



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

11 3832

DATE : October 30, 1989

SUBJECT: NH_3N , NO_3N and $\text{NO}_2\text{N} + \text{NO}_3\text{N}$ Determination of Keystone Sanitation for September, Superfund Remedial, (9/6/89 - 10/2/89)

FROM : Nicoline Shulterbrandt *NRS*
Environmental Specialist

TO : Daniel K. Donnelly
Acting Chief, Laboratory Branch

THRU : Norman Fritsche *NF*
Team Leader, Inorganic Analysis Section

Keystone Sanitation samples, 890906-11-16, 890907-01-08, 890908-01-07, 890919-03-08, 890920-12-21, 890921-05-09, 890927-01-07, 890928-01-04, and 890929-02-08 were analyzed for the determination of $\text{NO}_2\text{N} + \text{NO}_3\text{N}$, NO_3N and NH_3N . The results appear later in the report.

Additional quality control data is available for review upon request.

Sample Description:

<u>Lab No.</u>	<u>Description</u>
890906-11	Keystone Sanitation, Surface Water 1, Sta. SW-1
-12	Keystone Sanitation, Surface Water 2, Sta. SW-2
-13	Keystone Sanitation, Surface Water 3, Sta. SW-3
-14	Keystone Sanitation, Surface Water 4, Sta. SW-4
-15	Keystone Sanitation, Surface Water 5, Sta. SW-5
-16	Keystone Sanitation, Surface Water 4 Dupe., Sta. SW-4D
890907-01	Keystone Sanitation, Surface Water 6, Sta. SW-6
-02	Keystone Sanitation, Surface Water 7, Sta. SW-7
-03	Keystone Sanitation, Surface Water 8, Sta. SW-8
-04	Keystone Sanitation, Surface Water 9, Sta. SW-9
-05	Keystone Sanitation, Surface Water 11, Sta. SW-11
-06	Keystone Sanitation, Surface Water 10, Sta. SW-10
-07	Keystone Sanitation, Surface Water 10D, Sta. SW-10D
-08	Keystone Sanitation, Surface Water 12, Sta. SW-12
890908-01	Keystone Sanitation, Surface Water 17, Sta. SW-17
-02	Keystone Sanitation, Surface Water 18, Sta. SW-18
-03	Keystone Sanitation, Surface Water 01B, Sta. SW-01B
-04	Keystone Sanitation, Surface Water 13, Sta. SW-13
-05	Keystone Sanitation, Surface Water 14, Sta. SW-14
-06	Keystone Sanitation, Surface Water 15, Sta. SW-15
-07	Keystone Sanitation, Surface Water 16, Sta. SW-16

AR305397

NH₃N, NO₃N and NO₂N + NO₃N Determination of Keystone Sanitation for
September, Superfund Remedial

Sample Description: (Continued)

<u>Lab No.</u>	<u>Description</u>
890919-03	Keystone Sanitation, Mon. Well AS, Sta. MW-AS
-04	Keystone Sanitation, Mon. Well FS, Sta. MW-FS
-05	Keystone Sanitation, Mon. Well FSD, Sta. MW-FSD
-06	Keystone Sanitation, Mon. Well HS, Sta. MW-HS
-07	Keystone Sanitation, Mon. Well HD, Sta. MW-HD
-08	Keystone Sanitation, Mon. Well CS, Sta. MW-CS
890920-12	Keystone Sanitation, Mon. Well BS, Sta. MW-BS
-13	Keystone Sanitation, Mon. Well BSD duplicate, Sta. MW-BSD
-14	Keystone Sanitation, Mon. Well BD, Sta. MW-BD
-15	Keystone Sanitation, Mon. Well FD, Sta. MW-FD
-16	Keystone Sanitation, Mon. Well CD, Sta. MW-CD
-17	Keystone Sanitation, Mon. Well AD, Sta. MW-AD
-18	Keystone Sanitation, Mon. Well GS, Sta. MW-GS
-19	Keystone Sanitation, Mon. Well CI, Sta. MW-CI
-20	Keystone Sanitation, Mon. Well DI, Sta. MW-DI
-21	Keystone Sanitation, Mon. Well Pres. Blank, Sta. MW-01B
890921-05	Keystone Sanitation, Mon. Well GI, Sta. MW-GI
-06	Keystone Sanitation, Mon. Well IS, Sta. MW-IS
-07	Keystone Sanitation, Mon. Well II, Sta. MW-II
-08	Keystone Sanitation, Mon. Well ID, Sta. MW-ID
-09	Keystone Sanitation, Mon. Well EI, Sta. MW-EI
890927-01	Keystone Sanitation, Mon. Well MD6, Sta. MW-MD6
-02	Keystone Sanitation, Mon. Well MD9, Sta. MW-MD9
-03	Keystone Sanitation, Mon. Well K1, Sta. MW-K1
-04	Keystone Sanitation, Mon. Well MD3, Sta. MW-MD3
-05	Keystone Sanitation, Mon. Well K6, Sta. MW-K6
-06	Keystone Sanitation, Mon. Well K7, Sta. MW-K7
-07	Keystone Sanitation, Mon. Well K8, Sta. MW-K8
890928-01	Keystone Sanitation, Mon. Well MD1, Sta. MW-MD1
-02	Keystone Sanitation, Mon. Well MD4, Sta. MW-MD4
-03	Keystone Sanitation, Mon. Well MD5, Sta. MW-MD5
-04	Keystone Sanitation, Mon. Well MD8, Sta. MW-MD8
890929-02	Keystone Sanitation, Mon. Well K4, Sta. MW-K4
-03	Keystone Sanitation, Mon. Well K5, Sta. MW-K5
-04	Keystone Sanitation, Mon. Well MD2, Sta. MW-MD2
-05	Keystone Sanitation, Mon. Well MD2 Dupe., Sta. MW-MD2D
-06	Keystone Sanitation, Mon. Well K3, Sta. MW-K3
-07	Keystone Sanitation, Mon. Well K3 Dupe., Sta. MW-K3D
-08	Keystone Sanitation, Mon. Well Pres. Blank, Sta. MW-02B

NS:ad

cc: Peggy Zawodny *PZ*
QCO

AR305398

NH₃N, NO₃N and NO₂N + NO₃N Determination of Keystone Sanitation
Superfund Remedial for September

Results:

<u>Lab No.</u>	<u>NH₃N (mg/L)</u>	<u>NO₃N (mg/L)</u>	<u>NO₂+NO₃N (mg/L)</u>
890906-11	<0.040	8.11	8.11
-12	<0.040	<0.040	<0.040
-13	<0.040	3.61	3.61
-14	<0.040	4.84	4.84
-15	<0.040	2.61	2.61
-16	<0.040*(112%)	4.89±0.08(78%)	4.89±0.08(78%)
890907-01	<0.040*(109%)	2.66	2.68
-02	<0.040	0.720±0.015(105%)	0.734±0.015(105%)
-03	<0.040	5.88	5.88
-04	0.065	1.32	1.32
-05	<0.040	2.22	2.22
-06	<0.040	2.91	2.91
-07	<0.040	3.09	3.09
-08	<0.040	1.98	1.98
890908-01	<0.040	3.62	3.62
-02	<0.040(114%)	2.91	2.91
-03	<0.040	0.055±0.013(95%)	0.055±0.013(95%)
-04	<0.040	5.53	5.54
-05	<0.040	5.34	5.34
-06	0.060	4.37	4.37
-07	<0.040	5.03	5.03
890919-03	<0.040	4.84	4.84
-04	<0.040	4.49	4.49
-05	<0.040	4.35	4.35
-06	<0.040	1.51	1.54
-07	0.074	0.799±0.053(74%)	0.799±0.053(74%)
-08	<0.040*(91%)	3.53	3.53
890920-12	<0.040	5.62	5.62
-13	<0.040	5.51	5.51
-14	0.288	0.189	0.213
-15	0.265	0.605	0.622
-16	0.206	0.226	0.287
-17	1.13	0.411	0.450
-18	<0.040	0.287	0.287
-19	<0.040	0.482	0.520
-20	<0.040	0.053	0.053
-21	<0.040*(91%)	0.047±0(83%)	0.047±0(83%)
890921-05	0.328	0.066±0.004(108%)	0.066±0.004(108%)
-06	<0.040	3.81	3.81
-07	<0.040*(85%)	1.78	1.84
-08	<0.040	0.488	0.570
-09	<0.040	<0.040	<0.040

*Analyzed in duplicate, both values were below the detection limit.
Numbers in parentheses are spike recoveries.

AR305399

NH₃N, NO₃N and NO₂N + NO₃N Determination of Keystone Sanitation
Superfund Remedial for September

Results:

<u>Lab No.</u>	<u>NH₃N (mg/L)</u>	<u>NO₃N (mg/L)</u>	<u>NO₂+NO₃N (mg/L)</u>
890927-01	<0.040*(108%)	4.46	4.46
-02	<0.040	5.25	5.25
-03	0.041	0.104±0(97%)	0.122±0(97%)
-04	<0.040	8.22	8.22
-05	0.052	3.23	3.28
-06	0.057	4.75	4.77
-07	**	2.25	2.27
890928-01	<0.040	0.204±0.001(100%)	0.204±0.001(100%)
-02	<0.040	<0.040	<0.040
-03	<0.040	0.315	0.315
-04	<0.040*(110%)	5.69	5.69
890929-02	0.087	2.91	2.91
-03	0.168	0.990±0.027(111%)	0.990±0.027(111%)
-04	<0.040*(104%)	3.93	3.93
-05	<0.040	3.77	3.77
-06	9.64	<0.040	<0.040
-07	9.52	<0.040	<0.040
-08	0.080	<0.040	<0.040

*Analyzed in duplicate, both values were below the detection limit.

**Sample interference, no value to report.

Numbers in parentheses are spike recoveries.

AR305400



2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: October 23, 1989

SUBJECT: Total Alkalinity, Total Suspended Solids and Total Dissolved Solids of Keystone Sanitation Samples for Superfund-Remedial (TFA03N9L9) (09/06/89 to 10/13/89). 890906-11-16, 890907-01-08 and 890908-01-07. ESAT TID #03890804. ESAT Task #1072 and #1075.

FROM: Sue Raupuk *MA*
ESAT Analyst *SR*

TO: Daniel K. Donnelly
Acting Chief, Laboratory Branch

THRU: Richard D. Dresser *RWD*
Acting ESAT Team Manager

The ESAT Laboratory Staff was assigned twenty-one (21) aqueous samples from Keystone Sanitation for Total Alkalinity, Total Suspended Solids and Total Dissolved Solids analysis. All samples were successfully analyzed within the allowed sample holding times (14 days for alkalinity and 7 days for TSS and TDS). Sample descriptions and results are presented in the following tables:

SAMPLE DESCRIPTIONS:

<u>Lab No.</u>	<u>Description</u>
890906-11	Keystone Sanitation, Surface Water 1, Sta. SW-1
890906-12	Keystone Sanitation, Surface Water 2, Sta. SW-2
890906-13	Keystone Sanitation, Surface Water 3, Sta. SW-3
890906-14	Keystone Sanitation, Surface Water 4, Sta. SW-4
890906-15	Keystone Sanitation, Surface Water 5, Sta. SW-5
890906-16	Keystone Sanitation, Surface Water 4 Dupe., Sta. SW-4D

AR305401

Site Name: Keystone Sanitation
 Sample Nos.: 890906-11-16, 890907-01-08 and 890908-01-07.

SAMPLE DESCRIPTIONS: (Cont'd).

<u>Lab.No.</u>	<u>Description</u>
890907-01	Keystone Sanitation, Surface Water 6, Sta. SW-6
890907-02	Keystone Sanitation, Surface Water 7, Sta. SW-7
890907-03	Keystone Sanitation, Surface Water 8, Sta. SW-8
890907-04	Keystone Sanitation, Surface Water 9, Sta. SW-9
890907-05	Keystone Sanitation, Surface Water 11, Sta. SW-11
890907-06	Keystone Sanitation, Surface Water 10, Sta. SW-10
890907-07	Keystone Sanitation, Surface Water 10D, Sta. SW-10D
890907-08	Keystone Sanitation, Surface Water 12, Sta. SW-12
890908-01	Keystone Sanitation, Surface Water 17, Sta. SW-17
890908-02	Keystone Sanitation, Surface Water 18, Sta. SW-18
890908-03	Keystone Sanitation, Surface Water 01B, Sta. SW-01B
890908-04	Keystone Sanitation, Surface Water 13, Sta. SW-13
890908-05	Keystone Sanitation, Surface Water 14, Sta. SW-14
890908-06	Keystone Sanitation, Surface Water 15, Sta. SW-15

Site Name: Keystone Sanitation

Sample Nos.: 890906-11-16, 890907-01-08 and 890908-01-07.

SAMPLE DESCRIPTIONS: (Cont'd.)

