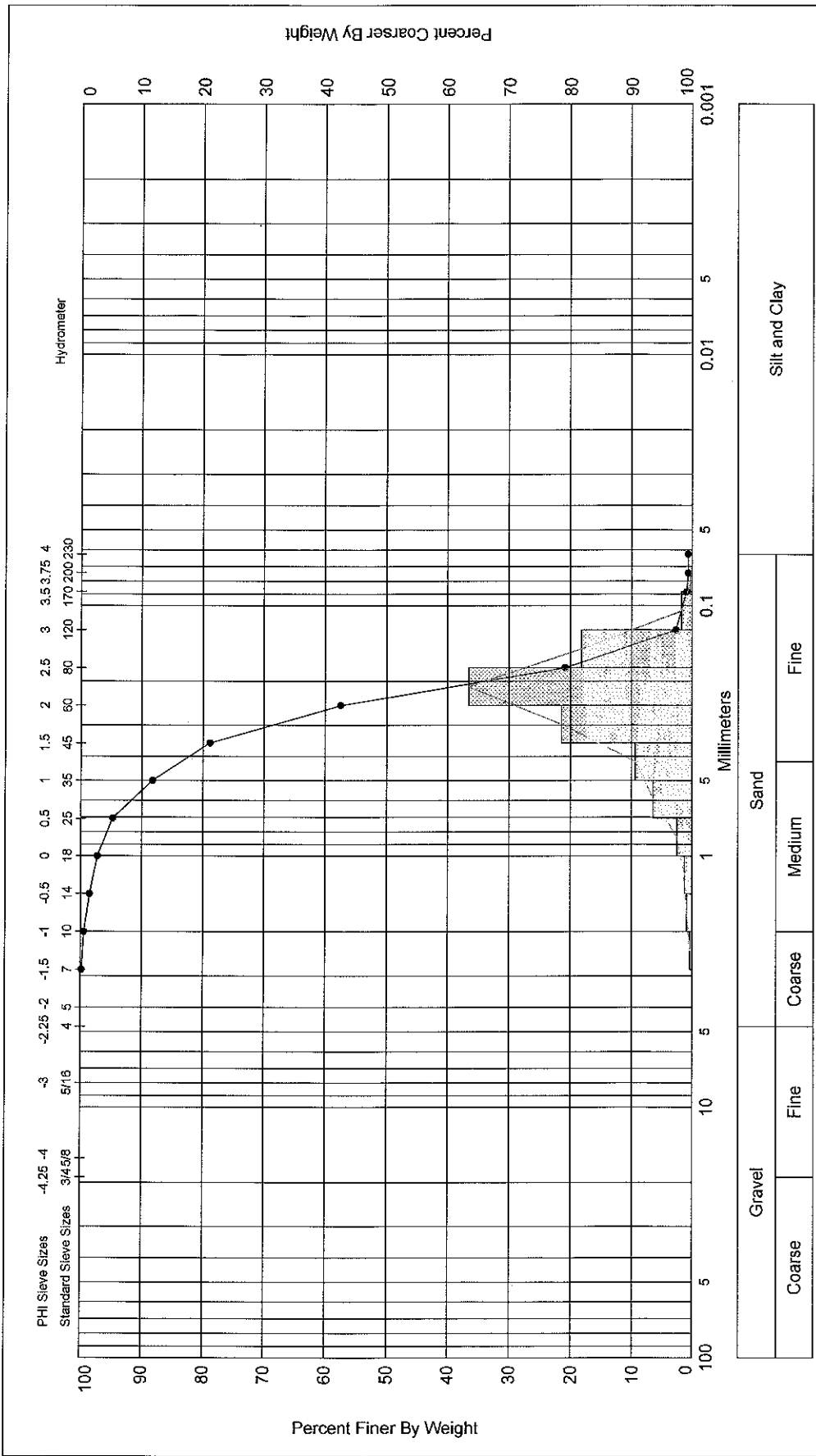


Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 9.61	#230 - 9.61	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
CERC 139=USGS 950 #Comp	—●—								2.34	1.33	0.09	2.24	1.25	Project Name:	U.S. MMS NE Florida
Comments:														Analysis Date:	04-18-06
Depths and elevations based on measured values														Analyzed By:	
														Easting (X):	80.96
														Northing (Y):	29.59
														Horizontal System:	
														Vertical System:	MSL

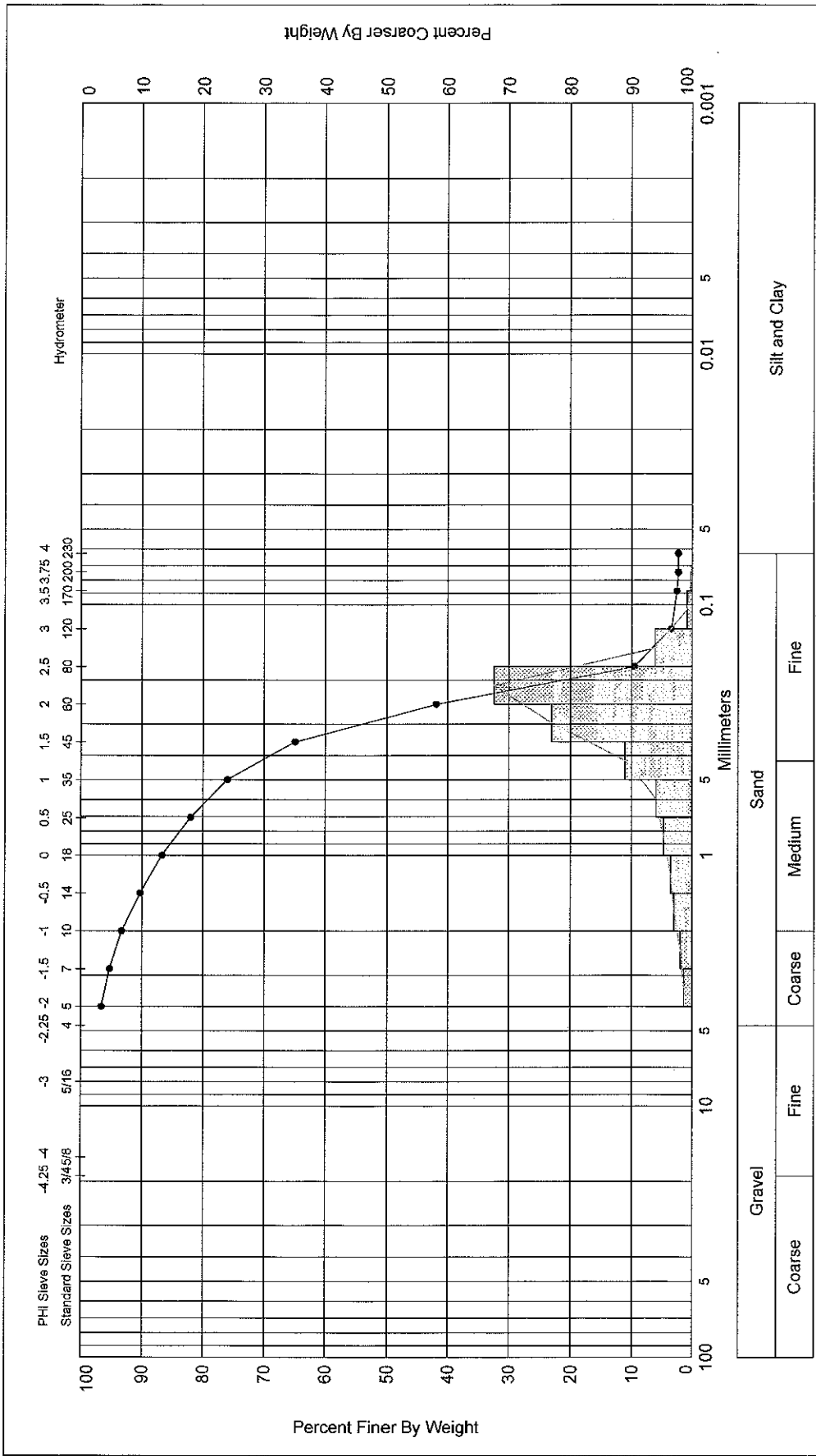
