UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET (ML-10C)
CHICAGO, ILLINOIS 60605

ELECTRONIC LABORATORY DATA PACKAGE
FINAL LEVEL IV
COVER PAGE

LIMS Work order(s):	1805005, 1805007
Analysis:	Nitrate-Nitrite N DA, Enzymatic reduction
Primary Analyst:	Anna Knoebel
Date:	May 22, 2018
Data Reporting Qualtrax Workflow ID:	14339

Digital Signature of Primary Analyst:

Anna Knoebel	Digitally signed by Anna Knoebel Date: 2018.05.22 15:08:10 -05'00'

Digital Signature Agreement: By signing above the primary analyst understands and agrees that they will be held legally bound, obligated, and responsible for the use of their digital signature as they would be by using their hand-written signature.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: **5/22/2018**

Subject: **Review of Region 5 Data for Central Sands**

To: **Water Division, WECA Region 5**
77 West Jackson Boulevard
Chicago, IL 60604

From: **Anna Knoebel, Chemist**
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.

Anna Knoebel

Please contact the analyst with any technical report issues, Robert Thompson at (312)-353-9078 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: **Central Sands**

Analyses included in this report:

Nitrate-Nitrite N DA, Enzymatic reduction

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1454

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Accredited Analyses included in this Report

Method: *ASTM D7781-14 in Water*
Analysis: *Nitrate-Nitrite N DA, Enzymatic reduction*

Analyte	Certifications
Nitrate-Nitrite N	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

ANALYSIS CASE NARRATIVE – Nitrate-Nitrite Nitrogen in Water

Work Order: 1805005, 1805007
Analyst: Anna Knoebel
Phone #: (312) 353-9467

General Information

Ninety-eight water samples for Nitrate-Nitrite Nitrogen were received on May 2, 2018 and May 4, 2018. All holding times were met.

Sample Analysis and Results

The samples were analyzed for Nitrate-Nitrite Nitrogen in water on May 10, 2018 using CRL SOP AIG031B, Version # 4 (SOP based on NECi Method N070003). The samples were stored in the refrigerator at all times except when in use.

The data reported herein meets any laboratory specifications referenced in the sampling QAPP "*FINAL_2018 GW Sampling Plan4_27_2018.pdf*"and the requirements referenced in CRL SOP AIG031B, Version # 4 (based on NECi Method N070003) except for those listed in the quality control section below.

Quality Control

Matrix Spike (MS)

All five matrix spike recoveries were outside the acceptance limit (90 – 110 %). The source samples were not affected by these recoveries and are not qualified because the samples were either non-detect or the spikes were diluted out.

Blank Spike (BS)

Four of the eighteen BS sample recoveries were slightly higher than the acceptance limit (90 – 110 %). The samples affected by these spikes were qualified "K" (The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value).

All other quality control audits were within CRL limits or did not result in qualification of the data.

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 5/3/2018 3:33:25PM**

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5** **Project Manager:** **Angela Ockrassa Davis**
Project: **Central Sands** **Project Number:** **[none]**

Report To:
Cheryl Burdett
Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago, IL 60604
Phone: (312) 886-1463
Fax: (312) 886-2001

Date Due: Jun-04-18 15:00 (32 day TAT)
Received By: Colin Breslin Date Received: May-02-18 09:55
Logged In By: Robert Snyder Date Logged In: May-03-18 09:30

Samples Received at:

Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
Anions: Chloride and nitrate as NO3
Full List metals

Sample ID: **1805005-01** **Sampled:** **Apr-30-18 07:19** **Matrix:** **Water**
Sample Name: **A1a** **Sample Location/Comments:** **1st Street**
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 07:19	pH = 2
Anions by IC	28	May-28-18 07:19	pH = 7
Metals ICP-AES (w)	180	Oct-27-18 07:19	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 07:19	pH = 2
Solids, TDS	7	May-07-18 07:19	pH = 7
TKN DA	28	May-28-18 07:19	pH = 2
TOC	28	May-28-18 07:19	pH = 2
Total Phosphorus DA	28	May-28-18 07:19	pH = 2

Sample ID: **1805005-02** **Sampled:** **Apr-30-18 07:32** **Matrix:** **Water**
Sample Name: **A1b** **Sample Location/Comments:** **1st Street**
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 07:32	pH = 2
Anions by IC	28	May-28-18 07:32	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 07:32	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 07:32	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-02 **Sampled:** Apr-30-18 07:32 **Matrix:** Water

Sample Name: A1b **Sample Location/Comments:** 1st Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Solids, TDS	7	May-07-18 07:32	pH = 5
TKN DA	28	May-28-18 07:32	pH = 2
TOC	28	May-28-18 07:32	pH = 2
Total Phosphorus DA	28	May-28-18 07:32	pH = 2

Sample ID: 1805005-03 **Sampled:** Apr-30-18 08:15 **Matrix:** Water

Sample Name: A2a **Sample Location/Comments:** 22nd Avenue North

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 08:15	pH = 2
Anions by IC	28	May-28-18 08:15	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 08:15	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 08:15	pH = 2
Solids, TDS	7	May-07-18 08:15	pH = 6
TKN DA	28	May-28-18 08:15	pH = 2
TOC	28	May-28-18 08:15	pH = 2
Total Phosphorus DA	28	May-28-18 08:15	pH = 2

Sample ID: 1805005-04 **Sampled:** Apr-30-18 08:24 **Matrix:** Water

Sample Name: A2b **Sample Location/Comments:** 22nd Avenue North

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 08:24	pH = 2
Anions by IC	28	May-28-18 08:24	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 08:24	pH = 5
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 08:24	pH = 2
Solids, TDS	7	May-07-18 08:24	pH = 6
TKN DA	28	May-28-18 08:24	pH = 2
TOC	28	May-28-18 08:24	pH = 2
Total Phosphorus DA	28	May-28-18 08:24	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-05 **Sampled:** Apr-30-18 09:06 **Matrix:** Water *QC Source Sample MS/MSD*

Sample Name: A3a **Sample Location/Comments:** 2nd Street

Sample Comments: MS/MSD

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:06	pH = 2
Anions by IC	28	May-28-18 09:06	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 09:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:06	pH = 2
Solids, TDS	7	May-07-18 09:06	pH = 6
TKN DA	28	May-28-18 09:06	pH = 2
TOC	28	May-28-18 09:06	pH = 2
Total Phosphorus DA	28	May-28-18 09:06	pH = 2

Sample ID: 1805005-06 **Sampled:** Apr-30-18 09:14 **Matrix:** Water

Sample Name: A3b **Sample Location/Comments:** 2nd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:14	pH = 2
Anions by IC	28	May-28-18 09:14	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 09:14	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:14	pH = 2
Solids, TDS	7	May-07-18 09:14	pH = 6
TKN DA	28	May-28-18 09:14	pH = 2
TOC	28	May-28-18 09:14	pH = 2
Total Phosphorus DA	28	May-28-18 09:14	pH = 2

Sample ID: 1805005-07 **Sampled:** Apr-30-18 09:38 **Matrix:** Water

Sample Name: A4 Equip **Sample Location/Comments:** Cranberry Rock Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:38	pH = 2
Anions by IC	28	May-28-18 09:38	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 09:38	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:38	pH = 2
Solids, TDS	7	May-07-18 09:38	pH = 5
TKN DA	28	May-28-18 09:38	pH = 2
TOC	28	May-28-18 09:38	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-07 **Sampled:** Apr-30-18 09:38 **Matrix:** Water

Sample Name: A4 Equip **Sample Location/Comments:** Cranberry Rock Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-28-18 09:38	pH = 2

Sample ID: 1805005-08 **Sampled:** Apr-30-18 09:06 **Matrix:** Water

Sample Name: A3a (Dup) **Sample Location/Comments:** 2nd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:06	pH = 2
Anions by IC	28	May-28-18 09:06	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 09:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:06	pH = 2
Solids, TDS	7	May-07-18 09:06	pH = 6
TKN DA	28	May-28-18 09:06	pH = 2
TOC	28	May-28-18 09:06	pH = 2
Total Phosphorus DA	28	May-28-18 09:06	pH = 2

Sample ID: 1805005-09 **Sampled:** Apr-30-18 09:49 **Matrix:** Water

Sample Name: FB1 **Sample Location/Comments:** Cranberry Rock Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:49	pH = 2
Anions by IC	28	May-28-18 09:49	pH = 4
Metals ICP-AES (w)	180	Oct-27-18 09:49	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:49	pH = 2
Solids, TDS	7	May-07-18 09:49	pH = 4
TKN DA	28	May-28-18 09:49	pH = 2
TOC	28	May-28-18 09:49	pH = 2
Total Phosphorus DA	28	May-28-18 09:49	pH = 2

Sample ID: 1805005-10 **Sampled:** Apr-30-18 09:58 **Matrix:** Water

Sample Name: A4a **Sample Location/Comments:** Cranberry Rock Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 09:58	pH = 2
Anions by IC	28	May-28-18 09:58	pH = 6

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-10 **Sampled:** Apr-30-18 09:58 **Matrix:** Water

Sample Name: A4a **Sample Location/Comments:** Cranberry Rock Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-27-18 09:58	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 09:58	pH = 2
Solids, TDS	7	May-07-18 09:58	pH = 6
TKN DA	28	May-28-18 09:58	pH = 2
TOC	28	May-28-18 09:58	pH = 2
Total Phosphorus DA	28	May-28-18 09:58	pH = 2

Sample ID: 1805005-11 **Sampled:** Apr-30-18 10:09 **Matrix:** Water

Sample Name: A4b **Sample Location/Comments:** Cranberry Rock Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 10:09	pH = 2
Anions by IC	28	May-28-18 10:09	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 10:09	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 10:09	pH = 2
Solids, TDS	7	May-07-18 10:09	pH = 5
TKN DA	28	May-28-18 10:09	pH = 2
TOC	28	May-28-18 10:09	pH = 2
Total Phosphorus DA	28	May-28-18 10:09	pH = 2

Sample ID: 1805005-12 **Sampled:** Apr-30-18 10:51 **Matrix:** Water

Sample Name: B1a **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 10:51	pH = 3
Anions by IC	28	May-28-18 10:51	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 10:51	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 10:51	pH = 3
Solids, TDS	7	May-07-18 10:51	pH = 5
TKN DA	28	May-28-18 10:51	pH = 3
TOC	28	May-28-18 10:51	pH = 3
Total Phosphorus DA	28	May-28-18 10:51	pH = 3

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-13 **Sampled:** Apr-30-18 10:58 **Matrix:** Water

Sample Name: B1b **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 10:58	pH = 2
Anions by IC	28	May-28-18 10:58	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 10:58	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 10:58	pH = 2
Solids, TDS	7	May-07-18 10:58	pH = 5
TKN DA	28	May-28-18 10:58	pH = 2
TOC	28	May-28-18 10:58	pH = 2
Total Phosphorus DA	28	May-28-18 10:58	pH = 2

Sample ID: 1805005-14 **Sampled:** Apr-30-18 11:40 **Matrix:** Water

Sample Name: B2a **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 11:40	pH = 2
Anions by IC	28	May-28-18 11:40	pH = 7
Metals ICP-AES (w)	180	Oct-27-18 11:40	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 11:40	pH = 2
Solids, TDS	7	May-07-18 11:40	pH = 7
TKN DA	28	May-28-18 11:40	pH = 2
TOC	28	May-28-18 11:40	pH = 2
Total Phosphorus DA	28	May-28-18 11:40	pH = 2

Sample ID: 1805005-15 **Sampled:** Apr-30-18 11:48 **Matrix:** Water

Sample Name: B2b **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 11:48	pH = 2
Anions by IC	28	May-28-18 11:48	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 11:48	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 11:48	pH = 2
Solids, TDS	7	May-07-18 11:48	pH = 5
TKN DA	28	May-28-18 11:48	pH = 2
TOC	28	May-28-18 11:48	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-15 **Sampled:** Apr-30-18 11:48 **Matrix:** Water

Sample Name: B2b **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-28-18 11:48	pH = 2

Sample ID: 1805005-16 **Sampled:** Apr-30-18 12:29 **Matrix:** Water

Sample Name: B3a **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 12:29	pH = 2
Anions by IC	28	May-28-18 12:29	pH = 6
Metals ICP-AES (w)	180	Oct-27-18 12:29	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 12:29	pH = 2
Solids, TDS	7	May-07-18 12:29	pH = 6
TKN DA	28	May-28-18 12:29	pH = 2
TOC	28	May-28-18 12:29	pH = 2
Total Phosphorus DA	28	May-28-18 12:29	pH = 2

Sample ID: 1805005-17 **Sampled:** Apr-30-18 12:36 **Matrix:** Water

Sample Name: B3b **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 12:36	pH = 2
Anions by IC	28	May-28-18 12:36	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 12:36	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 12:36	pH = 2
Solids, TDS	7	May-07-18 12:36	pH = 5
TKN DA	28	May-28-18 12:36	pH = 2
TOC	28	May-28-18 12:36	pH = 2
Total Phosphorus DA	28	May-28-18 12:36	pH = 2

Sample ID: 1805005-18 **Sampled:** Apr-30-18 13:10 **Matrix:** Water

Sample Name: B4a **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 13:10	pH = 2
Anions by IC	28	May-28-18 13:10	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-18 **Sampled:** Apr-30-18 13:10 **Matrix:** Water

Sample Name: B4a **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-27-18 13:10	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 13:10	pH = 2
Solids, TDS	7	May-07-18 13:10	pH = 5
TKN DA	28	May-28-18 13:10	pH = 2
TOC	28	May-28-18 13:10	pH = 2
Total Phosphorus DA	28	May-28-18 13:10	pH = 2

Sample ID: 1805005-19 **Sampled:** Apr-30-18 13:41 **Matrix:** Water

Sample Name: B4b **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 13:41	pH = 2
Anions by IC	28	May-28-18 13:41	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 13:41	pH = 4
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 13:41	pH = 2
Solids, TDS	7	May-07-18 13:41	pH = 5
TKN DA	28	May-28-18 13:41	pH = 2
TOC	28	May-28-18 13:41	pH = 2
Total Phosphorus DA	28	May-28-18 13:41	pH = 2

Sample ID: 1805005-20 **Sampled:** Apr-30-18 15:02 **Matrix:** Water

Sample Name: C1a **Sample Location/Comments:** 2nd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 15:02	pH = 2
Anions by IC	28	May-28-18 15:02	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 15:02	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 15:02	pH = 2
Solids, TDS	7	May-07-18 15:02	pH = 5
TKN DA	28	May-28-18 15:02	pH = 2
TOC	28	May-28-18 15:02	pH = 2
Total Phosphorus DA	28	May-28-18 15:02	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-21 **Sampled:** Apr-30-18 15:27 **Matrix:** Water

Sample Name: C1b **Sample Location/Comments:** 2nd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 15:27	pH = 2
Anions by IC	28	May-28-18 15:27	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 15:27	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 15:27	pH = 2
Solids, TDS	7	May-07-18 15:27	pH = 5
TKN DA	28	May-28-18 15:27	pH = 2
TOC	28	May-28-18 15:27	pH = 2
Total Phosphorus DA	28	May-28-18 15:27	pH = 2

Sample ID: 1805005-22 **Sampled:** Apr-30-18 16:06 **Matrix:** Water

Sample Name: C2a **Sample Location/Comments:** Nelson Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 16:06	pH = 2
Anions by IC	28	May-28-18 16:06	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 16:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 16:06	pH = 2
Solids, TDS	7	May-07-18 16:06	pH = 5
TKN DA	28	May-28-18 16:06	pH = 2
TOC	28	May-28-18 16:06	pH = 2
Total Phosphorus DA	28	May-28-18 16:06	pH = 2

Sample ID: 1805005-23 **Sampled:** Apr-30-18 16:14 **Matrix:** Water

Sample Name: C2b **Sample Location/Comments:** Nelson Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 16:14	pH = 2
Anions by IC	28	May-28-18 16:14	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 16:14	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 16:14	pH = 2
Solids, TDS	7	May-07-18 16:14	pH = 5
TKN DA	28	May-28-18 16:14	pH = 2
TOC	28	May-28-18 16:14	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-23 **Sampled:** Apr-30-18 16:14 **Matrix:** Water

Sample Name: C2b **Sample Location/Comments:** Nelson Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-28-18 16:14	pH = 2

Sample ID: 1805005-24 **Sampled:** Apr-30-18 14:16 **Matrix:** Water

Sample Name: C3a **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 14:16	pH = 2
Anions by IC	28	May-28-18 14:16	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 14:16	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 14:16	pH = 2
Solids, TDS	7	May-07-18 14:16	pH = 5
TKN DA	28	May-28-18 14:16	pH = 2
TOC	28	May-28-18 14:16	pH = 2
Total Phosphorus DA	28	May-28-18 14:16	pH = 2

Sample ID: 1805005-25 **Sampled:** Apr-30-18 14:26 **Matrix:** Water

Sample Name: C3b **Sample Location/Comments:** 3rd Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-28-18 14:26	pH = 2
Anions by IC	28	May-28-18 14:26	pH = 5
Metals ICP-AES (w)	180	Oct-27-18 14:26	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-28-18 14:26	pH = 2
Solids, TDS	7	May-07-18 14:26	pH = 5
TKN DA	28	May-28-18 14:26	pH = 2
TOC	28	May-28-18 14:26	pH = 2
Total Phosphorus DA	28	May-28-18 14:26	pH = 2

Sample ID: 1805005-26 **Sampled:** May-01-18 06:29 **Matrix:** Water

Sample Name: C5Aa **Sample Location/Comments:** CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 06:29	pH = 2
Anions by IC	28	May-29-18 06:29	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-26 **Sampled:** May-01-18 06:29 **Matrix:** Water

