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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 13F

FORM 13F Cover Page

CONFIDENTIAL TREATMENT EXPIRED



05077031

Report for the Calendar Year or Quarter Ended: December 31, 2004

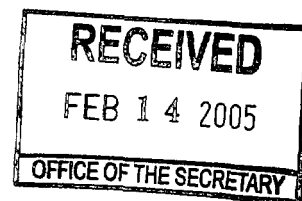
Check here if Amendment: ; Amendment Number: _____

This Amendment (Check only one): is a restatement
 adds new holding entries.

Institutional Manager Filing this Report:

Name: Two Sigma Investments, LLC

Address: 379 West Broadway
5th Floor
New York, New York 10012



13F File Number: 28- 10385

The institutional investment manager filing this report and the person by whom it is signed hereby represent that the person signing the report is authorized to submit it, that all information contained herein is true, correct and complete, and that it is understood that all required items, statements, schedules, lists, and tables, are considered integral parts of this form.

Person Signing this Report on Behalf of Reporting Manager:

Name: Mark Pickard
Title: President
Phone: (212) 625-5731

PROCESSED

AUG 14 2006

THOMSON
FINANCIAL

Signature, Place and Date of Signing:

New York, New York

February 11, 2004

[Signature]

[City, State]

[Date]

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Report Type: (Check only one):

- [X] 13F HOLDINGS REPORT. (Check here if all holdings of this reporting manager are reported in this report).
- [] 13F NOTICE. (Check here if no holdings reported are in this report, and all holdings are reported by other reporting managers(s).)
- [] 13F COMBINATION REPORT. (Check here if a portion of the holdings for this reporting manager are reported in this report and a portion are reported by other reporting manager(s).)

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Form 13F SUMMARY PAGE

Report Summary:

Number of Other Included Managers: 1
Form 13F Information Table Entry Total: 1,135
Form 13F Information Table Value Total: \$3,337,662
(thousands)

List of Other Included Managers:

Provide a numbered list of the name(s) and Form 13F file number(s) of all institutional investment managers with respect to which this report is filed, other than the manager filing this report.

No.	Form 13F File Number	Name
*	28-10704	Two Sigma Equity Portfolio, LLC
*	28-11144	Two Sigma Spectrum Portfolio, LLC

* This Form 13F holdings report is being filed on behalf of Two Sigma Investments, LLC ("Investments"). Investments serves as the sole investment manager of Two Sigma Equity Portfolio, LLC ("Equity") and Two Sigma Spectrum Portfolio, LLC ("Spectrum"), two investment entities that are affiliated with Investments and that may be deemed to be "other managers" for purposes of this Form 13F report. Investments, rather than Equity or Spectrum, exercises sole dispositive and voting authority over the securities held in the various accounts of Equity and Spectrum.

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Form 13F Information Table
Two Sigma Investments, LLC
December 31, 2004

Table with columns: NAME OF ISSUER, TITLE OF CLASS, CUSIP, VALUE (\$'000), SHRS OR PRN AMT, SH/PRN, PUT/CALL, INVESTMENT DISCRETION, OTHER MANAGERS, VOTING AUTHORITY (SOLE, SHARED, NONE).

