Analytical Report 639732

for

Eastern Municipal Water District

Project Manager: Suzanne Watson

503 Sludge Testing

10.22.2019

Collected By: Client

2525 West Huntington Drive, Suite 102
Tempe, AZ 85282
Ph: (480) 355-0900

Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Houston (EPA Lab code: TX00122): Arizona (AZ0765)
Xenco-Dallas (EPA Lab code: TX01468): Arizona (AZ0809)

10.22.2019

Project Manager: **Suzanne Watson**
Eastern Municipal Water District
2270 Trumble Rd
Perris, CA 92572

Reference: TWA Report No(s): **639732**
503 Sludge Testing
Project Address:

Suzanne Watson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the TWA Report Number(s) 639732. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the ADHS certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with ADHS standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and ADHS Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by TransWest Analytical. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 639732 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting TransWest Analytical to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Ruriko Konuma
Project Manager

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CASE NARRATIVE

Client Name: Eastern Municipal Water District
Project Name: 503 Sludge Testing

Project ID:
Work Order Number(s): *639732*

Report Date: *10.22.2019*
Date Received: *10.11.2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Flagging Criteria

Arizona Flags

All method blanks, laboratory spikes, and/or matrix spikes met quality control objectives for the parameters associated with this Work Order except as detailed below or on the Data Qualifier page of this report. Data Qualifiers used in this report are in accordance with ADHS Data Qualifiers, Revision 4.0 9/05/2012.
Data qualifiers (flags) contained within this analytical report have been issued to explain a quality control deficiency, and do not affect the quality (validity) of the data unless noted otherwise in the case narrative.

D2 Sample required dilution due to high concentration of target analyte.

M2 Matrix spike recovery was low; the associated blank spike recovery was acceptable.

Sample Cross Reference 639732

Eastern Municipal Water District, Perris, CA

503 Sludge Testing

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MV CENTRIFUGE CAKE GRAB 281733	S	10.07.2019 15:39		639732-001
PV- CENTRIFUGE CAKE GRAB 281735	S	10.07.2019 12:35		639732-002
SJ CENTRIFUGE CAKE GRAB 281732	S	10.08.2019 09:45		639732-003
TV CNETRIFUGE CAKE GRAB 281734	S	10.07.2019 07:30		639732-004

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Sample Id: **MV CENTRIFUGE CAKE GRAB 281733** Matrix: Sludge Date Received:10.11.2019 09:50
Lab Sample Id: 639732-001 Date Collected: 10.07.2019 15:39

Analytical Method: Total and Volatile Solids by SM 2540G
Tech: TNL % Solids:
Analyst: TNL Basis: Wet Weight
Seq Number: 3104748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Percent Solids	TSOLIDS	**20.1**	0.00100	%	10.14.2019 07:45		1
Percent Volatile Solids		**69.3**	0.00100	%	10.14.2019 07:45		1

Analytical Method: Metals, Total by SW 6010C Prep Method: SW3050B
Tech: PJB % Solids:
Analyst: DEP Date Prep: 10.21.2019 11:40 Basis: Wet Weight
Seq Number: 3104907 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**1.89**	1.75	mg/kg	10.21.2019 13:44		0.88
Cadmium	7440-43-9	<0.877	0.877	mg/kg	10.21.2019 13:44		0.88
Chromium	7440-47-3	**17.8**	0.877	mg/kg	10.21.2019 13:44		0.88
Copper	7440-50-8	**216**	1.75	mg/kg	10.21.2019 13:44		0.88
Lead	7439-92-1	**5.08**	1.75	mg/kg	10.21.2019 13:44		0.88
Molybdenum	7439-98-7	**9.40**	0.877	mg/kg	10.21.2019 13:44		0.88
Nickel	7440-02-0	**15.3**	0.877	mg/kg	10.21.2019 13:44		0.88
Selenium	7782-49-2	**3.68**	2.63	mg/kg	10.21.2019 13:44		0.88
Vanadium	7440-62-2	**15.3**	7.89	mg/kg	10.21.2019 13:44		0.88
Zinc	7440-66-6	**575**	2.63	mg/kg	10.21.2019 13:44		0.88