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Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Mean	Median	Skew	Kurt	Sort	Sample Information
CERC 147 Replica 1	#Comp 1			1.94			1.24	1.59	-0.88	3.58	0.95	U.S. MMS NE Florida
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Analyzed By:												
Easting (X): 80.91												
Northing (Y): 29.37												
Horizontal System:												
Vertical System: MSL												
Analysis Date: 04-18-06												
Project Name: U.S. MMS NE Florida												

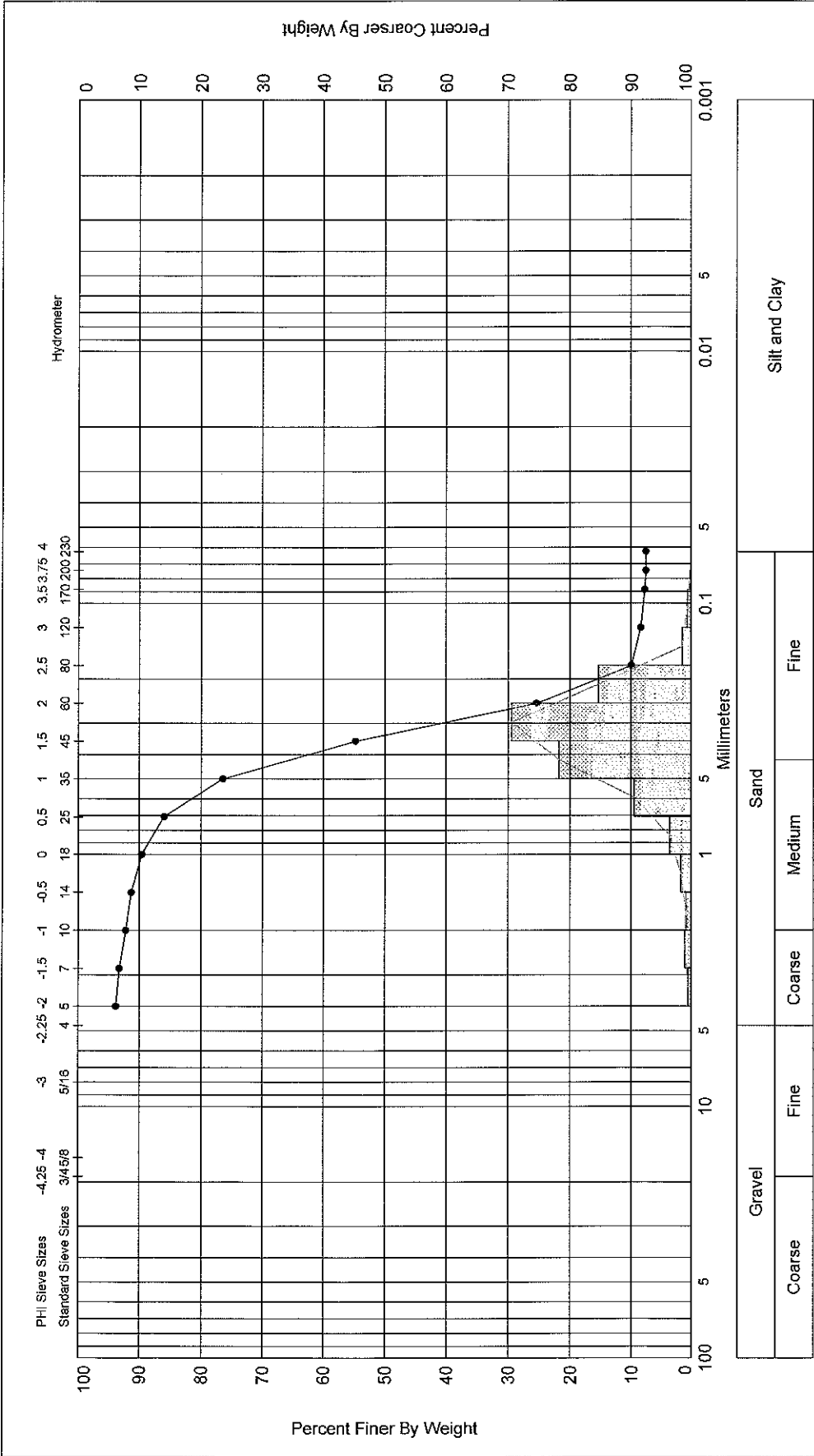


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information			