<u>Lab. No.</u>	<u>Description</u>
890908-07	Keystone Sanitation, Surface Water 16, Sta. SW-16

SAMPLE RESULTS:

<u>Lab. No.</u>	<u>Total Alkalinity (mg/L)</u>	<u>Total Suspended Solids (mg/L)</u>	<u>Total Dissolved Solids (mg/L)</u>
890906-11	21.1	<4	112±1
890906-12	57.0(102%)	43	71
890906-13	42.8±0.9	<4*	112
890906-14	9.9	<4	81
890906-15	40.9	<4	93
890906-16	9.9	<4	81
890907-01	41.6(99%)	<4	106±2
890907-02	44.1	47	77
890907-03	16.5±0.8	6	130
890907-04	60.0	9	114
890907-05	50.2	<4	138
890907-06	18.4	28	75
890907-07	14.7	<4	31
890907-08	60.0	24±6	138
890908-01	17.4	225	92
890908-02	34.9(101%)	7	125±1
890908-03	<2.0	<4*	<10
890908-04	31.1	<4	109
890908-05	34.9±0	<4	109
890908-06	6.2	177	70
890908-07	7.5	170	89

NOTES: Numbers in parentheses represent spike recoveries.

The Total Alkalinity results for samples 890906-13, 890907-03 and 890908-05 are the average of duplicate results reported with the standard deviation.

The Total Suspended Solids result for sample 890907-08 is the average of duplicate results reported with the standard deviation.

AR305403

Site Name: Keystone Sanitation

Sample Nos.: 890906-11-16, 890907-01-08 and 890908-01-07.

NOTES: (Cont'd.)

The Total Dissolved Solids results for samples 890906-11, 890907-01 and 890908-02 are the average of duplicate results reported with the standard deviation.

* Sample analyzed in duplicate, both values below the detection limit.

O.C. RESULTS:

Audit: (Total Alkalinity)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP384 (2A 2B 2C) (09-11-89)	17.4	17.5	99
WP384 (2A 2B 2C) (09-13-89)	17.1	17.5	98
WP384 (2A 2B 2C) (09-14-89)	17.4	17.5	99

Audit: (Total Suspended Solids)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP1185 Conc. 2 (09-07-89)	95	113	84
WP1185 Conc. 2 (09-07-89) Duplicate	96	113	85
WP1185 Conc. 2 (09-08-89)	97	113	86



Site Name: Keystone Sanitation

Sample Nos.: 890906-11-16, 890907-01-08 and 890908-01-07.

Audit: (Total Dissolved Solids)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP1187 Conc. 1 (09-06-89)	428	414	103
WP1187 Conc. 1 (09-06-89) Duplicate	426	414	103
WP1185 Conc. 2 (09-08-89)	260	283	92
WP1185 Conc. 2 (09-09-89) Duplicate	260	283	92

NOTES:

The Q.C. samples provide an estimate of combined sample preparation and measurement variability and/or bias.

cc: Ron Altman, EPA Task Monitor ^{RA}
Peggy Zawodny, EPA QCO ^{JS}
Terry Simpson, ESAT DPO

SR910A03TDS

AR305405



2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: October 19, 1989

SUBJECT: Total Alkalinity, Total Suspended Solids and Total Dissolved Solids for Superfund-Remedial (TFA03N9L9) (09/20/89 to 10/16/89). 890919-03-08, 890920-12-21, and 890921-05-09. ESAT TID #03890804. ESAT Task #1088.

FROM: Sue Raupuk *Sue R.* Carole Baer *CB*
ESAT Analyst ESAT Technician

TO: Daniel K. Donnelly
Acting Chief, Laboratory Branch

THRU: Richard D. Dresser *RDD*
Acting ESAT Team Manager

The ESAT Laboratory Staff was assigned twenty-one (21) aqueous samples from Keystone Sanitation for Total Alkalinity, Total Suspended Solids and Total Dissolved Solids analysis. All samples were successfully analyzed within the allowed sample holding times (14 days for alkalinity and 7 days for TSS and TDS). Sample descriptions and results are presented in the following tables:

SAMPLE DESCRIPTIONS:

<u>Lab No.</u>	<u>Description</u>
890919-03	Keystone Sanitation, Mon. Well AS, Sta. MW-AS
890919-04	Keystone Sanitation, Mon. Well FS, Sta. MW-FS
890919-05	Keystone Sanitation, Mon. Well FSD, Sta. MW-FSD
890919-06	Keystone Sanitation, Mon. Well HS, Sta. MW-HS
890919-07	Keystone Sanitation, Mon. Well HD, Sta. MW-HD
890919-08	Keystone Sanitation, Mon. Well CS, Sta. MW-CS

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Site Name: Keystone Sanitation

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Sample Nos.: 890919-03-08, 890920-12-21, and 890921-05-09

SAMPLE DESCRIPTIONS: (Cont'd).

<u>Lab.No.</u>	<u>Description</u>
890920-12	Keystone Sanitation, Mon. Well BS, Sta. MW-BS
890920-13	Keystone Sanitation, Mon. Well BSD Duplicate, Sta. MW-BSD
890920-14	Keystone Sanitation, Mon. Well BD, Sta. MW-BD
890920-15	Keystone Sanitation, Mon. Well FD, Sta. MW-FD
890920-16	Keystone Sanitation, Mon. Well CD, Sta. MW-CD
890920-17	Keystone Sanitation, Mon. Well AD, Sta. MW-AD
890920-18	Keystone Sanitation, Mon. Well GS, Sta. MW-GS
890920-19	Keystone Sanitation, Mon. Well CI, Sta. MW-CI
890920-20	Keystone Sanitation, Mon. Well DI, Sta. MW-DI
890920-21	Keystone Sanitation, Mon. Well Pres. Blank, Sta. MW-01B
890921-05	Keystone Sanitation, Mon. Well GI, Sta. MW-GI
890921-06	Keystone Sanitation, Mon. Well IS, Sta. MW-IS
890921-07	Keystone Sanitation, Mon. Well II, Sta. MW-II
890921-08	Keystone Sanitation, Mon. Well ID, Sta. MW-ID
890921-09	Keystone Sanitation, Mon. Well EI, Sta. MW-EI

AR305407



Site Name: Keystone Sanitation

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Sample Nos.: 890919-03-08, 890920-12-21, and 890921-05-09

SAMPLE RESULTS:

<u>Lab. No.</u>	<u>Total Alkalinity (mg/L)</u>	<u>Total Suspended Solids (mg/L)</u>	<u>Total Dissolved Solids (mg/L)</u>
890919-03	45.5 (88%)	127±1	138±2
890919-04	3.7±1.7	134	65
890919-05	3.7	65	76
890919-06	39.3	334	122
890919-07	130	43	212
890919-08	44.3	105	77
890920-12	15.9±0.8	230±4	133
890920-13	15.3	74	114
890920-14	6120	25	2390
890920-15	894	73	840
890920-16	376	188	397
890920-17	1240	87	833
890920-18	16.5	178	136
890920-19	84.7 (89%)	9	222
890920-20	245	54	258
890920-21	2.4	<4	32±13
890921-05	1200	59±1	1260±49
890921-06	66.9	2320	520
890921-07	93.2±1.7	19	164
890921-08	92 (102%)	58	133
890921-09	103	46	507

NOTES: Numbers in parentheses represent spike recoveries.