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Solids: 20.13
Analyst: ANJ Date Prep: 10.21.2019 08:40 Basis: Dry Weight
Seq Number: 3104892 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**1.70**	0.0903	mg/kg	10.21.2019 14:40		0.91

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Sample Id: **MV CENTRIFUGE CAKE GRAB 281733** Matrix: Sludge Date Received:10.11.2019 09:50
Lab Sample Id: 639732-001 Date Collected: 10.07.2019 15:39

Analytical Method: Nitrogen, Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Solids: 79.87
Analyst: KCS Date Prep: 10.18.2019 17:30 Basis: Dry Weight
Seq Number: 3104911 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Nitrogen, Ammonia (as N)	7664-41-7	**7530**	242	mg/kg	10.18.2019 22:58	D2	487.66

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: YAV % Solids: 79.87
Analyst: YAV Date Prep: 10.22.2019 13:00 Basis: Dry Weight
Seq Number: 3105020 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Nitrogen, Nitrate-Nitrite	7727-37-9	<4.97	4.97	mg/kg	10.22.2019 15:05		1

Analytical Method: Nitrogen, Kjeldahl, Total by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Solids: 20.13
Analyst: KCS Date Prep: 10.18.2019 10:18 Basis: Dry Weight
Seq Number: 3104834 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Nitrogen, Total Kjeldahl	7727-37-9	**62200**	9350	mg/kg	10.19.2019 00:22	D2	47.04

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Solids: 20.13
Analyst: KCS Date Prep: 10.18.2019 11:11 Basis: Dry Weight
Seq Number: 3104844 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Phosphorus (as P)	7723-14-0	**12700**	1930	mg/kg	10.18.2019 17:58	D2+	388.88

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Sample Id: **SJ CENTRIFUGE CAKE GRAB 281732** Matrix: Sludge Date Received:10.11.2019 09:50
Lab Sample Id: 639732-003 Date Collected: 10.08.2019 09:45

Analytical Method: Total and Volatile Solids by SM 2540G
Tech: TNL % Solids:
Analyst: TNL Basis: Wet Weight
Seq Number: 3104748

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Percent Solids	TSOLIDS	**22.9**	0.00100	%	10.14.2019 07:45		1
Percent Volatile Solids		**64.7**	0.00100	%	10.14.2019 07:45		1

Analytical Method: Metals, Total by SW 6010C Prep Method: SW3050B
Tech: PJB % Solids:
Analyst: DEP Date Prep: 10.21.2019 11:40 Basis: Wet Weight
Seq Number: 3104907 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	**2.52**	1.82	mg/kg	10.21.2019 13:52		0.91
Cadmium	7440-43-9	**0.928**	0.909	mg/kg	10.21.2019 13:52		0.91
Chromium	7440-47-3	**19.0**	0.909	mg/kg	10.21.2019 13:52		0.91
Copper	7440-50-8	**290**	1.82	mg/kg	10.21.2019 13:52		0.91
Lead	7439-92-1	**6.94**	1.82	mg/kg	10.21.2019 13:52		0.91
Molybdenum	7439-98-7	**13.7**	0.909	mg/kg	10.21.2019 13:52		0.91
Nickel	7440-02-0	**12.2**	0.909	mg/kg	10.21.2019 13:52		0.91
Selenium	7782-49-2	**4.95**	2.73	mg/kg	10.21.2019 13:52		0.91
Vanadium	7440-62-2	**34.2**	8.18	mg/kg	10.21.2019 13:52		0.91
Zinc	7440-66-6	**763**	2.73	mg/kg	10.21.2019 13:52		0.91

Analytical Method: Mercury by SW 7471B Prep Method: SW7471P
Tech: ADS % Solids: 22.87
Analyst: ANJ Date Prep: 10.21.2019 08:40 Basis: Dry Weight
Seq Number: 3104892 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	**0.949**	0.0825	mg/kg	10.21.2019 14:48		0.94