Sample Name: C5Aa **Sample Location/Comments:** CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 06:29	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 06:29	pH = 2
Solids, TDS	7	May-08-18 06:29	pH = 5
TKN DA	28	May-29-18 06:29	pH = 2
TOC	28	May-29-18 06:29	pH = 2
Total Phosphorus DA	28	May-29-18 06:29	pH = 2

Sample ID: 1805005-27 **Sampled:** May-01-18 06:43 **Matrix:** Water

Sample Name: C5Ab **Sample Location/Comments:** CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 06:43	pH = 2
Anions by IC	28	May-29-18 06:43	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 06:43	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 06:43	pH = 2
Solids, TDS	7	May-08-18 06:43	pH = 5
TKN DA	28	May-29-18 06:43	pH = 2
TOC	28	May-29-18 06:43	pH = 2
Total Phosphorus DA	28	May-29-18 06:43	pH = 2

Sample ID: 1805005-28 **Sampled:** May-01-18 07:06 **Matrix:** Water

Sample Name: C6a **Sample Location/Comments:** CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:06	pH = 2
Anions by IC	28	May-29-18 07:06	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 07:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:06	pH = 2
Solids, TDS	7	May-08-18 07:06	pH = 6
TKN DA	28	May-29-18 07:06	pH = 2
TOC	28	May-29-18 07:06	pH = 2
Total Phosphorus DA	28	May-29-18 07:06	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-29 **Sampled:** May-01-18 07:15 **Matrix:** Water

Sample Name: C6b **Sample Location/Comments:** CR G (Nelson Road)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:15	pH = 3
Anions by IC	28	May-29-18 07:15	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 07:15	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:15	pH = 3
Solids, TDS	7	May-08-18 07:15	pH = 5
TKN DA	28	May-29-18 07:15	pH = 3
TOC	28	May-29-18 07:15	pH = 3
Total Phosphorus DA	28	May-29-18 07:15	pH = 3

Sample ID: 1805005-30 **Sampled:** May-01-18 07:48 **Matrix:** Water

Sample Name: C7a **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:48	pH = 2
Anions by IC	28	May-29-18 07:48	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 07:48	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:48	pH = 2
Solids, TDS	7	May-08-18 07:48	pH = 6
TKN DA	28	May-29-18 07:48	pH = 2
TOC	28	May-29-18 07:48	pH = 2
Total Phosphorus DA	28	May-29-18 07:48	pH = 2

Sample ID: 1805005-31 **Sampled:** May-01-18 08:02 **Matrix:** Water

Sample Name: C7b **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:02	pH = 2
Anions by IC	28	May-29-18 08:02	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 08:02	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:02	pH = 2
Solids, TDS	7	May-08-18 08:02	pH = 5
TKN DA	28	May-29-18 08:02	pH = 2
TOC	28	May-29-18 08:02	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-31 **Sampled:** May-01-18 08:02 **Matrix:** Water

Sample Name: C7b **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-29-18 08:02	pH = 2

Sample ID: 1805005-32 **Sampled:** May-01-18 07:39 **Matrix:** Water

Sample Name: FB2 **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:39	pH = 2
Anions by IC	28	May-29-18 07:39	pH = 4
Metals ICP-AES (w)	180	Oct-28-18 07:39	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:39	pH = 2
Solids, TDS	7	May-08-18 07:39	pH = 4
TKN DA	28	May-29-18 07:39	pH = 2
TOC	28	May-29-18 07:39	pH = 2
Total Phosphorus DA	28	May-29-18 07:39	pH = 2

Sample ID: 1805005-33 **Sampled:** May-01-18 07:38 **Matrix:** Water

Sample Name: C7 equip **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 07:38	pH = 2
Anions by IC	28	May-29-18 07:38	pH = 4
Metals ICP-AES (w)	180	Oct-28-18 07:38	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 07:38	pH = 2
Solids, TDS	7	May-08-18 07:38	pH = 4
TKN DA	28	May-29-18 07:38	pH = 2
TOC	28	May-29-18 07:38	pH = 2
Total Phosphorus DA	28	May-29-18 07:38	pH = 2

Sample ID: 1805005-34 **Sampled:** May-01-18 08:02 **Matrix:** Water

Sample Name: C7 Dup **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:02	pH = 2
Anions by IC	28	May-29-18 08:02	pH = 5

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US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-34 **Sampled:** May-01-18 08:02 **Matrix:** Water

Sample Name: C7 Dup **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 08:02	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:02	pH = 2
Solids, TDS	7	May-08-18 08:02	pH = 5
TKN DA	28	May-29-18 08:02	pH = 2
TOC	28	May-29-18 08:02	pH = 2
Total Phosphorus DA	28	May-29-18 08:02	pH = 2

Sample ID: 1805005-35 **Sampled:** May-01-18 08:35 **Matrix:** Water

Sample Name: C8a **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:35	pH = 2
Anions by IC	28	May-29-18 08:35	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 08:35	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:35	pH = 2
Solids, TDS	7	May-08-18 08:35	pH = 5
TKN DA	28	May-29-18 08:35	pH = 2
TOC	28	May-29-18 08:35	pH = 2
Total Phosphorus DA	28	May-29-18 08:35	pH = 2

Sample ID: 1805005-36 **Sampled:** May-01-18 08:42 **Matrix:** Water

Sample Name: C8b **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 08:42	pH = 2
Anions by IC	28	May-29-18 08:42	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 08:42	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 08:42	pH = 2
Solids, TDS	7	May-08-18 08:42	pH = 5
TKN DA	28	May-29-18 08:42	pH = 2
TOC	28	May-29-18 08:42	pH = 2
Total Phosphorus DA	28	May-29-18 08:42	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-37 **Sampled:** May-01-18 10:00 **Matrix:** Water

Sample Name: C9a **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 10:00	pH = 2
Anions by IC	28	May-29-18 10:00	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 10:00	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 10:00	pH = 2
Solids, TDS	7	May-08-18 10:00	pH = 5
TKN DA	28	May-29-18 10:00	pH = 2
TOC	28	May-29-18 10:00	pH = 2
Total Phosphorus DA	28	May-29-18 10:00	pH = 2

Sample ID: 1805005-38 **Sampled:** May-01-18 10:21 **Matrix:** Water

Sample Name: C9b **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 10:21	pH = 2
Anions by IC	28	May-29-18 10:21	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 10:21	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 10:21	pH = 2
Solids, TDS	7	May-08-18 10:21	pH = 5
TKN DA	28	May-29-18 10:21	pH = 2
TOC	28	May-29-18 10:21	pH = 2
Total Phosphorus DA	28	May-29-18 10:21	pH = 2

Sample ID: 1805005-39 **Sampled:** May-01-18 11:05 **Matrix:** Water

Sample Name: C10a **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:05	pH = 2
Anions by IC	28	May-29-18 11:05	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 11:05	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:05	pH = 2
Solids, TDS	7	May-08-18 11:05	pH = 6
TKN DA	28	May-29-18 11:05	pH = 2
TOC	28	May-29-18 11:05	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-39 **Sampled:** May-01-18 11:05 **Matrix:** Water

Sample Name: C10a **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-29-18 11:05	pH = 2

Sample ID: 1805005-40 **Sampled:** May-01-18 11:12 **Matrix:** Water

Sample Name: C10b **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:12	pH = 2
Anions by IC	28	May-29-18 11:12	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 11:12	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:12	pH = 2
Solids, TDS	7	May-08-18 11:12	pH = 5
TKN DA	28	May-29-18 11:12	pH = 2
TOC	28	May-29-18 11:12	pH = 2
Total Phosphorus DA	28	May-29-18 11:12	pH = 2

Sample ID: 1805005-41 **Sampled:** May-01-18 11:46 **Matrix:** Water

Sample Name: C11a **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:46	pH = 3
Anions by IC	28	May-29-18 11:46	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 11:46	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:46	pH = 3
Solids, TDS	7	May-08-18 11:46	pH = 6
TKN DA	28	May-29-18 11:46	pH = 3
TOC	28	May-29-18 11:46	pH = 3
Total Phosphorus DA	28	May-29-18 11:46	pH = 3

Sample ID: 1805005-42 **Sampled:** May-01-18 11:52 **Matrix:** Water

Sample Name: C11b **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 11:52	pH = 2
Anions by IC	28	May-29-18 11:52	pH = 5

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-42 **Sampled:** May-01-18 11:52 **Matrix:** Water

Sample Name: C11b **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 11:52	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 11:52	pH = 2
Solids, TDS	7	May-08-18 11:52	pH = 5
TKN DA	28	May-29-18 11:52	pH = 2
TOC	28	May-29-18 11:52	pH = 2
Total Phosphorus DA	28	May-29-18 11:52	pH = 2

Sample ID: 1805005-43 **Sampled:** May-01-18 12:41 **Matrix:** Water

Sample Name: C12a **Sample Location/Comments:** 19th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 12:41	pH = 2
Anions by IC	28	May-29-18 12:41	pH = 7
Metals ICP-AES (w)	180	Oct-28-18 12:41	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 12:41	pH = 2
Solids, TDS	7	May-08-18 12:41	pH = 7
TKN DA	28	May-29-18 12:41	pH = 2
TOC	28	May-29-18 12:41	pH = 2
Total Phosphorus DA	28	May-29-18 12:41	pH = 2

Sample ID: 1805005-44 **Sampled:** May-01-18 12:47 **Matrix:** Water

Sample Name: C12b **Sample Location/Comments:** 19th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 12:47	pH = 2
Anions by IC	28	May-29-18 12:47	pH = 7
Metals ICP-AES (w)	180	Oct-28-18 12:47	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 12:47	pH = 2
Solids, TDS	7	May-08-18 12:47	pH = 7
TKN DA	28	May-29-18 12:47	pH = 2
TOC	28	May-29-18 12:47	pH = 2
Total Phosphorus DA	28	May-29-18 12:47	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-45 **Sampled:** May-01-18 13:30 **Matrix:** Water

Sample Name: C13a **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 13:30	pH = 3
Anions by IC	28	May-29-18 13:30	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 13:30	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 13:30	pH = 3
Solids, TDS	7	May-08-18 13:30	pH = 6
TKN DA	28	May-29-18 13:30	pH = 3
TOC	28	May-29-18 13:30	pH = 3
Total Phosphorus DA	28	May-29-18 13:30	pH = 3

Sample ID: 1805005-46 **Sampled:** May-01-18 13:39 **Matrix:** Water

Sample Name: C13b **Sample Location/Comments:** 4th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 13:39	pH = 2
Anions by IC	28	May-29-18 13:39	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 13:39	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 13:39	pH = 2
Solids, TDS	7	May-08-18 13:39	pH = 5
TKN DA	28	May-29-18 13:39	pH = 2
TOC	28	May-29-18 13:39	pH = 2
Total Phosphorus DA	28	May-29-18 13:39	pH = 2

Sample ID: 1805005-47 **Sampled:** May-01-18 14:19 **Matrix:** Water

Sample Name: D1a **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 14:19	pH = 2
Anions by IC	28	May-29-18 14:19	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 14:19	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 14:19	pH = 2
Solids, TDS	7	May-08-18 14:19	pH = 6
TKN DA	28	May-29-18 14:19	pH = 2
TOC	28	May-29-18 14:19	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-47 **Sampled:** May-01-18 14:19 **Matrix:** Water

Sample Name: D1a **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-29-18 14:19	pH = 2

Sample ID: 1805005-48 **Sampled:** May-01-18 14:26 **Matrix:** Water

Sample Name: D1b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 14:26	pH = 3
Anions by IC	28	May-29-18 14:26	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 14:26	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 14:26	pH = 3
Solids, TDS	7	May-08-18 14:26	pH = 5
TKN DA	28	May-29-18 14:26	pH = 3
TOC	28	May-29-18 14:26	pH = 3
Total Phosphorus DA	28	May-29-18 14:26	pH = 3

Sample ID: 1805005-49 **Sampled:** May-01-18 15:00 **Matrix:** Water

Sample Name: D2a **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:00	pH = 3
Anions by IC	28	May-29-18 15:00	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 15:00	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:00	pH = 3
Solids, TDS	7	May-08-18 15:00	pH = 6
TKN DA	28	May-29-18 15:00	pH = 3
TOC	28	May-29-18 15:00	pH = 3
Total Phosphorus DA	28	May-29-18 15:00	pH = 3

Sample ID: 1805005-50 **Sampled:** May-01-18 15:06 **Matrix:** Water

Sample Name: D2b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:06	pH = 2
Anions by IC	28	May-29-18 15:06	pH = 6

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-50 **Sampled:** May-01-18 15:06 **Matrix:** Water

Sample Name: D2b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-28-18 15:06	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:06	pH = 2
Solids, TDS	7	May-08-18 15:06	pH = 6
TKN DA	28	May-29-18 15:06	pH = 2
TOC	28	May-29-18 15:06	pH = 2
Total Phosphorus DA	28	May-29-18 15:06	pH = 2

Sample ID: 1805005-51 **Sampled:** May-01-18 15:41 **Matrix:** Water

Sample Name: D3a **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:41	pH = 2
Anions by IC	28	May-29-18 15:41	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 15:41	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:41	pH = 2
Solids, TDS	7	May-08-18 15:41	pH = 6
TKN DA	28	May-29-18 15:41	pH = 2
TOC	28	May-29-18 15:41	pH = 2
Total Phosphorus DA	28	May-29-18 15:41	pH = 2

Sample ID: 1805005-52 **Sampled:** May-01-18 15:48 **Matrix:** Water

Sample Name: D3b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 15:48	pH = 2
Anions by IC	28	May-29-18 15:48	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 15:48	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 15:48	pH = 2
Solids, TDS	7	May-08-18 15:48	pH = 5
TKN DA	28	May-29-18 15:48	pH = 2
TOC	28	May-29-18 15:48	pH = 2
Total Phosphorus DA	28	May-29-18 15:48	pH = 2

1805005

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5 **Project Manager:** Angela Ockrassa Davis
Project: Central Sands **Project Number:** [none]

Sample ID: 1805005-53 **Sampled:** May-01-18 16:19 **Matrix:** Water

Sample Name: D4a **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 16:19	pH = 2
Anions by IC	28	May-29-18 16:19	pH = 6
Metals ICP-AES (w)	180	Oct-28-18 16:19	pH = 2
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 16:19	pH = 2
Solids, TDS	7	May-08-18 16:19	pH = 6
TKN DA	28	May-29-18 16:19	pH = 2
TOC	28	May-29-18 16:19	pH = 2
Total Phosphorus DA	28	May-29-18 16:19	pH = 2

Sample ID: 1805005-54 **Sampled:** May-01-18 16:26 **Matrix:** Water

Sample Name: D4b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-29-18 16:26	pH = 2
Anions by IC	28	May-29-18 16:26	pH = 5
Metals ICP-AES (w)	180	Oct-28-18 16:26	pH = 3
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-29-18 16:26	pH = 2
Solids, TDS	7	May-08-18 16:26	pH = 5
TKN DA	28	May-29-18 16:26	pH = 2
TOC	28	May-29-18 16:26	pH = 2
Total Phosphorus DA	28	May-29-18 16:26	pH = 2

WORK ORDER MEMO: NCR 14118

PROJECT COMMENTS: Anions: Chloride, fluoride, bromide, sullfate.
Full List metals

REVIEWED
By Amanda Wroble at 3:35 pm, May 03, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER **Printed: 5/7/2018 9:53:28AM**

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, WECA Region 5** **Project Manager:** **Angela Ockrassa Davis**
Project: **Central Sands** **Project Number:** **CB022018**

Report To:
Cheryl Burdett
Water Division, WECA Region 5
77 West Jackson Boulevard
Chicago, IL 60604
Phone: (312) 886-1463
Fax: (312) 886-2001

Date Due: Jun-04-18 15:00 (30 day TAT)
Received By: Robert Snyder Date Received: May-04-18 10:00
Logged In By: Robert Snyder Date Logged In: May-07-18 07:38

Samples Received at:

Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	Yes
Paperwork Included	Yes

Work Order Comments:
Copy/Relog from 1805005. Anions: Chloride and nitrate as NO3
Full List metals
pH paper used in SC 16H2601

Sample ID: **1805007-01** **Sampled:** **May-02-18 06:38** **Matrix:** **Water**
Sample Name: **D5a** **Sample Location/Comments:** **5th Street**
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 06:38	pH = 1
Anions by IC	28	May-30-18 06:38	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 06:38	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 06:38	pH = 1
Solids, TDS	7	May-09-18 06:38	pH = 6
TKN DA	28	May-30-18 06:38	pH = 1
TOC	28	May-30-18 06:38	pH = 1
Total Phosphorus DA	28	May-30-18 06:38	pH = 1

Sample ID: **1805007-02** **Sampled:** **May-02-18 06:46** **Matrix:** **Water**
Sample Name: **D5b** **Sample Location/Comments:** **5th Street**
Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 06:46	pH = 1
Anions by IC	28	May-30-18 06:46	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 06:46	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 06:46	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-02 **Sampled:** May-02-18 06:46 **Matrix:** Water

Sample Name: D5b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Solids, TDS	7	May-09-18 06:46	pH = 5
TKN DA	28	May-30-18 06:46	pH = 1
TOC	28	May-30-18 06:46	pH = 1
Total Phosphorus DA	28	May-30-18 06:46	pH = 1