Form 13F Information Table
Two Sigma Investments, LLC
December 31, 2004

COLUMN 1 NAME OF ISSUER	COLUMN 2 TITLE OF CLASS	COLUMN 3 CUSIP	COLUMN 4 VALUE (\$X1000)	COLUMN 5			COLUMN 6 INVESTMENT DISCRETION	COLUMN 7 OTHER MANAGERS	COLUMN 8 VOTING AUTHORITY		
				SHRS OR PRN AMT	SH/PRN	PUT/CALL			SOLE	SHARED	NONE
UNIBANCO UNIAO DE BANCOS BRA	GDR REP PFD UT	90458E107	577	18,200	SH		SOLE	*		18200	
UNIONBANCAL CORP	COM	908906100	5,539	85,900	SH		SOLE	*		85900	
UNISYS CORP	COM	909214108	392	38,500	SH		SOLE	*		38500	
UNITED DEFENSE INDS INC	COM	91018B104	5,453	115,400	SH		SOLE	*		115400	
UNITED INDL CORP	COM	910671106	2,441	63,000	SH		SOLE	*		63000	
UNITED NAT FOODS INC	COM	911163103	514	16,529	SH		SOLE	*		16529	
UNITED SURGICAL PARTNERS INT	COM	913016309	460	11,034	SH		SOLE	*		11034	
UNITED TECHNOLOGIES CORP	COM	913017109	7,374	71,352	SH		SOLE	*		71352	
UNITED THERAPEUTICS CORP DEL	COM	91307C102	2,565	56,800	SH		SOLE	*		56800	
UNIVERSAL COMPRESSION HLDGS	COM	913431102	2,794	80,026	SH		SOLE	*		80026	
UNIVERSAL TECHNICAL INST INC	COM	913915104	393	10,300	SH		SOLE	*		10300	
UNIZAN FINANCIAL CORP	COM	91528W101	701	26,600	SH		SOLE	*		26600	
UNOCAL CORP	COM	915289102	6,227	144,000	SH		SOLE	*		144000	
UNOVA INC	COM	91529B106	465	18,400	SH		SOLE	*		18400	
UNUMPROVIDENT CORP	COM	91529Y106	1,453	81,000	SH		SOLE	*		81000	
US BANCORP DEL	COM NEW	902973304	789	25,200	SH		SOLE	*		25200	
UST INC	COM	902911106	4,056	84,300	SH		SOLE	*		84300	
UTI WORLDWIDE INC	ORD	G87210103	4,966	73,008	SH		SOLE	*		73008	
VALASSIS COMMUNICATIONS INC	COM	918866104	753	21,500	SH		SOLE	*		21500	
VALERO ENERGY CORP NEW	COM	91913Y100	953	21,000	SH		SOLE	*		21000	
VALLEY NATL BANCORP	COM	919794107	763	27,600	SH		SOLE	*		27600	
VALUECLICK INC	COM	92046N102	4,869	365,298	SH		SOLE	*		365298	
VARCO INTL INC DEL	COM	922122106	7,658	262,700	SH		SOLE	*		262700	
VECTOR GROUP LTD	COM	92240M108	1,074	64,600	SH		SOLE	*		64600	
VEECO INSTRS INC DEL	COM	922417100	389	18,480	SH		SOLE	*		18480	
VENTAS INC	COM	92276F100	822	30,000	SH		SOLE	*		30000	
VENTIV HEALTH INC	COM	922793104	1,233	60,678	SH		SOLE	*		60678	
VERISIGN INC	COM	92343E102	1,878	55,903	SH		SOLE	*		55903	
VERISITY LTD	ORD	M97385112	381	46,483	SH		SOLE	*		46483	
VERITAS SOFTWARE CO	COM	923436109	10,318	361,400	SH		SOLE	*		361400	
VERITY INC	COM	92343C106	1,392	106,064	SH		SOLE	*		106064	
VERIZON COMMUNICATIONS	COM	92343V104	9,038	223,100	SH		SOLE	*		223100	
VIAD CORP	COM NEW	92552R406	1,541	54,100	SH		SOLE	*		54100	
VIASAT INC	COM	92552V100	327	13,491	SH		SOLE	*		13491	
VIRAGE LOGIC CORP	COM	92763R104	242	13,051	SH		SOLE	*		13051	
VISTACARE INC	CL A	92839Y109	421	25,298	SH		SOLE	*		25298	
VIVENDI UNIVERSAL	SPON ADR NEW	92851S204	520	16,200	SH		SOLE	*		16200	
VORNADO RLTY TR	SH BEN INT	929042109	830	10,900	SH		SOLE	*		10900	
WACHOVIA CORP 2ND NEW	COM	929903102	23,954	455,408	SH		SOLE	*		455408	
WADDELL & REED FINL INC	CL A	930059100	270	11,300	SH		SOLE	*		11300	
