



**P:** +1 806 661 3100  
**F:** +1 806 661 3134  
**W:** cabotcorp.com

Cabot Corporation  
11561 US Hwy 60  
P.O. Box 5001  
Pampa, TX 79065  
USA

March 11, 2020

Texas Commission on Environmental Quality  
Water Quality Division  
Applications Review and Processing Team (MC-148)  
P.O. Box 13087  
Austin, Texas 78711-3087

RE: Cabot Corporation, Cabot Development and Manufacturing Center  
TPDES Industrial Wastewater Permit Renewal  
Permit No. WQ0004226000

In accordance with the rules and regulations of the Texas Commission on Environmental Quality (TCEQ), Cabot Corporation hereby submits one (1) original and three (3) complete copies of the enclosed application for the renewal of the above referenced permit, TPDES Permit No. WQ0004226000.

Please be advised that due to the necessity to resample for boron and mercury, data for those constituents for Table 16 of the Technical Report, page 37 of 73, will be provided separately.

For questions and clarifications, please contact me at (806) 661-3130 or by email at [Ashlee.Green@cabotcorp.com](mailto:Ashlee.Green@cabotcorp.com).

Sincerely,

A handwritten signature in blue ink that reads "Ashlee Green". The signature is written in a cursive, flowing style.

Ashlee Green  
Environmental Manager  
Cabot Corporation

cc: Ashlee Green, Environmental Manager, Cabot Corporation  
Chad Clements, Facilities General Manager, Cabot Corporation  
Janice King, Project Manager, AECOM  
Glendora Lopez, Environmental Scientist, AECOM



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Pampa, TX 79065  
USA

March 11, 2020

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashiers Office (MC-214)  
12100 Park 35 Circle  
Austin, Texas 78753

RE: Cabot Corporation, Cabot Development and Manufacturing Center  
TPDES Industrial Wastewater Permit Renewal  
Permit No. WQ0004226000

Please accept the enclosed check (#0004015610) of \$1,215.00 made payable to the Texas Commission on Environmental Quality in payment of the Industrial Wastewater Permit Application fees for the renewal of TPDES Permit No. WQ0004226000.

For questions related to this payment, please contact me at (806) 661-3130 or by email at [Ashlee.Green@cabotcorp.com](mailto:Ashlee.Green@cabotcorp.com).

Sincerely,

A handwritten signature in blue ink that reads "Ashlee Green".

Ashlee Green  
Environmental Manager  
Cabot Corporation

cc: Ashlee Green, Environmental Manager, Cabot Corporation  
Chad Clements, Facilities General Manager, Cabot Corporation  
Janice King, Project Manager, AECOM  
Glendora Lopez, Environmental Scientist, AECOM

VERIFY THE AUTHENTICITY OF THIS MULTITONE SECURITY DOCUMENT.

CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

CABOT CORPORATION  
ONE POINT ROYAL  
4400 NORTH POINT PKWY, SUITE 200  
ALPHARETTA, GA 30022



04015610

January 30, 2020

5-13/110 MA  
VOID AFTER 180 DAYS

XXXXXXXXXXXX

Amount: \*\*One Thousand Two Hundred Fifteen dollars and 00 cents\*\*

\*\*\*\$1,215.00\*\*

Pay to  
the  
order of

TEXAS COMMISSION ON ENVIRONMENTAL Q  
LTY  
REVENUES SECTION (MC 214)  
P.O. BOX 13089  
AUSTIN, TX 78711-3089

Bank of America N.A.  
Massachusetts

AUTHORIZED SIGNATURE

36826

770057980599

Delivered  
Wednesday 3/25/2020 at 9:12 am

**DELIVERED**

Signed for by: D.ALAMAN

[GET STATUS UPDATES](#)[OBTAIN PROOF OF DELIVERY](#)**FROM**

AECOM  
Regina Geren  
9400 Amberglen Blvd  
Austin, TX US 78729  
512 419-6387

**TO**

TCEQ - Financial Administration Div  
Cashiers Office  
12015 Park 35 Cir  
MC-214  
AUSTIN, TX US 78753  
512 239-1000

**Shipment Facts****TRACKING NUMBER**

770057980599

**SERVICE**

FedEx Standard Overnight

**WEIGHT**

0.5 lbs / 0.23 kgs

**DELIVERY ATTEMPTS**

1

**DELIVERED TO**

Shipping/Receiving

**TOTAL PIECES**

1

**TOTAL SHIPMENT WEIGHT**

0.5 lbs / 0.23 kgs

**TERMS**

Shipper

**PURCHASE ORDER NUMBER**

60614594

**INVOICE NUMBER**

60614594

**DEPARTMENT NUMBER**

60614594

**SHIPPER REFERENCE**

04104108.1

**PACKAGING**

FedEx Envelope

**SPECIAL HANDLING SECTION**

Deliver Weekday

**STANDARD TRANSIT**

3/25/2020 by 3:00 pm

**SHIP DATE**

Tue 3/24/2020

**ACTUAL DELIVERY**

Wed 3/25/2020 9:12 am

### Travel History

[Local Scan Time](#)

Wednesday , 3/25/2020

|         |            |                               |
|---------|------------|-------------------------------|
| 9:12 am | Austin, TX | Delivered                     |
| 8:20 am | AUSTIN, TX | On FedEx vehicle for delivery |
| 6:23 am | AUSTIN, TX | At local FedEx facility       |

---

Tuesday , 3/24/2020

|         |            |                              |
|---------|------------|------------------------------|
| 9:38 pm | AUSTIN, TX | At destination sort facility |
| 9:08 pm | AUSTIN, TX | Left FedEx origin facility   |
| 5:51 pm | AUSTIN, TX | Picked up                    |

---

Thursday , 3/19/2020

|         |  |                                    |
|---------|--|------------------------------------|
| 8:17 am |  | Shipment information sent to FedEx |
|---------|--|------------------------------------|

---

770057955576

Delivered  
Wednesday 3/25/2020 at 9:12 am

**DELIVERED**

Signed for by: D.ALAMAN

[GET STATUS UPDATES](#)[OBTAIN PROOF OF DELIVERY](#)**FROM**

AECOM  
Regina Geren  
9400 Amberglen Blvd  
Austin, TX US 78729  
512 419-6387

**TO**

TCEQ - Water Quality Division  
Applications Review and Processing  
12015 Park 35 Cir  
MC-148  
AUSTIN, TX US 78753  
512 239-1000

**Shipment Facts****TRACKING NUMBER**

770057955576

**SERVICE**

FedEx Standard Overnight

**WEIGHT**

3 lbs / 1.36 kgs

**DELIVERY ATTEMPTS**

1

**DELIVERED TO**

Shipping/Receiving

**TOTAL PIECES**

1

**TOTAL SHIPMENT WEIGHT**

3 lbs / 1.36 kgs

**TERMS**

Shipper

**PURCHASE ORDER NUMBER**

60614594

**INVOICE NUMBER**

60614594

**DEPARTMENT NUMBER**

60614594

**SHIPPER REFERENCE**

04104108.1

**PACKAGING**

FedEx Box

**SPECIAL HANDLING SECTION**

Deliver Weekday

**STANDARD TRANSIT**

3/25/2020 by 3:00 pm

**SHIP DATE**

Tue 3/24/2020

**ACTUAL DELIVERY**

Wed 3/25/2020 9:12 am

### Travel History

[Local Scan Time](#)

Wednesday , 3/25/2020

|         |            |                               |
|---------|------------|-------------------------------|
| 9:12 am | Austin, TX | Delivered                     |
| 8:20 am | AUSTIN, TX | On FedEx vehicle for delivery |
| 6:05 am | AUSTIN, TX | At local FedEx facility       |

---

Tuesday , 3/24/2020

|          |            |                              |
|----------|------------|------------------------------|
| 10:00 pm | AUSTIN, TX | At destination sort facility |
| 9:27 pm  | AUSTIN, TX | Left FedEx origin facility   |
| 5:51 pm  | AUSTIN, TX | Picked up                    |

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Thursday , 3/19/2020

|         |  |                                    |
|---------|--|------------------------------------|
| 8:17 am |  | Shipment cancelled by sender       |
| 8:14 am |  | Shipment information sent to FedEx |

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**CABOT CORPORATION PAMPA  
DEVELOPMENT AND MANUFACTURING  
CENTER**

**TPDES INDUSTRIAL WASTEWATER PERMIT  
RENEWAL  
PERMIT NO. WQ0004226000**

*Prepared for:*

**Cabot Corporation**

**Pampa, TX**

March 11, 2020

**AECOM**

9400 Amberglen Blvd.

Austin, Texas 78729

Tel: 512.454/4797

Fax: 512.454/8807

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### SECTION

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### ATTACHMENTS

|             |   |
|-------------|---|
| AR1.0-2a    | Delegation of Authority   |
| AR1.0-9b    | Original USGS Map   |
| SPIF 8      | USGS Topographic Map  |
| SPIF 9      | Property Photographs  |
| AR1.0-2c    | Core Data Form  |
| AR1.0-7d    | Public Viewing Web Address and Certification of Diligent Search |
| WKSHT3.0-8  | Soil Sample Analysis  |
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| TR1.0-1d    | Facility Map  |
| TR1.0-2b    | Water/Wastewater Flow Balance Schematic                         |
| TR1.0-5d    | Boiler Water Chemical Additive SDS                              |
| WKSHT 3.0   | Annual Crop Plan  |
| WKSHT 3.0-4 | Well Map  |

# Section 1.0

## Submission Checklist

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## TCEQ INDUSTRIAL WASTEWATER PERMIT APPLICATION

### INDUSTRIAL ADMINISTRATIVE REPORT

**Complete and submit this checklist with the application.**

APPLICANT NAME: Cabot Development and Manufacturing Center

PERMIT NUMBER: WQ0004226000

**Check Y for each of the following items included in this application. If an item was not included, check N.**

|                           | Y                                   | N                                   |                           | Y                                   | N                                   |
|---------------------------|-------------------------------------|-------------------------------------|---------------------------|-------------------------------------|-------------------------------------|
| Administrative Report 1.0 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Worksheet 8.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Administrative Report 1.1 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Worksheet 9.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| SPIF                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Worksheet 10.0            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Core Data Form            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Worksheet 11.0            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Technical Report 1.0      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Worksheet 11.1            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Worksheet 1.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Worksheet 11.2            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Worksheet 2.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Worksheet 11.3            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Worksheet 3.0             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Original USGS Map         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Worksheet 3.1             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Affected Landowners Map   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Worksheet 3.2             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Landowner Disk or Labels  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Worksheet 3.3             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Flow Diagram              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Worksheet 4.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Site Drawing              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Worksheet 4.1             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Original Photographs      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Worksheet 5.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Solids Management Program | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Worksheet 6.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Water Balance             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Worksheet 7.0             | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                           |                                     |                                     |

**For Commission Use Only:**  
 Segment Number: \_\_\_\_\_ County: \_\_\_\_\_ Expiration Date: \_\_\_\_\_  
 Proposed/Current Permit Number: \_\_\_\_\_ Region: \_\_\_\_\_

## Section 2.0

### Introduction

## INTRODUCTION

Cabot Corporation is submitting a permit renewal and amendment application for Texas Pollutant Discharge Elimination System (TPDES) permit number WQ0004226000 for the Cabot Pampa Development and Manufacturing Center.

The following attachments are submitted in accordance with the requirements of the TCEQ Core Data Form, Submission Checklist, Administrative Report, Supplemental Permit Information Form (SPIF), and Technical Report:

|             |   |
|-------------|---|
| AR1.0-2a    | Delegation of Authority   |
| AR1.0-9b    | Original USGS Map   |
| SPIF 8      | USGS Topographic Map  |
| SPIF 9      | Property Photographs  |
| AR1.0-2c    | Core Data Form  |
| AR1.0-7d    | Public Viewing Web Address and Certification of Diligent Search |
| WKSHT 3.0-8 | Soil Sample Analysis  |
| TR1.0-1c    | Safety Data Sheets for Chemicals Used On Site                   |
| TR1.0-1d    | Facility Map  |
| TR1.0-2b    | Water/Wastewater Flow Balance Schematic                         |
| TR1.0-5d    | Boiler Water Chemical Additive SDS                              |
| WKSHT 3.0   | Annual Crop Plan  |
| WKSHT 3.0-4 | Well Map  |

# Section 3.0

## Administrative Report

(TCEQ-10411 (05/10/2019) Industrial Wastewater Permit Application – Administrative Report)

# INDUSTRIAL ADMINISTRATIVE REPORT 1.0

The following information **is required** for **all** applications for TPDES permits and TLAPs.

**1. TYPE OF APPLICATION AND FEES (Instructions, Page 21)**

a. Permit No.: WQ0004226000      Expiration Date: 10/1/2020

EPA ID No.: TXDO39031828

b. Check the box next to the appropriate application type.

- |   |  |
|---|--|
| <input type="checkbox"/> New TPDES permit<br><input type="checkbox"/> Major amendment with renewal<br><input type="checkbox"/> Renewal with changes<br><input type="checkbox"/> Minor amendment without renewal<br><input type="checkbox"/> Stormwater only discharge | <input type="checkbox"/> New TLAP permit<br><input type="checkbox"/> Major amendment without renewal<br><input checked="" type="checkbox"/> Renewal without changes<br><input type="checkbox"/> Minor modification without renewal |
|---|--|

c. If applying for an **amendment** or **modification** of a permit, describe the request in detail: \_\_\_\_\_

d. Application Fee

**Check the box next to the amount submitted for the application fee:**

| EPA Classification  | New                              | Major Amendment<br>(With or Without<br>Renewal) | Renewal<br>(With or Without<br>Changes)     | Minor Amendment/<br>Minor<br>Modification<br>(Without<br>Renewal) |
|---|----------------------------------|---|---|---|
| Minor facility not subject to EPA categorical effluent guidelines ( <i>40 CFR Parts 400-471</i> ) | <input type="checkbox"/> \$350   | <input type="checkbox"/> \$350                  | <input type="checkbox"/> \$315              | <input type="checkbox"/> \$150                                    |
| Minor facility subject to EPA categorical effluent guidelines ( <i>40 CFR Parts 400-471</i> )     | <input type="checkbox"/> \$1,250 | <input type="checkbox"/> \$1,250                | <input checked="" type="checkbox"/> \$1,215 | <input type="checkbox"/> \$150                                    |
| Major facility  | N/A *                            | <input type="checkbox"/> \$2,050                | <input type="checkbox"/> \$2,015            | <input type="checkbox"/> \$450                                    |

\* All facilities are designated as minors until formally classified as a major by EPA.

**e. Payment Information:**

Mailed    Check or money order number: [Click to enter text.](#)

Check or money order amount: [Click to enter text.](#)

Named printed on check or money order: [Click to enter text.](#)

ePAY    Voucher number: [Click to enter text.](#)

Copy of voucher attached?  Yes    **Attachment:** [Click to enter text.](#)

## 2. APPLICANT INFORMATION (Instructions, Pages 21-22)

### a. Facility Owner (Owner of the facility must apply for the permit.)

- Provide the legal name of the entity (applicant) applying for this permit: Cabot Corporation  
(The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.)
- If the applicant is currently a customer with the TCEQ, provide the Customer Number, which can be located using the [TCEQ's Central Registry Customer Search](#)<sup>1</sup>: CN600124911
- Provide the name and title of the person signing the application. The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Mr.  Ms.  First/Last Name: Ashlee Green

Title: Environmental Manager

Credential:

### b. Co-applicant Information

- Provide the legal name of the co-applicant applying for this permit, if applicable: N/A  
(The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.)
- If the co-applicant is currently a customer with the TCEQ, provide the Customer Number, which can be located using the [TCEQ's Central Registry Customer Search](#): CN
- Provide the name and title of the person signing the application. The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Mr.  Ms.  First/Last Name:

Title:

Credential:

- Provide a brief description of the need for a co-permittee:

### c. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of the Administrative Report.

**Attachment:** Attachment AR1.0-2c – Core Data Form

## 3. APPLICATION CONTACT INFORMATION (Instructions, Page 22)

If the TCEQ needs additional information regarding this application, who should be contacted?

a. Mr.  Ms.  First/Last Name: Ashlee Green

Credential:

Organization Name: Cabot Corporation

Title: Environmental Manager

Mailing Address: P.O. Box 5001

City/State/ZIP Code: Pampa, TX, 79065

Phone No.: (806) 661-3130 Fax No.: (806) 661-3306

E-mail: Ashlee.Green@cabotcorp.com

Check one or both:  Administrative Contact

Technical Contact

<sup>1</sup> <http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch>



b. Mr.  Ms.  First/Last Name: Chad Clements Credential:   
Organization Name: Cabot Corporation Title: Facilities General Manager  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065  
Phone No.: (806) 661-3104 Fax No.: (806)661-3306 E-mail: Chad.Clements@cabotcorp.com  
Check one or both:  Administrative Contact  Technical Contact  
**Attachment:**

#### 4. PERMIT CONTACT INFORMATION (Instructions, Page 22)

Provide two names of individuals that can be contacted throughout the permit term.

a. Mr.  Ms.  First/Last Name: Ashlee Green Credential:   
Organization Name: Cabot Corporation Title: Environmental Manager  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065  
Phone No.: (806) 661-3130 Fax No.: (806) 661-3306 E-mail: Ashlee.Green@cabotcorp.com

b. Mr.  Ms.  First/Last Name: Chad Clements Credential:   
Organization Name: Cabot Corporation Title: Facilities General Manager  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065  
Phone No.: (806) 661-3104 Fax No.: (806)661-3306 E-mail: Chad.Clements@cabotcorp.com  
**Attachment:**

#### 5. BILLING CONTACT INFORMATION (Instructions, Page 22)

*The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits in effect on September 1 of each year. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (form TCEQ-20029).*

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

Mr.  Ms.  First/Last Name: Ashlee Green Credential:   
Organization Name: Cabot Corporation Title: Environmental Manager  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065-5001  
Phone No.: (806) 661-3130 Fax No.: (806) 661-3306 E-mail: Ashlee.Green@cabotcorp.com

#### 6. DMR/MER CONTACT INFORMATION (Instructions, Page 22)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs.

Mr.  Ms.  First/Last Name: Ashlee Green Credential:   
Organization Name: Cabot Corporation Title: Environmental Manager  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065  
Phone No.: (806) 661-3130 Fax No.: (806) 661-3306 E-mail: Ashlee.Green@cabotcorp.com

DMR data must be submitted through the [NetDMR<sup>2</sup>](#) system. An electronic reporting account can be established once the facility has obtained the permit number.

<sup>2</sup> <https://www.tceq.texas.gov/permitting/netdmr>

## 7. NOTICE INFORMATION (Instructions, Pages 23-24)

### a. Individual Publishing the Notices

Mr.  Ms.  First/Last Name: Ashlee Green Credential: [REDACTED]  
Organization Name: Cabot Corporation Title: Environmental Manager  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065  
Phone No.: (806) 661-3130 Fax No.: (806) 661-3306 E-mail: Ashlee.Green@cabotcorp.com

### b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)

E-mail: Ashlee.Green@cabotcorp.com

Fax: [REDACTED]

Regular Mail (USPS)

Mailing Address: [REDACTED] City/State/ZIP Code: [REDACTED]

### c. Contact in the Notice

Mr.  Ms.  First/Last Name: Ashlee Green Credential: [REDACTED]  
Organization Name: Cabot Corporation Title: Environmental Manager  
Phone No.: (806) 661-3130 Fax No.: (806) 661-3306 E-mail:  
Ashlee.Green@cabotcorp.com

See Attachment AR1.0-7.d - Public Viewing Web Address and

### d. Public Place Information Certification of Diligent Search

*If the facility or outfall is located in more than one county, provide a public viewing place for each county.* Public Viewing can be found at the following web address: <https://www.cabotcorp.com/company/worldwide-locations/north-america/usa-texas-pampa-development-and-manufacturing-center>

Public building name: [REDACTED] Location within the building: [REDACTED]

Physical Address of Building: [REDACTED]

City: [REDACTED] County: [REDACTED]

### e. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, and renewal applications**. It is not required for minor amendment or minor modification applications.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

Yes  No

If **no**, publication of an alternative language notice is not required; **skip to** Item 8 (REGULATED ENTITY AND PERMITTED SITE INFORMATION.)

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

Yes     No

3. Do the students at these schools attend a bilingual education program at another location?

Yes     No

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

Yes     No

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Spanish

## 8. REGULATED ENTITY AND PERMITTED SITE INFORMATION (Instructions Pages 24-25)

If the site of your business is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. [Search the TCEQ's Central Registry](#)<sup>3</sup> to determine the RN or to see if the larger site may already be registered as a regulated site:

If the site is found, provide the assigned RN and the information for the site to be authorized through this application below. The site information for this authorization may vary from the larger site information.

a. TCEQ issued Regulated Entity Number (RN): RN100210582

b. Name of project or site (the name known by the community where located): Cabot Corporation Pampa Development and Manufacturing Center (PDMC)

c. Is the location address of the facility in the existing permit the same?

Yes     No

d. If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

e. Owner of treatment facility: Cabot Corporation

Ownership of Facility:     Public     Private     Both     Federal

f. Owner of land where treatment facility is or will be:

Mr.  Ms.  First/Last or Organization Name: Cabot Corporation

Mailing Address: P.O. Box 5001

City/State/ZIP Code: Pampa, TX, 79065

Phone No.: (806) 661-3130

Fax No.: (806) 661-3306

E-mail: Ashlee.Green@cabotcorp.com

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. In some cases, a lease may not suffice - see instructions. **Attachment:** N/A

g. Owner of effluent TLAP disposal site (if applicable):

Mr.  Ms.  First/Last or Organization Name: Cabot Corporation

Mailing Address: P.O. Box 5001

City/State/ZIP Code: Pampa, TX, 79065

Phone No.: (806) 661-3130

Fax No.: (806)661-3306

E-mail: Ashlee.Green@cabotcorp.com

<sup>3</sup> <http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=regent.RNSearch>

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. **Attachment:** N/A

h. Owner of sewage sludge disposal site (if applicable):

Mr.  Ms.  First/Last or Organization Name: N/A

Mailing Address:  City/State/ZIP Code:

Phone No.:  Fax No.:  E-mail:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. **Attachment:**

(This information is required only if authorization is sought in the permit for sludge disposal on property owned or controlled by the applicant.)

## 9. TDPEs DISCHARGE/TLAP DISPOSAL INFORMATION (Instructions, Pages 25-28)

a. Is the facility located on or does the treated effluent cross American Indian Land?

Yes  No

b. Attach an **original** full size USGS Topographic Map (or an 8.5"×11" **reproduced** portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

- |   |  |
|---|--|
| <input type="checkbox"/> One-mile radius and three-miles downstream information           | <input checked="" type="checkbox"/> Effluent disposal site boundaries                          |
| <input checked="" type="checkbox"/> Applicant's property boundaries                       | <input checked="" type="checkbox"/> All wastewater ponds                                       |
| <input type="checkbox"/> Treatment facility boundaries                                    | <input type="checkbox"/> Sewage sludge disposal site   |
| <input type="checkbox"/> Labeled point(s) of discharge and highlighted discharge route(s) | <input type="checkbox"/> New and future construction   |
|   | <input checked="" type="checkbox"/> Attachment: <u>Attachment AR1.0-9b – Original USGS Map</u> |

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

Yes  No  N/A

If **no**, or a **new** application, please give an accurate description: N/A

d. Are the point(s) of discharge and the discharge route(s) in the existing permit correct?

Yes  No  N/A

If **no**, or a **new or amendment** applications, provide an accurate description: N/A

e. City nearest the outfall(s): N/A

f. County in which the outfalls(s) is/are located: N/A

g. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

Yes  No

If **yes**, indicate by a check mark if:  Authorization granted  Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

**Attachment:** N/A

- h. For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge. N/A
- i. For **TLAPs**, is the location of the effluent disposal site in the existing permit accurate?
- Yes    No    N/A
- If **no**, or if this a **new or amendment** application, provide an accurate description: N/A
- j. City nearest the disposal site: Pampa
- k. County in which the disposal site is located: Gray
- l. Disposal Site Latitude: 35° 30' 20.1852" N                      Longitude: 101° 2' 19.6620" W
- m. For **TLAPs**, describe how effluent is/will be routed from the treatment facility to the disposal site: Water is pumped from the pond through underground piping and applied to the land via spray irrigation to areas of vegetation along the plant entrance road.
- n. For **TLAPs**, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: There is no discharge from the disposal site. The facility and disposal site are located in the drainage area of the Canadian River below Lake Meredith in Segment No. 0101 of the Canadian River Basin.

## 10. MISCELLANEOUS INFORMATION (Instructions, Page 28)

- a. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?
- Yes    No
- If **yes**, list each person: Glendora Lopez, Air Quality Scientist II
- b. Do you owe any fees to the TCEQ?
- Yes    No
- If **yes**, provide the following:
- Acct. No.:
  - Amt. due:
- c. Do you owe any penalties to the TCEQ?
- Yes    No
- If **yes**, provide the following:
- Enforcement Order No.:
  - Amt. due:

**11. SIGNATURE PAGE (Instructions, Page 29)**

Permit No: WQ0004226000

Applicant Name: Cabot Corporation

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Ashlee Green

Signatory title: Environmental Manager

Signature: Ashlee Green Date: 3-12-2020

(Use blue ink)

Subscribed and Sworn to before me by the said Ashlee Green

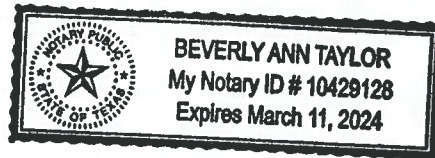
on this 12 day of Mar., 20 20.

My commission expires on the 11 day of Mar., 20 24.

Beverly Ann Taylor  
Notary Public

[SEAL]

Gray  
County, Texas



**If co-applicants are necessary, each entity must submit an original, separate signature page.**

# Attachment AR1.0-2a

## Delegation of Authority

Required by Industrial Administrative Report 1.0  
TCEQ-10411, Item 2.a, Page 3

CABOT CORPORATION

Delegation of Authority

THAT CABOT CORPORATION, a corporation organized and existing under the laws of the State of Delaware, with its principal office in Boston, Massachusetts, acting through Nicholas S. Cross, an Executive Vice President of the corporation, heretofore duly authorized by vote adopted by its Board of Directors on the 9<sup>th</sup> day of March, 2018, does hereby delegate responsibility and authority to employees of Cabot as follows:

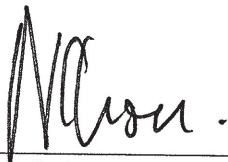
That CHAD CLEMENTS, as and while Facility General Manager of Cabot's Pampa Plant and ASHLEE GREEN, as and while Environmental Manager of Cabot's Pampa Plant, are, and each of them acting singly is, authorized to execute and deliver, in the name and on behalf of Cabot, any and all operating permit applications for Cabot's Pampa Plant and Pampa Development and Manufacturing Center in Pampa, Texas ("Pampa Plants"), and modifications and renewals thereof, filed with or administered by the United States Environmental Protection Agency, the Environmental Protection Agency for the State of Texas or other similar federal or state agencies, including without limitation permits for the construction, modification and operation of the equipment and fixtures of the Pampa Plants (including air and water discharge and waste generator permits), and any and all reports and information required or requested under such permits or applications or by such governmental agencies.

This Delegation of Authority shall be effective for a period of twenty-four (24) months from the date hereof unless revoked in writing at an earlier date.

In no event shall either of the above persons be authorized or empowered by this delegation of authority to further delegate any of such responsibility or authority.

This delegation replaces and supersedes in its entirety the Delegation of Authority dated August 1, 2016 delegating authority with respect to environmental permit matters to Chad Clements and Ashlee Green.

IN WITNESS WHEREOF, the undersigned has set his hand as of the 1<sup>st</sup> day of August, 2018 and has advised said employees and the Secretary of Cabot of the foregoing delegation.



---

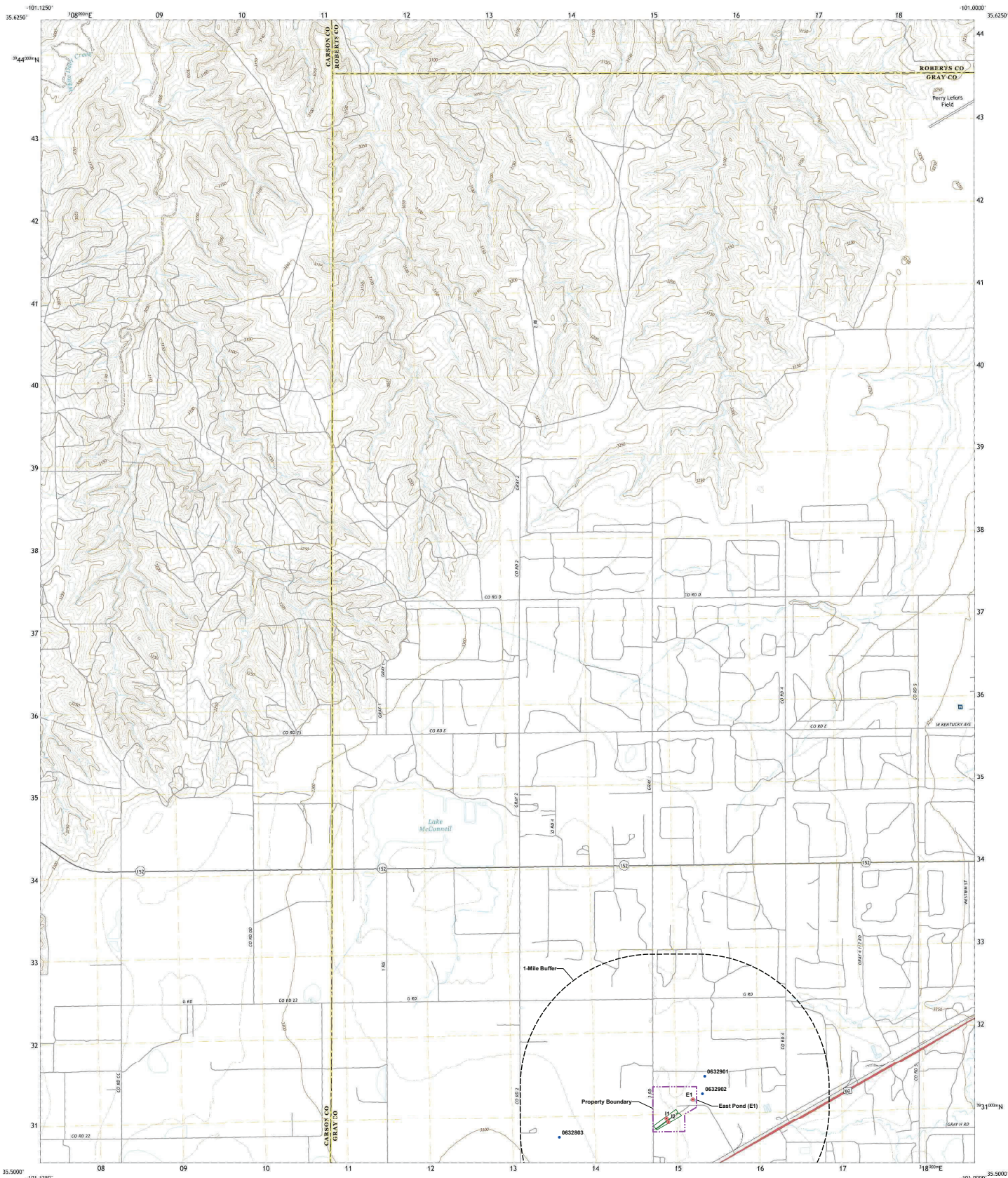
Nicholas S. Cross  
Executive Vice President



# Attachment AR1.0-9b

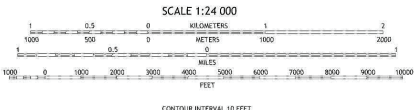
## Original USGS Map

Required by Industrial Administrative Report 1.0  
TCEQ-10411, Item 9.b, Page 7



Produced by the United States Geological Survey  
 World Geometric System of 1984 (WGS84), Projector and 1 000 meter grid Universal Transverse Mercator, Zone 14R  
 This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery: NAIP, September 2016 - November 2016  
 Roads: U.S. Census Bureau, 2015 - 2016  
 National Hydrography Dataset, 2004 - 2016  
 Contours: National Elevation Dataset, 2002  
 Boundaries: Multiple sources; see metadata file 2016 - 2017  
 Wetlands: FWS National Wetlands Inventory 2003 - 2005



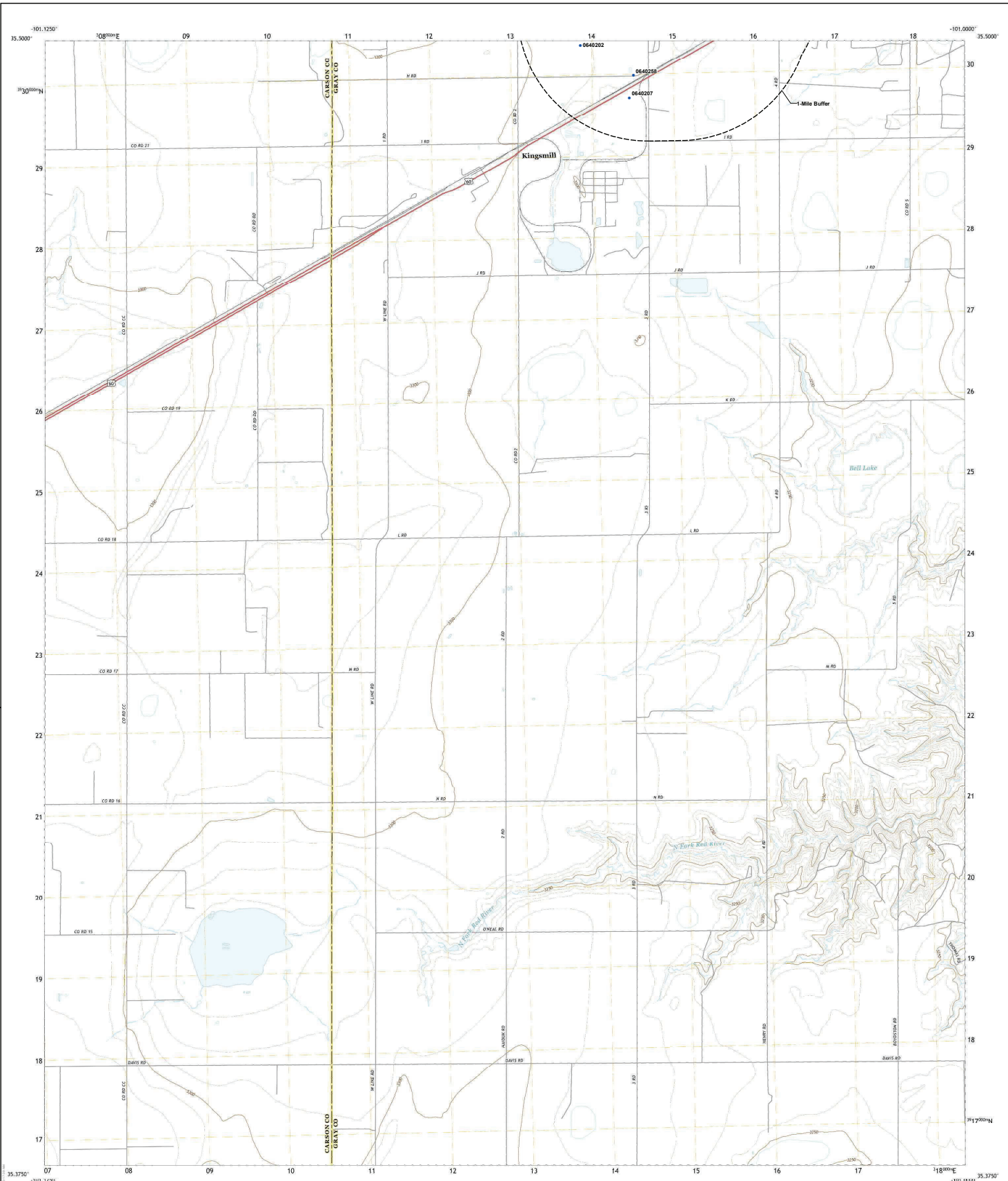
**ROAD CLASSIFICATION**

|                  |                 |
|------------------|-----------------|
| Expressway       | Local Connector |
| Secondary Hwy    | Local Road      |
| Ramp             | dvd             |
| Interstate Route | US Route        |
|                  | State Route     |

|    |    |    |                 |
|----|----|----|-----------------|
| 1  | 2  | 3  | 1 Skellytown NW |
| 4  | 5  | 6  | 2 Skellytown NE |
| 7  | 8  | 9  | 3 Pampa NW      |
| 10 | 11 | 12 | 4 Skellytown    |
| 13 | 14 | 15 | 5 Pampa         |
| 16 | 17 | 18 | 6 White Deer    |
| 19 | 20 | 21 | 7 Hospital      |
| 22 | 23 | 24 | 8 Bowers City   |

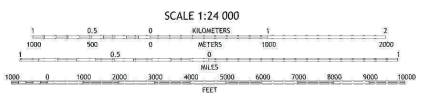
LAKE MCCONNELL, TX  
 2019

- Property Boundary
- Internal Outfall
- Pond
- 1-Mile Buffer
- Groundwater Well
- Irrigation Area

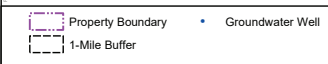


Produced by the United States Geological Survey  
 North American Datum of 1983 (NAD83)  
 World Geodetic System of 1984 (WGS84). Projection and  
 1,000-meter grid/Universal Transverse Mercator, Zone 14E  
 This map is not a legal document. Boundaries may be  
 generalized for this map scale. Private lands within government  
 reservations may not be shown. Obtain permission before  
 entering private lands.

Images:.....NAIP, September 2016 - November 2016  
 Roads:.....U.S. Census Bureau, 2016  
 Name:.....GNIS, 2016  
 Hydrography:.....National Hydrography Dataset, 2016  
 Contour:.....National Elevation Dataset, 2011  
 Boundaries:.....MapInfo Business, 2016  
 Wetlands:.....FWS National Wetlands Inventory 2003 - 2009



KINGSMILL, TX  
 2019



Cabot PDMC  
 AR1.0-9b (2 of 2)  
 Original USGS Map, Kingsmill, TX

## Section 4.0

# Supplemental Permit Information Form (SPIF)

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

### FOR AGENCIES REVIEWING INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

**TCEQ USE ONLY:**

Application type: \_\_\_Renewal \_\_\_Major Amendment \_\_\_Minor Amendment \_\_\_New

County: \_\_\_\_\_ Segment Number: \_\_\_\_\_

Admin Complete Date: \_\_\_\_\_

## Agency Receiving SPIF:

\_\_\_ Texas Historical Commission

\_\_\_ U.S. Fish and Wildlife

\_\_\_ Texas Parks and Wildlife Department

\_\_\_ U.S. Army Corps of Engineers

**This form applies to TPDES permit applications only.** (Instructions, Page 33)

The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

**Do not refer to a response of any item in the permit application form.** Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee Name: Cabot Corporation Pampa Manufacturing and Development Center (PDMC)
2. Permit No.: WQ0004226000 EPA ID No.: TXoD039031828
3. Address of the project (location description that includes street/highway, city/vicinity, and county): 5 miles west of Pampa on US HWY 60; Turn right on County Road 3; Travel north for 0.5 mi on County Road 3; Plant entrance is at the gate on the east side of the road.
4. Provide the name, address, phone and fax number, and email address of an individual that can be contacted to answer specific questions about the property.  
First/Last Name: Ms. Ashlee Green Title: Environmental Manager Credential:   
Organization Name: Cabot Corporation  
Mailing Address: P.O. Box 5001 City/State/ZIP Code: Pampa, TX, 79065  
Phone No.: (806) 661-3130 Fax No.: (806) 661-3306 E-mail: Ashlee.Green@cabotcorp.com
5. List the county in which the facility is located: Gray

6. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property: N/A
7. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in *30 TAC Chapter 307*). If known, please identify the classified segment number: Not applicable. Discharge from the evaporation pond is limited to land application at the site via spray irrigation.
8. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report.)

**Attachment:** Attachment SPIF 8 – USGS Topographic Map

9. Provide original photographs of any structures 50 years or older on the property.

**Attachment:** Attachment SPIF 9 – Property Photographs

10. Does your project involve any of the following? Check all that apply.

- Proposed access roads, utility lines, construction easements
- Visual effects that could damage or detract from a historic property's integrity
- Vibration effects during construction or as a result of project design
- Additional phases of development that are planned for the future
- Sealing caves, fractures, sinkholes, other karst features
- Disturbance of vegetation or wetlands

11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features): None.
12. Describe existing disturbances, vegetation, and land use: The site is a carbon black research and development facility with process equipment and buildings. Irrigated areas are native vegetation with Salt Cedar and Russian Olive trees.

THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

13. List construction dates of all buildings and structures on the property: The facility was originally constructed in approximately 1950. Several modifications and additions have been made to the facility since that time.
14. Provide a brief history of the property, and name of the architect/builder, if known: The facility has been in operation as a carbon black research facility since first construction. Prior to construction of the facility, the property was undeveloped.

# ATTACHMENT 1

## INDIVIDUAL INFORMATION

### 1. Individual information (Instructions, Page 33)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., or Miss): N/A

Full legal name (first, middle, and last):

Driver's License or State Identification Number:

Date of Birth:

Mailing Address:

City, State, and Zip Code:

Phone No.:

Fax No.:

E-mail Address:

CN:

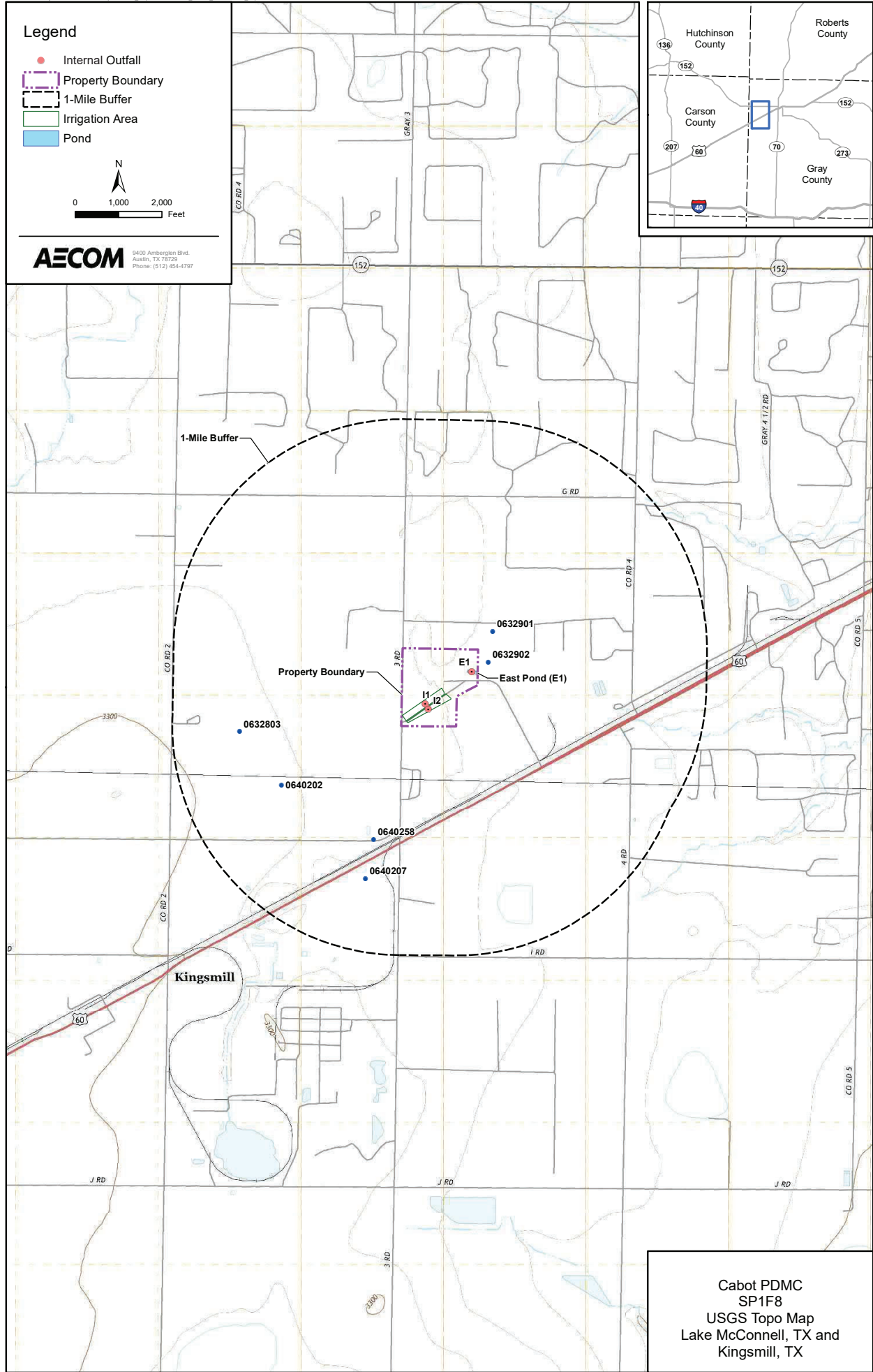
|   |
|---|
| <p><b>For Commission Use Only:</b><br/>Customer Number:<br/>Regulated Entity Number:<br/>Permit Number:</p> |
|---|

## Attachment SPIF 8

### USGS Topographic Map

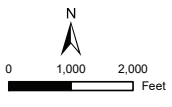
Required by Industrial Administrative Report 1.0  
TCEQ-10411, SPIF, Item 8, Page 13



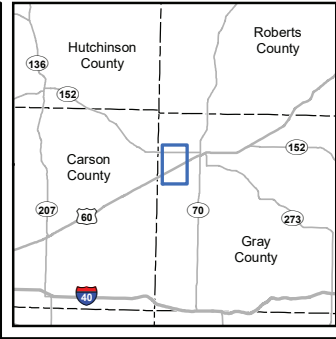


**Legend**

- Internal Outfall
- ▭ Property Boundary
- 1-Mile Buffer
- ▭ Irrigation Area
- ▭ Pond



**AECOM**  
9400 Amberglen Blvd.  
Austin, TX 78729  
Phone: (512) 454-4797





Cabot PDMC  
SP1F8  
USGS Topo Map  
Lake McConnell, TX and  
Kingsmill, TX


# Attachment SPIF 9

## Property Photographs

Required by Industrial Administrative Report 1.0  
TCEQ-10411, SPIF, Item 9, Page 13

|  |                               |   |
|--|-------------------------------|---|
| <b>Client Name:</b><br>Cabot Corporation, Cabot<br>Development and Manufacturing<br>Center |                               | <b>Site Location:</b><br>Pampa Development and Manufacturing Center (PDMC)          |
| <b>Photo No.:</b><br>1   | <b>Date:</b><br>June 12, 2015 |  |
| <b>Description:</b><br>Lab building facing south.  |                               |   |

|  |  |
|--|--|
| <p><b>Client Name:</b><br/>Cabot Corporation, Cabot<br/>Development and Manufacturing<br/>Center</p> | <p><b>Site Location:</b><br/>Pampa Development and Manufacturing Center (PDMC)</p> |
| <p><b>Photo No.:</b><br/>2</p>   | <p><b>Date:</b><br/>June 12, 2015</p>  |
| <p><b>Description:</b><br/>Utility building facing northwest.</p>                                    |  |
|                   |  |

|  |                               |   |
|--|-------------------------------|---|
| <b>Client Name:</b><br>Cabot Corporation, Cabot<br>Development and Manufacturing<br>Center |                               | <b>Site Location:</b><br>Pampa Development and Manufacturing Center (PDMC)          |
| <b>Photo No.:</b><br>3   | <b>Date:</b><br>June 12, 2015 |  |
| <b>Description:</b><br>Masonry shop and refractory<br>building facing southeast.           |                               |   |

# Attachment AR1.0-2c

## Core Data Form

Required by Industrial Administrative Report 1.0  
TCEQ-10411, Item 2.c, Page 3



TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

|   |   |   |
|---|---|---|
| <b>1. Reason for Submission</b> (If other is checked please describe in space provided.)  |   |   |
| <input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.) |   |   |
| <input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)                                |   | <input type="checkbox"/> Other                          |
| <b>2. Customer Reference Number (if issued)</b>   | <a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a> | <b>3. Regulated Entity Reference Number (if issued)</b> |
| CN 600124911  |   | RN 100210582  |

## SECTION II: Customer Information

|   |  |   |  |
|---|--|---|--|
| <b>4. General Customer Information</b>  | <b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy) | 03/02/2020  |  |
| <input type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership<br><input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)     |  |   |  |
| <b>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</b>   |  |   |  |
| <b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)  |  | If new Customer, enter previous Customer below:                     |  |
| Cabot Corporation   |  |   |  |
| <b>7. TX SOS/CPA Filing Number</b>  | <b>8. TX State Tax ID</b> (11 digits)                                  | <b>9. Federal Tax ID</b> (9 digits)                                 | <b>10. DUNS Number</b> (if applicable)   |
| 00020535-6  | 10422718972  | 04-227-1897   | 79-833-3972  |
| <b>11. Type of Customer:</b>  | <input checked="" type="checkbox"/> Corporation                        | <input type="checkbox"/> Individual                                 | Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited |
| Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other  | <input type="checkbox"/> Sole Proprietorship                           | <input type="checkbox"/> Other:                                     |  |
| <b>12. Number of Employees</b>  |  | <b>13. Independently Owned and Operated?</b>                        |  |
| <input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher  |  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |  |
| <b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following:   |  |   |  |
| <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator<br><input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other: |  |   |  |
| <b>15. Mailing Address:</b>   | PO Box 5001  |   |  |
|   | City   | Pampa   | State TX ZIP 79065 ZIP + 4 5001  |
| <b>16. Country Mailing Information</b> (if outside USA)   |  | <b>17. E-Mail Address</b> (if applicable)                           |  |
|   |  | ashlee.green@cabotcorp.com  |  |
| <b>18. Telephone Number</b>   | <b>19. Extension or Code</b>   | <b>20. Fax Number</b> (if applicable)                               |  |
| ( 806 ) 661-3130  |  | ( 806 ) 661-3306  |  |

## SECTION III: Regulated Entity Information

|  |
|--|
| <b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)                  |
| <input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information |
| <b>The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)</b>     |
| <b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)  |
| Cabot Corporation Pampa Development and Manufacturing  |

|   |   |          |  |                               |  |                  |         |      |
|---|---|----------|--|-------------------------------|--|------------------|---------|------|
| 23. Street Address of the Regulated Entity:<br><i>(No PO Boxes)</i>                                   | 8430 County Road, Pampa, Texas 79065  |          |  |                               |  |                  |         |      |
|   | City  | Pampa    | State                                  | TX                            | ZIP                                      | 79065            | ZIP + 4 | 5001 |
| 24. County  | Gray County   |          |  |                               |  |                  |         |      |
| Enter Physical Location Description if no street address is provided.                                 |   |          |  |                               |  |                  |         |      |
| 25. Description to Physical Location:   | 5 miles west of Pampa on US HWY 60; Turn right on County Road 3; Travel north for 0.5 miles on County Road 3; Plant entrance is at the gate on the east side of the road. |          |  |                               |  |                  |         |      |
| 26. Nearest City  |   |          |  |                               | State                                    | Nearest ZIP Code |         |      |
| Pampa   |   |          |  |                               | TX                                       | 79065            |         |      |
| 27. Latitude (N) In Decimal:  | 35.5056070  |          |  | 28. Longitude (W) In Decimal: | -101.0387950                             |                  |         |      |
| Degrees   | Minutes   | Seconds  | Degrees                                | Minutes                       | Seconds                                  |                  |         |      |
| 35°   | 30'   | 20.1852" | 101°                                   | 2'                            | 19.6620"                                 |                  |         |      |
| 29. Primary SIC Code (4 digits)   | 30. Secondary SIC Code (4 digits)   |          | 31. Primary NAICS Code (5 or 6 digits) |                               | 32. Secondary NAICS Code (5 or 6 digits) |                  |         |      |
| 2895  |   |          | 325180                                 |                               |  |                  |         |      |
| 33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i> |   |          |  |                               |  |                  |         |      |
| Cabot PDMC is a carbon black research and development facility.                                       |   |          |  |                               |  |                  |         |      |
| 34. Mailing Address:  | PO Box 5001   |          |  |                               |  |                  |         |      |
|   | City  | Pampa    | State                                  | TX                            | ZIP                                      | 79065            | ZIP + 4 | 5001 |
| 35. E-Mail Address:   | ashlee.green@cabotcorp.com  |          |  |                               |  |                  |         |      |
| 36. Telephone Number  |   |          | 37. Extension or Code                  |                               | 38. Fax Number <i>(if applicable)</i>    |                  |         |      |
| ( 806 ) 661-3130  |   |          |  |                               | ( 806 ) 661-3306                         |                  |         |      |

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

|  |  |   |   |  |
|--|--|---|---|--|
| <input type="checkbox"/> Dam Safety            | <input type="checkbox"/> Districts   | <input type="checkbox"/> Edwards Aquifer        | <input checked="" type="checkbox"/> Emissions Inventory Air | <input checked="" type="checkbox"/> Industrial Hazardous Waste |
|  |  |   | GH0047T   | TXD039031828<br>30055  |
| <input type="checkbox"/> Municipal Solid Waste | <input checked="" type="checkbox"/> New Source Review Air  | <input type="checkbox"/> OSSF                   | <input type="checkbox"/> Petroleum Storage Tank             | <input type="checkbox"/> PWS                                   |
|  | GH0047T<br>4817900019<br>PSDTX956<br>4223370263<br>102831<br>112635<br>117194<br>134865<br>43640<br>42233<br>70263 |   |   |  |
| <input type="checkbox"/> Sludge                | <input type="checkbox"/> Storm Water   | <input type="checkbox"/> Title V Air            | <input type="checkbox"/> Tires                              | <input type="checkbox"/> Used Oil                              |
|  |  |   |   |  |
| <input type="checkbox"/> Voluntary Cleanup     | <input checked="" type="checkbox"/> Waste Water  | <input type="checkbox"/> Wastewater Agriculture | <input type="checkbox"/> Water Rights                       | <input checked="" type="checkbox"/> Other:                     |
|  | WQ0004226000   |   |   | Pollution Prevention<br>Planning ID Number:<br>P06718          |

#### SECTION IV: Preparer Information

|                      |               |                |                       |
|----------------------|---------------|----------------|-----------------------|
| 40. Name:            | Ashlee Green  | 41. Title:     | Environmental Manager |
| 42. Telephone Number | 43. Ext./Code | 44. Fax Number | 45. E-Mail Address    |



|                |  |                |                            |
|----------------|--|----------------|----------------------------|
| (806) 661-3130 |  | (806) 661-3306 | Ashlee.Green@cabotcorp.com |
|----------------|--|----------------|----------------------------|

**SECTION V: Authorized Signature**

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

|                  |                          |            |                              |
|------------------|--------------------------|------------|------------------------------|
| Company:         | <i>Cabot Corporation</i> | Job Title: | <i>Environmental Manager</i> |
| Name(In Print) : | <i>Ashlee Green</i>      | Phone:     | <i>(806) 661 3130</i>        |
| Signature:       | <i>Ashlee Green</i>      | Date:      | <i>3-12-2020</i>             |

## Attachment AR1.0-7.d

# Public Viewing Web Address and Certification of Diligence



**P:** +1 806 661 3100  
**F:** +1 806 661 3134  
**W:** cabotcorp.com

Cabot Corporation  
11561 US Hwy 60  
P.O. Box 5001  
Pampa, TX 79065  
USA

April 24, 2020

Adriene C. McClarron  
Applications Review and Processing Team  
MC-148  
Texas Commission on Environmental Quality  
12100 Park 35 Circle  
Austin, TX 78753

**RE:** TPDES Industrial Wastewater Permit Renewal Permit No. WQ0004226000  
Issued to Cabot Corporation, Pampa Development and Manufacturing Center  
(EPA I.D. No. TXDO39031828) (CN600121911, RN100210582)

Dear Ms. McClarron:

With the recent closing of the Lovett Memorial Library due to COVID-19, Cabot Corporation has explored alternative options to allow the permit application to be visible to the public during the notice period.

In Gray county, there are currently no facilities open where an individual would be able to run copies of the application. We also found that the essential businesses that are open, were not willing to allow a display to be set up as this could potentially lead to crowds gathering as attempts are made to read and/or obtain copies of the permit application. This would also require a Cabot employee to make frequent trips to the location to ensure copies are available at all times.

In order to remain in compliance with the stay at home order that is still in effect for Gray County and not risk the health and safety of employees and people within the community, Cabot decided it would be best to make the permit application available for online viewing.

The permit application will be posted on Cabot Corporation-Pampa Development & Manufacturing Center home page at <https://www.cabotcorp.com/company/worldwide-locations/north-america/usa-texas-pampa-development-and-manufacturing-center>.



P: +1 806 661 3100  
F: +1 806 661 3134  
W: cabotcorp.com

Cabot Corporation  
116611 US Hwy 60  
P.O. Box 5001  
Pampa, TX 79065  
USA

"I certify that a diligent search and inquiry to locate an alternate publicly accessible physical viewing location within Gray County was made and the required application documents will be posted online at the time the notice is published."

Regards,

A handwritten signature in blue ink that reads "Ashlee Green". The signature is written in a cursive, flowing style.

**Ashlee Green**  
**Environmental Manager**  
**Pampa Facilities**

cc: **Ashlee Green, Environmental Manager, Cabot Corporation**  
**Chad Clements, Facilities General Manager, Cabot Corporation**  
**Janice King, Project Manager, AECOM**  
**Glendora Lopez, Environmental Scientist, AECOM**

# Section 5.0

## Technical Report

# TECHNICAL REPORT 1.0

## INDUSTRIAL

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For additional information or clarification on the requested information, refer to the [Instructions for Completing the Industrial Wastewater Permit Application](#)<sup>1</sup> available on the TCEQ website.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

**NOTE:** This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

### 1. FACILITY/SITE INFORMATION (Instructions, Pages 34-35)

- a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

The Cabot Pampa Development and Manufacturing Center (PDMC) is a research and development facility for carbon black manufacturing. PDMC evaluates changes in the carbon black manufacturing process. SIC Code: 2895; NAICS Code: 325180

- b. Describe all wastewater-generating processes at the facility.

Non-contact cooling water, wash water, boiler blowdown, and untreated storm water from within the process area is discharged to the East Pond through area drains, trenches and underground piping.

---

<sup>1</sup> [https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES\\_industrial\\_wastewater\\_steps.html](https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html)

c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

**Materials List**

| Raw Materials                             | Intermediate Products | Final Products |
|---|-----------------------|----------------|
| Natural Gas                               |                       | Carbon Black   |
| Hydrocarbon Oils                          |                       |                |
| Muriatic Acid                             |                       |                |
| Propylene Glycol (DowFrost)               |                       |                |
| Dipotassium hydrogen phosphate (DowFrost) |                       |                |
| Sulfanilic Acid                           |                       |                |
| Hydrogen Peroxide                         |                       |                |
| Calcium Acetate                           |                       |                |
|   |                       |                |

**Attachment:** Attachment TR1.0-1c – Safety Data Sheets Chemicals Used On Site

d. Attach a facility map (drawn to scale) with the following information:

- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
- The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

**Attachment:** Attachment TR1.0-1d – Facility Map

e. Is this a new permit application for an existing facility?

- Yes     No

If **yes**, provide background discussion:

f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

- Yes     No

List source(s) used to determine 100-year frequency flood plain: Flood Insurance Rate Map, Gray County, Texas, FEMA Flood Map Service Center

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area:

**Attachment:**

g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

- Yes     No     N/A (renewal only)

h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit?

- Yes     No

If **yes**, provide the permit number:

If **no**, provide an approximate date of application submittal to the USACE:

## 2. TREATMENT SYSTEM (Instructions, Page 35)

- a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

Incoming water provided by an adjacent facility. A portion of the incoming water utilized as non-contact cooling water is treated with Dow Frost in a closed loop system to prevent freezing prior to entering the system and to regulate temperature of process piping. Wastewater composed of non-contact cooling water, wash water, boiler blowdown, and untreated storm water from within the process area is routed directly to the East Pond through area drains, trenches, and underground piping for evaporation. If needed, muriatic acid is added to adjust pH. As necessary, water is pumped from the pond through underground piping to be land applied via spray irrigation to the areas of vegetation along each side of the plant entrance road.

- b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

**Attachment:** Attachment TR1.0-2b – Water/Wastewater Flow Balance Schematic

## 3. IMPOUNDMENTS (Instructions, Pages 35-37)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

Yes       No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 35-37, for additional information on the attachments required by Items 3.a – 3.e.

- a. Complete the table with the following information for each existing, new, or proposed impoundment:

**Use Designation:** Indicate the use designation for each impoundment as Treatment (T), Disposal (D), Containment (C), or Evaporation (E).

**Associated Outfall Number:** Provide an outfall number if a discharge occurs or will occur.

**Liner Type:** Indicate the liner type as Compacted clay liner (C), In-situ clay liner (I), Synthetic/plastic/rubber liner (S), or Alternate liner (A). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

**Leak Detection System:** If any leak detection systems are in place/planned, enter Y for yes. Otherwise, enter N for no.

**Groundwater Monitoring Wells and Data:** If groundwater monitoring wells are in place/planned, enter Y for yes. Otherwise, enter N for no. Attach any existing groundwater monitoring data.

**Dimensions:** Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

**Compliance with 40 CFR Part 257, Subpart D:** If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter Y for yes. Otherwise, enter N for no.

**Date of Construction:** Enter the date construction of the impoundment commenced (mm/dd/yy).



**Impoundment Information**

| Parameter  | Pond #          | Pond # | Pond # | Pond # |
|--|-----------------|--------|--------|--------|
| Use Designation: (T) (D) (C) or (E)                          | E               |        |        |        |
| Associated Outfall Number                                    | N/A             |        |        |        |
| Liner Type (C) (I) (S) or (A)                                | S               |        |        |        |
| Alt. Liner Attachment Reference                              | N/A             |        |        |        |
| Leak Detection System, Y/N                                   | N               |        |        |        |
| Groundwater Monitoring Wells, Y/N                            | N               |        |        |        |
| Groundwater Monitoring Data Attachment                       | N               |        |        |        |
| Pond Bottom Located Above The Seasonal High-Water Table, Y/N | Y               |        |        |        |
| Length (ft)  | Irregular Shape |        |        |        |
| Width (ft)   | Irregular Shape |        |        |        |
| Max Depth From Water Surface (ft), Not Including Freeboard   | 6               |        |        |        |
| Freeboard (ft)   | 1               |        |        |        |
| Surface Area (acres)   | 0.29            |        |        |        |
| Storage Capacity (gallons)                                   | 570,240         |        |        |        |
| 40 CFR Part 257, Subpart D, Y/N                              | Y               |        |        |        |
| Date of Construction   | 06/06/2001      |        |        |        |

**Impoundment Information**

| Parameter  | Pond # | Pond # | Pond # | Pond # |
|--|--------|--------|--------|--------|
| Use Designation: (T) (D) (C) or (E)                          |        |        |        |        |
| Associated Outfall Number                                    |        |        |        |        |
| Liner Type (C) (I) (S) or (A)                                |        |        |        |        |
| Alt. Liner Attachment Reference                              |        |        |        |        |
| Leak Detection System, Y/N                                   |        |        |        |        |
| Groundwater Monitoring Wells, Y/N                            |        |        |        |        |
| Groundwater Monitoring Data Attachment                       |        |        |        |        |
| Pond Bottom Located Above The Seasonal High-Water Table, Y/N |        |        |        |        |
| Length (ft)  |        |        |        |        |
| Width (ft)   |        |        |        |        |
| Max Depth From Water Surface (ft), not including freeboard   |        |        |        |        |
| Freeboard (ft)   |        |        |        |        |
| Surface Area (acres)   |        |        |        |        |
| Storage Capacity (gallons)                                   |        |        |        |        |
| 40 CFR Part 257, Subpart D, Y/N                              |        |        |        |        |
| Date of Construction   |        |        |        |        |

**Attachment:** N/A

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments.

b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

i. Liner data

Yes       No       Not yet designed

ii. Leak detection system or groundwater monitoring data

Yes       No       Not yet designed

iii. Groundwater impacts

Yes       No       Not yet designed

**NOTE:** Item b.iii is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

**Attachment:** N/A

**For TLAP applications: Items 3.c – 3.e are not required**, continue to Item 4.

c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within 1/2-mile of the impoundments.

**Attachment:** N/A

d. Attach copies of State Water Well Reports (e.g., driller's logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

**Attachment:** N/A

e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

**Attachment:** N/A

#### **4. OUTFALL/DISPOSAL METHOD INFORMATION (Instructions, Pages 38-39)**

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge operations and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/or numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

**For TLAP applications:** Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

**Outfall Latitude and Longitude**

| Outfall Number | Latitude-decimal degrees | Longitude-decimal degrees |
|----------------|--------------------------|---------------------------|
| E1             | 35.5068611               | -101.0376806              |
| I1             | 35.5047917               | -101.0412222              |
| I2             | 35.5044444               | -101.0409722              |

**Outfall Location Description**

| Outfall Number | Location Description  |
|----------------|---|
| E1             | Typically, pond freeboard is maintained through evaporation.  |
| I1&I2          | In advance of significant rainfall events, water may be pumped from the pond and used for spray irrigation in the areas of vegetation along the facility entrance road. |
|                |   |

**Description of Sampling Points (if different from Outfall location)**

| Outfall Number | Description of Sampling Point  |
|----------------|--|
| E1             | Prior to irrigation, a representative effluent sample is collected. If necessary, additional samples are collected at a frequency of once per month with at least one day between the sampling events. |
| I1&I2          | Samples are collected at a point after exiting the East Pond and prior to land application, with at least one day between the sampling events. Samples are only collected during land application.     |
|                |  |

**Outfall Flow Information – Permitted and Proposed**

| Outfall Number | Permitted Daily Avg Flow (MGD) | Permitted Daily Max Flow (MGD) | Proposed Daily Avg Flow (MGD) | Proposed Daily Max Flow (MGD) | Anticipated Discharge Date (mm/dd/yy) |
|----------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|---------------------------------------|
| E1             | 0.00215                        | N/A                            | N/A*                          | N/A*                          | N/A*                                  |
| I1&I2          | 0.025115                       | N/A                            | N/A*                          | N/A*                          | N/A*                                  |
|                |                                |                                |                               |                               |                                       |

\*There are no proposed changes in daily average or daily maximum flow.

**Outfall Discharge – Method and Measurement**

| Outfall Number | Pumped Discharge? Y/N | Gravity Discharge? Y/N | Type of Flow Measurement Device Used |
|----------------|-----------------------|------------------------|--------------------------------------|
| E1             | Y                     | N                      | Metered                              |
| I1&I2          | Y                     | N                      | Metered from storage system          |
|                |                       |                        |                                      |

**Outfall Discharge – Flow Characteristics**

| Outfall Number | Intermittent Discharge? Y/N | Continuous Discharge? Y/N | Seasonal Discharge? Y/N | Discharge Duration (hrs/day) | Discharge Duration (days/mo) | Discharge Duration (mo/yr) |
|----------------|-----------------------------|---------------------------|-------------------------|------------------------------|------------------------------|----------------------------|
| E1             | Y                           | N                         | N                       | Varies                       | Varies                       | Varies                     |
| I1&I2          | Y                           | N                         | N                       | Varies                       | Varies                       | Varies                     |

| Outfall Number | Intermittent Discharge?<br>Y/N | Continuous Discharge?<br>Y/N | Seasonal Discharge?<br>Y/N | Discharge Duration<br>(hrs/day) | Discharge Duration<br>(days/mo) | Discharge Duration<br>(mo/yr) |
|----------------|--------------------------------|------------------------------|----------------------------|---------------------------------|---------------------------------|-------------------------------|
|                |                                |                              |                            |                                 |                                 |                               |

### Wastestream Contributions

#### Outfall No.: E1

| Contributing Wastestreams   | Volume (MGD) | % of Total Flow |
|---|--------------|-----------------|
| Non-contact cooling water, wash water, boiler blowdown, storm water | 0.00215      | 100             |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |

#### Outfall No.: I1

| Contributing Wastestreams   | Volume (MGD) | % of Total Flow |
|---|--------------|-----------------|
| Non-contact cooling water, wash water, boiler blowdown, storm water | <0.025115**  | 100%            |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |

\*\*There was no land application of effluent in the past 24 months.

#### Outfall No.: I2

| Contributing Wastestreams   | Volume (MGD) | % of Total Flow |
|---|--------------|-----------------|
| Non-contact cooling water, wash water, boiler blowdown, storm water | <0.025115**  | 100%            |
|   |              |                 |
|   |              |                 |
|   |              |                 |
|   |              |                 |

| Contributing Wastestreams | Volume (MGD) | % of Total Flow |
|---------------------------|--------------|-----------------|
|                           |              |                 |
|                           |              |                 |
|                           |              |                 |

**Attachment:** N/A

## 5. BLOWDOWN AND ONCE-THROUGH COOLING WATER DISCHARGES (Instructions, Page 39)

a. Does the facility use/propose to use any cooling towers which discharge blowdown or other wastestreams to the outfall(s)?

Yes  No

**NOTE:** If the facility uses or plans to use cooling towers, Item 12 **is required**.

b. Does the facility use or plan to use any boilers that discharge blowdown or other wastestreams to the outfall(s)?

Yes  No

c. Does or will the facility discharge once-through cooling water to the outfall(s)?

Yes  No

**NOTE:** If the facility uses or plans to use once-through cooling water, Item 12 **is required**.

d. If **yes** to Items 5.a, 5.b, **or** 5.c, attach the SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

Attach a summary of this information in addition to the submittal of the SDS for each specific wastestream and the associated chemical additives and specify which outfalls are affected.

**Attachment:** Attachment TR1.0-5d – Boiler Water Chemical Additive SDS Information

e. Cooling Towers and Boilers

If **yes** to either Item 5.a **or** 5.b, complete the following table.

### Cooling Towers and Boilers

| Type of Unit   | Number of Units | Dly Avg Blowdown (gallons/day) | Dly Max Blowdown (gallons/day) |
|----------------|-----------------|--------------------------------|--------------------------------|
| Cooling Towers | NA              | NA                             | NA                             |
| Boilers        | 1               | 2.0                            | 10.0                           |

## 6. STORMWATER MANAGEMENT (Instructions, Pages 39-40)

Are there any existing/proposed outfalls which discharge stormwater associated with industrial activities, as defined at 40 CFR § 122.26(b)(14), commingled with any other wastestream?

Yes  No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in some manner which may result in exposure of the activities or materials to stormwater: Storm water may commingle with process

area wash water and flow to the East Pond. Water evaporates or is applied to the land via irrigation in the areas of vegetation along the plant entrance road to maintain freeboard.

**7. DOMESTIC SEWAGE, SEWAGE SLUDGE, AND SEPTAGE MANAGEMENT AND DISPOSAL (Instructions, Page 40)**

- a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.
  - Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. **Complete Item 7.b.**
  - Domestic sewage is disposed of by an on-site septic tank and drainfield system. **Complete Item 7.b.**
  - Domestic and industrial treatment sludge **ARE commingled** prior to use or disposal.
  - Industrial wastewater and domestic sewage are treated separately, and the respective sludge **IS NOT commingled** prior to sludge use or disposal. **Complete Worksheet 5.0.**
  - Facility is a POTW. **Complete Worksheet 5.0.**
  - Domestic sewage is not generated on-site.
  - Other (e.g., portable toilets), specify and **Complete Item 7.b:** \_\_\_\_\_
- b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

**Domestic Sewage Plant/Hauler Name**

| Plant/Hauler Name               | Permit/Registration No. |
|---------------------------------|-------------------------|
| Reeds Pumping Services          | 23491                   |
| City of Borger Rock Creek Plant | WQ0010535001            |

**8. IMPROVEMENTS OR COMPLIANCE/ENFORCEMENT REQUIREMENTS (Instructions, Page 40)**

- a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?
  - Yes       No
- b. Has the permittee completed or planned for any improvements or construction projects?
  - Yes       No
- c. If **yes** to either 8.a **or** 8.b, provide a brief summary of the requirements and a status update: N/A

**9. TOXICITY TESTING (Instructions, Page 41)**

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

- Yes       No

If **yes**, identify the tests and describe their purposes: N/A

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA.

**Attachment:** N/A

**10. OFF-SITE/THIRD PARTY WASTES (Instructions, Page 41)**

a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

- Yes  No

If **no**, proceed to Item 11. If **yes**, provide responses to Items 10.b through 10.d below.

b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility’s activities.

**Attachment:** N/A

c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility’s wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

- Yes  No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

**Attachment:** N/A

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

- Yes  No

If **yes**, **Worksheet 6.0** of this application **is required**.

**11. RADIOACTIVE MATERIALS (Instructions, Pages 41-42)**

a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

- Yes  No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

**Radioactive Materials Mined, Used, Stored, or Processed**

| Radioactive Material | Concentration (pCi/L) |
|----------------------|-----------------------|
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |



- b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

Yes  No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

**Radioactive Materials Present in the Discharge**

| Radioactive Material | Concentration (pCi/L) |
|----------------------|-----------------------|
| N/A                  |                       |
|                      |                       |
|                      |                       |
|                      |                       |
|                      |                       |

**12. COOLING WATER (Instructions, Pages 42-43)**

- a. Does the facility use or propose to use water for cooling purposes?

Yes  No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

- b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

Yes  No

If **yes**, stop here. If **no**, continue.

The cooling water is obtained from an adjacent facility.  
The adjacent facility owns and operates the respective water well.

- c. Cooling Water Supplier

- i. Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

**Cooling Water Intake Structure(s) Owner(s) and Operator(s)**

|          |     |  |  |  |
|----------|-----|--|--|--|
| CWIS ID  |     |  |  |  |
| Owner    | N/A |  |  |  |
| Operator |     |  |  |  |

- ii. Cooling water is/will be obtained from a Public Water Supplier (PWS)

Yes  No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS Registration No. 0900012

- iii. Cooling water is/will be obtained from an Independent Supplier

Yes  No

If **no**, proceed to Item 12.d. If **yes**, contact the Industrial Permits Team to determine what application materials are required. Attach copies of the correspondence with the TCEQ and any required application materials, as stipulated in the correspondence with the TCEQ.

**Attachment:** N/A

d. 316(b) General Criteria

i. The CWIS(s) have or will have a cumulative design intake flow of 2 MGD or greater

Yes  No

ii. At least 25% of the total water withdrawn by the CWIS is/will be used exclusively for cooling purposes on an annual average basis

Yes  No

iii. The facility withdraws/proposes to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

Yes  No

If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*:

If **yes** to all three questions in Item 12.d, the facility is subject to 316(b). Proceed to Item 12.f.