Sample ID: 1805007-03 **Sampled:** May-02-18 07:17 **Matrix:** Water

Sample Name: D6a **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 07:17	pH = 1
Anions by IC	28	May-30-18 07:17	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 07:17	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 07:17	pH = 1
Solids, TDS	7	May-09-18 07:17	pH = 6
TKN DA	28	May-30-18 07:17	pH = 1
TOC	28	May-30-18 07:17	pH = 1
Total Phosphorus DA	28	May-30-18 07:17	pH = 1

Sample ID: 1805007-04 **Sampled:** May-02-18 07:29 **Matrix:** Water

Sample Name: D6b **Sample Location/Comments:** 5th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 07:29	pH = 1
Anions by IC	28	May-30-18 07:29	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 07:29	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 07:29	pH = 1
Solids, TDS	7	May-09-18 07:29	pH = 6
TKN DA	28	May-30-18 07:29	pH = 1
TOC	28	May-30-18 07:29	pH = 1
Total Phosphorus DA	28	May-30-18 07:29	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-05 **Sampled:** May-02-18 08:01 **Matrix:** Water

Sample Name: D7 equip **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 08:01	pH = 1
Anions by IC	28	May-30-18 08:01	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 08:01	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 08:01	pH = 1
Solids, TDS	7	May-09-18 08:01	pH = 5
TKN DA	28	May-30-18 08:01	pH = 1
TOC	28	May-30-18 08:01	pH = 1
Total Phosphorus DA	28	May-30-18 08:01	pH = 1

Sample ID: 1805007-06 **Sampled:** May-02-18 08:03 **Matrix:** Water

Sample Name: FB3 **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 08:03	pH = 1
Anions by IC	28	May-30-18 08:03	pH = 4
Metals ICP-AES (w)	180	Oct-29-18 08:03	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 08:03	pH = 1
Solids, TDS	7	May-09-18 08:03	pH = 4
TKN DA	28	May-30-18 08:03	pH = 1
TOC	28	May-30-18 08:03	pH = 1
Total Phosphorus DA	28	May-30-18 08:03	pH = 1

Sample ID: 1805007-07 **Sampled:** May-02-18 08:12 **Matrix:** Water

Sample Name: D7a Dup **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 08:12	pH = 1
Anions by IC	28	May-30-18 08:12	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 08:12	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 08:12	pH = 1
Solids, TDS	7	May-09-18 08:12	pH = 6
TKN DA	28	May-30-18 08:12	pH = 1
TOC	28	May-30-18 08:12	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-07 **Sampled:** May-02-18 08:12 **Matrix:** Water

Sample Name: D7a Dup **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-30-18 08:12	pH = 1

Sample ID: 1805007-08 **Sampled:** May-02-18 08:12 **Matrix:** Water *QC Source Sample MS/MSD*

Sample Name: D7a **Sample Location/Comments:** 23rd Avenue

Sample Comments: MS/MSD

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 08:12	pH = 1
Anions by IC	28	May-30-18 08:12	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 08:12	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 08:12	pH = 1
Solids, TDS	7	May-09-18 08:12	pH = 6
TKN DA	28	May-30-18 08:12	pH = 1
TOC	28	May-30-18 08:12	pH = 1
Total Phosphorus DA	28	May-30-18 08:12	pH = 1

Sample ID: 1805007-09 **Sampled:** May-02-18 08:19 **Matrix:** Water

Sample Name: D7b **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 08:19	pH = 1
Anions by IC	28	May-30-18 08:19	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 08:19	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 08:19	pH = 1
Solids, TDS	7	May-09-18 08:19	pH = 5
TKN DA	28	May-30-18 08:19	pH = 1
TOC	28	May-30-18 08:19	pH = 1
Total Phosphorus DA	28	May-30-18 08:19	pH = 1

Sample ID: 1805007-10 **Sampled:** May-02-18 08:55 **Matrix:** Water

Sample Name: D8a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 08:55	pH = 1
Anions by IC	28	May-30-18 08:55	pH = 6

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-10 **Sampled:** May-02-18 08:55 **Matrix:** Water

Sample Name: D8a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-29-18 08:55	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 08:55	pH = 1
Solids, TDS	7	May-09-18 08:55	pH = 6
TKN DA	28	May-30-18 08:55	pH = 1
TOC	28	May-30-18 08:55	pH = 1
Total Phosphorus DA	28	May-30-18 08:55	pH = 1

Sample ID: 1805007-11 **Sampled:** May-02-18 09:11 **Matrix:** Water

Sample Name: D8b **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 09:11	pH = 1
Anions by IC	28	May-30-18 09:11	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 09:11	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 09:11	pH = 1
Solids, TDS	7	May-09-18 09:11	pH = 6
TKN DA	28	May-30-18 09:11	pH = 1
TOC	28	May-30-18 09:11	pH = 1
Total Phosphorus DA	28	May-30-18 09:11	pH = 1

Sample ID: 1805007-12 **Sampled:** May-02-18 09:45 **Matrix:** Water

Sample Name: D9a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 09:45	pH = 1
Anions by IC	28	May-30-18 09:45	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 09:45	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 09:45	pH = 1
Solids, TDS	7	May-09-18 09:45	pH = 6
TKN DA	28	May-30-18 09:45	pH = 1
TOC	28	May-30-18 09:45	pH = 1
Total Phosphorus DA	28	May-30-18 09:45	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-13 **Sampled:** May-02-18 09:54 **Matrix:** Water

Sample Name: D9b **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 09:54	pH = 1
Anions by IC	28	May-30-18 09:54	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 09:54	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 09:54	pH = 1
Solids, TDS	7	May-09-18 09:54	pH = 6
TKN DA	28	May-30-18 09:54	pH = 1
TOC	28	May-30-18 09:54	pH = 1
Total Phosphorus DA	28	May-30-18 09:54	pH = 1

Sample ID: 1805007-14 **Sampled:** May-02-18 10:29 **Matrix:** Water

Sample Name: D10a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 10:29	pH = 1
Anions by IC	28	May-30-18 10:29	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 10:29	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 10:29	pH = 1
Solids, TDS	7	May-09-18 10:29	pH = 6
TKN DA	28	May-30-18 10:29	pH = 1
TOC	28	May-30-18 10:29	pH = 1
Total Phosphorus DA	28	May-30-18 10:29	pH = 1

Sample ID: 1805007-15 **Sampled:** May-02-18 10:29 **Matrix:** Water

Sample Name: D10a Dup **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 10:29	pH = 1
Anions by IC	28	May-30-18 10:29	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 10:29	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 10:29	pH = 1
Solids, TDS	7	May-09-18 10:29	pH = 6
TKN DA	28	May-30-18 10:29	pH = 1
TOC	28	May-30-18 10:29	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-15 **Sampled:** May-02-18 10:29 **Matrix:** Water

Sample Name: D10a Dup **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-30-18 10:29	pH = 1

Sample ID: 1805007-16 **Sampled:** May-02-18 10:41 **Matrix:** Water

Sample Name: D10b **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 10:41	pH = 1
Anions by IC	28	May-30-18 10:41	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 10:41	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 10:41	pH = 1
Solids, TDS	7	May-09-18 10:41	pH = 5
TKN DA	28	May-30-18 10:41	pH = 1
TOC	28	May-30-18 10:41	pH = 1
Total Phosphorus DA	28	May-30-18 10:41	pH = 1

Sample ID: 1805007-17 **Sampled:** May-02-18 10:41 **Matrix:** Water

Sample Name: D10b Dup **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 10:41	pH = 1
Anions by IC	28	May-30-18 10:41	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 10:41	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 10:41	pH = 1
Solids, TDS	7	May-09-18 10:41	pH = 5
TKN DA	28	May-30-18 10:41	pH = 1
TOC	28	May-30-18 10:41	pH = 1
Total Phosphorus DA	28	May-30-18 10:41	pH = 1

Sample ID: 1805007-18 **Sampled:** May-02-18 11:19 **Matrix:** Water

Sample Name: D11a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 11:19	pH = 1
Anions by IC	28	May-30-18 11:19	pH = 6

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-18 **Sampled:** May-02-18 11:19 **Matrix:** Water

Sample Name: D11a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-29-18 11:19	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 11:19	pH = 1
Solids, TDS	7	May-09-18 11:19	pH = 6
TKN DA	28	May-30-18 11:19	pH = 1
TOC	28	May-30-18 11:19	pH = 1
Total Phosphorus DA	28	May-30-18 11:19	pH = 1

Sample ID: 1805007-19 **Sampled:** May-02-18 11:42 **Matrix:** Water

Sample Name: D11b **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 11:42	pH = 1
Anions by IC	28	May-30-18 11:42	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 11:42	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 11:42	pH = 1
Solids, TDS	7	May-09-18 11:42	pH = 5
TKN DA	28	May-30-18 11:42	pH = 1
TOC	28	May-30-18 11:42	pH = 1
Total Phosphorus DA	28	May-30-18 11:42	pH = 1

Sample ID: 1805007-20 **Sampled:** May-02-18 12:41 **Matrix:** Water

Sample Name: E1a **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 12:41	pH = 1
Anions by IC	28	May-30-18 12:41	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 12:41	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 12:41	pH = 1
Solids, TDS	7	May-09-18 12:41	pH = 6
TKN DA	28	May-30-18 12:41	pH = 1
TOC	28	May-30-18 12:41	pH = 1
Total Phosphorus DA	28	May-30-18 12:41	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-21 **Sampled:** May-02-18 12:58 **Matrix:** Water

Sample Name: E1b **Sample Location/Comments:** 23rd Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 12:58	pH = 1
Anions by IC	28	May-30-18 12:58	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 12:58	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 12:58	pH = 1
Solids, TDS	7	May-09-18 12:58	pH = 6
TKN DA	28	May-30-18 12:58	pH = 1
TOC	28	May-30-18 12:58	pH = 1
Total Phosphorus DA	28	May-30-18 12:58	pH = 1

Sample ID: 1805007-22 **Sampled:** May-02-18 13:28 **Matrix:** Water

Sample Name: E2a **Sample Location/Comments:** Porter Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 13:28	pH = 1
Anions by IC	28	May-30-18 13:28	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 13:28	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 13:28	pH = 1
Solids, TDS	7	May-09-18 13:28	pH = 6
TKN DA	28	May-30-18 13:28	pH = 1
TOC	28	May-30-18 13:28	pH = 1
Total Phosphorus DA	28	May-30-18 13:28	pH = 1

Sample ID: 1805007-23 **Sampled:** May-02-18 13:37 **Matrix:** Water

Sample Name: E2b **Sample Location/Comments:** Porter Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 13:37	pH = 1
Anions by IC	28	May-30-18 13:37	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 13:37	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 13:37	pH = 1
Solids, TDS	7	May-09-18 13:37	pH = 5
TKN DA	28	May-30-18 13:37	pH = 1
TOC	28	May-30-18 13:37	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-23 **Sampled:** May-02-18 13:37 **Matrix:** Water

Sample Name: E2b **Sample Location/Comments:** Porter Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-30-18 13:37	pH = 1

Sample ID: 1805007-24 **Sampled:** May-02-18 13:28 **Matrix:** Water

Sample Name: E2a Dup **Sample Location/Comments:** Porter Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 13:28	pH = 1
Anions by IC	28	May-30-18 13:28	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 13:28	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 13:28	pH = 1
Solids, TDS	7	May-09-18 13:28	pH = 6
TKN DA	28	May-30-18 13:28	pH = 1
TOC	28	May-30-18 13:28	pH = 1
Total Phosphorus DA	28	May-30-18 13:28	pH = 1

Sample ID: 1805007-25 **Sampled:** May-02-18 13:37 **Matrix:** Water

Sample Name: E2b Dup **Sample Location/Comments:** Porter Road

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 13:37	pH = 1
Anions by IC	28	May-30-18 13:37	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 13:37	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 13:37	pH = 1
Solids, TDS	7	May-09-18 13:37	pH = 5
TKN DA	28	May-30-18 13:37	pH = 1
TOC	28	May-30-18 13:37	pH = 1
Total Phosphorus DA	28	May-30-18 13:37	pH = 1

Sample ID: 1805007-26 **Sampled:** May-02-18 14:03 **Matrix:** Water

Sample Name: E3a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 14:03	pH = 1
Anions by IC	28	May-30-18 14:03	pH = 6

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-26 **Sampled:** May-02-18 14:03 **Matrix:** Water

Sample Name: E3a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-29-18 14:03	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 14:03	pH = 1
Solids, TDS	7	May-09-18 14:03	pH = 6
TKN DA	28	May-30-18 14:03	pH = 1
TOC	28	May-30-18 14:03	pH = 1
Total Phosphorus DA	28	May-30-18 14:03	pH = 1

Sample ID: 1805007-27 **Sampled:** May-02-18 14:09 **Matrix:** Water

Sample Name: E3b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 14:09	pH = 1
Anions by IC	28	May-30-18 14:09	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 14:09	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 14:09	pH = 1
Solids, TDS	7	May-09-18 14:09	pH = 6
TKN DA	28	May-30-18 14:09	pH = 1
TOC	28	May-30-18 14:09	pH = 1
Total Phosphorus DA	28	May-30-18 14:09	pH = 1

Sample ID: 1805007-28 **Sampled:** May-02-18 14:37 **Matrix:** Water

Sample Name: E4a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 14:37	pH = 1
Anions by IC	28	May-30-18 14:37	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 14:37	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 14:37	pH = 1
Solids, TDS	7	May-09-18 14:37	pH = 6
TKN DA	28	May-30-18 14:37	pH = 1
TOC	28	May-30-18 14:37	pH = 1
Total Phosphorus DA	28	May-30-18 14:37	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-29 **Sampled:** May-02-18 14:43 **Matrix:** Water

Sample Name: E4b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 14:43	pH = 1
Anions by IC	28	May-30-18 14:43	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 14:43	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 14:43	pH = 1
Solids, TDS	7	May-09-18 14:43	pH = 6
TKN DA	28	May-30-18 14:43	pH = 1
TOC	28	May-30-18 14:43	pH = 1
Total Phosphorus DA	28	May-30-18 14:43	pH = 1

Sample ID: 1805007-30 **Sampled:** May-02-18 15:08 **Matrix:** Water

Sample Name: E5a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 15:08	pH = 1
Anions by IC	28	May-30-18 15:08	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 15:08	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 15:08	pH = 1
Solids, TDS	7	May-09-18 15:08	pH = 6
TKN DA	28	May-30-18 15:08	pH = 1
TOC	28	May-30-18 15:08	pH = 1
Total Phosphorus DA	28	May-30-18 15:08	pH = 1

Sample ID: 1805007-31 **Sampled:** May-02-18 15:13 **Matrix:** Water

Sample Name: E5b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 15:13	pH = 1
Anions by IC	28	May-30-18 15:13	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 15:13	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 15:13	pH = 1
Solids, TDS	7	May-09-18 15:13	pH = 6
TKN DA	28	May-30-18 15:13	pH = 1
TOC	28	May-30-18 15:13	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-31 **Sampled:** May-02-18 15:13 **Matrix:** Water

Sample Name: E5b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-30-18 15:13	pH = 1

Sample ID: 1805007-32 **Sampled:** May-02-18 15:38 **Matrix:** Water

Sample Name: E6a **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 15:38	pH = 1
Anions by IC	28	May-30-18 15:38	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 15:38	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 15:38	pH = 1
Solids, TDS	7	May-09-18 15:38	pH = 6
TKN DA	28	May-30-18 15:38	pH = 1
TOC	28	May-30-18 15:38	pH = 1
Total Phosphorus DA	28	May-30-18 15:38	pH = 1

Sample ID: 1805007-33 **Sampled:** May-02-18 15:44 **Matrix:** Water

Sample Name: E6b **Sample Location/Comments:** 20th Avenue

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 15:44	pH = 1
Anions by IC	28	May-30-18 15:44	pH = 6
Metals ICP-AES (w)	180	Oct-29-18 15:44	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 15:44	pH = 1
Solids, TDS	7	May-09-18 15:44	pH = 6
TKN DA	28	May-30-18 15:44	pH = 1
TOC	28	May-30-18 15:44	pH = 1
Total Phosphorus DA	28	May-30-18 15:44	pH = 1

Sample ID: 1805007-34 **Sampled:** May-02-18 16:09 **Matrix:** Water

Sample Name: E7a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 16:09	pH = 1
Anions by IC	28	May-30-18 16:09	pH = 5

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-34 **Sampled:** May-02-18 16:09 **Matrix:** Water

Sample Name: E7a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-29-18 16:09	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 16:09	pH = 1
Solids, TDS	7	May-09-18 16:09	pH = 5
TKN DA	28	May-30-18 16:09	pH = 1
TOC	28	May-30-18 16:09	pH = 1
Total Phosphorus DA	28	May-30-18 16:09	pH = 1

Sample ID: 1805007-35 **Sampled:** May-02-18 16:35 **Matrix:** Water

Sample Name: E7b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-30-18 16:35	pH = 1
Anions by IC	28	May-30-18 16:35	pH = 5
Metals ICP-AES (w)	180	Oct-29-18 16:35	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-30-18 16:35	pH = 1
Solids, TDS	7	May-09-18 16:35	pH = 5
TKN DA	28	May-30-18 16:35	pH = 1
TOC	28	May-30-18 16:35	pH = 1
Total Phosphorus DA	28	May-30-18 16:35	pH = 1

Sample ID: 1805007-36 **Sampled:** May-03-18 08:40 **Matrix:** Water

Sample Name: E8a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 08:40	pH = 1
Anions by IC	28	May-31-18 08:40	pH = 5
Metals ICP-AES (w)	180	Oct-30-18 08:40	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 08:40	pH = 1
Solids, TDS	7	May-10-18 08:40	pH = 5
TKN DA	28	May-31-18 08:40	pH = 1
TOC	28	May-31-18 08:40	pH = 1
Total Phosphorus DA	28	May-31-18 08:40	pH = 1