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Sample Id: **SJ CENTRIFUGE CAKE GRAB 281732** Matrix: Sludge Date Received:10.11.2019 09:50
Lab Sample Id: 639732-003 Date Collected: 10.08.2019 09:45

Analytical Method: Nitrogen, Ammonia by EPA 350.1 Prep Method: E350.1P
Tech: KCS % Solids: 77.13
Analyst: KCS Date Prep: 10.18.2019 17:30 Basis: Dry Weight
Seq Number: 3104911 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Nitrogen, Ammonia (as N)	7664-41-7	**7010**	211	mg/kg	10.18.2019 23:15	D2	482.83

Analytical Method: Nitrogen, Nitrate-Nitrite by EPA 353.2 Prep Method: E353.2P
Tech: YAV % Solids: 77.13
Analyst: YAV Date Prep: 10.22.2019 13:00 Basis: Dry Weight
Seq Number: 3105020 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Nitrogen, Nitrate-Nitrite	7727-37-9	**5.28**	4.37	mg/kg	10.22.2019 15:09		1

Analytical Method: Nitrogen, Kjeldahl, Total by EPA 351.2 Prep Method: E351.2P
Tech: KCS % Solids: 22.87
Analyst: KCS Date Prep: 10.18.2019 10:18 Basis: Dry Weight
Seq Number: 3104834 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Nitrogen, Total Kjeldahl	7727-37-9	**52200**	7910	mg/kg	10.19.2019 00:27	D2	45.25

Analytical Method: Total Phosphorus by EPA 365.1 Prep Method: E365.1_P
Tech: KCS % Solids: 22.87
Analyst: KCS Date Prep: 10.18.2019 11:11 Basis: Dry Weight
Seq Number: 3104844 SUB: AZ0765

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Phosphorus (as P)	7723-14-0	**21000**	1750	mg/kg	10.18.2019 17:59	D2+	400.08

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Analytical Method: **Total and Volatile Solids by SM 2540G**
Seq Number: 3104748 Matrix: Solid
MB Sample Id: 3104748-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Solids	100	%	10.14.2019 07:45	
Percent Volatile Solids	0.140	%	10.14.2019 07:45	
Percent Moisture	<0.00100	%	10.14.2019 07:45	

Analytical Method: **Total and Volatile Solids by SM 2540G**
Seq Number: 3104748 Matrix: Sludge
Parent Sample Id: 639732-004 MD Sample Id: 639732-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Solids	21.6	21.7	0	10	%	10.14.2019 07:45	
Percent Volatile Solids	67.0	63.9	5	10	%	10.14.2019 07:45	
Percent Moisture	78.4	78.3	0	20	%	10.14.2019 07:45	

Analytical Method: **Percent Moisture by SM2540G**
Seq Number: 3104860 Matrix: Solid
MB Sample Id: 3104860-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	10.11.2019 10:45	

Analytical Method: **Percent Moisture by SM2540G**
Seq Number: 3104860 Matrix: Sludge
Parent Sample Id: 639732-004 MD Sample Id: 639732-004 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	78.4	78.3	0	10	%	10.11.2019 10:45	

MS/MSD Percent Recovery	[D] = 100*(C-A) / B	LCS = Laboratory Control Sample	MS = Matrix Spike
Relative Percent Difference	RPD = 200* | (C-E) / (C+E) |	A = Parent Result	B = Spike Added
LCS/LCSD Recovery	[D] = 100 * (C) / [B]	C = MS/LCS Result	D = MSD/LCSD % Rec
Log Difference	Log Diff. = Log(Sample Duplicate) - Log(Original Sample)	E = MSD/LCSD Result	