If **no** to any of the questions in Item 12.d, the facility does not meet the minimum criteria to be subject to the full requirements of 316(b). Proceed to Item 12.e.

e. The facility is **not subject** to 316(b) **and uses/proposes to use cooling towers**.

Yes  No

If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1(a), 1(b)(i-iii) and (vi), 2(b)(i), and 3(a) to allow for a determination based upon BPJ.

f. Phase I vs Phase II Facilities

i. Existing facility (Phase II)

Yes  No

If **yes**, complete Worksheets 11.0 through 11.3, as applicable. Otherwise, continue.

ii. New Facility – (Phase I)

Yes  No

If **yes**, check the box next to the facility's compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2:

- Track I - AIF greater than 2 MGD, but less than 10 MGD
  - Attach information required by *40 CFR §§ 125.86(b)(2)-(4)*.
- Track I - AIF greater than 10 MGD
  - Attach information required by *40 CFR § 125.86(b)*.
- Track II
  - Attach information required by *40 CFR § 125.86(c)*.

**Attachment:**

**NOTE:** Item 13 is required only for existing permitted facilities.

**13. PERMIT CHANGE REQUESTS (Instructions, Pages 43-44)**

a. Is the facility requesting a **major amendment** of an existing permit?

- Yes     No

If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

b. Is the facility requesting any **minor amendments** to the permit?

- Yes     No

If **yes**, list and discuss the requested changes.

c. Is the facility requesting any **minor modifications** to the permit?

- Yes     No

If **yes**, list and discuss the requested changes.

# WORKSHEET 3.0

## LAND APPLICATION OF EFFLUENT

This worksheet is required for all applications for a permit to dispose of wastewater by land application.

### 1. TYPE OF DISPOSAL SYSTEM (Instructions, Page 63)

Check the box next to the type of land disposal requested by this application:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Irrigation   | <input type="checkbox"/> Subsurface application      |
| <input checked="" type="checkbox"/> Evaporation  | <input type="checkbox"/> Subsurface soils absorption |
| <input type="checkbox"/> Evapotranspiration beds | <input type="checkbox"/> Surface application         |
| <input type="checkbox"/> Drip irrigation system  | <input type="checkbox"/> Other, specify: _____       |

### 2. LAND APPLICATION AREA (Instructions, Page 63)

#### Land Application Area Information

| Effluent Application<br>(gallons/day) | Irrigation Acreage<br>(acres) | Describe land use &<br>indicate type(s) of crop(s)   | Public Access?<br>(Y/N) |
|---------------------------------------|-------------------------------|--|-------------------------|
| 2,150                                 | 6.69                          | Native Grass (Buffalo Grass,<br>Western Wheatgrass) and Trees<br>(Juniper and Russian Olive) | N                       |
|                                       |                               |  |                         |
|                                       |                               |  |                         |
|                                       |                               |  |                         |
|                                       |                               |  |                         |
|                                       |                               |  |                         |
|                                       |                               |  |                         |
|                                       |                               |  |                         |
|                                       |                               |  |                         |

### 3. ANNUAL CROPPING PLAN (Instructions, Page 63)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

There have been no onsite process changes. Therefore, the annual crop plan from the 2016 permit amendment is valid. See Attachment WKSHT 3.0 - Annual Crop Plan.

**Attachment:** Attachment WKSHT 3.0 – Annual Crop Plan

**4. WELL AND MAP INFORMATION (Instructions, Page 64)**

a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

- The exact boundaries of the land application area
- On-site buildings
- Waste-disposal or treatment facilities
- Effluent storage and tailwater control facilities
- Buffer zones
- All surface waters in the state onsite and within 500 feet of the property boundaries
- All water wells within 1/2-mile of the disposal site, wastewater ponds, or property boundaries
- All springs and seeps onsite and within 500 feet of the property boundaries

**Attachment:** WKSHT 3.0-4 – Well Map

b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

**Well and Map Information Table**

| Well ID | Well Use      | Producing?<br>Y/N/U | Open, cased, capped,<br>or plugged? | Proposed Best<br>Management Practice |
|---------|---------------|---------------------|-------------------------------------|--------------------------------------|
| 632901  | Public Supply | Y                   | Cased                               | NA                                   |
| 632902  | Industrial    | Y                   | Cased                               | NA                                   |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |
|         |               |                     |                                     |                                      |

**Attachment:** click to enter text

c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

- Yes       No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

**Attachment:** N/A

d. Attach a short groundwater technical report using 30 TAC § 309.20(a)(4) as guidance.

**Attachment:** N/A      The property on which the water wells lie was sold by Cabot Corporation in 1980. Therefore water wells ID Nos. 632901 and 632902 are not owned or operated by Cabot Corporation.

## 5. SOIL MAP AND SOIL INFORMATION (Instructions, Page 65)

Check each box to confirm that the following information is attached:

- a.  USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops
- b.  Breakdown of acreage and percent of total acreage for each soil type
- c.  Copies of laboratory soil analyses

**Attachment:** Attachment WKSHT 3.0 – Annual Crop Plan

## 6. LABORATORY ACCREDITATION CERTIFICATION (Instructions, Page 66)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

- a. The laboratory is an in-house laboratory and is:
  - i. periodically inspected by the TCEQ; or
  - ii. located in another state and is accredited or inspected by that state; or
  - iii. performing work for another company with a unit located in the same site; or
  - iv. performing pro bono work for a governmental agency or charitable organization.
- b. The laboratory is accredited under federal law.
- c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- d. The laboratory supplies data for which the TCEQ does not offer accreditation.

Review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of approved signatories.

I, Ashlee Green, certify that all laboratory tests submitted with this application meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*.

(Signature) 

## 7. EFFLUENT MONITORING DATA (Instructions, Page 66)

Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Irrigation did not occur in 2018 or 2019, therefore there are no analytical results for that timeframe for BOD, Total Nitrogen, Conductivity, or Total Acres Irrigated.

**Table 14 for Site No.: East Pond**

**Samples are (check one):**     Composites     Grabs

| Date (mo/yr)   | Daily Avg Flow (gpd) | BOD <sub>5</sub> (mg/L) | TSS (mg/L) | Nitrogen (mg/L) | Conductivity (mmhos/cm) | Total acres irrigated | Hydraulic Application rate (acre-feet/month) |
|----------------|----------------------|-------------------------|------------|-----------------|-------------------------|-----------------------|--|
| 1/2018         | 9                    |                         |            |                 |                         | 0                     |  |
| 2/2018         | 0                    |                         |            |                 |                         | 0                     |  |
| 3/2018         | 37                   |                         |            |                 |                         | 0                     |  |
| 4/2018         | 446                  |                         |            |                 |                         | 0                     |  |
| 5/2018         | 135                  |                         |            |                 |                         | 0                     |  |
| 6/2018         | 1114                 |                         |            |                 |                         | 0                     |  |
| 7/2018         | 1138                 |                         |            |                 |                         | 0                     |  |
| 8/2018         | 611                  |                         |            |                 |                         | 0                     |  |
| 9/2018         | 48                   |                         |            |                 |                         | 0                     |  |
| 10/2018        | 836                  |                         |            |                 |                         | 0                     |  |
| 11/2018        | 0                    |                         |            |                 |                         | 0                     |  |
| 12/2018        | 93                   |                         |            |                 |                         | 0                     |  |
| 1/2019         | 0                    |                         |            |                 |                         | 0                     |  |
| 2/2019         | 0                    |                         |            |                 |                         | 0                     |  |
| 3/2019         | 418                  |                         |            |                 |                         | 0                     |  |
| 4/2019         | 240                  |                         |            |                 |                         | 0                     |  |
| 5/2019         | 604                  |                         |            |                 |                         | 0                     |  |
| 6/2019         | 720                  |                         |            |                 |                         | 0                     |  |
| 7/2019         | 93                   |                         |            |                 |                         | 0                     |  |
| 8/2019         | 883                  |                         |            |                 |                         | 0                     |  |
| 9/2019         | 288                  |                         |            |                 |                         | 0                     |  |
| 10/2019        | 1486                 |                         |            |                 |                         | 0                     |  |
| 11/2019        | 48                   |                         |            |                 |                         | 0                     |  |
| 12/2019        | 186                  |                         |            |                 |                         | 0                     |  |
|                |                      |                         |            |                 |                         |                       |  |
| 1/2018-12/2019 | pH                   | 7.4 - 9.8               |            |                 |                         |                       |  |
| 1/2018-12/2019 | Oil & Grease (mg/L)  | ND                      |            |                 |                         |                       |  |

Attach an explanation of all persistent excursions to permitted parameters and corrective actions taken.

**Attachment:**





**Table 15 for Site No.: East Pond; Samples are (check one):**  Composites  Grabs

| Pollutant                       | Sample 1 (mg/L) | Sample 2 (mg/L) | Sample 3 (mg/L) | Sample 4 (mg/L) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| BOD (5-day)                     | <5.00           | 10.7            | 24.3            | 20.6            |
| CBOD (5-day)                    | <5.00           | 5.55            | 7.93            | 7.47            |
| Chemical oxygen demand          | 44.7            | 113             | 60.6            | 48.7            |
| Total organic carbon            | 17.4            | 16.2            | 16.2            | 15.6            |
| Ammonia nitrogen                | 4.39            | 4.13            | 4.76            | 5.02            |
| Total suspended solids          | 28.0            | 17.5            | 28.0            | 18.0            |
| Nitrate nitrogen                | 0.161           | <0.100          | <0.100          | <0.100          |
| Total organic nitrogen          | 0.407           | 6.07            | 3.32            | 4.03            |
| Total phosphorus                | 13.2            | 1.44            | 0.873           | 1.08            |
| Oil and grease                  | <4.82           | <5.19           | <4.88           | <5.06           |
| Total residual chlorine         | <0.100          | <0.100          | 0.12            | 0.11            |
| Total dissolved solids          | 510             | 404             | 444             | 510             |
| Sulfate                         | 3.60            | 3.42            | 3.81            | 2.91            |
| Chloride                        | 75.4            | 78.2            | 78.4            | 81.3            |
| Fluoride                        | <0.500          | <0.500          | <0.500          | <0.500          |
| Fecal Coliform (cfu/100 mL)     | 14.0            | 120             | 94              | 34              |
| Specific conductance (mmhos/cm) | 0.809           | 0.812           | 0.829           | 0.865           |
| pH (standard units; min/max)    | 7.5             | 7.8             | 7.75            | 8.06            |
| Soluble sodium                  | 84.9            | 87.1            | 85.3            | 91.5            |
| Soluble calcium                 | 22.7            | 21.1            | 21.1            | 20.5            |
| Soluble magnesium               | <5.00           | 2.29            | 2.34            | 2.30            |
| SAR (unitless)                  | 4.89            | 4.80            | 4.69            | 5.10            |

**Table 16: for Site No.: East Pond; Samples are (check one):**  Composites  Grabs

| Pollutant            | Sample 1 (µg/L) | Sample 2 (µg/L) | Sample 3 (µg/L) | Sample 4 (µg/L) | MAL (µg/L)   |
|----------------------|-----------------|-----------------|-----------------|-----------------|--------------|
| Aluminum, total      | 63.2            | 54.8            | 24.1            | 54.8            | 2.5          |
| Antimony, total      | <1.00           | <5.00           | <0.500          | <1.00           | 5            |
| Arsenic, total       | 0.821           | 1.15            | <0.500          | 0.786           | 0.5          |
| Barium, total        | 53.8            | 51.2            | 58.4            | 51.7            | 3            |
| Beryllium, total     | <0.500          | <0.500          | <0.500          | <0.500          | 0.5          |
| Boron, total         | 109             | 113             | 128             | 139             | 20           |
| Cadmium, total       | <0.200          | <1.00           | <0.200          | <0.200          | 1            |
| Chromium, total      | 1.15            | <2.50           | 3.75            | 0.875           | 3            |
| Chromium, hexavalent | <3.00           | <3.00           | <3.00           | <3.00           | 3            |
| Chromium, trivalent  | <0.500          | <2.50           | 2.25            | <0.500          | N/A          |
| Copper, total        | 1.30            | <1.00           | 4.06            | 1.04            | 2            |
| Cyanide              | <5.00           | 8.00            | <5.00           | <5.00           | 10           |
| Lead, total          | <0.500          | <0.500          | <0.500          | <0.500          | 0.5          |
| Mercury, total       | <0.00426        | <0.00426        | <0.00426        | <0.00426        | 0.005/0.0005 |
| Nickel, total        | 4.60            | 5.17            | 4.81            | 4.82            | 2            |
| Selenium, total      | <1.00           | <5.00           | <1.00           | <1.00           | 5            |
| Silver, total        | <0.200          | <0.500          | <0.200          | <0.200          | 0.5          |
| Thallium, total      | <0.500          | <0.500          | <0.500          | <0.500          | 0.5          |
| Zinc, total          | 534             | 231             | 151             | 23.2            | 5            |

# Attachment WKSHT3.0-8

## Laboratory Reports

# Attachment WKSHT3.0-8

## Week 1 Laboratory Reports



# Results

Printed: 01/24/2020 17:37

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Account  
**CABC-P**

## Results

|   |                                      |                               |                  |             |            |                 |            |          |     |
|---|--------------------------------------|-------------------------------|------------------|-------------|------------|-----------------|------------|----------|-----|
| <b>1855558</b>  | <b>Land Application Grab Samples</b> | Received: 01/17/2020          |                  |             |            |                 |            |          |     |
| Non-Potable Water   | Collected by: Client Cabot Corp.     | PO: 111041                    |                  |             |            |                 |            |          |     |
|   | Taken: 01/16/2020 08:40:00           |                               |                  |             |            |                 |            |          |     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Prepared: 877972</td> <td style="width: 16.5%;">01/16/2020</td> <td style="width: 16.5%;">08:45:00</td> <td style="width: 16.5%;">Analyzed 877972</td> <td style="width: 16.5%;">01/16/2020</td> <td style="width: 16.5%;">08:45:00</td> <td style="width: 16.5%;">CLI</td> </tr> </table> |                                      |                               | Prepared: 877972 | 01/16/2020  | 08:45:00   | Analyzed 877972 | 01/16/2020 | 08:45:00 | CLI |
| Prepared: 877972  | 01/16/2020                           | 08:45:00                      | Analyzed 877972  | 01/16/2020  | 08:45:00   | CLI             |            |          |     |
| <i>Parameter</i>  | <i>Results</i>                       | <i>Units</i>                  | <i>RL</i>        | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>   |            |          |     |
| z pH Client Provided  | 7.5                                  | SU                            |                  |             |            |                 |            |          |     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Prepared: 878015</td> <td style="width: 16.5%;">01/16/2020</td> <td style="width: 16.5%;">08:47:00</td> <td style="width: 16.5%;">Analyzed 878015</td> <td style="width: 16.5%;">01/16/2020</td> <td style="width: 16.5%;">08:47:00</td> <td style="width: 16.5%;">CLI</td> </tr> </table> |                                      |                               | Prepared: 878015 | 01/16/2020  | 08:47:00   | Analyzed 878015 | 01/16/2020 | 08:47:00 | CLI |
| Prepared: 878015  | 01/16/2020                           | 08:47:00                      | Analyzed 878015  | 01/16/2020  | 08:47:00   | CLI             |            |          |     |
| <i>Parameter</i>  | <i>Results</i>                       | <i>Units</i>                  | <i>RL</i>        | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>   |            |          |     |
| z Cl2 Res(Total)Analyzed by client  | ND                                   | mg/L                          |                  |             |            |                 |            |          |     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Prepared: 878646</td> <td style="width: 16.5%;">01/22/2020</td> <td style="width: 16.5%;">08:10:00</td> <td style="width: 16.5%;">Analyzed 878646</td> <td style="width: 16.5%;">01/22/2020</td> <td style="width: 16.5%;">08:10:00</td> <td style="width: 16.5%;">DSI</td> </tr> </table> |                                      |                               | Prepared: 878646 | 01/22/2020  | 08:10:00   | Analyzed 878646 | 01/22/2020 | 08:10:00 | DSI |
| Prepared: 878646  | 01/22/2020                           | 08:10:00                      | Analyzed 878646  | 01/22/2020  | 08:10:00   | DSI             |            |          |     |
| <i>Parameter</i>  | <i>Results</i>                       | <i>Units</i>                  | <i>RL</i>        | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>   |            |          |     |
| NEIOil and Grease (HEM)   | <4.82                                | mg/L                          | 4.82             |             |            | 01              |            |          |     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Prepared: 879126</td> <td style="width: 16.5%;">01/24/2020</td> <td style="width: 16.5%;">10:30:00</td> <td style="width: 16.5%;">Analyzed 879328</td> <td style="width: 16.5%;">01/24/2020</td> <td style="width: 16.5%;">00:00:00</td> <td style="width: 16.5%;">AMB</td> </tr> </table> |                                      |                               | Prepared: 879126 | 01/24/2020  | 10:30:00   | Analyzed 879328 | 01/24/2020 | 00:00:00 | AMB |
| Prepared: 879126  | 01/24/2020                           | 10:30:00                      | Analyzed 879328  | 01/24/2020  | 00:00:00   | AMB             |            |          |     |
| <i>Parameter</i>  | <i>Results</i>                       | <i>Units</i>                  | <i>RL</i>        | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>   |            |          |     |
| NEICyanide, total   | <0.005                               | mg/L                          | 0.005            |             |            | 04              |            |          |     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Prepared: 878540</td> <td style="width: 16.5%;">01/21/2020</td> <td style="width: 16.5%;">13:00:00</td> <td style="width: 16.5%;">Analyzed 878540</td> <td style="width: 16.5%;">01/21/2020</td> <td style="width: 16.5%;">13:00:00</td> <td style="width: 16.5%;">MDM</td> </tr> </table> |                                      |                               | Prepared: 878540 | 01/21/2020  | 13:00:00   | Analyzed 878540 | 01/21/2020 | 13:00:00 | MDM |
| Prepared: 878540  | 01/21/2020                           | 13:00:00                      | Analyzed 878540  | 01/21/2020  | 13:00:00   | MDM             |            |          |     |
| <i>Parameter</i>  | <i>Results</i>                       | <i>Units</i>                  | <i>RL</i>        | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>   |            |          |     |
| NEIFecal Coliform (MPN)   | 14.0                                 | MPN/10<br>0 mL                | 1.8              | H           |            | 03              |            |          |     |
| <b>1855559</b>  | <b>Land Application Composite</b>    | COMP: 01/15 0850 - 01/16 0840 |                  |             |            |                 |            |          |     |
| Non-Potable Water   | Collected by: Client Cabot Corp.     | Received: 01/17/2020          |                  |             |            |                 |            |          |     |
| Composite Stop 08:40  | Taken: 1/16/20 08:40:00              | PO: 111041                    |                  |             |            |                 |            |          |     |
| <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Prepared:</td> <td style="width: 16.5%;">01/24/2020</td> <td style="width: 16.5%;">12:49:59</td> <td style="width: 16.5%;">Calculated</td> <td style="width: 16.5%;">01/24/2020</td> <td style="width: 16.5%;">12:49:59</td> <td style="width: 16.5%;">CAL</td> </tr> </table>             |                                      |                               | Prepared:        | 01/24/2020  | 12:49:59   | Calculated      | 01/24/2020 | 12:49:59 | CAL |
| Prepared:   | 01/24/2020                           | 12:49:59                      | Calculated       | 01/24/2020  | 12:49:59   | CAL             |            |          |     |
| <i>Parameter</i>  | <i>Results</i>                       | <i>Units</i>                  | <i>RL</i>        | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>   |            |          |     |
| Sodium Adsorption Ratio - Liquid  | 4.89                                 | 1                             |                  |             |            |                 |            |          |     |





# Results

Printed: 01/24/2020 17:37

| 1855559                   | Land Application Composite | COMP: 01/15 0850 - 01/16 0840 |           |             |            | Received: 01/17/2020 |                 |          |            |          |            |
|---------------------------|----------------------------|-------------------------------|-----------|-------------|------------|----------------------|-----------------|----------|------------|----------|------------|
| Non-Potable Water         | Collected by: Client       | Cabot Corp.                   |           |             |            | PO: 111041           |                 |          |            |          |            |
| Composite Stop 08:40      | 1/16/20                    | Taken:                        | 08:40:00  |             |            |                      |                 |          |            |          |            |
| <hr/>                     |                            |                               |           |             |            |                      |                 |          |            |          |            |
| <i>Calculation</i>        | <i>Prepared:</i>           |                               |           | 01/22/2020  | 16:02:04   | <i>Calculated</i>    | 01/22/2020      | 16:02:04 | <i>CAL</i> |          |            |
| <i>Parameter</i>          | <i>Results</i>             | <i>Units</i>                  | <i>RL</i> | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>        |                 |          |            |          |            |
| NEITrivalent Chromium     | <0.0005                    | mg/L                          | 0.0005    |             | 16065-83-1 |                      |                 |          |            |          |            |
| <hr/>                     |                            |                               |           |             |            |                      |                 |          |            |          |            |
| EPA 200.7, Rev. 4.4       | <i>Prepared:</i>           |                               |           | 878962      | 01/23/2020 | 10:37:00             | <i>Analyzed</i> | 878962   | 01/23/2020 | 10:37:00 | <i>CLK</i> |
| <i>Parameter</i>          | <i>Results</i>             | <i>Units</i>                  | <i>RL</i> | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>        |                 |          |            |          |            |
| NEIDissolved Calcium      | 22.7                       | mg/L                          | 5.00      |             | 7440-70-2  | 04                   |                 |          |            |          |            |
| NEIDissolved Magnesium    | <5.00                      | mg/L                          | 5.00      |             | 7439-95-4  | 04                   |                 |          |            |          |            |
| NEIDissolved Sodium       | 84.9                       | mg/L                          | 5.00      |             | 7440-23-5  | 04                   |                 |          |            |          |            |
| <hr/>                     |                            |                               |           |             |            |                      |                 |          |            |          |            |
| EPA 200.8 5.4             | <i>Prepared:</i>           |                               |           | 878490      | 01/21/2020 | 09:45:00             | <i>Analyzed</i> | 878697   | 01/21/2020 | 22:35:00 | <i>JAB</i> |
| <i>Parameter</i>          | <i>Results</i>             | <i>Units</i>                  | <i>RL</i> | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>        |                 |          |            |          |            |
| NEIAluminum, Total        | 0.0632                     | mg/L                          | 0.005     |             | 7429-90-5  | 15                   |                 |          |            |          |            |
| NEIAntimony, Total        | <0.001                     | mg/L                          | 0.001     |             | 7440-36-0  | 15                   |                 |          |            |          |            |
| NEIArsenic, Total         | 0.000821                   | mg/L                          | 0.0005    |             | 7440-38-2  | 15                   |                 |          |            |          |            |
| NEIBarium, Total          | 0.0538                     | mg/L                          | 0.003     |             | 7440-39-3  | 15                   |                 |          |            |          |            |
| NEIBeryllium, Total       | <0.0005                    | mg/L                          | 0.0005    |             | 7440-41-7  | 15                   |                 |          |            |          |            |
| NEICadmium, Total         | <0.0002                    | mg/L                          | 0.0002    |             | 7440-43-9  | 15                   |                 |          |            |          |            |
| NEIChromium, Total        | 0.00115                    | mg/L                          | 0.0005    |             | 7440-47-3  | 15                   |                 |          |            |          |            |
| NEICopper, Total          | 0.0013                     | mg/L                          | 0.001     |             | 7440-50-8  | 15                   |                 |          |            |          |            |
| NEILEad, Total            | <0.0005                    | mg/L                          | 0.0005    |             | 7439-92-1  | 15                   |                 |          |            |          |            |
| NEINickel, Total          | 0.0046                     | mg/L                          | 0.001     |             | 7440-02-0  | 15                   |                 |          |            |          |            |
| NEISelenium, Total        | <0.001                     | mg/L                          | 0.001     |             | 7782-49-2  | 15                   |                 |          |            |          |            |
| NEISilver, Total          | <0.0002                    | mg/L                          | 0.0002    |             | 7440-22-4  | 15                   |                 |          |            |          |            |
| NEThallium, Total         | <0.0005                    | mg/L                          | 0.0005    |             | 7440-28-0  | 15                   |                 |          |            |          |            |
| <hr/>                     |                            |                               |           |             |            |                      |                 |          |            |          |            |
| EPA 200.8 5.4             | <i>Prepared:</i>           |                               |           | 878490      | 01/21/2020 | 09:45:00             | <i>Analyzed</i> | 878886   | 01/22/2020 | 17:00:00 | <i>JAB</i> |
| <i>Parameter</i>          | <i>Results</i>             | <i>Units</i>                  | <i>RL</i> | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>        |                 |          |            |          |            |
| NEIZinc, Total            | 0.534                      | mg/L                          | 0.010     |             | 7440-66-6  | 15                   |                 |          |            |          |            |
| <hr/>                     |                            |                               |           |             |            |                      |                 |          |            |          |            |
| EPA 245.1 3               | <i>Prepared:</i>           |                               |           | 878200      | 01/20/2020 | 08:15:00             | <i>Analyzed</i> | 878351   | 01/20/2020 | 14:11:00 | <i>LPS</i> |
| <i>Parameter</i>          | <i>Results</i>             | <i>Units</i>                  | <i>RL</i> | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>        |                 |          |            |          |            |
| NEIMercury, Total         | <0.200                     | ug/L                          | 0.200     |             | 7439-97-6  | 13                   |                 |          |            |          |            |
| <hr/>                     |                            |                               |           |             |            |                      |                 |          |            |          |            |
| EPA 300.0 2.1             | <i>Prepared:</i>           |                               |           | 878214      | 01/17/2020 | 13:01:00             | <i>Analyzed</i> | 878214   | 01/17/2020 | 13:01:00 | <i>ATN</i> |
| <i>Parameter</i>          | <i>Results</i>             | <i>Units</i>                  | <i>RL</i> | <i>Flag</i> | <i>CAS</i> | <i>Bottle</i>        |                 |          |            |          |            |
| NEIChloride               | 75.4                       | mg/L                          | 1.50      |             |            | 01                   |                 |          |            |          |            |
| NEIFluoride               | <0.500                     | mg/L                          | 0.500     |             |            | 01                   |                 |          |            |          |            |
| NEINitrate-Nitrogen Total | 0.161                      | mg/L                          | 0.100     |             | 14797-55-8 | 01                   |                 |          |            |          |            |
| NEISulfate                | 3.60                       | mg/L                          | 1.50      |             |            | 01                   |                 |          |            |          |            |





# Results

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| 1855559  | Land Application Composite | COMP: 01/15 0850 - 01/16 0840 |          |            |          |          |            | Received:  | 01/17/2020 |     |
|--|----------------------------|-------------------------------|----------|------------|----------|----------|------------|------------|------------|-----|
| Non-Potable Water                                  | Collected by: Client       | Cabot Corp.                   |          |            |          |          |            | PO:        | 111041     |     |
| Composite Stop 08:40                               | 1/16/20                    | Taken:                        | 08:40:00 |            |          |          |            |            |            |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| EPA 350.1 2  |                            | Prepared:                     | 878196   | 01/20/2020 | 08:20:11 | Analyzed | 878539     | 01/21/2020 | 00:00:00   | AMB |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Ammonia (as N)                                 |                            | 4.39                          | mg/L     | 0.040      |          |          |            |            | 14         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| EPA 351.2 2  |                            | Prepared:                     | 878181   | 01/20/2020 | 08:30:00 | Analyzed | 878597     | 01/21/2020 | 13:08:00   | RSV |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Total Kjeldahl Nitrogen                        |                            | 8.46                          | mg/L     | 0.050      |          |          | 7727-37-9  |            | 12         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 2510 B-2011                                     |                            | Prepared:                     | 878298   | 01/20/2020 | 11:05:00 | Analyzed | 878298     | 01/20/2020 | 11:05:00   | MM2 |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Lab Spec. Conductance at 25 C                  |                            | 809                           | umhos/cm |            |          |          |            |            | 01         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 2540 C-2011                                     |                            | Prepared:                     | 879245   | 01/23/2020 | 09:40:00 | Analyzed | 879245     | 01/23/2020 | 09:40:00   | TH2 |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Total Dissolved Solids                         |                            | 510                           | mg/L     | 50.0       |          |          |            |            | 01         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 2540 D-2011                                     |                            | Prepared:                     | 878943   | 01/22/2020 | 13:00:00 | Analyzed | 878943     | 01/22/2020 | 13:00:00   | JW3 |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Total Suspended Solids                         |                            | 28.0                          | mg/L     | 20.0       |          |          |            |            | 01         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 3500-Cr B-2011                                  |                            | Prepared:                     | 878210   | 01/17/2020 | 13:10:00 | Analyzed | 878210     | 01/17/2020 | 13:10:00   | ALB |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Hexavalent Chromium                            |                            | <3.00                         | ug/L     | 3.00       |          | H        | 18540-29-9 |            | 01         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 4500-CI F-2011                                  |                            | Prepared:                     | 878149   | 01/17/2020 | 15:52:00 | Analyzed | 878149     | 01/17/2020 | 15:52:00   | ELS |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Cl <sub>2</sub> Residual, Total(Lab) Titration |                            | <0.100                        | mg/L     | 0.100      |          |          |            |            | 01         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 4500-P E-2011                                   |                            | Prepared:                     | 879288   | 01/24/2020 | 09:30:00 | Analyzed | 879288     | 01/24/2020 | 09:30:00   | ESG |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Phosphorus (as P), total                       |                            | 13.2                          | mg/L     | 1.00       |          |          | 7723-14-0  |            | 06         |     |
| <hr/>  |                            |                               |          |            |          |          |            |            |            |     |
| SM 5210 B-2011                                     |                            | Prepared:                     | 878153   | 01/18/2020 |          | Analyzed | 878153     | 01/23/2020 | 10:40:55   | JCB |
| Parameter  |                            | Results                       | Units    | RL         |          | Flag     | CAS        |            | Bottle     |     |
| NEI Biochemical Oxygen Demand (BOD5)               |                            | <5.00                         | mg/L     | 5.00       |          |          | 1026-3     |            | 01         |     |





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| 1855559                   | Land Application Composite | COMP: 01/15 0850 - 01/16 0840 |          |            |          | Received: 01/17/2020 |            |              |              |
|---------------------------|----------------------------|-------------------------------|----------|------------|----------|----------------------|------------|--------------|--------------|
| Non-Potable Water         | Collected by: Client       | Cabot Corp.                   |          | PO: 111041 |          |                      |            |              |              |
| Composite Stop 08:40      | 1/16/20                    | Taken:                        | 08:40:00 |            |          |                      |            |              |              |
| <hr/>                     |                            |                               |          |            |          |                      |            |              |              |
| SM 5210 B-2011            |                            | Prepared:                     | 878154   | 01/18/2020 | Analyzed | 878154               | 01/23/2020 | 10:07:59 JCB |              |
| Parameter                 | Results                    | Units                         | RL       | Flag       | CAS      | Bottle               |            |              |              |
| NEIBOD Carbonaceous       | <5.00                      | mg/L                          | 5.00     | B          |          | 01                   |            |              |              |
| <hr/>                     |                            |                               |          |            |          |                      |            |              |              |
| SM 5220 D-2011            |                            | Prepared:                     | 878587   | 01/21/2020 | 11:00:00 | Analyzed             | 878587     | 01/21/2020   | 11:00:00 MM2 |
| Parameter                 | Results                    | Units                         | RL       | Flag       | CAS      | Bottle               |            |              |              |
| NEIChemical Oxygen Demand | 44.7                       | mg/L                          | 22.0     |            |          | 06                   |            |              |              |
| <hr/>                     |                            |                               |          |            |          |                      |            |              |              |
| SM 5310 C-2011            |                            | Prepared:                     | 878556   | 01/21/2020 | 11:31:00 | Analyzed             | 878556     | 01/21/2020   | 11:31:00 ALH |
| Parameter                 | Results                    | Units                         | RL       | Flag       | CAS      | Bottle               |            |              |              |
| NETotal Organic Carbon    | 17.4                       | mg/L                          | 1.00     |            |          | 05                   |            |              |              |

## Sample Preparation

| 1855558                          | Land Application Grab Samples |                               |            |            |          | Received: 01/17/2020 |          |            |              |
|----------------------------------|-------------------------------|-------------------------------|------------|------------|----------|----------------------|----------|------------|--------------|
|                                  |                               |                               |            |            | 111041   |                      |          |            |              |
| <hr/>                            |                               |                               |            |            |          |                      |          |            |              |
| SM 4500-CN <sup>-</sup> C-2011   |                               | Prepared:                     | 879126     | 01/24/2020 | 10:30:00 | Analyzed             | 879126   | 01/24/2020 | 10:30:00 JCI |
| NEICyanide Distillation          | 10/5                          | ml                            |            | 02         |          |                      |          |            |              |
| <hr/>                            |                               |                               |            |            |          |                      |          |            |              |
| SM 9221 E + C-2006               |                               | Prepared:                     | 878536     | 01/20/2020 | 14:31:00 | Analyzed             | 878536   | 01/20/2020 | 14:31:00 MDM |
| NEIFecal Coliform MPN Started /L | STARTED                       |                               | H          |            | 03       |                      |          |            |              |
| <hr/>                            |                               |                               |            |            |          |                      |          |            |              |
| 1855559                          | Land Application Composite    | COMP: 01/15 0850 - 01/16 0840 |            |            |          | Received: 01/17/2020 |          |            |              |
| Composite Stop 08:40 1/16/20     |                               |                               |            |            | 111041   |                      |          |            |              |
| <hr/>                            |                               |                               |            |            |          |                      |          |            |              |
|                                  |                               | Prepared:                     | 01/17/2020 | 12:02:00   | Analyzed | 01/17/2020           | 12:02:00 | CCP        |              |
| z Bottle pH                      | <2                            | SU                            |            | 03         |          |                      |          |            |              |
| z Bottle pH                      | <2                            | SU                            |            | 04         |          |                      |          |            |              |







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|  |                                   |                                      |            |          |                   |            |          |                             |
|--|-----------------------------------|--------------------------------------|------------|----------|-------------------|------------|----------|-----------------------------|
| <b>1855559</b>                             | <b>Land Application Composite</b> | <b>COMP: 01/15 0850 - 01/16 0840</b> |            |          |                   |            |          | <b>Received: 01/17/2020</b> |
|  |                                   |                                      |            |          |                   |            |          | <b>111041</b>               |
| Composite Stop 08:40                       | 1/16/20                           |                                      |            |          |                   |            |          |                             |
|  |                                   | Prepared: 878016                     | 01/20/2020 | 12:14:07 | Calculated 878016 | 01/20/2020 | 12:14:07 | CAL                         |
| <b>NEIClient Field Filtration (Onsite)</b> |                                   | <b>Verified</b>                      |            |          |                   |            |          |                             |
|  |                                   | Prepared: 878838                     | 01/23/2020 | 05:33:08 | Analyzed 878838   | 01/23/2020 | 05:33:08 | LPS                         |
| <b>z Transfer to ICP/MS</b>                |                                   | <b>COMPLETE</b>                      |            |          |                   |            |          | <b>04</b>                   |
| <b>EPA 200.2 2.8</b>                       |                                   | Prepared: 878490                     | 01/21/2020 | 09:45:00 | Analyzed 878490   | 01/21/2020 | 09:45:00 | TES                         |
| <b>NEILiquid Metals Digestion</b>          | <b>50/50</b>                      | <b>ml</b>                            |            |          |                   |            |          | <b>03</b>                   |
| <b>EPA 245.1 3</b>                         |                                   | Prepared: 878200                     | 01/20/2020 | 08:15:00 | Analyzed 878200   | 01/20/2020 | 08:15:00 | ALB                         |
| <b>NEIMercury Liquid Metals Digestion</b>  | <b>50/25</b>                      | <b>ml</b>                            |            |          |                   |            |          | <b>03</b>                   |
| <b>EPA 350.2, Rev. 2.0</b>                 |                                   | Prepared: 878196                     | 01/20/2020 | 08:20:11 | Analyzed 878196   | 01/20/2020 | 08:20:11 | JCI                         |
| <b>NEIAmmonia Distillation</b>             | <b>50/50</b>                      | <b>ml</b>                            |            |          |                   |            |          | <b>06</b>                   |
| <b>EPA 351.2, Rev 2.0</b>                  |                                   | Prepared: 878181                     | 01/20/2020 | 08:30:00 | Analyzed 878181   | 01/20/2020 | 08:30:00 | CRS                         |
| <b>NETKN Block Digestion</b>               | <b>20/20</b>                      | <b>ml</b>                            |            |          |                   |            |          | <b>06</b>                   |
| <b>SM 2540 C-2011</b>                      |                                   | Prepared: 878680                     | 01/23/2020 | 09:40:00 | Analyzed 878680   | 01/23/2020 | 09:40:00 | TH2                         |
| <b>NETotal Dissolved Solids Started</b>    |                                   | <b>Started</b>                       |            |          |                   |            |          |                             |
| <b>SM 2540 D-2011</b>                      |                                   | Prepared: 877836                     | 01/16/2020 | 14:56:37 | Analyzed 877836   | 01/16/2020 | 14:56:37 | JW3                         |
| <b>NETSS Set Started</b>                   |                                   | <b>Started</b>                       |            |          |                   |            |          |                             |
| <b>SM 5210 B-2011</b>                      |                                   | Prepared: 878153                     | 01/18/2020 |          | Analyzed 878153   | 01/18/2020 | 06:51:14 | JCB                         |
| <b>NEIBOD Set Started</b>                  |                                   | <b>Started</b>                       |            |          |                   |            |          |                             |
| <b>SM 5210 B-2011</b>                      |                                   | Prepared: 878154                     | 01/18/2020 |          | Analyzed 878154   | 01/18/2020 | 06:51:14 | JCB                         |





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|                      |                                   |                               |                      |
|----------------------|-----------------------------------|-------------------------------|----------------------|
| <b>1855559</b>       | <b>Land Application Composite</b> | COMP: 01/15 0850 - 01/16 0840 | Received: 01/17/2020 |
|                      |                                   |                               | 111041               |
| Composite Stop 08:40 | 1/16/20                           |                               |                      |
| SM 5210 B-2011       | Prepared: 878154 01/18/2020       | Analyzed 878154 01/18/2020    | 06:51:14 JCB         |

NE/BODc Set Started Started

### Qualifiers:

B - Analyte detected in the associated method blank      H - Sample started outside recommended holding time

We report results on an As Received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at Ana-labs corporate laboratory that holds the following Federal and State certificates: EPA Lab Number TX00063, US Department of Agriculture Soil Import Permit P330-17-00117, Texas Commission on Environmental Quality Commercial Drinking Water Lab Approval (Lab ID: TX219), Texas Commission on Environmental Quality NELAP T104704201-19-15, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) Certificate No LA026, Oklahoma Department of Environmental Quality TNI Laboratory Accreditation Program Certificate No. 2018-126, Arkansas Department of Environmental Quality Certification #18-068-0. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column. MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Trey Peery, MA, Project Manager





# Quality Control

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Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Account  
**CABC-P**

Analytical Set **878540**

**SM 9221 E + C-2006**

**Blank**

| <u>Parameter</u>              | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MLQ</u> | <u>Units</u> | <u>File</u> |
|-------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Fecal Coliform MPN Started /L | 878540         | PASS           | 1.80       | 1.80       | MPN/100 mL   | 120810018   |

**Micro Dup**

| <u>Parameter</u>     | <u>Sample</u> | <u>Type</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>Range</u> | <u>Criterion</u> |
|----------------------|---------------|-------------|---------------|----------------|-------------|--------------|------------------|
| Fecal Coliform (MPN) | 1855932       | Duplicate   | 6.1           | 4.0            | MPN/100 mL  | 0.183        | 0.7825           |

**Standard**

| <u>Parameter</u>              | <u>Sample</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------------|---------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Fecal Coliform MPN Started /L | 878536        | POSITIVE       | POSITIV      | EMPN/100 ml  | -               | -              | 120810019   |

Analytical Set **878153**

**SM 5210 B-2011**

**Blank**

| <u>Parameter</u>                 | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MLQ</u> | <u>Units</u> | <u>File</u> |
|----------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Biochemical Oxygen Demand (BOD5) | 878153         | 0.19           | 0.200      | 0.500      | mg/L         | 120801678   |
|                                  | 878153         | 0.20           | 0.200      | 0.500      | mg/L         | 120801727   |

**Duplicate**

| <u>Parameter</u>                 | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|----------------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Biochemical Oxygen Demand (BOD5) | 1855478       | 14.9          | 13.3           | mg/L        | 11.3       | 30.0          |
|                                  | 1855575       | 108           | 107            | mg/L        | 0.930      | 30.0          |
|                                  | 1855687       | 50.7          | 49.7           | mg/L        | 1.99       | 30.0          |
|                                  | 1855698       | 16.2          | 16.7           | mg/L        | 3.04       | 30.0          |

**Seed Drop**

| <u>Parameter</u>                 | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MLQ</u> | <u>Units</u> | <u>File</u> |
|----------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Biochemical Oxygen Demand (BOD5) | 878153         | 0.780          | 0.200      | 0.500      | mg/L         | 120801679   |
|                                  | 878153         | 0.637          | 0.200      | 0.500      | mg/L         | 120801728   |

**Standard**

| <u>Parameter</u>                 | <u>Sample</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|----------------------------------|---------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Biochemical Oxygen Demand (BOD5) |               | 192            | 198          | mg/L         | 97.0            | 83.7 - 116     | 120801680   |
|                                  |               | 205            | 198          | mg/L         | 104             | 83.7 - 116     | 120801729   |

Analytical Set **878154**

**SM 5210 B-2011**

**Blank**

| <u>Parameter</u> | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MLQ</u> | <u>Units</u> | <u>File</u> |
|------------------|----------------|----------------|------------|------------|--------------|-------------|
| BOD Carbonaceous | 878154         | 0.25           | 0.200      | 0.500      | mg/L         | 120801776   |





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### Duplicate

| Parameter        | Sample  | Result | Unknown | Unit | RPD    | Limit% |
|------------------|---------|--------|---------|------|--------|--------|
| BOD Carbonaceous | 1855449 | ND     | ND      | mg/L |        | 30.0   |
|                  | 1855599 | 3.27   | 2.23    | mg/L | 37.8 * | 30.0   |
|                  | 1855812 | ND     | 3.23    | mg/L | 200 *  | 30.0   |

### Seed Drop

| Parameter        | PrepSet | Reading | MDL   | MQL   | Units | File      |
|------------------|---------|---------|-------|-------|-------|-----------|
| BOD Carbonaceous | 878154  | 0.603   | 0.200 | 0.500 | mg/L  | 120801777 |

### Standard

| Parameter        | Sample | Reading | Known | Units | Recover% | Limits%    | File      |
|------------------|--------|---------|-------|-------|----------|------------|-----------|
| BOD Carbonaceous |        | 198     | 198   | mg/L  | 100      | 83.7 - 116 | 120801778 |

Analytical Set

878539

EPA 350.1 2

### Blank

| Parameter      | PrepSet | Reading | MDL     | MQL   | Units | File      |
|----------------|---------|---------|---------|-------|-------|-----------|
| Ammonia (as N) | 878196  | 0.005   | 0.00356 | 0.020 | mg/L  | 120809938 |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Ammonia (as N) | 2.07    | 2.00  | mg/L  | 104      | 90.0 - 110 | 120809937 |
|                | 2.09    | 2.00  | mg/L  | 104      | 90.0 - 110 | 120809947 |
|                | 1.92    | 2.00  | mg/L  | 96.0     | 90.0 - 110 | 120809957 |
|                | 2.06    | 2.00  | mg/L  | 103      | 90.0 - 110 | 120809963 |
|                | 1.92    | 2.00  | mg/L  | 96.0     | 90.0 - 110 | 120809973 |
|                | 1.94    | 2.00  | mg/L  | 97.0     | 90.0 - 110 | 120809983 |
|                | 1.95    | 2.00  | mg/L  | 97.5     | 90.0 - 110 | 120809994 |
|                | 1.91    | 2.00  | mg/L  | 95.5     | 90.0 - 110 | 120810003 |
|                | 2.05    | 2.00  | mg/L  | 102      | 90.0 - 110 | 120810008 |
|                | 1.95    | 2.00  | mg/L  | 97.5     | 90.0 - 110 | 120810013 |

### Duplicate

| Parameter      | Sample  | Result | Unknown | Unit | RPD   | Limit% |
|----------------|---------|--------|---------|------|-------|--------|
| Ammonia (as N) | 1855447 | 0.413  | 0.414   | mg/L | 0.242 | 20.0   |
|                | 1855449 | 0.308  | 0.298   | mg/L | 3.30  | 20.0   |
|                | 1855684 | 0.127  | 0.125   | mg/L | 1.59  | 20.0   |

### ICV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Ammonia (as N) | 1.92    | 2.00  | mg/L  | 96.0     | 90.0 - 110 | 120809936 |

### LCS Dup

| Parameter      | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|----------------|---------|------|------|-------|------------|------|-------|-------|------|--------|
| Ammonia (as N) | 878196  | 2.08 | 2.12 | 2.00  | 90.0 - 110 | 104  | 106   | mg/L  | 1.90 | 20.0   |

### Mat. Spike

| Parameter      | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|----------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| Ammonia (as N) | 1855447 | 2.03  | 0.414   | 2.00  | mg/L  | 80.8       | 80.0 - 120 | 120809943 |
|                | 1855449 | 2.01  | 0.298   | 2.00  | mg/L  | 85.6       | 80.0 - 120 | 120809946 |
|                | 1855684 | 1.95  | 0.125   | 2.00  | mg/L  | 91.2       | 80.0 - 120 | 120809990 |

Analytical Set

878597

EPA 351.2 2





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### Blank

| Parameter               | PrepSet | Reading | MDL    | MQL   | Units | File      |
|-------------------------|---------|---------|--------|-------|-------|-----------|
| Total Kjeldahl Nitrogen | 878181  | ND      | 0.0191 | 0.050 | mg/L  | 120811163 |

### CCV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------|---------|-------|-------|----------|------------|-----------|
| Total Kjeldahl Nitrogen | 5.05    | 5.00  | mg/L  | 101      | 90.0 - 110 | 120811162 |
|                         | 5.13    | 5.00  | mg/L  | 103      | 90.0 - 110 | 120811172 |
|                         | 4.96    | 5.00  | mg/L  | 99.2     | 90.0 - 110 | 120811179 |
|                         | 5.23    | 5.00  | mg/L  | 105      | 90.0 - 110 | 120811186 |
|                         | 4.86    | 5.00  | mg/L  | 97.2     | 90.0 - 110 | 120811192 |

### Duplicate

| Parameter               | Sample  | Result | Unknown | Unit | RPD   | Limit% |
|-------------------------|---------|--------|---------|------|-------|--------|
| Total Kjeldahl Nitrogen | 1855357 | 0.351  | 0.393   | mg/L | 11.3  | 20.0   |
|                         | 1855358 | ND     | 0.048   | mg/L | 200 * | 20.0   |

### ICV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------|---------|-------|-------|----------|------------|-----------|
| Total Kjeldahl Nitrogen | 5.35    | 5.00  | mg/L  | 107      | 90.0 - 110 | 120811161 |

### LCS Dup

| Parameter               | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|-------------------------|---------|------|------|-------|------------|------|-------|-------|-------|--------|
| Total Kjeldahl Nitrogen | 878181  | 4.89 | 4.88 | 5.00  | 90.0 - 110 | 97.8 | 97.6  | mg/L  | 0.205 | 20.0   |

### Mat. Spike

| Parameter               | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|-------------------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| Total Kjeldahl Nitrogen | 1855357 | 5.22  | 0.393   | 5.00  | mg/L  | 96.5       | 80.0 - 120 | 120811168 |
|                         | 1855358 | 4.50  | 0.048   | 5.00  | mg/L  | 90.0       | 80.0 - 120 | 120811171 |

Analytical Set 879328

SM 4500-CN<sup>-</sup>E-2011

### Blank

| Parameter      | PrepSet | Reading | MDL     | MQL    | Units | File      |
|----------------|---------|---------|---------|--------|-------|-----------|
| Cyanide, total | 879126  | ND      | 0.00242 | 0.0025 | mg/L  | 120826121 |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Cyanide, total | 0.497   | 0.500 | mg/L  | 99.4     | 90.0 - 110 | 120826120 |
|                | 0.499   | 0.500 | mg/L  | 99.8     | 90.0 - 110 | 120826130 |
|                | 0.506   | 0.500 | mg/L  | 101      | 90.0 - 110 | 120826140 |
|                | 0.508   | 0.500 | mg/L  | 102      | 90.0 - 110 | 120826150 |
|                | 0.508   | 0.500 | mg/L  | 102      | 90.0 - 110 | 120826160 |
|                | 0.503   | 0.500 | mg/L  | 101      | 90.0 - 110 | 120826162 |

### Duplicate

| Parameter      | Sample  | Result | Unknown | Unit | RPD    | Limit% |
|----------------|---------|--------|---------|------|--------|--------|
| Cyanide, total | 1854979 | 0.004  | 0.006   | mg/L | 40.0 * | 20.0   |
|                | 1854983 | ND     | ND      | mg/L |        | 20.0   |

### ICV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Cyanide, total | 0.198   | 0.200 | mg/L  | 99.0     | 90.0 - 110 | 120826119 |

### LCS Dup

| Parameter | PrepSet | LCS | LCSD | Known | Limits% | LCS% | LCSD% | Units | RPD | Limit% |
|-----------|---------|-----|------|-------|---------|------|-------|-------|-----|--------|
|-----------|---------|-----|------|-------|---------|------|-------|-------|-----|--------|





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### LCS Dup

| Parameter      | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|----------------|---------|-------|-------|-------|------------|------|-------|-------|------|--------|
| Cyanide, total | 879126  | 0.218 | 0.211 | 0.200 | 90.0 - 110 | 109  | 106   | mg/L  | 3.26 | 20.0   |

### Mat. Spike

| Parameter      | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|----------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| Cyanide, total | 1854979 | 0.418 | 0.006   | 0.400 | mg/L  | 103        | 90.0 - 110 | 120826126 |
|                | 1854983 | 0.424 | ND      | 0.400 | mg/L  | 106        | 90.0 - 110 | 120826129 |

Analytical Set **878646**

EPA 1664B (HEM)

### Blank

| Parameter            | PrepSet | Reading | MDL   | MQL  | Units | File      |
|----------------------|---------|---------|-------|------|-------|-----------|
| Oil and Grease (HEM) | 878646  | ND      | 0.804 | 4.00 | mg/L  | 120811638 |

### ControlBlk

| Parameter            | PrepSet | Reading | MDL | MQL | Units | File      |
|----------------------|---------|---------|-----|-----|-------|-----------|
| Oil and Grease (HEM) | 878646  | -0.0001 |     |     | grams | 120811637 |
|                      | 878646  | -0.0002 |     |     | grams | 120811662 |

### LCS Dup

| Parameter            | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|----------------------|---------|------|------|-------|------------|------|-------|-------|------|--------|
| Oil and Grease (HEM) | 878646  | 35.9 | 37.0 | 40.0  | 78.0 - 114 | 89.8 | 92.5  | mg/L  | 3.02 | 20.0   |

### MS

| Parameter            | Sample  | MS   | MSD | UNK | Known | Limits     | MS% | MSD% | Units | RPD | Limit% |
|----------------------|---------|------|-----|-----|-------|------------|-----|------|-------|-----|--------|
| Oil and Grease (HEM) | 1855678 | 41.7 | 0   | ND  | 40.0  | 78.0 - 114 | 104 |      | mg/L  |     | 20.0   |

Analytical Set **878943**

SM 2540 D-2011

### Blank

| Parameter              | PrepSet | Reading | MDL | MQL | Units | File      |
|------------------------|---------|---------|-----|-----|-------|-----------|
| Total Suspended Solids | 878943  | ND      | 2   | 2   | mg/L  | 120819025 |

### ControlBlk

| Parameter              | PrepSet | Reading | MDL | MQL | Units | File      |
|------------------------|---------|---------|-----|-----|-------|-----------|
| Total Suspended Solids | 878943  | -0.0003 |     |     | grams | 120819024 |

### Duplicate

| Parameter              | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|------------------------|---------|--------|---------|------|------|--------|
| Total Suspended Solids | 1855559 | 26.0   | 28.0    | mg/L | 7.41 | 20.0   |
|                        | 1855628 | 8600   | 9100    | mg/L | 5.65 | 20.0   |
|                        | 1855680 | 880    | 820     | mg/L | 7.06 | 20.0   |

### LCS

| Parameter              | PrepSet | Reading | Known | Units | Recover% | Limits     | File      |
|------------------------|---------|---------|-------|-------|----------|------------|-----------|
| Total Suspended Solids | 878943  | 48.0    | 50.0  | mg/L  | 96.0     | 90.0 - 110 | 120819058 |

### Standard

| Parameter              | Sample | Reading | Known | Units | Recover% | Limits%    | File      |
|------------------------|--------|---------|-------|-------|----------|------------|-----------|
| Total Suspended Solids |        | 102     | 100   | mg/L  | 102      | 90.0 - 110 | 120819057 |

Analytical Set **879245**

SM 2540 C-2011

### Blank

| Parameter              | PrepSet | Reading | MDL  | MQL  | Units | File      |
|------------------------|---------|---------|------|------|-------|-----------|
| Total Dissolved Solids | 879245  | ND      | 5.00 | 5.00 | mg/L  | 120824625 |





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### ControlBlk

| Parameter              | PrepSet | Reading | MDL | MQL | Units | File      |
|------------------------|---------|---------|-----|-----|-------|-----------|
| Total Dissolved Solids | 879245  | 0.0002  |     |     | grams | 120824612 |

### Duplicate

| Parameter              | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|------------------------|---------|--------|---------|------|------|--------|
| Total Dissolved Solids | 1855238 | 408    | 424     | mg/L | 3.85 | 20.0   |

### LCS

| Parameter              | PrepSet | Reading | Known | Units | Recover% | Limits     | File      |
|------------------------|---------|---------|-------|-------|----------|------------|-----------|
| Total Dissolved Solids | 879245  | 194     | 200   | mg/L  | 97.0     | 85.0 - 115 | 120824626 |

### Standard

| Parameter              | Sample | Reading | Known | Units | Recover% | Limits%    | File      |
|------------------------|--------|---------|-------|-------|----------|------------|-----------|
| Total Dissolved Solids |        | 110     | 100   | mg/L  | 110      | 90.0 - 110 | 120824613 |

Analytical Set **878214**

EPA 300.0 2.1

### AWRL/MRL C

| Parameter              | Reading | Known  | Units | Recover% | Limits%    | File      |
|------------------------|---------|--------|-------|----------|------------|-----------|
| Fluoride               | 0.103   | 0.100  | mg/L  | 103      | 50.0 - 150 | 120803157 |
| Nitrate-Nitrogen Total | 0.0235  | 0.0226 | mg/L  | 104      | 70.0 - 130 | 120803157 |

### Blank

| Parameter              | PrepSet | Reading | MDL     | MQL   | Units | File      |
|------------------------|---------|---------|---------|-------|-------|-----------|
| Chloride               | 878214  | 0.014   | 0.0053  | 0.300 | mg/L  | 120803158 |
| Fluoride               | 878214  | ND      | 0.00863 | 0.050 | mg/L  | 120803158 |
| Nitrate-Nitrogen Total | 878214  | ND      | 0.00185 | 0.020 | mg/L  | 120803158 |
| Sulfate                | 878214  | ND      | 0.00775 | 0.300 | mg/L  | 120803158 |

### CCV

| Parameter              | Reading | Known | Units | Recover% | Limits%    | File      |
|------------------------|---------|-------|-------|----------|------------|-----------|
| Chloride               | 10.5    | 10.0  | mg/L  | 105      | 90.0 - 110 | 120803130 |
|                        | 10.4    | 10.0  | mg/L  | 104      | 90.0 - 110 | 120803143 |
|                        | 10.5    | 10.0  | mg/L  | 105      | 90.0 - 110 | 120803156 |
|                        | 10.4    | 10.0  | mg/L  | 104      | 90.0 - 110 | 120803159 |
| Fluoride               | 10.6    | 10.0  | mg/L  | 106      | 90.0 - 110 | 120803130 |
|                        | 10.5    | 10.0  | mg/L  | 105      | 90.0 - 110 | 120803143 |
|                        | 10.7    | 10.0  | mg/L  | 107      | 90.0 - 110 | 120803156 |
|                        | 10.6    | 10.0  | mg/L  | 106      | 90.0 - 110 | 120803159 |
| Nitrate-Nitrogen Total | 2.39    | 2.26  | mg/L  | 106      | 90.0 - 110 | 120803130 |
|                        | 2.38    | 2.26  | mg/L  | 105      | 90.0 - 110 | 120803143 |
|                        | 2.41    | 2.26  | mg/L  | 107      | 90.0 - 110 | 120803156 |
|                        | 2.37    | 2.26  | mg/L  | 105      | 90.0 - 110 | 120803159 |
| Sulfate                | 10.5    | 10.0  | mg/L  | 105      | 90.0 - 110 | 120803130 |
|                        | 10.4    | 10.0  | mg/L  | 104      | 90.0 - 110 | 120803143 |
|                        | 10.4    | 10.0  | mg/L  | 104      | 90.0 - 110 | 120803156 |
|                        | 10.2    | 10.0  | mg/L  | 102      | 90.0 - 110 | 120803159 |

### LCS Dup

| Parameter              | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|------------------------|---------|------|------|-------|------------|------|-------|-------|-------|--------|
| Chloride               | 878214  | 5.06 | 5.08 | 5.00  | 85.0 - 110 | 101  | 102   | mg/L  | 0.394 | 20.0   |
| Fluoride               | 878214  | 5.42 | 5.43 | 5.00  | 88.0 - 110 | 108  | 109   | mg/L  | 0.184 | 20.0   |
| Nitrate-Nitrogen Total | 878214  | 1.20 | 1.21 | 1.13  | 88.0 - 110 | 106  | 107   | mg/L  | 0.830 | 20.0   |
| Sulfate                | 878214  | 5.01 | 5.00 | 5.00  | 88.0 - 110 | 100  | 100   | mg/L  | 0.200 | 20.0   |





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## MSD

| Parameter              | Sample  | MS   | MSD  | UNK   | Known | Limits     | MS%    | MSD%   | Units | RPD  | Limit% |
|------------------------|---------|------|------|-------|-------|------------|--------|--------|-------|------|--------|
| Chloride               | 1854738 | 23.6 | 23.4 | 15.2  | 10.0  | 80.0 - 120 | 84.0   | 82.0   | mg/L  | 2.41 | 20.0   |
| Fluoride               | 1854738 | 10.2 | 10.0 | 0.280 | 10.0  | 80.0 - 120 | 99.2   | 97.2   | mg/L  | 2.04 | 20.0   |
| Nitrate-Nitrogen Total | 1854738 | 2.49 | 2.40 | 0.262 | 2.26  | 80.0 - 120 | 98.6   | 94.6   | mg/L  | 4.12 | 20.0   |
| Sulfate                | 1854738 | 50.0 | 49.1 | 40.5  | 10.0  | 80.0 - 120 | 95.0   | 86.0   | mg/L  | 9.94 | 20.0   |
| Chloride               | 1855356 | 51.0 | 51.0 | 43.1  | 10.0  | 80.0 - 120 | 79.0 * | 79.0 * | mg/L  | 0    | 20.0   |
| Fluoride               | 1855356 | 10.4 | 10.3 | 0.350 | 10.0  | 80.0 - 120 | 100    | 99.5   | mg/L  | 1.00 | 20.0   |
| Nitrate-Nitrogen Total | 1855356 | 2.29 | 2.27 | 0.354 | 2.26  | 80.0 - 120 | 85.7   | 84.8   | mg/L  | 1.04 | 20.0   |
| Sulfate                | 1855356 | 8.55 | 8.44 | 2.33  | 10.0  | 80.0 - 120 | 62.2 * | 61.1 * | mg/L  | 1.78 | 20.0   |

Analytical Set 878210

SM 3500-Cr B-2011

## Blank

| Parameter           | PrepSet | Reading | MDL   | MQL  | Units | File      |
|---------------------|---------|---------|-------|------|-------|-----------|
| Hexavalent Chromium | 878210  | ND      | 0.550 | 3.00 | ug/L  | 120803078 |
|                     | 878210  | ND      | 0.550 | 3.00 | ug/L  | 120803086 |

## CCV

| Parameter           | Reading | Known | Units | Recover% | Limits%    | File      |
|---------------------|---------|-------|-------|----------|------------|-----------|
| Hexavalent Chromium | 78.4    | 80.0  | ug/L  | 98.0     | 90.0 - 110 | 120803079 |
|                     | 78.4    | 80.0  | ug/L  | 98.0     | 90.0 - 110 | 120803087 |

## LCS Dup

| Parameter           | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|---------------------|---------|------|------|-------|------------|------|-------|-------|------|--------|
| Hexavalent Chromium | 878210  | 78.7 | 77.2 | 80.0  | 85.0 - 115 | 98.4 | 96.5  | ug/L  | 1.92 | 15.0   |

## MSD

| Parameter           | Sample  | MS   | MSD  | UNK | Known | Limits     | MS%  | MSD% | Units | RPD  | Limit% |
|---------------------|---------|------|------|-----|-------|------------|------|------|-------|------|--------|
| Hexavalent Chromium | 1855550 | 72.1 | 73.1 | ND  | 80.0  | 70.0 - 130 | 90.1 | 91.4 | ug/L  | 1.38 | 20.0   |

Analytical Set 878351

EPA 245.1 3

## Blank

| Parameter      | PrepSet | Reading | MDL   | MQL   | Units | File      |
|----------------|---------|---------|-------|-------|-------|-----------|
| Mercury, Total | 878200  | ND      | 0.075 | 0.100 | ug/L  | 120805873 |

## CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Mercury, Total | 5.02    | 5.000 | ug/L  | 100      | 90.0 - 110 | 120805872 |
|                | 5.15    | 5.000 | ug/L  | 103      | 90.0 - 110 | 120805882 |
|                | 4.92    | 5.000 | ug/L  | 98.4     | 90.0 - 110 | 120805888 |
|                | 5.14    | 5.000 | ug/L  | 103      | 90.0 - 110 | 120805898 |

## ICL

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Mercury, Total | 19.8    | 20.00 | ug/L  | 99.0     | 90.0 - 110 | 120805871 |

## ICV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Mercury, Total | 5.19    | 5.000 | ug/L  | 104      | 90.0 - 110 | 120805870 |

## LCS Dup

| Parameter      | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|----------------|---------|------|------|-------|------------|------|-------|-------|------|--------|
| Mercury, Total | 878200  | 5.41 | 4.97 | 5.00  | 85.0 - 115 | 108  | 99.4  | ug/L  | 8.48 | 20.0   |







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## MSD

| Parameter      | Sample  | MS   | MSD  | UNK | Known | Limits     | MS% | MSD% | Units | RPD  | Limit% |
|----------------|---------|------|------|-----|-------|------------|-----|------|-------|------|--------|
| Mercury, Total | 1855500 | 10.3 | 10.6 | ND  | 10.0  | 70.0 - 130 | 103 | 106  | ug/L  | 2.87 | 14.0   |
|                | 1855553 | 10.3 | 10.3 | ND  | 10.0  | 70.0 - 130 | 103 | 103  | ug/L  | 0    | 14.0   |

Analytical Set **878556**

**SM 5310 C-2011**

## AWRL/MRL C

| Parameter            | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------------|---------|-------|-------|----------|------------|-----------|
| Total Organic Carbon | 2.09    | 2.00  | mg/L  | 104      | 50.0 - 150 | 120810328 |

## Blank

| Parameter            | PrepSet | Reading | MDL    | MQL   | Units | File      |
|----------------------|---------|---------|--------|-------|-------|-----------|
| Total Organic Carbon | 878556  | ND      | 0.0618 | 0.500 | mg/L  | 120810327 |
|                      | 878556  | ND      | 0.0618 | 0.500 | mg/L  | 120810341 |
|                      | 878556  | ND      | 0.0618 | 0.500 | mg/L  | 120810354 |

## CCB

| Parameter            | PrepSet | Reading | MDL    | MQL   | Units | File      |
|----------------------|---------|---------|--------|-------|-------|-----------|
| Total Organic Carbon | 878556  | 0.114   | 0.0618 | 0.500 | mg/L  | 120810321 |
|                      | 878556  | 0.0926  | 0.0618 | 0.500 | mg/L  | 120810332 |
|                      | 878556  | ND      | 0.0618 | 0.500 | mg/L  | 120810339 |
|                      | 878556  | ND      | 0.0618 | 0.500 | mg/L  | 120810347 |
|                      | 878556  | ND      | 0.0618 | 0.500 | mg/L  | 120810352 |
|                      | 878556  | 0.103   | 0.0618 | 0.500 | mg/L  | 120810363 |
|                      | 878556  | 0.196   | 0.0618 | 0.500 | mg/L  | 120810372 |
|                      | 878556  | 0.101   | 0.0618 | 0.500 | mg/L  | 120810374 |

## CCV

| Parameter            | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------------|---------|-------|-------|----------|------------|-----------|
| Total Organic Carbon | 9.82    | 10.0  | mg/L  | 98.2     | 90.0 - 110 | 120810324 |
|                      | 9.50    | 10.0  | mg/L  | 95.0     | 90.0 - 110 | 120810333 |
|                      | 9.73    | 10.0  | mg/L  | 97.3     | 90.0 - 110 | 120810340 |
|                      | 9.90    | 10.0  | mg/L  | 99.0     | 90.0 - 110 | 120810348 |
|                      | 9.68    | 10.0  | mg/L  | 96.8     | 90.0 - 110 | 120810353 |
|                      | 9.75    | 10.0  | mg/L  | 97.5     | 90.0 - 110 | 120810364 |
|                      | 9.52    | 10.0  | mg/L  | 95.2     | 90.0 - 110 | 120810373 |
|                      | 9.37    | 10.0  | mg/L  | 93.7     | 90.0 - 110 | 120810375 |

## ICL

| Parameter            | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------------|---------|-------|-------|----------|------------|-----------|
| Total Organic Carbon | 20.2    | 20.0  | mg/L  | 101      | 90.0 - 110 | 120810323 |

## ICV

| Parameter            | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------------|---------|-------|-------|----------|------------|-----------|
| Total Organic Carbon | 9.50    | 10.0  | mg/L  | 95.0     | 90.0 - 110 | 120810325 |

## LCS

| Parameter            | PrepSet | Reading | Known | Units | Recover% | Limits     | File      |
|----------------------|---------|---------|-------|-------|----------|------------|-----------|
| Total Organic Carbon | 878556  | 4.79    | 5.00  | mg/L  | 95.8     | 84.7 - 105 | 120810326 |
|                      | 878556  | 4.79    | 5.00  | mg/L  | 95.8     | 84.7 - 105 | 120810342 |
|                      | 878556  | 4.69    | 5.00  | mg/L  | 93.8     | 84.7 - 105 | 120810355 |

## MSD

| Parameter | Sample | MS | MSD | UNK | Known | Limits | MS% | MSD% | Units | RPD | Limit% |
|-----------|--------|----|-----|-----|-------|--------|-----|------|-------|-----|--------|
|-----------|--------|----|-----|-----|-------|--------|-----|------|-------|-----|--------|





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## MSD

| Parameter            | Sample  | MS   | MSD  | UNK    | Known | Limits     | MS%  | MSD% | Units | RPD  | Limit% |
|----------------------|---------|------|------|--------|-------|------------|------|------|-------|------|--------|
| Total Organic Carbon | 1854746 | 10.0 | 9.89 | 0.0898 | 10.0  | 90.3 - 108 | 99.1 | 98.0 | mg/L  | 1.12 | 20.0   |
|                      | 1854805 | 13.2 | 13.2 | 3.21   | 10.0  | 90.3 - 108 | 99.9 | 99.9 | mg/L  | 0    | 20.0   |
|                      | 1854947 | 12.6 | 12.5 | 2.78   | 10.0  | 90.3 - 108 | 98.2 | 97.2 | mg/L  | 1.02 | 20.0   |
|                      | 1855371 | 12.1 | 12.1 | 2.62   | 10.0  | 90.3 - 108 | 94.8 | 94.8 | mg/L  | 0    | 20.0   |
|                      | 1855430 | 11.0 | 10.9 | 1.26   | 10.0  | 90.3 - 108 | 97.4 | 96.4 | mg/L  | 1.03 | 20.0   |

## Standard

| Parameter            | Sample | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------------|--------|---------|-------|-------|----------|------------|-----------|
| Total Organic Carbon |        | 48.6    | 50.0  | mg/L  | 97.2     | 90.0 - 110 | 120810322 |

Analytical Set **878697**

EPA 200.8 5.4

## Blank

| Parameter        | PrepSet | Reading | MDL        | MQL    | Units | File      |
|------------------|---------|---------|------------|--------|-------|-----------|
| Aluminum, Total  | 878490  | ND      | 0.0025     | 0.005  | mg/L  | 120813616 |
| Antimony, Total  | 878490  | ND      | 0.000399   | 0.001  | mg/L  | 120813616 |
| Arsenic, Total   | 878490  | ND      | 0.00025    | 0.0005 | mg/L  | 120813616 |
| Barium, Total    | 878490  | ND      | 0.00233    | 0.003  | mg/L  | 120813616 |
| Beryllium, Total | 878490  | ND      | 0.00006050 | 0.0005 | mg/L  | 120813616 |
| Cadmium, Total   | 878490  | ND      | 0.000095   | 0.0002 | mg/L  | 120813616 |
| Chromium, Total  | 878490  | ND      | 0.0005     | 0.0005 | mg/L  | 120813616 |
| Copper, Total    | 878490  | ND      | 0.0005     | 0.001  | mg/L  | 120813616 |
| Lead, Total      | 878490  | ND      | 0.00025    | 0.0005 | mg/L  | 120813616 |
| Nickel, Total    | 878490  | ND      | 0.0005     | 0.001  | mg/L  | 120813616 |
| Selenium, Total  | 878490  | ND      | 0.000728   | 0.001  | mg/L  | 120813616 |
| Silver, Total    | 878490  | ND      | 0.00006280 | 0.0002 | mg/L  | 120813616 |
| Thallium, Total  | 878490  | ND      | 0.00025    | 0.0005 | mg/L  | 120813616 |
| Zinc, Total      | 878490  | ND      | 0.0025     | 0.005  | mg/L  | 120813616 |

## CCV

| Parameter       | Reading         | Known  | Units | Recover%   | Limits%    | File       |           |
|-----------------|-----------------|--------|-------|------------|------------|------------|-----------|
| Aluminum, Total | 0.0485          | 0.05   | mg/L  | 97.0       | 90.0 - 110 | 120813554  |           |
|                 | 0.0474          | 0.05   | mg/L  | 94.8       | 90.0 - 110 | 120813565  |           |
|                 | 0.0477          | 0.05   | mg/L  | 95.4       | 90.0 - 110 | 120813576  |           |
|                 | 0.0487          | 0.05   | mg/L  | 97.4       | 90.0 - 110 | 120813585  |           |
|                 | 0.0508          | 0.05   | mg/L  | 102        | 90.0 - 110 | 120813611  |           |
|                 | 0.0492          | 0.05   | mg/L  | 98.4       | 90.0 - 110 | 120813621  |           |
|                 | 0.0472          | 0.05   | mg/L  | 94.4       | 90.0 - 110 | 120813632  |           |
|                 | 0.0475          | 0.05   | mg/L  | 95.0       | 90.0 - 110 | 120813639  |           |
|                 | Antimony, Total | 0.0479 | 0.05  | mg/L       | 95.8       | 90.0 - 110 | 120813585 |
|                 |                 | 0.0475 | 0.05  | mg/L       | 95.0       | 90.0 - 110 | 120813593 |
| 0.0473          |                 | 0.05   | mg/L  | 94.6       | 90.0 - 110 | 120813600  |           |
| 0.0466          |                 | 0.05   | mg/L  | 93.2       | 90.0 - 110 | 120813611  |           |
| 0.0485          |                 | 0.05   | mg/L  | 97.0       | 90.0 - 110 | 120813621  |           |
| 0.0474          |                 | 0.05   | mg/L  | 94.8       | 90.0 - 110 | 120813632  |           |
| 0.0479          |                 | 0.05   | mg/L  | 95.8       | 90.0 - 110 | 120813639  |           |
| Arsenic, Total  | 0.0491          | 0.05   | mg/L  | 98.2       | 90.0 - 110 | 120813554  |           |
|                 | 0.0478          | 0.05   | mg/L  | 95.6       | 90.0 - 110 | 120813565  |           |
|                 | 0.0473          | 0.05   | mg/L  | 94.6       | 90.0 - 110 | 120813576  |           |
|                 | 0.0493          | 0.05   | mg/L  | 98.6       | 90.0 - 110 | 120813585  |           |
| 0.0499          | 0.05            | mg/L   | 99.8  | 90.0 - 110 | 120813593  |            |           |