CEPC 147 Replica 1 #Comp-2	●			#200 - 0.67 #230 - 0.67			2.1	1.93	-1.21	5.01	0.76	Project Name:	U.S. MMS NE Florida		
Comments:												Analysis Date:	04-18-06		
Depths and elevations based on measured values												Analyzed By:			
												Easting (X):	80.91		
												Northing (Y):	29.37		
												Horizontal System:			
												Vertical System:	MSL		
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708			

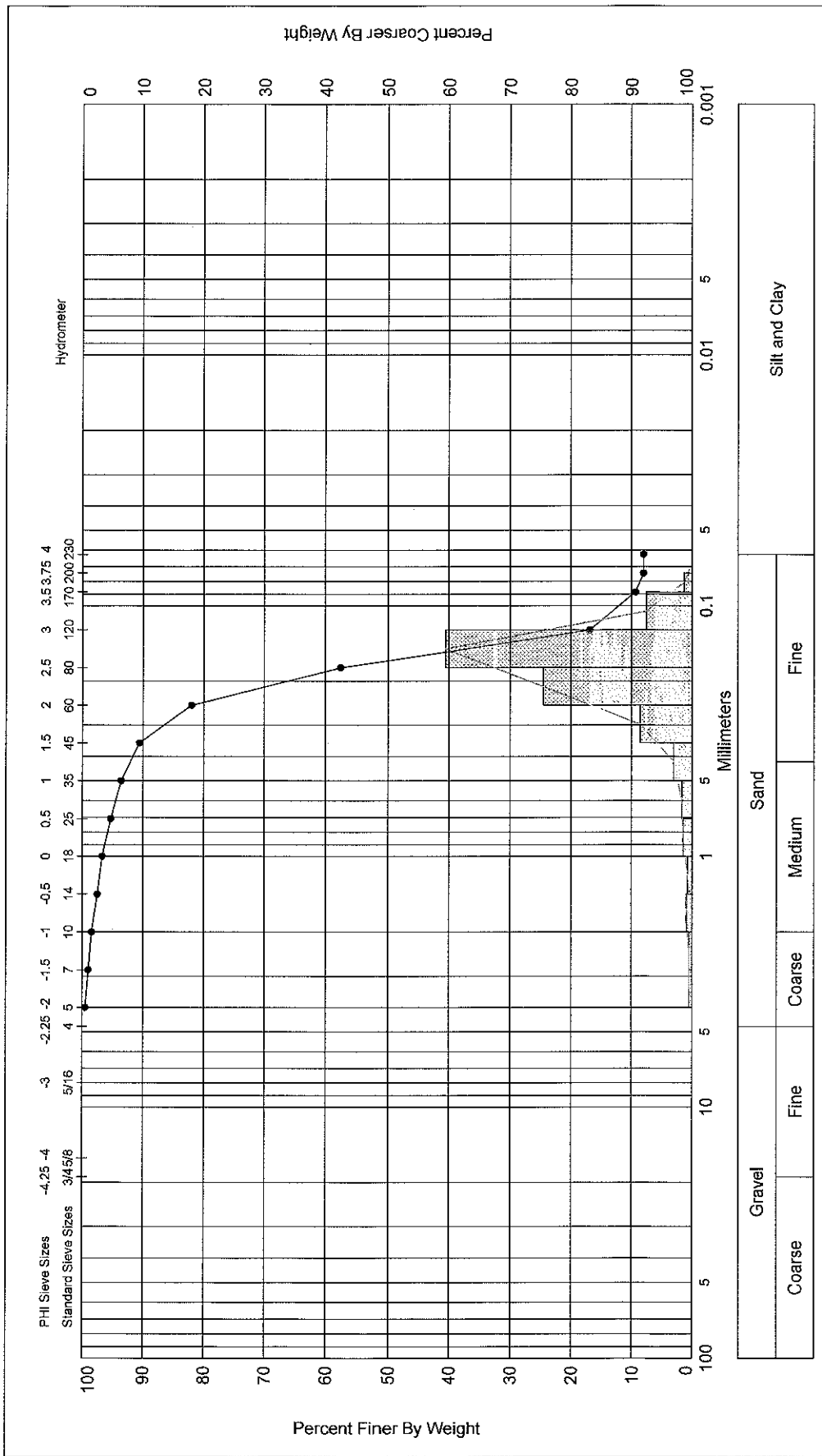


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
ERC 147 Replica 2 #Comp 1	●			200 - 2.29 230 - 2.29			1.82	1.41	-0.9	3.7	1.02	U.S. MMS NE Florida