The Total Alkalinity results for samples 890919-04, 890920-12 and 890921-07 are the average of duplicate results reported with the standard deviation.

The Total Suspended Solids results for samples 890919-03, 890920-12, and 890921-05 are the average of duplicate results reported with the standard deviation.

The Total Dissolved Solids results for samples 890919-03, 890920-21, and 890921-05 are the average of duplicate results reported with the standard deviation.

AR305408



Site Name: Keystone Sanitation

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Sample Nos.: 890919-03-08, 890920-12-21, and 890921-05-09

O.C. RESULTS:

Audit: (Total Alkalinity)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP384 (2A 2B 2C) (09-20-89)	17.2	17.5	98
WP384 (2A 2B 2C) (09-21-89)	17.6	17.5	101
WP384 (2A 2B 2C) (09-22-89)	16.7	17.5	95

Audit: (Total Suspended Solids)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP1185 Conc. 2 (09-20-89)	101	113	89
WP1185 Conc. 2 (09-21-89)	98	113	87
WP1185 Conc. 2 (09-21-89) Duplicate	99	113	88
WP1185 Conc. 2 (09-25-89)	110	113	97

Audit: (Total Dissolved Solids)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP1185 Conc. 2 (09-21-89)	250	283	88
WP1185 Conc. 2 (09-21-89) Duplicate	317	283	112
WP1185 Conc. 2 (09-21-89) Triplicate	290	283	102
WP1185 Conc. 2 (09-25-89)	287	283	101

AR305409

CHAIN OF CUSTODY RECORD

[illegible]

CHAIN OF CUSTODY RECORD

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field

AR 30541

CHAIN OF CUSTODY RECORD

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

AR305412

BODY RECORD

Distribution: Original Accompanies Shipment; Copy to Coordinator Files

AR305413

2422

**Curt's Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106**

CHAIN OF CUSTODY RECORD

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

U. S. Environmental Protection Agency, Region III, Central Regional Lab

Project Name: Keystone Sanitation - Superfund-Remedial

<u>Lab No.</u>	<u>TOC (mg/L)</u>	<u>COD (mg/L)</u>
890919-03	3.6±1.6(70%)	5.3
-04	5.8	21.2
-05	1.0	<4.0
-06	1.0	8.1
-07	2.2	8.9
-08	<1.0	7.7
890920-12	4.4±0.1(115%)	17.5
-13	2.2	20.0±4.0(73%)
-14	24.0	65.0
-15	21.4	63.0
-16	13.0	26.5
-17	34.0	178
-18	4.4	15.7
-19	1.6	6.2
-20	1.3	12.0
-21	2.5	<4.0
890921-05	7.0±0.1(98%)	29.3
-06	6.2	22.3
-07	1.0	4.5±0(105%)
-08	1.6	6.4
-09	<1.0	15.7
890927-01	2.2±1.1(80%)	7.9±0.3(106%)
-02	1.9	12.9
-03	6.8	14.5
-04	2.5	12.1
-05	8.0	19.0
-06	1.9	15.3
-07	35.4	135
890928-01	18.1±0.8(109%)	69.6
-02	<1.0	<4.0
-03	2.0	13.5±1.7(102%)
-04	13.7	59.4
890929-02	1.9±0(116%)	6.1
-03	6.7	45.0
-04	1.8	13.1
-05	5.4	23.8±3.7(114%)
-06	108	454±19(88%)
-07	86.4	437
-08	1.9	<4.0

Numbers in parentheses are spike recoveries.

AR305415



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : October 26, 1989

SUBJECT: Chloride and Sulfate Analyses of the Keystone Sanitation Samples, 890906-11-16, 890907-01-08, 890908-01-08, 890919-03-08, 890920-12-21, 890921-05-09, 890927-01-07, 890928-01-04, 890929-02-08, Superfund-Remedial, TFA03N9L9, (10/5/89 - 10/19/89)

FROM : Ronald H. Altman *RG*
Chemist

TO : Daniel K. Donnelly
Acting Chief, Laboratory Branch

THRU : Norman Fritsche *NF*
Team Leader, Inorganic Section

The chloride and sulfate results of the Keystone Sanitation samples by automated spectrophotometry are presented in the attached table.

Additional quality control results are available upon request.

Sample Descriptions:

<u>Lab No.</u>	<u>Description</u>
890906-11	Keystone Sanitation, Surface Water 1, Sta. SW-1
-12	Keystone Sanitation, Surface Water 2, Sta. SW-2
-13	Keystone Sanitation, Surface Water 3, Sta. SW-3
-14	Keystone Sanitation, Surface Water 4, Sta. SW-4
-15	Keystone Sanitation, Surface Water 5, Sta. SW-5
-16	Keystone Sanitation, Surface Water 4 Dupe, Sta. SW-4D
890907-01	Keystone Sanitation, Surface Water 6, Sta. SW-6
-02	Keystone Sanitation, Surface Water 7, Sta. SW-7
-03	Keystone Sanitation, Surface Water 8, Sta. SW-8
-04	Keystone Sanitation, Surface Water 9, Sta. SW-9
-05	Keystone Sanitation, Surface Water 11, Sta. SW-11
-06	Keystone Sanitation, Surface Water 10, Sta. SW-10
-07	Keystone Sanitation, Surface Water 10D, Sta. SW-10D
-08	Keystone Sanitation, Surface Water 12, Sta. SW-12
890908-01	Keystone Sanitation, Surface Water 17, Sta. SW-17
-02	Keystone Sanitation, Surface Water 18, Sta. SW-18
-03	Keystone Sanitation, Surface Water 01B, Sta. SW-01B
-04	Keystone Sanitation, Surface Water 13, Sta. SW-13
-05	Keystone Sanitation, Surface Water 14, Sta. SW-14
-06	Keystone Sanitation, Surface Water 15, Sta. SW-15
-07	Keystone Sanitation, Surface Water 16, Sta. SW-16
890919-03	Keystone Sanitation, Surface Water AS, Sta. SW-AS
-04	Keystone Sanitation, Surface Water FS, Sta. SW-FS
-05	Keystone Sanitation, Surface Water FSD, Sta. SW-FSD
-06	Keystone Sanitation, Surface Water HS, Sta. SW-HS
-07	Keystone Sanitation, Surface Water HD, Sta. SW-HD
-08	Keystone Sanitation, Surface Water CS, Sta. SW-CS