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## CCV

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Arsenic, Total   | 0.0471         | 0.05         | mg/L         | 94.2            | 90.0 - 110     | 120813611   |
|                  | 0.0494         | 0.05         | mg/L         | 98.8            | 90.0 - 110     | 120813621   |
|                  | 0.0478         | 0.05         | mg/L         | 95.6            | 90.0 - 110     | 120813632   |
|                  | 0.0471         | 0.05         | mg/L         | 94.2            | 90.0 - 110     | 120813639   |
| Barium, Total    | 0.0484         | 0.05         | mg/L         | 96.8            | 90.0 - 110     | 120813554   |
|                  | 0.0475         | 0.05         | mg/L         | 95.0            | 90.0 - 110     | 120813565   |
|                  | 0.047          | 0.05         | mg/L         | 94.0            | 90.0 - 110     | 120813576   |
|                  | 0.0478         | 0.05         | mg/L         | 95.6            | 90.0 - 110     | 120813585   |
|                  | 0.0475         | 0.05         | mg/L         | 95.0            | 90.0 - 110     | 120813593   |
|                  | 0.048          | 0.05         | mg/L         | 96.0            | 90.0 - 110     | 120813600   |
|                  | 0.0472         | 0.05         | mg/L         | 94.4            | 90.0 - 110     | 120813611   |
|                  | 0.0481         | 0.05         | mg/L         | 96.2            | 90.0 - 110     | 120813621   |
|                  | 0.0476         | 0.05         | mg/L         | 95.2            | 90.0 - 110     | 120813632   |
|                  | 0.0484         | 0.05         | mg/L         | 96.8            | 90.0 - 110     | 120813639   |
| Beryllium, Total | 0.0472         | 0.05         | mg/L         | 94.4            | 90.0 - 110     | 120813554   |
|                  | 0.0473         | 0.05         | mg/L         | 94.6            | 90.0 - 110     | 120813565   |
|                  | 0.0467         | 0.05         | mg/L         | 93.4            | 90.0 - 110     | 120813576   |
|                  | 0.0483         | 0.05         | mg/L         | 96.6            | 90.0 - 110     | 120813585   |
|                  | 0.0473         | 0.05         | mg/L         | 94.6            | 90.0 - 110     | 120813593   |
|                  | 0.0464         | 0.05         | mg/L         | 92.8            | 90.0 - 110     | 120813600   |
|                  | 0.0476         | 0.05         | mg/L         | 95.2            | 90.0 - 110     | 120813611   |
|                  | 0.0474         | 0.05         | mg/L         | 94.8            | 90.0 - 110     | 120813621   |
|                  | 0.0468         | 0.05         | mg/L         | 93.6            | 90.0 - 110     | 120813632   |
|                  | 0.0482         | 0.05         | mg/L         | 96.4            | 90.0 - 110     | 120813639   |
| Cadmium, Total   | 0.0484         | 0.05         | mg/L         | 96.8            | 90.0 - 110     | 120813554   |
|                  | 0.0481         | 0.05         | mg/L         | 96.2            | 90.0 - 110     | 120813565   |
|                  | 0.0477         | 0.05         | mg/L         | 95.4            | 90.0 - 110     | 120813576   |
|                  | 0.0477         | 0.05         | mg/L         | 95.4            | 90.0 - 110     | 120813585   |
|                  | 0.0476         | 0.05         | mg/L         | 95.2            | 90.0 - 110     | 120813593   |
|                  | 0.0478         | 0.05         | mg/L         | 95.6            | 90.0 - 110     | 120813600   |
|                  | 0.0469         | 0.05         | mg/L         | 93.8            | 90.0 - 110     | 120813611   |
|                  | 0.0473         | 0.05         | mg/L         | 94.6            | 90.0 - 110     | 120813621   |
|                  | 0.0475         | 0.05         | mg/L         | 95.0            | 90.0 - 110     | 120813632   |
|                  | 0.0474         | 0.05         | mg/L         | 94.8            | 90.0 - 110     | 120813639   |
| Chromium, Total  | 0.0508         | 0.05         | mg/L         | 102             | 90.0 - 110     | 120813554   |
|                  | 0.050          | 0.05         | mg/L         | 100             | 90.0 - 110     | 120813565   |
|                  | 0.050          | 0.05         | mg/L         | 100             | 90.0 - 110     | 120813576   |
|                  | 0.0504         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813585   |
|                  | 0.0504         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813593   |
|                  | 0.0505         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813600   |
|                  | 0.0496         | 0.05         | mg/L         | 99.2            | 90.0 - 110     | 120813611   |
|                  | 0.0508         | 0.05         | mg/L         | 102             | 90.0 - 110     | 120813621   |
|                  | 0.0506         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813632   |
|                  | 0.0501         | 0.05         | mg/L         | 100             | 90.0 - 110     | 120813639   |
| Copper, Total    | 0.049          | 0.05         | mg/L         | 98.0            | 90.0 - 110     | 120813554   |
|                  | 0.0482         | 0.05         | mg/L         | 96.4            | 90.0 - 110     | 120813565   |
|                  | 0.0478         | 0.05         | mg/L         | 95.6            | 90.0 - 110     | 120813576   |
|                  | 0.0469         | 0.05         | mg/L         | 93.8            | 90.0 - 110     | 120813585   |
|                  | 0.0476         | 0.05         | mg/L         | 95.2            | 90.0 - 110     | 120813593   |





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## CCV

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Copper, Total    | 0.0479         | 0.05         | mg/L         | 95.8            | 90.0 - 110     | 120813600   |
|                  | 0.0466         | 0.05         | mg/L         | 93.2            | 90.0 - 110     | 120813611   |
|                  | 0.0474         | 0.05         | mg/L         | 94.8            | 90.0 - 110     | 120813621   |
|                  | 0.0467         | 0.05         | mg/L         | 93.4            | 90.0 - 110     | 120813632   |
|                  | 0.047          | 0.05         | mg/L         | 94.0            | 90.0 - 110     | 120813639   |
| Lead, Total      | 0.0493         | 0.05         | mg/L         | 98.6            | 90.0 - 110     | 120813585   |
|                  | 0.0491         | 0.05         | mg/L         | 98.2            | 90.0 - 110     | 120813593   |
|                  | 0.0474         | 0.05         | mg/L         | 94.8            | 90.0 - 110     | 120813600   |
|                  | 0.0473         | 0.05         | mg/L         | 94.6            | 90.0 - 110     | 120813611   |
|                  | 0.0483         | 0.05         | mg/L         | 96.6            | 90.0 - 110     | 120813621   |
|                  | 0.0474         | 0.05         | mg/L         | 94.8            | 90.0 - 110     | 120813632   |
|                  | 0.0479         | 0.05         | mg/L         | 95.8            | 90.0 - 110     | 120813639   |
| Nickel, Total    | 0.0504         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813585   |
|                  | 0.0504         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813593   |
|                  | 0.0495         | 0.05         | mg/L         | 99.0            | 90.0 - 110     | 120813600   |
|                  | 0.0495         | 0.05         | mg/L         | 99.0            | 90.0 - 110     | 120813611   |
|                  | 0.0505         | 0.05         | mg/L         | 101             | 90.0 - 110     | 120813621   |
|                  | 0.0498         | 0.05         | mg/L         | 99.6            | 90.0 - 110     | 120813632   |
|                  | 0.0495         | 0.05         | mg/L         | 99.0            | 90.0 - 110     | 120813639   |
| Selenium, Total  | 0.0492         | 0.05         | mg/L         | 98.4            | 90.0 - 110     | 120813554   |
|                  | 0.0488         | 0.05         | mg/L         | 97.6            | 90.0 - 110     | 120813565   |
|                  | 0.0483         | 0.05         | mg/L         | 96.6            | 90.0 - 110     | 120813576   |
|                  | 0.0513         | 0.05         | mg/L         | 103             | 90.0 - 110     | 120813585   |
|                  | 0.0526         | 0.05         | mg/L         | 105             | 90.0 - 110     | 120813593   |
|                  | 0.0497         | 0.05         | mg/L         | 99.4            | 90.0 - 110     | 120813600   |
|                  | 0.0474         | 0.05         | mg/L         | 94.8            | 90.0 - 110     | 120813611   |
|                  | 0.0523         | 0.05         | mg/L         | 105             | 90.0 - 110     | 120813621   |
|                  | 0.0485         | 0.05         | mg/L         | 97.0            | 90.0 - 110     | 120813632   |
|                  | 0.0466         | 0.05         | mg/L         | 93.2            | 90.0 - 110     | 120813639   |
| Silver, Total    | 0.0485         | 0.05         | mg/L         | 97.0            | 90.0 - 110     | 120813554   |
|                  | 0.0478         | 0.05         | mg/L         | 95.6            | 90.0 - 110     | 120813565   |
|                  | 0.0475         | 0.05         | mg/L         | 95.0            | 90.0 - 110     | 120813576   |
|                  | 0.0469         | 0.05         | mg/L         | 93.8            | 90.0 - 110     | 120813585   |
|                  | 0.0472         | 0.05         | mg/L         | 94.4            | 90.0 - 110     | 120813593   |
|                  | 0.0473         | 0.05         | mg/L         | 94.6            | 90.0 - 110     | 120813600   |
|                  | 0.0462         | 0.05         | mg/L         | 92.4            | 90.0 - 110     | 120813611   |
|                  | 0.047          | 0.05         | mg/L         | 94.0            | 90.0 - 110     | 120813621   |
|                  | 0.0469         | 0.05         | mg/L         | 93.8            | 90.0 - 110     | 120813632   |
|                  | 0.0469         | 0.05         | mg/L         | 93.8            | 90.0 - 110     | 120813639   |
| Thallium, Total  | 0.0488         | 0.05         | mg/L         | 97.6            | 90.0 - 110     | 120813585   |
|                  | 0.0488         | 0.05         | mg/L         | 97.6            | 90.0 - 110     | 120813593   |
|                  | 0.047          | 0.05         | mg/L         | 94.0            | 90.0 - 110     | 120813600   |
|                  | 0.0475         | 0.05         | mg/L         | 95.0            | 90.0 - 110     | 120813611   |
|                  | 0.0479         | 0.05         | mg/L         | 95.8            | 90.0 - 110     | 120813621   |
|                  | 0.0471         | 0.05         | mg/L         | 94.2            | 90.0 - 110     | 120813632   |
|                  | 0.0477         | 0.05         | mg/L         | 95.4            | 90.0 - 110     | 120813639   |

## ICV

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Aluminum, Total  | 0.0481         | 0.05         | mg/L         | 96.2            | 90.0 - 110     | 120813553   |





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## ICV

| Parameter        | Reading | Known | Units | Recover% | Limits%    | File      |
|------------------|---------|-------|-------|----------|------------|-----------|
| Antimony, Total  | 0.0473  | 0.05  | mg/L  | 94.6     | 90.0 - 110 | 120813553 |
| Arsenic, Total   | 0.0486  | 0.05  | mg/L  | 97.2     | 90.0 - 110 | 120813553 |
| Barium, Total    | 0.0475  | 0.05  | mg/L  | 95.0     | 90.0 - 110 | 120813553 |
| Beryllium, Total | 0.0469  | 0.05  | mg/L  | 93.8     | 90.0 - 110 | 120813553 |
| Cadmium, Total   | 0.0485  | 0.05  | mg/L  | 97.0     | 90.0 - 110 | 120813553 |
| Chromium, Total  | 0.0505  | 0.05  | mg/L  | 101      | 90.0 - 110 | 120813553 |
| Copper, Total    | 0.0503  | 0.05  | mg/L  | 101      | 90.0 - 110 | 120813553 |
| Lead, Total      | 0.0482  | 0.05  | mg/L  | 96.4     | 90.0 - 110 | 120813553 |
| Nickel, Total    | 0.0509  | 0.05  | mg/L  | 102      | 90.0 - 110 | 120813553 |
| Selenium, Total  | 0.0489  | 0.05  | mg/L  | 97.8     | 90.0 - 110 | 120813553 |
| Silver, Total    | 0.048   | 0.05  | mg/L  | 96.0     | 90.0 - 110 | 120813553 |
| Thallium, Total  | 0.0481  | 0.05  | mg/L  | 96.2     | 90.0 - 110 | 120813553 |

## LCS Dup

| Parameter        | PrepSet | LCS    | LCSD   | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|------------------|---------|--------|--------|-------|------------|------|-------|-------|-------|--------|
| Aluminum, Total  | 878490  | 0.490  | 0.491  | 0.500 | 85.0 - 115 | 98.0 | 98.2  | mg/L  | 0.204 | 20.0   |
| Antimony, Total  | 878490  | 0.465  | 0.463  | 0.500 | 85.0 - 115 | 93.0 | 92.6  | mg/L  | 0.431 | 20.0   |
| Arsenic, Total   | 878490  | 0.484  | 0.481  | 0.500 | 85.0 - 115 | 96.8 | 96.2  | mg/L  | 0.622 | 20.0   |
| Barium, Total    | 878490  | 0.486  | 0.485  | 0.500 | 85.0 - 115 | 97.2 | 97.0  | mg/L  | 0.206 | 20.0   |
| Beryllium, Total | 878490  | 0.191  | 0.194  | 0.200 | 85.0 - 115 | 95.5 | 97.0  | mg/L  | 1.56  | 20.0   |
| Cadmium, Total   | 878490  | 0.244  | 0.242  | 0.250 | 85.0 - 115 | 97.6 | 96.8  | mg/L  | 0.823 | 20.0   |
| Chromium, Total  | 878490  | 0.501  | 0.499  | 0.500 | 85.0 - 115 | 100  | 99.8  | mg/L  | 0.400 | 20.0   |
| Copper, Total    | 878490  | 0.483  | 0.475  | 0.500 | 85.0 - 115 | 96.6 | 95.0  | mg/L  | 1.67  | 20.0   |
| Lead, Total      | 878490  | 0.498  | 0.496  | 0.500 | 85.0 - 115 | 99.6 | 99.2  | mg/L  | 0.402 | 20.0   |
| Nickel, Total    | 878490  | 0.499  | 0.493  | 0.500 | 85.0 - 115 | 99.8 | 98.6  | mg/L  | 1.21  | 20.0   |
| Selenium, Total  | 878490  | 0.497  | 0.498  | 0.500 | 85.0 - 115 | 99.4 | 99.6  | mg/L  | 0.201 | 20.0   |
| Silver, Total    | 878490  | 0.0959 | 0.0951 | 0.100 | 85.0 - 115 | 95.9 | 95.1  | mg/L  | 0.838 | 20.0   |
| Thallium, Total  | 878490  | 0.487  | 0.484  | 0.500 | 85.0 - 115 | 97.4 | 96.8  | mg/L  | 0.618 | 20.0   |
| Zinc, Total      | 878490  | 0.484  | 0.474  | 0.500 | 85.0 - 115 | 96.8 | 94.8  | mg/L  | 2.09  | 20.0   |

## MRL Check

| Parameter     | Reading | Known | Units | Recover% | Limits%    | File      |
|---------------|---------|-------|-------|----------|------------|-----------|
| Copper, Total | 0.00137 | 0.001 | mg/L  | 137      | 25.0 - 175 | 120813552 |
| Lead, Total   | 0.00158 | 0.001 | mg/L  | 158      | 25.0 - 175 | 120813552 |

## MSD

| Parameter        | Sample  | MS     | MSD    | UNK      | Known | Limits     | MS%  | MSD% | Units | RPD  | Limit% |
|------------------|---------|--------|--------|----------|-------|------------|------|------|-------|------|--------|
| Aluminum, Total  | 1855447 | 0.848  | 0.822  | 0.370    | 0.500 | 70.0 - 130 | 95.6 | 90.4 | mg/L  | 5.59 | 20.0   |
| Antimony, Total  | 1855447 | 0.470  | 0.461  | 0.00121  | 0.500 | 70.0 - 130 | 93.8 | 92.0 | mg/L  | 1.94 | 20.0   |
| Arsenic, Total   | 1855447 | 0.503  | 0.487  | 0.00302  | 0.500 | 70.0 - 130 | 100  | 96.8 | mg/L  | 3.25 | 20.0   |
| Barium, Total    | 1855447 | 0.508  | 0.497  | 0.0165   | 0.500 | 70.0 - 130 | 98.3 | 96.1 | mg/L  | 2.26 | 20.0   |
| Beryllium, Total | 1855447 | 0.197  | 0.190  | 0.000247 | 0.200 | 70.0 - 130 | 98.4 | 94.9 | mg/L  | 3.62 | 20.0   |
| Cadmium, Total   | 1855447 | 0.246  | 0.239  | 0.000316 | 0.250 | 70.0 - 130 | 98.3 | 95.5 | mg/L  | 2.89 | 20.0   |
| Chromium, Total  | 1855447 | 0.505  | 0.495  | 0.00124  | 0.500 | 70.0 - 130 | 101  | 98.8 | mg/L  | 2.00 | 20.0   |
| Copper, Total    | 1855447 | 0.478  | 0.463  | 0.00169  | 0.500 | 70.0 - 130 | 95.3 | 92.3 | mg/L  | 3.20 | 20.0   |
| Lead, Total      | 1855447 | 0.506  | 0.498  | 0.000776 | 0.500 | 70.0 - 130 | 101  | 99.4 | mg/L  | 1.60 | 20.0   |
| Nickel, Total    | 1855447 | 0.493  | 0.477  | 0.00272  | 0.500 | 70.0 - 130 | 98.1 | 94.9 | mg/L  | 3.32 | 20.0   |
| Selenium, Total  | 1855447 | 0.512  | 0.496  | 0.00845  | 0.500 | 70.0 - 130 | 101  | 97.5 | mg/L  | 3.23 | 20.0   |
| Silver, Total    | 1855447 | 0.0957 | 0.0925 | 0.000128 | 0.100 | 70.0 - 130 | 95.6 | 92.4 | mg/L  | 3.41 | 20.0   |
| Thallium, Total  | 1855447 | 0.493  | 0.483  | 0.000756 | 0.500 | 70.0 - 130 | 98.4 | 96.4 | mg/L  | 2.05 | 20.0   |





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## MSD

| Parameter        | Sample  | MS     | MSD    | UNK      | Known | Limits     | MS%  | MSD% | Units | RPD   | Limit% |
|------------------|---------|--------|--------|----------|-------|------------|------|------|-------|-------|--------|
| Zinc, Total      | 1855447 | 0.480  | 0.466  | ND       | 0.500 | 70.0 - 130 | 96.0 | 93.2 | mg/L  | 2.96  | 20.0   |
| Aluminum, Total  | 1855480 | 0.507  | 0.509  | ND       | 0.500 | 70.0 - 130 | 101  | 102  | mg/L  | 0.394 | 20.0   |
| Antimony, Total  | 1855480 | 0.463  | 0.464  | ND       | 0.500 | 70.0 - 130 | 92.6 | 92.8 | mg/L  | 0.216 | 20.0   |
| Arsenic, Total   | 1855480 | 0.478  | 0.490  | ND       | 0.500 | 70.0 - 130 | 95.6 | 98.0 | mg/L  | 2.48  | 20.0   |
| Barium, Total    | 1855480 | 0.525  | 0.530  | 0.0427   | 0.500 | 70.0 - 130 | 96.5 | 97.5 | mg/L  | 1.03  | 20.0   |
| Beryllium, Total | 1855480 | 0.194  | 0.197  | ND       | 0.200 | 70.0 - 130 | 97.0 | 98.5 | mg/L  | 1.53  | 20.0   |
| Cadmium, Total   | 1855480 | 0.245  | 0.247  | ND       | 0.250 | 70.0 - 130 | 98.0 | 98.8 | mg/L  | 0.813 | 20.0   |
| Chromium, Total  | 1855480 | 0.510  | 0.511  | 0.000747 | 0.500 | 70.0 - 130 | 102  | 102  | mg/L  | 0.196 | 20.0   |
| Copper, Total    | 1855480 | 0.468  | 0.478  | 0.00234  | 0.500 | 70.0 - 130 | 93.1 | 95.1 | mg/L  | 2.12  | 20.0   |
| Lead, Total      | 1855480 | 0.507  | 0.512  | ND       | 0.500 | 70.0 - 130 | 101  | 102  | mg/L  | 0.981 | 20.0   |
| Nickel, Total    | 1855480 | 0.491  | 0.498  | ND       | 0.500 | 70.0 - 130 | 98.2 | 99.6 | mg/L  | 1.42  | 20.0   |
| Selenium, Total  | 1855480 | 0.491  | 0.503  | ND       | 0.500 | 70.0 - 130 | 98.2 | 101  | mg/L  | 2.41  | 20.0   |
| Silver, Total    | 1855480 | 0.0944 | 0.0955 | ND       | 0.100 | 70.0 - 130 | 94.4 | 95.5 | mg/L  | 1.16  | 20.0   |
| Thallium, Total  | 1855480 | 0.471  | 0.483  | ND       | 0.500 | 70.0 - 130 | 94.2 | 96.6 | mg/L  | 2.52  | 20.0   |
| Zinc, Total      | 1855480 | 0.526  | 0.540  | 0.0523   | 0.500 | 70.0 - 130 | 94.7 | 97.5 | mg/L  | 2.91  | 20.0   |

Analytical Set 878886

EPA 200.8 5.4

## Blank

| Parameter       | PrepSet | Reading  | MDL      | MDL    | Units | File      |
|-----------------|---------|----------|----------|--------|-------|-----------|
| Aluminum, Total | 878490  | 0.0222   | 0.00204  | 0.0025 | mg/L  | 120817487 |
| Arsenic, Total  | 878490  | 0.000735 | 0.000359 | 0.0005 | mg/L  | 120817487 |
| Barium, Total   | 878490  | 0.00207  | 0.000562 | 0.001  | mg/L  | 120817487 |
| Cadmium, Total  | 878490  | ND       | 0.000186 | 0.0002 | mg/L  | 120817487 |
| Lead, Total     | 878490  | ND       | 0.00025  | 0.0005 | mg/L  | 120817487 |
| Nickel, Total   | 878490  | ND       | 0.0005   | 0.001  | mg/L  | 120817487 |
| Zinc, Total     | 878490  | ND       | 0.001    | 0.002  | mg/L  | 120817487 |

## CCV

| Parameter   | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------|---------|-------|-------|----------|------------|-----------|
| Zinc, Total | 0.0524  | 0.05  | mg/L  | 105      | 90.0 - 110 | 120817447 |
|             | 0.0515  | 0.05  | mg/L  | 103      | 90.0 - 110 | 120817451 |
|             | 0.0521  | 0.05  | mg/L  | 104      | 90.0 - 110 | 120817455 |
|             | 0.0515  | 0.05  | mg/L  | 103      | 90.0 - 110 | 120817462 |
|             | 0.0515  | 0.05  | mg/L  | 103      | 90.0 - 110 | 120817473 |
|             | 0.0519  | 0.05  | mg/L  | 104      | 90.0 - 110 | 120817484 |
|             | 0.0514  | 0.05  | mg/L  | 103      | 90.0 - 110 | 120817491 |
|             | 0.0508  | 0.05  | mg/L  | 102      | 90.0 - 110 | 120817500 |

## ICV

| Parameter   | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------|---------|-------|-------|----------|------------|-----------|
| Zinc, Total | 0.0509  | 0.05  | mg/L  | 102      | 90.0 - 110 | 120817443 |

## LCS Dup

| Parameter       | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|-----------------|---------|-------|-------|-------|------------|------|-------|-------|-------|--------|
| Aluminum, Total | 878490  | 0.526 | 0.515 | 0.500 | 85.0 - 115 | 105  | 103   | mg/L  | 2.11  | 20.0   |
| Arsenic, Total  | 878490  | 0.492 | 0.488 | 0.500 | 85.0 - 115 | 98.4 | 97.6  | mg/L  | 0.816 | 20.0   |
| Barium, Total   | 878490  | 0.507 | 0.503 | 0.500 | 85.0 - 115 | 101  | 101   | mg/L  | 0.792 | 20.0   |
| Cadmium, Total  | 878490  | 0.247 | 0.243 | 0.250 | 85.0 - 115 | 98.8 | 97.2  | mg/L  | 1.63  | 20.0   |
| Lead, Total     | 878490  | 0.515 | 0.510 | 0.500 | 85.0 - 115 | 103  | 102   | mg/L  | 0.976 | 20.0   |
| Nickel, Total   | 878490  | 0.496 | 0.486 | 0.500 | 85.0 - 115 | 99.2 | 97.2  | mg/L  | 2.04  | 20.0   |





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### LCS Dup

| Parameter   | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|-------------|---------|-------|-------|-------|------------|------|-------|-------|-------|--------|
| Zinc, Total | 878490  | 0.493 | 0.489 | 0.500 | 85.0 - 115 | 98.6 | 97.8  | mg/L  | 0.815 | 20.0   |

### MSD

| Parameter       | Sample  | MS    | MSD   | UNK     | Known | Limits     | MS%  | MSD% | Units | RPD  | Limit% |
|-----------------|---------|-------|-------|---------|-------|------------|------|------|-------|------|--------|
| Aluminum, Total | 1855447 | 0.861 | 0.851 | 0.386   | 0.500 | 70.0 - 130 | 95.0 | 93.0 | mg/L  | 2.13 | 20.0   |
| Arsenic, Total  | 1855447 | 0.502 | 0.489 | 0.0039  | 0.500 | 70.0 - 130 | 99.6 | 97.0 | mg/L  | 2.64 | 20.0   |
| Barium, Total   | 1855447 | 0.510 | 0.505 | 0.0176  | 0.500 | 70.0 - 130 | 98.5 | 97.5 | mg/L  | 1.02 | 20.0   |
| Cadmium, Total  | 1855447 | 0.240 | 0.240 | ND      | 0.250 | 70.0 - 130 | 96.0 | 96.0 | mg/L  | 0    | 20.0   |
| Lead, Total     | 1855447 | 0.505 | 0.499 | ND      | 0.500 | 70.0 - 130 | 101  | 99.8 | mg/L  | 1.20 | 20.0   |
| Nickel, Total   | 1855447 | 0.489 | 0.481 | ND      | 0.500 | 70.0 - 130 | 97.8 | 96.2 | mg/L  | 1.65 | 20.0   |
| Zinc, Total     | 1855447 | 0.493 | 0.486 | 0.00348 | 0.500 | 70.0 - 130 | 97.9 | 96.5 | mg/L  | 1.44 | 20.0   |

Analytical Set **878962**

EPA 200.7 4.4

### CCV

| Parameter           | Reading | Known | Units | Recover% | Limits%    | File      |
|---------------------|---------|-------|-------|----------|------------|-----------|
| Dissolved Calcium   | 26.1    | 25.0  | mg/L  | 104      | 90.0 - 110 | 120819375 |
|                     | 26.6    | 25.0  | mg/L  | 106      | 90.0 - 110 | 120819383 |
| Dissolved Magnesium | 25.9    | 25.0  | mg/L  | 104      | 90.0 - 110 | 120819375 |
|                     | 26.4    | 25.0  | mg/L  | 106      | 90.0 - 110 | 120819383 |
| Dissolved Sodium    | 24.9    | 25.0  | mg/L  | 99.6     | 90.0 - 110 | 120819375 |
|                     | 25.6    | 25.0  | mg/L  | 102      | 90.0 - 110 | 120819383 |

### Dir. SPKD

| Parameter           | Sample  | DSPK | DSPKD | UNK  | Known | Limits%      | DSPK%  | DSPKD% | Units | RPD  | Limit% |
|---------------------|---------|------|-------|------|-------|--------------|--------|--------|-------|------|--------|
| Dissolved Calcium   | 1855559 | 64.1 | 73.4  | 22.7 | 50.0  | 75.0 - 125   | 82.8   | 101    | mg/L  | 13.5 | 20.0   |
| Dissolved Magnesium | 1855559 | 43.4 | 52.1  | 2.44 | 50.0  | 75.0 - 125   | 81.9   | 99.3   | mg/L  | 18.2 | 20.0   |
| Dissolved Sodium    | 1855559 | 122  | 132   | 84.9 | 50.0  | 75.0 - 125 * | 74.2 * | 94.2   | mg/L  | 7.87 | 20.0   |

### Direct SPK

| Parameter           | Sample  | DSPK | UNK  | Known | Limits%    | DSPK%  | Units |
|---------------------|---------|------|------|-------|------------|--------|-------|
| Dissolved Calcium   | 1855559 | 64.1 | 22.7 | 50.0  | 75.0 - 125 | 82.8   | mg/L  |
| Dissolved Magnesium | 1855559 | 43.4 | 2.44 | 50.0  | 75.0 - 125 | 81.9   | mg/L  |
| Dissolved Sodium    | 1855559 | 122  | 84.9 | 50.0  | 75.0 - 125 | 74.2 * | mg/L  |

### ICL

| Parameter           | Reading | Known | Units | Recover% | Limits%    | File      |
|---------------------|---------|-------|-------|----------|------------|-----------|
| Dissolved Calcium   | 49.1    | 50.0  | mg/L  | 98.2     | 95.0 - 105 | 120819348 |
| Dissolved Magnesium | 49.3    | 50.0  | mg/L  | 98.6     | 95.0 - 105 | 120819348 |
| Dissolved Sodium    | 49.7    | 50.0  | mg/L  | 99.4     | 95.0 - 105 | 120819348 |

### ICV

| Parameter           | Reading | Known | Units | Recover% | Limits%    | File      |
|---------------------|---------|-------|-------|----------|------------|-----------|
| Dissolved Calcium   | 25.5    | 25.0  | mg/L  | 102      | 90.0 - 110 | 120819351 |
| Dissolved Magnesium | 25.3    | 25.0  | mg/L  | 101      | 90.0 - 110 | 120819351 |
| Dissolved Sodium    | 24.5    | 25.0  | mg/L  | 98.0     | 90.0 - 110 | 120819351 |

### LDR

| Parameter           | Reading | Known | Units | Recover% | Limits%    | File      |
|---------------------|---------|-------|-------|----------|------------|-----------|
| Dissolved Calcium   | 99.0    | 100   | mg/L  | 99.0     | 90.0 - 110 | 120819349 |
| Dissolved Magnesium | 101     | 100   | mg/L  | 101      | 90.0 - 110 | 120819349 |
| Dissolved Sodium    | 109     | 100   | mg/L  | 109      | 90.0 - 110 | 120819349 |





# Quality Control

Analytical Set **878149**

SM 4500-CI F-2011

**Blank**

| <u>Parameter</u>             | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| CI2                          | 878149         | ND             | 0.100      | 0.100      | mg/L         | 120801648   |
| Residual,Total(Lab)Titration |                |                |            |            |              |             |

**Duplicate**

| <u>Parameter</u>             | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| CI2                          | 1855789       | ND            | ND             | mg/L        |            | 20.0          |
| Residual,Total(Lab)Titration |               |               |                |             |            |               |

Analytical Set **878298**

SM 2510 B-2011

**Blank**

| <u>Parameter</u>              | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|-------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Lab Spec. Conductance at 25 C | 878298         | 0.88           |            |            | umhos/cm     | 120804779   |

**Duplicate**

| <u>Parameter</u>              | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|-------------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Lab Spec. Conductance at 25 C | 1854935       | 286           | 280            | umhos/cm    | 2.12       | 20.0          |
|                               | 1855789       | 1190          | 1170           | umhos/cm    | 1.69       | 20.0          |

**ICV**

| <u>Parameter</u>              | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Lab Spec. Conductance at 25 C | 12700          | 12900        | umhos/cm     | 98.4            | 90.0 - 110     | 120804782   |

**Standard**

| <u>Parameter</u>              | <u>Sample</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------------|---------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Lab Spec. Conductance at 25 C | 878298        | 1420           | 1410         | umhos/cm     | 101             | 90.0 - 110     | 120804780   |
|                               | 878298        | 100            | 100          | umhos/cm     | 100             | 90.0 - 110     | 120804781   |
|                               | 878298        | 1440           | 1410         | umhos/cm     | 102             | 90.0 - 110     | 120804794   |
|                               | 878298        | 1410           | 1410         | umhos/cm     | 100             | 90.0 - 110     | 120804805   |

Analytical Set **878587**

SM 5220 D-2011

**CCV**

| <u>Parameter</u>       | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Chemical Oxygen Demand | 399            | 400          | mg/L         | 99.8            | 95.0 - 105     | 120811059   |

**Duplicate**

| <u>Parameter</u>       | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Chemical Oxygen Demand | 1855007       | 26.1          | 22.5           | mg/L        | 14.8       | 20.0          |
|                        | 1855527       | 51.5          | 55.1           | mg/L        | 6.75       | 20.0          |

**LCS**

| <u>Parameter</u>       | <u>PrepSet</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits</u> | <u>File</u> |
|------------------------|----------------|----------------|--------------|--------------|-----------------|---------------|-------------|
| Chemical Oxygen Demand | 878587         | 214            | 200          | mg/L         | 107             | 90.0 - 110    | 120811060   |

**Mat. Spike**

| <u>Parameter</u>       | <u>Sample</u> | <u>Spike</u> | <u>Unknown</u> | <u>Known</u> | <u>Units</u> | <u>Recovery %</u> | <u>Limits %</u> | <u>File</u> |
|------------------------|---------------|--------------|----------------|--------------|--------------|-------------------|-----------------|-------------|
| Chemical Oxygen Demand | 1855007       | 225          | 22.5           | 200          | mg/L         | 101               | 80.0 - 120      | 120811063   |
|                        | 1855527       | 229          | 55.1           | 200          | mg/L         | 87.0              | 80.0 - 120      | 120811075   |

Analytical Set **879288**

SM 4500-P E-2011







# Quality Control

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## AWRL/MRL C

| <u>Parameter</u>         | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|--------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Phosphorus (as P), total | 0.069          | 0.060        | mg/L         | 115             | 70.0 - 130     | 120825296   |

## Blank

| <u>Parameter</u>         | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|--------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Phosphorus (as P), total | 879288         | 0.0119         | 0.00285    | 0.010      | mg/L         | 120825295   |

## CCV

| <u>Parameter</u>         | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|--------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Phosphorus (as P), total | 0.317          | 0.300        | mg/L         | 106             | 90.0 - 110     | 120825297   |
|                          | 0.324          | 0.300        | mg/L         | 108             | 90.0 - 110     | 120825312   |
|                          | 0.323          | 0.300        | mg/L         | 108             | 90.0 - 110     | 120825325   |

## LCS Dup

| <u>Parameter</u>         | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>Known</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|--------------------------|----------------|------------|-------------|--------------|----------------|-------------|--------------|--------------|------------|---------------|
| Phosphorus (as P), total | 879288         | 0.354      | 0.357       | 0.300        | 80.0 - 120     | 118         | 119          | mg/L         | 0.844      | 20.0          |

## MSD

| <u>Parameter</u>         | <u>Sample</u> | <u>MS</u> | <u>MSD</u> | <u>UNK</u> | <u>Known</u> | <u>Limits</u> | <u>MS%</u> | <u>MSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|--------------------------|---------------|-----------|------------|------------|--------------|---------------|------------|-------------|--------------|------------|---------------|
| Phosphorus (as P), total | 1855357       | 0.463     | 0.466      | 0.181      | 0.300        | 70.0 - 130    | 94.0       | 95.0        | mg/L         | 1.06       | 20.0          |
|                          | 1855358       | 0.426     | 0.421      | 0.175      | 0.300        | 70.0 - 130    | 83.7       | 82.0        | mg/L         | 2.01       | 20.0          |

\* Out RPD is Relative Percent Difference:  $\frac{\text{abs}(r1-r2)}{\text{mean}(r1,r2)} * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification; AWRL/MRL C - Ambient Water Reporting Limit/Minimum Reporting Limit Check Std; ICV - Initial Calibration Verification; LCS - Laboratory Control Sample; CCB - Continuing Calibration Blank; MS - Matrix Spike; MRL Check - Minimum Reporting Limit Check Std; LDR - Linear Dynamic Range Standard



905924 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
Employee Owned Integrity Caring Continual Improvement

Chain of Custody

COC Printed 10/15/2020 Page 1 of 2

Report To:

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**CABC-P**  
**126**

Lab Number 185000  
PO Number 11041  
Phone 806/661-3130  
Fax 806/661-3134

Land Application Grab Samples

Matrix: Non-Potable Water  
Sample Collection Start

Date: 1.16.20 Time: 0840

Sampler Printed Name: MICHAEL BONILLA

Sampler Affiliation: CABC

Sampler Signature: [Signature]

On Site Testing

C12k Field Cl2 Check for CNa

Field Cl2 Check for CNa Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

S2Ck Field Sulfide Check for CNa

Field Sulfide Check for CNa Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |  |  |  |
|---|--|--|--|
| 1 | Na2S2O3 (0.008%) Polystyrene-100 mL Sterilized       |  |  |
| N | <b>Short Hold</b> FMPL Fecal Coliform MPN Started /L | SM 9221 E + C-2006 (0.347 days)            |  |
| 1 | H2SO4 to pH <2 GIQt w/TcF-lined lid                  |  |  |
| N | HEM Oil and Grease (HEM)                             | BPA 1664B (HEM) (28.0 days)                |  |
| 1 | NaOH to pH >12 Polyethylene 250 mL/amber             |  |  |
| N | CNa Cyanide, total                                   | SM 4500-CN <sup>-</sup> E-2011 (14.0 days) |  |

Ambient Conditions/Comments

as 1.16.19

~~Handy~~

pH  
Cl2  
Temp

CLIENT PROVIDED RESULTS  
UNDER COMMENTS ON NEXT PAGE

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

905924 CoC Print Group 001 of 001



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COC Printed 01/15/2020 Page 2 of 2

### Chain of Custody

**CABC-P**

**126**

Report To:

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Phone 806/661-3130  
Fax 806/661-3134

| Date    | Time  | Relinquished   | Received   |
|---------|-------|--|--|
| 1/16/20 | 16:00 | Printed Name: <u>MICHAEL BONILLA</u> Affiliation: <u>CABC</u><br>Signature: <u>[Signature]</u> | Printed Name: <u>JCH</u> Affiliation: <u>ana lab</u><br>Signature: <u>[Signature]</u>                |
| 1/16/20 | 18:00 | Printed Name: <u>JCH</u> Affiliation: <u>ana lab</u><br>Signature: <u>[Signature]</u>          | Printed Name: <u>LSO</u> Affiliation: <u></u><br>Signature: <u></u>                                  |
| 1/17/20 | 0650  | Printed Name: <u>LSO</u> Affiliation: <u></u><br>Signature: <u></u>                            | Printed Name: <u>Rayshawn Thompson Ana-Lab</u> Affiliation: <u></u><br>Signature: <u>[Signature]</u> |
|         |       | Printed Name: <u></u> Affiliation: <u></u><br>Signature: <u></u>                               | Printed Name: <u></u> Affiliation: <u></u><br>Signature: <u></u>                                     |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region

The accredited column designates accreditation by A - A2LA, N - NELAP, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

**Comments**

pH & TEMP  
COLLECTED BY: MBB DATE: 1.16.20 TIME: 0840 ANALYZED BY: MBB DATE: 1.16.20 TIME: 0845  
RESULTS: 7.5 TEMP: 8.6°C

TOTAL CHLORINE RESIDUAL  
COLLECTED BY: MBB DATE: 1.16.20 TIME: 0840 ANALYZED BY: MBB DATE: 1.16.20 TIME: 0847  
RESULTS: ND TEMP: 8.6°C

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662 Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

905924 CoC Print Group 001 of 001



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**Chain of Custody**

COC Printed 01/15/2020 Page 1 of 3

**Report To:**

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

**CABC-P**  
**127**

Lab Number 1855559  
 PO Number 111041  
 Phone 806/661-3130  
 Fax 806/661-3134

**Land Application Composite**

Matrix: Non-Potable Water

Sample Collection Start

Sample Collection Stop

Date: 1.15.20 Time: 0850

Date: 1.16.20 Time: 0840

Sampler Printed Name: MICAH BONILLA

Sampler Printed Name: MICAH BONILLA

Sampler Affiliation: ANA CABC

Sampler Affiliation: CABC

Sampler Signature: [Signature]

Sampler Signature: [Signature]

|   |   |  |                            |
|---|---|--|----------------------------|
|   | I | H2SO4 to pH <2 Amber Glass 250 mL w/Teflon lined lid |                            |
| N |   | TOCL Total Organic Carbon                            | SM 5310 C-2011 (28.0 days) |
|   | I | Z -- No bottle required                              |                            |
| N |   | Short Hold CFFL Client Field Filtration (Onsite)     | (0.0104 days)              |

Client Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |  |   |  |
|---|--|---|--|
| N |  | Short Hold Cr+3 Trivalent Chromium        | Calculation CAS:16065-83-1 (1.00 days) |
| N |  | Short Hold FFIL Field Filtration (Onsite) | (0.0104 days)                          |

Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |   |  |  |
|---|---|--|--|
|   | I | GTMS Transfer to ICP/MS                      |  |
|   | I | HNO3 to pH <2 Polyethylene 500 mL for Metals |  |
| N |   | *AgM Silver, Total                           | EPA 200.8 5.4 CAS:7440-22-4 (180 days) |
| N |   | *AlM Aluminum, Total                         | EPA 200.8 5.4 CAS:7429-90-5 (180 days) |
| N |   | *AsM Arsenic, Total                          | EPA 200.8 5.4 CAS:7440-38-2 (180 days) |
| N |   | *BaM Barium, Total                           | EPA 200.8 5.4 CAS:7440-39-3 (180 days) |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

905924 CoC Print Group 001 of 001



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 Employee Owned Integrity Caring Continual Improvement  
 COC Printed 01/15/2020 Page 2 of 3

### Chain of Custody

**CABC-P**  
127

**Report To:**

Cabot Corp.  
Ashlee Green  
P.O. Box 5001  
Pampa, TX 79065

Phone 806/661-3130  
Fax 806/661-3134

|  |                   |   |   |
|--|-------------------|---|---|
| N  | *BeM              | Beryllium, Total                                  | EPA 200.8 5.4 CAS:7440-41-7 (180 days)          |
| N  | *CdM              | Cadmium, Total                                    | EPA 200.8 5.4 CAS:7440-43-9 (180 days)          |
| N  | *CrM              | Chromium, Total                                   | EPA 200.8 5.4 CAS:7440-47-3 (180 days)          |
| N  | *CuM              | Copper, Total                                     | EPA 200.8 5.4 CAS:7440-50-8 (180 days)          |
| N  | *Hg               | Mercury, Total                                    | EPA 245.1 3 CAS:7439-97-6 (28.0 days)           |
| N  | *NiM              | Nickel, Total                                     | EPA 200.8 5.4 CAS:7440-02-0 (180 days)          |
| N  | *PbM              | Lead, Total                                       | EPA 200.8 5.4 CAS:7439-92-1 (180 days)          |
| N  | *SbM              | Antimony, Total                                   | EPA 200.8 5.4 CAS:7440-36-0 (180 days)          |
| N  | *SeM              | Selenium, Total                                   | EPA 200.8 5.4 CAS:7782-49-2 (180 days)          |
| N  | *TlM              | Thallium, Total                                   | EPA 200.8 5.4 CAS:7440-28-0 (180 days)          |
| N  | *ZnM              | Zinc, Total                                       | EPA 200.8 5.4 CAS:7440-66-6 (180 days)          |
| N  | 301L              | Liquid Metals Digestion                           | EPA 200.2 2.8 (180 days)                        |
| N  | 747L              | Mercury Liquid Metals Digestion                   | EPA 245.1 3 (28.0 days)                         |
| <b>1 HNO3 to pH &lt;2 Polyethylene 500 mL/AFTER filtration</b> |                   |   |   |
| N  | <b>Short Hold</b> | *CaD Dissolved Calcium                            | EPA 200.7, Rev. 4.4 CAS:7440-70-2 (0.0104 days) |
| N  | <b>Short Hold</b> | *MgD Dissolved Magnesium                          | EPA 200.7, Rev. 4.4 CAS:7439-95-4 (0.0104 days) |
| N  | <b>Short Hold</b> | *NaD Dissolved Sodium                             | EPA 200.7, Rev. 4.4 CAS:7440-23-5 (0.0104 days) |
| <b>2 H2SO4 to pH &lt;2 250 ml Polyethylene</b>                 |                   |   |   |
| N  |                   | COD Chemical Oxygen Demand                        | SM 5220 D-2011 (28.0 days)                      |
| N  |                   | NH <sub>4</sub> N Ammonia (as N)                  | EPA 350.1 2 (28.0 days)                         |
| N  |                   | TKN Total Kjeldahl Nitrogen                       | EPA 351.2 2 CAS:7727-37-9 (28.0 days)           |
| N  |                   | TPWB Phosphorus (as P), total                     | SM 4500-P E-2011 CAS:7723-14-0 (28.0 days)      |
| <b>1 Polyethylene 1/2 gal (White)</b>                          |                   |   |   |
| N  | <b>Short Hold</b> | BOD Biochemical Oxygen Demand (BOD <sub>5</sub> ) | SM 5210 B-2011 CAS:1026-3 (2.00 days)           |
| N  | <b>Short Hold</b> | BOD <sub>c</sub> BOD Carbonaceous                 | SM 5210 B-2011 (2.00 days)                      |
| N  | <b>Short Hold</b> | SARL Sodium Adsorption Ratio - Liquid             | 600/2-78-054 3.2.19 (0.0104 days)               |
| N  |                   | TSS Total Suspended Solids                        | SM 2540 D-2011 (7.00 days)                      |
| <b>1 Polyethylene Quart (White)</b>                            |                   |   |   |
| N  |                   | :CIL Chloride                                     | EPA 300.0 2.1 (28.0 days)                       |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

905924 CoC Print Group 001 of 001



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 Employee Owned Integrity Caring Continual Improvement  
 COC Printed 01/15/2020 Page 3 of 3

### Chain of Custody

Report To:

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 Ashlee Green  
 P.O. Box 5001  
 Pampa, TX 79065

**CABC-P**  
**127**

Phone 806/661-3130  
 Fax 806/661-3134

|   |            |      |                                    |  |
|---|------------|------|------------------------------------|--|
| N |            | IFIL | Fluoride                           | EPA 300.0 2.1 (28.0 days)                    |
| N | Short Hold | IN3L | Nitrate-Nitrogen Total             | EPA 300.0 2.1 CAS:14797-55-8 (2.00 days)     |
| N |            | IS4L | Sulfate                            | EPA 300.0 2.1 (28.0 days)                    |
| N | Short Hold | CI2L | Cl2 Residual, Total(Lab) Titration | SM 4500-Cl F-2011 (2.00 days)                |
| N |            | CONL | Lab Spec. Conductance at 25 C      | SM 2510 B-2011 (28.0 days)                   |
| N | Short Hold | Cr+6 | Hexavalent Chromium                | SM 3500-Cr B-2011 CAS:18540-29-9 (1.00 days) |
| N | Short Hold | DMF  | Dissolved Metals Filtering         | SM 3030 B-2004 (0.0104 days)                 |
| N | Short Hold | DMFW | Dissolved (Wastewater) Filtering   | SM 3030 B-2004 (0.0104 days)                 |

Dissolved (Wastewater) Filtering Quality Control

Collected By MGB Date 1.16.20 Time 0840 Analyzed By MGB Date 1.16.20 Time 0852 (FILTERED)  
 Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

N TDS Total Dissolved Solids SM 2540 C-2011 (7.00 days)

Ambient Conditions/Comments

| Date      | Time  | Relinquished  | Received  |
|-----------|-------|---|---|
| 1.16.20   | 16:00 | Printed Name <u>MICAH BONIUM</u> Affiliation _____<br>Signature _____             | Printed Name <u>SCA</u> Affiliation <u>analab</u><br>Signature <u>[Signature]</u>               |
| 1/16/2020 | 18:00 | Printed Name <u>SCA</u> Affiliation <u>analab</u><br>Signature <u>[Signature]</u> | Printed Name <u>LSO</u> Affiliation _____<br>Signature _____                                    |
| 1/17/20   | 0850  | Printed Name <u>LSO</u> Affiliation _____<br>Signature _____                      | Printed Name <u>Rayshawn Thompson Ana-Lab</u> Affiliation _____<br>Signature <u>[Signature]</u> |
|           |       | Printed Name _____ Affiliation _____<br>Signature _____                           | Printed Name _____ Affiliation _____<br>Signature _____   |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
 Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region [ ]

The accredited column designates accreditation by A- A2LA, N - NELAP, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments

See Attached for Tracking #

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

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905924 CoC Print Group 001 of 001

1/16/2020

<https://www2.iso.com/weblabels/?labelsizes=0&combinedlabel=1&sessionkey=%7BE12777CD-FC86-43EF-983B-00334EFE836E%7D>

Airbill No. Z5677238

LSO  
1-800-800-8984  
www.iso.com

SHIP TO:  
LOGIN  
ANA-LAB CORP  
2600 DUDLEY RD.  
KILGORE, TX 75662  
9039840551

From:  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556

**B****GGG****LSO PRIORITY NEXT DAY**

10:30 IN MOST CITIES  
LATER IN REMOTE CITIES

PRINT DATE: 1/16/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 58.00LBS  
REF 1: UNITED, CABC, LSDP 1D00V.0000 REF 2:

1/17 0855 CP  
Date Time Tech C

Therm#: 6093 Corr Fact: 0.0 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.



# Results

Printed: 01/02/4040 14:51

Page f o64  
912498

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 500f  
Pampa, TX 72095

Limits

Account  
**CABC-P**

## Results

|   |                  |                                      |                                     |
|---|------------------|--------------------------------------|-------------------------------------|
| <b>1869421</b>                          | <b>LL Hg/*BI</b> | CO- P84/45 f105 W/49 f410            | Received: 04/47/4040                |
| HonWotable 3 ater                       |                  | Collected by: :CN                    | AnaWbb                              |
| Composite Stop f48l0 4/49/40            |                  | Taken: f48l0800                      | PO:                                 |
| Supplement to Test Report fL99c49       |                  |                                      |                                     |
|   |                  | Prepared: 02/28/2020 10:03:27        | Calculated 02/28/2020 10:03:27      |
| Parameter                               | Results          | Units RL                             | Flag CAS Bottle                     |
| <b>z LL Mercury Test Prep</b>           | <b>Verified</b>  |                                      |                                     |
| EPA 200.7 4.4                           |                  | Prepared: 885252 02/28/2020 14:30:00 | Analyzed 885852 03/04/2020 11:35:00 |
| Parameter                               | Results          | Units RL                             | Flag CAS Bottle                     |
| <b>NELAC Boron</b>                      | <b>0.109</b>     | <b>mg/L</b> 0.040                    | <b>7440-42-8</b> 01                 |
| EPA 245.7 2                             |                  | Prepared: 885350 03/02/2020 07:08:34 | Analyzed 885471 03/02/2020 13:44:00 |
| Parameter                               | Results          | Units RL                             | Flag CAS Bottle                     |
| <b>NELAC Mercury, Total (low level)</b> | <b>&lt;4.26</b>  | <b>ng/L</b> c.49                     | <b>7439-97-6</b> 0c                 |

## Sample Preparation

|  |                  |                                      |                                     |
|--|------------------|--------------------------------------|-------------------------------------|
| <b>1869421</b>                               | <b>LL Hg/*BI</b> | CO- P84/45 f105 W/49 f410            | Received: 04/47/4040                |
| Composite Stop f48l0 4/49/40                 |                  |                                      |                                     |
|  |                  | Prepared: 02/27/2020 13:33:00        | Analyzed 02/27/2020 13:33:00        |
| z  | <b>Bottle pH</b> | <b>&lt;2</b>                         | <b>SU</b> 04                        |
| EPA 200.2 2.8                                |                  | Prepared: 885252 02/28/2020 14:30:00 | Analyzed 885252 02/28/2020 14:30:00 |
| <b>NELAC Liquid Metals Digestion</b>         | <b>50/50</b>     | <b>ml</b>                            | 04                                  |
| EPA 245.7 2                                  |                  | Prepared: 885350 03/02/2020 07:08:34 | Analyzed 885350 03/02/2020 07:08:34 |
| <b>NELAC Low Level Mercury Liquid Metals</b> | <b>50/47</b>     | <b>ml</b>                            | 0f                                  |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



HEMAPW###redited Qf0c70c40fW2W5





# Results

Printed: 01/02/4040 14:51

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912498

|                      |                                      |                                     |                      |
|----------------------|--------------------------------------|-------------------------------------|----------------------|
| <b>1869421</b>       | <b>LL Hg/*BI</b>                     | CO- P84/45 f105 W/49 f410           | Received: 04/47/4040 |
| Composite Stop f48l0 | 4/49/40                              |                                     |                      |
| EPA 245.7 2          | Prepared: 885350 03/02/2020 07:08:34 | Analyzed 885350 03/02/2020 07:08:34 | LPS                  |

Qualifiers

These report results on an As Received or wet basis unless otherwise noted, testing was performed at Ana-Lab's corporate laboratory that holds the following (Federal and State Certifications: EPA Method 1631, Texas Department of Agriculture Soil Import Permit P110770077, Texas Commission on Environmental Quality Commercial Urine Drinking Water Method Approval Method IU8TX4f2z, Texas Commission on Environmental Quality HEMAP T10c70c40fW2W5, Louisiana Department of Environmental Quality Laboratory Certification HEMAP, MEMAPz Q0400L, Louisiana Department of Health and Hospitals Urine Drinking Water HEMAPz Certificate Home MA049, Oklahoma Department of Environmental Quality THI Laboratory Accreditation Program Certificate Home 40fLW49, Arkansas Department of Environmental Quality Certification Q1W9LW. The Accredited column designates accreditation by HEMAC, or a method covered under HEMAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in (Form) without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of HEMAC.

RM is the Reporting Method (sample specific) quantitation limit and is at or above the Method Detection Limit (MDL) - CAS is Chemical Abstract Service number. RM is our Reporting Method, or Minimum Quantitation Level. The RM translates into amount the Instrument Detection Limit (IDL) - Method Detection Limit (MDL) and Practical Quantitation Method (PQL), and any dilutions and/or concentrations performed during sample preparation. Our analytical result must be above this RM before we report a value in the Results column of our report without a flag. Otherwise, we report HU (Not Detected) above RM, because the result is "<" less than the number in the RM column. - AM is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we would have our RM at or below the - AM.

Bill Peery, MS, VP Technical Services





# Quality Control

Printed 03/09/2020

Page 1 of 2  
912498

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Account  
**CABC-P**

Analytical Set **885471**

EPA 245.7 2

**AWRL/MRL C**

| <u>Parameter</u>           | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Mercury, Total (low level) | 4.21           | 5.00         | ng/L         | 84.2            | 70.0 - 130     | 120951126   |

**Blank**

| <u>Parameter</u>           | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MDL</u> | <u>Units</u> | <u>File</u> |
|----------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Mercury, Total (low level) | 885350         | ND             | 1.65       | 4.00       | ng/L         | 120951130   |

**CCV**

| <u>Parameter</u>           | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Mercury, Total (low level) | 9.90           | 10.0         | ng/L         | 99.0            | 76.0 - 124     | 120951129   |
|                            | 9.75           | 10.0         | ng/L         | 97.5            | 76.0 - 124     | 120951140   |
|                            | 9.65           | 10.0         | ng/L         | 96.5            | 76.0 - 124     | 120951151   |
|                            | 9.58           | 10.0         | ng/L         | 95.8            | 76.0 - 124     | 120951159   |

**ICL**

| <u>Parameter</u>           | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Mercury, Total (low level) | 108            | 100          | ng/L         | 108             | 90.0 - 110     | 120951128   |

**ICV**

| <u>Parameter</u>           | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Mercury, Total (low level) | 9.47           | 10.0         | ng/L         | 94.7            | 90.0 - 110     | 120951127   |

**LCS Dup**

| <u>Parameter</u>           | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>Known</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|----------------------------|----------------|------------|-------------|--------------|----------------|-------------|--------------|--------------|------------|---------------|
| Mercury, Total (low level) | 885350         | 26.0       | 25.7        | 25.0         | 76.0 - 113     | 104         | 103          | ng/L         | 1.16       | 50.0          |

**MSD**

| <u>Parameter</u>           | <u>Sample</u> | <u>MS</u> | <u>MSD</u> | <u>UNK</u> | <u>Known</u> | <u>Limits</u> | <u>MS%</u> | <u>MSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|----------------------------|---------------|-----------|------------|------------|--------------|---------------|------------|-------------|--------------|------------|---------------|
| Mercury, Total (low level) | 1866304       | 31.5      | 31.8       | 2.41       | 26.6         | 67.0 - 111    | 109        | 110         | ng/L         | 1.03       | 18.0          |
|                            | 1866658       | 28.1      | 28.4       | ND         | 26.6         | 67.0 - 111    | 106        | 107         | ng/L         | 1.06       | 18.0          |

Analytical Set **885852**

EPA 200.7 4.4

**Blank**

| <u>Parameter</u> | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MDL</u> | <u>Units</u> | <u>File</u> |
|------------------|----------------|----------------|------------|------------|--------------|-------------|
| Boron            | 885252         | ND             | 0.0134     | 0.100      | mg/L         | 120958307   |

**CCV**

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Boron            | 4.91           | 5.00         | mg/L         | 98.2            | 90.0 - 110     | 120958306   |
|                  | 4.84           | 5.00         | mg/L         | 96.8            | 90.0 - 110     | 120958317   |
|                  | 4.75           | 5.00         | mg/L         | 95.0            | 90.0 - 110     | 120958328   |
|                  | 4.90           | 5.00         | mg/L         | 98.0            | 90.0 - 110     | 120958332   |

**ICL**

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|





# Quality Control

Printed 03/09/2020

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912498

### ICL

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Boron            | 10.0           | 10.0         | mg/L         | 100             | 95.0 - 105     | 120958301   |

### ICV

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Boron            | 5.01           | 5.00         | mg/L         | 100             | 90.0 - 110     | 120958302   |

### LCS Dup

| <u>Parameter</u> | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>Known</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------|----------------|------------|-------------|--------------|----------------|-------------|--------------|--------------|------------|---------------|
| Boron            | 885252         | 0.897      | 0.926       | 1.00         | 85.0 - 115     | 89.7        | 92.6         | mg/L         | 3.18       | 25.0          |

### MSD

| <u>Parameter</u> | <u>Sample</u> | <u>MS</u> | <u>MSD</u> | <u>UNK</u> | <u>Known</u> | <u>Limits</u> | <u>MS%</u> | <u>MSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------|---------------|-----------|------------|------------|--------------|---------------|------------|-------------|--------------|------------|---------------|
| Boron            | 1865994       | 0.975     | 0.989      | ND         | 1.00         | 75.0 - 125    | 97.5       | 98.9        | mg/L         | 1.43       | 25.0          |
| Boron            | 1866841       | 6.58      | 6.45       | 5.51       | 1.00         | 75.0 - 125    | 107        | 94.0        | mg/L         | 12.9       | 25.0          |

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification; ICV - Initial Calibration Verification; AWRL/MRL C - Ambient Water Reporting Limit/Minimum Reporting Limit Check Std



912498 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

Employee Owned Integrity Caring Continual Improvement

COC Printed 02/26/2020 Page 1 of 1

# Chain of Custody

Lab Number 1866426  
PO Number \_\_\_\_\_  
Phone 806/661-3130  
Fax 806/661-3134

**Report To:**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**CABC-P**  
**128**

**LLHg**

Matrix: Non-Potable Water

Sample Collection Start

Date: 2/25/2020 Time: 1305

Sample Collection Stop

Date: 2/26/2020 Time: 1230

Sampler Printed Name: Michah

Sampler Printed Name: JCA

Sampler Affiliation: CABC

Sampler Affiliation: ana-lab

Sampler Signature: \_\_\_\_\_

Sampler Signature: \_\_\_\_\_

1 Glass 500 ml /clean metals w/HCl

|       |      |                                 |                                       |
|-------|------|---------------------------------|---------------------------------------|
| NELAC | *HgI | Mercury, Total (low level)      | EPA 245.7 2 CAS:7439-97-6 (28.0 days) |
| NELAC | 245I | Low Level Mercury Liquid Metals | EPA 245.7 2 (28.0 days)               |
|       | HgKt | LL Mercury Test Prep            |                                       |

Ambient Conditions/Comments

*(Please add Boron analysis)*

| Date           | Time         | Relinquished   | Received  |
|----------------|--------------|--|---|
| <u>2/26/20</u> | <u>13:00</u> | Printed Name: <u>JCA</u><br>Signature: <u>[Signature]</u><br>Affiliation: <u>ana-lab</u> | Printed Name: <u>CSO</u><br>Signature: _____<br>Affiliation: _____                                    |
| <u>2/27/20</u> | <u>0910</u>  | Printed Name: <u>CSO</u><br>Signature: _____<br>Affiliation: _____                       | Printed Name: <u>Kaystawn Thompson Ana-Lab</u><br>Signature: <u>[Signature]</u><br>Affiliation: _____ |
|                |              | Printed Name _____<br>Signature _____<br>Affiliation _____                               | Printed Name _____<br>Signature _____<br>Affiliation _____  |
|                |              | Printed Name _____<br>Signature _____<br>Affiliation _____                               | Printed Name _____<br>Signature _____<br>Affiliation _____  |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region  Yes  No  
Samples Radioactive?  Yes Samples Contains Dioxin?  Yes Samples Biological Hazard?  Yes

The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments

*Please add Boron to analysis*

See Attached for Tracking # and Temp



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

912498 CoC Print Group 001 of 001

2/26/2020

https://www2.iso.com/weblabels/?labels=0&combinedlabel=1&sessionkey=%7BBE32B1B1-B683-40B1-9B99-90A9F82E38BA%7D



Airbill No. Z5728148

LSO  
1-800-800-8984  
www.iso.com

**SHIP TO:**  
**LOGIN**  
**ANA-LAB CORP**  
**2600 DUDLEY RD.**  
**KILGORE, TX 75662**  
**9039840551**

From:  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556

2/27 09:21 / 15  
Date  
Time  
Temp: 0.1 / 0.1  
Tech  
Therm#: 6443 Corr Fact: 0.0 C



PRINT DATE: 2/26/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 29.00LBS  
REF 1: MEMP, LEF1, CABC 1D00V.0000 REF 2:

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# Attachment WKSHT3.0-8

## Week 2 Laboratory Reports



# Results

Printed: 01/20/4040 11:43

Page 1 of 4  
906560

Report 6o

CaTot Corpb  
sAlee h reen  
PbObGoBx001  
Pampa56, X709x

Account  
**CABC-P**

## Results

| 1856952                        | Land Application Grab Samples        | Received:                           | 01/42/4040      |
|--------------------------------|--------------------------------------|-------------------------------------|-----------------|
| onPotatle - ater               | Collected by: Client                 | CaTot Corpb                         | PO:             |
|                                | Taken: 01/44/4040 11840800           |                                     |                 |
|                                | Prepared: 878822 01/22/2020 11:25:00 | Analyzed 878822 01/22/2020 11:25:00 | CLI             |
| Parameter                      | Results                              | Units RL                            | Flag CAS Bottle |
| z pH Client Provided           | 7.8                                  | SU                                  |                 |
| EPA 1664B (HEM)                | Prepared: 879350 01/27/2020 08:05:00 | Analyzed 879350 01/27/2020 08:05:00 | DSI             |
| Parameter                      | Results                              | Units RL                            | Flag CAS Bottle |
| NELAC Oil and Grease (HEM)     | <5.19                                | mg/L x17                            | 04              |
| SM 4500-CN <sup>-</sup> E-2011 | Prepared: 879344 01/25/2020 11:00:00 | Analyzed 879474 01/27/2020 00:00:00 | AMB             |
| Parameter                      | Results                              | Units RL                            | Flag CAS Bottle |
| NELAC Cyanide, total           | 0.008                                | mg/L 000x                           | 0W              |
| SM 9221 E + C-2006             | Prepared: 879221 01/24/2020 12:16:00 | Analyzed 879221 01/24/2020 12:16:00 | MDM             |
| Parameter                      | Results                              | Units RL                            | Flag CAS Bottle |
| NELAC Fecal Coliform (MPN)     | 120                                  | MPN/10 100<br>0 mL                  | 01              |

## Sample Preparation

| 1856952                        | Land Application Grab Samples        | Received:                           | 01/42/4040 |
|--------------------------------|--------------------------------------|-------------------------------------|------------|
| SM 4500-CN <sup>-</sup> C-2011 | Prepared: 879344 01/25/2020 11:00:00 | Analyzed 879344 01/25/2020 11:00:00 | CRS        |
| Parameter                      | Results                              | Units                               | Bottle     |
| NELAC Cyanide Distillation     | 10/5                                 | ml                                  | 02         |
| SM 9221 E + C-2006             | Prepared: 879215 01/23/2020 11:36:00 | Analyzed 879215 01/23/2020 11:36:00 | MDM        |





# Results

Printed: 01/20/4040 11:43

1856952 Land Application Grab Samples Received: 01/42/4040

SM 9221 E + C-2006 Prepared: 879215 01/23/2020 11:36:00 Analyzed 879215 01/23/2020 11:36:00 MDM

NELAC Fecal Coliform MPN Started /L STARTED L 01

c ualifiers8

L N#ample started outside reMmended Aolding time

- e report results on an . s ReMived or wet Tasis unless marQed k ry - eigAb Dnless otAerwise noted5testing was performed at . naNaTs  
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Environmental c uality CertifiMtion SIH09H0b 6Ae . MMedited Mlumn designates aMMeditation Ty : NN: E3. C5or ) Nnot Movered under  
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Bill Peery, MS, VP Technical Services







# Quality Control

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Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Account  
**CABC-P**

Analytical Set **879221**

**SM 9221 E + C-2006**

**Blank**

| <u>Parameter</u>              | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|-------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Fecal Coliform MPN Started /L | 879221         | PASS           | 1.80       | 1.80       | MPN/100 mL   | 120824060   |

**Standard**

| <u>Parameter</u>              | <u>Sample</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------------|---------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Fecal Coliform MPN Started /L | 879215        | POSITIVE       | POSITIV      | MPN/100 ml   | -               | -              | 120824061   |

Analytical Set **879474**

**SM 4500-CN<sup>-</sup> E-2011**

**Blank**

| <u>Parameter</u> | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|------------------|----------------|----------------|------------|------------|--------------|-------------|
| Cyanide, total   | 879344         | 0.002          | 0.00119    | 0.0025     | mg/L         | 120829510   |

**CCV**

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Cyanide, total   | 0.515          | 0.500        | mg/L         | 103             | 90.0 - 110     | 120829452   |
|                  | 0.509          | 0.500        | mg/L         | 102             | 90.0 - 110     | 120829462   |
|                  | 0.501          | 0.500        | mg/L         | 100             | 90.0 - 110     | 120829472   |
|                  | 0.498          | 0.500        | mg/L         | 99.6            | 90.0 - 110     | 120829482   |
|                  | 0.502          | 0.500        | mg/L         | 100             | 90.0 - 110     | 120829493   |
|                  | 0.499          | 0.500        | mg/L         | 99.8            | 90.0 - 110     | 120829504   |
|                  | 0.502          | 0.500        | mg/L         | 100             | 90.0 - 110     | 120829514   |
|                  | 0.506          | 0.500        | mg/L         | 101             | 90.0 - 110     | 120829524   |
|                  | 0.504          | 0.500        | mg/L         | 101             | 90.0 - 110     | 120829535   |
|                  | 0.497          | 0.500        | mg/L         | 99.4            | 90.0 - 110     | 120829544   |
| 0.510            | 0.500          | mg/L         | 102          | 90.0 - 110      | 120829545      |             |
| 0.494            | 0.500          | mg/L         | 98.8         | 90.0 - 110      | 120829547      |             |

**Duplicate**

| <u>Parameter</u> | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Cyanide, total   | 1857317       | 0.008         | 0.010          | mg/L        | 22.2       | *             |
|                  | 1857372       | 0.014         | 0.012          | mg/L        | 15.4       | 20.0          |

**ICV**

| <u>Parameter</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Cyanide, total   | 0.203          | 0.200        | mg/L         | 102             | 90.0 - 110     | 120829451   |

**LCS Dup**

| <u>Parameter</u> | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>Known</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------|----------------|------------|-------------|--------------|----------------|-------------|--------------|--------------|------------|---------------|
| Cyanide, total   | 879344         | 0.215      | 0.219       | 0.200        | 90.0 - 110     | 108         | 110          | mg/L         | 1.84       | 20.0          |

**Mat. Spike**

| <u>Parameter</u> | <u>Sample</u> | <u>Spike</u> | <u>Unknown</u> | <u>Known</u> | <u>Units</u> | <u>Recovery %</u> | <u>Limits %</u> | <u>File</u> |
|------------------|---------------|--------------|----------------|--------------|--------------|-------------------|-----------------|-------------|
| Cyanide, total   | 1857317       | 0.422        | 0.010          | 0.400        | mg/L         | 103               | 90.0 - 110      | 120829516   |





Quality Control

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906560

Mat. Spike

| Parameter      | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|----------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| Cyanide, total | 1857372 | 0.430 | 0.012   | 0.400 | mg/L  | 104        | 90.0 - 110 | 120829519 |

Analytical Set **879350**

EPA 1664B (HEM)

Blank

| Parameter            | PrepSet | Reading | MDL   | SQL  | Units | File      |
|----------------------|---------|---------|-------|------|-------|-----------|
| Oil and Grease (HEM) | 879350  | ND      | 0.804 | 4.00 | mg/L  | 120826597 |

ControlBlk

| Parameter            | PrepSet | Reading | MDL | SQL | Units | File      |
|----------------------|---------|---------|-----|-----|-------|-----------|
| Oil and Grease (HEM) | 879350  | -0.0001 |     |     | grams | 120826596 |
|                      | 879350  | 0       |     |     | grams | 120826621 |

LCS Dup

| Parameter            | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|----------------------|---------|------|------|-------|------------|------|-------|-------|------|--------|
| Oil and Grease (HEM) | 879350  | 35.5 | 37.9 | 40.0  | 78.0 - 114 | 88.8 | 94.8  | mg/L  | 6.54 | 20.0   |

MS

| Parameter            | Sample  | MS   | MSD | UNK  | Known | Limits     | MS%  | MSD% | Units | RPD | Limit% |
|----------------------|---------|------|-----|------|-------|------------|------|------|-------|-----|--------|
| Oil and Grease (HEM) | 1856986 | 63.8 | 0   | 24.5 | 40.0  | 78.0 - 114 | 98.2 |      | mg/L  |     | 20.0   |

Analytical Set **878822**

Duplicate

| Parameter          | Sample  | Result | Unknown | Unit | RPD | Limit% |
|--------------------|---------|--------|---------|------|-----|--------|
| pH Client Provided | 1857168 | 6.8    | 6.8     | SU   |     | 20     |
|                    | 1857170 | 7.7    | 7.7     | SU   |     | 20     |

\* Out RPD is Relative Percent Difference:  $\frac{\text{abs}(r1-r2)}{\text{mean}(r1,r2)} * 100\%$

Recover% is Recovery Percent:  $\frac{\text{result}}{\text{known}} * 100\%$

Blank - Method Blank; MS - Matrix Spike; CCV - Continuing Calibration Verification; ICV - Initial Calibration Verification



906560 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**  
 Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
 Employee Owned Integrity Caring Continual Improvement

**Chain of Custody**

COC Printed 01/21/2020 Page 1 of 2

**Report To**

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

**CABC-P**

**126**

Lab Number 1856952  
 PO Number \_\_\_\_\_  
 Phone 806/661-3130  
 Fax 806/661-3134

**Land Application Grab Samples**

Matrix: Non-Potable Water

Sample Collection Start

Date: 1.22.20 Time: 1120

Sampler Printed Name: Megan Bowler

Sampler Affiliation: CABC

Sampler Signature: [Signature]

On Site Testing

C12k Field C12 Check for CNa

Field C12 Check for CNa Quality Control

Collected By MOB Date 1.22.20 Time 1120 Analyzed By MOB Date 1.22.20 Time 1128  
 Results 6/ Units \_\_\_\_\_ Temp. 13 C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

S2Ck Field Sulfide Check for CNa

Field Sulfide Check for CNa Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|                                     |  |                                    |  |
|-------------------------------------|--|------------------------------------|--|
| <input checked="" type="checkbox"/> | Na2S2O3 (0.008%) Polystyrene-100 mL Sterilized |                                    |  |
| N                                   | <b>Short Hold</b>                              | FMPL Fecal Coliform MPN Started /L | SM 9221 E + C-2006 (0.347 days)            |
| <input checked="" type="checkbox"/> | H2SO4 to pH <2 GIQt w/Tef-lined lid            |                                    |  |
| N                                   | HEM  | Oil and Grease (HEM)               | EPA 1664B (HEM) (28.0 days)                |
| <input checked="" type="checkbox"/> | NaOH to pH >12 Polyethylene 250 mL/amber       |                                    |  |
| N                                   | CNa  | Cyanide, total                     | SM 4500-CN <sup>-</sup> E-2011 (14.0 days) |
| <input checked="" type="checkbox"/> | Polyethylene Quart (White)                     |                                    |  |
| N                                   | pHLL   | Laboratory pH                      | SM 4500-H+ B-2011                          |

Ambient Conditions/Comments



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

906560 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

Employee Owned Integrity Caring Continual Improvement

COC Printed 01/21/2020 Page 2 of 2

Chain of Custody

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**CABC-P**  
**126**

Phone 806/661-3130  
Fax 806/661-3134

| Date    | Time  | Relinquished       |             | Received             |             |
|---------|-------|--------------------|-------------|----------------------|-------------|
|         |       | Printed Name       | Affiliation | Printed Name         | Affiliation |
| 1.22.20 | 1:30  | Mick Bonner        |             | Jeff                 | ana-lab     |
|         |       | <i>[Signature]</i> |             | <i>[Signature]</i>   |             |
| 1/22/20 | 18:00 | SCW                | ana-lab     | LSO                  |             |
|         |       | <i>[Signature]</i> |             | <i>[Signature]</i>   |             |
| 1/22/20 | 09:30 | Lone Star          |             | Elisa Tucker Ana-Lab |             |
|         |       | <i>[Signature]</i> |             | <i>[Signature]</i>   |             |
|         |       |                    |             |                      |             |
|         |       |                    |             |                      |             |

Sample Received on Ice?  Yes  No  
Cooler/Sample Secure?  Yes  No  
Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
If Shipped: Tracking Number & Temp - See Attached  
Hand Delivered to Region [ ]

The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments

pH + Temp

COLLECTED BY: MLB DATE: 1.22.20 TIME: 11:20 ANALYZED BY: MLB DATE: 1.22.20 TIME: 11:25

RESULTS: 7.8 TEMP: 13°C

TOTAL CHLORINE RESIDUAL

COLLECTED BY: MLB DATE: 1.22.20 TIME: 11:20 ANALYZED BY: MLB DATE: 1.22.20 TIME: 11:28

RESULTS: 7.8 TEMP: 13°C



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

3 of 3

906560 CoC Print Group 001 of 001

1/22/2020

https://www2.lso.com/weblabels/?labelsize=0&combinedlabel=1&sessionkey=%7B191AA4A6-7973-40B7-A327-DD9F46936527%7D



Airbill No. Z5683480

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**LOGIN**  
**ANA-LAB CORP**  
**2600 DUDLEY RD.**  
**KILGORE, TX 75662**  
**9039840551**

**From:**  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556



PRINT DATE: 1/22/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 66.00LBS  
REF 1: MEMP, SHAM, RT66 LEF1 CABG, URBT 1D00V.0000 REF 2

1/23 0935 RT  
Date Time Tech  
Temp: 0.4 / 0.3 C  
Therm#: 6205 Corr Fact: -0.1 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.