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-37 **Sampled:** May-03-18 08:48 **Matrix:** Water

Sample Name: E8b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 08:48	pH = 1
Anions by IC	28	May-31-18 08:48	pH = 6
Metals ICP-AES (w)	180	Oct-30-18 08:48	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 08:48	pH = 1
Solids, TDS	7	May-10-18 08:48	pH = 6
TKN DA	28	May-31-18 08:48	pH = 1
TOC	28	May-31-18 08:48	pH = 1
Total Phosphorus DA	28	May-31-18 08:48	pH = 1

Sample ID: 1805007-38 **Sampled:** May-03-18 07:15 **Matrix:** Water

Sample Name: E10a **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 07:15	pH = 1
Anions by IC	28	May-31-18 07:15	pH = 6
Metals ICP-AES (w)	180	Oct-30-18 07:15	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 07:15	pH = 1
Solids, TDS	7	May-10-18 07:15	pH = 6
TKN DA	28	May-31-18 07:15	pH = 1
TOC	28	May-31-18 07:15	pH = 1
Total Phosphorus DA	28	May-31-18 07:15	pH = 1

Sample ID: 1805007-39 **Sampled:** May-03-18 07:15 **Matrix:** Water

Sample Name: E10a Dup **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 07:15	pH = 1
Anions by IC	28	May-31-18 07:15	pH = 6
Metals ICP-AES (w)	180	Oct-30-18 07:15	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 07:15	pH = 1
Solids, TDS	7	May-10-18 07:15	pH = 6
TKN DA	28	May-31-18 07:15	pH = 1
TOC	28	May-31-18 07:15	pH = 1

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US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-39 **Sampled:** May-03-18 07:15 **Matrix:** Water

Sample Name: E10a Dup **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Total Phosphorus DA	28	May-31-18 07:15	pH = 1

Sample ID: 1805007-40 **Sampled:** May-03-18 07:27 **Matrix:** Water

Sample Name: E10b **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 07:27	pH = 1
Anions by IC	28	May-31-18 07:27	pH = 6
Metals ICP-AES (w)	180	Oct-30-18 07:27	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 07:27	pH = 1
Solids, TDS	7	May-10-18 07:27	pH = 6
TKN DA	28	May-31-18 07:27	pH = 1
TOC	28	May-31-18 07:27	pH = 1
Total Phosphorus DA	28	May-31-18 07:27	pH = 1

Sample ID: 1805007-41 **Sampled:** May-03-18 07:36 **Matrix:** Water

Sample Name: FB4 **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 07:36	pH = 1
Anions by IC	28	May-31-18 07:36	pH = 4
Metals ICP-AES (w)	180	Oct-30-18 07:36	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 07:36	pH = 1
Solids, TDS	7	May-10-18 07:36	pH = 4
TKN DA	28	May-31-18 07:36	pH = 1
TOC	28	May-31-18 07:36	pH = 1
Total Phosphorus DA	28	May-31-18 07:36	pH = 1

Sample ID: 1805007-42 **Sampled:** May-03-18 07:13 **Matrix:** Water

Sample Name: E10 Equip **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 07:13	pH = 1
Anions by IC	28	May-31-18 07:13	pH = 4

1805007

US EPA Region 5 Chicago Regional Laboratory

Client: Water Division, WECA Region 5
Project: Central Sands
Project Manager: Angela Ockrassa Davis
Project Number: CB022018

Sample ID: 1805007-42 **Sampled:** May-03-18 07:13 **Matrix:** Water

Sample Name: E10 Equip **Sample Location/Comments:** 8th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Metals ICP-AES (w)	180	Oct-30-18 07:13	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 07:13	pH = 1
Solids, TDS	7	May-10-18 07:13	pH = 4
TKN DA	28	May-31-18 07:13	pH = 1
TOC	28	May-31-18 07:13	pH = 1
Total Phosphorus DA	28	May-31-18 07:13	pH = 1

Sample ID: 1805007-43 **Sampled:** May-03-18 09:53 **Matrix:** Water

Sample Name: E9a **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 09:53	pH = 1
Anions by IC	28	May-31-18 09:53	pH = 5
Metals ICP-AES (w)	180	Oct-30-18 09:53	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 09:53	pH = 1
Solids, TDS	7	May-10-18 09:53	pH = 5
TKN DA	28	May-31-18 09:53	pH = 1
TOC	28	May-31-18 09:53	pH = 1
Total Phosphorus DA	28	May-31-18 09:53	pH = 1

Sample ID: 1805007-44 **Sampled:** May-03-18 10:02 **Matrix:** Water

Sample Name: E9b **Sample Location/Comments:** 7th Street

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Ammonia N DA, Distilled	28	May-31-18 10:02	pH = 1
Anions by IC	28	May-31-18 10:02	pH = 5
Metals ICP-AES (w)	180	Oct-30-18 10:02	pH = 1
Nitrate-Nitrite N DA, Enzymatic reduction	28	May-31-18 10:02	pH = 1
Solids, TDS	7	May-10-18 10:02	pH = 5
TKN DA	28	May-31-18 10:02	pH = 1
TOC	28	May-31-18 10:02	pH = 1
Total Phosphorus DA	28	May-31-18 10:02	pH = 1

Reviewed By Date

1805007

US EPA Region 5 Chicago Regional Laboratory

Client:	Water Division, WECA Region 5	Project Manager:	Angela Ockrassa Davis
Project:	Central Sands	Project Number:	CB022018

PROJECT COMMENTS: Anions: Chloride, fluoride, bromide, sullfate.
Full List metals

REVIEWED
By Robert Thompson at 9:54 am, May 07, 2018

Reviewed By Date

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Nitrate-Nitrite Nitrogen, Nitrate Reductase, ASTM D7781 - 14 (modified)
US EPA Region 5 Chicago Regional Laboratory

A1a (1805005-01) **Matrix: Water** **Sampled: Apr-30-18 07:19** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A1b (1805005-02) **Matrix: Water** **Sampled: Apr-30-18 07:32** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.79**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A2a (1805005-03) **Matrix: Water** **Sampled: Apr-30-18 08:15** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**36.9**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

A2b (1805005-04) **Matrix: Water** **Sampled: Apr-30-18 08:24** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A3a (1805005-05) **Matrix: Water** **Sampled: Apr-30-18 09:06** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A3b (1805005-06) **Matrix: Water** **Sampled: Apr-30-18 09:14** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.12**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A4 Equip (1805005-07) **Matrix: Water** **Sampled: Apr-30-18 09:38** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A3a (Dup) (1805005-08) **Matrix: Water** **Sampled: Apr-30-18 09:06** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Nitrate-Nitrite Nitrogen, Nitrate Reductase, ASTM D7781 - 14 (modified)
US EPA Region 5 Chicago Regional Laboratory

FB1 (1805005-09) **Matrix: Water** **Sampled: Apr-30-18 09:49** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A4a (1805005-10) **Matrix: Water** **Sampled: Apr-30-18 09:58** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.25**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

A4b (1805005-11) **Matrix: Water** **Sampled: Apr-30-18 10:09** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**4.61**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

B1a (1805005-12) **Matrix: Water** **Sampled: Apr-30-18 10:51** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

B1b (1805005-13) **Matrix: Water** **Sampled: Apr-30-18 10:58** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

B2a (1805005-14) **Matrix: Water** **Sampled: Apr-30-18 11:40** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

B2b (1805005-15) **Matrix: Water** **Sampled: Apr-30-18 11:48** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.23**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

B3a (1805005-16) **Matrix: Water** **Sampled: Apr-30-18 12:29** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**4.53**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Nitrate-Nitrite Nitrogen, Nitrate Reductase, ASTM D7781 - 14 (modified)
US EPA Region 5 Chicago Regional Laboratory

B3b (1805005-17) **Matrix: Water** **Sampled: Apr-30-18 12:36** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.96**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

B4a (1805005-18) **Matrix: Water** **Sampled: Apr-30-18 13:10** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**33.3**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

B4b (1805005-19) **Matrix: Water** **Sampled: Apr-30-18 13:41** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**28.0**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C1a (1805005-20) **Matrix: Water** **Sampled: Apr-30-18 15:02** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.12**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C1b (1805005-21) **Matrix: Water** **Sampled: Apr-30-18 15:27** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C2a (1805005-22) **Matrix: Water** **Sampled: Apr-30-18 16:06** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**42.1**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C2b (1805005-23) **Matrix: Water** **Sampled: Apr-30-18 16:14** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**3.39**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C3a (1805005-24) **Matrix: Water** **Sampled: Apr-30-18 14:16** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**27.7**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

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Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

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C3b (1805005-25) **Matrix: Water** **Sampled: Apr-30-18 14:26** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**2.62**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C5Aa (1805005-26) **Matrix: Water** **Sampled: May-01-18 06:29** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**44.3**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C5Ab (1805005-27) **Matrix: Water** **Sampled: May-01-18 06:43** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**59.2**	K	1.00	2.00	mg/L	20	B18E022	May-09-18	May-10-18

C6a (1805005-28) **Matrix: Water** **Sampled: May-01-18 07:06** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**36.8**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C6b (1805005-29) **Matrix: Water** **Sampled: May-01-18 07:15** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**25.3**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C7a (1805005-30) **Matrix: Water** **Sampled: May-01-18 07:48** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**31.7**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C7b (1805005-31) **Matrix: Water** **Sampled: May-01-18 08:02** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**37.3**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

FB2 (1805005-32) **Matrix: Water** **Sampled: May-01-18 07:39** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

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Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

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C7 equip (1805005-33) **Matrix: Water** **Sampled: May-01-18 07:38** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C7b Dup (1805005-34) **Matrix: Water** **Sampled: May-01-18 08:02** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**36.5**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C8a (1805005-35) **Matrix: Water** **Sampled: May-01-18 08:35** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**17.1**	K	0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C8b (1805005-36) **Matrix: Water** **Sampled: May-01-18 08:42** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**2.95**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C9a (1805005-37) **Matrix: Water** **Sampled: May-01-18 10:00** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**2.48**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C9b (1805005-38) **Matrix: Water** **Sampled: May-01-18 10:21** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.69**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C10a (1805005-39) **Matrix: Water** **Sampled: May-01-18 11:05** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**8.33**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

C10b (1805005-40) **Matrix: Water** **Sampled: May-01-18 11:12** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**16.7**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

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Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

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C11a (1805005-41) **Matrix: Water** **Sampled: May-01-18 11:46** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C11b (1805005-42) **Matrix: Water** **Sampled: May-01-18 11:52** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.57**	K	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C12a (1805005-43) **Matrix: Water** **Sampled: May-01-18 12:41** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C12b (1805005-44) **Matrix: Water** **Sampled: May-01-18 12:47** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C13a (1805005-45) **Matrix: Water** **Sampled: May-01-18 13:30** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

C13b (1805005-46) **Matrix: Water** **Sampled: May-01-18 13:39** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D1a (1805005-47) **Matrix: Water** **Sampled: May-01-18 14:19** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D1b (1805005-48) **Matrix: Water** **Sampled: May-01-18 14:26** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

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Water Division, WECA Region 5	Project: Central Sands	
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Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

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D2a (1805005-49) **Matrix: Water** **Sampled: May-01-18 15:00** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**2.86**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D2b (1805005-50) **Matrix: Water** **Sampled: May-01-18 15:06** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**32.7**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D3a (1805005-51) **Matrix: Water** **Sampled: May-01-18 15:41** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**21.1**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D3b (1805005-52) **Matrix: Water** **Sampled: May-01-18 15:48** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**23.4**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D4a (1805005-53) **Matrix: Water** **Sampled: May-01-18 16:19** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**20.5**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D4b (1805005-54) **Matrix: Water** **Sampled: May-01-18 16:26** **Received: May-02-18 09:55**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**50.6**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D5a (1805007-01) **Matrix: Water** **Sampled: May-02-18 06:38** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.29**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D5b (1805007-02) **Matrix: Water** **Sampled: May-02-18 06:46** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.36**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

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Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

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D6a (1805007-03) **Matrix: Water** **Sampled: May-02-18 07:17** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D6b (1805007-04) **Matrix: Water** **Sampled: May-02-18 07:29** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D7 equip (1805007-05) **Matrix: Water** **Sampled: May-02-18 08:01** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

FB3 (1805007-06) **Matrix: Water** **Sampled: May-02-18 08:03** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D7a Dup (1805007-07) **Matrix: Water** **Sampled: May-02-18 08:12** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**33.7**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D7a (1805007-08) **Matrix: Water** **Sampled: May-02-18 08:12** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D7b (1805007-09) **Matrix: Water** **Sampled: May-02-18 08:19** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**36.8**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D8a (1805007-10) **Matrix: Water** **Sampled: May-02-18 08:55** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**42.3**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

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D8b (1805007-11) **Matrix: Water** **Sampled: May-02-18 09:11** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D9a (1805007-12) **Matrix: Water** **Sampled: May-02-18 09:45** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D9b (1805007-13) **Matrix: Water** **Sampled: May-02-18 09:54** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**2.29**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D10a (1805007-14) **Matrix: Water** **Sampled: May-02-18 10:29** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**14.3**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D10a Dup (1805007-15) **Matrix: Water** **Sampled: May-02-18 10:29** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D10b (1805007-16) **Matrix: Water** **Sampled: May-02-18 10:41** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

D10b Dup (1805007-17) **Matrix: Water** **Sampled: May-02-18 10:41** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**16.2**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

D11a (1805007-18) **Matrix: Water** **Sampled: May-02-18 11:19** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**32.2**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

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D11b (1805007-19) **Matrix: Water** **Sampled: May-02-18 11:42** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**23.9**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E1a (1805007-20) **Matrix: Water** **Sampled: May-02-18 12:41** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**27.2**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E1b (1805007-21) **Matrix: Water** **Sampled: May-02-18 12:58** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**25.7**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E2a (1805007-22) **Matrix: Water** **Sampled: May-02-18 13:28** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.52**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E2b (1805007-23) **Matrix: Water** **Sampled: May-02-18 13:37** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**3.15**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E2a Dup (1805007-24) **Matrix: Water** **Sampled: May-02-18 13:28** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.58**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E2b Dup (1805007-25) **Matrix: Water** **Sampled: May-02-18 13:37** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**3.16**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E3a (1805007-26) **Matrix: Water** **Sampled: May-02-18 14:03** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**6.58**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Nitrate-Nitrite Nitrogen, Nitrate Reductase, ASTM D7781 - 14 (modified)
US EPA Region 5 Chicago Regional Laboratory

E3b (1805007-27) **Matrix: Water** **Sampled: May-02-18 14:09** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**7.40**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E4a (1805007-28) **Matrix: Water** **Sampled: May-02-18 14:37** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**23.3**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E4b (1805007-29) **Matrix: Water** **Sampled: May-02-18 14:43** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**26.8**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E5a (1805007-30) **Matrix: Water** **Sampled: May-02-18 15:08** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**38.7**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E5b (1805007-31) **Matrix: Water** **Sampled: May-02-18 15:13** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**26.9**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

E6a (1805007-32) **Matrix: Water** **Sampled: May-02-18 15:38** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.15**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E6b (1805007-33) **Matrix: Water** **Sampled: May-02-18 15:44** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**0.15**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E7a (1805007-34) **Matrix: Water** **Sampled: May-02-18 16:09** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

Environmental Protection Agency Region 5
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Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Nitrate-Nitrite Nitrogen, Nitrate Reductase, ASTM D7781 - 14 (modified)
US EPA Region 5 Chicago Regional Laboratory

E7b (1805007-35) **Matrix: Water** **Sampled: May-02-18 16:35** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E8a (1805007-36) **Matrix: Water** **Sampled: May-03-18 08:40** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E8b (1805007-37) **Matrix: Water** **Sampled: May-03-18 08:48** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E10a (1805007-38) **Matrix: Water** **Sampled: May-03-18 07:15** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.13**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E10a Dup (1805007-39) **Matrix: Water** **Sampled: May-03-18 07:15** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.22**		0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E10b (1805007-40) **Matrix: Water** **Sampled: May-03-18 07:27** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

FB4 (1805007-41) **Matrix: Water** **Sampled: May-03-18 07:36** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E10 Equip (1805007-42) **Matrix: Water** **Sampled: May-03-18 07:13** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

Environmental Protection Agency Region 5
Chicago Regional Laboratory

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Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Nitrate-Nitrite Nitrogen, Nitrate Reductase, ASTM D7781 - 14 (modified)
US EPA Region 5 Chicago Regional Laboratory

E9a (1805007-43) **Matrix: Water** **Sampled: May-03-18 09:53** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**U**	U	0.05	0.10	mg/L	1	B18E022	May-09-18	May-10-18

E9b (1805007-44) **Matrix: Water** **Sampled: May-03-18 10:02** **Received: May-04-18 10:00**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**20.2**		0.50	1.00	mg/L	10	B18E022	May-09-18	May-10-18

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Water Division, WECA Region 5	Project: Central Sands	
77 West Jackson Boulevard	Project Number: CB022018	**Reported:**
Chicago IL, 60604	Project Manager: Cheryl Burdett	May-22-18 14:54

Notes and Definitions

K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
*	This Quality Control measure meets the requirements of the CRL SOP for this analyte.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Quality Control Summary