AR305416

Sample Descriptions: (con't)

<u>Lab No.</u>	<u>Description</u>
890920-12	Keystone Sanitation, Mon. Well BS, Sta. MW-BS
-13	Keystone Sanitation, Mon. Well BSD duplicate, Sta. MW-BSD
-14	Keystone Sanitation, Mon. Well BD, Sta. MW-BD
-15	Keystone Sanitation, Mon. Well FD, Sta. MW-FD
-16	Keystone Sanitation, Mon. Well CD, Sta. MW-CD
-17	Keystone Sanitation, Mon. Well AD, Sta. MW-AD
-18	Keystone Sanitation, Mon. Well GS, Sta. MW-GS
-19	Keystone Sanitation, Mon. Well CI, Sta. MW-CI
-20	Keystone Sanitation, Mon. Well DI, Sta. MW-DI
-21	Keystone Sanitation, Mon. Well Pres Blank, Sta. MW-01B
890921-05	Keystone Sanitation, Mon. Well GI, Sta. MW-GI
-06	Keystone Sanitation, Mon. Well IS, Sta. MW-IS
-07	Keystone Sanitation, Mon. Well II, Sta. MW-II
-08	Keystone Sanitation, Mon. Well ID, Sta. MW-ID
-09	Keystone Sanitation, Mon. Well EI, Sta. MW-EI
890927-01	Keystone Sanitation, Mon. Well MD6, Sta. MW-MD6
-02	Keystone Sanitation, Mon. Well MD9, Sta. MW-MD9
-03	Keystone Sanitation, Mon. Well K1, Sta. MW-K1
-04	Keystone Sanitation, Mon. Well MD3, Sta. MW-MD3
-05	Keystone Sanitation, Mon. Well K6, Sta. MW-K6
-06	Keystone Sanitation, Mon. Well K7, Sta. MW-K7
-07	Keystone Sanitation, Mon. Well K8, Sta. MW-K8
890928-01	Keystone Sanitation, Mon. Well MD1, Sta. MW-MD1
-02	Keystone Sanitation, Mon. Well MD4, Sta. MW-MD4
-03	Keystone Sanitation, Mon. Well MD5, Sta. MW-MD5
-04	Keystone Sanitation, Mon. Well MD8, Sta. MW-MD8
890929-02	Keystone Sanitation, Mon. Well K4, Sta. MW-K4
-03	Keystone Sanitation, Mon. Well K5, Sta. MW-K5
-04	Keystone Sanitation, Mon. Well MD2, Sta. MW-MD2
-05	Keystone Sanitation, Mon. Well MD2 Dupe, Sta. MW-MD2D
-06	Keystone Sanitation, Mon. Well K3, Sta. MW-K3
-07	Keystone Sanitation, Mon. Well K3 Dupe, Sta. MW-K3D
-08	Keystone Sanitation, Mon. Well Pres. Blank, Sta. MW-02B

RHA:jr

cc: Peggy Zawodny, QCO

AR305417

U. S. Environmental Protection Agency, Region III, Central Regional Lab

Project Name: Keystone Sanitation - Superfund-Remedial

<u>Lab No.</u>	<u>Cl (mg/L)</u>	<u>SO₄ (mg/L)</u>
890906-11	10.6	8.9
-12	9.0	5.9
-13	12.2	9.4
-14	9.4	< 5
-15	9.4	6.8
-16	10.2±0.1 (110%)	< 5 (107%)
890907-01	10.5	7.2
-02	14.9	9.5
-03	13.6	14.5
-04	12.6	9.3
-05	31.1	5.9
-06	9.3	6.1
-07	9.8	7.4
-08	29.2±0 (116%)	9.9±0 (115%)
890908-01	10.4	< 5
-02	27.1	12.8
-03	< 1	< 5
-04	8.6	8.0
-05	8.9	7.5
-06	5.8	< 5
-07	8.4±0.1 (109%)	6.2±0.3 (90%)
890919-03	6.7	10.7
-04	7.9	< 5
-05	5.4	< 5
-06	27.3	8.6
-07	4.0	24.1
-08	8.2±0.1 (101%)	9.9±1.3 (97%)
890920-12	14.9	9.6
-13	13.8	9.2
-14	6.3	7.0
-15	2.4	11.6
-16	2.4	35.5
-17	2.4	33.0
-18	3.1	12.5
-19	5.7	38.2
-20	< 1* (85%)	15.0±0.7 (116%)
-21	< 1	< 5
890921-05	< 1	14.3
-06	5.1±0.3 (93%)	26.6
-07	2.6	21.7
-08	2.1	31.0
-09	113	13.2±0.4 (101%)
890927-01	7.7	< 5
-02	10.1	7.0
-03	95.6	6.5
-04	21.5	< 5
-05	44.1	< 5
-06	102	< 5
-07	13.3±0.5 (98%)	6.3±0 (88%)

AR305418

U. S. Environmental Protection Agency, Region III, Central Regional Lab

Project Name: Keystone Sanitation - Superfund-Remedial

<u>Lab No.</u>	<u>Cl (mg/L)</u>	<u>SO₄ (mg/L)</u>
890928-01	< 1	< 5
-02	< 1	14.1
-03	6.0	36.2
-04	8.4±0.2 (103%)	6.9±0.1 (92%)
890929-02	2.2	< 5
-03	24.9	6.4
-04	14.1	< 5
-05	12.5±0.2 (87%)	< 5
-06	1240	26.0
-07	1230	27.7±0.1 (118%)
-08	< 1	< 5

Numbers in parentheses are spike recoveries.

*Sample analyzed in duplicate; both values below the analytical detection limit.