# Results

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906562

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 6001  
Pampa5T, X7096

Account  
**CABC-P**

## Results

|   |                                   |                          |                   |                      |             |                   |               |
|---|-----------------------------------|--------------------------|-------------------|----------------------|-------------|-------------------|---------------|
| <b>1856954</b>                          | <b>Land Application Composite</b> | Comp 1/41 1160:1/44 1140 |                   | Received: 01/42/4040 |             |                   |               |
| Non:Potable - ater                      |                                   | Collected by:            | Client            | Cabot Corp.          |             | PO:               |               |
| Composite Wop 11840 1/44/40             |                                   | Taken:                   | 11840800          |                      |             |                   |               |
| <hr/>                                   |                                   |                          |                   |                      |             |                   |               |
| 600/2-78-054 3.2.19                     |                                   | Prepared:                | 01/31/2020        | 09:37:12             | Calculated  | 01/31/2020        | 09:37:12 CAL  |
| <i>Parameter</i>                        |                                   | <i>Results</i>           | <i>Units</i>      | <i>RL</i>            | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |
| <b>Sodium Adsorption Ratio - Liquid</b> |                                   | <b>4.80</b>              | <b>1</b>          |                      |             |                   |               |
| <hr/>                                   |                                   |                          |                   |                      |             |                   |               |
| Calculation                             |                                   | Prepared:                | 01/27/2020        | 15:13:58             | Calculated  | 01/27/2020        | 15:13:58 CAL  |
| <i>Parameter</i>                        |                                   | <i>Results</i>           | <i>Units</i>      | <i>RL</i>            | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |
| <b>NELAC</b>                            | <b>Trivalent Chromium</b>         | <b>&lt;0.0025</b>        | <b>mg/L</b>       | 0.0046               |             | <b>16065-83-1</b> |               |
| <hr/>                                   |                                   |                          |                   |                      |             |                   |               |
| EPA 200.7, Rev. 4.4                     |                                   | Prepared:                | 880127 01/30/2020 | 10:45:00             | Analyzed    | 880127 01/30/2020 | 10:45:00 LPS  |
| <i>Parameter</i>                        |                                   | <i>Results</i>           | <i>Units</i>      | <i>RL</i>            | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |
| <b>NELAC</b>                            | <b>Dissolved Calcium</b>          | <b>21.1</b>              | <b>mg/L</b>       | 0.600                |             | <b>7440-70-2</b>  | 0H            |
| <b>NELAC</b>                            | <b>Dissolved Magnesium</b>        | <b>2.29</b>              | <b>mg/L</b>       | 0.600                |             | <b>7439-95-4</b>  | 0H            |
| <hr/>                                   |                                   |                          |                   |                      |             |                   |               |
| EPA 200.7, Rev. 4.4                     |                                   | Prepared:                | 880127 01/30/2020 | 10:48:00             | Analyzed    | 880127 01/30/2020 | 10:48:00 LPS  |
| <i>Parameter</i>                        |                                   | <i>Results</i>           | <i>Units</i>      | <i>RL</i>            | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |
| <b>NELAC</b>                            | <b>Dissolved Sodium</b>           | <b>87.1</b>              | <b>mg/L</b>       | 6.00                 |             | <b>7440-23-5</b>  | 0H            |
| <hr/>                                   |                                   |                          |                   |                      |             |                   |               |
| EPA 200.8 5.4                           |                                   | Prepared:                | 879175 01/24/2020 | 10:45:00             | Analyzed    | 879385 01/24/2020 | 20:52:00 JAB  |
| <i>Parameter</i>                        |                                   | <i>Results</i>           | <i>Units</i>      | <i>RL</i>            | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |
| <b>NELAC</b>                            | <b>Aluminum, Total</b>            | <b>0.0548</b>            | <b>mg/L</b>       | 0.046                | B           | <b>7429-90-5</b>  | 14            |
| <b>NELAC</b>                            | <b>Antimony, Total</b>            | <b>&lt;0.005</b>         | <b>mg/L</b>       | 0.006                |             | <b>7440-36-0</b>  | 14            |
| <b>NELAC</b>                            | <b>Barium, Total</b>              | <b>0.0512</b>            | <b>mg/L</b>       | 0.016                |             | <b>7440-39-3</b>  | 14            |
| <b>NELAC</b>                            | <b>Cadmium, Total</b>             | <b>&lt;0.001</b>         | <b>mg/L</b>       | 0.001                |             | <b>7440-43-9</b>  | 14            |
| <b>NELAC</b>                            | <b>Chromium, Total</b>            | <b>&lt;0.0025</b>        | <b>mg/L</b>       | 0.0046               | B           | <b>7440-47-3</b>  | 14            |
| <b>NELAC</b>                            | <b>Nickel, Total</b>              | <b>0.00517</b>           | <b>mg/L</b>       | 0.006                | B           | <b>7440-02-0</b>  | 14            |
| <b>NELAC</b>                            | <b>Selenium, Total</b>            | <b>&lt;0.005</b>         | <b>mg/L</b>       | 0.006                |             | <b>7782-49-2</b>  | 14            |
| <b>NELAC</b>                            | <b>Zinc, Total</b>                | <b>0.231</b>             | <b>mg/L</b>       | 0.046                |             | <b>7440-66-6</b>  | 14            |
| <hr/>                                   |                                   |                          |                   |                      |             |                   |               |
| EPA 200.8 5.4                           |                                   | Prepared:                | 879175 01/24/2020 | 10:45:00             | Analyzed    | 879826 01/28/2020 | 12:34:00 JAB  |
| <i>Parameter</i>                        |                                   | <i>Results</i>           | <i>Units</i>      | <i>RL</i>            | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |
| <b>NELAC</b>                            | <b>Arsenic, Total</b>             | <b>0.00115</b>           | <b>mg/L</b>       | 0.0006               |             | <b>7440-38-2</b>  | 14            |
| <b>NELAC</b>                            | <b>Beryllium, Total</b>           | <b>&lt;0.0005</b>        | <b>mg/L</b>       | 0.0006               |             | <b>7440-41-7</b>  | 14            |





# Results

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| 1856954                             | Land Application Composite | Comp 1/41 1160:1/44 1140 |                            | Received: | 01/42/4040                 |        |  |
|-------------------------------------|----------------------------|--------------------------|----------------------------|-----------|----------------------------|--------|--|
| Non:Potable - ater                  | Collected by: Client       | Cabot Corp.              |                            | PO:       |                            |        |  |
| Composite Wop 11840                 | 1/44/40                    | Taken:                   | 11840800                   |           |                            |        |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| EPA 200.8 5.4                       |                            | Prepared:                | 879175 01/24/2020 10:45:00 | Analyzed  | 879826 01/28/2020 12:34:00 | JAB    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Copper, Total                 | <0.001                     | mg/L                     | 0.001                      |           | 7440-50-8                  | 14     |  |
| NELAC Lead, Total                   | <0.0005                    | mg/L                     | 0.0006                     |           | 7439-92-1                  | 14     |  |
| NELAC Silver, Total                 | <0.0005                    | mg/L                     | 0.0006                     |           | 7440-22-4                  | 14     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| EPA 200.8 5.4                       |                            | Prepared:                | 879175 01/24/2020 10:45:00 | Analyzed  | 880063 01/29/2020 17:21:00 | CLK    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Thallium, Total               | <0.0005                    | mg/L                     | 0.0006                     |           | 7440-28-0                  | 14     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| EPA 245.1 3                         |                            | Prepared:                | 879378 01/27/2020 08:15:00 | Analyzed  | 879508 01/27/2020 13:27:00 | LPS    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Mercury, Total                | <0.200                     | ug/L                     | 0.400                      |           | 7439-97-6                  | 1H     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| EPA 300.0 2.1                       |                            | Prepared:                | 879166 01/23/2020 15:13:00 | Analyzed  | 879166 01/23/2020 15:13:00 | ATN    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Chloride                      | 78.2                       | mg/L                     | 1.60                       |           |                            | 01     |  |
| NELAC Fluoride                      | <0.500                     | mg/L                     | 0.600                      |           |                            | 01     |  |
| NELAC Nitrate-Nitrogen Total        | <0.100                     | mg/L                     | 0.100                      |           | 14797-55-8                 | 01     |  |
| NELAC Sulfate                       | 3.42                       | mg/L                     | 1.60                       |           |                            | 01     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| EPA 350.1 2                         |                            | Prepared:                | 879222 01/24/2020 14:00:00 | Analyzed  | 879459 01/27/2020 00:00:00 | AMB    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Ammonia (as N)                | 4.13                       | mg/L                     | 0.0HD                      |           |                            | 12     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| EPA 351.2 2                         |                            | Prepared:                | 879578 01/28/2020 09:00:00 | Analyzed  | 880020 01/29/2020 15:17:00 | RSV    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Total Kjeldahl Nitrogen       | 10.2                       | mg/L                     | 0.100                      |           | 7727-37-9                  | 16     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| SM 2510 B-2011                      |                            | Prepared:                | 879264 01/24/2020 14:00:00 | Analyzed  | 879264 01/24/2020 14:00:00 | ELS    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Lab Spec. Conductance at 25 C | 812                        | umhos/cm                 |                            |           |                            | 01     |  |
| <hr/>                               |                            |                          |                            |           |                            |        |  |
| SM 2540 C-2011                      |                            | Prepared:                | 879668 01/27/2020 13:30:00 | Analyzed  | 879668 01/27/2020 13:30:00 | ZCS    |  |
| Parameter                           | Results                    | Units                    | RL                         | Flag      | CAS                        | Bottle |  |
| NELAC Total Dissolved Solids        | 404                        | mg/L                     | 40.0                       |           |                            | 01     |  |





# Results

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| 1856954                                | Land Application Composite | Comp 1/41 1160:1/44 1140 |          |            |          | Received: 01/42/4040 |            |            |          |     |
|--|----------------------------|--------------------------|----------|------------|----------|----------------------|------------|------------|----------|-----|
| Non:Potable - ater                     | Collected by: Client       | Cabot Corp.              |          |            |          | PO:                  |            |            |          |     |
| Composite Wop 11840                    | 1/44/40                    | Taken:                   | 11840800 |            |          |                      |            |            |          |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 2540 D-2011                         |                            | Prepared:                | 880112   | 01/29/2020 | 11:00:00 | Analyzed             | 880112     | 01/29/2020 | 11:00:00 | ZCS |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Total Suspended Solids           |                            | 17.5                     | mg/L     | 10.0       |          |                      |            |            | 01       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 3500-Cr B-2011                      |                            | Prepared:                | 879270   | 01/23/2020 | 14:45:00 | Analyzed             | 879270     | 01/23/2020 | 14:45:00 | ALB |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Hexavalent Chromium              |                            | <3.00                    | ug/L     | 2.00       |          | L                    | 18540-29-9 |            | 01       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 4500-CI F-2011                      |                            | Prepared:                | 879302   | 01/23/2020 | 15:52:00 | Analyzed             | 879302     | 01/23/2020 | 15:52:00 | ELS |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Cl2 Residual,Total(Lab)Titration |                            | <0.100                   | mg/L     | 0.100      |          |                      |            |            | 04       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 4500-P E-2011                       |                            | Prepared:                | 879483   | 01/27/2020 | 10:20:00 | Analyzed             | 879483     | 01/27/2020 | 10:20:00 | ESG |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Phosphorus (as P), total         |                            | 1.44                     | mg/L     | 0.600      |          |                      | 7723-14-0  |            | 09       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 5210 B-2011                         |                            | Prepared:                | 879086   | 01/24/2020 |          | Analyzed             | 879086     | 01/29/2020 | 10:37:59 | SNS |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Biochemical Oxygen Demand (BOD5) |                            | 10.7                     | mg/L     | 4.00       |          | B                    | 1026-3     |            | 01       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 5210 B-2011                         |                            | Prepared:                | 879087   | 01/24/2020 |          | Analyzed             | 879087     | 01/29/2020 | 09:55:56 | SNS |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC BOD Carbonaceous                 |                            | 5.55                     | mg/L     | 4.00       |          | B                    |            |            | 01       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 5220 D-2011                         |                            | Prepared:                | 879454   | 01/27/2020 | 08:40:00 | Analyzed             | 879454     | 01/27/2020 | 08:40:00 | ESG |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Chemical Oxygen Demand           |                            | 113                      | mg/L     | 40.0       |          |                      |            |            | 06       |     |
| <hr/>                                  |                            |                          |          |            |          |                      |            |            |          |     |
| SM 5310 C-2011                         |                            | Prepared:                | 879208   | 01/23/2020 | 20:40:00 | Analyzed             | 879208     | 01/23/2020 | 20:40:00 | ALH |
| Parameter                              |                            | Results                  | Units    | RL         |          | Flag                 | CAS        |            | Bottle   |     |
| NELAC Total Organic Carbon             |                            | 16.2                     | mg/L     | 4.00       |          |                      |            |            | 0X       |     |

## Sample Preparation







# Results

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| 1856954             | Land Application Composite       | Comp 1/41 1160:1/44 1140             | Received: 01/42/4040                      |
|---------------------|----------------------------------|--------------------------------------|---|
| Composite Wop 11840 | 1/44/40                          |                                      |   |
|                     |                                  | Prepared: 01/23/2020 11:45:00        | Analyzed 01/23/2020 11:45:00 RDT          |
| z                   | Bottle pH                        | <2 SU                                | 02  |
| z                   | Bottle pH                        | <2 SU                                | 0H  |
|                     |                                  | Prepared: 878996 01/24/2020 09:56:41 | Calculated 878996 01/24/2020 09:56:41 CAL |
| NELAC               | Client Field Filtration (Onsite) | Verified                             |   |
|                     |                                  | Prepared: 879774 01/29/2020 06:49:02 | Analyzed 879774 01/29/2020 06:49:02 LPS   |
| z                   | Transfer to ICP/MS               | COMPLETE                             | 0H  |
| EPA 200.2 2.8       |                                  | Prepared: 879175 01/24/2020 10:45:00 | Analyzed 879175 01/24/2020 10:45:00 TES   |
| NELAC               | Liquid Metals Digestion          | 50/50 ml                             | 02  |
| EPA 245.1 3         |                                  | Prepared: 879378 01/27/2020 08:15:00 | Analyzed 879378 01/27/2020 08:15:00 ALB   |
| NELAC               | Mercury Liquid Metals Digestion  | 50/25 ml                             | 02  |
| EPA 350.2, Rev. 2.0 |                                  | Prepared: 879222 01/24/2020 14:00:00 | Analyzed 879222 01/24/2020 14:00:00 CRS   |
| NELAC               | Ammonia Distillation             | 50/50 ml                             | 06  |
| EPA 351.2, Rev 2.0  |                                  | Prepared: 879578 01/28/2020 09:00:00 | Analyzed 879578 01/28/2020 09:00:00 CRS   |
| NELAC               | TKN Block Digestion              | 20/20 ml                             | 06  |
| SM 2540 C-2011      |                                  | Prepared: 878208 01/27/2020 13:30:00 | Analyzed 878208 01/27/2020 13:30:00 ZCS   |
| NELAC               | Total Dissolved Solids Started   | Started                              |   |
| SM 2540 D-2011      |                                  | Prepared: 878848 01/29/2020 11:00:00 | Analyzed 878848 01/29/2020 11:00:00 ZCS   |
| NELAC               | TSS Set Started                  | Started                              |   |





# Results

Printed: 01/21/4040 15:35

|                        |                                   |                             |   |
|------------------------|-----------------------------------|-----------------------------|---|
| <b>1856954</b>         | <b>Land Application Composite</b> | Comp 1/41 1160:1/44 1140    | Received: 01/42/4040                    |
| Composite Wop 11840    | 1/44/40                           |                             |   |
| SM 5210 B-2011         |                                   | Prepared: 879086 01/24/2020 | Analyzed 879086 01/24/2020 06:53:10 SNS |
| NELAC BOD Set Started  |                                   | Started                     |   |
| SM 5210 B-2011         |                                   | Prepared: 879087 01/24/2020 | Analyzed 879087 01/24/2020 06:53:10 SNS |
| NELAC BODc Set Started |                                   | Started                     |   |

Qualifiers 8

B : Analyte determined in the associated method blank L : Sample started outside recommended holding time

- e report results on an As Received or wet basis unless marked Qry - eight. k unless otherwise noted 5testing was performed at Ana:labs  
 Incorporate laboratory that holds the following Federal and State Certifications EPA 3 ab Number T, 000925k WDepartment of Agriculture Soil  
 Import Permit P220:1X0011X5 Texas Commission on Environmental Quality Commercial Qrining - ater 3 ab Approval U ab IQ8T, 417F5  
 Texas Commission on Environmental Quality NE3 AP T10HXDH01:17:1653 Louisiana Department of Environmental Quality Laboratory  
 Certification UNE3 AP53 E3 APFS0400( 5 Louisiana Department of Health and Hospitals Qrining - ater UNE3 APFCertification No 3 A0495  
 Oklahoma Department of Environmental Quality Laboratory Accreditation Program Certification No. 401( :1495Aransas Department of  
 Environmental Quality Certification S1(:09(:0. The Accredited Column designates a Accreditation by N :: NE3 AC5or ) :: not Moved under  
 NE3 AC scope of a Accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced, CEPT in Dk 33 without written approval of Ana:3 ab Corp. k unless otherwise specified these test results meet the requirements of NE3 AC.

R3 is the Reporting Limit sample specific quantitation limit and is at or above the method detection limit Q3 F CAWis Chemical  
 Abstract Number. R3 is our Reporting Limit for minimum quantitation level. The R3 takes into account the Instrument Detection  
 Limit UQ3 F5 method detection limit UQ3 F5 and Practical Quantitation Limit UQ3 F5 and any dilutions and/or Concentrations performed  
 during sample preparation UEc 3 F. Our analytical result must be above this R3 before we report a value in the 'Results' column of our report  
 without a 'J' flag. Otherwise we report NQ Not Detected above R3 F5 because the result is "<" Less than the number in the R3 column.  
 q A3 is minimum Analytical level and is typically from regulatory agencies. k unless we report a result in the result column for interference  
 prevent it 5we work# to have our R3 at or below the q A3.

Bill Peery, MS, VP Technical Services





Quality Control

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Account  
**CABC-P**

Analytical Set **879086** **WM 5210 B-2011**

**BlanR**

| Parameter                         | PrepSet | Reading | MDL   | SQL   | Units | File          |
|-----------------------------------|---------|---------|-------|-------|-------|---------------|
| Biochemical Oxygen Demand NBOF 5N | L790L6  | 1.17    | 0.400 | 0.500 | mg/8  | ( 140L41) ) 0 |
|                                   | L790L6  | 1.15    | 0.400 | 0.500 | mg/8  | ( 140L41) L7  |
|                                   | L790L6  | 1.10    | 0.400 | 0.500 | mg/8  | ( 140L41927   |

**k Vplicate**

| Parameter                         | Sample   | ResKlt | Uncnov n | Unit | RPD  | Limit% |
|-----------------------------------|----------|--------|----------|------|------|--------|
| Biochemical Oxygen Demand NBOF 5N | 1L5557L  | ) 5.4  | ) 7.0    | mg/8 | 2.90 | 20.0   |
|                                   | 1L569) 7 | 4L7    | 47.1     | mg/8 | 5.72 | 20.0   |
|                                   | 1L5707)  | 7.60   | 5.14     | mg/8 | 29.0 | ( 20.0 |
|                                   | 1L57160  | 10)    | 96.9     | mg/8 | 7.07 | 20.0   |
|                                   | 1L574) 6 | 210    | 4L)      | mg/8 | L.75 | 20.0   |

**Wed k rop**

| Parameter                         | PrepSet | Reading | MDL   | SQL   | Units | File        |
|-----------------------------------|---------|---------|-------|-------|-------|-------------|
| Biochemical Oxygen Demand NBOF 5N | L790L6  | 0.920   | 0.400 | 0.500 | mg/8  | 140L41) ) 1 |
|                                   | L790L6  | 0.950   | 0.400 | 0.500 | mg/8  | 140L41) LL  |
|                                   | L790L6  | 0.952   | 0.400 | 0.500 | mg/8  | 140L4192L   |

**Wandard**

| Parameter                         | Sample | Reading | u nov n | Units | Reworker% | Limits% | File        |
|-----------------------------------|--------|---------|---------|-------|-----------|---------|-------------|
| Biochemical Oxygen Demand NBOF 5N | 44)    | 19L     | mg/8    | 112   | 12.7      | 3 116   | 140L41) ) 4 |
|                                   | 41L    | 19L     | mg/8    | 110   | 12.7      | 3 116   | 140L41) L9  |
|                                   | 415    | 19L     | mg/8    | 109   | 12.7      | 3 116   | 140L41929   |

Analytical Set **879087** **WM 5210 B-2011**

**BlanR**

| Parameter        | PrepSet | Reading | MDL   | SQL   | Units | File        |
|------------------|---------|---------|-------|-------|-------|-------------|
| BOF Carbonaceous | L790L7  | 1.16    | 0.400 | 0.500 | mg/8  | ( 140L41544 |
|                  | L790L7  | 1.19    | 0.400 | 0.500 | mg/8  | ( 140L41569 |

**k Vplicate**

| Parameter        | Sample  | ResKlt | Uncnov n | Unit | RPD   | Limit% |
|------------------|---------|--------|----------|------|-------|--------|
| BOF Carbonaceous | 1L56L12 | 2.25   | 4.55     | mg/8 | 47.1  | 20.0   |
|                  | 1L569L9 | DF     | 4.11     | mg/8 | 400   | ( 20.0 |
|                  | 1L57147 | 40.L   | 40.6     | mg/8 | 0.966 | 20.0   |
|                  | 1L571L1 | ) .92  | 5.61     | mg/8 | 14.9  | 20.0   |

**Wed k rop**

| Parameter        | PrepSet | Reading | MDL   | SQL   | Units | File      |
|------------------|---------|---------|-------|-------|-------|-----------|
| BOF Carbonaceous | L790L7  | 0.602   | 0.400 | 0.500 | mg/8  | 140L41542 |





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### Weed k rop

| Parameter        | PrepSet | Reading | MDL   | MQL   | Units | File      |
|------------------|---------|---------|-------|-------|-------|-----------|
| BOF Carbonaceous | L790L7  | 0.607   | 0.400 | 0.500 | mg/8  | 140L41570 |

### Wandard

| Parameter        | Sample | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|------------------|--------|---------|---------|-------|----------|------------|-----------|
| BOF Carbonaceous | 192    | 19L     | 19L     | mg/8  | 97.5     | 12.7 3 116 | 140L4154) |
|                  | 400    | 19L     | 19L     | mg/8  | 101      | 12.7 3 116 | 140L41571 |

Analytical Set **879459**

EPA 350.1 2

### BlanR

| Parameter     | PrepSet | Reading | MDL     | MQL   | Units | File      |
|---------------|---------|---------|---------|-------|-------|-----------|
| Ammonia Ms DN | L79444  | DF      | 0.00256 | 0.040 | mg/8  | 140L49052 |

### CC:

| Parameter     | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|---------------|---------|---------|-------|----------|------------|-----------|
| Ammonia Ms DN | 4.0L    | 4.00    | mg/8  | 10)      | 90.0 3 110 | 140L49054 |
|               | 4.12    | 4.00    | mg/8  | 106      | 90.0 3 110 | 140L49064 |
|               | 1.9L    | 4.00    | mg/8  | 99.0     | 90.0 3 110 | 140L49071 |
|               | 4.0)    | 4.00    | mg/8  | 104      | 90.0 3 110 | 140L490L1 |
|               | 4.0)    | 4.00    | mg/8  | 104      | 90.0 3 110 | 140L49094 |
|               | 4.02    | 4.00    | mg/8  | 104      | 90.0 3 110 | 140L49102 |
|               | 4.07    | 4.00    | mg/8  | 10)      | 90.0 3 110 | 140L49110 |

### k Vplicate

| Parameter     | Sample  | ResKlt | Uncnov n | Unit | RPD  | Limit% |
|---------------|---------|--------|----------|------|------|--------|
| Ammonia Ms DN | 1L5696) | 2.16   | 2.90     | mg/8 | 1.02 | 40.0   |
|               | 1L5707L | 0.100  | 0.10)    | mg/8 | 2.94 | 40.0   |

### yC:

| Parameter     | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|---------------|---------|---------|-------|----------|------------|-----------|
| Ammonia Ms DN | 1.90    | 4.00    | mg/8  | 95.0     | 90.0 3 110 | 140L49051 |

### LCWk Vp

| Parameter     | PrepSet | LCS  | LCSD | u nov n | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|---------------|---------|------|------|---------|------------|------|-------|-------|------|--------|
| Ammonia Ms DN | L79444  | 1.95 | 4.01 | 4.00    | 90.0 3 110 | 97.5 | 100   | mg/8  | 2.02 | 40.0   |

### Mat. VpiRe

| Parameter     | Sample  | Spice | Uncnov n | u nov n | Units | Rewokery % | Limits %   | File      |
|---------------|---------|-------|----------|---------|-------|------------|------------|-----------|
| Ammonia Ms DN | 1L5696) | 6.1L  | 2.90     | 4.00    | mg/8  | 11)        | L0.0 3 140 | 140L49061 |
|               | 1L5707L | 4.0)  | 0.10)    | 4.00    | mg/8  | 96.L       | L0.0 3 140 | 140L4905L |

Analytical Set **880020**

EPA 351.2 2

### BlanR

| Parameter               | PrepSet | Reading | MDL    | MQL   | Units | File      |
|-------------------------|---------|---------|--------|-------|-------|-----------|
| Total - eldahl Ditrogen | L7957L  | DF      | 0.0191 | 0.050 | mg/8  | 140L2994) |

### CC:

| Parameter               | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-------------------------|---------|---------|-------|----------|------------|-----------|
| Total - eldahl Ditrogen | .16     | 5.00    | mg/8  | 97.4     | 90.0 3 110 | 140L29942 |
|                         | 5.0)    | 5.00    | mg/8  | 101      | 90.0 3 110 | 140L29922 |
|                         | 5.05    | 5.00    | mg/8  | 101      | 90.0 3 110 | 140L299)) |
|                         | 5.17    | 5.00    | mg/8  | 102      | 90.0 3 110 | 140L29952 |
|                         | 5.)4    | 5.00    | mg/8  | 10L      | 90.0 3 110 | 140L2995) |





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**CC:**

| Parameter               | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-------------------------|---------|---------|-------|----------|------------|-----------|
| Total - Eldahl Ditrogen | 5.5     | 5.00    | mg/8  | 109      | 90.0 3 110 | 140L29955 |

**k Vplicate**

| Parameter               | Sample  | ResKlt | Uncnov n | Unit | RPD  | Limit% |
|-------------------------|---------|--------|----------|------|------|--------|
| Total - Eldahl Ditrogen | 1L5757  | 4.1L   | 4.45     | mg/8 | 2.16 | 40.0   |
|                         | 1L57575 | 1.7)   | 1.14     | mg/8 | 0.9  | 40.0   |

**yC:**

| Parameter               | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-------------------------|---------|---------|-------|----------|------------|-----------|
| Total - Eldahl Ditrogen | 0.91    | 5.00    | mg/8  | 9L4      | 90.0 3 110 | 140L29944 |

**LCWk Vp**

| Parameter               | PrepSet | LCS  | LCSD | u nov n | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|-------------------------|---------|------|------|---------|------------|------|-------|-------|-------|--------|
| Total - Eldahl Ditrogen | L7957L  | 5.20 | 5.4L | 5.00    | 90.0 3 110 | 106  | 106   | mg/8  | 0.27L | 40.0   |

**Mat. VpiRe**

| Parameter               | Sample  | Spice | Uncnov n | u nov n | Units | Rewokery % | Limits %   | File      |
|-------------------------|---------|-------|----------|---------|-------|------------|------------|-----------|
| Total - Eldahl Ditrogen | 1L5757  | 7.25  | 4.45     | 5.00    | mg/8  | 104        | L0.0 3 140 | 140L29949 |
|                         | 1L57575 | 6.17  | 1.14     | 5.00    | mg/8  | 101        | L0.0 3 140 | 140L29924 |

Analytical Set **879668**

**WM 2540 C-2011**

**BlanR**

| Parameter               | PrepSet | Reading | MDL  | SQL  | Units | File      |
|-------------------------|---------|---------|------|------|-------|-----------|
| Total F issolved Solids | L7966L  | DF      | 5.00 | 5.00 | mg/8  | 140L22611 |

**ControlBIR**

| Parameter               | PrepSet | Reading | MDL | SQL | Units | File      |
|-------------------------|---------|---------|-----|-----|-------|-----------|
| Total F issolved Solids | L7966L  | 0.0004  |     |     | grams | 140L22517 |

**k Vplicate**

| Parameter               | Sample  | ResKlt | Uncnov n | Unit | RPD  | Limit% |
|-------------------------|---------|--------|----------|------|------|--------|
| Total F issolved Solids | 1L5676L | L00    | L00      | mg/8 | 0    | 40.0   |
|                         | 1L57057 | L10    | L70      | mg/8 | 7.1) | 40.0   |

**LCW**

| Parameter               | PrepSet | Reading | u nov n | Units | Rewoker% | Limits     | File      |
|-------------------------|---------|---------|---------|-------|----------|------------|-----------|
| Total F issolved Solids | L7966L  | 440     | 400     | mg/8  | 110      | L5.0 3 115 | 140L22614 |

**Wandard**

| Parameter               | Sample | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-------------------------|--------|---------|---------|-------|----------|------------|-----------|
| Total F issolved Solids |        | 9L0     | 100     | mg/8  | 9L0      | 90.0 3 110 | 140L225LL |

Analytical Set **880112**

**WM 2540 k-2011**

**BlanR**

| Parameter              | PrepSet | Reading | MDL | SQL | Units | File     |
|------------------------|---------|---------|-----|-----|-------|----------|
| Total Suspended Solids | LL0114  | DF      | 4   | 4   | mg/8  | 140L1971 |

**ControlBIR**

| Parameter              | PrepSet | Reading | MDL | SQL | Units | File     |
|------------------------|---------|---------|-----|-----|-------|----------|
| Total Suspended Solids | LL0114  | 0.0004  |     |     | grams | 140L1970 |

**k Vplicate**

| Parameter | Sample | ResKlt | Uncnov n | Unit | RPD | Limit% |
|-----------|--------|--------|----------|------|-----|--------|
|-----------|--------|--------|----------|------|-----|--------|





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## k Vplicate

| Parameter              | Sample  | ResKlt | Uncnov n | Unit | RPD   | Limit% |
|------------------------|---------|--------|----------|------|-------|--------|
| Total Suspended Solids | 1L57220 | 1)L    | 124      | mg/8 | 11.)  | 40.0   |
|                        | 1L57)06 | L900   | 90L0     | mg/8 | 4.00  | 40.0   |
|                        | 1L57)0L | 6700   | 6760     | mg/8 | 0.194 | 40.0   |

## LCW

| Parameter              | PrepSet | Reading | u nov n | Units | Rewoker% | Limits     | File      |
|------------------------|---------|---------|---------|-------|----------|------------|-----------|
| Total Suspended Solids | LL0114  | )L0     | 50.0    | mg/8  | 96.0     | 90.0 3 110 | 140L)4002 |

## Wandard

| Parameter              | Sample | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|------------------------|--------|---------|---------|-------|----------|------------|-----------|
| Total Suspended Solids |        | 96.0    | 100     | mg/8  | 96.0     | 90.0 3 110 | 140L)4004 |

Analytical Set **879166**

EPA 300.0 2.1

## Aw DL/MDL C

| Parameter             | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-----------------------|---------|---------|-------|----------|------------|-----------|
| #luoride              | 0.105   | 0.100   | mg/8  | 105      | 50.0 3 150 | 140L42075 |
| DitrateDitrogen Total | 0.0425  | 0.0446  | mg/8  | 10)      | 70.0 3 120 | 140L42075 |

## BlanR

| Parameter             | PrepSet | Reading | MDL     | MQL    | Units | File      |
|-----------------------|---------|---------|---------|--------|-------|-----------|
| Chloride              | L79166  | 0.061   | 0.0196  | 0.200  | mg/8  | 140L420L) |
| #luoride              | L79166  | DF      | 0.01)   | 0.100  | mg/8  | 140L420L) |
| DitrateDitrogen Total | L79166  | DF      | 0.00456 | 0.0446 | mg/8  | 140L420L) |
| Sulfate               | L79166  | 0.024   | 0.0109  | 0.200  | mg/8  | 140L420L) |

## CC:

| Parameter             | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-----------------------|---------|---------|-------|----------|------------|-----------|
| Chloride              | 10.L    | 10.0    | mg/8  | 10L      | 90.0 3 110 | 140L42069 |
|                       | 10.6    | 10.0    | mg/8  | 106      | 90.0 3 110 | 140L420L0 |
|                       | 10.6    | 10.0    | mg/8  | 106      | 90.0 3 110 | 140L42102 |
|                       | 10.6    | 10.0    | mg/8  | 106      | 90.0 3 110 | 140L42107 |
| #luoride              | 10.4    | 10.0    | mg/8  | 104      | 90.0 3 110 | 140L42069 |
|                       | 10.1    | 10.0    | mg/8  | 101      | 90.0 3 110 | 140L420L0 |
|                       | 10.4    | 10.0    | mg/8  | 104      | 90.0 3 110 | 140L42102 |
|                       | 9.69    | 10.0    | mg/8  | 96.9     | 90.0 3 110 | 140L42107 |
| DitrateDitrogen Total | 4.47    | 4.46    | mg/8  | 100      | 90.0 3 110 | 140L42069 |
|                       | 4.4)    | 4.46    | mg/8  | 99.1     | 90.0 3 110 | 140L420L0 |
|                       | 4.21    | 4.46    | mg/8  | 104      | 90.0 3 110 | 140L42102 |
|                       | 4.20    | 4.46    | mg/8  | 104      | 90.0 3 110 | 140L42107 |
| Sulfate               | 10.)    | 10.0    | mg/8  | 10)      | 90.0 3 110 | 140L42069 |
|                       | 10.4    | 10.0    | mg/8  | 104      | 90.0 3 110 | 140L420L0 |
|                       | 10.4    | 10.0    | mg/8  | 104      | 90.0 3 110 | 140L42102 |
|                       | 10.4    | 10.0    | mg/8  | 104      | 90.0 3 110 | 140L42107 |

## LCWk Vp

| Parameter             | PrepSet | LCS  | LCSD | u nov n | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|-----------------------|---------|------|------|---------|------------|------|-------|-------|-------|--------|
| Chloride              | L79166  | 5.01 | 5.00 | 5.00    | L5.0 3 110 | 100  | 100   | mg/8  | 0.400 | 40.0   |
| #luoride              | L79166  | 5.1) | 5.1) | 5.00    | LL0 3 110  | 102  | 102   | mg/8  | 0     | 40.0   |
| DitrateDitrogen Total | L79166  | 1.11 | 1.14 | 1.12    | LL0 3 110  | 9L4  | 99.1  | mg/8  | 0.197 | 40.0   |
| Sulfate               | L79166  | )9L  | )9L  | 5.00    | LL0 3 110  | 99.6 | 99.6  | mg/8  | 0     | 40.0   |





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### MW

| Parameter              | Sample  | MS   | MSD | UNu    | u nov n | Limits     | MS%  | MSD% | Units | RPD | Limit% |
|------------------------|---------|------|-----|--------|---------|------------|------|------|-------|-----|--------|
| Chloride               | 1L56940 | 49.9 |     | 40.7   | 10.0    | 10.0 3 140 | 94.0 |      | mg/8  |     | 40.0   |
|                        | 1L56940 | 49.7 |     | 40.7   | 10.0    | 10.0 3 140 | 90.0 |      | mg/8  |     | 40.0   |
| #luoride               | 1L56940 | 9.55 |     | 0.610  | 10.0    | 10.0 3 140 | L9.) |      | mg/8  |     | 40.0   |
|                        | 1L56940 | 9.56 |     | 0.610  | 10.0    | 10.0 3 140 | L9.5 |      | mg/8  |     | 40.0   |
| Ditrate3Ditrogen Total | 1L56940 | 4.0L |     | 0.0655 | 4.46    | 10.0 3 140 | L9.1 |      | mg/8  |     | 40.0   |
|                        | 1L56940 | 4.0L |     | 0.0655 | 4.46    | 10.0 3 140 | L9.1 |      | mg/8  |     | 40.0   |
| Sulfate                | 1L56940 | 14.) |     | 2.)2   | 10.0    | 10.0 3 140 | L9.7 |      | mg/8  |     | 40.0   |
|                        | 1L56940 | 14.) |     | 2.)2   | 10.0    | 10.0 3 140 | L9.7 |      | mg/8  |     | 40.0   |

### MWk

| Parameter              | Sample  | MS   | MSD  | UNu   | u nov n | Limits     | MS%    | MSD%   | Units | RPD   | Limit% |
|------------------------|---------|------|------|-------|---------|------------|--------|--------|-------|-------|--------|
| Chloride               | 1L566)9 | 457  | 457  | 41)   | 50.0    | 10.0 3 140 | L6.0   | L6.0   | mg/8  | 0     | 40.0   |
| #luoride               | 1L566)9 | )L6  | )9.0 | 2.40  | 50.0    | 10.0 3 140 | 90.L   | 91.6   | mg/8  | 0.177 | 40.0   |
| Ditrate3Ditrogen Total | 1L566)9 | 10.7 | 10.L | 0.)1L | 11.2    | 10.0 3 140 | 91.0   | 91.9   | mg/8  | 0.96L | 40.0   |
| Sulfate                | 1L566)9 | 556  | 55L  | 545   | 50.0    | 10.0 3 140 | 64.0 ( | 66.0 ( | mg/8  | 6.45  | 40.0   |

Analytical Set **879208**

**WM 5310 C-2011**

### Aw DL/MDL C

| Parameter            | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon | 1.56    | 4.00    | mg/8  | 7L0       | 75.0 3 145 | 140L42L96 |

### BlanR

| Parameter            | PrepSet | Reading | MDL    | MQL   | Units | File      |
|----------------------|---------|---------|--------|-------|-------|-----------|
| Total Organic Carbon | L7940L  | 0.0L27  | 0.016L | 0.500 | mg/8  | 140L42L95 |
|                      | L7940L  | 0.0914  | 0.016L | 0.500 | mg/8  | 140L42L99 |
|                      | L7940L  | 0.15)   | 0.016L | 0.500 | mg/8  | 140L42910 |
|                      | L7940L  | 0.070L  | 0.016L | 0.500 | mg/8  | 140L42915 |

### CCB

| Parameter            | PrepSet | Reading | MDL    | MQL   | Units | File       |
|----------------------|---------|---------|--------|-------|-------|------------|
| Total Organic Carbon | L7940L  | 0.12)   | 0.016L | 0.500 | mg/8  | 140L42L11L |
|                      | L7940L  | 0.15)   | 0.016L | 0.500 | mg/8  | 140L4290L  |
|                      | L7940L  | 0.112   | 0.016L | 0.500 | mg/8  | 140L42912  |
|                      | L7940L  | 0.0772  | 0.016L | 0.500 | mg/8  | 140L42944  |
|                      | L7940L  | 0.1)0   | 0.016L | 0.500 | mg/8  | 140L42920  |

### CC:

| Parameter            | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon | 9.19    | 10.0    | mg/8  | 9L9       | 90.0 3 110 | 140L42L91 |
|                      | 9.10    | 10.0    | mg/8  | 9L0       | 90.0 3 110 | 140L42901 |
|                      | 9.7)    | 10.0    | mg/8  | 97.)      | 90.0 3 110 | 140L42909 |
|                      | 9.7L    | 10.0    | mg/8  | 97.L      | 90.0 3 110 | 140L4291) |
|                      | 9.59    | 10.0    | mg/8  | 95.9      | 90.0 3 110 | 140L42942 |
|                      | 9.00    | 10.0    | mg/8  | 90.0      | 90.0 3 110 | 140L42921 |

### k Vplicate

| Parameter            | Sample  | Resklt | Uncnov n | Unit | RPD  | Limit% |
|----------------------|---------|--------|----------|------|------|--------|
| Total Organic Carbon | 1L56245 | 2.)7   | 2.)2     | mg/8 | 1.16 | 40.0   |

### yCL

| Parameter            | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon | 40.6    | 40.0    | mg/8  | 102       | 90.0 3 110 | 140L42L90 |





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### yCL

| Parameter            | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon | 19.L    | 40.0    | mg/8  | 99.0      | 90.0 3 110 | 140L42L97 |

### yC:

| Parameter            | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon | 9.1L    | 10.0    | mg/8  | 91.L      | 90.0 3 110 | 140L42L94 |
|                      | 9.)5    | 10.0    | mg/8  | 9).5      | 90.0 3 110 | 140L42L9L |

### LCW

| Parameter            | PrepSet | Reading | u nov n | Units | Reworker% | Limits     | File      |
|----------------------|---------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon | L7940L  | 5.16    | 5.00    | mg/8  | 102       | L).7 3 105 | 140L42L92 |
|                      | L7940L  | .)67    | 5.00    | mg/8  | 92.)      | L).7 3 105 | 140L42L9) |
|                      | L7940L  | .)6L    | 5.00    | mg/8  | 92.6      | L).7 3 105 | 140L42900 |
|                      | L7940L  | .)51    | 5.00    | mg/8  | 90.4      | L).7 3 105 | 140L42916 |

### MWk

| Parameter            | Sample  | MS   | MSD  | UNu   | u nov n | Limits     | MS%  | MSD% | Units | RPD   | Limit% |
|----------------------|---------|------|------|-------|---------|------------|------|------|-------|-------|--------|
| Total Organic Carbon | 1L567)0 | 1).6 | 1).5 | .)20  | 10.0    | 90.2 3 10L | 102  | 104  | mg/8  | 0.976 | 40.0   |
|                      | 1L57042 | 12.) | 12.) | 2.46  | 10.0    | 90.2 3 10L | 101  | 101  | mg/8  | 0     | 40.0   |
|                      | 1L57102 | 9.L4 | 9.)5 | 0.101 | 10.0    | 90.2 3 10L | 97.4 | 92.5 | mg/8  | 2.LL  | 40.0   |

### Wandard

| Parameter            | Sample | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------------|--------|---------|---------|-------|-----------|------------|-----------|
| Total Organic Carbon |        | 50.2    | 50.0    | mg/8  | 101       | 90.0 3 110 | 140L42L19 |

Analytical Set **879270**

**WM 3500-Cr B-2011**

### BlanR

| Parameter           | PrepSet | Reading | MDL   | MLQ  | Units | File      |
|---------------------|---------|---------|-------|------|-------|-----------|
| Kexavalent Chromium | L79470  | DF      | 0.550 | 2.00 | ug/8  | 140L4)9L) |
|                     | L79470  | DF      | 0.550 | 2.00 | ug/8  | 140L4)991 |
|                     | L79470  | DF      | 0.550 | 2.00 | ug/8  | 140L4)995 |

### CC:

| Parameter           | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|---------------------|---------|---------|-------|-----------|------------|-----------|
| Kexavalent Chromium | 7L.)    | L0.0    | ug/8  | 9L.0      | 90.0 3 110 | 140L4)9L5 |
|                     | 77.9    | L0.0    | ug/8  | 97.)      | 90.0 3 110 | 140L4)994 |
|                     | 77.9    | L0.0    | ug/8  | 97.)      | 90.0 3 110 | 140L4)996 |

### LCWk Vp

| Parameter           | PrepSet | LCS  | LCSD | u nov n | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|---------------------|---------|------|------|---------|------------|------|-------|-------|-------|--------|
| Kexavalent Chromium | L79470  | L0.4 | 79.7 | L0.0    | L5.0 3 115 | 100  | 99.6  | ug/8  | 0.645 | 15.0   |

### MWk

| Parameter           | Sample  | MS   | MSD  | UNu | u nov n | Limits     | MS%  | MSD% | Units | RPD  | Limit% |
|---------------------|---------|------|------|-----|---------|------------|------|------|-------|------|--------|
| Kexavalent Chromium | 1L5695) | 6L.6 | 70.1 | DF  | L0.0    | 70.0 3 120 | L5.L | L7.6 | ug/8  | 4.16 | 40.0   |

Analytical Set **879385**

**EPA 200.8 5.4**

### BlanR

| Parameter       | PrepSet | Reading | MDL      | MLQ    | Units | File      |
|-----------------|---------|---------|----------|--------|-------|-----------|
| Aluminum, Total | L79175  | 0.006L4 | 0.0045   | 0.005  | mg/8  | 140L4776L |
| Antimony, Total | L79175  | DF      | 0.000299 | 0.001  | mg/8  | 140L4776L |
| Arsenic, Total  | L79175  | DF      | 0.00045  | 0.0005 | mg/8  | 140L4776L |
| Barium, Total   | L79175  | DF      | 0.00422  | 0.002  | mg/8  | 140L4776L |







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## BlanR

| Parameter        | PrepSet | Reading | MDL        | MQL    | Units | File        |
|------------------|---------|---------|------------|--------|-------|-------------|
| Beryllium, Total | L79175  | DF      | 0.00006050 | 0.0005 | mg/8  | 140L4776L   |
| Cadmium, Total   | L79175  | DF      | 0.000095   | 0.0004 | mg/8  | 140L4776L   |
| Chromium, Total  | L79175  | 0.00474 | 0.0005     | 0.0005 | mg/8  | ( 140L4776L |
| Copper, Total    | L79175  | DF      | 0.0005     | 0.001  | mg/8  | 140L4776L   |
| Lead, Total      | L79175  | DF      | 0.00045    | 0.0005 | mg/8  | 140L4776L   |
| Mercury, Total   | L79175  | 0.0069L | 0.0005     | 0.001  | mg/8  | ( 140L4776L |
| Selenium, Total  | L79175  | DF      | 0.00074L   | 0.001  | mg/8  | 140L4776L   |
| Silver, Total    | L79175  | DF      | 0.000064L  | 0.0004 | mg/8  | 140L4776L   |
| Thallium, Total  | L79175  | DF      | 0.00045    | 0.0005 | mg/8  | 140L4776L   |
| Zinc, Total      | L79175  | 0.00L42 | 0.0045     | 0.005  | mg/8  | ( 140L4776L |

## CC:

| Parameter       | Reading         | u nov n | Units | Reworker% | Limits%    | File       |           |
|-----------------|-----------------|---------|-------|-----------|------------|------------|-----------|
| Aluminum, Total | 0.050)          | 0.05    | mg/8  | 101       | 90.0 3 110 | 140L47720  |           |
|                 | 0.0512          | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L477) 0 |           |
|                 | 0.0505          | 0.05    | mg/8  | 101       | 90.0 3 110 | 140L47750  |           |
|                 | 0.050)          | 0.05    | mg/8  | 101       | 90.0 3 110 | 140L47760  |           |
|                 | 0.054           | 0.05    | mg/8  | 10)       | 90.0 3 110 | 140L47770  |           |
|                 | 0.0515          | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L477L0  |           |
|                 | 0.051           | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L477L7  |           |
|                 | 0.050L          | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L47796  |           |
|                 | 0.0514          | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L47799  |           |
|                 | 0.0519          | 0.05    | mg/8  | 10)       | 90.0 3 110 | 140L47L09  |           |
| Antimony, Total | 0.0) L)         | 0.05    | mg/8  | 96.L      | 90.0 3 110 | 140L47720  |           |
|                 | 0.0) 71         | 0.05    | mg/8  | 9) .4     | 90.0 3 110 | 140L47760  |           |
|                 | 0.0) L          | 0.05    | mg/8  | 96.0      | 90.0 3 110 | 140L47770  |           |
|                 | 0.0) 7L         | 0.05    | mg/8  | 95.6      | 90.0 3 110 | 140L477L0  |           |
|                 | 0.0) L2         | 0.05    | mg/8  | 96.6      | 90.0 3 110 | 140L477L7  |           |
|                 | 0.0) 79         | 0.05    | mg/8  | 95.L      | 90.0 3 110 | 140L47796  |           |
|                 | 0.0) 67         | 0.05    | mg/8  | 92.)      | 90.0 3 110 | 140L47799  |           |
|                 | 0.0) L4         | 0.05    | mg/8  | 96.)      | 90.0 3 110 | 140L47L09  |           |
|                 | Barium, Total   | 0.0) 77 | 0.05  | mg/8      | 95.)       | 90.0 3 110 | 140L47760 |
|                 |                 | 0.0) L1 | 0.05  | mg/8      | 96.4       | 90.0 3 110 | 140L47770 |
| 0.0) 77         |                 | 0.05    | mg/8  | 95.)      | 90.0 3 110 | 140L477L0  |           |
| 0.0) 94         |                 | 0.05    | mg/8  | 9L)       | 90.0 3 110 | 140L477L7  |           |
| 0.0) L5         |                 | 0.05    | mg/8  | 97.0      | 90.0 3 110 | 140L47796  |           |
| 0.0) 77         |                 | 0.05    | mg/8  | 95.)      | 90.0 3 110 | 140L47799  |           |
| 0.0) L7         |                 | 0.05    | mg/8  | 97.)      | 90.0 3 110 | 140L47L09  |           |
| Cadmium, Total  |                 | 0.0) 91 | 0.05  | mg/8      | 9L.4       | 90.0 3 110 | 140L47720 |
|                 |                 | 0.0) L6 | 0.05  | mg/8      | 97.4       | 90.0 3 110 | 140L47760 |
|                 |                 | 0.0) 9  | 0.05  | mg/8      | 9L.0       | 90.0 3 110 | 140L47770 |
|                 | 0.0) L6         | 0.05    | mg/8  | 97.4      | 90.0 3 110 | 140L477L0  |           |
|                 | 0.0) L7         | 0.05    | mg/8  | 97.)      | 90.0 3 110 | 140L477L7  |           |
|                 | 0.0) L          | 0.05    | mg/8  | 96.0      | 90.0 3 110 | 140L47796  |           |
|                 | 0.0) L6         | 0.05    | mg/8  | 97.4      | 90.0 3 110 | 140L47799  |           |
|                 | 0.0) L)         | 0.05    | mg/8  | 96.L      | 90.0 3 110 | 140L47L09  |           |
|                 | Chromium, Total | 0.0502  | 0.05  | mg/8      | 101        | 90.0 3 110 | 140L47760 |
|                 |                 | 0.0) 9L | 0.05  | mg/8      | 99.6       | 90.0 3 110 | 140L47770 |
| 0.0506          |                 | 0.05    | mg/8  | 101       | 90.0 3 110 | 140L477L0  |           |
|                 | 0.0507          | 0.05    | mg/8  | 101       | 90.0 3 110 | 140L477L7  |           |





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**CC:**

| <u>Parameter</u> | <u>Reading</u> | <u>u nov n</u> | <u>Units</u> | <u>Reworker%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|----------------|--------------|------------------|----------------|-------------|
| Chromium, Total  | 0.050)         | 0.05           | mg/8         | 101              | 90.0 3 110     | 140L47796   |
|                  | 0.0507         | 0.05           | mg/8         | 101              | 90.0 3 110     | 140L47799   |
|                  | 0.0519         | 0.05           | mg/8         | 10)              | 90.0 3 110     | 140L47L09   |
| Dicj el, Total   | 0.0)96         | 0.05           | mg/8         | 99.4             | 90.0 3 110     | 140L47760   |
|                  | 0.0502         | 0.05           | mg/8         | 101              | 90.0 3 110     | 140L47770   |
|                  | 0.0505         | 0.05           | mg/8         | 101              | 90.0 3 110     | 140L477L0   |
|                  | 0.0505         | 0.05           | mg/8         | 101              | 90.0 3 110     | 140L477L7   |
|                  | 0.051          | 0.05           | mg/8         | 104              | 90.0 3 110     | 140L47796   |
|                  | 0.0)97         | 0.05           | mg/8         | 99.)             | 90.0 3 110     | 140L47799   |
|                  | 0.054L         | 0.05           | mg/8         | 106              | 90.0 3 110     | 140L47L09   |
|                  | 0.0)L          | 0.05           | mg/8         | 97.6             | 90.0 3 110     | 140L477)0   |
|                  | 0.0)L1         | 0.05           | mg/8         | 96.4             | 90.0 3 110     | 140L47750   |
| Selenium, Total  | 0.0)L5         | 0.05           | mg/8         | 97.0             | 90.0 3 110     | 140L47760   |
|                  | 0.0549         | 0.05           | mg/8         | 106              | 90.0 3 110     | 140L47770   |
|                  | 0.0)94         | 0.05           | mg/8         | 9L.)             | 90.0 3 110     | 140L477L0   |
|                  | 0.0)L7         | 0.05           | mg/8         | 97.)             | 90.0 3 110     | 140L477L7   |
|                  | 0.0)L9         | 0.05           | mg/8         | 97.L             | 90.0 3 110     | 140L47796   |
|                  | 0.0)6          | 0.05           | mg/8         | 94.0             | 90.0 3 110     | 140L47799   |
|                  | 0.0507         | 0.05           | mg/8         | 101              | 90.0 3 110     | 140L47L09   |
|                  | 0.0)91         | 0.05           | mg/8         | 9L.4             | 90.0 3 110     | 140L47720   |
|                  | 0.0)91         | 0.05           | mg/8         | 9L.4             | 90.0 3 110     | 140L477)0   |
|                  | 0.0)L7         | 0.05           | mg/8         | 97.)             | 90.0 3 110     | 140L47750   |
| Hinc, Total      | 0.0)7L         | 0.05           | mg/8         | 95.6             | 90.0 3 110     | 140L47760   |
|                  | 0.0)L          | 0.05           | mg/8         | 96.0             | 90.0 3 110     | 140L47770   |
|                  | 0.0)L2         | 0.05           | mg/8         | 96.6             | 90.0 3 110     | 140L477L0   |
|                  | 0.0)L)         | 0.05           | mg/8         | 96.L             | 90.0 3 110     | 140L477L7   |
|                  | 0.0)79         | 0.05           | mg/8         | 95.L             | 90.0 3 110     | 140L47796   |
|                  | 0.0)7L         | 0.05           | mg/8         | 95.6             | 90.0 3 110     | 140L47799   |
|                  | 0.0)L1         | 0.05           | mg/8         | 96.4             | 90.0 3 110     | 140L47L09   |

**yC:**

| <u>Parameter</u> | <u>Reading</u> | <u>u nov n</u> | <u>Units</u> | <u>Reworker%</u> | <u>Limits%</u> | <u>File</u> |
|------------------|----------------|----------------|--------------|------------------|----------------|-------------|
| Aluminum, Total  | 0.0)96         | 0.05           | mg/8         | 99.4             | 90.0 3 110     | 140L4774L   |
| Antimony, Total  | 0.0)L          | 0.05           | mg/8         | 96.0             | 90.0 3 110     | 140L4774L   |
| Barium, Total    | 0.0)L6         | 0.05           | mg/8         | 97.4             | 90.0 3 110     | 140L4774L   |
| Cadmium, Total   | 0.0)94         | 0.05           | mg/8         | 9L.)             | 90.0 3 110     | 140L4774L   |
| Chromium, Total  | 0.0501         | 0.05           | mg/8         | 100              | 90.0 3 110     | 140L4774L   |
| Dicj el, Total   | 0.051)         | 0.05           | mg/8         | 102              | 90.0 3 110     | 140L4774L   |
| Selenium, Total  | 0.0)96         | 0.05           | mg/8         | 99.4             | 90.0 3 110     | 140L4774L   |
| Hinc, Total      | 0.0)95         | 0.05           | mg/8         | 99.0             | 90.0 3 110     | 140L4774L   |

**LCWk Vp**

| <u>Parameter</u> | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>u nov n</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------|----------------|------------|-------------|----------------|----------------|-------------|--------------|--------------|------------|---------------|
| Aluminum, Total  | L79175         | 0.509      | 0.514       | 0.500          | 15.0 3 115     | 104         | 104          | mg/8         | 0.5L       | 40.0          |
| Antimony, Total  | L79175         | 0.)55      | 0.)60       | 0.500          | 15.0 3 115     | 91.0        | 94.0         | mg/8         | 1.09       | 40.0          |
| Arsenic, Total   | L79175         | 0.)L7      | 0.)9L       | 0.500          | 15.0 3 115     | 97.)        | 99.6         | mg/8         | 4.42       | 40.0          |
| Barium, Total    | L79175         | 0.)L4      | 0.)L4       | 0.500          | 15.0 3 115     | 96.)        | 96.)         | mg/8         | 0          | 40.0          |
| Beryllium, Total | L79175         | 0.199      | 0.196       | 0.400          | 15.0 3 115     | 99.5        | 9L.0         | mg/8         | 1.54       | 40.0          |
| Cadmium, Total   | L79175         | 0.451      | 0.4)9       | 0.450          | 15.0 3 115     | 100         | 99.6         | mg/8         | 0.100      | 40.0          |
| Chromium, Total  | L79175         | 0.540      | 0.54)       | 0.500          | 15.0 3 115     | 10)         | 105          | mg/8         | 0.766      | 40.0          |





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## LCWk Vp

| Parameter       | PrepSet | LCS    | LCSD   | u nov n | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|-----------------|---------|--------|--------|---------|------------|------|-------|-------|-------|--------|
| Copper, Total   | L79175  | 0.77   | 0.7    | 5.00    | 15.0 3 115 | 95.) | 97.)  | mg/8  | 4.07  | 40.0   |
| Lead, Total     | L79175  | 0.54L  | 0.541  | 5.00    | 15.0 3 115 | 106  | 10)   | mg/8  | 1.22  | 40.0   |
| Dicj el, Total  | L79175  | 0.512  | 0.51L  | 5.00    | 15.0 3 115 | 102  | 10)   | mg/8  | 0.970 | 40.0   |
| Selenium, Total | L79175  | 0.50)  | 0.512  | 5.00    | 15.0 3 115 | 101  | 102   | mg/8  | 1.77  | 40.0   |
| Silver, Total   | L79175  | 0.0972 | 0.0972 | 0.100   | 15.0 3 115 | 97.2 | 97.2  | mg/8  | 0     | 40.0   |
| Thallium, Total | L79175  | 0.500  | 0.99   | 5.00    | 15.0 3 115 | 100  | 99.L  | mg/8  | 0.400 | 40.0   |
| Hinc, Total     | L79175  | 0.9L5  | 0.91   | 5.00    | 15.0 3 115 | 97.0 | 9L4   | mg/8  | 1.42  | 40.0   |

## MWk

| Parameter        | Sample  | MS     | MSD    | UNu       | u nov n | Limits     | MS%   | MSD%  | Units | RPD   | Limit% |
|------------------|---------|--------|--------|-----------|---------|------------|-------|-------|-------|-------|--------|
| Aluminum, Total  | 1L5709L | 0.515  | 0.514  | 0.0466    | 5.00    | 70.0 3 120 | 97.7  | 97.1  | mg/8  | 0.616 | 40.0   |
| Antimony, Total  | 1L5709L | 0.2)   | 0.24   | 0.000L55  | 5.00    | 70.0 3 120 | L6.6  | L6.4  | mg/8  | 0.62  | 40.0   |
| Arsenic, Total   | 1L5709L | 0.500  | 0.12   | 0.012L    | 5.00    | 70.0 3 120 | 97.4  | 92.L  | mg/8  | 2.56  | 40.0   |
| Barium, Total    | 1L5709L | 0.570  | 0.571  | 0.104     | 5.00    | 70.0 3 120 | 92.6  | 92.L  | mg/8  | 0.412 | 40.0   |
| Beryllium, Total | 1L5709L | 0.16L  | 0.170  | 0.000155  | 0.400   | 70.0 3 120 | L2.9  | L.9   | mg/8  | 1.1L  | 40.0   |
| Cadmium, Total   | 1L5709L | 0.442  | 0.440  | 0.00017)  | 0.450   | 70.0 3 120 | L9.1  | L7.9  | mg/8  | 1.26  | 40.0   |
| Chromium, Total  | 1L5709L | 0.9LL  | 0.9L)  | 0.0014)   | 0.500   | 70.0 3 120 | 97.)  | 96.6  | mg/8  | 0.145 | 40.0   |
| Copper, Total    | 1L5709L | 0.29   | 0.21   | 0.0021    | 5.00    | 70.0 3 120 | L6.9  | L5.2  | mg/8  | 1.16  | 40.0   |
| Lead, Total      | 1L5709L | 0.99   | 0.96   | 0.000641  | 5.00    | 70.0 3 120 | 99.7  | 99.1  | mg/8  | 0.60) | 40.0   |
| Dicj el, Total   | 1L5709L | 0.29   | 0.25   | 0.00256   | 5.00    | 70.0 3 120 | L7.1  | L6.2  | mg/8  | 0.942 | 40.0   |
| Selenium, Total  | 1L5709L | 0.49   | 0.2LL  | DF        | 5.00    | 70.0 3 120 | L5.L  | 77.6  | mg/8  | 10.0  | 40.0   |
| Silver, Total    | 1L5709L | 0.0L56 | 0.0L)  | 0.0000L62 | 0.100   | 70.0 3 120 | L5.5  | L.7   | mg/8  | 0.9)0 | 40.0   |
| Thallium, Total  | 1L5709L | 0.67   | 0.6L   | 0.000))L  | 0.500   | 70.0 3 120 | 92.2  | 92.5  | mg/8  | 0.41) | 40.0   |
| Hinc, Total      | 1L5709L | 0.24   | 0.42   | 0.00556   | 5.00    | 70.0 3 120 | L5.2  | L2.5  | mg/8  | 4.12  | 40.0   |
| Aluminum, Total  | 1L57105 | 0.601  | 0.606  | 0.101     | 5.00    | 70.0 3 120 | 100   | 101   | mg/8  | 0.995 | 40.0   |
| Antimony, Total  | 1L57105 | 0.60   | 0.62   | DF        | 5.00    | 70.0 3 120 | 94.0  | 94.6  | mg/8  | 0.650 | 40.0   |
| Arsenic, Total   | 1L57105 | 0.91   | 0.95   | DF        | 5.00    | 70.0 3 120 | 9L4   | 99.0  | mg/8  | 0.11  | 40.0   |
| Barium, Total    | 1L57105 | 0.9L9  | 0.90   | 0.0029L   | 5.00    | 70.0 3 120 | 97.0  | 97.4  | mg/8  | 0.406 | 40.0   |
| Beryllium, Total | 1L57105 | 0.197  | 0.196  | DF        | 0.400   | 70.0 3 120 | 9L5   | 9L0   | mg/8  | 0.509 | 40.0   |
| Cadmium, Total   | 1L57105 | 0.450  | 0.450  | 0.000597  | 0.450   | 70.0 3 120 | 99.L  | 99.L  | mg/8  | 0     | 40.0   |
| Chromium, Total  | 1L57105 | 0.521  | 0.54L  | 0.00464   | 5.00    | 70.0 3 120 | 106   | 105   | mg/8  | 0.569 | 40.0   |
| Copper, Total    | 1L57105 | 0.9L4  | 0.9L4  | 0.001)    | 5.00    | 70.0 3 120 | 96.1  | 96.1  | mg/8  | 0     | 40.0   |
| Lead, Total      | 1L57105 | 0.547  | 0.545  | 0.000519  | 5.00    | 70.0 3 120 | 105   | 105   | mg/8  | 0.2L1 | 40.0   |
| Dicj el, Total   | 1L57105 | 0.540  | 0.517  | DF        | 5.00    | 70.0 3 120 | 10)   | 102   | mg/8  | 0.579 | 40.0   |
| Selenium, Total  | 1L57105 | 0.507  | 0.511  | 0.00157   | 5.00    | 70.0 3 120 | 101   | 104   | mg/8  | 0.7LL | 40.0   |
| Silver, Total    | 1L57105 | 0.097  | 0.096L | DF        | 0.100   | 70.0 3 120 | 97.0  | 96.L  | mg/8  | 0.406 | 40.0   |
| Thallium, Total  | 1L57105 | 0.50)  | 0.500  | DF        | 0.500   | 70.0 3 120 | 101   | 100   | mg/8  | 0.797 | 40.0   |
| Hinc, Total      | 1L57105 | 0.91)  | 0.914  | DF        | 5.00    | 70.0 3 120 | 112 ( | 114 ( | mg/8  | 0.419 | 40.0   |

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EPA 245.1 3

### BlanR

| Parameter      | PrepSet | Reading | MDL   | SQL   | Units | File      |
|----------------|---------|---------|-------|-------|-------|-----------|
| mercury, Total | L7927L  | DF      | 0.074 | 0.100 | ug/8  | 140L200)L |

### CC:

| Parameter      | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|----------------|---------|---------|-------|-----------|------------|-----------|
| mercury, Total | 5.07    | 5.000   | ug/8  | 101       | 90.0 3 110 | 140L200)7 |
|                | 5.12    | 5.000   | ug/8  | 102       | 90.0 3 110 | 140L20057 |
|                | 5.06    | 5.000   | ug/8  | 101       | 90.0 3 110 | 140L20059 |





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**yCL**

| Parameter      | Reading | u nov n | Units | Reworker% | Limits%    | File       |
|----------------|---------|---------|-------|-----------|------------|------------|
| Mercury, Total | 40.0    | 40.00   | ug/8  | 100       | 90.0 3 110 | 140L200) 6 |

**yC:**

| Parameter      | Reading | u nov n | Units | Reworker% | Limits%    | File       |
|----------------|---------|---------|-------|-----------|------------|------------|
| Mercury, Total | 5.44    | 5.000   | ug/8  | 10)       | 90.0 3 110 | 140L200) 5 |

**LCWk Vp**

| Parameter      | PrepSet | LCS  | LCSD  | u nov n | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|----------------|---------|------|-------|---------|------------|------|-------|-------|-------|--------|
| Mercury, Total | L7927L  | 5.04 | ) .9L | 5.00    | L5.0 3 115 | 100  | 99.6  | ug/8  | 0.100 | 40.0   |

**MWk**

| Parameter      | Sample  | MS   | MSD  | UNu | u nov n | Limits     | MS%  | MSD% | Units | RPD   | Limit% |
|----------------|---------|------|------|-----|---------|------------|------|------|-------|-------|--------|
| Mercury, Total | 1L57241 | 9.LL | 9.L0 | DF  | 10.0    | 70.0 3 120 | 9LL  | 9L.0 | ug/8  | 0.L12 | 1).0   |
|                | 1L57296 | 9.90 | 9.L) | DF  | 10.0    | 70.0 3 120 | 99.0 | 9L.) | ug/8  | 0.60L | 1).0   |

Analytical Set **879826**

**EPA 200.8 5.4**

**BlanR**

| Parameter        | PrepSet | Reading | MDL      | MQL    | Units | File      |
|------------------|---------|---------|----------|--------|-------|-----------|
| Antimony, Total  | L79175  | DF      | 0.00045  | 0.0005 | mg/8  | 140L26699 |
| Arsenic, Total   | L79175  | DF      | 0.000259 | 0.0005 | mg/8  | 140L26699 |
| Barium, Total    | L79175  | DF      | 0.000564 | 0.001  | mg/8  | 140L26699 |
| Beryllium, Total | L79175  | DF      | 0.000154 | 0.0005 | mg/8  | 140L26699 |
| Cadmium, Total   | L79175  | DF      | 0.000116 | 0.0004 | mg/8  | 140L26699 |
| Copper, Total    | L79175  | DF      | 0.0005   | 0.001  | mg/8  | 140L26699 |
| Lead, Total      | L79175  | DF      | 0.00045  | 0.0005 | mg/8  | 140L26699 |
| Dicj el, Total   | L79175  | DF      | 0.0005   | 0.001  | mg/8  | 140L26699 |
| Selenium, Total  | L79175  | DF      | 0.000799 | 0.001  | mg/8  | 140L26699 |
| Silver, Total    | L79175  | DF      | 0.00011  | 0.0005 | mg/8  | 140L26699 |
| Hinc, Total      | L79175  | DF      | 0.001    | 0.004  | mg/8  | 140L26699 |

**CC:**

| Parameter      | Reading          | u nov n | Units | Reworker% | Limits%    | File       |           |
|----------------|------------------|---------|-------|-----------|------------|------------|-----------|
| Arsenic, Total | 0.0507           | 0.05    | mg/8  | 101       | 90.0 3 110 | 140L26691  |           |
|                | 0.0517           | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26707  |           |
|                | 0.0517           | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L2671L  |           |
|                | 0.0544           | 0.05    | mg/8  | 10)       | 90.0 3 110 | 140L2674L  |           |
|                | 0.0517           | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26725  |           |
|                | 0.0519           | 0.05    | mg/8  | 10)       | 90.0 3 110 | 140L267) 6 |           |
|                | 0.0512           | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26757  |           |
|                | 0.0514           | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L26762  |           |
|                | Beryllium, Total | 0.0) L5 | 0.05  | mg/8      | 97.0       | 90.0 3 110 | 140L26691 |
|                |                  | 0.0) 91 | 0.05  | mg/8      | 9L4        | 90.0 3 110 | 140L26707 |
| 0.0) L4        |                  | 0.05    | mg/8  | 96.)      | 90.0 3 110 | 140L2671L  |           |
| Copper, Total  | 0.0509           | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L26691  |           |
|                | 0.054            | 0.05    | mg/8  | 10)       | 90.0 3 110 | 140L26707  |           |
|                | 0.0509           | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L2671L  |           |
|                | 0.052L           | 0.05    | mg/8  | 10L       | 90.0 3 110 | 140L2674L  |           |
|                | 0.0) 99          | 0.05    | mg/8  | 99.L      | 90.0 3 110 | 140L26725  |           |
|                | 0.0) 97          | 0.05    | mg/8  | 99.)      | 90.0 3 110 | 140L267) 6 |           |
|                | 0.0) 9)          | 0.05    | mg/8  | 9LL       | 90.0 3 110 | 140L26757  |           |
|                | 0.0) 92          | 0.05    | mg/8  | 9L6       | 90.0 3 110 | 140L26762  |           |





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### CC:

| Parameter   | Reading       | u nov n | Units | Reworker% | Limits%    | File       |           |
|-------------|---------------|---------|-------|-----------|------------|------------|-----------|
| 8ead, Total | 0.0515        | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26691  |           |
|             | 0.0) 77       | 0.05    | mg/8  | 95.)      | 90.0 3 110 | 140L26707  |           |
|             | 0.0512        | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L2671L  |           |
|             | 0.0511        | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L2674L  |           |
|             | 0.0515        | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26725  |           |
|             | 0.0517        | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L267) 6 |           |
|             | 0.051)        | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26757  |           |
|             | 0.051)        | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26762  |           |
|             | Silver, Total | 0.0517  | 0.05  | mg/8      | 102        | 90.0 3 110 | 140L26691 |
|             |               | 0.0546  | 0.05  | mg/8      | 105        | 90.0 3 110 | 140L26707 |
| 0.052       |               | 0.05    | mg/8  | 106       | 90.0 3 110 | 140L2671L  |           |
| 0.0524      |               | 0.05    | mg/8  | 106       | 90.0 3 110 | 140L2674L  |           |
| 0.052       |               | 0.05    | mg/8  | 106       | 90.0 3 110 | 140L26725  |           |
| 0.054L      |               | 0.05    | mg/8  | 106       | 90.0 3 110 | 140L267) 6 |           |
| 0.052       |               | 0.05    | mg/8  | 106       | 90.0 3 110 | 140L26757  |           |
| 0.0522      |               | 0.05    | mg/8  | 107       | 90.0 3 110 | 140L26762  |           |

### yC:

| Parameter        | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|------------------|---------|---------|-------|-----------|------------|-----------|
| Arsenic, Total   | 0.050L  | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L26690 |
| Beryllium, Total | 0.050L  | 0.05    | mg/8  | 104       | 90.0 3 110 | 140L26690 |
| Copper, Total    | 0.0) 92 | 0.05    | mg/8  | 9L.6      | 90.0 3 110 | 140L26690 |
| 8ead, Total      | 0.0504  | 0.05    | mg/8  | 100       | 90.0 3 110 | 140L26690 |
| Silver, Total    | 0.0516  | 0.05    | mg/8  | 102       | 90.0 3 110 | 140L26690 |

### LCWk Vp

| Parameter        | PrepSet | LCS   | LCSD  | u nov n | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|------------------|---------|-------|-------|---------|------------|------|-------|-------|-------|--------|
| Antimony, Total  | L79175  | 0.)L2 | 0.)90 | 0.500   | 15.0 3 115 | 96.6 | 9L.0  | mg/8  | 1.)   | 40.0   |
| Arsenic, Total   | L79175  | 0.512 | 0.516 | 0.500   | 15.0 3 115 | 102  | 102   | mg/8  | 0.5L2 | 40.0   |
| Barium, Total    | L79175  | 0.507 | 0.506 | 0.500   | 15.0 3 115 | 101  | 101   | mg/8  | 0.197 | 40.0   |
| Beryllium, Total | L79175  | 0.191 | 0.191 | 0.400   | 15.0 3 115 | 95.5 | 95.5  | mg/8  | 0     | 40.0   |
| Cadmium, Total   | L79175  | 0.460 | 0.460 | 0.450   | 15.0 3 115 | 10)  | 10)   | mg/8  | 0     | 40.0   |
| Copper, Total    | L79175  | 0.)96 | 0.)92 | 0.500   | 15.0 3 115 | 99.4 | 9L.6  | mg/8  | 0.607 | 40.0   |
| 8ead, Total      | L79175  | 0.54) | 0.546 | 0.500   | 15.0 3 115 | 105  | 105   | mg/8  | 0.2L1 | 40.0   |
| Dicj el, Total   | L79175  | 0.504 | 0.506 | 0.500   | 15.0 3 115 | 100  | 101   | mg/8  | 0.79) | 40.0   |
| Selenium, Total  | L79175  | 0.51L | 0.517 | 0.500   | 15.0 3 115 | 10)  | 102   | mg/8  | 0.192 | 40.0   |
| Silver, Total    | L79175  | 0.10) | 0.105 | 0.100   | 15.0 3 115 | 10)  | 105   | mg/8  | 0.957 | 40.0   |
| Hinc, Total      | L79175  | 0.544 | 0.517 | 0.500   | 15.0 3 115 | 10)  | 102   | mg/8  | 0.964 | 40.0   |

### Lk D

| Parameter       | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|-----------------|---------|---------|-------|-----------|------------|-----------|
| Antimony, Total | 1.0L    | 1       | mg/8  | 10L       | 90.0 3 110 | 140L266L9 |
| Barium, Total   | 10.7    | 10      | mg/8  | 107       | 90.0 3 110 | 140L266L9 |
| Copper, Total   | 10.)    | 10      | mg/8  | 10)       | 90.0 3 110 | 140L266L9 |
| 8ead, Total     | 10.6    | 10      | mg/8  | 106       | 90.0 3 110 | 140L266L9 |

### MDL ChecR

| Parameter     | Reading  | u nov n | Units | Reworker% | Limits%    | File      |
|---------------|----------|---------|-------|-----------|------------|-----------|
| Copper, Total | 0.00116  | 0.001   | mg/8  | 116       | 45.0 3 175 | 140L266L6 |
| 8ead, Total   | 0.0009L4 | 0.001   | mg/8  | 9L.4      | 45.0 3 175 | 140L266L6 |