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Analytical Method: **Metals, Total by SW 6010C** Prep Method: SW3050B
Seq Number: 3104907 Matrix: Solid Date Prep: 10.21.2019
MB Sample Id: 7688527-1-BLK LCS Sample Id: 7688527-1-BKS LCSD Sample Id: 7688527-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.424	100	97.8	98	99.6	100	75-125	2	20	mg/kg	10.21.2019 13:06	
Cadmium	<0.239	100	97.9	98	98.2	98	75-125	0	20	mg/kg	10.21.2019 13:06	
Chromium	0.179	100	102	102	102	102	75-125	0	20	mg/kg	10.21.2019 13:06	
Copper	<0.443	100	97.4	97	97.7	98	75-125	0	20	mg/kg	10.21.2019 13:06	
Lead	<0.476	100	103	103	103	103	75-125	0	20	mg/kg	10.21.2019 13:06	
Molybdenum	<0.106	100	99.0	99	99.3	99	75-125	0	20	mg/kg	10.21.2019 13:06	
Nickel	<0.248	100	98.6	99	99.0	99	75-125	0	20	mg/kg	10.21.2019 13:06	
Selenium	<0.498	100	98.8	99	98.3	98	75-125	1	20	mg/kg	10.21.2019 13:06	
Vanadium	<0.553	100	100	100	100	100	75-125	0	20	mg/kg	10.21.2019 13:06	
Zinc	<0.556	100	99.9	100	100	100	75-125	0	20	mg/kg	10.21.2019 13:06	

Analytical Method: **Metals, Total by SW 6010C** Prep Method: SW3050B
Seq Number: 3104907 Matrix: Soil Date Prep: 10.21.2019
Parent Sample Id: 640276-001 MS Sample Id: 640276-001 S MSD Sample Id: 640276-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.378	89.3	85.9	96	88.9	96	75-125	3	20	mg/kg	10.21.2019 13:19	
Cadmium	<0.213	89.3	86.8	97	89.6	97	75-125	3	20	mg/kg	10.21.2019 13:19	
Chromium	9.24	89.3	104	106	106	104	75-125	2	20	mg/kg	10.21.2019 13:19	
Copper	4.66	89.3	90.7	96	93.7	96	75-125	3	20	mg/kg	10.21.2019 13:19	
Lead	6.31	89.3	94.5	99	97.2	98	75-125	3	20	mg/kg	10.21.2019 13:19	
Molybdenum	<0.0946	89.3	90.1	101	93.1	101	75-125	3	20	mg/kg	10.21.2019 13:19	
Nickel	8.21	89.3	94.8	97	98.4	97	75-125	4	20	mg/kg	10.21.2019 13:19	
Selenium	0.939	89.3	83.4	92	85.4	91	75-125	2	20	mg/kg	10.21.2019 13:19	
Vanadium	16.3	89.3	112	107	115	107	75-125	3	20	mg/kg	10.21.2019 13:19	
Zinc	20.1	89.3	111	102	115	102	75-125	4	20	mg/kg	10.21.2019 13:19	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3104892 Matrix: Solid Date Prep: 10.21.2019
MB Sample Id: 7688492-1-BLK LCS Sample Id: 7688492-1-BKS LCSD Sample Id: 7688492-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00384	0.200	0.197	99	0.205	103	80-120	4	20	mg/kg	10.21.2019 14:24	

Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3104892 Matrix: Sludge Date Prep: 10.21.2019
Parent Sample Id: 640085-002 MS Sample Id: 640085-002 S MSD Sample Id: 640085-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00343	0.179	0.174	97	0.176	98	75-125	1	20	mg/kg	10.21.2019 14:27	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Mercury by SW 7471B** Prep Method: SW7471P
Seq Number: 3104892 Matrix: Sludge Date Prep: 10.21.2019
Parent Sample Id: 640086-001 MS Sample Id: 640086-001 S MSD Sample Id: 640086-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.00363	0.189	0.176	93	0.176	93	75-125	0	20	mg/kg	10.21.2019 14:57	