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Analyzed By:												
Easting (X): 80.91												
Northing (Y): 29.37												
Horizontal System:												
Vertical System: MSL												

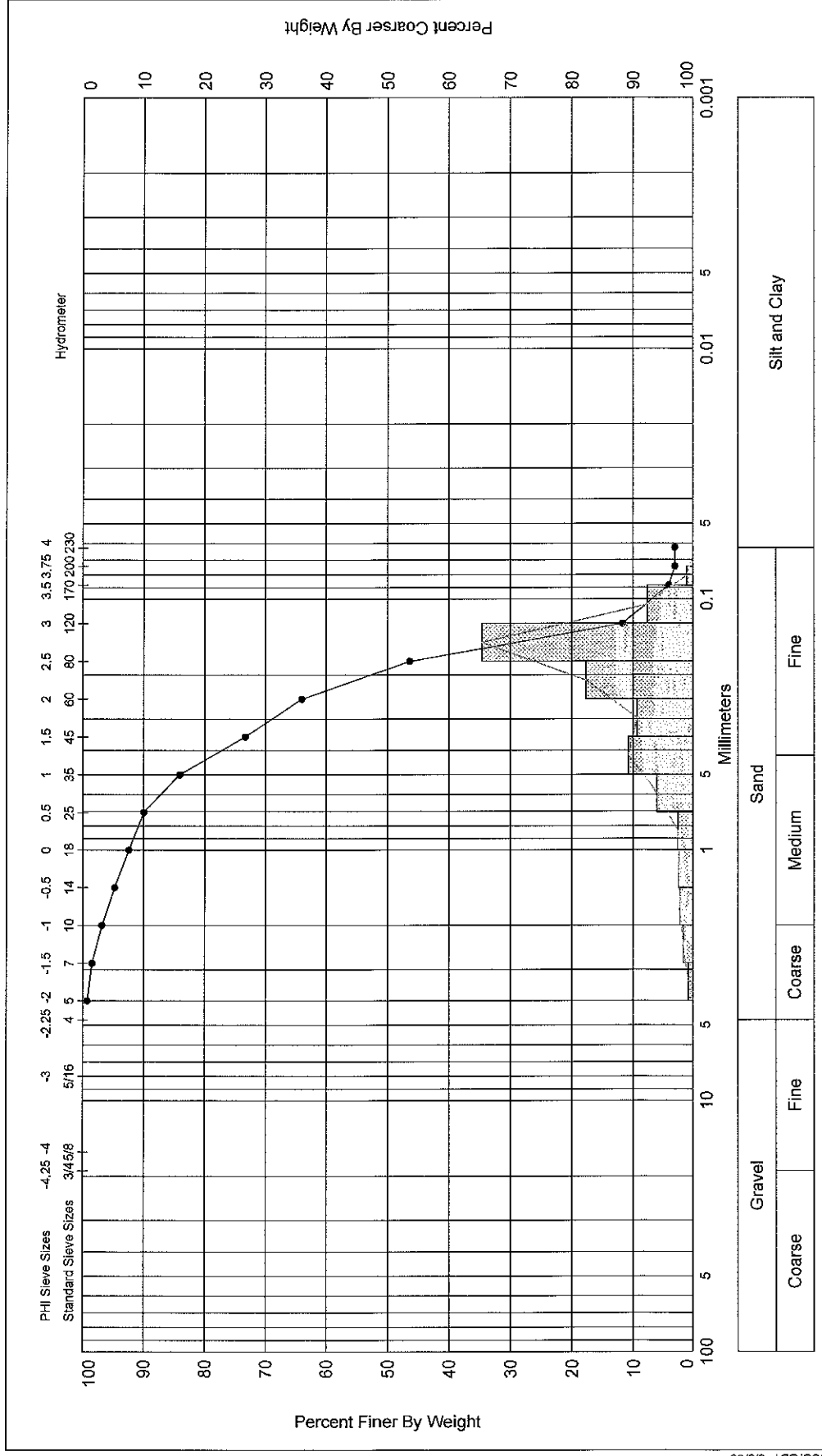




Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Mean	Median	Skew	Kurt	Sort	Sample Information
CERC 168 #Comp	●			#200 - 7.57 #230 - 7.57			1.58	1.2	-0.19	4.36	0.78	U.S. MMS NE Florida
Comments:												
Depths and elevations based on measured values												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												
Analyzed By: 80.82												
Easting (X): 29.16												