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MWk

| Parameter        | Sample  | MS     | MSD    | UNu      | u nov n | Limits     | MS%  | MSD% | Units | RPD   | Limit% |
|------------------|---------|--------|--------|----------|---------|------------|------|------|-------|-------|--------|
| Antimony, Total  | 1L5709L | 0.)7L  | 0.)L6  | 0.0002)6 | 0.500   | 70.0 3 120 | 95.5 | 97.1 | mg/8  | 1.66  | 40.0   |
| Arsenic, Total   | 1L5709L | 0.529  | 0.549  | 0.020L   | 0.500   | 70.0 3 120 | 104  | 99.6 | mg/8  | 1.99  | 40.0   |
| Barium, Total    | 1L5709L | 0.614  | 0.619  | 0.109    | 0.500   | 70.0 3 120 | 101  | 104  | mg/8  | 1.2L  | 40.0   |
| Beryllium, Total | 1L5709L | 0.172  | 0.176  | DF       | 0.400   | 70.0 3 120 | L6.5 | LL.0 | mg/8  | 1.74  | 40.0   |
| Cadmium, Total   | 1L5709L | 0.426  | 0.42)  | 0.0004)2 | 0.450   | 70.0 3 120 | 9)2  | 92.5 | mg/8  | 0.154 | 40.0   |
| Copper, Total    | 1L5709L | 0.)62  | 0.)61  | 0.011)   | 0.500   | 70.0 3 120 | 90.2 | L9.9 | mg/8  | 0.))  | 40.0   |
| Lead, Total      | 1L5709L | 0.)7L  | 0.)6L  | 0.000477 | 0.500   | 70.0 3 120 | 95.5 | 92.5 | mg/8  | 4.14  | 40.0   |
| Dicj el, Total   | 1L5709L | 0.)2   | 0.)27  | 0.00L)2  | 0.500   | 70.0 3 120 | L6.9 | L5.7 | mg/8  | 1.29  | 40.0   |
| Selenium, Total  | 1L5709L | 0.540  | 0.509  | 0.02)5   | 0.500   | 70.0 3 120 | 97.1 | 9)9  | mg/8  | 4.49  | 40.0   |
| Silver, Total    | 1L5709L | 0.0956 | 0.09)4 | DF       | 0.100   | 70.0 3 120 | 95.6 | 9)4  | mg/8  | 1.)L  | 40.0   |
| Hinc, Total      | 1L5709L | 0.)5   | 0.)50  | 0.00L4L  | 0.500   | 70.0 3 120 | L9.1 | LL.2 | mg/8  | 0.901 | 40.0   |
| Antimony, Total  | 1L57105 | 0.)97  | 0.)L7  | DF       | 0.500   | 70.0 3 120 | 99.) | 97.) | mg/8  | 4.02  | 40.0   |
| Arsenic, Total   | 1L57105 | 0.514  | 0.514  | 0.000L71 | 0.500   | 70.0 3 120 | 104  | 104  | mg/8  | 0     | 40.0   |
| Barium, Total    | 1L57105 | 0.544  | 0.512  | 0.0021L  | 0.500   | 70.0 3 120 | 10)  | 104  | mg/8  | 1.75  | 40.0   |
| Beryllium, Total | 1L57105 | 0.194  | 0.191  | DF       | 0.400   | 70.0 3 120 | 96.0 | 95.5 | mg/8  | 0.544 | 40.0   |
| Cadmium, Total   | 1L57105 | 0.457  | 0.455  | 0.000519 | 0.450   | 70.0 3 120 | 102  | 104  | mg/8  | 0.7L2 | 40.0   |
| Copper, Total    | 1L57105 | 0.504  | 0.)94  | DF       | 0.500   | 70.0 3 120 | 100  | 9L)  | mg/8  | 4.01  | 40.0   |
| Lead, Total      | 1L57105 | 0.544  | 0.514  | DF       | 0.500   | 70.0 3 120 | 10)  | 104  | mg/8  | 1.92  | 40.0   |
| Dicj el, Total   | 1L57105 | 0.515  | 0.515  | 0.00175  | 0.500   | 70.0 3 120 | 102  | 102  | mg/8  | 0     | 40.0   |
| Selenium, Total  | 1L57105 | 0.502  | 0.507  | DF       | 0.500   | 70.0 3 120 | 101  | 101  | mg/8  | 0.794 | 40.0   |
| Silver, Total    | 1L57105 | 0.105  | 0.10)  | DF       | 0.100   | 70.0 3 120 | 105  | 10)  | mg/8  | 0.957 | 40.0   |
| Hinc, Total      | 1L57105 | 0.976  | 0.95L  | 0.)61    | 0.500   | 70.0 3 120 | 102  | 99.) | mg/8  | 2.56  | 40.0   |

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BlanR

| Parameter       | PrepSet | Reading | MDL     | SQL    | Units | File         |
|-----------------|---------|---------|---------|--------|-------|--------------|
| Aluminum, Total | L79175  | 0.0)2   | 0.0045  | 0.005  | mg/8  | ( 140L) 1414 |
| Thallium, Total | L79175  | DF      | 0.00045 | 0.0005 | mg/8  | 140L) 1414   |

CC:

| Parameter       | Reading | u nov n | Units | Reworker% | Limits%    | File       |
|-----------------|---------|---------|-------|-----------|------------|------------|
| Thallium, Total | 0.0)LL  | 0.05    | mg/8  | 97.6      | 90.0 3 110 | 140L) 1405 |
|                 | 0.0)91  | 0.05    | mg/8  | 9L.4      | 90.0 3 110 | 140L) 1415 |
|                 | 0.0)79  | 0.05    | mg/8  | 95.L      | 90.0 3 110 | 140L) 1446 |
|                 | 0.0)79  | 0.05    | mg/8  | 95.L      | 90.0 3 110 | 140L) 1426 |

yC:

| Parameter       | Reading | u nov n | Units | Reworker% | Limits%    | File       |
|-----------------|---------|---------|-------|-----------|------------|------------|
| Thallium, Total | 0.0)9   | 0.05    | mg/8  | 9L.0      | 90.0 3 110 | 140L) 1115 |

LCWk Vp

| Parameter       | PrepSet | LCS   | LCSD  | u nov n | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|-----------------|---------|-------|-------|---------|------------|------|-------|-------|------|--------|
| Aluminum, Total | L79175  | 0.509 | 0.554 | 0.500   | L5.0 3 115 | 104  | 110   | mg/8  | L.11 | 40.0   |
| Thallium, Total | L79175  | 0.)95 | 0.501 | 0.500   | L5.0 3 115 | 99.0 | 100   | mg/8  | 1.40 | 40.0   |

MWk

| Parameter       | Sample  | MS    | MSD   | UNu      | u nov n | Limits     | MS%  | MSD% | Units | RPD   | Limit% |
|-----------------|---------|-------|-------|----------|---------|------------|------|------|-------|-------|--------|
| Aluminum, Total | 1L5709L | 0.)95 | 0.)91 | 0.014)   | 0.500   | 70.0 3 120 | 96.5 | 95.7 | mg/8  | 0.124 | 40.0   |
| Thallium, Total | 1L5709L | 0.)66 | 0.)59 | 0.000471 | 0.500   | 70.0 3 120 | 92.1 | 91.7 | mg/8  | 1.51  | 40.0   |

Analytical Set 880127

EPA 200.7 4.4





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**CC:**

| Parameter             | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|-----------------------|---------|---------|-------|-----------|------------|-----------|
| F issolved Calcium    | 45.1    | 45.0    | mg/8  | 100       | 90.0 3 110 | 140L)4294 |
|                       | 45.6    | 45.0    | mg/8  | 104       | 90.0 3 110 | 140L)4)00 |
| F issolved k agnesium | 45.1    | 45.0    | mg/8  | 100       | 90.0 3 110 | 140L)4294 |
|                       | 45.)    | 45.0    | mg/8  | 104       | 90.0 3 110 | 140L)4)00 |
| F issolved Sodium     | 4).7    | 45.0    | mg/8  | 9LL       | 90.0 3 110 | 140L)4294 |
|                       | 4).9    | 45.0    | mg/8  | 99.6      | 90.0 3 110 | 140L)4)00 |

**k ir. WPKk**

| Parameter             | Sample  | DSPu | DSPuD | UNu  | u nov n | Limits%    | DSPu % | DSPuD% | Units | RPD  | Limit% |
|-----------------------|---------|------|-------|------|---------|------------|--------|--------|-------|------|--------|
| F issolved Calcium    | 1L5695) | 66.) | 6L.1  | 40.6 | 50.0    | 75.0 3 145 | 91.6   | 95.0   | mg/8  | 4.52 | 40.0   |
| F issolved k agnesium | 1L5695) | )7.1 | )9.0  | 4.4) | 50.0    | 75.0 3 145 | L9.7   | 92.5   | mg/8  | 2.95 | 40.0   |
| F issolved Sodium     | 1L5695) | 149  | 121   | L7.1 | 50.0    | 75.0 3 145 | L2.L   | L7.L   | mg/8  | 1.5) | 40.0   |

**k irect WPK**

| Parameter             | Sample  | DSPu | UNu  | u nov n | Limits%    | DSPu % | Units     |
|-----------------------|---------|------|------|---------|------------|--------|-----------|
| F issolved Calcium    | 1L5695) | 66.) | 40.6 | 50.0    | 75.0 3 145 | 91.6   | mg/8 40.0 |
| F issolved k agnesium | 1L5695) | )7.1 | 4.4) | 50.0    | 75.0 3 145 | L9.7   | mg/8 40.0 |
| F issolved Sodium     | 1L5695) | 149  | L7.1 | 50.0    | 75.0 3 145 | L2.L   | mg/8 40.0 |

**yCL**

| Parameter             | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|-----------------------|---------|---------|-------|-----------|------------|-----------|
| F issolved Calcium    | )9.6    | 50.0    | mg/8  | 99.4      | 95.0 3 105 | 140L)42L6 |
| F issolved k agnesium | )9.7    | 50.0    | mg/8  | 99.)      | 95.0 3 105 | 140L)42L6 |
| F issolved Sodium     | 50.)    | 50.0    | mg/8  | 101       | 95.0 3 105 | 140L)42L6 |

**yC:**

| Parameter             | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|-----------------------|---------|---------|-------|-----------|------------|-----------|
| F issolved Calcium    | 4).L    | 45.0    | mg/8  | 99.4      | 90.0 3 110 | 140L)4290 |
| F issolved k agnesium | 4).L    | 45.0    | mg/8  | 99.4      | 90.0 3 110 | 140L)4290 |
| F issolved Sodium     | 4).2    | 45.0    | mg/8  | 97.4      | 90.0 3 110 | 140L)4290 |

**Lk D**

| Parameter             | Reading | u nov n | Units | Reworker% | Limits%    | File      |
|-----------------------|---------|---------|-------|-----------|------------|-----------|
| F issolved Calcium    | 99.9    | 100     | mg/8  | 99.9      | 90.0 3 110 | 140L)42L7 |
| F issolved k agnesium | 101     | 100     | mg/8  | 101       | 90.0 3 110 | 140L)42L7 |
| F issolved Sodium     | 10L     | 100     | mg/8  | 10L       | 90.0 3 110 | 140L)42L7 |

Analytical Set **879264**

**WM 2510 B-2011**

**BlanR**

| Parameter                     | PrepSet | Reading | MDL | MQL | Units    | File      |
|-------------------------------|---------|---------|-----|-----|----------|-----------|
| 8ab Spec. Conductance at 45 C | L7946)  | 0.900   |     |     | umhos/cm | 140L4)L40 |

**k Vplicate**

| Parameter                     | Sample  | ResKlt | Uncnov n | Unit     | RPD   | Limit% |
|-------------------------------|---------|--------|----------|----------|-------|--------|
| 8ab Spec. Conductance at 45 C | 1L56969 | 561    | 559      | umhos/cm | 0.257 | 40.0   |
|                               | 1L57406 | 105    | 105      | umhos/cm | 0     | 40.0   |

**yC:**

| Parameter                     | Reading | u nov n | Units    | Reworker% | Limits%    | File      |
|-------------------------------|---------|---------|----------|-----------|------------|-----------|
| 8ab Spec. Conductance at 45 C | 14900   | 14900   | umhos/cm | 100       | 90.0 3 110 | 140L4)L42 |





# Quality Control

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906562

### Wandard

| Parameter                     | Sample | Reading | u nov n | Units    | Rewoker% | Limits%    | File      |
|-------------------------------|--------|---------|---------|----------|----------|------------|-----------|
| 8ab Spec. Conductance at 45 C | L7946) | 1)40    | 1)10    | umhos/cm | 101      | 90.0 3 110 | 140L4)L41 |
|                               | L7946) | 100     | 100     | umhos/cm | 100      | 90.0 3 110 | 140L4)L44 |
|                               | L7946) | 1)40    | 1)10    | umhos/cm | 101      | 90.0 3 110 | 140L4)L25 |
|                               | L7946) | 1)40    | 1)10    | umhos/cm | 101      | 90.0 3 110 | 140L4)L)7 |

Analytical Set **879302**

**WM 4500-CI F-2011**

### BlanR

| Parameter                     | PrepSet | Reading | MDL   | MQL   | Units | File      |
|-------------------------------|---------|---------|-------|-------|-------|-----------|
| Cl4 Residual,TotalNabNtration | L79204  | DF      | 0.100 | 0.100 | mg/8  | 140L45672 |

### k Vplicate

| Parameter                     | Sample  | ResKlt | Uncnov n | Unit | RPD | Limit% |
|-------------------------------|---------|--------|----------|------|-----|--------|
| Cl4 Residual,TotalNabNtration | 1L5695) | DF     | DF       | mg/8 |     | 40.0   |

Analytical Set **879454**

**WM 5220 k-2011**

### CC:

| Parameter               | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|-------------------------|---------|---------|-------|----------|------------|-----------|
| Chemical Oxygen F emand | 295     | )00     | mg/8  | 9LL      | 95.0 3 105 | 140L4LL51 |

### k Vplicate

| Parameter               | Sample  | ResKlt | Uncnov n | Unit | RPD | Limit% |
|-------------------------|---------|--------|----------|------|-----|--------|
| Chemical Oxygen F emand | 1L56577 | DF     | DF       | mg/8 |     | 40.0   |
|                         | 1L571L7 | 44.5   | 44.5     | mg/8 | 0   | 40.0   |

### LCW

| Parameter               | PrepSet | Reading | u nov n | Units | Rewoker% | Limits     | File      |
|-------------------------|---------|---------|---------|-------|----------|------------|-----------|
| Chemical Oxygen F emand | L79)5)  | 407     | 400     | mg/8  | 10)      | 90.0 3 110 | 140L4LL54 |

### Mat. VpiRe

| Parameter               | Sample  | Spice | Uncnov n | u nov n | Units | Rewokery % | Limits %   | File      |
|-------------------------|---------|-------|----------|---------|-------|------------|------------|-----------|
| Chemical Oxygen F emand | 1L56577 | 424   | DF       | 440     | mg/8  | 105        | L0.0 3 140 | 140L4LL55 |
|                         | 1L571L7 | 411   | 44.5     | 400     | mg/8  | 9).4       | L0.0 3 140 | 140L4LL67 |

Analytical Set **879483**

**WM 4500-P E-2011**

### Aw DL/MDL C

| Parameter              | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|------------------------|---------|---------|-------|----------|------------|-----------|
| Phosphorus Ms PN)total | 0.071)  | 0.060   | mg/8  | 119      | 70.0 3 120 | 140L496L) |

### BlanR

| Parameter              | PrepSet | Reading | MDL     | MQL   | Units | File      |
|------------------------|---------|---------|---------|-------|-------|-----------|
| Phosphorus Ms PN)total | L79)L2  | 0.0107  | 0.004L5 | 0.010 | mg/8  | 140L496L2 |

### CC:

| Parameter              | Reading | u nov n | Units | Rewoker% | Limits%    | File      |
|------------------------|---------|---------|-------|----------|------------|-----------|
| Phosphorus Ms PN)total | 0.205   | 0.200   | mg/8  | 104      | 90.0 3 110 | 140L496L5 |
|                        | 0.214   | 0.200   | mg/8  | 10)      | 90.0 3 110 | 140L49700 |
|                        | 0.214   | 0.200   | mg/8  | 10)      | 90.0 3 110 | 140L49712 |

### LCWk Vp

| Parameter | PrepSet | LCS | LCSD | u nov n | Limits% | LCS% | LCSD% | Units | RPD | Limit% |
|-----------|---------|-----|------|---------|---------|------|-------|-------|-----|--------|
|-----------|---------|-----|------|---------|---------|------|-------|-------|-----|--------|







# Quality Control

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### LCWk Vp

| Parameter              | PrepSet | LCS   | LCSD  | u nov n | Limits%    | LCS% | LCSD% | Units | RPD | Limit% |
|------------------------|---------|-------|-------|---------|------------|------|-------|-------|-----|--------|
| Phosphorus Ms PN total | L79) L2 | 0.249 | 0.216 | 0.200   | 10.0 3 140 | 110  | 105   | mg/8  | .02 | 40.0   |

### MWk

| Parameter              | Sample  | MS    | MSD   | UNu   | u nov n | Limits     | MS% | MSD% | Units | RPD  | Limit% |
|------------------------|---------|-------|-------|-------|---------|------------|-----|------|-------|------|--------|
| Phosphorus Ms PN total | 1L56504 | 0.11  | 0.07  | 0.107 | 0.200   | 70.0 3 120 | 104 | 100  | mg/8  | 4.21 | 40.0   |
|                        | 1L56960 | 0.54L | 0.525 | 0.424 | 0.200   | 70.0 3 120 | 9L7 | 101  | mg/8  | 4.2) | 40.0   |

( Out RPF is Relative Percent Difference ZabsMl 3r4N meanMl,r4N( 100: Recover: is Recovery Percent Z result / j nown ( 100:

BlanJ 3k ethod BlanJ %CC; 3 Continuing Calibration ; erification%k S 3k atrix Spij e%AWR8/k R8 C 3 Ambient Water Reporting 8imit/k inimum Reporting 8imit ChecJ Std%CS 3 8aboratory Control Sample%CCB 3 Continuing Calibration BlanJ %4C; 3 Initial Calibration ; erification%FR 3 8inear F ynamic Range Standard%k R8 ChecJ 3 k inimum Reporting 8imit ChecJ Std



906562 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
Employee Owned Integrity Caring Continual Improvement

Chain of Custody

COC Printed 01/21/2020 Page 1 of 3

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

CABC-P

127

Lab Number 1856959  
PO Number  
Phone 806/661-3130  
Fax 806/661-3134

Land Application Composite

Matrix: Non-Potable Water

Sample Collection Start

Date: 1.21.20 Time: 1150

Sample Collection Stop

Date: 1.22.20 Time: 1120

Sampler Printed Name: Miami Bonilla

Sampler Printed Name: Miami Bonilla

Sampler Affiliation: CABC

Sampler Affiliation: CABC

Sampler Signature: [Signature]

Sampler Signature: [Signature]

1 H2SO4 to pH <2 Amber Glass 250 mL w/Teflon lined lid

N TOCL Total Organic Carbon SM 5310 C-2011 (28.0 days)

1 Z- No bottle required

N Short Hold CFPL Client Field Filtration (Onsite) (0.0104 days)

Client Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

N Short Hold Cr+3 Trivalent Chromium Calculation CAS:16065-83-J (1.00 days)

N Short Hold FFIL Field Filtration (Onsite) (0.0104 days)

Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

GTMS Transfer to ICP/MS

1 HNO3 to pH <2 Polyethylene 500 mL for Metals

N \*AgM Silver, Total EPA 200.8 5.4 CAS:7440-22-4 (180 days)

N \*AlM Aluminum, Total EPA 200.8 5.4 CAS:7429-90-5 (180 days)

N \*AsM Arsenic, Total EPA 200.8 5.4 CAS:7440-38-2 (180 days)

N \*BaM Barium, Total EPA 200.8 5.4 CAS:7440-39-3 (180 days)



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Pachhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

906562 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**  
 Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com **LELAP-accredited #02008**  
 Employee Owned Integrity Caring Commitment Improvement  
 COC Printed 01/21/2020 Page 2 of 3

**Chain of Custody**

**CABC-P**

127

Phone 806/661-3130  
 Fax 806/661-3134

**Report To**

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

|  |                   |      |                                  |   |
|--|-------------------|------|----------------------------------|---|
| N  |                   | *BeM | Beryllium, Total                 | EPA 200.8 5.4 CAS:7440-41-7 (180 days)          |
| N  |                   | *CdM | Cadmium, Total                   | EPA 200.8 5.4 CAS:7440-43-9 (180 days)          |
| N  |                   | *CrM | Chromium, Total                  | EPA 200.8 5.4 CAS:7440-47-3 (180 days)          |
| N  |                   | *CuM | Copper, Total                    | EPA 200.8 5.4 CAS:7440-50-8 (180 days)          |
| N  |                   | *Hg  | Mercury, Total                   | EPA 245.1 3 CAS:7439-97-6 (28.0 days)           |
| N  |                   | *NiM | Nickel, Total                    | EPA 200.8 5.4 CAS:7440-02-0 (180 days)          |
| N  |                   | *PbM | Lead, Total                      | EPA 200.8 5.4 CAS:7439-92-1 (180 days)          |
| N  |                   | *SbM | Antimony, Total                  | EPA 200.8 5.4 CAS:7440-36-0 (180 days)          |
| N  |                   | *SeM | Selenium, Total                  | EPA 200.8 5.4 CAS:7782-49-2 (180 days)          |
| N  |                   | *TlM | Thallium, Total                  | EPA 200.8 5.4 CAS:7440-28-0 (180 days)          |
| N  |                   | *ZnM | Zinc, Total                      | EPA 200.8 5.4 CAS:7440-66-6 (180 days)          |
| N  |                   | 301L | Liquid Metals Digestion          | EPA 200.2 2.8 (180 days)                        |
| N  |                   | 747L | Mercury Liquid Metals Digestion  | EPA 245.1 3 (28.0 days)                         |
| <b>1 HNO3 to pH &lt;2 Polyethylene 500 mL/AFTER filtration</b> |                   |      |                                  |   |
| N  | <b>Short Hold</b> | *CaD | Dissolved Calcium                | EPA 200.7, Rev. 4.4 CAS:7440-70-2 (0.0104 days) |
| N  | <b>Short Hold</b> | *MgD | Dissolved Magnesium              | EPA 200.7, Rev. 4.4 CAS:7439-95-4 (0.0104 days) |
| N  | <b>Short Hold</b> | *NaD | Dissolved Sodium                 | EPA 200.7, Rev. 4.4 CAS:7440-23-5 (0.0104 days) |
| <b>2 H2SO4 to pH &lt;2 250 ml Polyethylene</b>                 |                   |      |                                  |   |
| N  |                   | COD  | Chemical Oxygen Demand           | SM 5220 D-2011 (28.0 days)                      |
| N  |                   | NHaN | Ammonia (as N)                   | EPA 350.1 2 (28.0 days)                         |
| N  |                   | TKN  | Total Kjeldahl Nitrogen          | EPA 351.2 2 CAS:7727-37-9 (28.0 days)           |
| N  |                   | TPWB | Phosphorus (as P), total         | SM 4500-P E-2011 CAS:7723-14-0 (28.0 days)      |
| <b>1 Polyethylene 1/2 gal (White)</b>                          |                   |      |                                  |   |
| N  | <b>Short Hold</b> | BOD  | Biochemical Oxygen Demand (BOD5) | SM 5210 B-2011 CAS:1026-3 (2.00 days)           |
| N  | <b>Short Hold</b> | BODc | BOD Carbonaceous                 | SM 5210 B-2011 (2.00 days)                      |
| N  | <b>Short Hold</b> | SARL | Sodium Adsorption Ratio - Liquid | 600/2-78-054 3.2.19 (0.0104 days)               |
| N  |                   | TSS  | Total Suspended Solids           | SM 2540 D-2011 (7.00 days)                      |
| <b>1 Polyethylene Quart (White)</b>                            |                   |      |                                  |   |
| N  |                   | ICL  | Chloride                         | EPA 300.0 2.1 (28.0 days)                       |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Parhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

906562 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
 Employee Owned Integrity Caring Continuous Improvement  
 COC Printed 01/21/2020 Page 3 of 3

Chain of Custody

Report To:

**CABC-P**  
127

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Phone 806/661-3130  
Fax 806/661-3134

|   |            |      |                                    |  |
|---|------------|------|------------------------------------|--|
| N |            | IFIL | Fluoride                           | EPA 300.0 2.1 (28.0 days)                    |
| N | Short Hold | IN3L | Nitrate-Nitrogen Total             | EPA 300.0 2.1 CAS:14797-55-8 (2.00 days)     |
| N |            | IS4L | Sulfate                            | EPA 300.0 2.1 (28.0 days)                    |
| N | Short Hold | CI2L | Cl2 Residual, Total(Lab) Titration | SM 4500-Cl F-2011 (2.00 days)                |
| N |            | CONL | Lab Spec. Conductance at 25 C      | SM 2510 B-2011 (28.0 days)                   |
| N | Short Hold | Cr+6 | Hexavalent Chromium                | SM 3500-Cr B-2011 CAS:18540-29-9 (1.00 days) |
| N | Short Hold | DMF  | Dissolved Metals Filtering         | SM 3030 B-2004 (0.0104 days)                 |
| N | Short Hold | DMFW | Dissolved (Wastewater) Filtering   | SM 3030 B-2004 (0.0104 days)                 |

Dissolved (Wastewater) Filtering Quality Control

Collected By MGB Date 1-22-20 Time 1120 Analyzed By MGB Date 1-22-20 Time 1130

Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

N TDS Total Dissolved Solids SM 2540 C-2011 (7.00 days)

Ambient Conditions/Comments

| Date    | Time  | Relinquished  | Received  |
|---------|-------|---|---|
| 1-22-20 | 11:30 | Printed Name: <u>MICHAEL BOBROW</u> Affiliation: _____<br>Signature: _____    | Printed Name: <u>JCH</u> Affiliation: <u>ana lab</u><br>Signature: <u>JCH</u>   |
| 1/22/20 | 18:00 | Printed Name: <u>JCH</u> Affiliation: <u>ana lab</u><br>Signature: <u>JCH</u> | Printed Name: <u>LSO</u> Affiliation: _____<br>Signature: _____                 |
| 1/22/20 | 09:30 | Printed Name: <u>LSO</u> Affiliation: _____<br>Signature: _____               | Printed Name: <u>Elsa Tucker Ana-Lab</u> Affiliation: _____<br>Signature: _____ |
|         |       | Printed Name: _____ Affiliation: _____<br>Signature: _____                    | Printed Name: _____ Affiliation: _____<br>Signature: _____                      |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
 Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region [ ]

The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP 0000323.

Comments



Corporate Shipping: 2680 Dudley Rd. Kilgore, TX 75662

Handhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

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1/22/2020

<https://www2.lso.com/weblabels/?labelsizes=0&combinedlabel=1&sessionkey=%7B191AA4A6-7973-40B7-A327-DD9F46936527%7D>

Airbill No. Z5683480

LSO  
1-800-800-8984  
www.lso.com

SHIP TO:  
LOGIN  
ANA-LAB CORP  
2600 DUDLEY RD.  
KILGORE, TX 75662  
9039840551

From:  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553558

**B****GGG****LSO PRIORITY NEXT DAY**

10:30 IN MOST CITIES

LATER IN REMOTE CITIES

PRINT DATE: 1/22/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 66.00LBS  
REF 1: MEMP, SHAM, RT66 LEF1 CAB, URBT 1D00V.0000 REF 2

1/23 0935 RT  
Date Time Tech  
Temp: 0.4 / 0.3 C  
Therm#: 6205 Corr Fact: -0.1 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

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Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

Account

**CABC-P**

Project

**911956**

This report consists of this Table of Contents and the following pages:

| <u>Report Name</u>           | <u>Description</u>   | <u>Pages</u> |
|------------------------------|--|--------------|
| 911956_r03_03_ProjectResults | Ana-Lab Project P:911956 C:CABC Project Results t:304          | 2            |
| 911956_r10_05_ProjectQC      | Ana-Lab Project P:911956 C:CABC Project Quality Control Groups | 2            |
| 911956_r99_09_CoC_1_of_1     | Ana-Lab CoC CABC 911956_1_of_1                                 | 2            |
| <b>Total Pages:</b>          |  | <b>6</b>     |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



NELAP-accredited #T104704201-19-15



# Results

Printed: 01/24/POPO 12:30

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911956

**Report To**

Cabot Corp.  
Ashlee Green  
P.O. Box 5002  
Kilgore, TX 79085

Account  
**CABC-P**

## Results

|   |                 |               |            |             |                  |            |          |                      |          |     |
|---|-----------------|---------------|------------|-------------|------------------|------------|----------|----------------------|----------|-----|
| <b>1868257</b>                          | <b>LL Hg</b>    |               |            |             |                  |            |          | Received: 01/05/POPO |          |     |
| Non-potable Water                       |                 | Collected by: | Client     | Cabot Corp. |                  |            | PO:      |                      |          |     |
| Composite Hop 22:05                     | 1/3/PO          | Taken:        | 22:05:00   |             |                  |            |          |                      |          |     |
|   |                 | Prepared:     | 03/18/2020 | 12:14:12    | Calculated       | 03/18/2020 | 12:14:12 | CAL                  |          |     |
| Parameter                               | Results         | Units         | RL         | Flag        | CAS              | Bottle     |          |                      |          |     |
| <b>z LL Mercury Test Prep</b>           | <b>Verified</b> |               |            |             |                  |            |          |                      |          |     |
| EPA 200.7 4.4                           |                 | Prepared:     | 886235     | 03/05/2020  | 14:30:00         | Analyzed   | 887087   | 03/11/2020           | 10:51:00 | LPS |
| Parameter                               | Results         | Units         | RL         | Flag        | CAS              | Bottle     |          |                      |          |     |
| <b>NELAC Boron</b>                      | <b>0.113</b>    | <b>mg/L</b>   | 0.0PO      |             | <b>7440-42-8</b> | 01         |          |                      |          |     |
| EPA 245.7 2                             |                 | Prepared:     | 886987     | 03/11/2020  | 07:47:22         | Analyzed   | 887136   | 03/11/2020           | 12:03:00 | LPS |
| Parameter                               | Results         | Units         | RL         | Flag        | CAS              | Bottle     |          |                      |          |     |
| <b>NELAC Mercury, Total (low level)</b> | <b>&lt;4.26</b> | <b>ng/L</b>   | 3.P8       |             | <b>7439-97-6</b> | 03         |          |                      |          |     |

## Sample Preparation

|  |                  |              |            |            |          |            |          |                      |          |     |
|--|------------------|--------------|------------|------------|----------|------------|----------|----------------------|----------|-----|
| <b>1868257</b>                               | <b>LL Hg</b>     |              |            |            |          |            |          | Received: 01/05/POPO |          |     |
| Composite Hop 22:05                          | 1/3/PO           |              |            |            |          |            |          |                      |          |     |
|  |                  | Prepared:    | 03/05/2020 | 10:48:00   | Analyzed | 03/05/2020 | 10:48:00 | KAT                  |          |     |
| z  | <b>Bottle pH</b> | <b>&lt;2</b> | <b>SU</b>  |            |          |            |          | <b>OP</b>            |          |     |
| EPA 200.2 2.8                                |                  | Prepared:    | 886235     | 03/05/2020 | 14:30:00 | Analyzed   | 886235   | 03/05/2020           | 14:30:00 | TES |
| <b>NELAC Liquid Metals Digestion</b>         | <b>50/50</b>     | <b>ml</b>    |            |            |          |            |          | <b>OP</b>            |          |     |
| EPA 245.7 2                                  |                  | Prepared:    | 886987     | 03/11/2020 | 07:47:22 | Analyzed   | 886987   | 03/11/2020           | 07:47:22 | LPS |
| <b>NELAC Low Level Mercury Liquid Metals</b> | <b>50/47</b>     | <b>ml</b>    |            |            |          |            |          | <b>02</b>            |          |     |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NEMAF -aSSredited LT203703P02-29-25



# Results

Printed: 01/24/POPO 12:30

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911956

|                     |                                      |   |
|---------------------|--------------------------------------|---|
| 1868257             | LL Hg                                | Received: 01/05/POPO                    |
| Composite Hop 22:05 | 1/3/PO                               |   |
| EPA 245.7 2         | Prepared: 886987 03/11/2020 07:47:22 | Analyzed 886987 03/11/2020 07:47:22 LPS |

### Qualifiers:

We report results on an As Received or wet basis unless marked Qry Weight. Unless otherwise noted, testing was performed at Ana-labs Sorporate laboratory that holds the following Federal and Htate Certifications: Ef A Mtb Number TX00081, k H Qepartment o6 AgriSulture Hoil Import f ermit f 110-27-00227, Texas Commission on Environmental c uality CommerSial Qrin#ing Water Mtb Approval U Mtb IQ: TXP29E, Texas Commission on Environmental c uality NEMAf T203703P02-29-25, Muisiana Qepartment o6 Environmental c uality Maboratory CertifiG Sation UNEMAf , MEMAf FLOP004, Muisiana Qepartment o6( ealth and ( ospitals Qrin#ing Water UNEMAf FCertifiG Sate No MA0P8, O#lahoma Qepartment o6 Environmental c uality TNI Maboratory ASSreditation f rogram CertifiG Sate No. P024-2P8, Ar#ansas Qepartment o6 Environmental c uality CertifiG Sation L24-084-0. The ASSredited Solumn designates aSSreditation by N -- NEMAC, or ) -- not Sovered under NEMAC sSope o6 aSSreditation.

These analytiSal results relate to the sample tested. This report may NOT be reproduSed EXCEf T in Dk MMwithout written approval o6 Ana-Mtb Corp. k nless otherwise speSiGed, these test results meet the rezuirements o6 NEMAC.

RMis the Reporting Mmit l sample speSiG S zuantitation limitFand is at or above the q ethod QeteStion Mmit lq QME. CAH is ChemiSal AbstraSt HerviSe number. RMis our Reporting Mmit, or q inimum c uantitation Mvel. The RMta#es into aSSount the Instrument QeteStion Mmit UQME, q ethod QeteStion Mmit lq QME, and f raStiSal c uantitation Mmit Uf c ME, and any dilutions and/or SonSentrations performed during sample preparation UEc ME. Our analytiSal result must be above this RMbefore we report a value in the 'Results' Solumn o6 our report Uwithout a 'J' agF. Otherwise, we report NQ UNot QeteSted above RM, beSause the result is "<" Uless thanFthe number in the RMSolumn. q AMis q inimum AnalytiSal Mvel and is typiSally f rom regulatory agenSies. k nless we report a result in the result Solumn, or interfereSes prevent it, we wor# to have our RMat or below the q AM

Bill Peery, MS, VP Technical Services







Quality Control

Printed 03/19/2020

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911956

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 760R5

Account  
**CABC-P**

AnalytiSal Met **887087** EPA 200.7 4.4

**BlanW**

| <u>Krwg etew</u> | <u>Kwadet</u> | <u>ver Uim</u> | <u>%o c</u> | <u>%Rc</u> | <u>Lnits</u> | <u>File</u> |
|------------------|---------------|----------------|-------------|------------|--------------|-------------|
| Boron            | 99R235        | ( )            | 0.0134      | 0.100      | mg/L         | 120693912   |

**CCR**

| <u>Krwg etew</u> | <u>ver Uim</u> | <u>pnQSm</u> | <u>Lnits</u> | <u>veMQwP</u> | <u>cig itsP</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| Boron            | 4.96           | 5.00         | mg/L         | 67.9          | 60.0 8110       | 120693909   |
|                  | 4.6R           | 5.00         | mg/L         | 66.2          | 60.0 8110       | 120693916   |
|                  | 5.05           | 5.00         | mg/L         | 101           | 60.0 8110       | 120693929   |

**kCL**

| <u>Krwg etew</u> | <u>ver Uim</u> | <u>pnQSm</u> | <u>Lnits</u> | <u>veMQwP</u> | <u>cig itsP</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| Boron            | 6.76           | 10.0         | mg/L         | 67.6          | 65.0 8105       | 120693766   |

**kCR**

| <u>Krwg etew</u> | <u>ver Uim</u> | <u>pnQSm</u> | <u>Lnits</u> | <u>veMQwP</u> | <u>cig itsP</u> | <u>File</u> |
|------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| Boron            | 5.03           | 5.00         | mg/L         | 101           | 60.0 8110       | 120693900   |

**LCVI Sp**

| <u>Krwg etew</u> | <u>Kwadet</u> | <u>c Cd</u> | <u>c Cdo</u> | <u>pnQSm</u> | <u>cig itsP</u> | <u>c CdP</u> | <u>c Cdo P</u> | <u>Lnits</u> | <u>v Ko</u> | <u>cig itP</u> |
|------------------|---------------|-------------|--------------|--------------|-----------------|--------------|----------------|--------------|-------------|----------------|
| Boron            | 99R235        | 0.610       | 0.623        | 1.00         | 95.0 8115       | 61.0         | 62.3           | mg/L         | 1.42        | 25.0           |

**MVI**

| <u>Krwg etew</u> | <u>drg ale</u> | <u>%d</u> | <u>%do</u> | <u>LNp</u> | <u>pnQSm</u> | <u>cig its</u> | <u>%dP</u> | <u>%do P</u> | <u>Lnits</u> | <u>v Ko</u> | <u>cig itP</u> |
|------------------|----------------|-----------|------------|------------|--------------|----------------|------------|--------------|--------------|-------------|----------------|
| Boron            | 19R7R69        | 1.13      | 1.15       | 0.125      | 1.00         | 75.0 8125      | 100        | 102          | mg/L         | 1.67        | 25.0           |

AnalytiSal Met **887136** EPA 245.7 2

**AD uL/MuL C**

| <u>Krwg etew</u>           | <u>ver Uim</u> | <u>pnQSm</u> | <u>Lnits</u> | <u>veMQwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 4.32           | 5.00         | ng/L         | 9R4           | 70.0 8130       | 120694R59   |

**BlanW**

| <u>Krwg etew</u>           | <u>Kwadet</u> | <u>ver Uim</u> | <u>%o c</u> | <u>%Rc</u> | <u>Lnits</u> | <u>File</u> |
|----------------------------|---------------|----------------|-------------|------------|--------------|-------------|
| - erSury, Total Now levelD | 99R697        | ( )            | 1.R5        | 4.00       | ng/L         | 120694RR2   |

**CCR**

| <u>Krwg etew</u>           | <u>ver Uim</u> | <u>pnQSm</u> | <u>Lnits</u> | <u>veMQwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 6.R9           | 10.0         | ng/L         | 6R9           | 7R0 8124        | 120694RR1   |
|                            | 10.0           | 10.0         | ng/L         | 100           | 7R0 8124        | 120694R72   |
|                            | 10.0           | 10.0         | ng/L         | 100           | 7R0 8124        | 120694R93   |
|                            | 10.3           | 10.0         | ng/L         | 103           | 7R0 8124        | 120694R61   |

**kCL**

| <u>Krwg etew</u>           | <u>ver Uim</u> | <u>pnQSm</u> | <u>Lnits</u> | <u>veMQwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 107            | 100          | ng/L         | 107           | 60.0 8110       | 120694RR0   |





# Quality Control

Printed 03/19/2020

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911956

### KCR

| <u>Keyword</u>             | <u>Ver Lim</u> | <u>pnQsm</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 6.75           | 10.0         | ng/L         | 67.5          | 60.0 8 110      | 120694R56   |

### LCVI Sp

| <u>Keyword</u>             | <u>Kwadet</u> | <u>c Cd</u> | <u>c Cdo</u> | <u>pnQsm</u> | <u>cig itsP</u> | <u>c CdP</u> | <u>c Cdo P</u> | <u>Lmits</u> | <u>v Ko</u> | <u>cig itP</u> |
|----------------------------|---------------|-------------|--------------|--------------|-----------------|--------------|----------------|--------------|-------------|----------------|
| - erSury, Total Now levelD | 99R697        | 2R5         | 2R3          | 25.0         | 7R0 8 113       | 10R          | 105            | ng/L         | 0.759       | 50.0           |

### MVI

| <u>Keyword</u>             | <u>drq ale</u> | <u>%d</u> | <u>%do</u> | <u>LNp</u> | <u>pnQsm</u> | <u>cig its</u> | <u>%dP</u> | <u>%do P</u> | <u>Lmits</u> | <u>v Ko</u> | <u>cig itP</u> |
|----------------------------|----------------|-----------|------------|------------|--------------|----------------|------------|--------------|--------------|-------------|----------------|
| - erSury, Total Now levelD | 19R793R        | 35.2      | 33.R       | R54        | 2RR          | R7.0 8 111     | 109        | 102          | ng/L         | 5.74        | 19.0           |
|                            | 19R9409        | 31.3      | 30.R       | ( )        | 2RR          | R7.0 8 111     | 119 *      | 115 *        | ng/L         | 2.2R        | 19.0           |

\* Out c P) is c elative PerSent ) iffereSe: absN1&2D/ meanN1,r2D\* 100% c eSover% is c eSovery PerSent: result / known \* 100%

Blank 8- ethod Blank; CCV 8Continuing Calibration VerifiSation; ICV 8Initial Calibration VerifiSation; AWc L/- c L C 8Ambient Water c eporting Limit/- inimum c eporting Limit CheSk Md



911956 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

Employee Owned Integrity Caring Continual Improvement

COC Printed 02/26/2020 Page 1 of 1

Chain of Custody

CABC-P

128

Lab Number 1868257

PO Number

Phone 806/661-3130

Fax 806/661-3134

Report To

Cabot Corp. Ashlee Green P. O. Box 5001 Pampa, TX 79065

LL Hg

\*ADD BORON

Matrix: Non-Potable Water

Sample Collection Start

Sample Collection Stop

Date: 3.3.20 Time: 1115

Date: 3.4.20 Time: 1105

Sampler Printed Name: MICHAEL BONILLA

Sampler Printed Name: MICHAEL BONILLA

Sampler Affiliation: CABC

Sampler Affiliation: CABC

Sampler Signature: [Signature]

Sampler Signature: [Signature]

1 Glass 500 ml /clean metals w/HCl

|       |      |                                 |                                      |
|-------|------|---------------------------------|--------------------------------------|
| NELAC | *HgI | Mercury, Total (low level)      | EPA 245.72 CAS:7439-97-6 (28.0 days) |
| NELAC | 245I | Low Level Mercury Liquid Metals | EPA 245.72 (28.0 days)               |
|       | HgKt | LL Mercury Test Prep            |                                      |

Ambient Conditions/Comments

| Date   | Time | Relinquished  | Received  |
|--------|------|---|---|
| 3.4.20 | 1330 | Printed Name: MICHAEL BONILLA<br>Signature: [Signature] | Printed Name: [Signature]<br>Signature: [Signature]           |
| 3/4/20 | 1800 | Printed Name: [Signature]<br>Signature: [Signature]     | Printed Name: LSO<br>Signature: [Signature]                   |
| 3/5/20 | 0800 | Printed Name: LSO<br>Signature: [Signature]             | Printed Name: Kelly Overman Ana-Lab<br>Signature: [Signature] |
|        |      | Printed Name: Affiliation                               | Printed Name: Affiliation                                     |
|        |      | Signature   | Signature   |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other

Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region  Yes  No

Samples Radioactive?  Yes  No Samples Contains Dioxin?  Yes  No Samples Biological Hazard?  Yes  No

The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments

\*ADD BORON



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

1  
2  
3

2 of 2

911956 CoC Print Group 001 of 001



Airbill No. Z5736782

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
LOGIN  
ANA-LAB CORP  
2600 DUDLEY RD.  
KILGORE, TX 75662  
9039840551

From:  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556

|          |            |  |
|----------|------------|--|
| <b>B</b> | <b>GGG</b> | <b>LSO PRIORITY NEXT DAY</b>                   |
|          |            | 10:30 IN MOST CITIES<br>LATER IN REMOTE CITIES |

PRINT DATE: 3/4/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 59.00LBS  
REF 1: CLAR HEDL MEMP COA4 AMA9 MADO MMWA LEF1 CAE

3/5 0840 [Signature]

|       |           |      |
|-------|-----------|------|
| Date  | Time      | Tech |
| Temp: | 0.1 / 0.9 | C    |

Therm#: 6093 Corr Fact: 0.0 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# Attachment WKSHT3.0-8

## Week 3 Laboratory Reports



# Results

Printed: 01/21/10 9:28

4age 2 oPf  
907296

Report 6o

CaTot Corpb  
. sAlee h reen  
4bObGoBx002  
4ampa56, X70fx

Account  
**CABC-P**

## Results

|   |                                   |                              |               |                      |                   |              |
|---|-----------------------------------|------------------------------|---------------|----------------------|-------------------|--------------|
| <b>1858585</b>                          | <b>Land Application Composite</b> | CO: 4902/1N21xx - 02/17 228x |               | Received: 02/80/1010 |                   |              |
| Won-4otaTle H ater                      | Collected by: Client              | CaTot Corpb                  |               | PO:                  |                   |              |
| Composite 3top 2298x                    | 2/17/10 Taken:                    | 2298x90                      |               |                      |                   |              |
| <hr/>                                   |                                   |                              |               |                      |                   |              |
| 600/2-78-054 3.2.19                     | Prepared:                         | 02/06/2020                   | 15:25:29      | Calculated           | 02/06/2020        | 15:25:29 CAL |
| Parameter                               | Results                           | Units                        | RL            | Flag                 | CAS               | Bottle       |
| <b>Sodium Adsorption Ratio - Liquid</b> | <b>4.69</b>                       | <b>1</b>                     |               |                      |                   |              |
| <hr/>                                   |                                   |                              |               |                      |                   |              |
| Calculation                             | Prepared:                         | 02/04/2020                   | 10:37:14      | Calculated           | 02/04/2020        | 10:37:14 CAL |
| Parameter                               | Results                           | Units                        | RL            | Flag                 | CAS               | Bottle       |
| <b>NELAC Trivalent Chromium</b>         | <b>0.00225</b>                    | <b>mg/L</b>                  | <b>0b000x</b> |                      | <b>16065-83-1</b> |              |
| <hr/>                                   |                                   |                              |               |                      |                   |              |
| EPA 200.7, Rev. 4.4                     | Prepared:                         | 881262 02/05/2020            | 13:42:00      | Analyzed             | 881262 02/05/2020 | 13:42:00 LPS |
| Parameter                               | Results                           | Units                        | RL            | Flag                 | CAS               | Bottle       |
| <b>NELAC Dissolved Calcium</b>          | <b>21.1</b>                       | <b>mg/L</b>                  | <b>0b00</b>   |                      | <b>7440-70-2</b>  | <b>0M</b>    |
| <b>NELAC Dissolved Magnesium</b>        | <b>2.34</b>                       | <b>mg/L</b>                  | <b>0b00</b>   |                      | <b>7439-95-4</b>  | <b>0M</b>    |
| <hr/>                                   |                                   |                              |               |                      |                   |              |
| EPA 200.7, Rev. 4.4                     | Prepared:                         | 881262 02/05/2020            | 13:45:00      | Analyzed             | 881262 02/05/2020 | 13:45:00 LPS |
| Parameter                               | Results                           | Units                        | RL            | Flag                 | CAS               | Bottle       |
| <b>NELAC Dissolved Sodium</b>           | <b>85.3</b>                       | <b>mg/L</b>                  | <b>xb00</b>   |                      | <b>7440-23-5</b>  | <b>0M</b>    |
| <hr/>                                   |                                   |                              |               |                      |                   |              |
| EPA 200.8 5.4                           | Prepared:                         | 880166 01/30/2020            | 14:15:00      | Analyzed             | 880757 02/03/2020 | 17:02:00 JAB |
| Parameter                               | Results                           | Units                        | RL            | Flag                 | CAS               | Bottle       |
| <b>NELAC Arsenic, Total</b>             | <b>&lt;0.0005</b>                 | <b>mg/L</b>                  | <b>0b000x</b> | <b>G</b>             | <b>7440-38-2</b>  | <b>0N</b>    |
| <b>NELAC Beryllium, Total</b>           | <b>&lt;0.0005</b>                 | <b>mg/L</b>                  | <b>0b000x</b> |                      | <b>7440-41-7</b>  | <b>0N</b>    |
| <b>NELAC Cadmium, Total</b>             | <b>&lt;0.0002</b>                 | <b>mg/L</b>                  | <b>0b0001</b> |                      | <b>7440-43-9</b>  | <b>0N</b>    |
| <b>NELAC Chromium, Total</b>            | <b>0.00375</b>                    | <b>mg/L</b>                  | <b>0b000x</b> |                      | <b>7440-47-3</b>  | <b>0N</b>    |
| <b>NELAC Copper, Total</b>              | <b>0.00406</b>                    | <b>mg/L</b>                  | <b>0b002</b>  |                      | <b>7440-50-8</b>  | <b>0N</b>    |
| <b>NELAC Nickel, Total</b>              | <b>0.00481</b>                    | <b>mg/L</b>                  | <b>0b002</b>  |                      | <b>7440-02-0</b>  | <b>0N</b>    |
| <b>NELAC Selenium, Total</b>            | <b>&lt;0.001</b>                  | <b>mg/L</b>                  | <b>0b002</b>  |                      | <b>7782-49-2</b>  | <b>0N</b>    |
| <b>NELAC Silver, Total</b>              | <b>&lt;0.0002</b>                 | <b>mg/L</b>                  | <b>0b0001</b> |                      | <b>7440-22-4</b>  | <b>0N</b>    |
| <b>NELAC Zinc, Total</b>                | <b>0.151</b>                      | <b>mg/L</b>                  | <b>0b00x</b>  |                      | <b>7440-66-6</b>  | <b>0N</b>    |
| <hr/>                                   |                                   |                              |               |                      |                   |              |
| EPA 200.8 5.4                           | Prepared:                         | 880166 01/30/2020            | 14:15:00      | Analyzed             | 881018 02/04/2020 | 18:50:00 JAB |
| Parameter                               | Results                           | Units                        | RL            | Flag                 | CAS               | Bottle       |
| <b>NELAC Aluminum, Total</b>            | <b>0.0241</b>                     | <b>mg/L</b>                  | <b>0b001x</b> | <b>G</b>             | <b>7429-90-5</b>  | <b>0N</b>    |





# Results

Printed: 01/21/1010 9:28

4age 1 oPf  
907296

| 1858585                             | Land Application Composite | CO: 4902/1N21xx - 02/17 228x | Received: 02/80/1010                    |
|-------------------------------------|----------------------------|------------------------------|---|
| Won-4ota Tle H ater                 | Collected by: Client       | CaTot Corpb                  | PO:                                     |
| Composite 3top 2298x                | 2/17/10 Taken:             | 2298x900                     |   |
| <hr/>                               |                            |                              |   |
| EPA 200.8 5.4                       | Prepared: 880166           | 01/30/2020 14:15:00          | Analyzed 881018 02/04/2020 18:50:00 JAB |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Antimony, Total               | <0.0005                    | mg/L 0f000x                  | 7440-36-0 0N                            |
| NELAC Lead, Total                   | <0.0005                    | mg/L 0f000x                  | 7439-92-1 0N                            |
| NELAC Thallium, Total               | <0.0005                    | mg/L 0f000x                  | 7440-28-0 0N                            |
| <hr/>                               |                            |                              |   |
| EPA 200.8 5.4                       | Prepared: 880166           | 01/30/2020 14:15:00          | Analyzed 882235 02/11/2020 16:27:00 JAB |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Barium, Total                 | 0.0584                     | mg/L 0f008                   | 7440-39-3 0N                            |
| <hr/>                               |                            |                              |   |
| EPA 245.1 3                         | Prepared: 880253           | 01/31/2020 07:45:00          | Analyzed 880661 02/03/2020 13:33:00 LPS |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Mercury, Total                | <0.200                     | ug/L 0f100                   | 7439-97-6 2M                            |
| <hr/>                               |                            |                              |   |
| EPA 300.0 2.1                       | Prepared: 880435           | 01/30/2020 11:50:00          | Analyzed 880435 01/30/2020 11:50:00 ATN |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Chloride                      | 78.4                       | mg/L 2bx0                    | 02                                      |
| NELAC Fluoride                      | <0.500                     | mg/L 0bx00                   | 02                                      |
| NELAC Nitrate-Nitrogen Total        | <0.100                     | mg/L 0f200                   | 14797-55-8 02                           |
| NELAC Sulfate                       | 3.81                       | mg/L 2bx0                    | 02                                      |
| <hr/>                               |                            |                              |   |
| EPA 350.1 2                         | Prepared: 880365           | 01/31/2020 13:30:00          | Analyzed 880621 02/03/2020 00:00:00 AMB |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Ammonia (as N)                | 4.76                       | mg/L 0f100                   | 2x                                      |
| <hr/>                               |                            |                              |   |
| EPA 351.2 2                         | Prepared: 880238           | 01/31/2020 08:30:00          | Analyzed 880698 02/03/2020 13:35:00 RSV |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Total Kjeldahl Nitrogen       | 8.08                       | mg/L 0f200                   | 7727-37-9 28                            |
| <hr/>                               |                            |                              |   |
| SM 2510 B-2011                      | Prepared: 880216           | 01/30/2020 15:55:00          | Analyzed 880216 01/30/2020 15:55:00 MM2 |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Lab Spec. Conductance at 25 C | 829                        | umhos/cm                     | 02                                      |
| <hr/>                               |                            |                              |   |
| SM 2540 C-2011                      | Prepared: 880637           | 01/31/2020 11:15:00          | Analyzed 880637 01/31/2020 11:15:00 TH2 |
| Parameter                           | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Total Dissolved Solids        | 444                        | mg/L 10f0                    | 02                                      |





# Results

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| 1858585                                | Land Application Composite | CO: 4902/1N21xx - 02/17 228x | Received: 02/80/1010                    |
|--|----------------------------|------------------------------|---|
| Won-4otaTle H ater                     | Collected by: Client       | CaTot Corpb                  | PO:                                     |
| Composite 3top 2298x                   | Taken: 2/17/10             | 2298x900                     |   |
| <hr/>                                  |                            |                              |   |
| SM 2540 D-2011                         | Prepared: 881268           | 02/05/2020 11:00:00          | Analyzed 881268 02/05/2020 11:00:00 JWK |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Total Suspended Solids           | 28.0                       | mg/L 1000                    | 02                                      |
| <hr/>                                  |                            |                              |   |
| SM 3500-Cr B-2011                      | Prepared: 880330           | 01/30/2020 11:15:00          | Analyzed 880330 01/30/2020 11:15:00 ALB |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Hexavalent Chromium              | <3.00                      | ug/L 800                     | 18540-29-9 02                           |
| <hr/>                                  |                            |                              |   |
| SM 4500-CI F-2011                      | Prepared: 880408           | 01/30/2020 16:50:00          | Analyzed 880408 01/30/2020 16:50:00 MM2 |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Cl2 Residual,Total(Lab)Titration | <0.100                     | mg/L 00200                   | 02                                      |
| <hr/>                                  |                            |                              |   |
| SM 4500-P E-2011                       | Prepared: 881977           | 02/10/2020 13:10:00          | Analyzed 881977 02/10/2020 13:10:00 ESG |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Phosphorus (as P), total         | 0.873                      | mg/L 000x0                   | 7723-14-0 0f                            |
| <hr/>                                  |                            |                              |   |
| SM 5210 B-2011                         | Prepared: 880232           | 01/31/2020                   | Analyzed 880232 02/05/2020 09:14:50 JCB |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Biochemical Oxygen Demand (BOD5) | 24.3                       | mg/L 1000                    | G, 1026-3 02                            |
| <hr/>                                  |                            |                              |   |
| SM 5210 B-2011                         | Prepared: 880233           | 01/31/2020                   | Analyzed 880233 02/05/2020 08:42:26 JCB |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC BOD Carbonaceous                 | 7.93                       | mg/L 1000                    | G 02                                    |
| <hr/>                                  |                            |                              |   |
| SM 5220 D-2011                         | Prepared: 880944           | 02/04/2020 10:30:00          | Analyzed 880944 02/04/2020 10:30:00 MM2 |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Chemical Oxygen Demand           | 60.6                       | mg/L 1100                    | 0f                                      |
| <hr/>                                  |                            |                              |   |
| SM 5310 C-2011                         | Prepared: 880282           | 01/30/2020 13:49:00          | Analyzed 880282 01/30/2020 13:49:00 ALH |
| Parameter                              | Results                    | Units RL                     | Flag CAS Bottle                         |
| NELAC Total Organic Carbon             | 16.2                       | mg/L 2000                    | 0x                                      |

| 1858586            | Land Application Grab Samples | Received: 02/80/1010 |
|--------------------|-------------------------------|----------------------|
| Won-4otaTle H ater | Collected by: h G             | na-SaT               |
|                    | Taken: 02/17/1010             | 2298x900             |
| PO:                |                               |                      |







# Results

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| 1858586 Land Application Grab Samples   |         | Received: 02/80/1010                    |      |
|---|---------|---|------|
| Won-4otaTle H ater                      |         | Collected by: : h G . na-SaT            |      |
| Taken: 02/17/1010 2298x900              |         | PO:                                     |      |
| Prepared: 880068 01/29/2020 11:45:00    |         | Analyzed 880068 01/29/2020 11:45:00 MGB |      |
| Parameter                               | Results | Units                                   | RL   |
| z pH Client Provided                    | 7.75    | SU                                      |      |
| Client                                  |         | Prepared: 880069 01/29/2020 11:47:00    |      |
| Analyzed 880069 01/29/2020 11:47:00 MGB |         |   |      |
| Parameter                               | Results | Units                                   | RL   |
| z Cl2 Res(Total)Analyzed by client      | 0.12    | mg/L                                    |      |
| EPA 1664B (HEM)                         |         | Prepared: 880406 02/03/2020 07:45:00    |      |
| Analyzed 880406 02/03/2020 07:45:00 DSI |         |   |      |
| Parameter                               | Results | Units                                   | RL   |
| NELAC Oil and Grease (HEM)              | <4.88   | mg/L                                    | MBN  |
| SM 4500-CN <sup>-</sup> E-2011          |         | Prepared: 880532 02/03/2020 10:00:00    |      |
| Analyzed 880628 02/03/2020 00:00:00 AMB |         |   |      |
| Parameter                               | Results | Units                                   | RL   |
| NELAC Cyanide, total                    | <0.005  | mg/L                                    | 000x |
| SM 9221 E + C-2006                      |         | Prepared: 880382 01/31/2020 10:48:00    |      |
| Analyzed 880382 01/31/2020 10:48:00 MDM |         |   |      |
| Parameter                               | Results | Units                                   | RL   |
| NELAC Fecal Coliform (MPN)              | 94      | MPN/10 0 mL                             | 20N  |

## Sample Preparation

| 1858585 Land Application Composite     |          | CO: 4902/1N21xx - 02/17 228x          |  | Received: 02/80/1010 |    |
|--|----------|---------------------------------------|--|----------------------|----|
| Composite 3top 2298x 2/17/10           |          |                                       |  |                      |    |
| Prepared: 01/30/2020 09:29:00          |          | Analyzed 01/30/2020 09:29:00          |  | CCP                  |    |
| z Bottle pH                            | <2       | SU                                    |  |                      | 08 |
| z Bottle pH                            | <2       | SU                                    |  |                      | 0M |
| Prepared: 880016 01/31/2020 10:01:51   |          | Calculated 880016 01/31/2020 10:01:51 |  | CAL                  |    |
| NELAC Client Field Filtration (Onsite) | Verified |                                       |  |                      |    |





# Results

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|                      |  |                                      |   |
|----------------------|--|--------------------------------------|---|
| <b>1858585</b>       | <b>Land Application Composite</b>      | CO: 4902/1N21xx - 02/17 228x         | Received: 02/80/1010                    |
| Composite 3 top 228x | 2/17/10                                |                                      |   |
|                      |  | Prepared: 880734 02/04/2020 06:39:14 | Analyzed 880734 02/04/2020 06:39:14 LPS |
| <b>z</b>             | <b>Transfer to ICP/MS</b>              | <b>COMPLETE</b>                      | <b>0M</b>                               |
| EPA 200.2 2.8        |  | Prepared: 880166 01/30/2020 14:15:00 | Analyzed 880166 01/30/2020 14:15:00 TES |
| <b>NELAC</b>         | <b>Liquid Metals Digestion</b>         | <b>50/50 ml</b>                      | <b>08</b>                               |
| EPA 245.1 3          |  | Prepared: 880253 01/31/2020 07:45:00 | Analyzed 880253 01/31/2020 07:45:00 ALB |
| <b>NELAC</b>         | <b>Mercury Liquid Metals Digestion</b> | <b>50/25 ml</b>                      | <b>08</b>                               |
| EPA 350.2, Rev. 2.0  |  | Prepared: 880365 01/31/2020 13:30:00 | Analyzed 880365 01/31/2020 13:30:00 JCI |
| <b>NELAC</b>         | <b>Ammonia Distillation</b>            | <b>50/50 ml</b>                      | <b>0f</b>                               |
| EPA 351.2, Rev 2.0   |  | Prepared: 880238 01/31/2020 08:30:00 | Analyzed 880238 01/31/2020 08:30:00 CRS |
| <b>NELAC</b>         | <b>TKN Block Digestion</b>             | <b>20/20 ml</b>                      | <b>0f</b>                               |
| SM 2540 C-2011       |  | Prepared: 880099 01/31/2020 11:15:00 | Analyzed 880099 01/31/2020 11:15:00 TH2 |
| <b>NELAC</b>         | <b>Total Dissolved Solids Started</b>  | <b>Started</b>                       |   |
| SM 2540 D-2011       |  | Prepared: 880047 02/05/2020 11:00:00 | Analyzed 880047 02/05/2020 11:00:00 JWK |
| <b>NELAC</b>         | <b>TSS Set Started</b>                 | <b>Started</b>                       |   |
| SM 5210 B-2011       |  | Prepared: 880232 01/31/2020          | Analyzed 880232 01/31/2020 06:50:55 JCB |
| <b>NELAC</b>         | <b>BOD Set Started</b>                 | <b>Started</b>                       |   |
| SM 5210 B-2011       |  | Prepared: 880233 01/31/2020          | Analyzed 880233 01/31/2020 06:50:55 JCB |
| <b>NELAC</b>         | <b>BODc Set Started</b>                | <b>Started</b>                       |   |





# Results

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|  |                  |            |          |          |        |            |          |                      |
|--|------------------|------------|----------|----------|--------|------------|----------|----------------------|
| <b>1858586 Land Application Grab Samples</b> |                  |            |          |          |        |            |          | Received: 02/80/1010 |
| SM 4500-CN <sup>-</sup> C-2011               | Prepared: 880532 | 02/03/2020 | 10:00:00 | Analyzed | 880532 | 02/03/2020 | 10:00:00 | JCI                  |
| NELAC Cyanide Distillation                   | 10/5             |            | ml       |          |        |            |          | 01                   |
| SM 9221 E + C-2006                           | Prepared: 880379 | 01/30/2020 | 09:50:00 | Analyzed | 880379 | 01/30/2020 | 09:50:00 | MDM                  |
| NELAC Fecal Coliform MPN Started /L          | STARTED          |            |          |          |        |            |          | 08                   |

### Qualifiers

G - analyte detected in the associated method blank # - 3 sample started outside recommended holding time  
, - 3 standard reads significantly above desired

The report results on analyses received or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at the Ana-Lab Corporate Laboratory that follows the following Federal and State Regulations: EPA SaT WmTer 6, 000f85U3 Department of Agriculture Soil Import Permit 4880-2X-0022X5 6eBas Commission on Environmental Quality Commercial Drinking Water SaT approval (SaTID96, 127)5 6eBas Commission on Environmental Quality WES. 4 620MDM02-27-2x5 Louisiana Department of Environmental Quality SaTory CertiHLation (WES. 4)5SES. 4) c0100N5 Louisiana Department of Health and Hospitals Drinking Water (WES. 4) CertiHLate Wb S. 01f5 Oklahoma Department of Environmental Quality 6 W SaTory. LLreditation 4rogram CertiHLate Wb102N21f5. rkansas Department of Environmental Quality CertiHLation c2N0fN0b 6 Ae. LLredited Lolumn designates allreditation Ty W-- WES. C5or z -- not covered under WES. C slope of allreditation

6 Ae analytial results relate to the sample tested. 6 Ais report may W06 Te reproduced E, CE46 in FUSS without written approval of the SaT Corp. Unless otherwise specified, these test results meet the requirements of WES. Cb RS is the Reporting Limit (sample specific quantitation limit) and is at or above the detection limit (DL) or the Reporting Limit (RS). The Reporting Limit (RS) is our Reporting Limit for minimum Quantitation. Sevelb 6 Ae RS takes into account the instrument detection limit (IDL) and the detection limit (DL) and 4raLiLal Quantitation Limit (4QS) and any dilutions and/or concentrations performed during sample preparation (EQS). Our analytical result must be above the RS. Therefore, we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report WD (not detected above RS). The result is "<" (less than) the number in the RS column. The S is minimum analytical level and is typically from regulatory agencies. Unless we report a result in the result column for interferences, prevent it. We work to have our RS at or below the S.

Bill Peery, MS, VP Technical Services





# Quality Control

Report To

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 Pbp bGoBx001  
 PaE ma, TX 7906x

Account  
**CABC-P**

Analytical Set **880382** SM 9221 E + C-2006

**Blank**

| Parameter                  | PrepSet | Reading | MDL  | MQL  | Units       | File     |
|----------------------------|---------|---------|------|------|-------------|----------|
| Fecal Coliform MPN Starte4 | 880(8/  | P. SS   | 1180 | 1180 | MPN2100 E L | 1/0857/( |

**Standard**

| Parameter                  | Sample | Reading    | Known      | Units       | Recover% | Limits% | File      |
|----------------------------|--------|------------|------------|-------------|----------|---------|-----------|
| Fecal Coliform MPN Starte4 | 880(79 | Pp SvT y d | Pp SvT y d | MPN2100 E l |          | 3       | 1/0857//5 |

Analytical Set **880232** SM 5210 B-2011

**Blank**

| Parameter            | PrepSet | Reading | MDL  | MQL  | Units | File      |
|----------------------|---------|---------|------|------|-------|-----------|
| GiocseE ical p Bygen | 880(/   | 0188    | 0100 | 0100 | E gL  | 1/085509/ |
| DeE an4 V Gp Dx-     | 880(/   | 0186    | 0100 | 0100 | E gL  | 1/08551(9 |
|                      | 880(/   | 018(    | 0100 | 0100 | E gL  | 1/085x916 |

**Duplicate**

| Parameter            | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|----------------------|---------|--------|---------|------|------|--------|
| GiocseE ical p Bygen | 18x8x(0 | x188   | x185    | E gL | 11bx | (010   |
| DeE an4 V Gp Dx-     | 18x8610 | /510   | //10    | E gL | 8180 | (010   |
|                      | 18x8815 | /9x    | /78     | E gL | x19( | (010   |
|                      | 18x8891 | 616    | 6168    | E gL | 8110 | (010   |
|                      | 18x8995 | 81x(   | 811(    | E gL | 5180 | (010   |

**Seed Drop**

| Parameter            | PrepSet | Reading | MDL  | MQL  | Units | File      |
|----------------------|---------|---------|------|------|-------|-----------|
| GiocseE ical p Bygen | 880(/   | 01950   | 0100 | 0100 | E gL  | 1/085509( |
| DeE an4 V Gp Dx-     | 880(/   | 1101    | 0100 | 0100 | E gL  | 1/0855150 |
|                      | 880(/   | 01767   | 0100 | 0100 | E gL  | 1/085x917 |

**Standard**

| Parameter            | Sample | Reading | Known | Units | Recover%  | Limits% | File      |
|----------------------|--------|---------|-------|-------|-----------|---------|-----------|
| GiocseE ical p Bygen | /7/    | 198     | E gL  | 1(7   | 8(17 3116 | *       | 1/0855095 |
| DeE an4 V Gp Dx-     | /x7    | 198     | E gL  | 1(0   | 8(17 3116 | *       | 1/0855151 |
|                      | /50    | 198     | E gL  | 1/1   | 8(17 3116 | *       | 1/085x918 |

Analytical Set **880233** SM 5210 B-2011

**Blank**

| Parameter         | PrepSet | Reading | MDL  | MQL  | Units | File      |
|-------------------|---------|---------|------|------|-------|-----------|
| Gp D CarvonaceouA | 880((   | 018(    | 0100 | 0100 | E gL  | 1/0855180 |
|                   | 880((   | 018(    | 0100 | 0100 | E gL  | 1/0855//7 |





# Quality Control

### Duplicate

| Parameter       | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|-----------------|---------|--------|---------|------|------|--------|
| Gp D CarvoneouA | 18x8x6/ | x17    | 516x    | E gL | 1016 | (10)   |
|                 | 18x877x | 1517   | 1(16    | E gL | 7177 | (10)   |
|                 | 18x88(8 | 1910   | 1818    | E gL | 1106 | (10)   |
|                 | 18x8976 | (161   | 5109    | E gL | 1/1x | (10)   |

### Seed Drop

| Parameter       | PrepSet | Reading | MDL  | MQL  | Units | File      |
|-----------------|---------|---------|------|------|-------|-----------|
| Gp D CarvoneouA | 880/((  | 01667   | 0100 | 0100 | E gL  | 1/0855181 |
|                 | 880/((  | 01757   | 0100 | 0100 | E gL  | 1/0855//8 |

### Standard

| Parameter       | Sample | Reading | Known | Units | Recover% | Limits% | File      |
|-----------------|--------|---------|-------|-------|----------|---------|-----------|
| Gp D CarvoneouA | /19    | 198     | E gL  | 111   | 8(17     | 3116    | 1/085518/ |
|                 | /1x    | 198     | E gL  | 109   | 8(17     | 3116    | 1/0855//9 |

Analytical Set

880621

EPA 350.12

### Blank

| Parameter      | PrepSet | Reading | MDL     | MQL   | Units | File      |
|----------------|---------|---------|---------|-------|-------|-----------|
| E E onia VIAN- | 880(6x  | ND      | 0100(x6 | 010/0 | E gL  | 1/08x/156 |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits% | File |           |
|----------------|---------|-------|-------|----------|---------|------|-----------|
| E E onia VIAN- | 1199    | /100  | E gL  | 991x     | 9010    | 3110 | 1/08x/15x |
|                | /10(    | /100  | E gL  | 10/      | 9010    | 3110 | 1/08x/1xx |
|                | 1199    | /100  | E gL  | 991x     | 9010    | 3110 | 1/08x/1x6 |
|                | /10(    | /100  | E gL  | 10/      | 9010    | 3110 | 1/08x/16x |
|                | /100    | /100  | E gL  | 100      | 9010    | 3110 | 1/08x/176 |
|                | /119    | /100  | E gL  | 110      | 9010    | 3110 | 1/08x/186 |
|                | /115    | /100  | E gL  | 107      | 9010    | 3110 | 1/08x/19( |
|                | 119(    | /100  | E gL  | 961x     | 9010    | 3110 | 1/08x//0/ |
|                | 1198    | /100  | E gL  | 9910     | 9010    | 3110 | 1/08x//06 |
|                | /106    | /100  | E gL  | 10(      | 9010    | 3110 | 1/08x//1( |
|                | /116    | /100  | E gL  | 108      | 9010    | 3110 | 1/08x//1  |

### Duplicate

| Parameter      | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|----------------|---------|--------|---------|------|------|--------|
| E E onia VIAN- | 18x8x61 | 0107/  | 01069   | E gL | 516  | /100   |
|                | 18x908( | 0119x  | 0119(   | E gL | 110( | /100   |

### ICV

| Parameter      | Reading | Known | Units | Recover% | Limits% | File |           |
|----------------|---------|-------|-------|----------|---------|------|-----------|
| E E onia VIAN- | /10/    | /100  | E gL  | 101      | 9010    | 3110 | 1/08x/155 |

### LCS Dup

| Parameter      | PrepSet | LCS  | LCS D | Known | Limits% | LCS% | LCS D% | Units | RPD  | Limit% |      |
|----------------|---------|------|-------|-------|---------|------|--------|-------|------|--------|------|
| E E onia VIAN- | 880(6x  | /108 | /10x  | /100  | 9010    | 3110 | 105    | 10/   | E gL | 115x   | /100 |

### Mat. Spike

| Parameter      | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits % | File |           |
|----------------|---------|-------|---------|-------|-------|------------|----------|------|-----------|
| E E onia VIAN- | 18x8x61 | 1196  | 01069   | /100  | E gL  | 9516       | 8010     | 31/0 | 1/08x/1x5 |
|                | 18x908( | /115  | 0119(   | /100  | E gL  | 9715       | 8010     | 31/0 | 1/08x/1x1 |





# Quality Control

Analytical Set **880628**

SM 4500-CN<sup>-</sup>E-2011

### Blank

| Parameter      | PrepSet | Reading | MDL      | MDL      | Units | File       |
|----------------|---------|---------|----------|----------|-------|------------|
| Cyanide, total | 880x(/  | ND      | 0.000/5/ | 0.000/ x | E.g.L | 1/08x/(x9) |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File       |
|----------------|---------|-------|-------|----------|------------|------------|
| Cyanide, total | 0.005   | 0.000 | E.g.L | 101      | 90.0 3.110 | 1/08x/(x8) |
|                | 0.007   | 0.000 | E.g.L | 101      | 90.0 3.110 | 1/08x/(67) |
|                | 0.091   | 0.000 | E.g.L | 98.6     | 90.0 3.110 | 1/08x/(78) |
|                | 0.091   | 0.000 | E.g.L | 98.6     | 90.0 3.110 | 1/08x/(86) |

### Duplicate

| Parameter      | Sample  | Result | Unknown | Unit  | RPD | Limit% |
|----------------|---------|--------|---------|-------|-----|--------|
| Cyanide, total | 18x8x88 | ND     | ND      | E.g.L |     | /0.0   |
|                | 18x8606 | ND     | ND      | E.g.L |     | /0.0   |

### ICV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File       |
|----------------|---------|-------|-------|----------|------------|------------|
| Cyanide, total | 0.098   | 0.000 | E.g.L | 99.0     | 90.0 3.110 | 1/08x/(x7) |

### LCS Dup

| Parameter      | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|----------------|---------|-------|-------|-------|------------|------|-------|-------|------|--------|
| Cyanide, total | 880x(/  | 0.001 | 0.007 | 0.000 | 90.0 3.110 | 100  | 105   | E.g.L | /0.5 | /0.0   |

### Mat. Spike

| Parameter      | Sample  | Spike  | Unknown | Known  | Units | Recovery % | Limits %   | File       |
|----------------|---------|--------|---------|--------|-------|------------|------------|------------|
| Cyanide, total | 18x8x88 | 0.05(/ | ND      | 0.0500 | E.g.L | 108        | 90.0 3.110 | 1/08x/(65) |
|                | 18x8606 | 0.05(/ | ND      | 0.0500 | E.g.L | 108        | 90.0 3.110 | 1/08x/(68) |

Analytical Set **880698**

EPA 351.2 2

### Blank

| Parameter               | PrepSet | Reading | MDL     | MDL    | Units | File       |
|-------------------------|---------|---------|---------|--------|-------|------------|
| Total Kjeldahl Nitrogen | 880/(8  | ND      | 0.00191 | 0.00x0 | E.g.L | 1/08x(650) |

### CCV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File       |
|-------------------------|---------|-------|-------|----------|------------|------------|
| Total Kjeldahl Nitrogen | 0.008   | 0.000 | E.g.L | 108      | 90.0 3.110 | 1/08x(60)  |
|                         | 0.007   | 0.000 | E.g.L | 106      | 90.0 3.110 | 1/08x(69)  |
|                         | 0.001   | 0.000 | E.g.L | 100      | 90.0 3.110 | 1/08x(659) |
|                         | 0.010   | 0.000 | E.g.L | 107      | 90.0 3.110 | 1/08x(6x9) |
|                         | 0.00x   | 0.000 | E.g.L | 10x      | 90.0 3.110 | 1/08x(666) |
|                         | 0.017   | 0.000 | E.g.L | 10(      | 90.0 3.110 | 1/08x(67x) |
|                         | 0.098   | 0.000 | E.g.L | 99.6     | 90.0 3.110 | 1/08x(680) |
|                         | 0.017   | 0.000 | E.g.L | 10(      | 90.0 3.110 | 1/08x(681) |

### Duplicate

| Parameter               | Sample  | Result | Unknown | Unit  | RPD  | Limit% |
|-------------------------|---------|--------|---------|-------|------|--------|
| Total Kjeldahl Nitrogen | 18x8/(7 | 0.090( | 0.09(/  | E.g.L | (0.6 | /0.0   |
|                         | 18x8/5x | 0.056  | 0.091   | E.g.L | 1/0  | /0.0   |