AR305419

CHAIN OF CUSTODY RECORD

[illegible]

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875

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

PROJ. NO.	PROJECT NAME	STATION LOCATION	
	KETSTONE SANITATION	COMP.	GRAB
SAMPLERS: Signature	<i>[Signature]</i>	TIME	
	<i>[Signature]</i>	DATE	
NO.	OF	CON-	TAINERS
1X HDPE Nitrate / Nitrite 1X HDPE TSS, TDS, Solids 10 MBSC Nitrate, Ammonia Nitrate, Chloride, Sulfate TOC, COD			
COOLER 10F2		TAG #	
LAB- EPA CPL: REGION III		REMARKS	

[illegible]

Distribution: Original Accompanies Shipment Copy to Coordinator Field

ALL OFFICES UNPRESSED

67, 1
Luncheon

AR305421

CHAIN OF CUSTODY RECORD

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field

ALL OFFERS UNPRESSED

7744

AR305423

1234

Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

CHAIN OF CUSTODY RECORD

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

REGION 3
Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

PROJ. NO.	PROJECT NAME	STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION
	KEYSTONE SANITATION						
SAMPLERS: (Signature) <i>[Signature]</i>							
NO. OF CONTAINERS							
LAB - EPA CRL REGION 3							
REMARKS							
TAG #							

[illegible]

Distribution: Original Accompanies Shipment; Copy to Coordinator Field

AR305425

AL PROTECTION
Office of Enforcement

**Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106**

Allen

AR305426

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

ALL CRIMES UNPROCESSED

9-7785

CHAIN OF CUSTODY RECORD

[illegible]

AR305427

Distribution: Original Accompanies Shipment; Copy to Coordinator Field

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	STATION LOCATION	DATE	TIME	COMP.	GRAB	RELINQUISHED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)
KS	Keystone Sanitation											
SAMPLERS: (Signature) <i>Robert J. ...</i>												
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION							
MW-GI	9/20	0800		X	MON WELL GI	4	1	2	1	89092105	1066937-40	
MW-IS	9/20	1140		X	MON WELL IS	4	1	2	1	89092106	1066977-80	
MW-II	9/20	1430		X	MON WELL II	4	1	2	1	89092107	1066987-90	
MW-ID	9/20	1545		X	MON WELL ID	4	1	2	1	89092108	1066997-7006	
MW-EI	9/20	1630		X	MON WELL EI	4	1	2	1	89092109	1066897-900	
AR305428												
Relinquished by: (Signature) <i>[Signature]</i> Date / Time 9/20/89 1800 Received by: (Signature) <i>FED Ex</i> Date / Time												
Relinquished by: (Signature) <i>[Signature]</i> Date / Time Received by: (Signature) Date / Time												
Relinquished by: (Signature) Date / Time Received for Laboratory by: (Signature) <i>James Robinson</i> Date / Time 9-21-89 1025												
Remarks: Nitrate/Nitrite, Ammonia, H₂SO₄ pres., H₂SO₄ pres., TOC, COD. All others UNPRESERVED												



2568A RIVA ROAD
SUITE 300
ANNAPOLIS, MD 21401
PHONE: 301-266-9887

DATE: October 24, 1989

SUBJECT: Total Alkalinity, Total Suspended Solids and Total Dissolved Solids of Keystone Sanitation Samples for Superfund-Remedial (TFA03N9L9) (09/27/89 to 10/16/89). 890927-01-07, 890928-01-04, and 890929-02-08. ESAT TID #03890804. ESAT Task #1096.

FROM: Sue Raupuk ^{MR}_{GR} ESAT Analyst Marinela Alvero ^{MA} ESAT Chemist

TO: Daniel K. Donnelly
Acting Chief, Laboratory Branch

THRU: Richard D. Dresser RD Acting ESAT Team Manager

The ESAT Laboratory Staff was assigned eighteen (18) aqueous samples from Keystone Sanitation for Total Alkalinity, Total Suspended Solids and Total Dissolved Solids analysis. All samples were successfully analyzed within the allowed sample holding times (14 days for alkalinity and 7 days for TSS and TDS). Sample descriptions and results are presented in the following tables:

SAMPLE DESCRIPTIONS:

<u>Lab No.</u>	<u>Description</u>
890927-01	Keystone Sanitation, Mon. Well MD6, Sta. MW-MD6
890927-02	Keystone Sanitation, Mon. Well MD9, Sta. MW-MD9
890927-03	Keystone Sanitation, Mon. Well K1, Sta. MW-K1
890927-04	Keystone Sanitation, Mon. Well MD3, Sta. MW-MD3
890927-05	Keystone Sanitation, Mon. Well K6, Sta. MW-K6
890927-06	Keystone Sanitation, Mon. Well K7, Sta. MW-K7

AR305429



Site Name: Keystone Sanitation
Sample Nos.: 890927-01-07, 890928-01-04,
and 890929-02-08

Page 2 of 5

SAMPLE DESCRIPTIONS: (Cont'd).

<u>Lab.No.</u>	<u>Description</u>
890927-07	Keystone Sanitation, Mon. Well K8, Sta. MW-K8
890928-01	Keystone Sanitation, Mon. Well MD1, Sta. MW-MD1
890928-02	Keystone Sanitation, Mon. Well MD4, Sta. MW-MD4
890928-03	Keystone Sanitation, Mon. Well MD5, Sta. MW-MD5
890928-04	Keystone Sanitation, Mon. Well MD8, Sta. MW-MD8
890929-02	Keystone Sanitation, Mon. Well K4, Sta. MW-K4
890929-03	Keystone Sanitation, Mon. Well K5, Sta. MW-K5
890929-04	Keystone Sanitation, Mon. Well MD2, Sta. MW-MD2
890929-05	Keystone Sanitation, Mon. Well MD2 Dupe., Sta. MW-MD2D
890929-06	Keystone Sanitation, Mon. Well K3, Sta. MW-K3
890929-07	Keystone Sanitation, Mon. Well K3 Dupe., Sta. MW-K3D
890929-08	Keystone Sanitation Mon. Well Pres. Blank, Sta. MW-02B

AR305430



Site Name: Keystone Sanitation
Sample Nos.: 890927-01-07, 890928-01-04,
and 890929-02-08

Page 3 of 5

SAMPLE RESULTS:

<u>Lab. No.</u>	<u>Total Alkalinity (mg/L)</u>	<u>Total Suspended Solids (mg/L)</u>	<u>Total Dissolved Solids (mg/L)</u>
890927-01	19.9 (101%)	<4 **	94±3
890927-02	9.4±0.9	4	92
890927-03	46	<4	297
890927-04	16.2	<4	108
890927-05	42.3	105	140
890927-06	38.6	12	88
890927-07	37.3	4330	303
890928-01	79.6±1.7	76±1	67
890928-02	94.6	7	114±1
890928-03	85.9 (98%)	47	153
890928-04	27.4	<4	162
890929-02	34.8±0.8	80	102
890929-03	50.6	156	156
890929-04	63.3	<4	156
890929-05	63.3 (103%)	<4	136±20
890929-06	253	89	2990
890929-07	256	86	2940
890929-08	2.5	<4 *	21

NOTES: Numbers in parentheses represent spike recoveries.

The Total Alkalinity results for samples 890927-02, 890928-01 and 890929-02 are the average of duplicate results reported with the standard deviation.

The Total Suspended Solids result for sample 890928-01 is the average of duplicate results reported with the standard deviation.

The Total Dissolved Solids results for samples 890927-01, 890928-02, and 890929-05 are the average of duplicate results reported with the standard deviation.