Date: 05/22/18 **Analyst:** Anna Knoebel

Project: Central Sands

Analyte: Nitrate-Nitrite N

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
18E1001-CAL1	**-0.02**	mg/L	U	0.05	0.10	0.000		%			
18E1001-CAL2	**0.08**	mg/L		0.05	0.10	0.1000		79%			
18E1001-CAL3	**0.24**	mg/L		0.05	0.10	0.2500		97%			
18E1001-CAL4	**0.51**	mg/L		0.05	0.10	0.5000		102%			
18E1001-CAL5	**1.04**	mg/L		0.05	0.10	1.000		104%			
18E1001-CAL6	**1.30**	mg/L		0.05	0.10	1.250		104%			
18E1001-CAL7	**2.45**	mg/L		0.05	0.10	2.500		98%			
18E1001-CAL8	**5.01**	mg/L		0.05	0.10	5.000		100%			
18E1001-CCB1	**-0.0050**	mg/L	U	0.05	0.10						
18E1001-CCB2	**-0.03**	mg/L	U	0.05	0.10						
18E1001-CCB3	**-0.0004**	mg/L	U	0.05	0.10						
18E1001-CCB4	**0.0002**	mg/L		0.05	0.10						
18E1001-CCB5	**-0.02**	mg/L	U	0.05	0.10						
18E1001-CCB6	**-0.03**	mg/L	U	0.05	0.10						
18E1001-CCB7	**-0.04**	mg/L	U	0.05	0.10						
18E1001-CCB8	**-0.03**	mg/L	U	0.05	0.10						
18E1001-CCB9	**-0.02**	mg/L	U	0.05	0.10						
18E1001-CCBA	**-0.02**	mg/L	U	0.05	0.10						

REVIEWED
By AK at 1:58 pm, May 22, 2018

Anna Knoebel, Chemist

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1351

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Quality Control Summary

Date: 05/22/18 **Analyst:** Anna Knoebel

Project: Central Sands

Analyte: Nitrate-Nitrite N

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
18E1001-CCBB	0.0060	mg/L		0.05	0.10						
18E1001-CCBC	-0.02	mg/L	U	0.05	0.10						
18E1001-CCBD	-0.02	mg/L	U	0.05	0.10						
18E1001-CCBE	-0.02	mg/L	U	0.05	0.10						
18E1001-CCBF	-0.02	mg/L	U	0.05	0.10						
18E1001-CCBG	-0.04	mg/L	U	0.05	0.10						
18E1001-CCBH	-0.02	mg/L	U	0.05	0.10						
18E1001-CCV1	3.31	mg/L		0.05	0.10	3.000		110%	90-110		
18E1001-CCV2	3.29	mg/L		0.05	0.10	3.000		110%	90-110		
18E1001-CCV3	3.11	mg/L		0.05	0.10	3.000		104%	90-110		
18E1001-CCV4	3.25	mg/L		0.05	0.10	3.000		108%	90-110		
18E1001-CCV5	3.18	mg/L		0.05	0.10	3.000		106%	90-110		
18E1001-CCV6	3.13	mg/L		0.05	0.10	3.000		104%	90-110		
18E1001-CCV7	3.30	mg/L		0.05	0.10	3.000		110%	90-110		
18E1001-CCV8	3.09	mg/L		0.05	0.10	3.000		103%	90-110		
18E1001-CCV9	3.27	mg/L		0.05	0.10	3.000		109%	90-110		
18E1001-CCVA	3.25	mg/L		0.05	0.10	3.000		108%	90-110		
18E1001-CCVB	3.22	mg/L		0.05	0.10	3.000		107%	90-110		

REVIEWED
By AK at 1:59 pm, May 22, 2018

Anna Knoebel, Chemist

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1351

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Quality Control Summary

Date: 05/22/18 **Analyst:** Anna Knoebel

Project: Central Sands

Analyte: Nitrate-Nitrite N

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
18E1001-CCVC	**3.21**	mg/L		0.05	0.10	3.000		107%	90-110		
18E1001-CCVD	**3.16**	mg/L		0.05	0.10	3.000		105%	90-110		
18E1001-CCVE	**3.19**	mg/L		0.05	0.10	3.000		106%	90-110		
18E1001-CCVF	**3.25**	mg/L		0.05	0.10	3.000		108%	90-110		
18E1001-CCVG	**3.22**	mg/L		0.05	0.10	3.000		107%	90-110		
18E1001-CCVH	**3.10**	mg/L		0.05	0.10	3.000		103%	90-110		
18E1001-ICB1	**-0.01**	mg/L	U	0.05	0.10						
18E1001-ICV1	**3.23**	mg/L		0.05	0.10	3.000		108%	90-110		
18E1001-PEM1	**2.64**	mg/L				2.500		106%	90-110		
B18E022-BLK1	U	mg/L	*, U	0.05	0.10						
B18E022-BLK2	U	mg/L	U	0.05	0.10						
B18E022-BLK3	U	mg/L	U	0.05	0.10						
B18E022-BLK4	U	mg/L	U	0.05	0.10						
B18E022-BLK5	U	mg/L	U	0.05	0.10						
B18E022-BLK6	U	mg/L	U	0.05	0.10						
B18E022-BLK7	U	mg/L	U	0.05	0.10						
B18E022-BLK8	U	mg/L	U	0.05	0.10						
B18E022-BLK9	U	mg/L	U	0.05	0.10						

REVIEWED
By AK at 1:59 pm, May 22, 2018

Anna Knoebel, Chemist

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1351

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Chicago Regional Laboratory
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Quality Control Summary

Date: 05/22/18 **Analyst:** Anna Knoebel

Project: Central Sands

Analyte: Nitrate-Nitrite N

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
B18E022-BLKA	U	mg/L	U	0.05	0.10						
B18E022-BLKB	U	mg/L	U	0.05	0.10						
B18E022-BLKC	U	mg/L	U	0.05	0.10						
B18E022-BLKD	U	mg/L	U	0.05	0.10						
B18E022-BLKE	U	mg/L	U	0.05	0.10						
B18E022-BLKF	U	mg/L	U	0.05	0.10						
B18E022-BLKG	U	mg/L	U	0.05	0.10						
B18E022-BLKH	U	mg/L	U	0.05	0.10						
B18E022-BLKI	U	mg/L	U	0.05	0.10						
B18E022-BS1	2.18	mg/L		0.05	0.10	2.000		109%	90-110		
B18E022-BS2	2.11	mg/L		0.05	0.10	2.000		105%	90-110		
B18E022-BS3	2.19	mg/L		0.05	0.10	2.000		109%	90-110		
B18E022-BS4	2.22	mg/L	Q	0.05	0.10	2.000		111%	90-110		
B18E022-BS5	2.10	mg/L		0.05	0.10	2.000		105%	90-110		
B18E022-BS6	2.21	mg/L	Q	0.05	0.10	2.000		111%	90-110		
B18E022-BS7	2.21	mg/L	Q	0.05	0.10	2.000		111%	90-110		
B18E022-BS8	2.20	mg/L		0.05	0.10	2.000		110%	90-110		
B18E022-BS9	2.16	mg/L		0.05	0.10	2.000		108%	90-110		

REVIEWED
By AK at 1:59 pm, May 22, 2018

Anna Knoebel, Chemist

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1351

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Quality Control Summary

Date: 05/22/18 **Analyst:** Anna Knoebel

Project: Central Sands

Analyte: Nitrate-Nitrite N

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
B18E022-BSA	**2.20**	mg/L		0.05	0.10	2.000		110%	90-110		
B18E022-BSB	**2.17**	mg/L		0.05	0.10	2.000		108%	90-110		
B18E022-BSC	**2.60**	mg/L	Q	0.05	0.10	2.000		130%	90-110		
B18E022-BSD	**2.12**	mg/L		0.05	0.10	2.000		106%	90-110		
B18E022-BSE	**2.15**	mg/L		0.05	0.10	2.000		107%	90-110		
B18E022-BSF	**2.11**	mg/L		0.05	0.10	2.000		105%	90-110		
B18E022-BSG	**2.14**	mg/L		0.05	0.10	2.000		107%	90-110		
B18E022-BSH	**2.16**	mg/L		0.05	0.10	2.000		108%	90-110		
B18E022-BSI	**2.12**	mg/L		0.05	0.10	2.000		106%	90-110		
B18E022-DUP1 Source: 1805005-05	**U**	mg/L	U	0.05	0.10		U				20
B18E022-DUP2 Source: 1805005-26	**42.2**	mg/L		0.50	1.00		44.3			5	20
B18E022-DUP3 Source: 1805005-47	**U**	mg/L	U	0.05	0.10		U				20
B18E022-DUP4 Source: 1805007-08	**U**	mg/L	U	0.05	0.10		U				20
B18E022-DUP5 Source: 1805007-29	**27.2**	mg/L		0.50	1.00		26.8			1	20
B18E022-MRL1	**0.10**	mg/L		0.05	0.10	0.1000		95%	49-136		
B18E022-MS1 Source: 1805005-05	**2.45**	mg/L	Q	0.05	0.10	2.000	U	123%	90-110		
B18E022-MS2 Source: 1805005-26	**44.1**	mg/L	Q	0.50	1.00	2.000	44.3	NR	90-110		
B18E022-MS3 Source: 1805005-47	**2.36**	mg/L	Q	0.05	0.10	2.000	U	118%	90-110		

REVIEWED
By AK at 1:59 pm, May 22, 2018

Anna Knoebel, Chemist

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1351

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Quality Control Summary

Date: 05/22/18 **Analyst:** Anna Knoebel

Project: Central Sands

Analyte: Nitrate-Nitrite N

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction

QC Sample Name	Result	Units	Flags / Qualifiers	MDL	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	% RPD	% RPD Limit
B18E022-MS4 Source: 1805007-08	U	mg/L	U, Q	0.05	0.10	2.000	U	%	90-110		
B18E022-MS5 Source: 1805007-29	**29.7**	mg/L	Q	0.50	1.00	2.000	26.8	145%	90-110		

Notes and Definitions

K	The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
*	This Quality Control measure meets the requirements of the CRL SOP for this analyte.
U	Not Detected
NR	Not Reported
Q	QC limit Exceeded

REVIEWED
By AK at 1:59 pm, May 22, 2018

Anna Knoebel, Chemist

Report Name: 1805005,1805007 Nitrate-Nitrite N DA, Enzymatic reduction FINAL May 22 18 1351

Nonconformance Report (NCR)

ID 14118
Current Step is Complete
Initiated by Snyder Robert
Submit for Evaluation by Snyder Robert on 5/2/2018 4:33:22 PM
Submit for Simple CA by Persoon Carolyn on 5/3/2018 9:02:26 AM
Requested Action Completed; Submit for Review by Snyder Robert on 5/3/2018 9:30:51 AM
Submit for CA Effectiveness by Ockrassa Davis Angela on 5/7/2018 10:52:11 AM
2. CA Effective; Send for Final Approval by Ockrassa Davis Angela on 5/7/2018 10:52:54 AM
Approve: Close Corrective Action by Persoon Carolyn on 5/7/2018 1:48:24 PM
Launched Workflow Record Disposition (ID: 14162) on 5/7/2018 1:48:32 PM
Record Disposition Launched; NCR Complete by Workflow Action Executor on 5/7/2018 1:48:33 PM

Complete

Short Title
CC and/or NCR short title
Multiple issues

NCR - Project Name and/or Work Order Number
MUST MATCH THE PROJECT NAME OR WO EXACTLY AS DOCUMENTED IN LIMS.
Central Sands

NCR - Nonconformance Description
Include incident description, activity and note the associated work has stopped
7 coolers arrived for this project at CRL today. Upon unpacking, inventorying, and pH checks the following problems were discovered:

1 CoC to sample bottle name mismatch (C7b Dup)
1 sample bottle with two sample names written on it (A4b)
4 sample bottles with no sample names written on them (A1a, A2b, D1b)
14 sample bottles that were underpreserved (C11a, C13a, B1a, B2a, B3b, B4b, C3a, C6b, A1a, A2b, D1b(x2), D2a, D4b)

Checkin has stopped

CA - Incident Date
The date in which the incident (causing the finding) occurred
5/2/2018

NCR - CC Notification, if any
Description of client contact
Telephone contact was made by sample custodian to field crew due to lack of email access. Field crew was able to clarify incorrect/missing sample names. Customer requests that CRL analyze underpreserved A&I samples and flag data, and preserve metals samples here. They will also preserve samples that require preservation down to pH 1 for the rest of the project. The amount of fine sediment in the samples is speculated to be reacting with the preservative.

NCR - Simple CA Recommendation (Initiator)
Proceed with checkin

NCR - CC Attachment

NCR - DD Evaluation
The Deputy Director must read the report (below) and evaluate the non-conformance by completing the 2 fields (Left-handside is a drop down menu: Right-hand side are instructions) directly below.

NCR Evaluation	NCR Comment
Non-Significant	Client clarified issues identified with naming and CoC, analyst will adjust pH, move forward analyzing per clients request and apply applicable flags. Sample custodian followed-up with field crew to assure naming and pH requirements are met.

CA - Simple CA Root Cause
State the incident's root cause (root cause analysis does not apply in this route)
sampling/naming protocol not follwoing in the field

Responsible Party
Snyder Robert(549)

NCR - CA Responsible Party Group
To which group does the assigned CA party belong to?
Lab-wide: Sample Custodian

NCR - Simple CA Recommendation Response, if any (DD)
Sample custodian already followed-up with field crew to prevent future misnaming,CoC, and preservation issues. Move forward with analysis as requested by client and apply appropriate flags if needed.

NCR - Additional Action Request
Simple CA additional information or action request

CA Additional Action Request

NCR - Rejected by DD Comment

CA - Simple Action Taken

CA - Simple CA Taken Date	CA - Simple CA Taken Description
5/3/2018	proceeding with login

CA - Simple Action NOT Taken
State the reason for not performing the requested action

CA - Simple Action Not Taken

NCR - CRL Affected Staff Notification (Simple CA)
Please note how CRL affected staff was notified of the resolution to this NCR. Making reference to an attached PDF is acceptable.

see pdf

CA - Simple Action Taken Attachment
14122 NCR 14118.pdf

CA - Deficiency Claim Investigation

CA - Investigation Date	CA - Deficiency Claim Investigation

CA - Root Cause Analysis
This field documents the RCA and proposed root cause determination.

CA - Root Cause Analysis (RCA)	CA - Root Cause (proposed)

CA - Proposed Action
The person investigating the incident should propose appropriate immediate, short-term and long-term (addressing the root cause) corrective actions. Not all incidents require the stated three types of CAs. In some cases, one type of CA can address another or all.

CA - Proposed Corrective Action(s)

CA - Responsible Party for Action Taken

CA - Investigation Supportive Documentation

CA - Investigation Review Return Comments (QAC)

CA - Corrective Action Taken
Please REVIEW the CA report below and pay special attention to the 'PROPOSED CORRECTIVE ACTIONS' and 'INVESTIGATION REVIEW' fields for instructions.

CA - Date Corrective Action (s) Taken	CA - Person Who Performed the Action	CA - Description of Corrective Action(s) Taken

NCR - CRL Affected Staff Notification (Formal CA)
Please note how CRL affected staff was notified of the resolution to this NCR. Making reference to an attached PDF is acceptable.

CA - Action Taken Attachment

CA - Request for Additional Action or Information
After reviewing the CA taken; Addition info or action is needed

CA - Additional Action Request Date	

	CA - Additional Action or Info Request Description

CA - Corrective Action Taken Review (QAC)

CA - Corrective Action(s) Taken Review (QAC) Date	CA - Corrective Action(s) Taken Review (QAC)
5/7/2018	Analytical staff notification summarizing this NCR and client request was sent via email on 05/03/18 - see attachment. The sample custodian completed sample login.

CA - Root Cause (determined by QAC)

NCR - Review of Actions Attachment (by QAC)

CA - Wait for Effectiveness Date
After the CA is effective, REMOVE THE DATE from this field and continue.

CA - Effectiveness Comment
CA effectiveness does not apply since the root cause of this incident is outside of the CRL's control. This nonconformance is due to at least one field documentation (COCs, sample tags, etc.) discrepancy and/or sample preservation issues (field/shipping). The client and appropriate CRL staff members were notified of the incident and its resolution.