### ICV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File       |
|-------------------------|---------|-------|-------|----------|------------|------------|
| Total Kjeldahl Nitrogen | 0.081   | 0.000 | E.g.L | 96.6     | 90.0 3.110 | 1/08x(6/9) |





# Quality Control

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### LCS Dup

| Parameter               | PrepSet | LCS | LCSD | Known | Limits%   | LCS% | LCSD% | Units | RPD  | Limit% |
|-------------------------|---------|-----|------|-------|-----------|------|-------|-------|------|--------|
| Total Kjeldahl Nitrogen | 880/ (8 | x8/ | x8/9 | x80   | 900 3 110 | 105  | 106   | E g/L | 14 ( | / 00   |

### Mat. Spike

| Parameter               | Sample   | Spike | Unknown | Known | Units | Recovery % | Limits %  | File      |
|-------------------------|----------|-------|---------|-------|-------|------------|-----------|-----------|
| Total Kjeldahl Nitrogen | 18x8/ (7 | 68/1  | 08/ (   | x80   | E g/L | 105        | 800 3 1/0 | 1/08x(65x |
|                         | 18x8/ 5x | x8/8  | 08/91   | x80   | E g/L | 998        | 800 3 1/0 | 1/08x(65x |

Analytical Set **880406**

EPA 1664B (HEM)

### Blank

| Parameter             | PrepSet | Reading | MDL  | SQL | Units | File      |
|-----------------------|---------|---------|------|-----|-------|-----------|
| pil an4 h reaAe VhdM- | 880506  | ND      | 0805 | 580 | E g/L | 1/0857x66 |

### ControlBlk

| Parameter             | PrepSet | Reading | MDL | SQL | Units  | File      |
|-----------------------|---------|---------|-----|-----|--------|-----------|
| pil an4 h reaAe VhdM- | 880506  | 308001  |     |     | graE A | 1/0857x6x |
|                       | 880506  | 30800/  |     |     | graE A | 1/0857x90 |

### LCS Dup

| Parameter             | PrepSet | LCS  | LCSD | Known | Limits%   | LCS% | LCSD% | Units | RPD | Limit% |
|-----------------------|---------|------|------|-------|-----------|------|-------|-------|-----|--------|
| pil an4 h reaAe VhdM- | 880506  | (x8) | ((8  | 508   | 788 3 115 | 87x  | 85x   | E g/L | (89 | / 00   |

### MS

| Parameter             | Sample  | MS  | MSD | UNK | Known | Limits    | MS% | MSD% | Units | RPD | Limit% |
|-----------------------|---------|-----|-----|-----|-------|-----------|-----|------|-------|-----|--------|
| pil an4 h reaAe VhdM- | 18x8609 | (58 | 0   | ND  | 508   | 788 3 115 | 878 |      | E g/L |     | / 00   |

Analytical Set **880637**

SM 2540 C-2011

### Blank

| Parameter             | PrepSet | Reading | MDL | SQL | Units | File       |
|-----------------------|---------|---------|-----|-----|-------|------------|
| Total DiAol e4 Soli4A | 8806(7  | ND      | x80 | x80 | E g/L | 1/08x/ x06 |

### ControlBlk

| Parameter             | PrepSet | Reading | MDL | SQL | Units  | File       |
|-----------------------|---------|---------|-----|-----|--------|------------|
| Total DiAol e4 Soli4A | 8806(7  | 0800/   |     |     | graE A | 1/08x/ 59( |

### Duplicate

| Parameter             | Sample  | Result | Unknown | Unit  | RPD  | Limit% |
|-----------------------|---------|--------|---------|-------|------|--------|
| Total DiAol e4 Soli4A | 18x8566 | (1/    | ((/     | E g/L | 68/1 | / 00   |

### LCS

| Parameter             | PrepSet | Reading | Known | Units | Recover% | Limits    | File       |
|-----------------------|---------|---------|-------|-------|----------|-----------|------------|
| Total DiAol e4 Soli4A | 8806(7  | 198     | / 00  | E g/L | 998      | 8x8 3 11x | 1/08x/ x07 |

### Standard

| Parameter             | Sample | Reading | Known | Units | Recover% | Limits%   | File       |
|-----------------------|--------|---------|-------|-------|----------|-----------|------------|
| Total DiAol e4 Soli4A |        | 10/     | 100   | E g/L | 10/      | 908 3 110 | 1/08x/ 595 |

Analytical Set **881268**

SM 2540 D-2011

### Blank

| Parameter            | PrepSet | Reading | MDL | SQL | Units | File       |
|----------------------|---------|---------|-----|-----|-------|------------|
| Total Suan4e4 Soli4A | 881/ 68 | ND      | /   | /   | E g/L | 1/086x/ x8 |





# Quality Control

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### ControlBlk

| Parameter     | PrepSet | Reading | MDL | MQL | Units | File      |
|---------------|---------|---------|-----|-----|-------|-----------|
| Total Sulfate | 881/68  | 30000   |     |     | mg/L  | 1/086x/x7 |

### Duplicate

| Parameter     | Sample   | Result | Unknown | Unit | RPD | Limit% |
|---------------|----------|--------|---------|------|-----|--------|
| Total Sulfate | 18x8x(7) | 5750   | 5750    | mg/L | 0   | /00    |
|               | 18x8601  | 11500  | 11500   | mg/L | 0   | /00    |
|               | 18x9/7/  | 157    | 157     | mg/L | 100 | /00    |

### LCS

| Parameter     | PrepSet | Reading | Known | Units | Recover% | Limits    | File      |
|---------------|---------|---------|-------|-------|----------|-----------|-----------|
| Total Sulfate | 881/68  | 5x0     | 100   | mg/L  | 900      | 900 3 110 | 1/086x/91 |

### Standard

| Parameter     | Sample | Reading | Known | Units | Recover% | Limits%   | File      |
|---------------|--------|---------|-------|-------|----------|-----------|-----------|
| Total Sulfate |        | 900     | 100   | mg/L  | 900      | 900 3 110 | 1/086x/90 |

Analytical Set 880435

EPA 300.0 2.1

### AWRL/MRL C

| Parameter              | Reading | Known   | Units | Recover% | Limits%   | File      |
|------------------------|---------|---------|-------|----------|-----------|-----------|
| Fluoride               | 0.05    | 0.00    | mg/L  | 105      | 100 3 1x0 | 1/0858059 |
| Nitrate-Nitrogen Total | 0.0/0.0 | 0.0/0.6 | mg/L  | 105      | 700 3 1(0 | 1/0858059 |

### Blank

| Parameter              | PrepSet | Reading | MDL      | MQL     | Units | File      |
|------------------------|---------|---------|----------|---------|-------|-----------|
| Cs-137                 | 8805(x) | 0.07    | 0.0196   | 0.00    | mg/L  | 1/0858058 |
| Fluoride               | 8805(x) | ND      | 0.015    | 0.00    | mg/L  | 1/0858058 |
| Nitrate-Nitrogen Total | 8805(x) | ND      | 0.00/0.6 | 0.0/0.6 | mg/L  | 1/0858058 |
| Sulfate                | 8805(x) | 0.0/0.9 | 0.0109   | 0.00    | mg/L  | 1/0858058 |

### CCV

| Parameter              | Reading | Known   | Units | Recover% | Limits%   | File      |
|------------------------|---------|---------|-------|----------|-----------|-----------|
| Cs-137                 | 106     | 100     | mg/L  | 106      | 900 3 110 | 1/085805x |
|                        | 10x     | 100     | mg/L  | 10x      | 900 3 110 | 1/08580x8 |
|                        | 100     | 100     | mg/L  | 100      | 900 3 110 | 1/085807( |
| Fluoride               | 100     | 100     | mg/L  | 100      | 900 3 110 | 1/085805x |
|                        | 100     | 100     | mg/L  | 100      | 900 3 110 | 1/08580x8 |
|                        | 986     | 100     | mg/L  | 986      | 900 3 110 | 1/085807( |
| Nitrate-Nitrogen Total | 1.0/1.0 | 1.0/0.6 | mg/L  | 100      | 900 3 110 | 1/085805x |
|                        | 1.0/1.0 | 1.0/0.6 | mg/L  | 100      | 900 3 110 | 1/08580x8 |
|                        | 1.0/1.0 | 1.0/0.6 | mg/L  | 100      | 900 3 110 | 1/085807( |
| Sulfate                | 100     | 100     | mg/L  | 100      | 900 3 110 | 1/085805x |
|                        | 100     | 100     | mg/L  | 100      | 900 3 110 | 1/08580x8 |
|                        | 100     | 100     | mg/L  | 100      | 900 3 110 | 1/085807( |

### LCS Dup

| Parameter              | PrepSet | LCS | LCSD | Known | Limits%   | LCS% | LCSD% | Units | RPD   | Limit% |
|------------------------|---------|-----|------|-------|-----------|------|-------|-------|-------|--------|
| Cs-137                 | 8805(x) | 505 | 500  | 100   | 8x0 3 110 | 988  | 980   | mg/L  | 0.81  | /00    |
| Fluoride               | 8805(x) | 500 | 500  | 100   | 880 3 110 | 985  | 980   | mg/L  | 0.507 | /00    |
| Nitrate-Nitrogen Total | 8805(x) | 101 | 100  | 100   | 880 3 110 | 980  | 960   | mg/L  | 1.0   | /00    |
| Sulfate                | 8805(x) | 108 | 100  | 100   | 880 3 110 | 105  | 100   | mg/L  | 1.06  | /00    |







# Quality Control

## MSD

| Parameter              | Sample  | MS  | MSD | UNK   | Known | Limits   | MS% | MSD% | Units | RPD  | Limit% |
|------------------------|---------|-----|-----|-------|-------|----------|-----|------|-------|------|--------|
| Cs137                  | 18x8x98 | 151 | 109 | 100   | 100   | 800 31/0 | 110 | 900  | E.g.L | 100  | 100    |
| Fluoride               | 18x8x98 | 986 | 985 | 0.51  | 100   | 800 31/0 | 96  | 960  | E.g.L | 0.08 | 100    |
| Nitrate/Nitrogen Total | 18x8x98 | 118 | 118 | 0.11  | 100   | 800 31/0 | 97  | 990  | E.g.L | 0.15 | 100    |
| Sulfate                | 18x8x98 | 111 | 111 | 1.57  | 100   | 800 31/0 | 108 | 106  | E.g.L | 1.86 | 100    |
| Cs137                  | 18x86/6 | 170 | 176 | 8.9   | 100   | 800 31/0 | 96  | 90   | E.g.L | 1.7  | 100    |
| Fluoride               | 18x86/6 | 981 | 957 | 0.670 | 100   | 800 31/0 | 91  | 910  | E.g.L | 0.69 | 100    |
| Nitrate/Nitrogen Total | 18x86/6 | 158 | 111 | 0.181 | 100   | 800 31/0 | 109 | 10   | E.g.L | 6.7  | 100    |
| Sulfate                | 18x86/6 | 750 | 716 | 6.6   | 100   | 800 31/0 | 79  | 7x0* | E.g.L | 6.9  | 100    |

Analytical Set 880282

SM 5310 C-2011

## AWRL/MRL C

| Parameter            | Reading | Known | Units | Recover% | Limits%  | File      |
|----------------------|---------|-------|-------|----------|----------|-----------|
| Total Organic Carbon | 158     | 100   | E.g.L | 89       | 800 31x0 | 1/085x765 |

## Blank

| Parameter            | PrepSet | Reading | MDL   | SQL  | Units | File      |
|----------------------|---------|---------|-------|------|-------|-----------|
| Total Organic Carbon | 880/8/  | ND      | 0.618 | 0.00 | E.g.L | 1/085x76( |
|                      | 880/8/  | ND      | 0.618 | 0.00 | E.g.L | 1/085x767 |

## CCB

| Parameter            | PrepSet | Reading | MDL   | SQL  | Units | File      |
|----------------------|---------|---------|-------|------|-------|-----------|
| Total Organic Carbon | 880/8/  | 0.88    | 0.618 | 0.00 | E.g.L | 1/085x7x7 |
|                      | 880/8/  | ND      | 0.618 | 0.00 | E.g.L | 1/085x777 |
|                      | 880/8/  | 0.5     | 0.618 | 0.00 | E.g.L | 1/085x788 |

## CCV

| Parameter            | Reading | Known | Units | Recover% | Limits%  | File      |
|----------------------|---------|-------|-------|----------|----------|-----------|
| Total Organic Carbon | 101     | 100   | E.g.L | 101      | 900 3110 | 1/085x760 |
|                      | 101     | 100   | E.g.L | 101      | 900 3110 | 1/085x770 |
|                      | 956     | 100   | E.g.L | 95       | 900 3110 | 1/085x778 |
|                      | 90      | 100   | E.g.L | 90       | 900 3110 | 1/085x789 |

## ICL

| Parameter            | Reading | Known | Units | Recover% | Limits%  | File      |
|----------------------|---------|-------|-------|----------|----------|-----------|
| Total Organic Carbon | 101     | 100   | E.g.L | 101      | 900 3110 | 1/085x7x9 |
|                      | 101     | 100   | E.g.L | 101      | 900 3110 | 1/085x76x |

## ICV

| Parameter            | Reading | Known | Units | Recover% | Limits%  | File      |
|----------------------|---------|-------|-------|----------|----------|-----------|
| Total Organic Carbon | 9x5     | 100   | E.g.L | 9x5      | 900 3110 | 1/085x761 |
|                      | 91      | 100   | E.g.L | 91       | 900 3110 | 1/085x766 |

## LCS

| Parameter            | PrepSet | Reading | Known | Units | Recover% | Limits  | File      |
|----------------------|---------|---------|-------|-------|----------|---------|-----------|
| Total Organic Carbon | 880/8/  | 1.05    | 1.00  | E.g.L | 101      | 85 310x | 1/085x76/ |
|                      | 880/8/  | 51x     | 1.00  | E.g.L | 89       | 85 310x | 1/085x768 |
|                      | 880/8/  | 516     | 1.00  | E.g.L | 9x       | 85 310x | 1/085x769 |

## MSD

| Parameter            | Sample  | MS  | MSD | UNK  | Known | Limits  | MS% | MSD% | Units | RPD  | Limit% |
|----------------------|---------|-----|-----|------|-------|---------|-----|------|-------|------|--------|
| Total Organic Carbon | 18x70x7 | 986 | 981 | 0.6  | 100   | 90 3108 | 97  | 97   | E.g.L | 0.1/ | 100    |
|                      | 18x8/01 | 110 | 110 | 1.56 | 100   | 90 3108 | 9x  | 9x   | E.g.L | 0    | 100    |





# Quality Control

### Standard

| Parameter            | Sample | Reading | Known | Units | Recover% | Limits%   | File      |
|----------------------|--------|---------|-------|-------|----------|-----------|-----------|
| Total Organic Carbon |        | 5967    | x000  | EGAL  | 996      | 900 3 110 | 1/085x7x8 |

Analytical Set **880330** SM 3500-Cr B-2011

### Blank

| Parameter             | PrepSet | Reading | MDL  | MDL | Units | File      |
|-----------------------|---------|---------|------|-----|-------|-----------|
| HeBaI alent CsroE iuE | 880((0  | ND      | 0bx0 | (00 | ugAL  | 1/0856x9/ |
|                       | 880((0  | ND      | 0bx0 | (00 | ugAL  | 1/0856x99 |
|                       | 880((0  | ND      | 0bx0 | (00 | ugAL  | 1/085660x |

### CCV

| Parameter             | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------------------|---------|-------|-------|----------|-----------|-----------|
| HeBaI alent CsroE iuE | 786     | 800   | ugAL  | 976      | 900 3 110 | 1/0856x9( |
|                       | 786     | 800   | ugAL  | 980      | 900 3 110 | 1/0856600 |
|                       | 780     | 800   | ugAL  | 986      | 900 3 110 | 1/0856606 |

### LCS Dup

| Parameter             | PrepSet | LCS | LCSD | Known | Limits%   | LCS% | LCSD% | Units | RPD   | Limit% |
|-----------------------|---------|-----|------|-------|-----------|------|-------|-------|-------|--------|
| HeBaI alent CsroE iuE | 880((0  | 760 | 776  | 800   | 8x0 3 11x | 966  | 96x   | ugAL  | 06 89 | 1x0    |

### MSD

| Parameter             | Sample  | MS  | MSD | UNK | Known | Limits    | MS% | MSD% | Units | RPD   | Limit% |
|-----------------------|---------|-----|-----|-----|-------|-----------|-----|------|-------|-------|--------|
| HeBaI alent CsroE iuE | 18x8x8x | 716 | 7/6 | ND  | 800   | 700 3 1(0 | 896 | 906  | ugAL  | 06 76 | /00    |

Analytical Set **880661** EPA 245.1 3

### Blank

| Parameter      | PrepSet | Reading | MDL   | MDL  | Units | File      |
|----------------|---------|---------|-------|------|-------|-----------|
| Mercury, Total | 880/x(  | ND      | 0607/ | 0600 | ugAL  | 1/08x(/07 |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%   | File      |
|----------------|---------|-------|-------|----------|-----------|-----------|
| Mercury, Total | 5699    | x600  | ugAL  | 996      | 900 3 110 | 1/08x(/06 |
|                | 5697    | x600  | ugAL  | 996      | 900 3 110 | 1/08x(/16 |
|                | x605    | x600  | ugAL  | 101      | 900 3 110 | 1/08x(/17 |
|                | x608    | x600  | ugAL  | 10/      | 900 3 110 | 1/08x(/16 |
|                | x606    | x600  | ugAL  | 101      | 900 3 110 | 1/08x(/5x |
|                | x609    | x600  | ugAL  | 10/      | 900 3 110 | 1/08x(/x5 |
|                | x608    | x600  | ugAL  | 10/      | 900 3 110 | 1/08x(/6/ |
|                | x609    | x600  | ugAL  | 10/      | 900 3 110 | 1/08x(/67 |

### ICL

| Parameter      | Reading | Known | Units | Recover% | Limits%   | File      |
|----------------|---------|-------|-------|----------|-----------|-----------|
| Mercury, Total | 196     | /000  | ugAL  | 980      | 900 3 110 | 1/08x(/0x |

### ICV

| Parameter      | Reading | Known | Units | Recover% | Limits%   | File      |
|----------------|---------|-------|-------|----------|-----------|-----------|
| Mercury, Total | x6(     | x600  | ugAL  | 10(      | 900 3 110 | 1/08x(/05 |

### LCS Dup

| Parameter      | PrepSet | LCS | LCSD | Known | Limits%   | LCS% | LCSD% | Units | RPD | Limit% |
|----------------|---------|-----|------|-------|-----------|------|-------|-------|-----|--------|
| Mercury, Total | 880/x(  | x69 | 5696 | x600  | 8x0 3 11x | 105  | 996   | ugAL  | 5x( | /00    |





# Quality Control

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## MSD

| Parameter      | Sample  | MS  | MSD | UNK | Known | Limits   | MS% | MSD% | Units | RPD   | Limit% |
|----------------|---------|-----|-----|-----|-------|----------|-----|------|-------|-------|--------|
| Mercury, Total | 18x807/ | 10b | 10b | ND  | 10b   | 700 31(0 | 10/ | 10(  | ug/L  | 0b976 | 15b    |
|                | 18x8159 | 10b | 10b | ND  | 10b   | 700 31(0 | 105 | 10x  | ug/L  | 0b9x7 | 15b    |

Analytical Set

880757

EPA 200.8 5.4

## Blank

| Parameter         | PrepSet | Reading  | MDL              | SQL    | Units | File      |
|-------------------|---------|----------|------------------|--------|-------|-----------|
| Mercury, Total    | 880166  | 0b001/ 5 | 0b000/ x         | 0b000x | E g/L | 1/08xx099 |
| GerylliumE, Total | 880166  | ND       | 0b000060x        | 0b000x | E g/L | 1/08xx099 |
| Ca4EiuE, Total    | 880166  | ND       | 0b00009x         | 0b000/ | E g/L | 1/08xx099 |
| CsroEiuE, Total   | 880166  | ND       | 0b000x           | 0b000x | E g/L | 1/08xx099 |
| Comer, Total      | 880166  | ND       | 0b000x           | 0b001  | E g/L | 1/08xx099 |
| Nickel, Total     | 880166  | ND       | 0b000x           | 0b001  | E g/L | 1/08xx099 |
| SeleniuE, Total   | 880166  | ND       | 0b0007/ 8        | 0b001  | E g/L | 1/08xx099 |
| Sill er, Total    | 880166  | ND       | 0b00006/ 80b000/ |        | E g/L | 1/08xx099 |
| Zinc, Total       | 880166  | ND       | 0b00/ x          | 0b00x  | E g/L | 1/08xx099 |

## CCV

| Parameter         | Reading | Known | Units | Recover% | Limits%  | File       |
|-------------------|---------|-------|-------|----------|----------|------------|
| Mercury, Total    | 0b0585  | 0b0x  | E g/L | 96b      | 90b 3110 | 1/08xx098  |
|                   | 0b0578  | 0b0x  | E g/L | 9xb      | 90b 3110 | 1/08xx106  |
|                   | 0b05x5  | 0b0x  | E g/L | 90b      | 90b 3110 | 1/08xx116  |
|                   | 0b0x0x  | 0b0x  | E g/L | 101      | 90b 3110 | 1/08xx1/ x |
| GerylliumE, Total | 0b0585  | 0b0x  | E g/L | 96b      | 90b 3110 | 1/08xx098  |
|                   | 0b059   | 0b0x  | E g/L | 98b      | 90b 3110 | 1/08xx106  |
|                   | 0b0595  | 0b0x  | E g/L | 98b      | 90b 3110 | 1/08xx116  |
|                   | 0b0x07  | 0b0x  | E g/L | 101      | 90b 3110 | 1/08xx1/ x |
| Ca4EiuE, Total    | 0b059x  | 0b0x  | E g/L | 99b      | 90b 3110 | 1/08xx098  |
|                   | 0b0x0   | 0b0x  | E g/L | 100      | 90b 3110 | 1/08xx106  |
|                   | 0b059x  | 0b0x  | E g/L | 99b      | 90b 3110 | 1/08xx116  |
|                   | 0b0x01  | 0b0x  | E g/L | 100      | 90b 3110 | 1/08xx1/ x |
| CsroEiuE, Total   | 0b0x1/  | 0b0x  | E g/L | 10/      | 90b 3110 | 1/08xx098  |
|                   | 0b0x/ 6 | 0b0x  | E g/L | 10x      | 90b 3110 | 1/08xx106  |
|                   | 0b0x/ x | 0b0x  | E g/L | 10x      | 90b 3110 | 1/08xx116  |
|                   | 0b0x/ / | 0b0x  | E g/L | 105      | 90b 3110 | 1/08xx1/ x |
| Comer, Total      | 0b0578  | 0b0x  | E g/L | 9xb      | 90b 3110 | 1/08xx098  |
|                   | 0b0585  | 0b0x  | E g/L | 96b      | 90b 3110 | 1/08xx106  |
|                   | 0b0569  | 0b0x  | E g/L | 9( b     | 90b 3110 | 1/08xx116  |
|                   | 0b056   | 0b0x  | E g/L | 9/ b     | 90b 3110 | 1/08xx1/ x |
| Nickel, Total     | 0b0x/   | 0b0x  | E g/L | 105      | 90b 3110 | 1/08xx098  |
|                   | 0b0597  | 0b0x  | E g/L | 99b      | 90b 3110 | 1/08xx106  |
|                   | 0b0595  | 0b0x  | E g/L | 98b      | 90b 3110 | 1/08xx116  |
|                   | 0b0x( 9 | 0b0x  | E g/L | 108      | 90b 3110 | 1/08xx1/ x |
| SeleniuE, Total   | 0b0565  | 0b0x  | E g/L | 9/ b     | 90b 3110 | 1/08xx098  |
|                   | 0b056x  | 0b0x  | E g/L | 9( b     | 90b 3110 | 1/08xx106  |
|                   | 0b0x( 6 | 0b0x  | E g/L | 107      | 90b 3110 | 1/08xx116  |
|                   | 0b0599  | 0b0x  | E g/L | 99b      | 90b 3110 | 1/08xx1/ x |
| Sill er, Total    | 0b0577  | 0b0x  | E g/L | 9xb      | 90b 3110 | 1/08xx098  |
|                   | 0b057   | 0b0x  | E g/L | 95b      | 90b 3110 | 1/08xx106  |
|                   | 0b056/  | 0b0x  | E g/L | 9/ b     | 90b 3110 | 1/08xx116  |





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## CCV

| Parameter     | Reading | Known | Units | Recover% | Limits%   | File       |
|---------------|---------|-------|-------|----------|-----------|------------|
| Silver, Total | 00567   | 00x   | E gL  | 9(15     | 900 3 110 | 1/08xx1/ x |
| Zinc, Total   | 00578   | 00x   | E gL  | 9x16     | 900 3 110 | 1/08xx098  |
|               | 00581   | 00x   | E gL  | 96b      | 900 3 110 | 1/08xx106  |
|               | 0058(   | 00x   | E gL  | 9616     | 900 3 110 | 1/08xx116  |
|               | 00x1/   | 00x   | E gL  | 10/      | 900 3 110 | 1/08xx1/ x |

## ICV

| Parameter        | Reading | Known | Units | Recover% | Limits%   | File      |
|------------------|---------|-------|-------|----------|-----------|-----------|
| Mercuric, Total  | 0058    | 00x   | E gL  | 960      | 900 3 110 | 1/08xx07x |
| Geryllium, Total | 00578   | 00x   | E gL  | 9x16     | 900 3 110 | 1/08xx07x |
| Ca4EiuE, Total   | 00598   | 00x   | E gL  | 9916     | 900 3 110 | 1/08xx07x |
| CsroEiuE, Total  | 00x18   | 00x   | E gL  | 105      | 900 3 110 | 1/08xx07x |
| Commer, Total    | 00x1/   | 00x   | E gL  | 10/      | 900 3 110 | 1/08xx07x |
| Nickel, Total    | 00x51   | 00x   | E gL  | 108      | 900 3 110 | 1/08xx07x |
| Selenium, Total  | 005x9   | 00x   | E gL  | 9118     | 900 3 110 | 1/08xx07x |
| Silver, Total    | 0057(   | 00x   | E gL  | 9516     | 900 3 110 | 1/08xx07x |
| Zinc, Total      | 00591   | 00x   | E gL  | 98b      | 900 3 110 | 1/08xx07x |

## LCS Dup

| Parameter        | PrepSet | LCS    | LCSD   | Known | Limits%    | LCS% | LCSD% | Units | RPD    | Limit% |
|------------------|---------|--------|--------|-------|------------|------|-------|-------|--------|--------|
| Mercuric, Total  | 880166  | 00587  | 0058x  | 00x00 | 8x10 3 11x | 97b  | 970   | E gL  | 0051/  | /00    |
| Geryllium, Total | 880166  | 0097   | 000(   | 0000  | 8x10 3 11x | 98bx | 10/   | E gL  | (00    | /00    |
| Ca4EiuE, Total   | 880166  | 00x0   | 00xx   | 00x0  | 8x10 3 11x | 100  | 10/   | E gL  | 108    | /00    |
| CsroEiuE, Total  | 880166  | 00x50  | 00x56  | 00x00 | 8x10 3 11x | 108  | 109   | E gL  | 100    | /00    |
| Commer, Total    | 880166  | 0058/  | 00586  | 00x00 | 8x10 3 11x | 96b  | 97b   | E gL  | 008/ 6 | /00    |
| Nickel, Total    | 880166  | 00x/ x | 00x(9  | 00x00 | 8x10 3 11x | 10x  | 108   | E gL  | /06(   | /00    |
| Selenium, Total  | 880166  | 00x15  | 00x/ / | 00x00 | 8x10 3 11x | 10(  | 105   | E gL  | 10x5   | /00    |
| Silver, Total    | 880166  | 00958  | 0096/  | 0000  | 8x10 3 11x | 9518 | 96b   | E gL  | 1057   | /00    |
| Zinc, Total      | 880166  | 00590  | 00595  | 00x00 | 8x10 3 11x | 980  | 9818  | E gL  | 0081(  | /00    |

## MRL Check

| Parameter     | Reading | Known | Units | Recover% | Limits%     | File      |
|---------------|---------|-------|-------|----------|-------------|-----------|
| Commer, Total | 000095  | 0001  | E gL  | 950      | / x10 3 17x | 1/08xx076 |

## MSD

| Parameter        | Sample  | MS    | MSD    | UNK      | Known | Limits    | MS%  | MSD% | Units | RPD   | Limit% |
|------------------|---------|-------|--------|----------|-------|-----------|------|------|-------|-------|--------|
| Mercuric, Total  | 18x8x96 | 00x10 | 00x17  | 00015    | 00x00 | 700 3 1(0 | 99b  | 101  | E gL  | 100   | /00    |
| Geryllium, Total | 18x8x96 | 0095  | 009(   | 0000068/ | 0000  | 700 3 1(0 | 970  | 96bx | E gL  | 00x17 | /00    |
| Ca4EiuE, Total   | 18x8x96 | 0057  | 0058   | ND       | 00x0  | 700 3 1(0 | 9818 | 99b  | E gL  | 00505 | /00    |
| CsroEiuE, Total  | 18x8x96 | 00x(  | 00x(6  | 0000506  | 00x00 | 700 3 1(0 | 106  | 106  | E gL  | 00x66 | /00    |
| Commer, Total    | 18x8x96 | 00561 | 00566  | ND       | 00x00 | 700 3 1(0 | 9/ b | 9( b | E gL  | 108   | /00    |
| Nickel, Total    | 18x8x96 | 00596 | 00x01  | 00008x1  | 00x00 | 700 3 1(0 | 990  | 100  | E gL  | 100   | /00    |
| Selenium, Total  | 18x8x96 | 00580 | 0058/  | 000/ 7   | 00x00 | 700 3 1(0 | 9xbx | 9xb0 | E gL  | 00518 | /00    |
| Silver, Total    | 18x8x96 | 00916 | 0091   | ND       | 0000  | 700 3 1(0 | 9116 | 910  | E gL  | 00x7  | /00    |
| Zinc, Total      | 18x8x96 | 00569 | 00575  | ND       | 00x00 | 700 3 1(0 | 9(18 | 9518 | E gL  | 106   | /00    |
| Mercuric, Total  | 18x861x | 00x01 | 0058(  | ND       | 00x00 | 700 3 1(0 | 100  | 9616 | E gL  | (066  | /00    |
| Geryllium, Total | 18x861x | 0001  | 0001   | ND       | 0000  | 700 3 1(0 | 100  | 100  | E gL  | 0     | /00    |
| Ca4EiuE, Total   | 18x861x | 00x(  | 00x1   | ND       | 00x0  | 700 3 1(0 | 101  | 100  | E gL  | 00595 | /00    |
| CsroEiuE, Total  | 18x861x | 00x(x | 00x/ / | 000/ 9(  | 00x00 | 700 3 1(0 | 106  | 105  | E gL  | /057  | /00    |
| Commer, Total    | 18x861x | 008x/ | 008(1  | 0080     | 00x00 | 700 3 1(0 | 9515 | 90b  | E gL  | 5bx   | /00    |
| Nickel, Total    | 18x861x | 00x11 | 00x0x  | 0001     | 00x00 | 700 3 1(0 | 10/  | 101  | E gL  | 108   | /00    |





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## MSD

| Parameter        | Sample  | MS    | MSD   | UNK      | Known | Limits   | MS% | MSD% | Units | RPD   | Limit% |
|------------------|---------|-------|-------|----------|-------|----------|-----|------|-------|-------|--------|
| SeleniumE, Total | 18x861x | 0b/ / | 0b09  | ND       | 0b00  | 700 31(0 | 105 | 10/  | E gL  | /b/   | /00    |
| SilicE, Total    | 18x861x | 0b957 | 0b95( | ND       | 0b00  | 700 31(0 | 95b | 95b  | E gL  | 0b/ ( | /00    |
| Zinc, Total      | 18x861x | 0b58x | 0b585 | 0b00/ 68 | 0b00  | 700 31(0 | 96b | 96b  | E gL  | 0b 08 | /00    |

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| Parameter         | PrepSet | Reading  | MDL      | MDL     | Units | File        |
|-------------------|---------|----------|----------|---------|-------|-------------|
| SeleniumE, Total  | 880166  | 0b00/ 88 | 0b00/ 05 | 0b00/ x | E gL  | 1/ 0860/ x9 |
| SilicE, Total     | 880166  | ND       | 0b000/ x | 0b000x  | E gL  | 1/ 0860/ x9 |
| SulfurE, Total    | 880166  | ND       | 0b000(x9 | 0b000x  | E gL  | 1/ 0860/ x9 |
| GalliumE, Total   | 880166  | 0b006(9  | 0b000x6/ | 0b001   | E gL  | 1/ 0860/ x9 |
| ZirconiumE, Total | 880166  | ND       | 0b0001x/ | 0b000x  | E gL  | 1/ 0860/ x9 |
| CalciumE, Total   | 880166  | ND       | 0b000186 | 0b000/  | E gL  | 1/ 0860/ x9 |
| ChromiumE, Total  | 880166  | ND       | 0b000x   | 0b000x  | E gL  | 1/ 0860/ x9 |
| Lead4, Total      | 880166  | ND       | 0b000/ x | 0b000x  | E gL  | 1/ 0860/ x9 |
| Nickel, Total     | 880166  | ND       | 0b000x   | 0b001   | E gL  | 1/ 0860/ x9 |
| SeleniumE, Total  | 880166  | ND       | 0b000799 | 0b001   | E gL  | 1/ 0860/ x9 |
| SilicE, Total     | 880166  | ND       | 0b00011  | 0b000x  | E gL  | 1/ 0860/ x9 |
| TantalumE, Total  | 880166  | ND       | 0b000/ x | 0b000x  | E gL  | 1/ 0860/ x9 |
| Zinc, Total       | 880166  | ND       | 0b001    | 0b00/   | E gL  | 1/ 0860/ x9 |

## CCV

| Parameter        | Reading      | Known  | Units | Recover% | Limits%  | File        |             |
|------------------|--------------|--------|-------|----------|----------|-------------|-------------|
| SeleniumE, Total | 0b0x0(       | 0b0x   | E gL  | 101      | 900 3110 | 1/ 0860/ x7 |             |
|                  | 0b0588       | 0b0x   | E gL  | 97b      | 900 3110 | 1/ 0860/ 6( |             |
|                  | 0b059/       | 0b0x   | E gL  | 98b      | 900 3110 | 1/ 0860/ 7( |             |
|                  | 0b0x0/       | 0b0x   | E gL  | 100      | 900 3110 | 1/ 0860/ 8/ |             |
| SilicE, Total    | 0b0x01       | 0b0x   | E gL  | 100      | 900 3110 | 1/ 0860/ (9 |             |
|                  | 0b0598       | 0b0x   | E gL  | 99b      | 900 3110 | 1/ 0860/ 5( |             |
|                  | 0b0x0(       | 0b0x   | E gL  | 101      | 900 3110 | 1/ 0860/ 57 |             |
|                  | 0b0598       | 0b0x   | E gL  | 99b      | 900 3110 | 1/ 0860/ x7 |             |
|                  | 0b0x1(       | 0b0x   | E gL  | 10(      | 900 3110 | 1/ 0860/ 6( |             |
|                  | 0b0x05       | 0b0x   | E gL  | 101      | 900 3110 | 1/ 0860/ 7( |             |
|                  | 0b0599       | 0b0x   | E gL  | 99b      | 900 3110 | 1/ 0860/ 8/ |             |
|                  | Lead4, Total | 0b059( | 0b0x  | E gL     | 98b      | 900 3110    | 1/ 0860/ (9 |
|                  |              | 0b0595 | 0b0x  | E gL     | 98b      | 900 3110    | 1/ 0860/ 5( |
|                  |              | 0b059( | 0b0x  | E gL     | 98b      | 900 3110    | 1/ 0860/ 57 |
| 0b0589           |              | 0b0x   | E gL  | 97b      | 900 3110 | 1/ 0860/ x7 |             |
| 0b058x           |              | 0b0x   | E gL  | 97b      | 900 3110 | 1/ 0860/ 6( |             |
| 0b0586           |              | 0b0x   | E gL  | 97b      | 900 3110 | 1/ 0860/ 7( |             |
| 0b0585           |              | 0b0x   | E gL  | 96b      | 900 3110 | 1/ 0860/ 8/ |             |
| TantalumE, Total |              | 0b0598 | 0b0x  | E gL     | 99b      | 900 3110    | 1/ 0860/ (9 |
|                  | 0b0599       | 0b0x   | E gL  | 99b      | 900 3110 | 1/ 0860/ 5( |             |
|                  | 0b0598       | 0b0x   | E gL  | 99b      | 900 3110 | 1/ 0860/ 57 |             |
|                  | 0b0595       | 0b0x   | E gL  | 98b      | 900 3110 | 1/ 0860/ x7 |             |
|                  | 0b059        | 0b0x   | E gL  | 98b      | 900 3110 | 1/ 0860/ 6( |             |
|                  | 0b059/       | 0b0x   | E gL  | 98b      | 900 3110 | 1/ 0860/ 7( |             |
|                  | 0b0589       | 0b0x   | E gL  | 97b      | 900 3110 | 1/ 0860/ 8/ |             |





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## ICV

| Parameter       | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------------|---------|-------|-------|----------|-----------|-----------|
| LuE inuE, Total | 010x06  | 010x  | E gL  | 101      | 9010 3110 | 1/0860/(7 |
| ntiE ony, Total | 010x01  | 010x  | E gL  | 100      | 9010 3110 | 1/0860/(7 |
| Lea4, Total     | 010598  | 010x  | E gL  | 9916     | 9010 3110 | 1/0860/(7 |
| TsalliuE, Total | 010x05  | 010x  | E gL  | 101      | 9010 3110 | 1/0860/(7 |

## LCS Dup

| Parameter        | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS%  | LCSD% | Units | RPD    | Limit% |
|------------------|---------|-------|-------|-------|------------|-------|-------|-------|--------|--------|
| LuE inuE, Total  | 880166  | 01590 | 0159( | 01x00 | 81x10 311x | 9810  | 9816  | E gL  | 01610  | /010   |
| ntiE ony, Total  | 880166  | 01580 | 01576 | 01x00 | 81x10 311x | 9610  | 91x1  | E gL  | 018(7  | /010   |
| rAenic, Total    | 880166  | 0159/ | 01591 | 01x00 | 81x10 311x | 9815  | 9811  | E gL  | 0110(  | /010   |
| GariuE, Total    | 880166  | 01x05 | 01x16 | 01x00 | 81x10 311x | 101   | 10(   | E gL  | /11x   | /010   |
| GerylliuE, Total | 880166  | 01187 | 01188 | 01100 | 81x10 311x | 9(1x  | 9510  | E gL  | 01x(   | /010   |
| Ca4E iuE, Total  | 880166  | 01155 | 011x1 | 011x0 | 81x10 311x | 9716  | 100   | E gL  | /118(  | /010   |
| CsroE iuE, Total | 880166  | 01591 | 01596 | 01x00 | 81x10 311x | 9811  | 9911  | E gL  | 1101   | /010   |
| Lea4, Total      | 880166  | 01578 | 01591 | 01x00 | 81x10 311x | 91x16 | 9811  | E gL  | /1168  | /010   |
| Nickel, Total    | 880166  | 01575 | 01588 | 01x00 | 81x10 311x | 95118 | 9716  | E gL  | /1191  | /010   |
| SeleniuE, Total  | 880166  | 01590 | 01595 | 01x00 | 81x10 311x | 9810  | 98118 | E gL  | 01181( | /010   |
| Sill er, Total   | 880166  | 01101 | 0110( | 01100 | 81x10 311x | 101   | 10(   | E gL  | 1196   | /010   |
| TsalliuE, Total  | 880166  | 01569 | 01580 | 01x00 | 81x10 311x | 9(118 | 9610  | E gL  | /11(   | /010   |
| Zinc, Total      | 880166  | 01589 | 01598 | 01x00 | 81x10 311x | 97118 | 9916  | E gL  | 1118/  | /010   |

## MRL Check

| Parameter   | Reading  | Known | Units | Recover% | Limits%    | File      |
|-------------|----------|-------|-------|----------|------------|-----------|
| Lea4, Total | 010005x/ | 01001 | E gL  | 51x1     | /1x10 317x | 1/0860/(8 |

## MSD

| Parameter        | Sample  | MS     | MSD    | UNK     | Known | Limits    | MS%   | MSD%   | Units | RPD    | Limit% |
|------------------|---------|--------|--------|---------|-------|-----------|-------|--------|-------|--------|--------|
| LuE inuE, Total  | 18x8x96 | 01596  | 0159/  | 0100x7  | 01x00 | 7010 31(0 | 9811  | 9711   | E gL  | 011819 | /010   |
| ntiE ony, Total  | 18x8x96 | 0158(  | 0158/  | ND      | 01x00 | 7010 31(0 | 9616  | 9615   | E gL  | 01107  | /010   |
| rAenic, Total    | 18x8x96 | 01x16  | 01x16  | 01019/  | 01x00 | 7010 31(0 | 9915  | 9915   | E gL  | 0      | /010   |
| GariuE, Total    | 18x8x96 | 0118(1 | 0118/6 | 011(1(  | 01x00 | 7010 31(0 | 105   | 10(    | E gL  | 011970 | /010   |
| GerylliuE, Total | 18x8x96 | 01181  | 01185  | ND      | 01100 | 7010 31(0 | 901x  | 9/10   | E gL  | 1165   | /010   |
| Ca4E iuE, Total  | 18x8x96 | 01151  | 01150  | ND      | 011x0 | 7010 31(0 | 9615  | 9610   | E gL  | 011516 | /010   |
| CsroE iuE, Total | 18x8x96 | 01586  | 0158/  | ND      | 01x00 | 7010 31(0 | 9711  | 9615   | E gL  | 0118/6 | /010   |
| Lea4, Total      | 18x8x96 | 01569  | 0157x  | ND      | 01x00 | 7010 31(0 | 9(118 | 91x10  | E gL  | 1117   | /010   |
| Nickel, Total    | 18x8x96 | 01559  | 0155/  | 010016  | 01x00 | 7010 31(0 | 891x  | 8811   | E gL  | 11x8   | /010   |
| SeleniuE, Total  | 18x8x96 | 015xx  | 01565  | 0100(/  | 01x00 | 7010 31(0 | 9015  | 9/11   | E gL  | 1197   | /010   |
| Sill er, Total   | 18x8x96 | 01099/ | 010979 | ND      | 01100 | 7010 31(0 | 9911  | 9711   | E gL  | 111(   | /010   |
| TsalliuE, Total  | 18x8x96 | 015x6  | 015x6  | ND      | 01x00 | 7010 31(0 | 9111  | 9111   | E gL  | 0      | /010   |
| Zinc, Total      | 18x8x96 | 015x8  | 015x6  | ND      | 01x00 | 7010 31(0 | 9116  | 9111   | E gL  | 015(8  | /010   |
| LuE inuE, Total  | 18x861x | 01x00  | 01581  | 0100/06 | 01x00 | 7010 31(0 | 9916  | 91x118 | E gL  | (1189  | /010   |
| ntiE ony, Total  | 18x861x | 01587  | 0156x  | ND      | 01x00 | 7010 31(0 | 9715  | 9(10   | E gL  | 516/   | /010   |
| rAenic, Total    | 18x861x | 01599  | 01579  | ND      | 01x00 | 7010 31(0 | 99118 | 91x11  | E gL  | 5109   | /010   |
| GariuE, Total    | 18x861x | 01x59  | 01x(7  | 010(89  | 01x00 | 7010 31(0 | 10/   | 9916   | E gL  | /118   | /010   |
| GerylliuE, Total | 18x861x | 01189  | 01185  | ND      | 01100 | 7010 31(0 | 951x  | 9/10   | E gL  | /1168  | /010   |
| Ca4E iuE, Total  | 18x861x | 011x0  | 01158  | ND      | 011x0 | 7010 31(0 | 100   | 9911   | E gL  | 01180( | /010   |
| CsroE iuE, Total | 18x861x | 01x06  | 01586  | ND      | 01x00 | 7010 31(0 | 101   | 9711   | E gL  | 510(   | /010   |
| Lea4, Total      | 18x861x | 0159/  | 0158/  | ND      | 01x00 | 7010 31(0 | 9815  | 9615   | E gL  | /10x   | /010   |
| Nickel, Total    | 18x861x | 01578  | 0157(  | ND      | 01x00 | 7010 31(0 | 91x16 | 9516   | E gL  | 110x   | /010   |
| SeleniuE, Total  | 18x861x | 0159(  | 01578  | ND      | 01x00 | 7010 31(0 | 9816  | 91x16  | E gL  | (109   | /010   |





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## MSD

| Parameter       | Sample  | MS   | MSD  | UNK     | Known | Limits   | MS% | MSD% | Units | RPD   | Limit% |
|-----------------|---------|------|------|---------|-------|----------|-----|------|-------|-------|--------|
| Silver, Total   | 18x861x | 080  | 080  | ND      | 0800  | 700 31(0 | 10  | 10   | E gL  | 08976 | / 00   |
| TsalliuE, Total | 18x861x | 0587 | 0577 | 0600(6/ | 0600  | 700 31(0 | 97  | 9x   | E gL  | / 08  | / 00   |
| Zinc, Total     | 18x861x | 060  | 059  | ND      | 0600  | 700 31(0 | 100 | 98   | E gL  | / 01  | / 00   |

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## CCV

| Parameter          | Reading | Known | Units | Recover% | Limits%  | File       |
|--------------------|---------|-------|-------|----------|----------|------------|
| DiAolI e4 CalciuE  | / x1x   | / x10 | E gL  | 10/      | 900 3110 | 1/ 086x066 |
|                    | / x16   | / x10 | E gL  | 10/      | 900 3110 | 1/ 086x077 |
|                    | / 60    | / x10 | E gL  | 105      | 900 3110 | 1/ 086x088 |
|                    | / x18   | / x10 | E gL  | 10       | 900 3110 | 1/ 086x096 |
| DiAolI e4 MagneAuE | / x15   | / x10 | E gL  | 10/      | 900 3110 | 1/ 086x066 |
|                    | / x15   | / x10 | E gL  | 10/      | 900 3110 | 1/ 086x077 |
|                    | / x18   | / x10 | E gL  | 10       | 900 3110 | 1/ 086x088 |
|                    | / x16   | / x10 | E gL  | 10/      | 900 3110 | 1/ 086x096 |
| DiAolI e4 So4iuE   | / x11   | / x10 | E gL  | 100      | 900 3110 | 1/ 086x066 |
|                    | / x1    | / x10 | E gL  | 101      | 900 3110 | 1/ 086x077 |
|                    | / x16   | / x10 | E gL  | 10/      | 900 3110 | 1/ 086x088 |
|                    | / x1    | / x10 | E gL  | 101      | 900 3110 | 1/ 086x096 |

## Dir. SPKD

| Parameter          | Sample  | DSPK  | DSPKD | UNK   | Known | Limits%            | DSPK% | DSPKD% | Units | RPD    | Limit% |
|--------------------|---------|-------|-------|-------|-------|--------------------|-------|--------|-------|--------|--------|
| DiAolI e4 CalciuE  | 18x8x8x | 680   | 668   | / 06  | x00   | 7x10 31/ x         | 9x10  | 9/ 16  | E gL  | 1578   | / 00   |
| DiAolI e4 MagneAuE | 18x8x8x | x10   | x0    | / 1   | x00   | 7x10 31/ x         | 97    | 9x10   | E gL  | 118    | / 00   |
| DiAolI e4 So4iuE   | 18x8x8x | 1(1   | 1/ 7  | 8x1   | x00   | 7x10 31/ x         | 91    | 8(15   | E gL  | ( 10   | / 00   |
| DiAolI e4 CalciuE  | 18x8697 | 1(7   | 1(8   | 1(    | x100  | 7x10 31/ x         | 80    | 100    | E gL  | 057/ 7 | / 00   |
| DiAolI e4 MagneAuE | 18x8697 | x70   | x8    | x( 6  | x100  | 7x10 31/ x         | 88    | 96     | E gL  | 0688   | / 00   |
| DiAolI e4 So4iuE   | 18x8697 | 1x/ 0 | 1x50  | 1x/ 0 | x100  | 7x10 31/ x * * 0 * |       | 500 *  | E gL  | 111    | / 00   |

## Direct SPK

| Parameter          | Sample  | DSPK  | UNK   | Known | Limits%    | DSPK% | Units     |
|--------------------|---------|-------|-------|-------|------------|-------|-----------|
| DiAolI e4 CalciuE  | 18x8x8x | 680   | / 06  | x00   | 7x10 31/ x | 9x10  | E gL / 00 |
| DiAolI e4 MagneAuE | 18x8x8x | x10   | / 1   | x00   | 7x10 31/ x | 97    | E gL / 00 |
| DiAolI e4 So4iuE   | 18x8x8x | 1(1   | 8x1   | x00   | 7x10 31/ x | 91    | E gL / 00 |
| DiAolI e4 CalciuE  | 18x8697 | 1(7   | 1(    | x100  | 7x10 31/ x | 80    | E gL / 00 |
| DiAolI e4 MagneAuE | 18x8697 | x70   | x( 6  | x100  | 7x10 31/ x | 88    | E gL / 00 |
| DiAolI e4 So4iuE   | 18x8697 | 1x/ 0 | 1x/ 0 | x100  | 7x10 31/ x | 0 *   | E gL / 00 |

## ICL

| Parameter          | Reading | Known | Units | Recover% | Limits%   | File       |
|--------------------|---------|-------|-------|----------|-----------|------------|
| DiAolI e4 CalciuE  | 59x     | x00   | E gL  | 99       | 9x10 310x | 1/ 086x060 |
| DiAolI e4 MagneAuE | 590     | x00   | E gL  | 98       | 9x10 310x | 1/ 086x060 |
| DiAolI e4 So4iuE   | 598     | x00   | E gL  | 99       | 9x10 310x | 1/ 086x060 |

## ICV

| Parameter          | Reading | Known | Units | Recover% | Limits%  | File       |
|--------------------|---------|-------|-------|----------|----------|------------|
| DiAolI e4 CalciuE  | / 50    | / x10 | E gL  | 99       | 900 3110 | 1/ 086x065 |
| DiAolI e4 MagneAuE | / 518   | / x10 | E gL  | 99       | 900 3110 | 1/ 086x065 |
| DiAolI e4 So4iuE   | / 51    | / x10 | E gL  | 97       | 900 3110 | 1/ 086x065 |





# Quality Control

### LDR

| Parameter           | Reading | Known | Units | Recover% | Limits%  | File      |
|---------------------|---------|-------|-------|----------|----------|-----------|
| DiAbolI e4 CalciuE  | 99b     | 100   | E gL  | 99b      | 90b 3110 | 1/086x061 |
| DiAbolI e4 MagneAuE | 99b     | 100   | E gL  | 99b      | 90b 3110 | 1/086x061 |
| DiAbolI e4 So4iuE   | 109     | 100   | E gL  | 109      | 90b 3110 | 1/086x061 |

Analytical Set **882235**

EPA 200.8 5.4

### CCV

| Parameter     | Reading | Known | Units | Recover% | Limits%  | File      |
|---------------|---------|-------|-------|----------|----------|-----------|
| GariuE, Total | 0b588   | 0b0x  | E gL  | 97b      | 90b 3110 | 1/088x7(1 |
|               | 0b58/   | 0b0x  | E gL  | 96b      | 90b 3110 | 1/088x7(8 |

### ICV

| Parameter     | Reading | Known | Units | Recover% | Limits%  | File      |
|---------------|---------|-------|-------|----------|----------|-----------|
| GariuE, Total | 0b0x0/  | 0b0x  | E gL  | 100      | 90b 3110 | 1/088x717 |

Analytical Set **880216**

SM 2510 B-2011

### Blank

| Parameter                    | PrepSet | Reading | MDL | SQL | Units   | File      |
|------------------------------|---------|---------|-----|-----|---------|-----------|
| Lav SncbCon4uctance at / x C | 880/16  | 0b5     |     |     | uE soAE | 1/085(711 |

### Duplicate

| Parameter                    | Sample  | Result | Unknown | Unit    | RPD  | Limit% |
|------------------------------|---------|--------|---------|---------|------|--------|
| Lav SncbCon4uctance at / x C | 18x79/8 | (8(    | (8/     | uE soAE | 0b61 | /0b    |
|                              | 18x8x96 | x/60   | x/x0    | uE soAE | 0b90 | /0b    |

### ICV

| Parameter                    | Reading | Known | Units   | Recover% | Limits%  | File      |
|------------------------------|---------|-------|---------|----------|----------|-----------|
| Lav SncbCon4uctance at / x C | 1/800   | 1/900 | uE soAE | 99b      | 90b 3110 | 1/085(71x |

### Standard

| Parameter                    | Sample | Reading | Known | Units   | Recover% | Limits%  | File      |
|------------------------------|--------|---------|-------|---------|----------|----------|-----------|
| Lav SncbCon4uctance at / x C | 880/16 | 15(0    | 1510  | uE soAE | 101      | 90b 3110 | 1/085(71/ |
|                              | 880/16 | 101     | 100   | uE soAE | 101      | 90b 3110 | 1/085(71( |
|                              | 880/16 | 1550    | 1510  | uE soAE | 10/      | 90b 3110 | 1/085(7/7 |
|                              | 880/16 | 1550    | 1510  | uE soAE | 10/      | 90b 3110 | 1/085(9(0 |

Analytical Set **880408**

SM 4500-CI F-2011

### Blank

| Parameter                        | PrepSet | Reading | MDL  | SQL  | Units | File      |
|----------------------------------|---------|---------|------|------|-------|-----------|
| CI/ ReA4ual, Total Lav-Titration | 880508  | ND      | 0b00 | 0b00 | E gL  | 1/085761x |

### Duplicate

| Parameter                        | Sample  | Result | Unknown | Unit | RPD | Limit% |
|----------------------------------|---------|--------|---------|------|-----|--------|
| CI/ ReA4ual, Total Lav-Titration | 18x8107 | /b6x   | /b6x    | E gL | 0   | /0b    |

Analytical Set **880944**

SM 5220 D-2011

### CCV

| Parameter | Reading | Known | Units | Recover% | Limits% | File |
|-----------|---------|-------|-------|----------|---------|------|
|-----------|---------|-------|-------|----------|---------|------|







# Quality Control

Printed 0/21/2010

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907296

### CCV

| Parameter                 | Reading | Known | Units | Recover% | Limits%   | File        |
|---------------------------|---------|-------|-------|----------|-----------|-------------|
| CseE ical p Bygen DeE an4 | ( 88    | 500   | E gL  | 970      | 9x0 3 10x | 1/ 08x86/ / |

### Duplicate

| Parameter                 | Sample   | Result | Unknown | Unit | RPD    | Limit% |
|---------------------------|----------|--------|---------|------|--------|--------|
| CseE ical p Bygen DeE an4 | 18x8/ 5x | ND     | ND      | E gL |        | / 00   |
|                           | 18x8/ 6x | / 90   | // bx   | E gL | / 70 * | / 00   |

### LCS

| Parameter                 | PrepSet | Reading | Known | Units | Recover% | Limits    | File        |
|---------------------------|---------|---------|-------|-------|----------|-----------|-------------|
| CseE ical p Bygen DeE an4 | 880955  | 19(     | / 00  | E gL  | 96x      | 900 3 110 | 1/ 08x86/ ( |

### Mat. Spike

| Parameter                 | Sample   | Spike | Unknown | Known | Units | Recovery % | Limits %   | File        |
|---------------------------|----------|-------|---------|-------|-------|------------|------------|-------------|
| CseE ical p Bygen DeE an4 | 18x8/ 5x | 196   | ND      | / 00  | E gL  | 980        | 800 3 1/ 0 | 1/ 08x86/ 6 |
|                           | 18x8/ 6x | / 05  | // bx   | / 00  | E gL  | 900        | 800 3 1/ 0 | 1/ 08x86( 8 |

Analytical Set 881977

SM 4500-P E-2011

### Blank

| Parameter             | PrepSet | Reading | MDL     | MDL  | Units | File       |
|-----------------------|---------|---------|---------|------|-------|------------|
| PsoAn oruAVAP-, total | 881977  | 000955  | 000/ 8x | 0010 | E gL  | 1/ 0880088 |

### CCV

| Parameter             | Reading | Known | Units | Recover% | Limits%   | File       |
|-----------------------|---------|-------|-------|----------|-----------|------------|
| PsoAn oruAVAP-, total | 001/    | 0000  | E gL  | 105      | 900 3 110 | 1/ 0880089 |
|                       | 00/ (   | 0000  | E gL  | 108      | 900 3 110 | 1/ 0880105 |
|                       | 0017    | 0000  | E gL  | 106      | 900 3 110 | 1/ 0880117 |

### LCS Dup

| Parameter             | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|-----------------------|---------|-------|-------|-------|------------|------|-------|-------|------|--------|
| PsoAn oruAVAP-, total | 881977  | 00156 | 001x/ | 0000  | 800 3 1/ 0 | 11x  | 117   | E gL  | 107/ | / 00   |

### MSD

| Parameter             | Sample  | MS    | MSD   | UNK     | Known | Limits     | MS% | MSD% | Units | RPD  | Limit% |
|-----------------------|---------|-------|-------|---------|-------|------------|-----|------|-------|------|--------|
| PsoAn oruAVAP-, total | 18x88x9 | 00x85 | 00x69 | 0095    | 0000  | 700 3 1( 0 | 960 | 910  | E gL  | x01  | / 00   |
|                       | 18x8987 | 00/ 9 | 00( 5 | 000/ 77 | 0000  | 700 3 1( 0 | 100 | 10/  | E gL  | 100x | / 00   |

\* p ut RPD iARelati e Percent Difference: avA13/ - 2E eanV1,r / - \* 100%

RecoI er% iARecoI ery Percent: reAIt 2knoOn \* 100%

Glank 3Mets04 Glank; vC) 3vntial Calivration ) erification; LCS 3Lavoratory Control SaE nle; CCG 3Continuing Calivration Glank; CC) 3Continuing Calivration ) erification; . WRL2MRL C 3. E vnt Water Remortng LiE it2MiniE uE Remortng LiE it Cseck St4; MS 3MatriBSnike; MRL Cs eck 3MiniE uE Remortng LiE it Cseck St4; LDR 3Linear DynaE ic Range Stan4ar4



907296 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

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Chain of Custody

CABC-P

127

Lab Number 1858585  
 PO Number \_\_\_\_\_  
 Phone 806/661-3130  
 Fax 806/661-3134

Report To

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

Land Application Composite

Matrix: Non-Potable Water

Sample Collection Start

Date: 1.28.20 Time: 1255  
 Sampler Printed Name: MICAH BONILUA  
 Sampler Affiliation: CABC  
 Sampler Signature: [Signature]

Sample Collection Stop

Date: 1.29.20 Time: 1135  
 Sampler Printed Name: MICAH BONILUA  
 Sampler Affiliation: CABC  
 Sampler Signature: [Signature]

|   |  |                      |  |
|---|--|----------------------|--|
| 1 | H2SO4 to pH <2 Amber Glass 250 mL w/Teflon lined lid |                      |  |
| N | TOCL   | Total Organic Carbon | SM 5310 C-2011 (28.0 days)                     |
| 1 | Z - No bottle required                               |                      |  |
| N | Short Hold   | CFFL                 | Client Field Filtration (Onsite) (0.0104 days) |

Client Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |            |      |                           |  |
|---|------------|------|---------------------------|--|
| N | Short Hold | Cr+3 | Trivalent Chromium        | Calculation CAS:16065-83-1 (1.00 days) |
| N | Short Hold | FFil | Field Filtration (Onsite) | (0.0104 days)                          |

Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |  |                    |  |
|---|--|--------------------|--|
| 1 | GTMS   | Transfer to ICP/MS |  |
| 1 | HNO3 to pH <2 Polyethylene 500 mL for Metals |                    |  |
| N | *AgM   | Silver, Total      | EPA 200.8 5.4 CAS:7440-22-4 (180 days) |
| N | *AlM   | Aluminum, Total    | EPA 200.8 5.4 CAS:7429-90-5 (180 days) |
| N | *AsM   | Arsenic, Total     | EPA 200.8 5.4 CAS:7440-38-2 (180 days) |
| N | *BaM   | Barium, Total      | EPA 200.8 5.4 CAS:7440-39-3 (180 days) |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

907296 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**

Phone 903/984-0551 FAX 903/984-5914 e-Mail [corp@ana-lab.com](mailto:corp@ana-lab.com) ILEIAP-accredited #02008

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### Chain of Custody

**CABC-P**

**127**

Phone 806/661-3130  
Fax 806/661-3134

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

|   |      |                                 |  |
|---|------|---------------------------------|--|
| N | *BeM | Beryllium, Total                | EPA 200.8 5.4 CAS:7440-41-7 (180 days) |
| N | *CdM | Cadmium, Total                  | EPA 200.8 5.4 CAS:7440-43-9 (180 days) |
| N | *CrM | Chromium, Total                 | EPA 200.8 5.4 CAS:7440-47-3 (180 days) |
| N | *CuM | Copper, Total                   | EPA 200.8 5.4 CAS:7440-50-8 (180 days) |
| N | *Hg  | Mercury, Total                  | EPA 245.1 3 CAS:7439-97-6 (28.0 days)  |
| N | *NiM | Nickel, Total                   | EPA 200.8 5.4 CAS:7440-02-0 (180 days) |
| N | *PbM | Lead, Total                     | EPA 200.8 5.4 CAS:7439-92-1 (180 days) |
| N | *SbM | Antimony, Total                 | EPA 200.8 5.4 CAS:7440-36-0 (180 days) |
| N | *SeM | Selenium, Total                 | EPA 200.8 5.4 CAS:7782-49-2 (180 days) |
| N | *TlM | Thallium, Total                 | EPA 200.8 5.4 CAS:7440-28-0 (180 days) |
| N | *ZnM | Zinc, Total                     | EPA 200.8 5.4 CAS:7440-66-6 (180 days) |
| N | 301L | Liquid Metals Digestion         | EPA 200.2 2.8 (180 days)               |
| N | 747L | Mercury Liquid Metals Digestion | EPA 245.1 3 (28.0 days)                |

**1 HNO3 to pH <2 Polyethylene 500 mL AFTER filtration**

|   |                   |      |                     |   |
|---|-------------------|------|---------------------|---|
| N | <b>Short Hold</b> | *CaD | Dissolved Calcium   | EPA 200.7, Rev. 4.4 CAS:7440-70-2 (0.0104 days) |
| N | <b>Short Hold</b> | *MgD | Dissolved Magnesium | EPA 200.7, Rev. 4.4 CAS:7439-95-4 (0.0104 days) |
| N | <b>Short Hold</b> | *NaD | Dissolved Sodium    | EPA 200.7, Rev. 4.4 CAS:7440-23-5 (0.0104 days) |

**2 H2SO4 to pH <2 250 ml Polyethylene**

|   |  |      |                          |  |
|---|--|------|--------------------------|--|
| N |  | COD  | Chemical Oxygen Demand   | SM 5220 D-2011 (28.0 days)                 |
| N |  | NHaN | Ammonia (as N)           | EPA 350.1 2 (28.0 days)                    |
| N |  | TKN  | Total Kjeldahl Nitrogen  | EPA 351.2 2 CAS:7727-37-9 (28.0 days)      |
| N |  | TPWB | Phosphorus (as P), total | SM 4500-P E-2011 CAS:7723-14-0 (28.0 days) |

**1 Polyethylene 1/2 gal (White)**

|   |                   |      |                                  |                                       |
|---|-------------------|------|----------------------------------|---------------------------------------|
| N | <b>Short Hold</b> | BOD  | Biochemical Oxygen Demand (BOD5) | SM 5210 B-2011 CAS:1026-3 (2.00 days) |
| N | <b>Short Hold</b> | BODc | BOD Carbonaceous                 | SM 5210 B-2011 (2.00 days)            |
| N | <b>Short Hold</b> | SARL | Sodium Adsorption Ratio - Liquid | 600/2-78-054 3.2.19 (0.0104 days)     |
| N |                   | TSS  | Total Suspended Solids           | SM 2540 D-2011 (7.00 days)            |

**1 Polyethylene Quart (White)**

|   |  |     |          |                           |
|---|--|-----|----------|---------------------------|
| N |  | ICL | Chloride | EPA 300.0 2.1 (28.0 days) |
|---|--|-----|----------|---------------------------|



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Fanhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

1  
2

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**Chain of Custody**

Report To:

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

**CABC-P**

127

Phone 806/661-3130  
 Fax 806/661-3134

|   |            |      |                                   |  |
|---|------------|------|-----------------------------------|--|
| N |            | IFIL | Fluoride                          | EPA 300.0 2.1 (28.0 days)                    |
| N | Short Hold | IN3L | Nitrate-Nitrogen Total            | EPA 300.0 2.1 CAS:14797-55-8 (2.00 days)     |
| N |            | IS4L | Sulfate                           | EPA 300.0 2.1 (28.0 days)                    |
| N | Short Hold | CI2L | Cl2 Residual, Total(Lab)Titration | SM 4500-Cl F-2011 (2.00 days)                |
| N |            | CONL | Lab Spec. Conductance at 25 C     | SM 2510 B-2011 (28.0 days)                   |
| N | Short Hold | Cr+6 | Hexavalent Chromium               | SM 3500-Cr B-2011 CAS:18540-29-9 (1.00 days) |
| N | Short Hold | DMF  | Dissolved Metals Filtering        | SM 3030 B-2004 (0.0104 days)                 |
| N | Short Hold | DMFW | Dissolved (Wastewater) Filtering  | SM 3030 B-2004 (0.0104 days)                 |

Dissolved (Wastewater) Filtering Quality Control

Collected By MBA Date 1.29.20 Time 1135 Analyzed By MBA Date 1.29.20 Time 1145 (FILTER TIME)

Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

N TDS Total Dissolved Solids SM 2540 C-2011 (7.00 days)

Ambient Conditions/Comments

| Date    | Time | Relinquished   | Received   |
|---------|------|--|--|
| 1.29.20 | 1800 | Printed Name <u>MICHA BONILLO</u> Affiliation _____<br>Signature _____ | Printed Name <u>LSD</u> Affiliation _____<br>Signature _____                   |
| 1/29/20 | 0800 | Printed Name _____ Affiliation _____<br>Signature <b>Lone Star</b>     | Printed Name <u>Kelly Overman Ana-Lab</u> Affiliation _____<br>Signature _____ |
|         |      | Printed Name _____ Affiliation _____<br>Signature _____                | Printed Name _____ Affiliation _____<br>Signature _____                        |
|         |      | Printed Name _____ Affiliation _____<br>Signature _____                | Printed Name _____ Affiliation _____<br>Signature _____                        |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
 Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region [ ]

The accredited column designates accreditation by A - AZLA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <<http://www.ana-lab.com>>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Fanhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

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Chain of Custody

**CABC-P**  
**126**

Lab Number 1858586  
PO Number \_\_\_\_\_  
Phone 806/661-3130  
Fax 806/661-3134

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Land Application Grab Samples

Matrix: Non-Potable Water

Sample Collection Start

Date: 1.29.20 Time: 1135

Sampler Printed Name: MICHA BONILLA

Sampler Affiliation: CABC

Sampler Signature: [Signature]

On Site Testing

C1Ck Field Cl2 Check for CNa

Field Cl2 Check for CNa Quality Control

Collected By MGB Date 1.29.20 Time 1135 Analyzed By MGB Date 1.29.20 Time 1147  
Results .12 Units ug/l Temp. 12.7 C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

S2Ck Field Sulfide Check for CNa

Field Sulfide Check for CNa Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|                          |            |  |  |
|--------------------------|------------|--|--|
| <input type="checkbox"/> | 1          | Na2S2O3 (0.008%) Polystyrene-100 mL Sterilized |  |
| N                        | Short Hold | FMPL Fecal Coliform MPN Started /L             | SM 9221 E + C-2006 (0.347 days)            |
| <input type="checkbox"/> | 1          | H2SO4 to pH <2 GIQT w/Tef-lined lid            |  |
| N                        | HEM        | Oil and Grease (HEM)                           | EPA 1664B (HEM) (28.0 days)                |
| <input type="checkbox"/> | 1          | NaOH to pH >12 Polyethylene 250 mL/amber       |  |
| N                        | CNa        | Cyanide, total                                 | SM 4500-CN <sup>-</sup> B-2011 (14.0 days) |
| <input type="checkbox"/> | 1          | Polyethylene Quart (White)                     |  |
| N                        | pHLL       | Laboratory pH                                  | SM 4500-H+ B-2011                          |

Ambient Conditions/Comments SUNNY, 43° F, CALM



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

907296 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
Employee Owned Integrity Caring Continual Improvement

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### Chain of Custody

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**CABC-P**  
**126**

Phone 806/661-3130  
Fax 806/661-3134

| Date    | Time  | Relinquished   | Received  |
|---------|-------|--|---|
| 1.29.20 | 18:00 | Printed Name <u>MICHAEL BONICA</u> Affiliation <u>CABC</u><br>Signature <u>[Signature]</u> | Printed Name <u>LSO</u> Affiliation<br>Signature                                      |
| 1.29.20 | 08:30 | Printed Name <u>LSO</u> Affiliation<br>Signature   | Printed Name <u>Kelly Overman Ana-Lab</u> Affiliation<br>Signature <u>[Signature]</u> |
|         |       | Printed Name Affiliation<br>Signature  | Printed Name Affiliation<br>Signature   |
|         |       | Printed Name Affiliation<br>Signature  | Printed Name Affiliation<br>Signature   |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region [ ]

The accredited column designates accreditation by A - A2LA, N - NELAP, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

**Comments**

pH + TEMP

COLLECTED BY: MGB DATE: 1.29.20 TIME: 1135 ANALYZED BY: MGB DATE: 1.29.20 TIME:

RESULTS: 7.75 Temp: 12.7°C

TOTAL CHLORINE RESIDUAL

COLLECTION BY: MGB DATE: 1.29.20 TIME: 1135 ANALYZED BY: MGB DATE: 1.29.20 TIME: 1147

RESULTS: 0.12 mg/L Temp: 12.7°C



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

907296 CoC Print Group 001 of 001

1/29/2020

https://www2.lso.com/weblabels/?labelsizes=0&combinedlabel=1&sessionkey=%7B332AB14F-B9BA-417E-8A71-94282AB9DD7C%7D



Airbill No. Z5692475

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**LOGIN**  
**ANA-LAB CORP**  
**2600 DUDLEY RD.**  
**KILGORE, TX 75662**  
**9039840551**

From:  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556



**LSO PRIORITY NEXT DAY**  
10:30 IN MOST CITIES  
LATER IN REMOTE CITIES

PRINT DATE: 1/29/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 52.00LBS  
REF 1: RT66, LEF1, CAB3 1D00V.0000 REF 2:

130 0832 160  
Date Time Tech  
Temp: 0.4/0.4 C  
Therm#: 6093 Corr Fact: 0.0 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcode is read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.