* Sample analyzed in duplicate, both values below the detection limit.

** Sample analyzed in duplicate, one value at the detection limit and one value below the detection limit.

AR305431



Site Name: Keystone Sanitation
Sample Nos.: 890927-01-07, 890928-01-04,
and 890929-02-08

Page 4 of 5

Q.C. RESULTS:

Audit: (Total Alkalinity)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP384 (2A 2B 2C) (09-28-89)	17.4	17.5	99
WP384 (2A 2B 2C) (09-28-89) Duplicate	18.7	17.5	107
WP384 (2A 2B 2C) (09-29-89)	17.7	17.5	101

Audit: (Total Suspended Solids)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP1185 Conc. #3 (09-27-89)	511	507	101
WP1185 Conc. #3 (09-28-89)	469	507	92
WP1185 Conc. #3 (09-29-89)	488	507	96

Audit: (Total Dissolved Solids)

<u>Lab No.</u>	<u>Found Value</u>	<u>True Value</u>	<u>% Recovery</u>
WP1185 Conc. 3 (09-28-89)	126	140	90
WP1185 Conc. 3 (09-28-89) Duplicate	133	140	95
WP1185 Conc. 3 (09-29-89)	138	140	98

AR305432



Site Name: Keystone Sanitation
Sample Nos.: 890927-01-07, 890928-01-04,
and 890929-02-08

Page 5 of 5

NOTES:

The Q.C. samples provide an estimate of combined sample preparation and measurement variability and/or bias.

cc: Ron Altman, EPA Task Monitor *ra*
Peggy Zawodny, EPA QCO *PZ*
Terry Simpson, ESAT DPO */*

SR910A06.TDS

AR305433



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE :October 4, 1989

SUBJECT:TOC and COD Determination of Keystone Sanitation
Superfund-Remedial, (9/7/89 - 9/25/89), 890906-11-16; 890907-01-08;
890908-01-07

FROM :Norman Fritsche *NF*
Environmental Scientist

TO :Daniel K. Donnelly
Acting Chief, Laboratory Branch

Keystone Sanitation samples 890906-11-16, 890907-01-08, and 890908-01-07 were analyzed for the determination of TOC and COD. The results appear below.

Additional quality control data is available upon request.

Sample Description:

<u>Lab No.</u>	<u>Description</u>
890906-11	Keystone Sanitation, Surface Water 1, Sta. SW-1
-12	Keystone Sanitation, Surface Water 2, Sta. SW-2
-13	Keystone Sanitation, Surface Water 3, Sta. SW-3
-14	Keystone Sanitation, Surface Water 4, Sta. SW-4
-15	Keystone Sanitation, Surface Water 5, Sta. SW-5
-16	Keystone Sanitation, Surface Water 4 Dup., Sta. SW-4D
890907-01	Keystone Sanitation, Surface Water 6, Sta. SW-6
-02	Keystone Sanitation, Surface Water 7, Sta. SW-7
-03	Keystone Sanitation, Surface Water 8, Sta. SW-8
-04	Keystone Sanitation, Surface Water 9, Sta. SW-9
-05	Keystone Sanitation, Surface Water 11, Sta. SW-11
-06	Keystone Sanitation, Surface Water 10, Sta. SW-10
-07	Keystone Sanitation, Surface Water 10D, Sta. SW-10D
-08	Keystone Sanitation, Surface Water 12, Sta. SW-12
890908-01	Keystone Sanitation, Surface Water 17, Sta. SW-17
-02	Keystone Sanitation, Surface Water 18, Sta. SW-18
-03	Keystone Sanitation, Surface Water 01B, Sta. SW-01B
-04	Keystone Sanitation, Surface Water 13, Sta. SW-13
-05	Keystone Sanitation, Surface Water 14, Sta. SW-14
-06	Keystone Sanitation, Surface Water 15, Sta. SW-15
-07	Keystone Sanitation, Surface Water 16, Sta. SW-16

AR305434

TOC and COD Determination of Keystone Sanitation
Superfund-Remedial, 890906-11-16; 890907-01-08; 890908-01-07

Results:

<u>Lab No.</u>	<u>TOC (mg/L)</u>	<u>COD (mg/L)</u>
890906-11	<1.0*(88%)	29.3
-12	4.5	31.3
-13	1.0	16.9
-14	<1.0	12.0±0(107%)
-15	2.4	16.1
-16	<1.0	12.0
890907-01	2.6±0.6(98%)	13.2
-02	10.6	40.2
-03	1.1	12.8
-04	3.2	39.5
-05	<1.0	6.2
-06	<1.0	16.5±0(94%)
-07	<1.0	7.4
-08	6.9	<4.0
890908-01	7.1±0.1(89%)	11.1
-02	4.8	11.9
-03	<1.0	<4.0
-04	<1.0	<4.0
-05	1.4	≤4.0(96%)
-06	14.0	106
-07	3.7	15.2

*Analyzed in duplicate, both values below detection limits.
Numbers in parentheses are spike recoveries.

NF:ad

cc: Peggy Zawodny *PZ*
QCO

AR305435



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : October 26, 1989

SUBJECT: TOC and COD Determination of Keystone Sanitation
Superfund-Remedial, (9/25/89 - 10/11/89), 890919-03 - 08; 890920-12 - 21;
890921-05 - 09; 890927-01 - 07; 890928-01 - 04; 890929-02 - 08

FROM : Norman Fritsche *NF*
Environmental Scientist

TO : Daniel K. Donnelly
Acting Chief, Laboratory Branch

Keystone Sanitation samples were analyzed for the determination of TOC and COD. The results appear in the attached table.

Additional quality control data is available upon request.

NF:ad

cc: Peggy Zawodny *PJ*
QCO

AR305436

TOC and COD Determination of Keystone Sanitation

Superfund-Remedial, 890919-03 - 08; 890920-12 - 21; 890921-05 - 09; 890928-01 - 07; 890928-01 - 04; 890902-08

Sample Description:

<u>Lab No.</u>	<u>Description</u>
890919-03	Keystone Sanitation, Mon. Well AS, Sta. MW-AS
-04	Keystone Sanitation, Mon. Well FS, Sta. MW-FS
-05	Keystone Sanitation, Mon. Well FSD, Sta. MW-FSD
-06	Keystone Sanitation, Mon. Well HS, Sta. MW-HS
-07	Keystone Sanitation, Mon. Well HD, Sta. MW-HD
-08	Keystone Sanitation, Mon. Well CS, Sta. MW-CS
890920-12	Keystone Sanitation, Mon. Well BS, Sta. MW-BS
-13	Keystone Sanitation, Mon. Well BSD duplicate, Sta. MW-BSD
-14	Keystone Sanitation, Mon. Well BD, Sta. MW-BD
-15	Keystone Sanitation, Mon. Well FD, Sta. MW-FD
-16	Keystone Sanitation, Mon. Well CD, Sta. MW-CD
-17	Keystone Sanitation, Mon. Well AD, Sta. MW-AD
-18	Keystone Sanitation, Mon. Well GS, Sta. MW-GS
-19	Keystone Sanitation, Mon. Well CI, Sta. MW-CI
-20	Keystone Sanitation, Mon. Well DI, Sta. MW-DI
-21	Keystone Sanitation, Mon. Well Pres. Blank, Sta. MW-01B
890921-05	Keystone Sanitation, Mon. Well GI, Sta. MW-GI
-06	Keystone Sanitation, Mon. Well IS, Sta. MW-IS
-07	Keystone Sanitation, Mon. Well II, Sta. MW-II
-08	Keystone Sanitation, Mon. Well ID, Sta. MW-ID
-09	Keystone Sanitation, Mon. Well EI, Sta. MW-EI
890927-01	Keystone Sanitation, Mon. Well MD6, Sta. MW-MD6
-02	Keystone Sanitation, Mon. Well MD9, Sta. MW-MD9
-03	Keystone Sanitation, Mon. Well K1, Sta. MW-K1
-04	Keystone Sanitation, Mon. Well MD3, Sta. MW-MD3
-05	Keystone Sanitation, Mon. Well K6, Sta. MW-K6
-06	Keystone Sanitation, Mon. Well K7, Sta. MW-K7
-07	Keystone Sanitation, Mon. Well K8, Sta. MW-K8
890928-01	Keystone Sanitation, Mon. Well MD1, Sta. MW-MD1
-02	Keystone Sanitation, Mon. Well MD4, Sta. MW-MD4
-03	Keystone Sanitation, Mon. Well MD5, Sta. MW-MD5
-04	Keystone Sanitation, Mon. Well MD8, Sta. MW-MD8
890929-02	Keystone Sanitation, Mon. Well K4, Sta. MW-K4
-03	Keystone Sanitation, Mon. Well K5, Sta. MW-K5
-04	Keystone Sanitation, Mon. Well MD2, Sta. MW-MD2
-05	Keystone Sanitation, Mon. Well MD2 Dupe., Sta. MW-MD2D
-06	Keystone Sanitation, Mon. Well K3, Sta. MW-K3
-07	Keystone Sanitation, Mon. Well K3 Dupe., Sta. MW-K3D
-08	Keystone Sanitation, Mon. Well Pres. Blank, Sta. MW-02B

AR305437



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : September 26, 1989

SUBJECT: Analytical Report for Keystone Sanitation for August Samples

FROM : Daniel K. Donnelly (3ES21) *DKD*
Acting Chief, Laboratory Branch

TO : Andy Palestini (3HW24)

Enclosed is the analytical report for the samples which were received at CRL in August. The rest of the analytical results for the samples for September will be sent to you later. If you have any questions, please give me a call.

DKD:jr

Enclosure
a/s

AR305438



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : September 20, 1989

SUBJECT: NH_3N , NO_3N and NO_2N + NO_3N Determination of Keystone Sanitation
Superfund Remedial, (8/23/89 - 8/25/89), 890823-08-19, 890824-01-06.

FROM : Nicoline Shulterbrandt *WRS*
Environmental Specialist

TO : Daniel K. Donnelly
Acting Chief, Laboratory Branch

THRU : Norman Fritsche *MF*
Team Leader, Inorganic Analysis Section

Keystone Sanitation samples, 890823-08-19 and 890824-01-06 were analyzed for the determination of NO_2N + NO_3N , NO_3N and NH_3N . The results appear later in the report.

Additional quality control data is available for review upon request.

Sample Description:

<u>Lab No.</u>	<u>Description</u>
890823-08	Keystone Sanitation, Res. Well 3, Sta. RW-3
-09	Keystone Sanitation, Res. Well 5, Sta. RW-5
-10	Keystone Sanitation, Res. Well 6, Sta. RW-6
-11	Keystone Sanitation, Res. Well 10, Sta. RW-10
-12	Keystone Sanitation, Res. Well, Pres. Blank, Sta. RW-01B
-13	Keystone Sanitation, Res. Well 4, Sta. RW-4
-14	Keystone Sanitation, Res. Well 4 Dupe, Sta. RW-4D
-15	Keystone Sanitation, Res. Well 8, Sta. RW-8
-16	Keystone Sanitation, Res. Well 8 Dupe, Sta. RW-8D
-17	Keystone Sanitation, Res. Well 1, Sta. RW-1
-18	Keystone Sanitation, Res. Well 11, Sta. RW-11
-19	Keystone Sanitation, Res. Well 12, Sta. RW-12
890824-01	Keystone Sanitation, Res. Well 2, Sta. RW-2
-02	Keystone Sanitation, Res. Well 7, Sta. RW-7
-03	Keystone Sanitation, Res. Well 9, Sta. RW-9
-04	Keystone Sanitation, Res. Well 13, Sta. RW-13
-05	Keystone Sanitation, Res. Well 14, Sta. RW-14
-06	Keystone Sanitation, Res. Well 15, Sta. RW-15

NS:ad

cc: Peggy Zawodny *PZ*
QCO

AR305439

NH₃N, NO₃N and NO₂N + NO₃N Determination of Keystone Sanitation
Superfund Remedial, 890823-08-19, 890824-01-06

Results:

<u>Lab No.</u>	<u>NH₃N (mg/L)</u>	<u>NO₃N (mg/L)</u>	<u>NO₂+NO₃N (mg/L)</u>
890823-08	<0.040*(106%)	0.486±0.008(101%)	0.486±0.008(101%)
-09	<0.040	6.10	6.10
-10	<0.040	3.50	3.50
-11	<0.040	7.27	7.27
-12	<0.040	0.046	0.046
-13	<0.040*(109%)	4.35	4.35
-14	<0.040	9.31	9.31
-15	<0.040	4.11	4.11
-16	<0.040	9.77	9.77
-17	<0.040	0.362	0.387
-18	<0.040	6.14	6.14
-19	<0.040	3.30	3.30
890824-01	<0.040*(105%)	6.89	6.89
-02	<0.040	6.01	6.01
-03	<0.040	6.45	6.45
-04	<0.040	0.077±0(144%)	0.077±0(144%)
-05	<0.040	2.75	2.75
-06	<0.040	2.19	2.19

*Analyzed in duplicate, both values were below the detection limit.
Numbers in parentheses are spike recoveries.

AR305440

Office of Enforcement

REGION 3

Curtis Bldg., 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

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