CA - Not Effective Comment

NCR - CA Effectiveness Review Attachment

CA - Approved Comment (DD)
approved -client follow-up completed and samples being anlayzed

CA - Not Approved Comment (DD)

Date: 5/21/2018

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Data Verification Checklist

Work Order: 1805005, 1805007 **Project:** Central Sands

Analysis: Nitrate-Nitrite N DA, Enzymatic reduction **CRL SOP Used:** AIG031B v4

Electronic Pathway(s):
I:\Projects (New File Structure)\C.R.L. (PTs, IDOCs, ADOCs)\Performance Testing - WW NSI (WP-245)\1.A&I\1804002\DA-4\NO3NO2N \1804002_5005_07

File Name(s): ARC_60.bak

General Information

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
1	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	YES	YES / NO / NA
2	Was customer contact communication included?	YES	YES / NO / NA
3	Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	YES	YES / NO / NA
4	Were all samples prepared and analyzed within holding times?	YES	YES / NO / NA

Sample Results

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
5	Were calculations checked?	YES	YES / NO / NA
6	Were all analyte results checked?	YES	YES / NO / NA
7	Were all results for soil and sediment samples reported on a dry weight basis?	NA	YES / NO / NA
8	Were % moisture (or solids) reported for all soil and sediment samples?	NA	YES / NO / NA
9	Other than those results < RL, were all other raw values bracketed by calibration standards?	YES	YES / NO / NA
10	Are the RLs for each method analyte included in the laboratory data package?	YES	YES / NO / NA
11	Are MDLs/RLs adjusted for dilutions?	YES	YES / NO / NA
12	Were the raw data (for example, chromatograms, spectral data) reviewed?	YES	YES / NO / NA
13	Were data associated with manual integrations flagged on the raw data?	NA	YES / NO / NA

Standards

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
14	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources as specified in the analytical SOP?	YES	YES / NO / NA
15	Were standard/reagent preparations checked (preparation date, expiration date, parent standard IDs, etc.), if applicable?	YES	YES / NO / NA

Batch Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)

Batch Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
16	Were appropriate type(s) of blanks analyzed?	YES	YES / NO / NA
17	Were blanks analyzed at the appropriate frequency?	YES	YES / NO / NA
18	Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	YES	YES / NO / NA
19	Were blank concentrations <= MDL or RL, as applicable in the analytical SOP?	YES	YES / NO / NA
20	Was each LCS/SRM taken through the entire analytical procedure, including prep and cleanup steps?	YES	YES / NO / NA
21	Were LCSs/SRMs analyzed at the required frequency?	YES	YES / NO / NA
22	Were LCS/SRM %Rs within the laboratory QC limits or other acceptance criteria? See narrative	NO	YES / NO / NA
23	Were the project/method specified analytes included in the MS?	YES	YES / NO / NA
24	Were MS analyzed at the appropriate frequency?	YES	YES / NO / NA
25	Were MS %Rs within the laboratory QC limits? See narrative	NO	YES / NO / NA
26	Were appropriate analytical duplicates analyzed for each matrix?	YES	YES / NO / NA
27	Were analytical duplicates analyzed at the appropriate frequency?	YES	YES / NO / NA
28	Were RPDs or relative standard deviations within the laboratory QC limits or other acceptance criteria?	YES	YES / NO / NA
29	Were RLs analyzed at the appropriate frequency?	YES	YES / NO / NA
30	Were RL recoveries within the laboratory QC limits?	YES	YES / NO / NA

Calibration

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
31	Were calibration correlation coefficient or other acceptance criteria met?	YES	YES / NO / NA
32	Was the number of calibration standards recommended in the method used for all analytes?	YES	YES / NO / NA
33	Were all points generated between the lowest and highest standard used to calculate the curve?	YES	YES / NO / NA
34	Are calibration data available for all instruments used?	YES	YES / NO / NA

Calibration Verification

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
35	Was the absolute value of the analyte concentration in the ICB/CCB <= MDL or RL, as applicable in the analytical SOP?	YES	YES / NO / NA
36	Was the calibration curve verified for each analyte?	YES	YES / NO / NA
37	Has the calibration curve been verified using an appropriate second source standard?	YES	YES / NO / NA
38	Were ICV/CCV analyzed at the method-required frequency?	YES	YES / NO / NA
39	Were ICV/CCV %R within the laboratory QC limits?	YES	YES / NO / NA

Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
40	QC limits in LIMS checked against the SOP?	YES	YES / NO / NA

Quality Control

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
41	Were percent differences, recoveries, and the linearity within the QC limits specified in the method? See # 22 and 25	NO	YES / NO / NA
42	Were QC charts checked if a QC audit, excluding matrix QC (MS or DUP), was out of limit?	YES	YES / NO / NA

Supporting Data

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
43	Were support equipment data (balance verification, data logs, logbook entries, etc.) included in data package?	YES	YES / NO / NA
44	Were approved spreadsheet(s) used?	YES	YES / NO / NA

Document Verification

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
45	Is the MDL or RL study up-to-date for each reported analyte?	YES	YES / NO / NA
46	Is documentation of the analyst's capability up-to-date and on file?	YES	YES / NO / NA
47	Are the procedures for compound/analyte identification documented?	YES	YES / NO / NA
48	Are laboratory SOPs current and on file for the method performed?	YES	YES / NO / NA
49	Were data evaluated against project QAPP or Sample Plan and documented in case narrative?	YES	YES / NO / NA

Accreditation

Question #	Question	Analyst Response (YES/ NO/ NA)	Reviewer Response (Circle Response)
50	ANAB logo used appropriately?	YES	YES / NO / NA

Signature: REVIEWED By AK at 11:45 am, May 21, 2018 FAA

Date: 5/22/2018

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1804002-01								
1805005-01								pH = 2
1805005-02								pH = 2
1805005-03								pH = 2
1805005-04								pH = 2
1805005-05								pH = 2
1805005-06								pH = 2
1805005-07								pH = 2
1805005-08								pH = 2
1805005-09								pH = 2
1805005-10								pH = 2
1805005-11								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

ED_004625A_00009148-00071

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-12								pH = 3
1805005-13								pH = 2
1805005-14								pH = 2
1805005-15								pH = 2
1805005-16								pH = 2
1805005-17								pH = 2
1805005-18								pH = 2
1805005-19								pH = 2
1805005-20								pH = 2
1805005-21								pH = 2
1805005-22								pH = 2
1805005-23								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-24								pH = 2
1805005-25								pH = 2
1805005-26								pH = 2
1805005-27								pH = 2
1805005-28								pH = 2
1805005-29								pH = 3
1805005-30								pH = 2
1805005-31								pH = 2
1805005-32								pH = 2
1805005-33								pH = 2
1805005-34								pH = 2
1805005-35								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

ED_004625A_00009148-00073

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-36								pH = 2
1805005-37								pH = 2
1805005-38								pH = 2
1805005-39								pH = 2
1805005-40								pH = 2
1805005-41								pH = 3
1805005-42								pH = 2
1805005-43								pH = 2
1805005-44								pH = 2
1805005-45								pH = 3
1805005-46								pH = 2
1805005-47								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-48								pH = 3
1805005-49								pH = 3
1805005-50								pH = 2
1805005-51								pH = 2
1805005-52								pH = 2
1805005-53								pH = 2
1805005-54								pH = 2
1805007-01								pH = 1
1805007-02								pH = 1
1805007-03								pH = 1
1805007-04								pH = 1
1805007-05								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-06								pH = 1
1805007-07								pH = 1
1805007-08								pH = 1
1805007-09								pH = 1
1805007-10								pH = 1
1805007-11								pH = 1
1805007-12								pH = 1
1805007-13								pH = 1
1805007-14								pH = 1
1805007-15								pH = 1
1805007-16								pH = 1
1805007-17								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

ED_004625A_00009148-00076

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-18								pH = 1
1805007-19								pH = 1
1805007-20								pH = 1
1805007-21								pH = 1
1805007-22								pH = 1
1805007-23								pH = 1
1805007-24								pH = 1
1805007-25								pH = 1
1805007-26								pH = 1
1805007-27								pH = 1
1805007-28								pH = 1
1805007-29								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

ED_004625A_00009148-00077

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-30								pH = 1
1805007-31								pH = 1
1805007-32								pH = 1
1805007-33								pH = 1
1805007-34								pH = 1
1805007-35								pH = 1
1805007-36								pH = 1
1805007-37								pH = 1
1805007-38								pH = 1
1805007-39								pH = 1
1805007-40								pH = 1
1805007-41								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Chicago Regional Laboratory
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Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-42								pH = 1
1805007-43								pH = 1
1805007-44								pH = 1
B18E022-BLK1								Same preparation
B18E022-BLK2								Same preparation
B18E022-BLK3								Same preparation
B18E022-BLK4								Same preparation
B18E022-BLK5								Same preparation
B18E022-BLK6								Same preparation
B18E022-BLK7								Same preparation
B18E022-BLK8								Same preparation
B18E022-BLK9								Same preparation

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
B18E022-BLKA								Same preparation
B18E022-BS1		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS2		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS3		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS4		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS5		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS6		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS7		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS8		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS9		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BSA		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-DUP1	1805005-05							

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
B18E022-DUP2	1805005-26							
B18E022-DUP3	1805005-47							
B18E022-DUP4	1805007-08							
B18E022-DUP5	1805007-29							
B18E022-MRL1		Pre-Prep	16F0809	50	50			
B18E022-MS1	1805005-05	Pre-Prep	16F0809	1000	50			
B18E022-MS2	1805005-26	Pre-Prep	16F0809	1000	50			
B18E022-MS3	1805005-47	Pre-Prep	16F0809	1000	50			
B18E022-MS4	1805007-08	Pre-Prep	16F0809	1000	50			
B18E022-MS5	1805007-29	Pre-Prep	16F0809	1000	50			

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/9/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/9/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	

PREPARATION REAGENTS/STANDARDS/PIPETTES:

16F0809:	NO3NO2N-SpikeMix(100 mg/L)	Prepared: Jun-08-16	Expires: Mar-04-19
17K1605:	NO3NO2N (enz)- pH 7.5 Phosphate Buffer Sol.	Prepared: Nov-16-17	Expires: May-16-18
18C2001:	Pipette (Electronic) -- 50 -1,000 uL	Prepared: Feb-19-18	Expires: Aug-31-18
18C2002:	Pipette (Electronic) -- 250 - 5,000 uL	Prepared: Feb-19-18	Expires: Aug-31-18
18C2003:	Pipette (Electronic) -- 500 - 10,000 uL	Prepared: Feb-19-18	Expires: Aug-31-18
18C2004:	Pipette (Electronic) -- 5 -100 uL	Prepared: Feb-19-18	Expires: Aug-31-18

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

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Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1804002-01								
1805005-01								pH = 2
1805005-02								pH = 2
1805005-03								pH = 2
1805005-04								pH = 2
1805005-05								pH = 2
1805005-06								pH = 2
1805005-07								pH = 2
1805005-08								pH = 2
1805005-09								pH = 2
1805005-10								pH = 2
1805005-11								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

ED_004625A_00009148-00083

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-12								pH = 3
1805005-13								pH = 2
1805005-14								pH = 2
1805005-15								pH = 2
1805005-16								pH = 2
1805005-17								pH = 2
1805005-18								pH = 2
1805005-19								pH = 2
1805005-20								pH = 2
1805005-21								pH = 2
1805005-22								pH = 2
1805005-23								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-24								pH = 2
1805005-25								pH = 2
1805005-26								pH = 2
1805005-27								pH = 2
1805005-28								pH = 2
1805005-29								pH = 3
1805005-30								pH = 2
1805005-31								pH = 2
1805005-32								pH = 2
1805005-33								pH = 2
1805005-34								pH = 2
1805005-35								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-36								pH = 2
1805005-37								pH = 2
1805005-38								pH = 2
1805005-39								pH = 2
1805005-40								pH = 2
1805005-41								pH = 3
1805005-42								pH = 2
1805005-43								pH = 2
1805005-44								pH = 2
1805005-45								pH = 3
1805005-46								pH = 2
1805005-47								pH = 2

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805005-48								pH = 3
1805005-49								pH = 3
1805005-50								pH = 2
1805005-51								pH = 2
1805005-52								pH = 2
1805005-53								pH = 2
1805005-54								pH = 2
1805007-01								pH = 1
1805007-02								pH = 1
1805007-03								pH = 1
1805007-04								pH = 1
1805007-05								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Chicago Regional Laboratory
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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-06								pH = 1
1805007-07								pH = 1
1805007-08								pH = 1
1805007-09								pH = 1
1805007-10								pH = 1
1805007-11								pH = 1
1805007-12								pH = 1
1805007-13								pH = 1
1805007-14								pH = 1
1805007-15								pH = 1
1805007-16								pH = 1
1805007-17								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-18								pH = 1
1805007-19								pH = 1
1805007-20								pH = 1
1805007-21								pH = 1
1805007-22								pH = 1
1805007-23								pH = 1
1805007-24								pH = 1
1805007-25								pH = 1
1805007-26								pH = 1
1805007-27								pH = 1
1805007-28								pH = 1
1805007-29								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-30								pH = 1
1805007-31								pH = 1
1805007-32								pH = 1
1805007-33								pH = 1
1805007-34								pH = 1
1805007-35								pH = 1
1805007-36								pH = 1
1805007-37								pH = 1
1805007-38								pH = 1
1805007-39								pH = 1
1805007-40								pH = 1
1805007-41								pH = 1

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
1805007-42								pH = 1
1805007-43								pH = 1
1805007-44								pH = 1
B18E022-BLK1								Same preparation
B18E022-BLK2								Same preparation
B18E022-BLK3								Same preparation
B18E022-BLK4								Same preparation
B18E022-BLK5								Same preparation
B18E022-BLK6								Same preparation
B18E022-BLK7								Same preparation
B18E022-BLK8								Same preparation
B18E022-BLK9								Same preparation

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
B18E022-BLKA								Same preparation
B18E022-BLKB								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKC								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKD								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKE								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKF								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKG								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKH								Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BLKI								Added for extra BLK and BS instrument automatically ran b/c of reruns

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
B18E022-BS1		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS2		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS3		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS4		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS5		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS6		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS7		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS8		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BS9		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BSA		Pre-Prep	16F0809	1000	50			Same preparation
B18E022-BSB		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BSC		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

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AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
B18E022-BSD		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BSE		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BSF		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BSG		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BSH		Pre-Prep	16F0809	1000	50			Added for extra BLK and BS instrument automatically ran b/c of reruns
B18E022-BSI		Pre-Prep	16F0809	1000	50			
B18E022-DUP1	1805005-05							
B18E022-DUP2	1805005-26							
B18E022-DUP3	1805005-47							
B18E022-DUP4	1805007-08							

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

ED_004625A_00009148-00094

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	
B18E022-DUP5	1805007-29							
B18E022-MRL1		Pre-Prep	16F0809	50	50			
B18E022-MS1	1805005-05	Pre-Prep	16F0809	1000	50			
B18E022-MS2	1805005-26	Pre-Prep	16F0809	1000	50			
B18E022-MS3	1805005-47	Pre-Prep	16F0809	1000	50			
B18E022-MS4	1805007-08	Pre-Prep	16F0809	1000	50			
B18E022-MS5	1805007-29	Pre-Prep	16F0809	1000	50			

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

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Date: 5/21/2018

AUTOMATED ANALYZER BENCH SHEET

Batch Number: B18E022

Date: 5/21/2018

Analyst (initials): AK

Analyses Included On This Benchsheet

Nitrate-Nitrite N DA, Enzymatic reduction

Sample Number	Source ID	Spike Type	Spike ID	Spike Amount (uL)	Final Volume (mL)	Dilution (mL)		Comments
						Initial	Final	

PREPARATION REAGENTS/STANDARDS/PIPETTES:

16F0809:	NO3NO2N-SpikeMix(100 mg/L)	Prepared: Jun-08-16	Expires: Mar-04-19
17K1605:	NO3NO2N (enz)- pH 7.5 Phosphate Buffer Sol.	Prepared: Nov-16-17	Expires: May-16-18
18C2001:	Pipette (Electronic) -- 50 -1,000 uL	Prepared: Feb-19-18	Expires: Aug-31-18
18C2002:	Pipette (Electronic) -- 250 - 5,000 uL	Prepared: Feb-19-18	Expires: Aug-31-18
18C2003:	Pipette (Electronic) -- 500 - 10,000 uL	Prepared: Feb-19-18	Expires: Aug-31-18
18C2004:	Pipette (Electronic) -- 5 -100 uL	Prepared: Feb-19-18	Expires: Aug-31-18

Batch Comments: All samples were centrifuged and batch QC and standards were prepared 5-9-18. Analysis will be performed on 5-10-18.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

Print Date: 5/10/2018

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Reagent Preparation Bench Sheet

Parameter / SOP #: NO3NO2N/AIG031B v4

Prepared by: Anna Knoebel

Reagent: NO3NO2N (enz)- NED

Preparation Date: May-10-18

LIMS ID: 18E1006

Expiration Date: Nov-10-18

Chemical Name (Formula)	LIMS ID	Mass or Volume (specify units)
N-1-Naphthylethylenediamine 2 HCl (C12H14N2.2HCl)	3070114	0.1194 g

Total Volume : 100 mL

Comments :

Balance # 17
Reviewed with Work Order#:_____

Analyst Signature: Anna Knoebel

Study	Sample	NELACAnalyteNumber	Analyte	NELACMethodCode	NELACTechCode
WP-245	PEI-138	1820	Nitrate-Nitrite as N		

MethodDescription	<	Result	EPACode	AnalysisDate	Analyst'sName	Units	InstrumentID
ASTM D7781-14		8.63	EP00037	5/10/2018	AK	mg/L	DA-4

Balance Check

BALANCE ID: #17
DATE: 5/10/2018
ANALYST: Francis Awanya
WEIGHT SET ID: TROEMNER S/N: ~~4000017548~~ 4000020557 FAA 5/10/2018
INITIAL & DATE: FAA 5/10/2018

Standard Weight (g)	Actual Weight (g)	Deviation (g) [Standard Weight - Actual
0.1000	0.1001	-0.0001
0.2000	0.2000	0.0000
0.5000	0.5000	0.0000
1.0000	1.0000	0.0000
2.0000	2.0000	0.0000
5.0000	5.0000	0.0000
10.0000	10.0001	-0.0001
20.0000	20.0000	0.0000
50.0000	50.0000	0.0000
100.0000	99.9999	0.0001

Balance Tolerance

*For weights 50 g - 100 g, deviation should be ± 0.0006 g
*For weights 20 g and under, deviation should be ± 0.0001 g