# Results

Printed: 01/21/2020 11:44

Page P of 2  
914199

**Report 60**

CaTot Corpb  
sAlee h reen  
4bObGoBx00P  
4ampa56, X709x

Corrected Limits

Account  
**CABC-P**

## Results

|   |                                      |                                      |  |
|---|--------------------------------------|--------------------------------------|--|
| <b>1873222</b>                          | <b>LL Hg</b>                         | CO: 4801/P0 P100 N01/PP P2x0         | Received: 01/P2/2020                   |
| - on Note Water                         | Collected by: Client                 | CaTot Corpb                          | PO:                                    |
| Composite Hop P2&0 1/PP/20              | Taken: P2&0800                       |                                      |  |
| Supplement to 6est Report P3X0X13       |                                      |                                      |  |
|   | Prepared: 03/23/2020 11:38:33        | Calculated: 03/23/2020 11:38:33      | CAL                                    |
| Parameter                               | Results                              | Units RL                             | Flag CAS Bottle                        |
| <b>z LL Mercury Test Prep</b>           | <b>Verified</b>                      |                                      |  |
| EPA 200.7 4.4                           | Prepared: 888038 03/17/2020 09:45:00 | Analyzed: 888331 03/18/2020 10:51:00 | LPS                                    |
| Parameter                               | Results                              | Units RL                             | Flag CAS Bottle                        |
| <b>NELAC Boron</b>                      | <b>0.128</b>                         | <b>mg/L</b>                          | <b>0602</b> <b>7440-42-8</b> <b>0M</b> |
| EPA 245.7 2                             | Prepared: 887526 03/13/2020 06:05:12 | Analyzed: 887630 03/13/2020 12:40:00 | LPS                                    |
| Parameter                               | Results                              | Units RL                             | Flag CAS Bottle                        |
| <b>NELAC Mercury, Total (low level)</b> | <b>&lt;4.26</b>                      | <b>ng/L</b>                          | <b>ME9</b> <b>7439-97-6</b> <b>01</b>  |

## Sample Preparation

|  |                                      |                                      |                      |
|--|--------------------------------------|--------------------------------------|----------------------|
| <b>1873222</b>                               | <b>LL Hg</b>                         | CO: 4801/P0 P100 N01/PP P2x0         | Received: 01/P2/2020 |
| Composite Hop P2&0 1/PP/20                   |                                      |                                      |                      |
|  | Prepared: 03/12/2020 16:11:00        | Analyzed: 03/12/2020 16:11:00        | CCP                  |
| z <b>Bottle pH</b>                           | <b>&lt;2</b>                         | <b>SU</b>                            | <b>02</b>            |
| EPA 200.2 2.8                                | Prepared: 888038 03/17/2020 09:45:00 | Analyzed: 888038 03/17/2020 09:45:00 | TES                  |
| <b>NELAC Liquid Metals Digestion</b>         | <b>50/50</b>                         | <b>ml</b>                            | <b>02</b>            |
| EPA 245.7 2                                  | Prepared: 887526 03/13/2020 06:05:12 | Analyzed: 887526 03/13/2020 06:05:12 | LPS                  |
| <b>NELAC Low Level Mercury Liquid Metals</b> | <b>50/47</b>                         | <b>ml</b>                            | <b>0P</b>            |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



- ES. 4NLLredited c6P0MMD20PN7NPx





# Results

Printed: 01/21/2020 11:44

Page 2 of 2  
914199

|                    |                                      |                                     |                      |
|--------------------|--------------------------------------|-------------------------------------|----------------------|
| 1873222            | LL Hg                                | CO: 4801/P0 P100 N01/PP P2x0        | Received: 01/P2/2020 |
| Composite Hop P2&0 | 1/PP/20                              |                                     |                      |
| EPA 245.7 2        | Prepared: 887526 03/13/2020 06:05:12 | Analyzed 887526 03/13/2020 06:05:12 | LPS                  |

# ualifiers8

We report results on an . s ReLeived or wet Tasis unless marQed k ry WeigAtb Dnless otAerwise noted5testing was performed at . naNaTs Lorporate laTorary tAat Aolds tAe following Uederal and Htate LertifiLates8 E4. SaT- umTer 6, 000915DHk epartment of . griLulture Hoil Import 4ermit 4110NPN00PPX5 6eBas Commission on Environmental # uality CommerLial k rinQng Water SaT. pproval ISaTIk 86, 2P7(5 6eBas Commission on Environmental # uality - ES. 4 6 P0M0M20PNP7NPx5Souisiana k epartment of Environmental # uality SaTorary CertifiLation F- ES. 45SES. 4( c020035 Souisiana k epartment of ) ealtAand ) ospitals k rinQng Water F- ES. 4( CertifiLate - o S. 0295 OQaAoma k epartment of Environmental # uality 6- I SaTorary . LLreditation 4rogram CertifiLate - ob20P3N295. rQansas k epartment of Environmental # uality CertifiLation cP3N093N0b 6 Ae . LLredited Lolumn designates aLLreditation Ty - N- ES. C5or z NNot Lovered under - ES. C sLope of aLLreditationb 6 Ae se analytiLal results relate to tAe sample testedb 6 Ais report may - O6 Te reproduLed E, CE46 in UDSS witAout written approval of . naNaTs Corp b Dnless otAerwise speLified5tAese test results meet tAe requirements of - ES. Cb RS is tAe Reporting Simit Isample speLifiL quantitation limit( and is at or aTove tAe : etAod k eteLtion Simit F k S(bC. His CAemiLal . TstraLt HerviLe numTerb RS is our Reporting SimitSor : inimum # uantitation Sevelb 6 Ae RS taQes into aLLount tAe Instrument k eteLtion Simit Hk S(5: etAod k eteLtion Simit F k S(5and 4raLtiLal # uantitation Simit F# S(5and any dilutions and/or LonLentrations performed during sample preparation H# S(b Our analytiLal result must Te aTove tAis RS Tefore we report a value in tAe 'Results' Lolumn of our report FwitAout a 'J' flag(b OtAerwise5we report - k F ot k eteLtad aTove RS(5TeLause tAe result is "<" Hess tAan( tAe numTer in tAe RS Lolumnb : . S is : inimum . nalytiLal Sevel and is typiLally from regulatory agenLiesbDnless we report a result in tAe result Lolumn5or interferenLes prevent it5we worQto Aave our RS at or Telow tAe : . Sb

Trey Peery, MA, Project Manager





# Quality Control

Printed 03/23/2020

Page 1 of 2  
914199

Report of

Account  
**CABC-P**

Cavot Cornb  
Leehreen  
Pbp bGoBx001  
PaE na5, T X706x

Analytical Set **887630**

EPA 245.7 2

### AWRL/MRL C

| Parameter                   | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------------------------|---------|-------|-------|----------|-----------|-----------|
| Mercury5, otal (loO lel el) | xl20    | xl00  | ng/4  | 10L      | X00 8 130 | 12077xX76 |

### Blank

| Parameter                   | PrepSet | Reading | MDL   | MDL  | Units | File      |
|-----------------------------|---------|---------|-------|------|-------|-----------|
| Mercury5, otal (loO lel el) | -- Xx26 | ND      | 0bxX3 | 1100 | ng/4  | 12077xX7X |

### CCV

| Parameter                   | Reading | Known | Units | Recover% | Limits%   | File       |
|-----------------------------|---------|-------|-------|----------|-----------|------------|
| Mercury5, otal (loO lel el) | 100     | 100   | ng/4  | 100      | X60 8 12L | 12077xX7x  |
|                             | 7b 0    | 100   | ng/4  | 7- 0     | X60 8 12L | 12077x- 0X |
|                             | 100     | 100   | ng/4  | 100      | X60 8 12L | 12077x- 1- |
|                             | 100     | 100   | ng/4  | 100      | X60 8 12L | 12077x- 26 |

### ICL

| Parameter                   | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------------------------|---------|-------|-------|----------|-----------|-----------|
| Mercury5, otal (loO lel el) | 7x13    | 100   | ng/4  | 7x13     | 700 8 110 | 12077xX73 |

### ICV

| Parameter                   | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------------------------|---------|-------|-------|----------|-----------|-----------|
| Mercury5, otal (loO lel el) | 7160    | 100   | ng/4  | 760      | 700 8 110 | 12077xX7L |

### LCS Dup

| Parameter                   | PrepSet | LCS  | LCS  | Known | Limits%   | LCS% | LCS | Units | RPD   | Limit% |
|-----------------------------|---------|------|------|-------|-----------|------|-----|-------|-------|--------|
| Mercury5, otal (loO lel el) | -- Xx26 | 2317 | 2111 | 2x0   | X60 8 113 | 7x16 | 76L | ng/4  | 0b 33 | x00    |

### MSD

| Parameter                   | Sample   | MS   | MSD  | UNK   | Known | Limits    | MS%    | MSD%  | Units | RPD   | Limit% |
|-----------------------------|----------|------|------|-------|-------|-----------|--------|-------|-------|-------|--------|
| Mercury5, otal (loO lel el) | 1- 6701X | 170  | 17L  | 1b2-  | 2616  | 6X0 8 111 | 6616 # | 6- 11 | ng/4  | 2123  | 1- 0   |
|                             | 1- 67X17 | 2111 | 2017 | 0b x1 | 2616  | 6X0 8 111 | X61    | Xx1L  | ng/4  | 01773 | 1- 0   |

Analytical Set **888331**

EPA 200.7 4.4

### Blank

| Parameter | PrepSet | Reading | MDL   | MDL   | Units | File      |
|-----------|---------|---------|-------|-------|-------|-----------|
| Goron     | --- 03- | ND      | 0013L | 00100 | E g/4 | 12101Lx27 |

### CCV

| Parameter | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------|---------|-------|-------|----------|-----------|-----------|
| Goron     | 1b -    | xl00  | E g/4 | 7X6      | 700 8 110 | 12101Lx2- |
|           | 1170    | xl00  | E g/4 | 7- 0     | 700 8 110 | 12101Lx37 |
|           | 1172    | xl00  | E g/4 | 7- L     | 700 8 110 | 12101Lx12 |

### ICL

| Parameter | Reading | Known | Units | Recover% | Limits%    | File      |
|-----------|---------|-------|-------|----------|------------|-----------|
| Goron     | 7b0     | 100   | E g/4 | 7X0      | 7x10 8 10x | 12101Lx26 |





# Quality Control

Printed 03/23/2020

Page 2 of 2  
914199

### ICV

| Parameter | Reading | Known | Units | Recover% | Limits%   | File      |
|-----------|---------|-------|-------|----------|-----------|-----------|
| Goron     | x100    | x100  | E g/4 | 100      | 700 8 110 | 12101Lx2X |

### LCS Dup

| Parameter | PrepSet | LCS   | LCSD | Known | Limits%     | LCS% | LCSD% | Units | RPD | Limit% |
|-----------|---------|-------|------|-------|-------------|------|-------|-------|-----|--------|
| Goron     | --- 03- | 05710 | 0677 | 100   | - x10 8 11x | 710  | - 75  | E g/4 | 152 | 2x10   |

### MSD

| Parameter | Sample    | MS  | MSD | UNK | Known | Limits    | MS% | MSD% | Units | RPD  | Limit% |
|-----------|-----------|-----|-----|-----|-------|-----------|-----|------|-------|------|--------|
| Goron     | 1- XI 333 | 12X | 11- | 317 | 100   | X10 8 12x | 10- | 770  | E g/4 | - 10 | 2x10   |

# put RPD iARelative Percent Difference:  $\frac{av(r1\&2)}{E\text{ean}(r152)} \# 100\%$

RecoIer% iARecoIery Percent:  $\frac{reAult}{knoOn} \# 100\%$

Glank 8Mets o9 Glank; CCV 8Continuing Calivration Verification; vCV 8vitial Calivration Verification; . WR4/MR4 C 8. E vient Water Renortng 4iE it/MiniE uE Renortng 4iE it Cseck St9



914199 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**  
 Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
 Employee Owned Integrity Caring Continual Improvement

**Chain of Custody**

COC Printed 03/11/2020 Page 1 of 2

**Report To**

Cabot Corp.  
 Ashlee Green  
 P.O. Box 5001  
 Pampa, TX 79065

**CABC-P**  
**128**

Lab Number 1870752  
 PO Number \_\_\_\_\_  
 Phone 806/661-3130  
 Fax 806/661-3134

**LLHg**

Matrix: Non-Potable Water

Sample Collection Start

Date: 3/10/20 Time: 1300

Sampler Printed Name: Micah Bonilla

Sampler Affiliation: CABC

Sampler Signature: \_\_\_\_\_

Sample Collection Stop

Date: 3.11.20 Time: 1250

Sampler Printed Name: Micah Bonilla

Sampler Affiliation: CABC

Sampler Signature: \_\_\_\_\_

|   |  |  |  |
|---|--|--|--|
| 1 | HNO3 to pH <2 Polyethylene 500 mL for Metals |  |  |
| N | *BI Boron                                    | EPA 200.7 4.4 CAS:7440-42-8 (180 days) |  |
| N | 301L Liquid Metals Digestion                 | EPA 200.2 2.8 (180 days)               |  |
| 1 | Glass 500 ml/clean metals w/HCl              |  |  |
| N | *Hgl Mercury, Total (low level)              | EPA 245.7 2 CAS:7439-97-6 (28.0 days)  |  |
| N | 245I Low Level Mercury Liquid Metals         | EPA 245.7 2 (28.0 days)                |  |
|   | HgKt LL Mercury Test Prep                    |  |  |

Ambient Conditions/Comments

| Date    | Time  | Relinquished  | Received   |
|---------|-------|---|--|
| 3/11/20 | 14:00 | Printed Name <u>Client</u> Affiliation <u>CABC</u><br>Signature _____ | Printed Name <u>SEH</u> Affiliation <u>ANALAB</u><br>Signature _____           |
| 3/11/20 | 1800  | Printed Name _____ Affiliation <u>ANALAB</u><br>Signature _____       | Printed Name <u>LSO</u> Affiliation _____<br>Signature _____                   |
| 3/10/20 | 0900  | Printed Name <u>LSO</u> Affiliation _____<br>Signature _____          | Printed Name <u>Kelly Overman Ana-Lab</u> Affiliation _____<br>Signature _____ |
|         |       | Printed Name _____ Affiliation _____<br>Signature _____               | Printed Name _____ Affiliation _____<br>Signature _____                        |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

1  
2

914199 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
Employee Owned Integrity Caring Continual Improvement

# Chain of Custody

COC Printed 03/11/2020 Page 2 of 2

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**CABC-P**  
**128**

Phone 806/661-3130  
Fax 806/661-3134

**Sample Received on Ice?**  Yes  No **Method of Shipment:**  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
**Cooler/Sample Secure?**  Yes  No **If Shipped: Tracking Number & Temp - See Attached** **Hand Delivered to Region [ ]**

*The accredited column designates accreditation by A - A2LA, N - NELAP, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.*

**Comments**



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

3 of 3

914199 CoC Print Group 001 of 001



Airbill No. Z5745195

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**LOGIN**  
**ANA-LAB CORP**  
**2600 DUDLEY RD.**  
**KILGORE, TX 75662**  
**9039840551**

From:  
JOHN  
ANA-LAB  
8501 STORAGE DR  
AMARILLO, TX 79110  
8063553556

|              |  |
|--------------|--|
| <b>B GGG</b> | <b>LSO PRIORITY NEXT DAY</b>                   |
|              | 10:30 IN MOST CITIES<br>LATER IN REMOTE CITIES |

PRINT DATE: 3/11/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 55.00LBS  
REF 1: MEMP, RT66, SHAM, LEF1, CABG 1D00V.0000 REF 2:

3/12 0942 RT  

|       |      |      |   |
|-------|------|------|---|
| Date  | Time | Tech |   |
| Temp: | 6.4  | 11.3 | C |

 Therm#: 6205 Corr Fact: -0.1 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. **LIMIT OF LIABILITY:** We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. **NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.**

# Attachment WKSHT3.0-8

## Week 4 Laboratory Reports



Ana-Lab Corp.  
 P.O. Box 9000  
 Kilgore, TX 75663  
 903/984-0551

LELAP-accredited #02008

# Report

Table of Contents

Printed 03/18/2015 Page 1 of 1

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

Account

**CABC-P**

Project

**908584**

This report consists of this Table of Contents and the following pages:

| <u>Page</u>                  | <u>Description</u>   | <u>Pages</u> |
|------------------------------|--|--------------|
| 908584_r03_03_ProjectResults | mi aA aL P2b6DhPj80: 9: 5 6 j6 mC6 P2b6Dhp edBrd ijl 05          | 6            |
| 908584_r10_05_ProjectQC      | mi aA aL P2b6DhPj80: 9: 5 6 j6 mC6 P2b6Dh4 BaurQ6 oi r2ouy 2bB:d | 14           |
| 908584_r99_09_CoC__1_of_1    | mi aA aL 6 o6 6 mC6 80: 9: 5 GlGfGl                              | 6            |
| <b>Total Pages:</b>          |  | <b>26</b>    |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662



RE- mPA Ddet met #F105705301A8A9





# Results

Printed: 01/24/1010 13:21

Page 2 of 6  
908584

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5002  
Pampa, TX 74065

Account  
**CABC-P**

## Results

|   |                                   |                               |                   |           |             |                   |               |                      |  |
|---|-----------------------------------|-------------------------------|-------------------|-----------|-------------|-------------------|---------------|----------------------|--|
| <b>1861183</b>                          | <b>Land Application Composite</b> | CO8 P901/05 20: 0 N01/06 2025 |                   |           |             |                   |               | Received: 01/07/1010 |  |
| - on Potable Water                      |                                   | Collected by:                 | Client            | AnaLab    | PO:         |                   |               |                      |  |
| Composite 3top 2025 1/6/10              |                                   | Taken:                        | 202590            |           |             |                   |               |                      |  |
| 600/2-78-054 3.2.19                     |                                   | Prepared:                     | 02/12/2020        | 15:26:08  | Calculated  | 02/12/2020        | 15:26:08      | CAL                  |  |
| <i>Parameter</i>                        |                                   | <i>Results</i>                | <i>Units</i>      | <i>RL</i> | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |                      |  |
| <b>Sodium Adsorption Ratio - Liquid</b> |                                   | <b>5.10</b>                   | <b>1</b>          |           |             |                   |               |                      |  |
| Calculation                             |                                   | Prepared:                     | 02/13/2020        | 11:14:05  | Calculated  | 02/13/2020        | 11:14:05      | CAL                  |  |
| <i>Parameter</i>                        |                                   | <i>Results</i>                | <i>Units</i>      | <i>RL</i> | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |                      |  |
| <b>NELAC</b>                            | <b>Trivalent Chromium</b>         | <b>&lt;0.0005</b>             | <b>mg/L</b>       | 0.0005    |             | <b>16065-83-1</b> |               |                      |  |
| EPA 200.7, Rev. 4.4                     |                                   | Prepared:                     | 882357 02/12/2020 | 10:13:00  | Analyzed    | 882357 02/12/2020 | 10:13:00      | LPS                  |  |
| <i>Parameter</i>                        |                                   | <i>Results</i>                | <i>Units</i>      | <i>RL</i> | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |                      |  |
| <b>NELAC</b>                            | <b>Dissolved Calcium</b>          | <b>20.5</b>                   | <b>mg/L</b>       | 0.500     |             | <b>7440-70-2</b>  | 0M            |                      |  |
| <b>NELAC</b>                            | <b>Dissolved Magnesium</b>        | <b>2.30</b>                   | <b>mg/L</b>       | 0.500     |             | <b>7439-95-4</b>  | 0M            |                      |  |
| EPA 200.7, Rev. 4.4                     |                                   | Prepared:                     | 882357 02/12/2020 | 10:16:00  | Analyzed    | 882357 02/12/2020 | 10:16:00      | LPS                  |  |
| <i>Parameter</i>                        |                                   | <i>Results</i>                | <i>Units</i>      | <i>RL</i> | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |                      |  |
| <b>NELAC</b>                            | <b>Dissolved Sodium</b>           | <b>91.5</b>                   | <b>mg/L</b>       | 5.00      |             | <b>7440-23-5</b>  | 0M            |                      |  |
| EPA 200.8 5.4                           |                                   | Prepared:                     | 882066 02/11/2020 | 09:45:00  | Analyzed    | 882488 02/12/2020 | 11:47:00      | JAB                  |  |
| <i>Parameter</i>                        |                                   | <i>Results</i>                | <i>Units</i>      | <i>RL</i> | <i>Flag</i> | <i>CAS</i>        | <i>Bottle</i> |                      |  |
| <b>NELAC</b>                            | <b>Aluminum, Total</b>            | <b>0.0548</b>                 | <b>mg/L</b>       | 0.005     |             | <b>7429-90-5</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Antimony, Total</b>            | <b>&lt;0.001</b>              | <b>mg/L</b>       | 0.002     |             | <b>7440-36-0</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Arsenic, Total</b>             | <b>0.000786</b>               | <b>mg/L</b>       | 0.0005    |             | <b>7440-38-2</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Barium, Total</b>              | <b>0.0517</b>                 | <b>mg/L</b>       | 0.00:     |             | <b>7440-39-3</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Beryllium, Total</b>           | <b>&lt;0.0005</b>             | <b>mg/L</b>       | 0.0005    |             | <b>7440-41-7</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Cadmium, Total</b>             | <b>&lt;0.0002</b>             | <b>mg/L</b>       | 0.0001    |             | <b>7440-43-9</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Chromium, Total</b>            | <b>0.000875</b>               | <b>mg/L</b>       | 0.0005    | B           | <b>7440-47-3</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Copper, Total</b>              | <b>0.00104</b>                | <b>mg/L</b>       | 0.002     |             | <b>7440-50-8</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Lead, Total</b>                | <b>&lt;0.0005</b>             | <b>mg/L</b>       | 0.0005    |             | <b>7439-92-1</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Nickel, Total</b>              | <b>0.00482</b>                | <b>mg/L</b>       | 0.002     |             | <b>7440-02-0</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Selenium, Total</b>            | <b>&lt;0.001</b>              | <b>mg/L</b>       | 0.002     | B           | <b>7782-49-2</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Silver, Total</b>              | <b>&lt;0.0002</b>             | <b>mg/L</b>       | 0.0001    |             | <b>7440-22-4</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Thallium, Total</b>            | <b>&lt;0.0005</b>             | <b>mg/L</b>       | 0.0005    |             | <b>7440-28-0</b>  | 24            |                      |  |
| <b>NELAC</b>                            | <b>Zinc, Total</b>                | <b>0.0232</b>                 | <b>mg/L</b>       | 0.005     |             | <b>7440-66-6</b>  | 24            |                      |  |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



- EHAPMS Accredited LT20M0M02N4N5



# Results

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| 1861183                             | Land Application Composite | CO8 P901/05 20: 0 N01/06 2025 |          |            |          | Received: 01/07/1010 |            |                         |
|-------------------------------------|----------------------------|-------------------------------|----------|------------|----------|----------------------|------------|-------------------------|
| - onPotable Water                   | Collected by: Client       | AnaLab                        |          | PO:        |          |                      |            |                         |
| Composite 3 top 2025                | 1/6/10                     | Taken:                        | 2025900  |            |          |                      |            |                         |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| EPA 245.1 3                         |                            | Prepared:                     | 881843   | 02/10/2020 | 09:30:00 | Analyzed             | 882183     | 02/11/2020 13:22:00 LPS |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Mercury, Total                |                            | <0.200                        | ug/L     | 0.100      |          |                      | 7439-97-6  | 27                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| EPA 300.0 2.1                       |                            | Prepared:                     | 881875   | 02/07/2020 | 11:06:00 | Analyzed             | 881875     | 02/07/2020 11:06:00 ATN |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Chloride                      |                            | 81.3                          | mg/L     | 2.50       |          |                      |            | 02                      |
| NELAC Fluoride                      |                            | <0.500                        | mg/L     | 0.500      |          |                      |            | 02                      |
| NELAC Nitrate-Nitrogen Total        |                            | <0.100                        | mg/L     | 0.200      |          |                      | 14797-55-8 | 02                      |
| NELAC Sulfate                       |                            | 2.91                          | mg/L     | 2.50       |          |                      |            | 02                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| EPA 350.1 2                         |                            | Prepared:                     | 881798   | 02/10/2020 | 08:30:00 | Analyzed             | 882118     | 02/11/2020 09:30:00 AMB |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Ammonia (as N)                |                            | 5.02                          | mg/L     | 0.0c0      |          |                      |            | 2c                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| EPA 351.2 2                         |                            | Prepared:                     | 881800   | 02/10/2020 | 09:00:00 | Analyzed             | 882141     | 02/11/2020 12:03:00 RSV |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Total Kjeldahl Nitrogen       |                            | 9.05                          | mg/L     | 0.200      |          |                      | 7727-37-9  | 26                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| SM 2510 B-2011                      |                            | Prepared:                     | 882955   | 02/14/2020 | 11:25:00 | Analyzed             | 882955     | 02/14/2020 11:25:00 MM2 |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Lab Spec. Conductance at 25 C |                            | 865                           | umhos/cm |            |          |                      |            | 02                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| SM 2540 C-2011                      |                            | Prepared:                     | 882100   | 02/10/2020 | 08:15:00 | Analyzed             | 882100     | 02/10/2020 08:15:00 TH2 |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Total Dissolved Solids        |                            | 510                           | mg/L     | 50.0       |          |                      |            | 02                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| SM 2540 D-2011                      |                            | Prepared:                     | 882703   | 02/12/2020 | 10:20:00 | Analyzed             | 882703     | 02/12/2020 10:20:00 ZCS |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Total Suspended Solids        |                            | 18.0                          | mg/L     | c.00       |          |                      |            | 02                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| SM 3500-Cr B-2011                   |                            | Prepared:                     | 881848   | 02/07/2020 | 10:10:00 | Analyzed             | 881848     | 02/07/2020 10:10:00 ALB |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |
| NELAC Hexavalent Chromium           |                            | <3.00                         | ug/L     | :.00       |          |                      | 18540-29-9 | 02                      |
| <hr/>                               |                            |                               |          |            |          |                      |            |                         |
| SM 4500-CI F-2011                   |                            | Prepared:                     | 882281   | 02/07/2020 | 14:20:00 | Analyzed             | 882281     | 02/07/2020 14:20:00 MM2 |
| Parameter                           |                            | Results                       | Units    | RL         |          | Flag                 | CAS        | Bottle                  |

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- EHAPMS Accredited LT20M0M02N4N5



# Results

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| 1861183              | Land Application Composite       | CO8 P901/05 20: 0 N01/06 2025 |         |            |          |          |        | Received:  | 01/07/1010 |        |
|----------------------|----------------------------------|-------------------------------|---------|------------|----------|----------|--------|------------|------------|--------|
| - onPotable Water    | Collected by: Client             | AnaLab                        |         |            |          |          |        | PO:        |            |        |
| Composite 3 top 2025 | 1/6/10                           | Taken:                        | 2025900 |            |          |          |        |            |            |        |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| SM 4500-CI F-2011    |                                  | Prepared:                     | 882281  | 02/07/2020 | 14:20:00 | Analyzed | 882281 | 02/07/2020 | 14:20:00   | MM2    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| NELAC                | Cl2 Residual,Total(Lab)Titration | <0.100                        |         | mg/L       | 0.200    |          |        |            |            | 01     |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| SM 4500-P E-2011     |                                  | Prepared:                     | 882589  | 02/13/2020 | 09:25:00 | Analyzed | 882589 | 02/13/2020 | 09:25:00   | NHL    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| NELAC                | Phosphorus (as P), total         | 1.08                          |         | mg/L       | 0.200    |          |        | 7723-14-0  |            | 07     |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| SM 5210 B-2011       |                                  | Prepared:                     | 881755  | 02/08/2020 |          | Analyzed | 881755 | 02/13/2020 | 13:43:05   | JCB    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| NELAC                | Biochemical Oxygen Demand (BOD5) | 20.6                          |         | mg/L       | 1.00     | BX       |        | 1026-3     |            | 02     |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| SM 5210 B-2011       |                                  | Prepared:                     | 881756  | 02/08/2020 |          | Analyzed | 881756 | 02/13/2020 | 13:21:23   | JCB    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| NELAC                | BOD Carbonaceous                 | 7.47                          |         | mg/L       | 1.00     | B        |        |            |            | 02     |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| SM 5220 D-2011       |                                  | Prepared:                     | 882351  | 02/12/2020 | 08:48:00 | Analyzed | 882351 | 02/12/2020 | 08:48:00   | ELS    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| NELAC                | Chemical Oxygen Demand           | 48.7                          |         | mg/L       | 11.0     |          |        |            |            | 06     |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| SM 5310 C-2011       |                                  | Prepared:                     | 882469  | 02/12/2020 | 01:42:00 | Analyzed | 882469 | 02/12/2020 | 01:42:00   | ALH    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| NELAC                | Total Organic Carbon             | 15.6                          |         | mg/L       | 1.00     |          |        |            |            | 05     |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| 1861184              | Land Application Grab Samples    |                               |         |            |          |          |        | Received:  | 01/07/1010 |        |
| - onPotable Water    | Collected by: Client             | Cabot Corp.                   |         |            |          |          |        | PO:        |            |        |
|                      | Taken:                           | 01/06/1010                    | 2025900 |            |          |          |        |            |            |        |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
|                      |                                  | Prepared:                     | 881471  | 02/06/2020 | 10:20:00 | Analyzed | 881471 | 02/06/2020 | 10:20:00   | CLI    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| z                    | pH Client Provided               | 8.06                          |         | SU         |          |          |        |            |            |        |
| <hr/>                |                                  |                               |         |            |          |          |        |            |            |        |
| Client               |                                  | Prepared:                     | 881549  | 02/06/2020 | 10:27:00 | Analyzed | 881549 | 02/06/2020 | 10:27:00   | CLI    |
| Parameter            |                                  | Results                       |         | Units      | RL       | Flag     |        | CAS        |            | Bottle |
| z                    | Cl2 Res(Total)Analyzed by client | 0.11                          |         | mg/L       |          |          |        |            |            |        |





# Results

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| 1861184 Land Application Grab Samples |         | Received: 01/07/1010                 |   |
|---------------------------------------|---------|--------------------------------------|---|
| - onPotable Water                     |         | Collected by: Client                 | Cabot Corp.                             |
|                                       |         | Taken: 01/06/1010 2025900            | PO:                                     |
| <b>EPA 1664B (HEM)</b>                |         | Prepared: 882349 02/13/2020 07:25:00 | Analyzed 882349 02/13/2020 07:25:00 DSI |
| Parameter                             | Results | Units                                | RL                                      |
| NELAC Oil and Grease (HEM)            | <5.06   | mg/L                                 | 5.06                                    |
| <b>SM 2550 B-2000</b>                 |         | Prepared: 881472 02/06/2020 10:15:00 | Analyzed 881472 02/06/2020 10:15:00 CLI |
| Parameter                             | Results | Units                                | RL                                      |
| NELAC Temperature/Client Provided     | 9.8     | Degrees C                            | 2                                       |
| <b>SM 4500-CN<sup>-</sup> E-2011</b>  |         | Prepared: 881827 02/10/2020 10:00:00 | Analyzed 882206 02/11/2020 13:00:00 AMB |
| Parameter                             | Results | Units                                | RL                                      |
| NELAC Cyanide, total                  | <0.005  | mg/L                                 | 0.005                                   |
| <b>SM 9221 E + C-2006</b>             |         | Prepared: 881821 02/08/2020 13:00:00 | Analyzed 881821 02/08/2020 13:00:00 MDM |
| Parameter                             | Results | Units                                | RL                                      |
| NELAC Fecal Coliform (MPN)            | 34      | MPN/100 mL                           | 2.c                                     |

## Sample Preparation

| 1861183 Land Application Composite |                                  | CO8 P901/05 20: 0 N01/06 2025        |                                       | Received: 01/07/1010 |                         |
|------------------------------------|----------------------------------|--------------------------------------|---------------------------------------|----------------------|-------------------------|
| Composite 3top 20925 1/6/10        |                                  |                                      |                                       |                      |                         |
|                                    |                                  | Prepared:                            | 02/07/2020 09:42:00                   | Analyzed             | 02/07/2020 09:42:00 CCP |
| z                                  | Bottle pH                        | <2                                   | SU                                    |                      | 0:                      |
| z                                  | Bottle pH                        | <2                                   | SU                                    |                      | 0M                      |
|                                    |                                  | Prepared: 881548 02/10/2020 16:42:38 | Calculated 881548 02/10/2020 16:42:38 | CAL                  |                         |
| NELAC                              | Client Field Filtration (Onsite) | Verified                             |                                       |                      |                         |
|                                    |                                  | Prepared: 881799 02/10/2020 08:00:19 | Analyzed 881799 02/10/2020 08:00:19   | LPS                  |                         |
| z                                  | Transfer to ICP/MS               | COMPLETE                             |                                       |                      | 0M                      |





# Results

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|                             |                                   |                               |            |                      |   |
|-----------------------------|-----------------------------------|-------------------------------|------------|----------------------|---|
| <b>1861183</b>              | <b>Land Application Composite</b> | CO8 P901/05 20: 0 N01/06 2025 |            | Received: 01/07/1010 |   |
| Composite 3 top 2025 1/6/10 |                                   |                               |            |                      |   |
| <hr/>                       |                                   |                               |            |                      |   |
| EPA 200.2 2.8               |                                   | Prepared: 882066              | 02/11/2020 | 09:45:00             | Analyzed 882066 02/11/2020 09:45:00 TES |
| NELAC                       | Liquid Metals Digestion           | 50/50                         | ml         |                      | 0:                                      |
| <hr/>                       |                                   |                               |            |                      |   |
| EPA 245.1 3                 |                                   | Prepared: 881843              | 02/10/2020 | 09:30:00             | Analyzed 881843 02/10/2020 09:30:00 ALB |
| NELAC                       | Mercury Liquid Metals Digestion   | 50/25                         | ml         |                      | 0:                                      |
| <hr/>                       |                                   |                               |            |                      |   |
| EPA 350.2, Rev. 2.0         |                                   | Prepared: 881798              | 02/10/2020 | 08:30:00             | Analyzed 881798 02/10/2020 08:30:00 JCI |
| NELAC                       | Ammonia Distillation              | 50/25                         | ml         |                      | 06                                      |
| <hr/>                       |                                   |                               |            |                      |   |
| EPA 351.2, Rev 2.0          |                                   | Prepared: 881800              | 02/10/2020 | 09:00:00             | Analyzed 881800 02/10/2020 09:00:00 CRS |
| NELAC                       | TKN Block Digestion               | 20/20                         | ml         |                      | 07                                      |
| <hr/>                       |                                   |                               |            |                      |   |
| SM 2540 C-2011              |                                   | Prepared: 881614              | 02/10/2020 | 08:15:00             | Analyzed 881614 02/10/2020 08:15:00 TH2 |
| NELAC                       | Total Dissolved Solids Started    | Started                       |            |                      |   |
| <hr/>                       |                                   |                               |            |                      |   |
| SM 2540 D-2011              |                                   | Prepared: 882011              | 02/12/2020 | 10:20:00             | Analyzed 882011 02/12/2020 10:20:00 ZCS |
| NELAC                       | TSS Set Started                   | Started                       |            |                      |   |
| <hr/>                       |                                   |                               |            |                      |   |
| SM 5210 B-2011              |                                   | Prepared: 881755              | 02/08/2020 |                      | Analyzed 881755 02/08/2020 06:54:40 JCB |
| NELAC                       | BOD Set Started                   | Started                       |            |                      |   |
| <hr/>                       |                                   |                               |            |                      |   |
| SM 5210 B-2011              |                                   | Prepared: 881756              | 02/08/2020 |                      | Analyzed 881756 02/08/2020 06:54:40 JCB |
| NELAC                       | BODc Set Started                  | Started                       |            |                      |   |

|                |                                      |                      |  |
|----------------|--------------------------------------|----------------------|--|
| <b>1861184</b> | <b>Land Application Grab Samples</b> | Received: 01/07/1010 |  |
|----------------|--------------------------------------|----------------------|--|





# Results

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|  |                               |   |    |   |  |                             |    |
|--|-------------------------------|---|----|---|--|-----------------------------|----|
| <b>1861184 Land Application Grab Samples</b> |                               |   |    |   |  | <i>Received:</i> 01/07/1010 |    |
| SM 4500-CN <sup>-</sup> C-2011               |                               | <i>Prepared:</i> 881827 02/10/2020 10:00:00 |    | <i>Analyzed:</i> 881827 02/10/2020 10:00:00 |  | CRS                         |    |
| NELAC  | Cyanide Distillation          | 10/5  | ml |   |  |                             | 01 |
| SM 9221 E + C-2006                           |                               | <i>Prepared:</i> 881819 02/07/2020 13:47:00 |    | <i>Analyzed:</i> 881819 02/07/2020 13:47:00 |  | MDM                         |    |
| NELAC  | Fecal Coliform MPN Started /L | STARTED                                     |    | #   |  |                             | 0: |

### Qualifiers9

B NAnalyte deteSted in the assoSiated method blank # N3sample started outside reSommended holding time  
X N3tandard reads higher than desired.

We report results on an As ReSeived or wet basis unless marked Dry Weight. Unless otherwise noted, testing was performed at AnaNabs Sorporate laboratory that holds the following Federal and 3tate SertifiSates9 EPA Hab - umber TX0006: , U3 Department of AgriSulture 3oil Import Permit P: : 0N27N0227, Texas Commission on Environmental Quality CommerSial Drinking Water Hab Approval (Hab ID9TX124), Texas Commission on Environmental Quality - EHAP T20M0M02N4N5, Houisiana Department of Environmental Quality Laboratory CertifiSation (- EHAP, HEHAP) L0100c, Houisiana Department of # ealth and # ospitals Drinking Water (- EHAP) CertifiSate - o HA016, Oklahoma Department of Environmental Quality T- I Laboratory ASSreditation Program CertifiSate - o. 102cN16, Arkansas Department of Environmental Quality CertifiSation L2cN06cN. The ASSredited Solumn designates aSSreditation by - NN- EHAC, or z NNnot Sovered under - EHAC sSope of aSSreditation.

These analytiSal results relate to the sample tested. This report may - OT be reproduSed EXCEPT in FUHH without written approval of AnaNab Corp. Unless otherwise speSified, these test results meet the requirements of - EHAC.

RH is the Reporting Himit (sample speSifiS quantitation limit) and is at or above the 8 ethod DeteStion Himit (8 DH). CA3 is ChemiSal AbstraSt 3erviSe number. RH is our Reporting Himit, or 8 inimum Quantitation Hevel. The RH takes into aSSount the Instrument DeteStion Himit (IDH), 8 ethod DeteStion Himit (8 DH), and PraStiSal Quantitation Himit (PQH), and any dilutions and/or SonSentrations performed during sample preparation (EQH). Our analytiSal result must be above this RH before we report a value in the 'Results' Solumn of our report (without a 'J' flag). Otherwise, we report - D (- ot DeteSted above RH), beSause the result is "<" (less than) the number in the RH Solumn. 8 AH is 8 inimum AnalytiSal Hevel and is typiSally from regulatory agenSies. Unless we report a result in the result Solumn, or interfeRenS prevent it, we work to have our RH at or below the 8 AH.

Trey Peery, MA, Project Manager





Quality Control

Report Xo

Account  
**CABC-P**

Cabot Corp.  
Ashlee Green  
P. O. Box , 001  
PampaTX7 9406,

Analytical Set **881821** SM 9221 E + C-2006

**Blank**

| Parameter                       | PrepSet | Reading | MDL  | SQL  | Units      | File       |
|---------------------------------|---------|---------|------|------|------------|------------|
| Fecal Coliform MPN Started<br>L | 8818/ 1 | PASS    | 1.80 | 1.80 | MPN2100 mL | 1/ 0899188 |

**Standard**

| Parameter                       | Sample | Reading   | Known               | Units | Recover% | Limits% | File       |
|---------------------------------|--------|-----------|---------------------|-------|----------|---------|------------|
| Fecal Coliform MPN Started<br>L | 881814 | POSIXI( E | POSIXI( EMPN2100 ml |       | )        |         | 1/ 0899184 |

Analytical Set **881755** SM 5210 B-2011

**Blank**

| Parameter                              | PrepSet | Reading | MDL    | SQL    | Units | File          |
|--|---------|---------|--------|--------|-------|---------------|
| Biochemical Oxygen<br>3 emand BBO3 , V | 8819, , | 1.19    | 0./ 00 | 0., 00 | mgL   | - 1/ 089, 64* |
|  | 8819, , | 1.1,    | 0./ 00 | 0., 00 | mgL   | - 1/ 089, 95/ |

**Duplicate**

| Parameter                              | Sample    | Result | Unknown | Unit | RPD   | Limit% |
|--|-----------|--------|---------|------|-------|--------|
| Biochemical Oxygen<br>3 emand BBO3 , V | 186118*   | 18.,   | / 0.6   | mgL  | 10.9  | *0.0   |
|  | 1861/ , 1 | **00   | */ 90   | mgL  | 0.41* | *0.0   |
|  | 1861*6,   | *.01   | *.61    | mgL  | 18.1  | *0.0   |

**Seed Drop**

| Parameter                              | PrepSet | Reading | MDL    | SQL    | Units | File        |
|--|---------|---------|--------|--------|-------|-------------|
| Biochemical Oxygen<br>3 emand BBO3 , V | 8819, , | 1./ 1   | 0./ 00 | 0., 00 | mgL   | 1/ 089, 645 |
|  | 8819, , | 1./ 1   | 0./ 00 | 0., 00 | mgL   | 1/ 089, 95* |

**Standard**

| Parameter                              | Sample | Reading | Known | Units | Recover% | Limits%    | File          |
|--|--------|---------|-------|-------|----------|------------|---------------|
| Biochemical Oxygen<br>3 emand BBO3 , V | / , 9  | 148     |       | mgL   | 1*0      | 8*.9 ) 116 | - 1/ 089, 64, |
|  | / 5,   | 148     |       | mgL   | 1/ 5     | 8*.9 ) 116 | - 1/ 089, 955 |

Analytical Set **881756** SM 5210 B-2011

**Blank**

| Parameter        | PrepSet | Reading | MDL    | SQL    | Units | File          |
|------------------|---------|---------|--------|--------|-------|---------------|
| BO3 Carbonaceous | 8819, 6 | 1.04    | 0./ 00 | 0., 00 | mgL   | - 1/ 089, 969 |
|                  | 8819, 6 | 1.16    | 0./ 00 | 0., 00 | mgL   | - 1/ 089, 816 |

**Duplicate**

| Parameter        | Sample    | Result | Unknown | Unit | RPD   | Limit% |
|------------------|-----------|--------|---------|------|-------|--------|
| BO3 Carbonaceous | 186118*   | 9./ 9  | 9.59    | mgL  | / .91 | *0.0   |
|                  | 1861/ , * | 9, /   | 9, /    | mgL  | 0     | *0.0   |





# Quality Control

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### Duplicate

| Parameter        | Sample   | Result | Unknown | Unit | RPD | Limit% |
|------------------|----------|--------|---------|------|-----|--------|
| BO3 Carbonaceous | 1861, 19 | N3     | N3      | mg/L |     | *0.0   |

### Seed Drop

| Parameter        | PrepSet | Reading | MDL   | MQL    | Units | File       |
|------------------|---------|---------|-------|--------|-------|------------|
| BO3 Carbonaceous | 8819, 6 | 0.95*   | 0./00 | 0., 00 | mg/L  | 1/089, 968 |
|                  | 8819, 6 | 0.9, 9  | 0./00 | 0., 00 | mg/L  | 1/089, 819 |

### Standard

| Parameter        | Sample | Reading | Known | Units | Recover% | Limits%    | File       |
|------------------|--------|---------|-------|-------|----------|------------|------------|
| BO3 Carbonaceous |        | / 11    | 148   | mg/L  | 109      | 8*.9 ) 116 | 1/089, 964 |
|                  |        | / 06    | 148   | mg/L  | 105      | 8*.9 ) 116 | 1/089, 818 |

Analytical Set **882118**

EPA 350.1 2

### Blank

| Parameter      | PrepSet | Reading | MDL      | MQL   | Units | File      |
|----------------|---------|---------|----------|-------|-------|-----------|
| Ammonia IAs NV | 881948  | N3      | 0.00*, 6 | 0.0/0 | mg/L  | 1/088*/65 |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Ammonia IAs NV | / .0,   | / .00 | mg/L  | 10/      | 40.0 ) 110 | 1/088*/6* |
|                | / .05   | / .00 | mg/L  | 10/      | 40.0 ) 110 | 1/088*/9* |
|                | 1.44    | / .00 | mg/L  | 44.,     | 40.0 ) 110 | 1/088*/8* |
|                | / .08   | / .00 | mg/L  | 105      | 40.0 ) 110 | 1/088*/4/ |
|                | / .05   | / .00 | mg/L  | 10/      | 40.0 ) 110 | 1/088*/46 |
|                | / .10   | / .00 | mg/L  | 10,      | 40.0 ) 110 | 1/088*/48 |

### Duplicate

| Parameter      | Sample  | Result | Unknown | Unit | RPD    | Limit% |
|----------------|---------|--------|---------|------|--------|--------|
| Ammonia IAs NV | 18610*/ | 0.8*9  | 0.85/   | mg/L | 0., 46 | / 0.0  |
|                | 18610** | 0.404  | 0.8, 9  | mg/L | , .84  | / 0.0  |

### ICV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------|---------|-------|-------|----------|------------|-----------|
| Ammonia IAs NV | 1.4/    | / .00 | mg/L  | 46.0     | 40.0 ) 110 | 1/088*/6/ |

### LCS Dup

| Parameter      | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|----------------|---------|-------|-------|-------|------------|------|-------|-------|-------|--------|
| Ammonia IAs NV | 881948  | / ./0 | / .06 | / .00 | 40.0 ) 110 | 110  | 10*   | mg/L  | 6., 9 | / 0.0  |

### Mat. Spike

| Parameter      | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|----------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| Ammonia IAs NV | 18610*/ | / .0* | 0.85/   | / .00 | mg/L  | , 4.5      | 80.0 ) 1/0 | 1/088*/64 |
|                | 18610** | / .16 | 0.8, 9  | / .00 | mg/L  | 6., /      | 80.0 ) 1/0 | 1/088*/9/ |

Analytical Set **882141**

EPA 351.2 2

### Blank

| Parameter               | PrepSet | Reading | MDL    | MQL    | Units | File     |
|-------------------------|---------|---------|--------|--------|-------|----------|
| Xotal Kjeldahl Nitrogen | 881800  | N3      | 0.0141 | 0.0, 0 | mg/L  | 1/088*6/ |

### CCV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------|---------|-------|-------|----------|------------|-----------|
| Xotal Kjeldahl Nitrogen | , .01   | , .00 | mg/L  | 100      | 40.0 ) 110 | 1/088*6/1 |







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### CCV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------|---------|-------|-------|----------|------------|-----------|
| Xotal Kjeldahl Nitrogen | 5.44    | ,.00  | mgL   | 44.8     | 40.0 ) 110 | 1/088*6*1 |
|                         | 5.94    | ,.00  | mgL   | 4.8      | 40.0 ) 110 | 1/088*651 |
|                         | 5.40    | ,.00  | mgL   | 48.0     | 40.0 ) 110 | 1/088*6,1 |
|                         | 5.85    | ,.00  | mgL   | 46.8     | 40.0 ) 110 | 1/088*66/ |
|                         | 5.91    | ,.00  | mgL   | 45./     | 40.0 ) 110 | 1/088*668 |

### Duplicate

| Parameter               | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|-------------------------|---------|--------|---------|------|------|--------|
| Xotal Kjeldahl Nitrogen | 1861/09 | 0.,*9  | 0.,94   | mgL  | 9.,* | /0.0   |
|                         | 1861,*5 | ,.**   | ,.06    | mgL  | ,./0 | /0.0   |

### ICV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------|---------|-------|-------|----------|------------|-----------|
| Xotal Kjeldahl Nitrogen | ,.*0    | ,.00  | mgL   | 106      | 40.0 ) 110 | 1/088*6/0 |

### LCS Dup

| Parameter               | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|-------------------------|---------|------|------|-------|------------|------|-------|-------|------|--------|
| Xotal Kjeldahl Nitrogen | 881800  | ,.5/ | ,./5 | ,.00  | 40.0 ) 110 | 108  | 10,   | mgL   | *,*8 | /0.0   |

### Mat. Spike

| Parameter               | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|-------------------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| Xotal Kjeldahl Nitrogen | 1861/09 | ,.0/  | 0.,94   | ,.00  | mgL   | 88.8       | 80.0 ) 1/0 | 1/088*6/9 |
|                         | 1861,*5 | ,.4*  | ,.06    | 10.0  | mgL   | 8.90       | 80.0 ) 1/0 | 1/088*6*0 |

Analytical Set **882206**

SM 4500-CN<sup>-</sup>E-2011

### Blank

| Parameter    | PrepSet | Reading | MDL     | MQL    | Units | File      |
|--------------|---------|---------|---------|--------|-------|-----------|
| CyanideTotal | 8818/9  | N3      | 0.00114 | 0.00/, | mgL   | 1/088,055 |

### CCV

| Parameter    | Reading | Known | Units | Recover% | Limits%    | File      |
|--------------|---------|-------|-------|----------|------------|-----------|
| CyanideTotal | 0.546   | 0.,00 | mgL   | 44./     | 40.0 ) 110 | 1/088,05* |
|              | 0.545   | 0.,00 | mgL   | 48.8     | 40.0 ) 110 | 1/088,0./ |
|              | 0.54*   | 0.,00 | mgL   | 48.6     | 40.0 ) 110 | 1/088,06/ |
|              | 0.584   | 0.,00 | mgL   | 49.8     | 40.0 ) 110 | 1/088,064 |

### Duplicate

| Parameter    | Sample  | Result | Unknown | Unit | RPD | Limit% |
|--------------|---------|--------|---------|------|-----|--------|
| CyanideTotal | 1861/06 | N3     | N3      | mgL  |     | /0.0   |
|              | 1861/09 | N3     | N3      | mgL  |     | /0.0   |

### ICV

| Parameter    | Reading | Known | Units | Recover% | Limits%    | File      |
|--------------|---------|-------|-------|----------|------------|-----------|
| CyanideTotal | 0./05   | 0./00 | mgL   | 10/      | 40.0 ) 110 | 1/088,05/ |

### LCS Dup

| Parameter    | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|--------------|---------|-------|-------|-------|------------|------|-------|-------|------|--------|
| CyanideTotal | 8818/9  | 0./10 | 0.144 | 0./00 | 40.0 ) 110 | 10,  | 44.,  | mgL   | ,.*8 | /0.0   |

### Mat. Spike

| Parameter    | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |
|--------------|---------|-------|---------|-------|-------|------------|------------|-----------|
| CyanideTotal | 1861/06 | 0.0*8 | N3      | 0.500 | mgL   | 4.,0       | 40.0 ) 110 | 1/088,054 |
|              | 1861/09 | 0.*46 | N3      | 0.500 | mgL   | 44.0       | 40.0 ) 110 | 1/088,0,* |





# Quality Control

Analytical Set **882100**

SM 2540 C-2011

**Blank**

| <u>Parameter</u>        | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|-------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Xotal 3 issolved Solids | 88/ 100        | N3             | , .00      | , .00      | mg $\bar{L}$ | 1/ 088/ 818 |

**ControlBlk**

| <u>Parameter</u>        | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|-------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Xotal 3 issolved Solids | 88/ 100        | 0              |            |            | grams        | 1/ 088/ 80, |

**Duplicate**

| <u>Parameter</u>        | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u>  | <u>RPD</u> | <u>Limit%</u> |
|-------------------------|---------------|---------------|----------------|--------------|------------|---------------|
| Xotal 3 issolved Solids | 18608, 8      | 540           | , *0           | mg $\bar{L}$ | 9.85       | / 0.0         |

**LCS**

| <u>Parameter</u>        | <u>PrepSet</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits</u> | <u>File</u> |
|-------------------------|----------------|----------------|--------------|--------------|-----------------|---------------|-------------|
| Xotal 3 issolved Solids | 88/ 100        | / 0/           | / 00         | mg $\bar{L}$ | 101             | 8, .0 ) 11,   | 1/ 088/ 814 |

**Standard**

| <u>Parameter</u>        | <u>Sample</u> | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------|---------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Xotal 3 issolved Solids |               | 100            | 100          | mg $\bar{L}$ | 100             | 40.0 ) 110     | 1/ 088/ 806 |

Analytical Set **882349**

EPA 1664B (HEM)

**Blank**

| <u>Parameter</u>     | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|----------------------|----------------|----------------|------------|------------|--------------|-------------|
| Oil and Grease DHEMV | 88/ *54        | N3             | 0.805      | 5.00       | mg $\bar{L}$ | 1/ 0889480  |

**ControlBlk**

| <u>Parameter</u>     | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|----------------------|----------------|----------------|------------|------------|--------------|-------------|
| Oil and Grease DHEMV | 88/ *54        | 0.000/         |            |            | grams        | 1/ 0889494  |
|                      | 88/ *54        | 0.0001         |            |            | grams        | 1/ 0888005  |

**LCS Dup**

| <u>Parameter</u>     | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>Known</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|----------------------|----------------|------------|-------------|--------------|----------------|-------------|--------------|--------------|------------|---------------|
| Oil and Grease DHEMV | 88/ *54        | *6.4       | *, .6       | 50.0         | 98.0 ) 115     | 4/ .        | 84.0         | mg $\bar{L}$ | *, 4       | / 0.0         |

**MS**

| <u>Parameter</u>     | <u>Sample</u> | <u>MS</u> | <u>MSD</u> | <u>UNK</u> | <u>Known</u> | <u>Limits</u> | <u>MS%</u> | <u>MSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|----------------------|---------------|-----------|------------|------------|--------------|---------------|------------|-------------|--------------|------------|---------------|
| Oil and Grease DHEMV | 1860910       | 66.4      | 0          | / 5.9      | 50.0         | 98.0 ) 115    | 106        |             | mg $\bar{L}$ |            | / 0.0         |

Analytical Set **882703**

SM 2540 D-2011

**Blank**

| <u>Parameter</u>       | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Xotal Suspended Solids | 88/ 90*        | N3             | /          | /          | mg $\bar{L}$ | 1/ 084581/  |

**ControlBlk**

| <u>Parameter</u>       | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MQL</u> | <u>Units</u> | <u>File</u> |
|------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Xotal Suspended Solids | 88/ 90*        | 0.0001         |            |            | grams        | 1/ 0845811  |

**Duplicate**

| <u>Parameter</u>       | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u>  | <u>RPD</u> | <u>Limit%</u> |
|------------------------|---------------|---------------|----------------|--------------|------------|---------------|
| Xotal Suspended Solids | 186118*       | 19.6          | 18.0           | mg $\bar{L}$ | / .,       | / 0.0         |
|                        | 1861/ , 1     | 5, /          | 558            | mg $\bar{L}$ | 0.884      | / 0.0         |
|                        | 1861/ , /     | 1/ 0          | 1*             | mg $\bar{L}$ | 4, /       | / 0.0         |





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### LCS

| Parameter              | PrepSet | Reading | Known | Units | Recover% | Limits     | File       |
|------------------------|---------|---------|-------|-------|----------|------------|------------|
| Xotal Suspended Solids | 88/ 90* | 54.0    | , 0.0 | mgL   | 48.0     | 40.0 ) 110 | 1/ 084585, |

### Standard

| Parameter              | Sample | Reading | Known | Units | Recover% | Limits%    | File       |
|------------------------|--------|---------|-------|-------|----------|------------|------------|
| Xotal Suspended Solids | 4/ .0  | 100     | 100   | mgL   | 4/ .0    | 40.0 ) 110 | 1/ 0845855 |

Analytical Set **881875**

EPA 300.0 2.1

### AWRL/MRL C

| Parameter              | Reading | Known    | Units | Recover% | Limits%      | File       |
|------------------------|---------|----------|-------|----------|--------------|------------|
| Fluoride               | 0.04*   | 0.100    | mgL   | 4*.0     | , 0.0 ) 1, 0 | 1/ 0898108 |
| Nitrate)Nitrogen Xotal | 0.0/ *9 | 0.0/ / 6 | mgL   | 10,      | 90.0 ) 1*0   | 1/ 0898108 |

### Blank

| Parameter              | PrepSet | Reading  | MDL     | MQL    | Units | File       |
|------------------------|---------|----------|---------|--------|-------|------------|
| Chloride               | 88189,  | 0.0/ 9   | 0.00, * | 0.*00  | mgL   | 1/ 0898109 |
| Fluoride               | 88189,  | N3       | 0.0086* | 0.0, 0 | mgL   | 1/ 0898109 |
| Nitrate)Nitrogen Xotal | 88189,  | 0.00/ 4* | 0.0018, | 0.0/ 0 | mgL   | 1/ 0898109 |
| Sulfate                | 88189,  | N3       | 0.0099, | 0.*00  | mgL   | 1/ 0898109 |

### CCV

| Parameter              | Reading | Known | Units | Recover% | Limits%    | File        |
|------------------------|---------|-------|-------|----------|------------|-------------|
| Chloride               | 10.1    | 10.0  | mgL   | 101      | 40.0 ) 110 | 1/ 0898105  |
|                        | 10.0    | 10.0  | mgL   | 100      | 40.0 ) 110 | 1/ 089811*  |
|                        | 10.1    | 10.0  | mgL   | 101      | 40.0 ) 110 | 1/ 0898118  |
|                        | 10.0    | 10.0  | mgL   | 100      | 40.0 ) 110 | 1/ 08981/ 8 |
|                        | 10.0    | 10.0  | mgL   | 100      | 40.0 ) 110 | 1/ 08981/ 4 |
| Fluoride               | 10.5    | 10.0  | mgL   | 105      | 40.0 ) 110 | 1/ 0898105  |
|                        | 10.*    | 10.0  | mgL   | 10*      | 40.0 ) 110 | 1/ 089811*  |
|                        | 10.5    | 10.0  | mgL   | 105      | 40.0 ) 110 | 1/ 0898118  |
|                        | 10.*    | 10.0  | mgL   | 10*      | 40.0 ) 110 | 1/ 08981/ 8 |
|                        | 10.*    | 10.0  | mgL   | 10*      | 40.0 ) 110 | 1/ 08981/ 4 |
| Nitrate)Nitrogen Xotal | / . *5  | / / 6 | mgL   | 105      | 40.0 ) 110 | 1/ 0898105  |
|                        | / . *0  | / / 6 | mgL   | 10/      | 40.0 ) 110 | 1/ 089811*  |
|                        | / . *6  | / / 6 | mgL   | 105      | 40.0 ) 110 | 1/ 0898118  |
|                        | / . *1  | / / 6 | mgL   | 10/      | 40.0 ) 110 | 1/ 08981/ 8 |
|                        | / . *1  | / / 6 | mgL   | 10/      | 40.0 ) 110 | 1/ 08981/ 4 |
| Sulfate                | 10.*    | 10.0  | mgL   | 10*      | 40.0 ) 110 | 1/ 0898105  |
|                        | 10.1    | 10.0  | mgL   | 101      | 40.0 ) 110 | 1/ 089811*  |
|                        | 10./    | 10.0  | mgL   | 10/      | 40.0 ) 110 | 1/ 0898118  |
|                        | 10.*    | 10.0  | mgL   | 10*      | 40.0 ) 110 | 1/ 08981/ 8 |
|                        | 10.*    | 10.0  | mgL   | 10*      | 40.0 ) 110 | 1/ 08981/ 4 |

### LCS Dup

| Parameter              | PrepSet | LCS   | LCSD  | Known | Limits%     | LCS% | LCSD% | Units | RPD    | Limit% |
|------------------------|---------|-------|-------|-------|-------------|------|-------|-------|--------|--------|
| Chloride               | 88189,  | 5.8,  | 5.88  | , .00 | 8, .0 ) 110 | 49.0 | 49.6  | mgL   | 0.619  | / 0.0  |
| Fluoride               | 88189,  | , / 0 | , / * | , .00 | 88.0 ) 110  | 105  | 10,   | mgL   | 0., 9, | / 0.0  |
| Nitrate)Nitrogen Xotal | 88189,  | 1.16  | 1.19  | 1.1*  | 88.0 ) 110  | 10*  | 105   | mgL   | 0.8, 8 | / 0.0  |
| Sulfate                | 88189,  | 5.41  | 5.4,  | , .00 | 88.0 ) 110  | 48./ | 44.0  | mgL   | 0.811  | / 0.0  |

### MSD

| Parameter | Sample | MS | MSD | UNK | Known | Limits | MS% | MSD% | Units | RPD | Limit% |
|-----------|--------|----|-----|-----|-------|--------|-----|------|-------|-----|--------|
|-----------|--------|----|-----|-----|-------|--------|-----|------|-------|-----|--------|





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### MSD

| Parameter              | Sample   | MS    | MSD   | UNK   | Known | Limits    | MS%    | MSD%   | Units | RPD   | Limit% |
|------------------------|----------|-------|-------|-------|-------|-----------|--------|--------|-------|-------|--------|
| Chloride               | 1860880  | 16.1  | 16./  | 9.5,  | 10.0  | 80.0) 1/0 | 86.,   | 89.,   | mg/L  | 1.1,  | /0.0   |
| Fluoride               | 1860880  | 4.41  | 4.8*  | 0.110 | 10.0  | 80.0) 1/0 | 48.0   | 49./   | mg/L  | 0.8/0 | /0.0   |
| Nitrate)Nitrogen Xotal | 1860880  | /. *1 | /.51  | 0.155 | /. /6 | 80.0) 1/0 | 4, .8  | 100    | mg/L  | 5., 1 | /0.0   |
| Sulfate                | 1860880  | *, .5 | *, .9 | / 8.8 | 10.0  | 80.0) 1/0 | 66.0 - | 64.0 - | mg/L  | 5.55  | /0.0   |
| Chloride               | 18604, 0 | , 1./ | , 0.8 | 51.1  | 10.0  | 80.0) 1/0 | 101    | 49.0   | mg/L  | 5.05  | /0.0   |
| Fluoride               | 18604, 0 | 4.80  | 4.95  | N3    | 10.0  | 80.0) 1/0 | 48.0   | 49.5   | mg/L  | 0.615 | /0.0   |
| Nitrate)Nitrogen Xotal | 18604, 0 | /. /5 | /.19  | N3    | /. /6 | 80.0) 1/0 | 44.1   | 46.0   | mg/L  | *.19  | /0.0   |
| Sulfate                | 18604, 0 | 1, .6 | 1, /  | */ *  | 10.0  | 80.0) 1/0 | 1/5 -  | 1/0    | mg/L  | */4   | /0.0   |

Analytical Set **881848**

SM 3500-Cr B-2011

### Blank

| Parameter           | PrepSet | Reading | MDL     | MQL  | Units | File       |
|---------------------|---------|---------|---------|------|-------|------------|
| Hexavalent Chromium | 881858  | N3      | 0., , 0 | *.00 | ug/L  | 1/08996, 6 |
|                     | 881858  | N3      | 0., , 0 | *.00 | ug/L  | 1/089966,  |

### CCV

| Parameter           | Reading | Known | Units | Recover% | Limits%   | File       |
|---------------------|---------|-------|-------|----------|-----------|------------|
| Hexavalent Chromium | 94./    | 80.0  | ug/L  | 44.0     | 40.0) 110 | 1/08996, 9 |
|                     | 94.5    | 80.0  | ug/L  | 44./     | 40.0) 110 | 1/0899666  |

### LCS Dup

| Parameter           | PrepSet | LCS  | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD   | Limit% |
|---------------------|---------|------|------|-------|------------|------|-------|-------|-------|--------|
| Hexavalent Chromium | 881858  | 98.4 | 94.5 | 80.0  | 8, .0) 11, | 48.6 | 44./  | ug/L  | 0.6*/ | 1, .0  |

### MSD

| Parameter           | Sample  | MS   | MSD  | UNK | Known | Limits    | MS%  | MSD% | Units | RPD  | Limit% |
|---------------------|---------|------|------|-----|-------|-----------|------|------|-------|------|--------|
| Hexavalent Chromium | 186118* | 69.1 | 64.6 | N3  | 80.0  | 90.0) 1*0 | 8*.4 | 89.0 | ug/L  | *.66 | /0.0   |

Analytical Set **882183**

EPA 245.1 3

### Blank

| Parameter      | PrepSet | Reading | MDL   | MQL   | Units | File      |
|----------------|---------|---------|-------|-------|-------|-----------|
| MercuryIXtotal | 88185*  | N3      | 0.09/ | 0.100 | ug/L  | 1/0885*65 |

### CCV

| Parameter      | Reading | Known  | Units | Recover% | Limits%   | File       |
|----------------|---------|--------|-------|----------|-----------|------------|
| MercuryIXtotal | 5.4,    | , .000 | ug/L  | 44.0     | 40.0) 110 | 1/0885*, , |
|                | , .06   | , .000 | ug/L  | 101      | 40.0) 110 | 1/0885*66  |
|                | 5.44    | , .000 | ug/L  | 44.8     | 40.0) 110 | 1/0885*99  |
|                | , .05   | , .000 | ug/L  | 101      | 40.0) 110 | 1/0885*88  |

### ICL

| Parameter      | Reading | Known | Units | Recover% | Limits%   | File       |
|----------------|---------|-------|-------|----------|-----------|------------|
| MercuryIXtotal | 14.,    | /0.00 | ug/L  | 49.,     | 40.0) 110 | 1/0885*, 5 |

### ICV

| Parameter      | Reading | Known  | Units | Recover% | Limits%   | File       |
|----------------|---------|--------|-------|----------|-----------|------------|
| MercuryIXtotal | , .10   | , .000 | ug/L  | 10/      | 40.0) 110 | 1/0885*, * |

### LCS Dup

| Parameter      | PrepSet | LCS   | LCSD  | Known | Limits%    | LCS% | LCSD% | Units | RPD    | Limit% |
|----------------|---------|-------|-------|-------|------------|------|-------|-------|--------|--------|
| MercuryIXtotal | 88185*  | , / * | , / 0 | , .00 | 8, .0) 11, | 10,  | 105   | ug/L  | 0., 9, | /0.0   |





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## MSD

| Parameter      | Sample  | MS   | MSD  | UNK | Known | Limits    | MS% | MSD% | Units | RPD   | Limit% |
|----------------|---------|------|------|-----|-------|-----------|-----|------|-------|-------|--------|
| MercuryTXtotal | 1860508 | 4.*  | 4.*  | N3  | 10.0  | 90.0) 1*0 | 4*0 | 4*/  | ugL   | 0/ 1, | 15.0   |
|                | 1860459 | 10.5 | 10.5 | N3  | 10.0  | 90.0) 1*0 | 105 | 105  | ugL   | 0     | 15.0   |

Analytical Set **882357**

EPA 200.7 4.4

## CCV

| Parameter            | Reading | Known | Units | Recover% | Limits%   | File        |
|----------------------|---------|-------|-------|----------|-----------|-------------|
| 3 issolved Calcium   | /, .0   | /, .0 | mgL   | 100      | 40.0) 110 | 1/0888195   |
|                      | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/088818,   |
|                      | /, .0   | /, .0 | mgL   | 100      | 40.0) 110 | 1/0888146   |
|                      | /, .1   | /, .0 | mgL   | 100      | 40.0) 110 | 1/0888/ 09  |
|                      | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/0888/ 16  |
|                      | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/0888/ / 0 |
| 3 issolved Magnesium | /, ./   | /, .0 | mgL   | 101      | 40.0) 110 | 1/0888195   |
|                      | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/088818,   |
|                      | /, .1   | /, .0 | mgL   | 100      | 40.0) 110 | 1/0888146   |
|                      | /, ./   | /, .0 | mgL   | 101      | 40.0) 110 | 1/0888/ 09  |
|                      | /, .0   | /, .0 | mgL   | 100      | 40.0) 110 | 1/0888/ 16  |
|                      | /, .0   | /, .0 | mgL   | 100      | 40.0) 110 | 1/0888/ / 0 |
| 3 issolved Sodium    | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/0888195   |
|                      | / 5.9   | /, .0 | mgL   | 48.8     | 40.0) 110 | 1/088818,   |
|                      | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/0888146   |
|                      | / 5.9   | /, .0 | mgL   | 48.8     | 40.0) 110 | 1/0888/ 09  |
|                      | / 5.4   | /, .0 | mgL   | 44.6     | 40.0) 110 | 1/0888/ 16  |
|                      | / 5.8   | /, .0 | mgL   | 44./     | 40.0) 110 | 1/0888/ / 0 |

## Dir. SPKD

| Parameter            | Sample  | DSPK  | DSPKD | UNK   | Known | Limits%           | DSPK%   | DSPKD%  | Units | RPD    | Limit% |
|----------------------|---------|-------|-------|-------|-------|-------------------|---------|---------|-------|--------|--------|
| 3 issolved Calcium   | 186118* | 6, .5 | 65.*  | 14.,  | , 0.0 | 9, .0) 1/,        | 41.8    | 84.6    | mgL   | 1.90   | / 0.0  |
| 3 issolved Magnesium | 186118* | , 0.* | 54.6  | / / 9 | , 0.0 | 9, .0) 1/,        | 46.1    | 45.9    | mgL   | 1.50   | / 0.0  |
| 3 issolved Sodium    | 186118* | 1*,   | 1**   | 41.,  | , 0.0 | 9, .0) 1/,        | 89.0    | 8*0     | mgL   | 1.54   | / 0.0  |
| 3 issolved Calcium   | 1861*94 | *5.1  | *5.*  | / 4.* | , .00 | 9, .0) 1/,        | 46.0    | 100     | mgL   | 0., 8, | / 0.0  |
| 3 issolved Magnesium | 1861*94 | 15.,  | 15.6  | 4., 5 | , .00 | 9, .0) 1/,        | 44./    | 101     | mgL   | 0.689  | / 0.0  |
| 3 issolved Sodium    | 1861*94 | *04   | *11   | *0*   | , .00 | 9, .0) 1/, - 1/ 0 | 160 -   | 160 -   | mgL   | 0.65,  | / 0.0  |
| 3 issolved Calcium   | 186180* | 10/   | 101   | 61./  | , 0.0 | 9, .0) 1/,        | 81.6    | 94.6    | mgL   | 0.48,  | / 0.0  |
| 3 issolved Magnesium | 186180* | 64.4  | 68.8  | / 1.4 | , 0.0 | 9, .0) 1/,        | 46.0    | 4*8     | mgL   | 1., 4  | / 0.0  |
| 3 issolved Sodium    | 186180* | *9*   | *65   | ***   | , 0.0 | 9, .0) 1/, - 80.0 | 6/ .0 - | 6/ .0 - | mgL   | / .55  | / 0.0  |

## Direct SPK

| Parameter            | Sample  | DSPK  | UNK   | Known | Limits%    | DSPK% | Units     |
|----------------------|---------|-------|-------|-------|------------|-------|-----------|
| 3 issolved Calcium   | 186118* | 6, .5 | 14.,  | , 0.0 | 9, .0) 1/, | 41.8  | mgL / 0.0 |
| 3 issolved Magnesium | 186118* | , 0.* | / / 9 | , 0.0 | 9, .0) 1/, | 46.1  | mgL / 0.0 |
| 3 issolved Sodium    | 186118* | 1*,   | 41.,  | , 0.0 | 9, .0) 1/, | 89.0  | mgL / 0.0 |
| 3 issolved Calcium   | 1861*94 | *5.1  | / 4.* | , .00 | 9, .0) 1/, | 46.0  | mgL / 0.0 |
| 3 issolved Magnesium | 1861*94 | 15.,  | 4., 5 | , .00 | 9, .0) 1/, | 44./  | mgL / 0.0 |
| 3 issolved Sodium    | 1861*94 | *04   | *0*   | , .00 | 9, .0) 1/, | 1/ 0  | mgL / 0.0 |
| 3 issolved Calcium   | 186180* | 10/   | 61./  | , 0.0 | 9, .0) 1/, | 81.6  | mgL / 0.0 |
| 3 issolved Magnesium | 186180* | 64.4  | / 1.4 | , 0.0 | 9, .0) 1/, | 46.0  | mgL / 0.0 |
| 3 issolved Sodium    | 186180* | *9*   | ***   | , 0.0 | 9, .0) 1/, | 80.0  | mgL / 0.0 |





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### ICL

| Parameter            | Reading | Known | Units        | Recover% | Limits%     | File       |
|----------------------|---------|-------|--------------|----------|-------------|------------|
| 3 issolved Calcium   | , 0./   | , 0.0 | mg $\bar{L}$ | 100      | 4, .0 ) 10, | 1/ 0888164 |
| 3 issolved Magnesium | , 0.1   | , 0.0 | mg $\bar{L}$ | 100      | 4, .0 ) 10, | 1/ 0888164 |
| 3 issolved Sodium    | , 0.5   | , 0.0 | mg $\bar{L}$ | 101      | 4, .0 ) 10, | 1/ 0888164 |

### ICV

| Parameter            | Reading | Known  | Units        | Recover% | Limits%    | File       |
|----------------------|---------|--------|--------------|----------|------------|------------|
| 3 issolved Calcium   | / 5.4   | / , .0 | mg $\bar{L}$ | 44.6     | 40.0 ) 110 | 1/ 088819* |
| 3 issolved Magnesium | / 5.4   | / , .0 | mg $\bar{L}$ | 44.6     | 40.0 ) 110 | 1/ 088819* |
| 3 issolved Sodium    | / 5.6   | / , .0 | mg $\bar{L}$ | 48.5     | 40.0 ) 110 | 1/ 088819* |

### LDR

| Parameter            | Reading | Known | Units        | Recover% | Limits%    | File       |
|----------------------|---------|-------|--------------|----------|------------|------------|
| 3 issolved Calcium   | 100     | 100   | mg $\bar{L}$ | 100      | 40.0 ) 110 | 1/ 0888190 |
| 3 issolved Magnesium | 101     | 100   | mg $\bar{L}$ | 101      | 40.0 ) 110 | 1/ 0888190 |
| 3 issolved Sodium    | 110     | 100   | mg $\bar{L}$ | 110      | 40.0 ) 110 | 1/ 0888190 |

Analytical Set **882469**

**SM 5310 C-2011**

### AWRL/MRL C

| Parameter            | Reading | Known | Units        | Recover% | Limits%      | File       |
|----------------------|---------|-------|--------------|----------|--------------|------------|
| Xotal Organic Carbon | 1., 8   | / .00 | mg $\bar{L}$ | 94.0     | , 0.0 ) 1, 0 | 1/ 0840810 |

### Blank

| Parameter            | PrepSet | Reading | MDL    | SQL    | Units        | File        |
|----------------------|---------|---------|--------|--------|--------------|-------------|
| Xotal Organic Carbon | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 0840808  |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 0840804  |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 08408/ 5 |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 084085/  |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 0840860  |

### CCB

| Parameter            | PrepSet | Reading | MDL    | SQL    | Units        | File        |
|----------------------|---------|---------|--------|--------|--------------|-------------|
| Xotal Organic Carbon | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 084080/  |
|                      | 88/ 564 | 0.068*  | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 08408*5  |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 0840850  |
|                      | 88/ 564 | 0.091/  | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 08408, 0 |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 08408, 8 |
|                      | 88/ 564 | N3      | 0.0618 | 0., 00 | mg $\bar{L}$ | 1/ 084086,  |

### CCV

| Parameter            | Reading | Known | Units        | Recover% | Limits%    | File        |
|----------------------|---------|-------|--------------|----------|------------|-------------|
| Xotal Organic Carbon | 4.6,    | 10.0  | mg $\bar{L}$ | 46.,     | 40.0 ) 110 | 1/ 084080,  |
|                      | 4.4/    | 10.0  | mg $\bar{L}$ | 44./     | 40.0 ) 110 | 1/ 08408/ 6 |
|                      | 4.84    | 10.0  | mg $\bar{L}$ | 48.4     | 40.0 ) 110 | 1/ 08408*,  |
|                      | 4.64    | 10.0  | mg $\bar{L}$ | 46.4     | 40.0 ) 110 | 1/ 0840851  |
|                      | 4.68    | 10.0  | mg $\bar{L}$ | 46.8     | 40.0 ) 110 | 1/ 08408, 1 |
|                      | 4.66    | 10.0  | mg $\bar{L}$ | 46.6     | 40.0 ) 110 | 1/ 08408, 4 |
|                      | 4/ 1    | 10.0  | mg $\bar{L}$ | 4/ .1    | 40.0 ) 110 | 1/ 0840866  |

### ICL

| Parameter            | Reading | Known | Units        | Recover% | Limits%    | File        |
|----------------------|---------|-------|--------------|----------|------------|-------------|
| Xotal Organic Carbon | 14./    | / 0.0 | mg $\bar{L}$ | 46.0     | 40.0 ) 110 | 1/ 0840805  |
|                      | / 0.1   | / 0.0 | mg $\bar{L}$ | 100      | 40.0 ) 110 | 1/ 08408/ / |





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### ICV

| Parameter            | Reading | Known | Units | Recover% | Limits%    | File        |
|----------------------|---------|-------|-------|----------|------------|-------------|
| Xotal Organic Carbon | 4/ 4    | 10.0  | mgL   | 4/ .4    | 40.0 ) 110 | 1/ 0840806  |
|                      | 4.60    | 10.0  | mgL   | 46.0     | 40.0 ) 110 | 1/ 08408/ * |

### LCS

| Parameter            | PrepSet | Reading | Known | Units | Recover% | Limits     | File        |
|----------------------|---------|---------|-------|-------|----------|------------|-------------|
| Xotal Organic Carbon | 88/ 564 | 5.65    | .00   | mgL   | 4/ .8    | 85.9 ) 10, | 1/ 0840809  |
|                      | 88/ 564 | 5.8*    | .00   | mgL   | 46.6     | 85.9 ) 10, | 1/ 08408/ , |
|                      | 88/ 564 | 5.65    | .00   | mgL   | 4/ .8    | 85.9 ) 10, | 1/ 084085*  |
|                      | 88/ 564 | 5., 5   | .00   | mgL   | 40.8     | 85.9 ) 10, | 1/ 0840861  |

### MSD

| Parameter            | Sample   | MS    | MSD   | UNK   | Known | Limits     | MS%   | MSD% | Units | RPD   | Limit% |
|----------------------|----------|-------|-------|-------|-------|------------|-------|------|-------|-------|--------|
| Xotal Organic Carbon | 1860668  | 1/ .5 | 1/ .9 | / .58 | 10.0  | 40.* ) 108 | 44./  | 10/  | mgL   | / .48 | / 0.0  |
|                      | 1860688  | 1/ .8 | 1/ .6 | / .49 | 10.0  | 40.* ) 108 | 48.*  | 46.* | mgL   | / .06 | / 0.0  |
|                      | 186045/  | 1/ ., | 1/ ./ | / .58 | 10.0  | 40.* ) 108 | 100   | 49./ | mgL   | *.05  | / 0.0  |
|                      | 1861/ 1, | 15.*  | 15.*  | 5.69  | 10.0  | 40.* ) 108 | 46.*  | 46.* | mgL   | 0     | / 0.0  |
|                      | 1861/ 91 | 1/ .9 | 1/ .8 | *.1*  | 10.0  | 40.* ) 108 | 4., 9 | 46.9 | mgL   | 1.05  | / 0.0  |