Analytical Method: **Nitrogen, Ammonia by EPA 350.1** Prep Method: E350.1P
Seq Number: 3104911 Matrix: Solid Date Prep: 10.18.2019
MB Sample Id: 7688481-1-BLK LCS Sample Id: 7688481-1-BKS LCSD Sample Id: 7688481-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Ammonia (as N)	0.334	9.76	9.92	102	10.2	102	90-110	3	20	mg/kg	10.18.2019 22:39	

Analytical Method: **Nitrogen, Ammonia by EPA 350.1** Prep Method: E350.1P
Seq Number: 3104911 Matrix: Soil Date Prep: 10.18.2019
Parent Sample Id: 639315-003 MS Sample Id: 639315-003 S MSD Sample Id: 639315-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Ammonia (as N)	0.570	9.77	10.6	103	10.6	102	90-110	0	20	mg/kg	10.18.2019 22:47	

Analytical Method: **Nitrogen, Nitrate-Nitrite by EPA 353.2** Prep Method: E353.2P
Seq Number: 3105020 Matrix: Solid Date Prep: 10.22.2019
MB Sample Id: 7688655-1-BLK LCS Sample Id: 7688655-1-BKS LCSD Sample Id: 7688655-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Nitrate-Nitrite	<0.319	10.0	10.6	106	9.37	94	85-115	12	20	mg/kg	10.22.2019 15:04	

Analytical Method: **Nitrogen, Nitrate-Nitrite by EPA 353.2** Prep Method: E353.2P
Seq Number: 3105020 Matrix: Sludge Date Prep: 10.22.2019
Parent Sample Id: 639732-001 MS Sample Id: 639732-001 S MSD Sample Id: 639732-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Nitrate-Nitrite	3.50	49.7	51.7	97	51.7	97	85-115	0	20	mg/kg	10.22.2019 15:06	

Analytical Method: **Nitrogen, Kjeldahl, Total by EPA 351.2** Prep Method: E351.2P
Seq Number: 3104834 Matrix: Solid Date Prep: 10.18.2019
MB Sample Id: 7688402-1-BLK LCS Sample Id: 7688402-1-BKS LCSD Sample Id: 7688402-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Total Kjeldahl	<3.38	198	196	99	194	99	90-110	1	20	mg/kg	10.19.2019 00:14	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: **Nitrogen, Kjeldahl, Total by EPA 351.2** Prep Method: E351.2P
Seq Number: 3104834 Matrix: Soil Date Prep: 10.18.2019
Parent Sample Id: 639315-001 MS Sample Id: 639315-001 S MSD Sample Id: 639315-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Nitrogen, Total Kjeldahl	733	938	1010	30	1020	30	90-110	1	20	mg/kg	10.19.2019 00:18	M2

Analytical Method: **Total Phosphorus by EPA 365.1** Prep Method: E365.1_P
Seq Number: 3104844 Matrix: Solid Date Prep: 10.18.2019
MB Sample Id: 7688415-1-BLK LCS Sample Id: 7688415-1-BKS LCSD Sample Id: 7688415-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Phosphorus (as P)	<0.307	4.89	4.57	93	4.42	92	90-110	3	10	mg/kg	10.18.2019 17:47	

Analytical Method: **Total Phosphorus by EPA 365.1** Prep Method: E365.1_P
Seq Number: 3104844 Matrix: Soil Date Prep: 10.18.2019
Parent Sample Id: 639315-001 MS Sample Id: 639315-001 S MSD Sample Id: 639315-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Phosphorus (as P)	81.5	94.3	116	37	116	37	90-110	0	10	mg/kg	10.18.2019 17:50	M2

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 50084

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : hou068

Sent By: Emily Petrunia **Date Sent:** 10.14.2019 05.54 PM

Received By: **Date Received:**

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: _____
Shadi Alshrouf

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Eastern Municipal Water District

Date/ Time Received: 10/11/2019 09:50:00 AM

Work Order #: 639732

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR#1

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	5.7	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Xenco Stafford
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Emily Petrunia Date: 10/11/2019

Checklist reviewed by: Ruriko Konuma Date: 10/14/2019