Version 1.0
Updated May 14, 2013
Reviewed by AO on 05/14/13

Print Date: 5/10/2018

ANALYSIS SEQUENCE **Printed: 5/21/2018 9:41:34AM**

18E1001

Instrument: DA-4 **Analysis Date:** May-10-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
1		18E1001-CAL1	ER-0	QC	18E0931	
2		18E1001-CAL2	ER-5	QC	18E1011	
3		18E1001-CAL3	ER-5	QC	18E1012	
4		18E1001-CAL4	ER-5	QC	18E1013	
5		18E1001-CAL5	ER-5	QC	18E1014	
6		18E1001-CAL6	ER-5	QC	18E1015	
7		18E1001-CAL7	ER-5	QC	18E1016	
8		18E1001-CAL8	ER-5	QC	18E0933	
9		18E1001-PEM1	EFF CHECK	QC	18E1001	
10		B18E022-BLK1	Blank	QC		
11		B18E022-BS1	LCS	QC		
12		18E1001-ICB1	CCB	QC		
13		18E1001-ICV1	CCV	QC	18E0932	
14		B18E022-MRL1	MRL Check	QC		
15	B	1805005-01	A1a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
16	B	1805005-02	A1b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
17	B	1805005-04	A2b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
18	B	1805005-05	A3a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
19		B18E022-DUP1	Duplicate	QC		
20		B18E022-MS1	Matrix Spike	QC		
21	B	1805005-06	A3b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
22		B18E022-BLK2	Blank	QC		

REVIEWED
By AK at 9:43 am, May 21, 2018

Analyst Initials and Date

ED_004625A_00009148-00101

ANALYSIS SEQUENCE

Printed: 5/21/2018 9:41:34AM

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
23		B18E022-BS2	LCS	QC		
24		18E1001-CCB1	CCB	QC		
25		18E1001-CCV1	CCV	QC	18E0932	
26	B	1805005-07	A4 Equip	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
27	B	1805005-08	A3a (Dup)	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
28	B	1805005-09	FB1	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
29	B	1805005-10	A4a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
30	B	1805005-11	A4b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
31	B	1805005-12	B1a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 3
32	A	1804002-01	PEI-138	Nitrate-Nitrite N DA, Enzymatic reduction		
33	B	1805005-13	B1b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
34	B	1805005-03	A2a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
35	B	1805005-14	B2a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
36		B18E022-BLK3	Blank	QC		
37		B18E022-BS3	LCS	QC		
38		18E1001-CCB2	CCB	QC		
39		18E1001-CCV2	CCV	QC	18E0932	
40	B	1805005-15	B2b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
41	B	1805005-16	B3a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
42	B	1805005-17	B3b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
43	B	1805005-20	C1a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
44	B	1805005-21	C1b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
45	B	1805005-23	C2b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
46		B18E022-BLK4	Blank	QC		

REVIEWED
By AK at 9:43 am, May 21, 2018

Analyst Initials and Date

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
47		B18E022-BS4	LCS	QC		
48		18E1001-CCB3	CCB	QC		
49		18E1001-CCV3	CCV	QC	18E0932	
50	B	1805005-25	C3b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
51	B	1805005-18	B4a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
52	B	1805005-19	B4b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
53		B18E022-BLK5	Blank	QC		
54		B18E022-BS5	LCS	QC		
55		18E1001-CCB4	CCB	QC		
56		18E1001-CCV4	CCV	QC	18E0932	
57	B	1805005-22	C2a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
58	B	1805005-24	C3a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
59	B	1805005-32	FB2	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
60	B	1805005-33	C7 equip	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
61	B	1805005-26	C5Aa	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
62		B18E022-DUP2	Duplicate	QC		
63		B18E022-MS2	Matrix Spike	QC		
64	B	1805005-28	C6a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
65		B18E022-BLK6	Blank	QC		
66		B18E022-BS6	LCS	QC		
67		18E1001-CCB5	CCB	QC		
68		18E1001-CCV5	CCV	QC	18E0932	
69	B	1805005-29	C6b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 3
70	B	1805005-30	C7a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2

REVIEWED
By AK at 9:43 am, May 21, 2018

Analyst Initials and Date

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
71	B	1805005-36	C8b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
72	B	1805005-31	C7b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
73	B	1805005-37	C9a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
74	B	1805005-38	C9b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
75		B18E022-BLK7	Blank	QC		
76		B18E022-BS7	LCS	QC		
77		18E1001-CCB6	CCB	QC		
78		18E1001-CCV6	CCV	QC	18E0932	
79	B	1805005-41	C11a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 3
80	B	1805005-42	C11b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
81	B	1805005-43	C12a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
82	B	1805005-44	C12b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
83	B	1805005-27	C5Ab	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
84	B	1805005-45	C13a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 3
85	B	1805005-34	C7b Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
86	B	1805005-35	C8a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
87	B	1805005-46	C13b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
88	B	1805005-47	D1a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
89		B18E022-BLK8	Blank	QC		
90		B18E022-BS8	LCS	QC		
91		18E1001-CCB7	CCB	QC		
92		18E1001-CCV7	CCV	QC	18E0932	
93	B	1805005-39	C10a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
94	B	1805005-40	C10b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2

REVIEWED
By AK at 9:43 am, May 21, 2018

Analyst Initials and Date

ANALYSIS SEQUENCE

Printed: 5/21/2018 9:41:34AM

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
95		B18E022-DUP3	Duplicate	QC		
96		B18E022-MS3	Matrix Spike	QC		
97	B	1805005-48	D1b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 3
98	B	1805005-49	D2a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 3
99		B18E022-BLK9	Blank	QC		
100		B18E022-BS9	LCS	QC		
101		18E1001-CCB8	CCB	QC		
102		18E1001-CCV8	CCV	QC	18E0932	
103	B	1805007-01	D5a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
104	B	1805007-02	D5b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
105	B	1805007-03	D6a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
106	B	1805007-04	D6b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
107	B	1805007-05	D7 equip	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
108	B	1805007-06	FB3	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
109		B18E022-BLKA	Blank	QC		
110		B18E022-BSA	LCS	QC		
111		18E1001-CCB9	Calibration Blank	QC		
112		18E1001-CCV9	CCV	QC	18E0932	
113	B	1805005-50	D2b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
114	B	1805005-51	D3a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
115	B	1805005-52	D3b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
116	B	1805005-53	D4a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
117	B	1805005-54	D4b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 2
118	B	1805007-11	D8b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1

REVIEWED
By AK at 9:44 am, May 21, 2018

Analyst Initials and Date

ANALYSIS SEQUENCE

Printed: 5/21/2018 9:41:34AM

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
119	B	1805007-12	D9a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
120		B18E022-BLKB	Blank	QC		
121		B18E022-BSB	LCS	QC		
122		18E1001-CCBA	CCB	QC		
123		18E1001-CCVA	CCV	QC	18E0932	
124	B	1805007-07	D7a Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
125	B	1805007-13	D9b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
126	B	1805007-15	D10a Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
127		B18E022-BLKC	Blank	QC		
128		B18E022-BSC	LCS	QC		
129		18E1001-CCBB	CCB	QC		
130		18E1001-CCVB	CCV	QC	18E0932	
131	B	1805007-08	D7a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
132		B18E022-DUP4	Duplicate	QC		
133	B	1805007-09	D7b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
134	B	1805007-10	D8a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
135	B	1805007-14	D10a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
136	B	1805007-16	D10b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
137		B18E022-BLKD	Blank	QC		
138		B18E022-BSD	LCS	QC		
139		18E1001-CCBC	CCB	QC		
140		18E1001-CCVC	CCV	QC	18E0932	
141	B	1805007-22	E2a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
142	B	1805007-23	E2b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1

REVIEWED
By AK at 9:44 am, May 21, 2018

Analyst Initials and Date

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
143	B	1805007-24	E2a Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
144	B	1805007-25	E2b Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
145		B18E022-BLKE	Blank	QC		
146		B18E022-BSE	LCS	QC		
147		18E1001-CCBD	CCB	QC		
148		18E1001-CCVD	CCV	QC	18E0932	
149		B18E022-BLKF	Blank	QC		
150		B18E022-BSF	LCS	QC		
151		18E1001-CCBE	CCB	QC		
152		18E1001-CCVE	CCV	QC	18E0932	
153	B	1805007-30	E5a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
154	B	1805007-31	E5b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
155	B	1805007-37	E8b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
156	B	1805007-38	E10a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
157	B	1805007-39	E10a Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
158	B	1805007-40	E10b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
159	B	1805007-41	FB4	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
160	B	1805007-42	E10 Equip	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
161	B	1805007-43	E9a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
162		B18E022-BLKG	Blank	QC		
163		B18E022-BSG	LCS	QC		
164		18E1001-CCBF	CCB	QC		
165		18E1001-CCVF	CCV	QC	18E0932	
166		B18E022-MS4	Matrix Spike	QC		

REVIEWED
By AK at 9:44 am, May 21, 2018

Analyst Initials and Date

ANALYSIS SEQUENCE

Printed: 5/21/2018 9:41:34AM

18E1001

Instrument: DA-4 **Analysis Date:** May-09-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
167	B	1805007-17	D10b Dup	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
168	B	1805007-18	D11a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
169	B	1805007-32	E6a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
170	B	1805007-26	E3a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
171	B	1805007-27	E3b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
172	B	1805007-28	E4a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
173	B	1805007-29	E4b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
174		B18E022-DUP5	Duplicate	QC		
175		B18E022-MS5	Matrix Spike	QC		
176		B18E022-BLKH	Blank	QC		
177		B18E022-BSH	LCS	QC		
178		18E1001-CCBG	CCB	QC		
179		18E1001-CCVG	CCV	QC	18E0932	
180	B	1805007-33	E6b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
181	B	1805007-34	E7a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
182	B	1805007-35	E7b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
183	B	1805007-36	E8a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
184	B	1805007-44	E9b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
185	B	1805007-19	D11b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
186	B	1805007-20	E1a	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
187	B	1805007-21	E1b	Nitrate-Nitrite N DA, Enzymatic reduction		pH = 1
188		B18E022-BLKI	Blank	QC		
189		B18E022-BSI	LCS	QC		
190		18E1001-CCBH	CCB	QC		

REVIEWED
By AK at 9:44 am, May 21, 2018

Analyst Initials and Date

ANALYSIS SEQUENCE

18E1001

Instrument: DA-4 **Analysis Date:** May-10-18

Calibration ID: UNASSIGNED **Matrix:** Water

Order	Container	Lab Number	Sample name or QC sample designation	Analysis	STD ID	Comments
191		18E1001-CCVH	CCV	QC	18E0932	

ANALYSIS REAGENTS/STANDARDS:

16F0809: NO3NO2N-SpikeMix(100 mg/L)

18E0931: NO3NO2N (enz)- WCS (0.0 mg/L)

18E0932: NO3NO2N (enz)- WcS (3.0 mg/L)

18E0933: NO3NO2N (enz)- WCS (5.0 mg/L)

18E1001: NO3NO2N (enz)- Eff. Check (2.5 mg/L)

18E1011: NO3NO2N (enz)- WCS (0.10 mg/L)

18E1012: NO3NO2N (enz)- WCS (0.25 mg/L)

18E1013: NO3NO2N (enz)- WCS (0.5 mg/L)

18E1014: NO3NO2N (enz)- WCS (1.0 mg/L)

18E1015: NO3NO2N (enz)- WCS (1.25 mg/L)

18E1016: NO3NO2N (enz)- WCS (2.5 mg/L)

17K1603: NO3NO2N (enz)- Sulfanilamide (SAN)

18E1003: NO3NO2N (enz)-NADH

18E1004: NO3NO2N (enz)-AtNaR Solution

18E1006: NO3NO2N (enz)- NED

REVIEWED
By AK at 9:44 am, May 21, 2018

Analyst Initials and Date

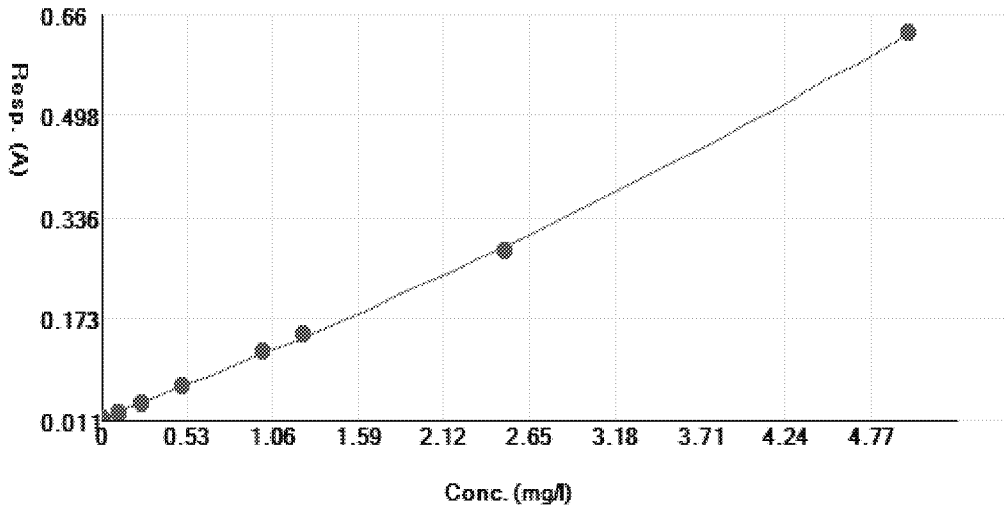
Calibration results

Nitrate-ER Version number 1.4

Date	5/10/2018	**User**	Anna Knoebel
Time	12:17:28PM	**Software version: 6.0.1**	
Analyzer name	DA-4		

Test	Nitrate-ER	**Coeff. of deter.**	0.999662
Status	Accepted	**Total factor**	8.146
Accepted	5/10/2018 12:17 PM		
Checked	5/10/2018 12:17 PM	Zero-order factor	0.014
User name	Anna Knoebel	1st order factor	0.097
Comment		2nd order factor	0.005
Errors			

Cal/Ctrl	Response	Calc. conc.	Given conc.	Lot	Errors
ER-0	0.012	-0.02341	0.00000	Default	
ER-5	0.022	0.07923	0.10000	Default	
ER-5	0.038	0.24325	0.25000	Default	
ER-5	0.065	0.51088	0.50000	Default	
ER-5	0.121	1.03866	1.00000	Default	
ER-5	0.149	1.29760	1.25000	Default	
ER-5	0.282	2.44530	2.50000	Default	
ER-5	0.629	5.00790	5.00000	Default	
EFF CHECK	0.307	2.6444	2.5000	Default	



Results by Test

Anna Knoebel

REVIEWED
By AK at 9:20 am, May 21, 2018

Date 5/15/2018 **User** ~~Nidia Fuentes~~

Time 7:17:00AM **Software version: 6.0.1**

Test name Nitrate-ER

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
1	BLK	1.4	0.0498	mg/l		0.0	man acc	
2	BS	1.4	2.1790	mg/l		0.0	man acc	
3	CCB	1.4	-0.0146	mg/l		0.0	man acc	Outside calibration
4	CCV	1.4	3.2329	mg/l		0.0	man acc	
5	B18E022-MRL1	1.4	0.0953	mg/l		0.0	man acc	
6	1804002-01	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
7	1805005-01	1.4	0.0738	mg/l		0.0	man acc	
8	1805005-02	1.4	1.7859	mg/l		0.0	man acc	
9	1805005-03	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
10	1805005-04	1.4	0.0341	mg/l		0.0	man acc	
11	1805005-05	1.4	0.0058	mg/l		0.0	man acc	
12	B18E022-DUP1	1.4	-0.0135	mg/l		0.0	man acc	Outside calibration
13	B18E022-MS1	1.4	2.4540	mg/l		0.0	man acc	
14	1805005-06	1.4	0.1230	mg/l		0.0	man acc	
15	BLK	1.4	-0.0269	mg/l		0.0	man acc	Outside calibration
16	BS	1.4	2.1092	mg/l		0.0	man acc	
17	CCB	1.4	-0.0053	mg/l		0.0	man acc	Outside calibration
18	CCV	1.4	3.3077	mg/l		0.0	man acc	QC, Rule 1 violated
19	1805005-07	1.4	-0.0307	mg/l		0.0	man acc	Outside calibration
20	1805005-08	1.4	0.0050	mg/l		0.0	man acc	
21	1805005-09	1.4	-0.0477	mg/l		0.0	man acc	Outside calibration
22	1805005-10	1.4	1.2504	mg/l		0.0	man acc	
23	1805005-11	1.4	4.6074	mg/l		0.0	man acc	
24	1805005-12	1.4	0.0207	mg/l		0.0	man acc	
25	1804002-01	1.4	8.6276	mg/l		9.0	man acc	
26	1805005-13	1.4	0.0414	mg/l		0.0	man acc	
27	1805005-03	1.4	36.9166	mg/l		9.0	man acc	
28	1805005-14	1.4	0.0253	mg/l		0.0	man acc	
29	BLK	1.4	0.0127	mg/l		0.0	man acc	
30	BS	1.4	2.1865	mg/l		0.0	man acc	
31	CCB	1.4	-0.0268	mg/l		0.0	man acc	Outside calibration
32	CCV	1.4	3.2875	mg/l		0.0	man acc	