WASHINGTON MUT INC	COM	939322103	13,834	327,200	SH		SOLE	*		327200	
WATERS CORP	COM	941648103	3,467	74,100	SH		SOLE	*		74100	
WATSON PHARMACEUTICALS INC	COM	942683103	2,484	75,700	SH		SOLE	*		75700	
WAYPOINT FINL CORP	COM	946756103	2,404	84,800	SH		SOLE	*		84800	
WEATHERFORD INTERNATIONAL LT	COM	G95089101	2,241	43,684	SH		SOLE	*		43684	
WEBSTER FINL CORP CONN	COM	947890109	679	13,400	SH		SOLE	*		13400	
WELLCARE HEALTH PLANS INC	COM	94946T106	1,940	59,700	SH		SOLE	*		59700	
WELLCHOICE INC	COM	949475107	4,438	83,100	SH		SOLE	*		83100	
WENDYS INTL INC	COM	950590109	2,650	67,500	SH		SOLE	*		67500	
WERNER ENTERPRISES INC	COM	950755108	2,875	127,000	SH		SOLE	*		127000	
WEST CORP	COM	952355106	794	23,994	SH		SOLE	*		23994	
WEST MARINE INC	COM	954235107	891	36,016	SH		SOLE	*		36016	
WESTAR ENERGY INC	COM	95709T100	2,744	120,000	SH		SOLE	*		120000	
WESTERN DIGITAL CORP	COM	958102106	2,056	189,700	SH		SOLE	*		189700	
WESTLAKE CHEM CORP	COM	960413102	848	25,400	SH		SOLE	*		25400	
WESTWOOD ONE INC	COM	961815107	1,697	63,000	SH		SOLE	*		63000	
WET SEAL INC	CL A	961840105	263	115,700	SH		SOLE	*		115700	
WEYERHAEUSER CO	COM	962166104	6,359	94,600	SH		SOLE	*		94600	
WFS FINL INC	COM	92923B106	819	16,200	SH		SOLE	*		16200	
WHEATON RIV MINERALS LTD	COM	962902102	435	133,500	SH		SOLE	*		133500	
WHITNEY HLDG CORP	COM	966612103	765	17,001	SH		SOLE	*		17001	
WINTRUST FINANCIAL CORP	COM	97650W108	1,493	26,211	SH		SOLE	*		26211	
WIRELESS FACILITIES INC	COM	97653A103	1,714	181,578	SH		SOLE	*		181578	
WITNESS SYS INC	COM	977424100	555	31,800	SH		SOLE	*		31800	
WOLVERINE WORLD WIDE INC	COM	97809T103	459	14,600	SH		SOLE	*		14600	
WORTHINGTON INDS INC	COM	981811102	6,910	352,900	SH		SOLE	*		352900	
WRIGHT MED GROUP INC	COM	98235T107	1,757	61,646	SH		SOLE	*		61646	
XEROX CORP	COM	984121103	757	44,500	SH		SOLE	*		44500	
XTO ENERGY INC	COM	98385X106	449	12,700	SH		SOLE	*		12700	
YAHOO INC	COM	984332106	839	22,255	SH		SOLE	*		22255	
ZALE CORP NEW	COM	988658106	400	13,400	SH		SOLE	*		13400	
ZEBRA TECHNOLOGIES CORP	CL A	989207105	1,203	21,384	SH		SOLE	*		21384	
ZHONE TECHNOLOGIES INC NEW	COM	98950P108	253	97,681	SH		SOLE	*		97681	
ZIMMER HLDGS INC	COM	98956P102	2,548	31,800	SH		SOLE	*		31800	
ZIONS BANCORPORATION	COM	989701107	1,336	19,640	SH		SOLE	*		19640	

Total number of positions: 1,135
Total dollar value of positions (\$X1000): \$ 3,337,662

* This Form 13F holdings report is being filed on behalf of Two Sigma Investments, LLC ("Investments"). Investments serves as the sole investment manager of Two Sigma Equity Portfolio, LLC ("Equity") and Two Sigma Spectrum Portfolio, LLC ("Spectrum"), two investment entities that are affiliated with Investments and that may be deemed to be "other managers" for purposes of this Form 13F report. Investments, rather than Equity or Spectrum, exercises sole dispositive and voting authority over the securities held in the various accounts of Equity and Spectrum.