Northing (Y):												
Horizontal System:												
Vertical System: MSL												

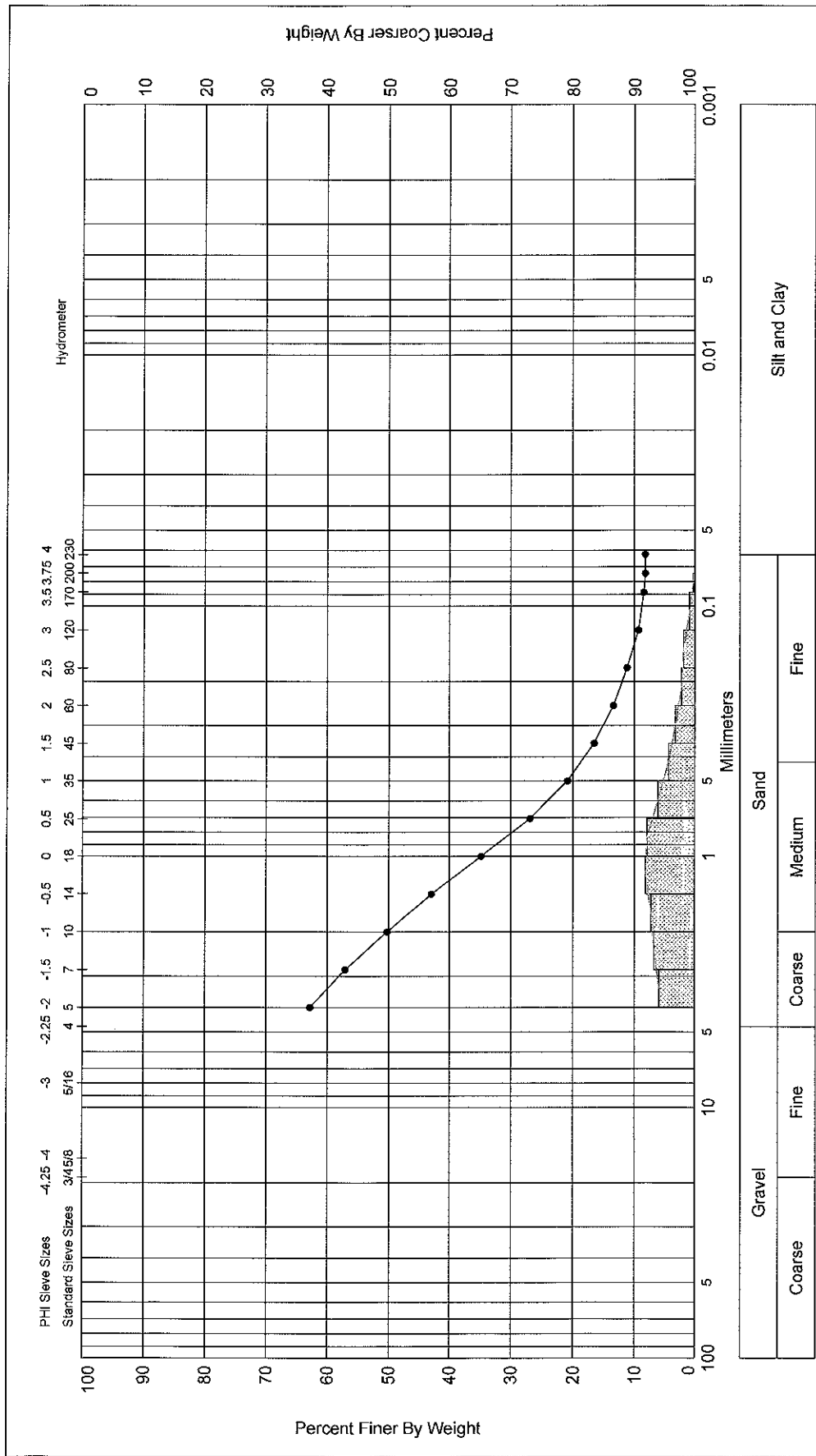


Sample	Symbol	Elev. (ft)	USCS	% Fines	#200 - 8.02	#230 - 8.02	% Organics	% Carbonates	Mean	Skew	Kurt	Sort	Sample Information		
CERC 170 #Comp	—●—							2.59	-2.16	9.36	0.83	Project Name:	U.S. MMS NE Florida		
Comments:													Analysis Date:	04-18-06	
Depths and elevations based on measured values													Analyzed By:		
													Easting (X):	80.94	
													Northing (Y):	29.20	
													Horizontal System:		
													Vertical System:	MSL	
													Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708		



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information					
CERC F111 #Comp	●			#200 - 2.96			2.4	1.97	-1.22	4.25	1.09	Project Name:	U.S. MMS NE Florida				
Comments:												Analysis Date:	04-18-06				
Depths and elevations based on measured values												Analyzed By:					
												Easting (X, ft):					
												Northing (Y, ft):					
												Horizontal System:					
												Vertical System:	MSL				
												Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708					





Gravel		Sand			Silt and Clay							
Coarse	Fine	Coarse	Medium	Fine	Coarse	Medium	Fine					
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information
CERC F161A #Comp	—●—			#200 - 8.21 #230 - 8.21			1.24	-0.86	2.12	5.44	1.23	Project Name: U.S. MMS NE Florida
Comments:												
Depths and elevations based on measured values												
Analyzed By:												
Analysis Date: 04-18-06												
Easting (X, ft):												
Northing (Y, ft):												
Horizontal System: NAD 1983												
Vertical System: MSL												
Scientific Environmental Applications 5575 Willoughby Drive Melbourne, FL 32934 ph 321 254-2708 fax 321 254-2708												