REVIEWED
By AK at 9:30 am, May 21, 2018

w/in limits

REVIEWED
By AK at 9:30 am, May 21, 2018

w/in limits

w/in limits

w/in limits

REVIEWED
By AK at 9:31 am, May 21, 2018

w/in limits

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
33	1805005-15	1.4	0.2295	mg/l		0.0	man acc	
34	1805005-16	1.4	4.5272	mg/l		0.0	man acc	
35	1805005-17	1.4	0.9600	mg/l		0.0	man acc	
36	1805005-18	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
37	1805005-19	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
38	1805005-20	1.4	0.1215	mg/l		0.0	man acc	
39	1805005-21	1.4	0.0243	mg/l		0.0	man acc	
40	1805005-22	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
41	1805005-23	1.4	3.3899	mg/l		0.0	man acc	
42	1805005-24	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
43	BLK	1.4	-0.0223	mg/l		0.0	man acc	Outside calibration w/in limits
44	BS	1.4	2.2159	mg/l		0.0	man acc	QC, Rule 1 violated
45	CCB	1.4	-0.0004	mg/l		0.0	man acc	Outside calibration w/in limits
46	CCV	1.4	3.1095	mg/l		0.0	man acc	
47	1805005-25	1.4	2.6199	mg/l		0.0	man acc	
48	1805005-26	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
49	B18E022-DUP2	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
50	B18E022-MS2	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
51	1805005-27	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
52	1805005-28	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
53	1805005-18	1.4	33.2868	mg/l		9.0	man acc	
54	1805005-19	1.4	27.9837	mg/l		9.0	man acc	
55	1805005-29	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
56	1805005-30	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
57	BLK	1.4	-0.0428	mg/l		0.0	man acc	Outside calibration w/in limits
58	BS	1.4	2.0987	mg/l		0.0	man acc	
59	CCB	1.4	0.0002	mg/l		0.0	man acc	
60	CCV	1.4	3.2503	mg/l		0.0	man acc	
61	1805005-22	1.4	42.0729	mg/l		9.0	man acc	
62	1805005-24	1.4	27.6830	mg/l		9.0	man acc	
63	1805005-31	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
64	1805005-32	1.4	0.0128	mg/l		0.0	man acc	
65	1805005-33	1.4	-0.0079	mg/l		0.0	man acc	Outside calibration
66	1805005-26	1.4	44.2906	mg/l		9.0	man acc	
67	B18E022-DUP2	1.4	42.2483	mg/l		9.0	man acc	
68	B18E022-MS2	1.4	44.0789	mg/l		9.0	man acc	
~~69~~	~~1805005-27~~	~~1.4~~	~~58.9571~~	~~mg/l~~		~~9.0~~	~~man acc~~	~~Test limit High, Outside calibration~~
70	1805005-28	1.4	36.7683	mg/l		9.0	man acc	
71	BLK	1.4	-0.0342	mg/l		0.0	man acc	Outside calibration

REVIEWED
By AK at 9:32 am, May 21, 2018

REVIEWED
By AK at 9:32 am, May 21, 2018

REVIEWED
By AK at 9:22 am, May 21, 2018

Dilution needed

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
72	BS	1.4	2.2115	mg/l		0.0	man acc	QC, Rule 1 violated
73	CCB	1.4	-0.0232	mg/l		0.0	man acc	Outside calibration w/in limits
74	CCV	1.4	3.1803	mg/l		0.0	man acc	REVIEWED By AK at 9:32 am, May 21, 2018
75	1805005-29	1.4	25.2764	mg/l		9.0	man acc	
76	1805005-30	1.4	31.6699	mg/l		9.0	man acc	
77	1805005-34	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
78	1805005-35	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
79	1805005-36	1.4	2.9474	mg/l		0.0	man acc	
80	1805005-31	1.4	37.2880	mg/l		9.0	man acc	
81	1805005-37	1.4	2.4843	mg/l		0.0	man acc	
82	1805005-38	1.4	0.6929	mg/l		0.0	man acc	
83	1805005-39	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
84	1805005-40	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
85	BLK	1.4	-0.0250	mg/l		0.0	man acc	Outside calibration w/in limits
86	BS	1.4	2.2124	mg/l		0.0	man acc	QC, Rule 1 violated
87	CCB	1.4	-0.0310	mg/l		0.0	man acc	Outside calibration w/in limits
88	CCV	1.4	3.1279	mg/l		0.0	man acc	REVIEWED By AK at 9:33 am, May 21, 2018
89	1805005-41	1.4	0.0035	mg/l		0.0	man acc	
90	1805005-42	1.4	0.5724	mg/l		0.0	man acc	
91	1805005-43	1.4	0.0288	mg/l		0.0	man acc	
92	1805005-44	1.4	0.0571	mg/l		0.0	man acc	
93	1805005-27	1.4	59.2039	mg/l		19.0	man acc	
94	1805005-45	1.4	0.0245	mg/l		0.0	man acc	
95	1805005-34	1.4	36.4587	mg/l		9.0	man acc	
96	1805005-35	1.4	17.1340	mg/l		9.0	man acc	
97	1805005-46	1.4	0.0220	mg/l		0.0	man acc	
98	1805005-47	1.4	-0.0195	mg/l		0.0	man acc	Outside calibration
99	BLK	1.4	0.0070	mg/l		0.0	man acc	
100	BS	1.4	2.2017	mg/l		0.0	man acc	QC, Rule 1 violated w/in limits
101	CCB	1.4	-0.0364	mg/l		0.0	man acc	Outside calibration w/in limits
102	CCV	1.4	3.3024	mg/l		0.0	man acc	QC, Rule 1 violated w/in limits
103	1805005-39	1.4	8.3331	mg/l		9.0	man acc	REVIEWED By AK at 9:33 am, May 21, 2018
104	1805005-40	1.4	16.7219	mg/l		9.0	man acc	
105	B18E022-DUP3	1.4	0.0059	mg/l		0.0	man acc	
106	B18E022-ms3	1.4	2.3597	mg/l		0.0	man acc	
107	1805005-48	1.4	0.0246	mg/l		0.0	man acc	
108	1805005-49	1.4	2.8639	mg/l		0.0	man acc	
109	1805005-50	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
110	1805005-51	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
111	1805005-52	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
112	1805005-53	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
113	BLK	1.4	-0.0338	mg/l		0.0	man acc	Outside calibration w/in limits
114	BS	1.4	2.1578	mg/l		0.0	man acc	REVIEWED By AK at 9:33 am, May 21, 2018
115	CCB	1.4	-0.0332	mg/l		0.0	man acc	Outside calibration
116	CCV	1.4	3.0866	mg/l		0.0	man acc	w/in limits
117	1805005-54	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
118	1805007-01	1.4	0.2914	mg/l		0.0	man acc	
119	1805007-02	1.4	1.3575	mg/l		0.0	man acc	
120	1805007-03	1.4	-0.0675	mg/l		0.0	man acc	Outside calibration
121	1805007-04	1.4	-0.0146	mg/l		0.0	man acc	Outside calibration
122	1805007-05	1.4	-0.0218	mg/l		0.0	man acc	Outside calibration
123	1805007-06	1.4	-0.0322	mg/l		0.0	man acc	Outside calibration
124	1805007-07	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
~~125~~	~~1805007-08~~	~~1.4~~	~~-0.0791~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~Outside calibration~~ Repeated
~~126~~	~~B18E022-DUP4~~	~~1.4~~	~~-0.1253~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~Outside calibration~~ Repeated
127	BLK	1.4	-0.0105	mg/l		0.0	man acc	Outside calibration
128	BS	1.4	2.2018	mg/l		0.0	man acc	QC, Rule 1 violated w/in limits
129	CCB	1.4	-0.0206	mg/l		0.0	man acc	Outside calibration
130	CCV	1.4	3.2685	mg/l		0.0	man acc	w/in limits
131	1805005-50	1.4	32.6519	mg/l		9.0	man acc	REVIEWED By AK at 9:34 am, May 21, 2018
132	1805005-51	1.4	21.1210	mg/l		9.0	man acc	
133	1805005-52	1.4	23.4202	mg/l		9.0	man acc	
134	1805005-53	1.4	20.5325	mg/l		9.0	man acc	
135	1805005-54	1.4	50.6223	mg/l		9.0	man acc	Outside calibration
~~136~~	~~B18E022-MS4~~	~~1.4~~	~~-0.0493~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~Outside calibration~~ Repeated
137	1805007-09	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
138	1805007-10	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
139	1805007-11	1.4	0.0384	mg/l		0.0	man acc	
140	1805007-12	1.4	-0.0957	mg/l		0.0	man acc	Outside calibration
141	BLK	1.4	-0.0379	mg/l		0.0	man acc	Outside calibration w/in limits
142	BS	1.4	2.1679	mg/l		0.0	man acc	
143	CCB	1.4	-0.0169	mg/l		0.0	man acc	Outside calibration w/in limits
144	CCV	1.4	3.2542	mg/l		0.0	man acc	REVIEWED By AK at 9:34 am, May 21, 2018
145	1805007-07	1.4	33.6554	mg/l		9.0	man acc	
146	1805007-13	1.4	2.2934	mg/l		0.0	man acc	
147	1805007-14	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
148	1805007-15	1.4	-0.0774	mg/l		0.0	man acc	Outside calibration
149	BLK	1.4	-0.0400	mg/l		0.0	man acc	Outside calibration

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
150	BS	1.4	2.6001	mg/l		0.0	man acc	QC, Rule 1 violated
151	CCB	1.4	0.0061	mg/l		0.0	man acc	
152	CCV	1.4	3.2200	mg/l		0.0	man acc	
153	1805007-08	1.4	-0.0648	mg/l		0.0	man acc	Outside calibration
154	B18E022-DUP4	1.4	-0.0528	mg/l		0.0	man acc	Outside calibration
~~155~~	~~B18E022-MS4~~	~~1.4~~	~~-0.0105~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~Outside calibration~~ Repeated
156	1805007-09	1.4	36.7642	mg/l		9.0	man acc	
157	1805007-10	1.4	42.3099	mg/l		9.0	man acc	
158	1805007-14	1.4	14.2766	mg/l		9.0	man acc	
159	1805007-16	1.4	-0.0291	mg/l		0.0	man acc	Outside calibration
160	1805007-17	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
161	1805007-18	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
162	1805007-19	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
163	BLK	1.4	-0.0465	mg/l		0.0	man acc	Outside calibration w/in limits
164	BS	1.4	2.1181	mg/l		0.0	man acc	
165	CCB	1.4	-0.0203	mg/l		0.0	man acc	Outside calibration w/in limits
166	CCV	1.4	3.2054	mg/l		0.0	man acc	REVIEWED By AK at 9:35 am, May 21, 2018
167	1805007-20	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
168	1805007-21	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
169	1805007-22	1.4	1.5183	mg/l		0.0	man acc	
170	1805007-23	1.4	3.1539	mg/l		0.0	man acc	
171	1805007-24	1.4	1.5807	mg/l		0.0	man acc	
172	1805007-25	1.4	3.1585	mg/l		0.0	man acc	
173	1805007-26	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
174	1805007-27	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
175	1805007-28	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
176	1805007-29	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
177	BLK	1.4	-0.0476	mg/l		0.0	man acc	Outside calibration w/in limits
178	BS	1.4	2.1491	mg/l		0.0	man acc	
179	CCB	1.4	-0.0161	mg/l		0.0	man acc	Outside calibration w/in limits
180	CCV	1.4	3.1586	mg/l		0.0	man acc	
181	1805007-17	1.4	-	mg/l		9.0	man rej	REVIEWED By AK at 9:35 am, May 21, 2018
182	1805007-18	1.4	-	mg/l		9.0	man rej	
183	1805007-19	1.4	-	mg/l		9.0	man rej	
184	B18E022-DUP5	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
185	1805007-20	1.4	-	mg/l		9.0	man rej	
186	B18E022-MS5	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
187	1805007-21	1.4	-	mg/l		9.0	man rej	
188	1805007-30	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
189	1805007-31	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
190	1805007-32	1.4	-	mg/l		0.0	man rej	
~~191~~	~~BLK~~	~~1.4~~	~~-0.0395~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~Outside calibration~~
~~192~~	~~BS~~	~~1.4~~	~~2.1442~~	~~mg/l~~		~~0.0~~	~~man acc~~	Not used
~~193~~	~~CCB~~	~~1.4~~	~~-0.0333~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~Outside calibration~~
~~194~~	~~CCV~~	~~1.4~~	~~3.3157~~	~~mg/l~~		~~0.0~~	~~man acc~~	~~QC, Rule 1 violated~~
195	1805007-26	1.4	-	mg/l		9.0	man rej	REVIEWED By AK at 9:29 am, May 21, 2018
196	1805007-27	1.4	-	mg/l		9.0	man rej	
197	1805007-28	1.4	-	mg/l		9.0	man rej	
198	1805007-29	1.4	-	mg/l		9.0	man rej	
199	1805007-33	1.4	-	mg/l		0.0	man rej	
200	1805007-34	1.4	-	mg/l		0.0	man rej	Outside calibration
201	B18E022-DUP5	1.4	-	mg/l		9.0	man rej	
202	1805007-35	1.4	-	mg/l		0.0	man rej	Outside calibration
203	B18E022-MS5	1.4	-	mg/l		9.0	man rej	
204	1805007-36	1.4	-	mg/l		0.0	man rej	Outside calibration
205	BLK	1.4	-0.0455	mg/l		0.0	man acc	Outside calibration w/in limits
206	BS	1.4	2.1056	mg/l		0.0	man acc	
207	CCB	1.4	-0.0224	mg/l		0.0	man acc	Outside calibration w/in limits
208	CCV	1.4	3.1852	mg/l		0.0	man acc	
209	1805007-30	1.4	38.6894	mg/l		9.0	man acc	REVIEWED By AK at 9:30 am, May 21, 2018
210	1805007-31	1.4	26.9346	mg/l		9.0	man acc	
211	1805007-37	1.4	-0.0739	mg/l		0.0	man acc	Outside calibration
212	1805007-38	1.4	1.1315	mg/l		0.0	man acc	
213	1805007-39	1.4	1.2211	mg/l		0.0	man acc	
214	1805007-40	1.4	0.0617	mg/l		0.0	man acc	
215	1805007-41	1.4	0.0368	mg/l		0.0	man acc	
216	1805007-42	1.4	0.0085	mg/l		0.0	man acc	
217	1805007-43	1.4	-0.0614	mg/l		0.0	man acc	Outside calibration
218	1805007-44	1.4	-	mg/l		0.0	aut rej	Dil. limit High, Outside calibration
219	BLK	1.4	-0.0313	mg/l		0.0	man acc	Outside calibration
220	BS	1.4	2.1363	mg/l		0.0	man acc	
221	CCB	1.4	-0.0223	mg/l		0.0	man acc	Outside calibration w/in limits
222	CCV	1.4	3.2530	mg/l		0.0	man acc	
223	B18E022-MS4	1.4	-0.0619	mg/l		0.0	man acc	Outside calibration w/in limits
224	1805007-17	1.4	16.2353	mg/l		9.0	man acc	
225	1805007-18	1.4	32.1641	mg/l		9.0	man acc	REVIEWED By AK at 9:30 am, May 21, 2018
226	1805007-32	1.4	0.1490	mg/l		0.0	man acc	
227	1805007-26	1.4	6.5817	mg/l		9.0	man acc	

Nbr.	Sample/ctrl ID	Test version	Result	Unit	Note	Dil. 1 +	Status	Errors
228	1805007-27	1.4	7.4018	mg/l		9.0	man acc	
229	1805007-28	1.4	23.2816	mg/l		9.0	man acc	
230	1805007-29	1.4	26.8194	mg/l		9.0	man acc	
231	B18E022-DUP5	1.4	27.1834	mg/l		9.0	man acc	
232	B18E022-MS5	1.4	29.7126	mg/l		9.0	man acc	
233	BLK	1.4	-0.0841	mg/l		0.0	man acc	QC, Outside calibration, Rule 1 violate
234	BS	1.4	2.1612	mg/l		0.0	man acc	
235	CCB	1.4	-0.0360	mg/l		0.0	man acc	Outside calibration w/in limits
236	CCV	1.4	3.2151	mg/l		0.0	man acc	REVIEWED By AK at 9:36 am, May 21, 2018
237	1805007-33	1.4	0.1503	mg/l		0.0	man acc	
238	1805007-34	1.4	-0.0857	mg/l		0.0	man acc	Outside calibration
239	1805007-35	1.4	-0.0330	mg/l		0.0	man acc	Outside calibration
240	1805007-36	1.4	-0.1126	mg/l		0.0	man acc	Outside calibration
241	1805007-44	1.4	20.2441	mg/l		9.0	man acc	
242	1805007-19	1.4	23.9402	mg/l		9.0	man acc	
243	1805007-20	1.4	27.2324	mg/l		9.0	man acc	REVIEWED By AK at 9:36 am, May 21, 2018
244	1805007-21	1.4	25.6870	mg/l		9.0	man acc	
245	BLK	1.4	-0.0190	mg/l		0.0	man acc	Outside calibration w/in limits
246	BS	1.4	2.1189	mg/l		0.0	man acc	
247	CCB	1.4	-0.0239	mg/l		0.0	man acc	Outside calibration w/in limits
248	CCV	1.4	3.1006	mg/l		0.0	man acc	REVIEWED By AK at 9:36 am, May 21, 2018

Environmental Protection Agency Region 5

Chicago Regional Laboratory

Print Date: 5/10/2018

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Reagent Preparation Bench Sheet

Parameter / SOP #: NO3NO2N/AIG031B v3

Reagent: NO3NO2N (enz)- Sulfanilamide (SAN)

LIMS ID: 18E1009

Prepared by: Anna Knoebel

Preparation Date: May-10-18

Expiration Date: Nov-10-18

Chemical Name (Formula)	LIMS ID	Mass or Volume (specify units)
Sulfanilamide (4-NH2C6H4SO2NH2)	3070113	1.0209 g
Hydrochloric Acid (HCl)	2052410	30 mL

Total Volume : 100 mL

Comments :

Balance # 17
Reviewed with Work Order#: _____

Analyst Signature: Anna Knoebel

The reagent was prepared on 5-10-18, but not used for the analysis on 5-10-18.

REVIEWED
By AK at 2:22 pm, May 18, 2018