### Standard

| Parameter            | Sample | Reading | Known | Units | Recover%   | Limits%    | File |
|----------------------|--------|---------|-------|-------|------------|------------|------|
| Xotal Organic Carbon | 58.,   | .00     | mgL   | 49.0  | 40.0 ) 110 | 1/ 084080* |      |

Analytical Set **882488**

EPA 200.8 5.4

### Blank

| Parameter       | PrepSet | Reading   | MDL              | MQL    | Units | File        |
|-----------------|---------|-----------|------------------|--------|-------|-------------|
| AluminumTXotal  | 88/ 066 | 0.005, 5  | 0.00/ ,          | 0.00,  | mgL   | 1/ 08416/ , |
| AntimonyTXotal  | 88/ 066 | N3        | 0.000*44         | 0.001  | mgL   | 1/ 08416/ , |
| ArsenicTXotal   | 88/ 066 | 0.0005/ * | 0.000/ ,         | 0.000, | mgL   | 1/ 08416/ , |
| BariumTXotal    | 88/ 066 | N3        | 0.00/ **         | 0.00*  | mgL   | 1/ 08416/ , |
| BerylliumTXotal | 88/ 066 | 0.000106  | 0.000060,        | 0.000, | mgL   | 1/ 08416/ , |
| CadmiumTXotal   | 88/ 066 | N3        | 0.00004,         | 0.000/ | mgL   | 1/ 08416/ , |
| ChromiumTXotal  | 88/ 066 | 0.000, 84 | 0.0000,          | 0.000, | mgL   | 1/ 08416/ , |
| CopperTXotal    | 88/ 066 | N3        | 0.000,           | 0.001  | mgL   | 1/ 08416/ , |
| LeadTXotal      | 88/ 066 | N3        | 0.000/ ,         | 0.000, | mgL   | 1/ 08416/ , |
| NickelTXotal    | 88/ 066 | N3        | 0.000,           | 0.001  | mgL   | 1/ 08416/ , |
| SeleniumTXotal  | 88/ 066 | 0.0018,   | 0.0009/ 8        | 0.001  | mgL   | 1/ 08416/ , |
| SilverTXotal    | 88/ 066 | N3        | 0.00006/ 80.000/ |        | mgL   | 1/ 08416/ , |
| XhalliumTXotal  | 88/ 066 | N3        | 0.000/ ,         | 0.000, | mgL   | 1/ 08416/ , |
| ZincTXotal      | 88/ 066 | N3        | 0.00/ ,          | 0.00,  | mgL   | 1/ 08416/ , |

### CCV

| Parameter      | Reading | Known | Units | Recover% | Limits%    | File        |
|----------------|---------|-------|-------|----------|------------|-------------|
| AluminumTXotal | 0.0, 1/ | 0.0,  | mgL   | 10/      | 40.0 ) 110 | 1/ 0841618  |
|                | 0.0, 0  | 0.0,  | mgL   | 100      | 40.0 ) 110 | 1/ 08416/ 8 |
|                | 0.0549  | 0.0,  | mgL   | 44.5     | 40.0 ) 110 | 1/ 08416*4  |
|                | 0.0, 04 | 0.0,  | mgL   | 10/      | 40.0 ) 110 | 1/ 08416, 0 |
|                | 0.0549  | 0.0,  | mgL   | 44.5     | 40.0 ) 110 | 1/ 0841660  |
|                | 0.054/  | 0.0,  | mgL   | 48.5     | 40.0 ) 110 | 1/ 0841691  |
| AntimonyTXotal | 0.054,  | 0.0,  | mgL   | 44.0     | 40.0 ) 110 | 1/ 0841618  |
|                | 0.0584  | 0.0,  | mgL   | 49.8     | 40.0 ) 110 | 1/ 08416/ 8 |
|                | 0.0596  | 0.0,  | mgL   | 4, ./    | 40.0 ) 110 | 1/ 08416*4  |





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## CCV

| Parameter        | Reading  | Known | Units | Recover% | Limits%    | File       |
|------------------|----------|-------|-------|----------|------------|------------|
| AntimonyTXtotal  | 0.0589   | 0.0,  | mg/L  | 49.5     | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.0, 01  | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/0841691  |
|                  | 0.054    | 0.0,  | mg/L  | 48.0     | 40.0 ) 110 | 1/0841681  |
| ArsenicTXtotal   | 0.0541   | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/0841618  |
|                  | 0.0, 01  | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/08416/ 8 |
|                  | 0.0569   | 0.0,  | mg/L  | 4*.5     | 40.0 ) 110 | 1/08416*4  |
|                  | 0.054*   | 0.0,  | mg/L  | 48.6     | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.0544   | 0.0,  | mg/L  | 44.8     | 40.0 ) 110 | 1/0841660  |
|                  | 0.05, 8  | 0.0,  | mg/L  | 41.6     | 40.0 ) 110 | 1/0841691  |
|                  | 0.0544   | 0.0,  | mg/L  | 44.8     | 40.0 ) 110 | 1/0841681  |
|                  | 0.05, 5  | 0.0,  | mg/L  | 40.8     | 40.0 ) 110 | 1/084164/  |
|                  | 0.056/   | 0.0,  | mg/L  | 4/ .5    | 40.0 ) 110 | 1/084190*  |
|                  | 0.058, 8 | 0.0,  | mg/L  | 49.0     | 40.0 ) 110 | 1/0841618  |
| BariumTXtotal    | 0.058    | 0.0,  | mg/L  | 46.0     | 40.0 ) 110 | 1/08416/ 8 |
|                  | 0.059,   | 0.0,  | mg/L  | 4, .0    | 40.0 ) 110 | 1/08416*4  |
|                  | 0.058    | 0.0,  | mg/L  | 46.0     | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.0598   | 0.0,  | mg/L  | 4, .6    | 40.0 ) 110 | 1/0841660  |
|                  | 0.059/   | 0.0,  | mg/L  | 45.5     | 40.0 ) 110 | 1/0841691  |
|                  | 0.0591   | 0.0,  | mg/L  | 45./     | 40.0 ) 110 | 1/0841681  |
|                  | 0.056,   | 0.0,  | mg/L  | 4*.0     | 40.0 ) 110 | 1/084164/  |
|                  | 0.0568   | 0.0,  | mg/L  | 4*.6     | 40.0 ) 110 | 1/084190*  |
|                  | 0.058/   | 0.0,  | mg/L  | 46.5     | 40.0 ) 110 | 1/0841618  |
|                  | 0.054,   | 0.0,  | mg/L  | 44.0     | 40.0 ) 110 | 1/08416/ 8 |
| BerylliumTXtotal | 0.058    | 0.0,  | mg/L  | 46.0     | 40.0 ) 110 | 1/08416*4  |
|                  | 0.0541   | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.054    | 0.0,  | mg/L  | 48.0     | 40.0 ) 110 | 1/0841660  |
|                  | 0.0585   | 0.0,  | mg/L  | 46.8     | 40.0 ) 110 | 1/0841691  |
|                  | 0.058,   | 0.0,  | mg/L  | 49.0     | 40.0 ) 110 | 1/0841681  |
|                  | 0.0585   | 0.0,  | mg/L  | 46.8     | 40.0 ) 110 | 1/0841618  |
|                  | 0.054*   | 0.0,  | mg/L  | 48.6     | 40.0 ) 110 | 1/08416/ 8 |
|                  | 0.0585   | 0.0,  | mg/L  | 46.8     | 40.0 ) 110 | 1/08416*4  |
|                  | 0.0541   | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.0541   | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/0841660  |
| ChromiumTXtotal  | 0.0586   | 0.0,  | mg/L  | 49./     | 40.0 ) 110 | 1/0841691  |
|                  | 0.0541   | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/0841681  |
|                  | 0.0, 0*  | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/0841618  |
|                  | 0.0, 08  | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/08416/ 8 |
|                  | 0.0, 01  | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/08416*4  |
|                  | 0.0, 06  | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.0, 11  | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/0841660  |
|                  | 0.0, 0*  | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/0841691  |
|                  | 0.0, 0*  | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/0841681  |
|                  | 0.0549   | 0.0,  | mg/L  | 44.5     | 40.0 ) 110 | 1/084164/  |
| CopperTXtotal    | 0.054*   | 0.0,  | mg/L  | 48.6     | 40.0 ) 110 | 1/084190*  |
|                  | 0.0599   | 0.0,  | mg/L  | 4, .5    | 40.0 ) 110 | 1/0841618  |
|                  | 0.0564   | 0.0,  | mg/L  | 4*.8     | 40.0 ) 110 | 1/08416/ 8 |
|                  | 0.0594   | 0.0,  | mg/L  | 4, .8    | 40.0 ) 110 | 1/08416*4  |
|                  | 0.0598   | 0.0,  | mg/L  | 4, .6    | 40.0 ) 110 | 1/08416, 0 |
|                  | 0.0598   | 0.0,  | mg/L  | 4, .6    | 40.0 ) 110 | 1/0841660  |







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## CCV

| Parameter       | Reading | Known | Units | Recover% | Limits%    | File        |
|-----------------|---------|-------|-------|----------|------------|-------------|
| CopperTXtotal   | 0.0561  | 0.0,  | mg/L  | 4/ .     | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.056   | 0.0,  | mg/L  | 4/ .0    | 40.0 ) 110 | 1/ 0841681  |
| LeadTXtotal     | 0.0, 1  | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 0841618  |
|                 | 0.0, 11 | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 08416/ 8 |
|                 | 0.0548  | 0.0,  | mg/L  | 44.6     | 40.0 ) 110 | 1/ 08416*4  |
|                 | 0.0, 08 | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 08416, 0 |
|                 | 0.0, 04 | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.0, 06 | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.0, 1  | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 0841681  |
|                 | 0.0548  | 0.0,  | mg/L  | 44.6     | 40.0 ) 110 | 1/ 084164/  |
|                 | 0.0, 01 | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/ 084190*  |
|                 | 0.0, 0  | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/ 0841618  |
| NickelTXtotal   | 0.0, 09 | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/ 08416/ 8 |
|                 | 0.0, 0/ | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/ 08416*4  |
|                 | 0.0, 0/ | 0.0,  | mg/L  | 100      | 40.0 ) 110 | 1/ 08416, 0 |
|                 | 0.0, 08 | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.054,  | 0.0,  | mg/L  | 44.0     | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.054*  | 0.0,  | mg/L  | 48.6     | 40.0 ) 110 | 1/ 0841681  |
|                 | 0.054,  | 0.0,  | mg/L  | 44.0     | 40.0 ) 110 | 1/ 084164/  |
|                 | 0.0541  | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/ 084190*  |
|                 | 0.0, 1* | 0.0,  | mg/L  | 10*      | 40.0 ) 110 | 1/ 0841618  |
|                 | 0.0, *6 | 0.0,  | mg/L  | 109      | 40.0 ) 110 | 1/ 08416/ 8 |
| SeleniumTXtotal | 0.0591  | 0.0,  | mg/L  | 45./     | 40.0 ) 110 | 1/ 08416*4  |
|                 | 0.0, 18 | 0.0,  | mg/L  | 105      | 40.0 ) 110 | 1/ 08416, 0 |
|                 | 0.0595  | 0.0,  | mg/L  | 45.8     | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.0595  | 0.0,  | mg/L  | 45.8     | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.059*  | 0.0,  | mg/L  | 45.6     | 40.0 ) 110 | 1/ 0841618  |
|                 | 0.059,  | 0.0,  | mg/L  | 4, .0    | 40.0 ) 110 | 1/ 08416/ 8 |
|                 | 0.059/  | 0.0,  | mg/L  | 45.5     | 40.0 ) 110 | 1/ 08416*4  |
| SilverTXtotal   | 0.0599  | 0.0,  | mg/L  | 4, .5    | 40.0 ) 110 | 1/ 08416, 0 |
|                 | 0.0594  | 0.0,  | mg/L  | 4, 8     | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.0566  | 0.0,  | mg/L  | 4*/.     | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.0564  | 0.0,  | mg/L  | 4*.8     | 40.0 ) 110 | 1/ 0841681  |
|                 | 0.056/  | 0.0,  | mg/L  | 4/ .5    | 40.0 ) 110 | 1/ 084164/  |
|                 | 0.056/  | 0.0,  | mg/L  | 4/ .5    | 40.0 ) 110 | 1/ 084190*  |
|                 | 0.0, 06 | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/ 0841618  |
|                 | 0.0, 1  | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 08416/ 8 |
|                 | 0.0, 0, | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/ 08416*4  |
|                 | 0.0, 1  | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 08416, 0 |
| XhalliumTXtotal | 0.0, 08 | 0.0,  | mg/L  | 10/      | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.0, 06 | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.0, 09 | 0.0,  | mg/L  | 101      | 40.0 ) 110 | 1/ 0841681  |
|                 | 0.0541  | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/ 0841618  |
|                 | 0.054/  | 0.0,  | mg/L  | 48.5     | 40.0 ) 110 | 1/ 08416/ 8 |
|                 | 0.058,  | 0.0,  | mg/L  | 49.0     | 40.0 ) 110 | 1/ 08416*4  |
|                 | 0.0541  | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/ 08416, 0 |
|                 | 0.058/  | 0.0,  | mg/L  | 46.5     | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.059,  | 0.0,  | mg/L  | 4, .0    | 40.0 ) 110 | 1/ 0841691  |
|                 | 0.058,  | 0.0,  | mg/L  | 49.0     | 40.0 ) 110 | 1/ 0841681  |
| ZincTXtotal     | 0.0541  | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/ 0841618  |
|                 | 0.054/  | 0.0,  | mg/L  | 48.5     | 40.0 ) 110 | 1/ 08416/ 8 |
|                 | 0.058,  | 0.0,  | mg/L  | 49.0     | 40.0 ) 110 | 1/ 08416*4  |
|                 | 0.0541  | 0.0,  | mg/L  | 48./     | 40.0 ) 110 | 1/ 08416, 0 |
|                 | 0.058/  | 0.0,  | mg/L  | 46.5     | 40.0 ) 110 | 1/ 0841660  |
|                 | 0.059,  | 0.0,  | mg/L  | 4, .0    | 40.0 ) 110 | 1/ 0841691  |





# Quality Control

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## CCV

| Parameter   | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------|---------|-------|-------|----------|------------|-----------|
| ZincTXtotal | 0.0591  | 0.0,  | mgL   | 45./     | 40.0 ) 110 | 1/084164/ |
|             | 0.0596  | 0.0,  | mgL   | 4, ./    | 40.0 ) 110 | 1/084190* |

## ICV

| Parameter        | Reading | Known | Units | Recover% | Limits%    | File      |
|------------------|---------|-------|-------|----------|------------|-----------|
| AluminumTXtotal  | 0.0, 04 | 0.0,  | mgL   | 10/      | 40.0 ) 110 | 1/084161* |
| AntimonyTXtotal  | 0.0, 0* | 0.0,  | mgL   | 101      | 40.0 ) 110 | 1/084161* |
| ArsenicTXtotal   | 0.0549  | 0.0,  | mgL   | 44.5     | 40.0 ) 110 | 1/084161* |
| BariumTXtotal    | 0.0, 0  | 0.0,  | mgL   | 100      | 40.0 ) 110 | 1/084161* |
| BerylliumTXtotal | 0.054,  | 0.0,  | mgL   | 44.0     | 40.0 ) 110 | 1/084161* |
| CadmiumTXtotal   | 0.054,  | 0.0,  | mgL   | 44.0     | 40.0 ) 110 | 1/084161* |
| ChromiumTXtotal  | 0.0, 1* | 0.0,  | mgL   | 10*      | 40.0 ) 110 | 1/084161* |
| CopperTXtotal    | 0.0541  | 0.0,  | mgL   | 48./     | 40.0 ) 110 | 1/084161* |
| LeadTXtotal      | 0.0549  | 0.0,  | mgL   | 44.5     | 40.0 ) 110 | 1/084161* |
| NickelTXtotal    | 0.0, 11 | 0.0,  | mgL   | 10/      | 40.0 ) 110 | 1/084161* |
| SeleniumTXtotal  | 0.058,  | 0.0,  | mgL   | 49.0     | 40.0 ) 110 | 1/084161* |
| SilverTXtotal    | 0.0595  | 0.0,  | mgL   | 45.8     | 40.0 ) 110 | 1/084161* |
| XhalliumTXtotal  | 0.054*  | 0.0,  | mgL   | 48.6     | 40.0 ) 110 | 1/084161* |
| ZincTXtotal      | 0.054,  | 0.0,  | mgL   | 44.0     | 40.0 ) 110 | 1/084161* |

## LCS Dup

| Parameter        | PrepSet | LCS    | LCS/D  | Known  | Limits%     | LCS%  | LCS/D% | Units | RPD     | Limit% |
|------------------|---------|--------|--------|--------|-------------|-------|--------|-------|---------|--------|
| AluminumTXtotal  | 88/066  | 0., /0 | 0., // | 0., 00 | 8., 0 ) 11, | 105   | 105    | mgL   | 0.*85   | /0.0   |
| AntimonyTXtotal  | 88/066  | 0.598  | 0.58,  | 0., 00 | 8., 0 ) 11, | 4., 6 | 49.0   | mgL   | 1.5,    | /0.0   |
| ArsenicTXtotal   | 88/066  | 0., 01 | 0., 1/ | 0., 00 | 8., 0 ) 11, | 100   | 10/    | mgL   | ./19    | /0.0   |
| BariumTXtotal    | 88/066  | 0.546  | 0.545  | 0., 00 | 8., 0 ) 11, | 44./  | 48.8   | mgL   | 0.505   | /0.0   |
| BerylliumTXtotal | 88/066  | 0./01  | 0./0,  | 0./00  | 8., 0 ) 11, | 100   | 10/    | mgL   | 1.49    | /0.0   |
| CadmiumTXtotal   | 88/066  | 0./, 5 | 0./, * | 0./, 0 | 8., 0 ) 11, | 10/   | 101    | mgL   | 0.*45   | /0.0   |
| ChromiumTXtotal  | 88/066  | 0., 55 | 0., 59 | 0., 00 | 8., 0 ) 11, | 104   | 104    | mgL   | 0., , 0 | /0.0   |
| CopperTXtotal    | 88/066  | 0.580  | 0.598  | 0., 00 | 8., 0 ) 11, | 46.0  | 4., 6  | mgL   | 0.518   | /0.0   |
| LeadTXtotal      | 88/066  | 0., /5 | 0., /5 | 0., 00 | 8., 0 ) 11, | 10,   | 10,    | mgL   | 0       | /0.0   |
| NickelTXtotal    | 88/066  | 0., *9 | 0., */ | 0., 00 | 8., 0 ) 11, | 109   | 106    | mgL   | 0.4*,   | /0.0   |
| SeleniumTXtotal  | 88/066  | 0., 15 | 0., */ | 0., 00 | 8., 0 ) 11, | 10*   | 106    | mgL   | *.55    | /0.0   |
| SilverTXtotal    | 88/066  | 0.044  | 0.048/ | 0.100  | 8., 0 ) 11, | 44.0  | 48./   | mgL   | 0.811   | /0.0   |
| XhalliumTXtotal  | 88/066  | 0., 1* | 0., 1, | 0., 00 | 8., 0 ) 11, | 10*   | 10*    | mgL   | 0.*84   | /0.0   |
| ZincTXtotal      | 88/066  | 0., 09 | 0., 0, | 0., 00 | 8., 0 ) 11, | 101   | 101    | mgL   | 0.*4,   | /0.0   |

## MRL Check

| Parameter     | Reading  | Known | Units | Recover% | Limits%     | File      |
|---------------|----------|-------|-------|----------|-------------|-----------|
| CopperTXtotal | 0.0004/6 | 0.001 | mgL   | 4/ .6    | /, .0 ) 19, | 1/0841615 |
| LeadTXtotal   | 0.000458 | 0.001 | mgL   | 45.8     | /, .0 ) 19, | 1/0841615 |

## MSD

| Parameter        | Sample  | MS     | MSD    | UNK     | Known  | Limits     | MS%  | MSD% | Units | RPD   | Limit% |
|------------------|---------|--------|--------|---------|--------|------------|------|------|-------|-------|--------|
| AluminumTXtotal  | 186158/ | *.01   | *.01   | /., 9   | 0., 00 | 90.0 ) 1*0 | 88.0 | 88.0 | mgL   | 0     | /0.0   |
| AntimonyTXtotal  | 186158/ | 0.581  | 0.581  | 0.0010, | 0., 00 | 90.0 ) 1*0 | 46.0 | 46.0 | mgL   | 0     | /0.0   |
| ArsenicTXtotal   | 186158/ | 0., 06 | 0., 08 | N3      | 0., 00 | 90.0 ) 1*0 | 101  | 10/  | mgL   | 0.*45 | /0.0   |
| BariumTXtotal    | 186158/ | 0.546  | 0.544  | 0.0116  | 0., 00 | 90.0 ) 1*0 | 46.4 | 49., | mgL   | 0.619 | /0.0   |
| BerylliumTXtotal | 186158/ | 0./0/  | 0./06  | N3      | 0./00  | 90.0 ) 1*0 | 101  | 10*  | mgL   | 1.46  | /0.0   |
| CadmiumTXtotal   | 186158/ | 0./54  | 0./54  | N3      | 0./, 0 | 90.0 ) 1*0 | 44.6 | 44.6 | mgL   | 0     | /0.0   |
| ChromiumTXtotal  | 186158/ | 0., *4 | 0., 50 | 0.00*8* | 0., 00 | 90.0 ) 1*0 | 109  | 109  | mgL   | 0.189 | /0.0   |





# Quality Control

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## MSD

| Parameter        | Sample  | MS      | MSD     | UNK       | Known   | Limits     | MS%   | MSD%  | Units | RPD    | Limit% |
|------------------|---------|---------|---------|-----------|---------|------------|-------|-------|-------|--------|--------|
| CopperTXtotal    | 186158/ | 0.565   | 0.568   | 0.0059    | 0., 00  | 90.0 ) 1*0 | 41.4  | 4/ .9 | mgL   | 0.869  | / 0.0  |
| LeadTXtotal      | 186158/ | 0., / 5 | 0., //  | 0.000*8/  | 0., 00  | 90.0 ) 1*0 | 10,   | 105   | mgL   | 0.*8*  | / 0.0  |
| NickelTXtotal    | 186158/ | 0., 5*  | 0., 5/  | 0.0*19    | 0., 00  | 90.0 ) 1*0 | 10/   | 10/   | mgL   | 0.146  | / 0.0  |
| SeleniumTXtotal  | 186158/ | 0., 18  | 0., /,  | N3        | 0., 00  | 90.0 ) 1*0 | 105   | 10,   | mgL   | 1.*5   | / 0.0  |
| SilverTXtotal    | 186158/ | 0.04, 1 | 0.046   | N3        | 0.100   | 90.0 ) 1*0 | 4., 1 | 46.0  | mgL   | 0.45/  | / 0.0  |
| XhalliumTXtotal  | 186158/ | 0., 1/  | 0., 11  | N3        | 0., 00  | 90.0 ) 1*0 | 10/   | 10/   | mgL   | 0.146  | / 0.0  |
| ZincTXtotal      | 186158/ | 1.4,    | 1.4,    | 1.59      | 0., 00  | 90.0 ) 1*0 | 46.0  | 46.0  | mgL   | 0      | / 0.0  |
| AluminumTXtotal  | 1861546 | 5.65    | 5.69    | 5.1,      | 0., 00  | 90.0 ) 1*0 | 48.0  | 105   | mgL   | , .45  | / 0.0  |
| AntimonyTXtotal  | 1861546 | 0.59*   | 0.59,   | 0.0004/ 9 | 0., 00  | 90.0 ) 1*0 | 45.5  | 45.8  | mgL   | 0.5/ * | / 0.0  |
| ArsenicTXtotal   | 1861546 | 0., 19  | 0., 18  | N3        | 0., 00  | 90.0 ) 1*0 | 10*   | 105   | mgL   | 0.14*  | / 0.0  |
| BariumTXtotal    | 1861546 | 0., *6  | 0., *6  | 0.0, 96   | 0., 00  | 90.0 ) 1*0 | 4., 9 | 4., 9 | mgL   | 0      | / 0.0  |
| BerylliumTXtotal | 1861546 | 0./ 0,  | 0./ 05  | 0.000*0*  | 0./ 00  | 90.0 ) 1*0 | 10/   | 10/   | mgL   | 0.540  | / 0.0  |
| CadmiumTXtotal   | 1861546 | 0./ 55  | 0./ 55  | 0.0000464 | 0./ , 0 | 90.0 ) 1*0 | 49.6  | 49.6  | mgL   | 0      | / 0.0  |
| ChromiumTXtotal  | 1861546 | 0., *8  | 0., *,  | 0.00, 98  | 0., 00  | 90.0 ) 1*0 | 106   | 106   | mgL   | 0., 6, | / 0.0  |
| CopperTXtotal    | 1861546 | 0.5, *  | 0.5, 0  | 0.00*6*   | 0., 00  | 90.0 ) 1*0 | 84.4  | 84.*  | mgL   | 0.690  | / 0.0  |
| LeadTXtotal      | 1861546 | 0., 0*  | 0., 05  | 0.000*4/  | 0., 00  | 90.0 ) 1*0 | 101   | 101   | mgL   | 0.144  | / 0.0  |
| NickelTXtotal    | 1861546 | 0., 04  | 0., 11  | 0.0/ *5   | 0., 00  | 90.0 ) 1*0 | 49.1  | 49.,  | mgL   | 0.511  | / 0.0  |
| SeleniumTXtotal  | 1861546 | 0., 1/  | 0., 19  | N3        | 0., 00  | 90.0 ) 1*0 | 10/   | 10*   | mgL   | 0.49/  | / 0.0  |
| SilverTXtotal    | 1861546 | 0.04*   | 0.04/ 1 | N3        | 0.100   | 90.0 ) 1*0 | 4*.0  | 4/ .1 | mgL   | 0.49/  | / 0.0  |
| XhalliumTXtotal  | 1861546 | 0.599   | 0.598   | 0.000/ 91 | 0., 00  | 90.0 ) 1*0 | 4., * | 4., , | mgL   | 0./ 10 | / 0.0  |
| ZincTXtotal      | 1861546 | 0.581   | 0.596   | 0.0066    | 0., 00  | 90.0 ) 1*0 | 45.4  | 4*.4  | mgL   | 1.06   | / 0.0  |

Analytical Set **882281**

SM 4500-CI F-2011

### Blank

| Parameter                          | PrepSet  | Reading | MDL   | SQL   | Units | File       |
|------------------------------------|----------|---------|-------|-------|-------|------------|
| CI/<br>ResidualTXtotalLabXitration | 88/ / 81 | N3      | 0.100 | 0.100 | mgL   | 1/ 088695, |

### Duplicate

| Parameter                          | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|------------------------------------|---------|--------|---------|------|------|--------|
| CI/<br>ResidualTXtotalLabXitration | 18610*/ | / .80  | / .9,   | mgL  | 1.80 | / 0.0  |

Analytical Set **882351**

SM 5220 D-2011

### CCV

| Parameter               | Reading | Known | Units | Recover% | Limits%     | File        |
|-------------------------|---------|-------|-------|----------|-------------|-------------|
| Chemical Oxygen 3 emand | *4,     | 500   | mgL   | 48.8     | 4., 0 ) 10, | 1/ 08880, 0 |

### Duplicate

| Parameter               | Sample   | Result | Unknown | Unit | RPD | Limit% |
|-------------------------|----------|--------|---------|------|-----|--------|
| Chemical Oxygen 3 emand | 186068*  | / 6.1  | / 6.1   | mgL  | 0   | / 0.0  |
|                         | 1861/ 09 | / 4.8  | / 4.8   | mgL  | 0   | / 0.0  |

### LCS

| Parameter               | PrepSet  | Reading | Known | Units | Recover% | Limits     | File        |
|-------------------------|----------|---------|-------|-------|----------|------------|-------------|
| Chemical Oxygen 3 emand | 88/ *, 1 | 146     | / 00  | mgL   | 48.0     | 40.0 ) 110 | 1/ 08880, 1 |

### Mat. Spike

| Parameter               | Sample   | Spike | Unknown | Known | Units | Recovery % | Limits %    | File        |
|-------------------------|----------|-------|---------|-------|-------|------------|-------------|-------------|
| Chemical Oxygen 3 emand | 186068*  | / 05  | / 6.1   | / 00  | mgL   | 84.0       | 80.0 ) 1/ 0 | 1/ 08880, 5 |
|                         | 1861/ 09 | / 09  | / 4.8   | / 00  | mgL   | 88.6       | 80.0 ) 1/ 0 | 1/ 088809,  |





# Quality Control

Analytical Set **882589**

SM 4500-P E-2011

**Blank**

| Parameter              | PrepSet  | Reading | MDL      | MQL   | Units | File       |
|------------------------|----------|---------|----------|-------|-------|------------|
| Phosphorus As PVItotal | 88/ , 84 | N3      | 0.00/ 8, | 0.010 | mgL   | 1/ 084***8 |

**CCV**

| Parameter              | Reading | Known | Units | Recover% | Limits%    | File        |
|------------------------|---------|-------|-------|----------|------------|-------------|
| Phosphorus As PVItotal | 0.*0*   | 0.*00 | mgL   | 101      | 40.0 ) 110 | 1/ 084***4  |
|                        | 0.*00   | 0.*00 | mgL   | 100      | 40.0 ) 110 | 1/ 084**, 5 |

**LCS Dup**

| Parameter              | PrepSet  | LCS   | LCSD  | Known | Limits%     | LCS% | LCSD% | Units | RPD    | Limit% |
|------------------------|----------|-------|-------|-------|-------------|------|-------|-------|--------|--------|
| Phosphorus As PVItotal | 88/ , 84 | 0.*1/ | 0.*1* | 0.*00 | 80.0 ) 1/ 0 | 105  | 105   | mgL   | 0.*/ 0 | / 0.0  |

**MSD**

| Parameter              | Sample  | MS     | MSD    | UNK    | Known | Limits     | MS% | MSD% | Units | RPD   | Limit% |
|------------------------|---------|--------|--------|--------|-------|------------|-----|------|-------|-------|--------|
| Phosphorus As PVItotal | 186094/ | 0., 55 | 0., 51 | 0./ *0 | 0.*00 | 90.0 ) 1*0 | 10, | 105  | mgL   | 0.460 | / 0.0  |

Analytical Set **882955**

SM 2510 B-2011

**Blank**

| Parameter                      | PrepSet  | Reading | MDL | MQL | Units   | File       |
|--------------------------------|----------|---------|-----|-----|---------|------------|
| Lab Spec. Conductance at / , C | 88/ 4, , | 0.84    |     |     | umhos2m | 1/ 084465/ |

**Duplicate**

| Parameter                      | Sample   | Result | Unknown | Unit    | RPD   | Limit% |
|--------------------------------|----------|--------|---------|---------|-------|--------|
| Lab Spec. Conductance at / , C | 186180*  | 5190   | 51/ 0   | umhos2m | 1/ 1  | / 0.0  |
|                                | 186/ 41/ | 880    | 89*     | umhos2m | 0.944 | / 0.0  |

**ICV**

| Parameter                      | Reading | Known  | Units   | Recover% | Limits%    | File       |
|--------------------------------|---------|--------|---------|----------|------------|------------|
| Lab Spec. Conductance at / , C | 1*000   | 1/ 400 | umhos2m | 101      | 40.0 ) 110 | 1/ 084465, |

**Standard**

| Parameter                      | Sample   | Reading | Known | Units   | Recover% | Limits%    | File        |
|--------------------------------|----------|---------|-------|---------|----------|------------|-------------|
| Lab Spec. Conductance at / , C | 88/ 4, , | 1510    | 1510  | umhos2m | 100      | 40.0 ) 110 | 1/ 084465*  |
|                                | 88/ 4, , | 100     | 100   | umhos2m | 100      | 40.0 ) 110 | 1/ 0844655  |
|                                | 88/ 4, , | 15/ 0   | 1510  | umhos2m | 101      | 40.0 ) 110 | 1/ 08446, 9 |
|                                | 88/ 4, , | 15*0    | 1510  | umhos2m | 101      | 40.0 ) 110 | 1/ 0844665  |

- Out RP3 is Relative Percent Difference:  $\frac{abs(D1)-V2}{mean(D1)+V-} \times 100\%$

Recover% is Recovery Percent:  $\frac{result-2known}{-} \times 100\%$

Blank ) Method Blank; CC( ) Continuing Calibration ( verification; AWRLMRL C ) Ambient Water Reporting Limit/Minimum Reporting Limit Check Std; LCS ) Laboratory Control Sample; IC( ) Initial Calibration ( verification; MS ) Matrix Spike; L3 R ) Linear 3 ynamic Range Standard; CCB ) Continuing Calibration Blank; MRL Check ) Minimum Reporting Limit Check Std



908584 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
Employee Owned Integrity Caring Continual Improvement

Chain of Custody

COC Printed 01/21/2020 Page 1 of 3

**CABC-P**  
127

Lab Number 18101183  
PO Number \_\_\_\_\_  
Phone 806/661-3130  
Fax 806/661-3134

Report To  
Cabot Corp.  
Ashlee Green  
P.O. Box 5001  
Pampa, TX 79065

Land Application Composite

Matrix: Non-Potable Water

Sample Collection Start

Sample Collection Step

Date: 2.5.20 Time: 1030

Date: 2.6.20 Time: 1015

Sampler Printed Name: MILAH BONILLA

Sampler Printed Name: MILAH BONILLA

Sampler Affiliation: CABC

Sampler Affiliation: CABC

Sampler Signature: [Signature]

Sampler Signature: [Signature]

|   |  |                                       |               |
|---|--|---------------------------------------|---------------|
| 1 | H2SO4 to pH <2 Amber Glass 250 mL w/Teflon lined lid |                                       |               |
| N | TOCL Total Organic Carbon                            | SM 5310 C-2011 (28.0 days)            |               |
| 1 | Z-- No bottle required                               |                                       |               |
| N | Short Hold   | CFFL Client Field Filtration (Onsite) | (0.0104 days) |

Client Field Filtration (Onsite) Quality Control

Collected By MS Date 2.5.20 Time 10:30 Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |            |                                |  |
|---|------------|--------------------------------|--|
| N | Short Hold | Cr+3 Trivalent Chromium        | Calculation CAS:16065-83-1 (1.00 days) |
| N | Short Hold | FFil Field Filtration (Onsite) | (0.0104 days)                          |

Field Filtration (Onsite) Quality Control

Collected By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Analyzed By \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

|   |  |  |  |
|---|--|--|--|
| 1 | GTMS Transfer to ICP/MS                      |  |  |
| 1 | HNO3 to pH <2 Polyethylene 500 mL for Metals |  |  |
| N | *AgM Silver, Total                           | EPA 200.8 5.4 CAS:7440-22-4 (180 days) |  |
| N | *AlM Aluminum, Total                         | EPA 200.8 5.4 CAS:7429-90-5 (180 days) |  |
| N | *AsM Arsenic, Total                          | EPA 200.8 5.4 CAS:7440-38-2 (180 days) |  |
| N | *BaM Barium, Total                           | EPA 200.8 5.4 CAS:7440-39-3 (180 days) |  |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

908584 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**  
 Phone 903/984-0551 FAX 903/984-5914 e-Mail [corp@ana-lab.com](mailto:corp@ana-lab.com) LELAP-accredited #02008

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COC Printed 01/21/2020 Page 2 of 3

### Chain of Custody

**CABC-P**

127

Phone 806/661-3130  
 Fax 806/661-3134

**Report To**

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

|   |      |                                 |  |
|---|------|---------------------------------|--|
| N | *BeM | Beryllium, Total                | EPA 200.8 5.4 CAS:7440-41-7 (180 days) |
| N | *CdM | Cadmium, Total                  | EPA 200.8 5.4 CAS:7440-43-9 (180 days) |
| N | *CrM | Chromium, Total                 | EPA 200.8 5.4 CAS:7440-47-3 (180 days) |
| N | *CuM | Copper, Total                   | EPA 200.8 5.4 CAS:7440-50-8 (180 days) |
| N | *Hg  | Mercury, Total                  | EPA 245.1 3 CAS:7439-97-6 (28.0 days)  |
| N | *NiM | Nickel, Total                   | EPA 200.8 5.4 CAS:7440-02-0 (180 days) |
| N | *PbM | Lead, Total                     | EPA 200.8 5.4 CAS:7439-92-1 (180 days) |
| N | *SbM | Antimony, Total                 | EPA 200.8 5.4 CAS:7440-36-0 (180 days) |
| N | *SeM | Selenium, Total                 | EPA 200.8 5.4 CAS:7782-49-2 (180 days) |
| N | *TlM | Thallium, Total                 | EPA 200.8 5.4 CAS:7440-28-0 (180 days) |
| N | *ZnM | Zinc, Total                     | EPA 200.8 5.4 CAS:7440-66-6 (180 days) |
| N | 301L | Liquid Metals Digestion         | EPA 200.2 2.8 (180 days)               |
| N | 747L | Mercury Liquid Metals Digestion | EPA 245.1 3 (28.0 days)                |

1 HNO3 to pH <2 Polyethylene 500 mL/AFTER filtration

|   |            |      |                     |   |
|---|------------|------|---------------------|---|
| N | Short Hold | *CaD | Dissolved Calcium   | EPA 200.7, Rev. 4.4 CAS:7440-70-2 (0.0104 days) |
| N | Short Hold | *MgD | Dissolved Magnesium | EPA 200.7, Rev. 4.4 CAS:7439-95-4 (0.0104 days) |
| N | Short Hold | *NaD | Dissolved Sodium    | EPA 200.7, Rev. 4.4 CAS:7440-23-5 (0.0104 days) |

2 H2SO4 to pH <2 250 ml Polyethylene

|   |  |      |                          |  |
|---|--|------|--------------------------|--|
| N |  | COD  | Chemical Oxygen Demand   | SM 5220 D-2011 (28.0 days)                 |
| N |  | NHaN | Ammonia (as N)           | EPA 350.1 2 (28.0 days)                    |
| N |  | TKN  | Total Kjeldahl Nitrogen  | EPA 351.2 2 CAS:7727-37-9 (28.0 days)      |
| N |  | TPWB | Phosphorus (as P), total | SM 4500-P E-2011 CAS:7723-14-0 (28.0 days) |

1 Polyethylene 1/2 gal (White)

|   |            |      |                                  |                                       |
|---|------------|------|----------------------------------|---------------------------------------|
| N | Short Hold | BOD  | Biochemical Oxygen Demand (BOD5) | SM 5210 B-2011 CAS:1026-3 (2.00 days) |
| N | Short Hold | BODc | BOD Carbonaceous                 | SM 5210 B-2011 (2.00 days)            |
| N | Short Hold | SARL | Sodium Adsorption Ratio - Liquid | 600/2-78-054 3.2.19 (0.0104 days)     |
| N |            | TSS  | Total Suspended Solids           | SM 2540 D-2011 (7.00 days)            |

1 Polyethylene Quart (White)

|   |  |     |          |                           |
|---|--|-----|----------|---------------------------|
| N |  | ICL | Chloride | EPA 300.0 2.1 (28.0 days) |
|---|--|-----|----------|---------------------------|



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

908584 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**

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### Chain of Custody

**CABC-P**

**127**

Phone 806/661-3130  
Fax 806/661-3134

**Report To**

Cabot Corp.  
Ashlee Green  
P.O. Box 5001  
Pampa, TX 79065

|   |                   |      |                                    |  |
|---|-------------------|------|------------------------------------|--|
| N |                   | PHL  | Fluoride                           | EPA 300.0 2.1 (28.0 days)                    |
| N | <b>Short Hold</b> | IN3L | Nitrate-Nitrogen Total             | EPA 300.0 2.1 CAS:14797-55-8 (2.00 days)     |
| N |                   | IS4L | Sulfate                            | EPA 300.0 2.1 (28.0 days)                    |
| N | <b>Short Hold</b> | CI2L | Cl2 Residual, Total(Lab) Titration | SM 4500-Cl F-2011 (2.00 days)                |
| N |                   | CONL | Lab Spec. Conductance at 25 C      | SM 2510 B-2011 (28.0 days)                   |
| N | <b>Short Hold</b> | Cr+6 | Hexavalent Chromium                | SM 3500-Cr B-2011 CAS:18540-29-9 (1.00 days) |
| N | <b>Short Hold</b> | DMF  | Dissolved Metals Filtering         | SM 3030 B-2004 (0.0104 days)                 |
| N | <b>Short Hold</b> | DMFW | Dissolved (Wastewater) Filtering   | SM 3030 B-2004 (0.0104 days)                 |

Dissolved (Wastewater) Filtering Quality Control

Collected By MGB Date 2-6-20 Time 1015 Analyzed By MGB Date 2-6-20 Time 1025 (FILTERED)

Results \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C Duplicate \_\_\_\_\_ Units \_\_\_\_\_ Temp. \_\_\_\_\_ C

N TDS Total Dissolved Solids SM 2540 C-2011 (7.00 days)

**Ambient Conditions/Comments**

| Date   | Time  | Relinquished  | Received  |
|--------|-------|---|---|
| 2-6-20 | 18:00 | Printed Name <u>Mikah Bonilla</u> Affiliation _____<br>Signature <u>[Signature]</u> | Printed Name <u>LSD</u> Affiliation _____<br>Signature _____                                |
| 2/7/20 | 09:05 | Printed Name _____ Affiliation _____<br>Signature <u>Lone Star</u>                  | Printed Name <u>Kelly Overman Ana-Lab</u> Affiliation _____<br>Signature <u>[Signature]</u> |
|        |       | Printed Name _____ Affiliation _____<br>Signature _____                             | Printed Name _____ Affiliation _____<br>Signature _____                                     |
|        |       | Printed Name _____ Affiliation _____<br>Signature _____                             | Printed Name _____ Affiliation _____<br>Signature _____                                     |

Sample Received on Ice?  Yes  No **Method of Shipment:**  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
Cooler/Sample Secure?  Yes  No **If Shipped: Tracking Number & Temp - See Attached** **Hand Delivered to Region [ ]**

The accredited column designates accreditation by A - A2LA, N - NELAP, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

**Comments**



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

908584 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

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Employee Owned Integrity Caring Continnal Improvement

COC Printed 01/21/2020 Page 1 of 2

Chain of Custody

CABC-P

126

Lab Number 1861184  
 PO Number  
 Phone 806/661-3130  
 Fax 806/661-3134

Report To

Cabot Corp.  
 Ashlee Green  
 P. O. Box 5001  
 Pampa, TX 79065

Land Application Grab Samples

Matrix: Non-Potable Water

Sample Collection Start

Date: 2.6.20 Time: 1015

Sampler Printed Name: Milan Rodilla

Sampler Affiliation: CABC

Sampler Signature: [Signature]

1 On Site Testing

C1Ck Field Cl2 Check for CNa

Field Cl2 Check for CNa Quality Control

Collected By MGA Date 2.6.20 Time Analyzed By Date Time

Results Units Temp. C Duplicate Units Temp. C

S2Ck Field Sulfide Check for CNa

Field Sulfide Check for CNa Quality Control

Collected By Date Time Analyzed By Date Time

Results Units Temp. C Duplicate Units Temp. C

|   |  |                                     |  |
|---|--|-------------------------------------|--|
| 1 | Na2S2O3 (0.008%) Polystyrene-100 mL Sterilized |                                     |  |
| N | Short Hold                                     | F MPL Fecal Coliform MPN Started /L | SM 9221 E + C-2006 (0.347 days)            |
| 1 | H2SO4 to pH <2 GIQt w/Tef-lined lid            |                                     |  |
| N | HEM  | Oil and Grease (HEM)                | EPA 1664B (HEM) (28.0 days)                |
| 1 | NaOH to pH >12 Polyethylene 250 mL/amber       |                                     |  |
| N | CNa  | Cyanide, total                      | SM 4500-CN <sup>-</sup> E-2011 (14.0 days) |
| 1 | Polyethylene Quart (White)                     |                                     |  |
| N | pHLL   | Laboratory pH                       | SM 4500-H+ B-2011                          |

Ambient Conditions/Comments

SUNNY, 37°F, N. WIND 10 MPH



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15



1  
2  
3

5 of 6

908584 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

Employee Owned Integrity Caring Continual Improvement

COC Printed 01/21/2020 Page 2 of 2

Chain of Custody

CABC-P

126

Phone 806/661-3130

Fax 806/661-3134

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

| Date   | Time | Relinquished                                  | Received   |
|--------|------|---|--|
| 2-6-20 | 1800 | Printed Name <u>MILAN BONILLA</u> Affiliation | Printed Name <u>LSO</u> Affiliation                    |
|        |      | Signature <u>[Signature]</u>                  | Signature  |
| 2/6/20 | 0901 | Printed Name <u>Lone Star</u> Affiliation     | Printed Name <u>Reilly Overman Ana-Lab</u> Affiliation |
|        |      | Signature <u>[Signature]</u>                  | Signature <u>[Signature]</u>                           |
|        |      | Printed Name Affiliation                      | Printed Name Affiliation                               |
|        |      | Signature                                     | Signature  |
|        |      | Printed Name Affiliation                      | Printed Name Affiliation                               |
|        |      | Signature                                     | Signature  |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region [ ]

The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <http://www.ana-lab.com>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments

pH + TEMP

COLLECTED BY: MGB DATE: 2.6.20 TIME: 1015 ANALYZED BY: MGB DATE: 2.6.20 TIME: 1020

RESULTS: 8.06 TEMP: 9.8° C

TOTAL CHLORINE RESIDUAL

COLLECTED BY: MGB DATE: 2.6.20 TIME: 1015 ANALYZED BY: MGB DATE: 2.6.20 TIME: 1027

RESULTS: .11 TEMP: 9.8° C



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

6 of 6

908584 CoC Print Group 001 of 001

2/6/2020

<https://www2.lso.com/weblabels/?labelsize=0&combinedlabel=1&sessionkey=%7B6D2B501E-1B19-43D6-8756-0F97985A2B98%7D>

Airbill No. Z5703707

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
**LOGIN**  
**ANA-LAB CORP**  
**2600 DUDLEY RD.**  
**KILGORE, TX 75662**  
**9039840551**

From:  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556

**B GGG**

**LSO PRIORITY NEXT DAY**  
10:30 IN MOST CITIES  
LATER IN REMOTE CITIES

PRINT DATE: 2/6/2020 REF 3:  
QUICKCODE: 4 WEIGHT: 68.00LBS  
REF 1: CABC, EXCE, COA4 1D00V.0000 REF 2:

2/7 09:15 (K)   
Date: \_\_\_\_\_ Time: \_\_\_\_\_ Tech: \_\_\_\_\_  
Temp: 0.3/0.3 C  
Therm#: 6093 Corr Fact: 0.0 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

**WARNING:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. **LIMIT OF LIABILITY:** We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. **NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.**



# Results

Printed: 01/24/2020 12:57

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9139R4

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 500f  
Pampa, TX 79085

Account  
**CABC-P**

**seut l2u**

| 187R6R   | LL Hg | CON P: 01/f7 f2f5 - 01/fWf40 |             |            |            | Received: 01/f9/2020 |          |            |           |     |
|--|-------|------------------------------|-------------|------------|------------|----------------------|----------|------------|-----------|-----|
| Hon-Potable 3 ater<br>Composite Mop ff:40 1/fW20 |       | Collected by: Client         | Cabot Corp. |            | PO:        |                      |          |            |           |     |
|  |       | Taken: ff:40:00              |             |            |            |                      |          |            |           |     |
|  |       | PreSared:                    | 03/23/2020  | 11:38:2L   | Calculated | 03/23/2020           | 11:38:2L | CAm        |           |     |
| Paras eter                                       |       | ReUltU                       | F nitU      | Rm         | glaS       | CAB                  | pottle   |            |           |     |
| <b>LL Mercury Test Prep</b>                      |       | <b>Verified</b>              |             |            |            |                      |          |            |           |     |
| EPA 200.7 4.4                                    |       | PreSared:                    | 888L0L      | 03/17/2020 | 19:30:00   | Analy4ed             | 88889z   | 03/20/2020 | 12:0z:00  | mPB |
| Paras eter                                       |       | ReUltU                       | F nitU      | Rm         | glaS       | CAB                  | pottle   |            |           |     |
| <b>NELAC Boron</b>                               |       | <b>0.139</b>                 | <b>mg/L</b> | 0.02       | --         | <b>7440-4R8</b>      | 01       |            |           |     |
| EPA 245.7 2                                      |       | PreSared:                    | 8871z1      | 03/29/2020 | 0z::z1:31  | Analy4ed             | 887296   | 03/29/2020 | 07::z6:00 | mPB |
| Paras eter                                       |       | ReUltU                       | F nitU      | Rm         | glaS       | CAB                  | pottle   |            |           |     |
| <b>NELAC Mercury, Total (low level)</b>          |       | <b>&lt;4.R6</b>              | <b>ng/L</b> | 4.28       | --         | <b>7439-97-6</b>     | 04       |            |           |     |

**Sample Preparation**

| 187R6R                                       | LL Hg | CON P: 01/f7 f2f5 - 01/fWf40 |            |            |           | Received: 01/f9/2020 |          |            |           |     |
|--|-------|------------------------------|------------|------------|-----------|----------------------|----------|------------|-----------|-----|
| Composite Mop ff:40 1/fW20                   |       |                              |            |            |           |                      |          |            |           |     |
|  |       | PreSared:                    | 03/17/2020 | 13:29:00   | Analy4ed  | 03/17/2020           | 13:29:00 | CCP        |           |     |
| <b>Bottle pH</b>                             |       | <b>&lt;R</b>                 | <b>SU</b>  |            |           |                      |          |            |           |     |
| EPA 200.2 2.8                                |       | PreSared:                    | 888L0L     | 03/17/2020 | 19:30:00  | Analy4ed             | 888L0L   | 03/17/2020 | 19:30:00  | TEB |
| <b>NELAC Liquid Metals Digestion</b>         |       | <b>50/50</b>                 | <b>ml</b>  |            |           |                      |          |            |           |     |
| EPA 245.7 2                                  |       | PreSared:                    | 8871z1     | 03/29/2020 | 0z::z1:31 | Analy4ed             | 8871z1   | 03/29/2020 | 0z::z1:31 | mPB |
| <b>NELAC Low Level Mercury Liquid Metals</b> |       | <b>50/47</b>                 | <b>ml</b>  |            |           |                      |          |            |           |     |

Corporate Shipping: R600 Dt dley s d. Kilgore, TX 7566R

Panhandle s egion: 6501 S2orage Dr Amarillo TX 79110



HESAP-aLLredited cTf0470420f-f9-f5



# Results

Printed: 01/24/2020 12:57

Page 2 of 2  
9139R4

|                     |                  |                             |  |
|---------------------|------------------|-----------------------------|--|
| <b>187R6R</b>       | <b>LL Hg</b>     | CONP: 01/f7 f2f5 - 01/fWf40 | Received: 01/f9/2020                               |
| Composite Mop ff:40 | 1/fW20           |                             |  |
| EPA 245.7 2         | PreSared: 8871z1 | 03/29/2020                  | 0z::z1:31 Analyzed 8871z1 03/29/2020 0z::z1:31 mPB |

### # ualifiers:

3 e report results on an As ReLeived or wet basis unless marQed k ry 3 eight. Dnless otherwise noted, testing was performed at Ana-labs Lorporate laboratory that holds the following Uederal and Mate LertiGLates: EPA Sab Humber TX00081, DMk epartment o6 AgriLulture Mbil Import Permit P110-f7-00ff7, Texas Commission on Environmental # uality CommerLial k rinQng 3 ater Sab Approval ISab Ik : TX2f9(, Texas Commission on Environmental # uality HESAP Tf0470420f-f9-f5, Souisiana k epartment o6 Environmental # uality Saboratory CertiGLation HESAP, SESAP( c0200W Souisiana k epartment o6) ealth and ) ospitals k rinQng 3 ater HESAP( CertiGLate Ho SA028, OQahoma k epartment o6 Environmental # uality THI Saboratory ALLreditation Program CertiGLate Ho. 20fWf28, ArQansas k epartment o6 Environmental # uality CertiGLation cfW08W0. The ALLredited Lolumn designates aLLreditation by H -- HESAC, or z -- not Lovered under HESAC sLope o6 aLLreditation.

These analytiLal results relate to the sample tested. This report may HOT be reproduLed EXCEPT in UDSS without written approval o6 Ana-Sab Corp. Dnless otherwise speLiGLed, these test results meet the requirements o6 HESAC.

RS is the Reporting Simit fsample speLiGL quantitation limit( and is at or above the N ethod k eteLtion Simit FN k S( . CAMis ChemiLal AbstraLt MerviLe number. RS is our Reporting Simit, or N inimum # uantitation Sevel. The RS taQes into aLLount the Instrument k eteLtion Simit Hk S(, N ethod k eteLtion Simit FN k S(, and PraLtiLal # uantitation Simit IP# S(, and any dilutions and/or LonLentrations performed during sample preparation H# S( . Our analytiLal result must be above this RS before we report a value in the 'Results' Lolumn o6 our report Fwithout a 'J' flag(. Otherwise, we report Hk Hhot k eteLtied above RS(, beLause the result is "<" Hless than( the number in the RS Lolumn.

N AS is N inimum AnalytiLal Sevel and is typiLally from regulatory agenLies. Dnless we report a result in the result Lolumn, or interfereLes prevent it, we worQt to have our RS at or below the N AS.

Trey Peery, MA, Projec2Manager





# Quality Control

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913924

Report To

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 760R5

Account  
**CABC-P**

Analytical Met

888845

EPA 200.7 4.4

**Blank**

| <u>Method</u> | <u>Reagent</u> | <u>Ver Lim</u> | <u>%c</u> | <u>%Rc</u> | <u>Lmits</u> | <u>File</u> |
|---------------|----------------|----------------|-----------|------------|--------------|-------------|
| Boron         | ((ROR)         | 4              | 0.0139    | 0.100      | mg/L         | 12102R063   |

**CCR**

| <u>Method</u> | <u>Ver Lim</u> | <u>p n Q M</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|---------------|----------------|----------------|--------------|---------------|-----------------|-------------|
| Boron         | 5.09           | 5.00           | mg/L         | 101           | 60.0 8110       | 12102R062   |
|               | 5.12           | 5.00           | mg/L         | 102           | 60.0 8110       | 12102R101   |
|               | 5.00           | 5.00           | mg/L         | 100           | 60.0 8110       | 12102R110   |

**kCL**

| <u>Method</u> | <u>Ver Lim</u> | <u>p n Q M</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|---------------|----------------|----------------|--------------|---------------|-----------------|-------------|
| Boron         | 10.1           | 10.0           | mg/L         | 101           | 65.0 8105       | 12102R07(   |

**kCR**

| <u>Method</u> | <u>Ver Lim</u> | <u>p n Q M</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|---------------|----------------|----------------|--------------|---------------|-----------------|-------------|
| Boron         | 5.10           | 5.00           | mg/L         | 102           | 60.0 8110       | 12102R076   |

**LCVI Sp**

| <u>Method</u> | <u>Reagent</u> | <u>c Cd</u> | <u>c Cdo</u> | <u>p n Q M</u> | <u>cig itsP</u> | <u>c CdP</u> | <u>c Cdo P</u> | <u>Lmits</u> | <u>v Ko</u> | <u>cig itP</u> |
|---------------|----------------|-------------|--------------|----------------|-----------------|--------------|----------------|--------------|-------------|----------------|
| Boron         | ((ROR)         | 0.652       | 0.69R        | 1.00           | (5.0 8115       | 65.2         | 69.R           | mg/L         | 0.R32       | 25.0           |

**MVI**

| <u>Method</u> | <u>Reagent</u> | <u>%d</u> | <u>%do</u> | <u>LNp</u> | <u>p n Q M</u> | <u>cig its</u> | <u>%dP</u> | <u>%do P</u> | <u>Lmits</u> | <u>v Ko</u> | <u>cig itP</u> |
|---------------|----------------|-----------|------------|------------|----------------|----------------|------------|--------------|--------------|-------------|----------------|
| Boron         | (72307         | 1.12      | 1.19       | 0.130      | 1.00           | 75.0 8125      | 66.0       | 101          | mg/L         | 2.00        | 25.0           |

Analytical Met

889247

EPA 245.7 2

**AD uL/Mu L C**

| <u>Method</u>              | <u>Ver Lim</u> | <u>p n Q M</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|----------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 5.10           | 5.00           | ng/L         | 102           | 70.0 8130       | 12103361R   |

**Blank**

| <u>Method</u>              | <u>Reagent</u> | <u>Ver Lim</u> | <u>%c</u> | <u>%Rc</u> | <u>Lmits</u> | <u>File</u> |
|----------------------------|----------------|----------------|-----------|------------|--------------|-------------|
| - erSury, Total Now levelD | ((6151)        | 4              | 1.R5      | 9.00       | ng/L         | 121033620   |

**CCR**

| <u>Method</u>              | <u>Ver Lim</u> | <u>p n Q M</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|----------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 10.0           | 10.0           | ng/L         | 100           | 7R0 8129        | 121033616   |
|                            | 10.5           | 10.0           | ng/L         | 105           | 7R0 8129        | 121033630   |
|                            | 10.2           | 10.0           | ng/L         | 102           | 7R0 8129        | 121033691   |
|                            | 10.R           | 10.0           | ng/L         | 10R           | 7R0 8129        | 12103369R   |

**kCL**

| <u>Method</u>              | <u>Ver Lim</u> | <u>p n Q M</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|----------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 10(            | 100            | ng/L         | 10(           | 60.0 8110       | 12103361(   |





# Quality Control

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### KCR

| <u>Keyword</u>             | <u>Ver Lim</u> | <u>pnQsm</u> | <u>Lmits</u> | <u>veMDwP</u> | <u>cig itsP</u> | <u>File</u> |
|----------------------------|----------------|--------------|--------------|---------------|-----------------|-------------|
| - erSury, Total Now levelD | 10.9           | 10.0         | ng/L         | 109           | 60.0 8110       | 121033617   |

### LCVI Sp

| <u>Keyword</u>             | <u>Kwadet</u> | <u>c Cd</u> | <u>c Cdo</u> | <u>pnQsm</u> | <u>cig itsP</u> | <u>c CdP</u> | <u>c Cdo P</u> | <u>Lmits</u> | <u>v Ko</u> | <u>cig itP</u> |
|----------------------------|---------------|-------------|--------------|--------------|-----------------|--------------|----------------|--------------|-------------|----------------|
| - erSury, Total Now levelD | ((6151        | 2R1         | 2R5          | 25.0         | 7R0 8113        | 109          | 10R            | ng/L         | 1.52        | 50.0           |

### MMI

| <u>Keyword</u>             | <u>drq ale</u> | <u>%d</u> | <u>%do</u> | <u>LNp</u> | <u>pnQsm</u> | <u>cig its</u> | <u>%dP</u> | <u>%do P</u> | <u>Lmits</u> | <u>v Ko</u> | <u>cig itP</u> |
|----------------------------|----------------|-----------|------------|------------|--------------|----------------|------------|--------------|--------------|-------------|----------------|
| - erSury, Total Now levelD | 1(72035        | 59.0      | 51.R       | 1R9        | 2RR          | R7.0 8111      | 191 *      | 132 *        | ng/L         | R56         | 1(.0           |
|                            | 1(73031        | 5(.5      | 5(.R       | 2R0        | 2RR          | R7.0 8111      | 122 *      | 123 *        | ng/L         | 0.307       | 1(.0           |

\* Out c P4 is c elative PerSent 4 ifferenSe: absN1&2D/ meanN1,r2D\* 100%      ceSover% is ceSovery PerSent: result / known \* 100%

Blank 8- ethod Blank; CCV 8Continuing Calibration VerifiSation; ICV 8Initial Calibration VerifiSation; AWc L/- c L C 8Ambient Water c eporting Limit/- inimum c eporting Limit CheSk Md



913924 CoC Print Group 001 of 001



**Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663**

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008  
Employee Owned Integrity Caring Continual Improvement

**Chain of Custody**

COC Printed 03/18/2020 Page 1 of 2  
Lab Number 1872629  
PO Number \_\_\_\_\_  
Phone 806/661-3130  
Fax 806/661-3134

**CABC-P**  
**128**

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**LLHg**

*Matrix: Non-Potable Water*

**Sample Collection Start**

Date: 3.17.20 Time: 1215

Sampler Printed Name: Micah Bonilla

Sampler Affiliation: CABC

**Sampler Signature:**

**Sample Collection Stop**

Date: 3.18.20 Time: 1140

Sampler Printed Name: Micah Bonilla

Sampler Affiliation: CABC

**Sampler Signature:**

|       |  |  |  |
|-------|--|--|--|
| 1     | HNO3 to pH <2 Polyethylene 500 mL for Metals |  |  |
| NELAC | *BI Boron                                    | EPA 200.7 4.4 CAS:7440-42-8 (180 days) |  |
| NELAC | 301L Liquid Metals Digestion                 | EPA 200.2 2.8 (180 days)               |  |
| 1     | Glass 500 ml/clean metals w/HCl              |  |  |
| NELAC | *Hgl Mercury, Total (low level)              | EPA 245.7 2 CAS:7439-97-6 (28.0 days)  |  |
| NELAC | 245I Low Level Mercury Liquid Metals         | EPA 245.7 2 (28.0 days)                |  |
|       | HgKt LL Mercury Test Prep                    |  |  |

**Ambient Conditions/Comments**

| Date    | Time | Relinquished  | Received   |
|---------|------|---|--|
| 3/18/20 | 1800 | Printed Name: <u>SCA</u> Affiliation: <u>ana-lab</u><br>Signature: <u>[Signature]</u> | Printed Name: <u>LSO</u> Affiliation: _____<br>Signature: _____                                |
| 3/18/20 | 0840 | Printed Name: <u>LSO</u> Affiliation: _____<br>Signature: _____                       | Printed Name: <u>Christ Parker Ana-Lab</u> Affiliation: _____<br>Signature: <u>[Signature]</u> |
|         |      | Printed Name: _____ Affiliation: _____<br>Signature: _____                            | Printed Name: _____ Affiliation: _____<br>Signature: _____                                     |
|         |      | Printed Name: _____ Affiliation: _____<br>Signature: _____                            | Printed Name: _____ Affiliation: _____<br>Signature: _____                                     |



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15

1  
2

913924 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

Employee Owned Integrity Caring Continual Improvement

COC Printed 03/18/2020 Page 2 of 2

### Chain of Custody

CABC-P

128

Phone 806/661-3130

Fax 806/661-3134

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
Cooler/Sample Secure?  Yes  No If Shipped: Tracking Number & Temp - See Attached Hand Delivered to Region  Yes  No  
Samples Radioactive?  Yes Samples Contains Dioxin?  Yes Samples Biological Hazard?  Yes

The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <<http://www.ana-lab.com>>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

**Comments**



Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201-19-15



3 of 3

913924 CoC Print Group 001 of 001

3/18/2020

https://www2.lso.com/weblabels/?labels=0&combinedlabel=1&sessionkey=%7B21EA70BD-33CC-4BC3-AA5F-663845752CBD%7D



Airbill No. Z5753006

LSO  
1-800-800-8984  
www.lso.com

**SHIP TO:**  
LOGIN  
ANA-LAB CORP  
2600 DUDLEY RD.  
KILGORE, TX 75662  
9039840551

**From:**  
JOHN  
ANA-LAB  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556



|          |            |  |
|----------|------------|--|
| <b>B</b> | <b>GGG</b> | <b>LSO PRIORITY NEXT DAY</b>                   |
|          |            | 10:30 IN MOST CITIES<br>LATER IN REMOTE CITIES |

PRINT DATE: 3/18/2020 REF 3:  
SKU CODE: 4 WEIGHT: 64.00LBS  
LEF1, CABG, CLAU USSB 1D00V.0000 REF 2:

3/19 0845 RT  
Date Time Tech  
Temp: 2.2/2.1 C  
Therm#: 8205 Corr Fact: -0.1 C

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned. Shipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number.

This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. LIMIT

OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

# WORKSHEET 3.1

## SURFACE LAND APPLICATION AND EVAPORATION

This worksheet **is required** for all applications for a permit to dispose of wastewater by surface land application or evaporation.

### 1. EDWARDS AQUIFER (Instructions, Page 67)

a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

Yes       No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b and 1.c.

b. Check the box next to the subchapter applicable to the facility.

*30 TAC Chapter 213, Subchapter A*

*30 TAC Chapter 213, Subchapter B*

c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following information:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

**Attachment:** \_\_\_\_\_

### 2. SURFACE SPRAY/IRRIGATION (Instructions, Page 67)

a. Provide the following information on the irrigation operations:

Area under irrigation (acres): 6.69

Design application rate (acre-ft/acre/yr): 0.44

Design application frequency (hours/day): 8

Design application frequency (days/week): <1

Design total nitrogen loading rate (lbs nitrogen/acre/year): 5.18

Average slope of the application area (percent): 0

Maximum slope of the application area (percent): 1

Irrigation efficiency (percent): 85

Effluent conductivity (mmhos/cm): 0.946 (avg. of 3 samples [9/2014, 10/2014, 03/2015])

Soil conductivity (mmhos/cm): 0.836

Curve number: 81

Describe the application method and equipment: Spray Irrigation using Micro Rain Traveling Sprinkler

b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance.

**Attachment:** Attachment 3.0– Annual Crop Plan

### 3. EVAPORATION PONDS (Instructions, Pages 68)

- a. Daily average effluent flow into ponds: 2,150 gallons per day
- b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions.

**Attachment:** Attachment WKSHT 3.0 – Annual Crop Plan

### 4. EVAPOTRANSPIRATION BEDS (Instructions, Page 68)

- a. Provide the following information on the evapotranspiration beds:

Number of beds: 0

Area of bed(s) (acres):

Depth of bed(s) (feet):

Void ratio of soil in the beds:

Storage volume within the beds (include units):

Description of any lining to protect groundwater:

- b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements.

**Attachment:** N/A

- c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner.

**Attachment:** N/A

### 5. OVERLAND FLOW (Instructions, Page 68)

- a. Provide the following information on the overland flow:

Area used for application (acres): 0

Slopes for application area (percent):

Design application rate (gpm/foot of slope width):

Slope length (feet):

Design BOD<sub>5</sub> loading rate (lbs BOD<sub>5</sub>/acre/day):

Design application frequency (hours/day):

Design application frequency (days/week):

- b. Attach a separate engineering report with the method of application and design requirements according to 30 TAC § 217.212.

**Attachment:** N/A

## Attachment TR1.0-1c

### Safety Data Sheets Chemicals Used On Site

Required by Technical Report 1.0  
TCEQ-10055, Item 1.c, Page 2



## Material Safety Data Sheet

### Muriatic acid

Version 1.1

Revision Date: 07/02/2014

#### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : Muriatic acid  
**Product Use Description** : industrial chemicalAcid.

#### Manufacturer or supplier's details

**Company** : Nexeo Solutions LLC  
**Address** : 3 Waterway Square Place Suite 1000  
Woodlands, Tx. 77380

#### Emergency telephone number:

Health North America: 1-855-NEXEO4U (1-855-639-3642)  
Health International: 1-855-NEXEO4U (1-855-639-3642)  
Transport North America: CHEMTREC 800.424.9300

**Additional Information:** : Responsible Party: Product Safety Group  
E-Mail: msds@nexeosolutions.com  
MSDS Requests: 1-855-429-2661  
MSDS Requests Fax: 1-281-500-2370  
Website: www.nexeosolutions.com

#### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Corrosive to metals : Category 1  
Skin corrosion : Sub-category 1B  
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

#### GHS Label element

Hazard pictograms :



Signal word : Danger  
Hazard statements : H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
Precautionary statements : **Prevention:**  
P234 Keep only in original container.



## Material Safety Data Sheet

### Muriatic acid

Version 1.1

Revision Date: 07/02/2014

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### **Response:**

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

#### **Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P406 Store in corrosive resistant stainless steel container with a resistant inner liner.

#### **Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

### Potential Health Effects

#### **Carcinogenicity:**

##### **IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

##### **ACGIH**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

##### **OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

##### **NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or antic-



## Material Safety Data Sheet

### Muriatic acid

Version 1.1

Revision Date: 07/02/2014

ipated carcinogen by NTP.

#### Emergency Overview

|                |                                  |
|----------------|----------------------------------|
| Appearance     | liquid                           |
| Colour         | clear, colourless, white, yellow |
| Odour          | characteristic, strong, pungent  |
| Hazard Summary | No information available.        |

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Hazardous components

| CAS-No.   | Chemical Name     | Concentration (%) |
|-----------|-------------------|-------------------|
| 7647-01-0 | Hydrochloric acid | 20 - 36.99        |

**Synonyms** : Muriatic acid

### SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : If unconscious place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.



## Material Safety Data Sheet

### Muriatic acid

Version 1.1

Revision Date: 07/02/2014

- Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.

#### SECTION 5. FIREFIGHTING MEASURES

- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.





## Material Safety Data Sheet

### Muriatic acid

Version 1.1

Revision Date: 07/02/2014

Methods and materials for containment and cleaning up : Neutralize with chalk, alkali solution or ammonia. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

#### SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully re-sealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Do not store near acids.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

##### Components with workplace control parameters

| CAS-No.   | Components        | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis     |
|-----------|-------------------|-------------------------------|--|-----------|
| 7647-01-0 | Hydrochloric acid | C                             | 2 ppm  | ACGIH     |
|           |                   | C                             | 5 ppm<br>7 mg/m <sup>3</sup>                   | NIOSH REL |
|           |                   | C                             | 5 ppm<br>7 mg/m <sup>3</sup>                   | OSHA Z-1  |



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|  |  |   |                              |         |
|--|--|---|------------------------------|---------|
|  |  | C | 5 ppm<br>7 mg/m <sup>3</sup> | OSHA P0 |
|--|--|---|------------------------------|---------|

#### Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

In the case of vapour formation use a respirator with an approved filter.

Hand protection  
Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection

: impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

: When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |                                    |
|---|------------------------------------|
| Appearance                                  | : liquid                           |
| Colour                                      | : clear, colourless, white, yellow |
| Odour                                       | : characteristic, strong, pungent  |
| Odour Threshold                             | : 0.25 - 10 ppm                    |
| pH  | : 1 @ 20 °C (68 °F)                |
| Freezing Point (Melting point/range)        | : -46 °C (-51 °F)                  |
| Boiling Point (Boiling point/boiling range) | : 100 °C (212 °F)                  |
| Flash point                                 | : No data available                |



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|  |  |
|--|--|
| Evaporation rate                           | : No data available                    |
| Flammability (solid, gas)                  | : No data available                    |
| Burning rate                               | : No data available                    |
| Upper explosion limit                      | : No data available                    |
| Lower explosion limit                      | : No data available                    |
| Vapour pressure                            | : 169 mmHg @ 20 °C (68 °F)             |
| Relative vapour density                    | : 1.267                                |
| Relative density                           | : 1.16Reference substance: (water = 1) |
| Density                                    | : Estimated 9.663 lb/gal               |
| Bulk density                               | : No data available                    |
| Solubility(ies)                            |  |
| Water solubility                           | : soluble                              |
| Solubility in other sol-<br>vents          | : No data available                    |
| Partition coefficient: n-<br>octanol/water | : No data available                    |
| Auto-ignition temperature                  | : No data available                    |
| Thermal decomposition                      | : No data available                    |

---

#### SECTION 10. STABILITY AND REACTIVITY

|                                    |   |
|------------------------------------|---|
| Reactivity                         | : No dangerous reaction known under conditions of normal use.                                     |
| Chemical stability                 | : Stable under normal conditions.   |
| Possibility of hazardous reactions | : Product will not undergo hazardous polymerization. Stable under recommended storage conditions. |
| Conditions to avoid                | : Avoid contact with:<br>Heat, flames and sparks.   |



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Keep away from heat, flame, sparks and other ignition sources.

Hazardous decomposition products : hydrogen chloride  
Phosgene

#### SECTION 11. TOXICOLOGICAL INFORMATION

##### Acute toxicity

###### Components:

###### **7647-01-0:**

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.  
Remarks: No data available

Acute inhalation toxicity : LC50 (rat, male): 8.3 mg/l  
Exposure time: 0.5 h  
Remarks: Acutely Toxic Category 3  
Difficulty in breathing

Acute dermal toxicity : Assessment: The component/mixture is moderately toxic after single contact with skin.  
Remarks: No data available

##### Skin corrosion/irritation

###### Product:

Remarks: Extremely corrosive and destructive to tissue.

###### Components:

###### **7647-01-0:**

Species: rabbit  
Classification: Causes burns.  
Method: OECD Test Guideline 404  
Result: Causes burns.  
GLP: no  
Remarks: Skin irritation, Category 1

##### Serious eye damage/eye irritation

###### Product:

Remarks: May cause irreversible eye damage.



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#### **Components:**

##### **7647-01-0:**

Species: rabbit  
Result: Risk of serious damage to eyes.  
Classification: Risk of serious damage to eyes.  
Method: OECD Test Guideline 405  
GLP: no

#### **Respiratory or skin sensitisation**

#### **Components:**

##### **7647-01-0:**

Test Type: Maximization test  
Species: guinea pig  
Assessment: Does not cause skin sensitisation.  
Method: OECD Test Guideline 406  
Result: Did not cause sensitisation on laboratory animals.  
GLP: no

#### **Germ cell mutagenicity**

#### **Components:**

##### **7647-01-0:**

Genotoxicity in vitro : Test Type: Mammalian cell gene mutation assay  
Test species: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Result: positive  
GLP: no

: Test Type: Chromosome aberration test in vitro  
Test species: Chinese hamster ovary (CHO)  
Metabolic activation: with and without metabolic activation  
Result: Ambiguous  
GLP: no

Germ cell mutagenicity-Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

#### **Carcinogenicity**

#### **Components:**

##### **7647-01-0:**

Species: rat, (male)  
Application Route: Inhalation  
Exposure time: 128 wk  
Dose: 10 ppm  
Frequency of Treatment: 6 h/d, 5 d/wk



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Result: did not display carcinogenic properties  
GLP: no

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

#### Reproductive toxicity

##### **Components:**

###### **7647-01-0:**

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Reproductive toxicity - Assessment : Fertility classification not possible from current data.  
Embryotoxicity classification not possible from current data.

#### STOT - single exposure

##### Product:

No data available

##### Components:

No data available

#### STOT - repeated exposure

##### Product:

No data available

##### Components:

No data available

#### Repeated dose toxicity

##### **Components:**

###### **7647-01-0:**

Species: rat, male and female

NOAEL: 20

LOAEL: 50

Application Route: inhalation (gas)

Exposure time: 13 wk

Number of exposures: 6 h/d, 5 d/wk

Dose: 0, 10, 20, 50 ppm

Method: OECD Test Guideline 413

GLP: yes



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Symptoms: death

#### Aspiration toxicity

#### Further information

#### Product:

Remarks: No data available

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

#### **7647-01-0:**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.25  
Exposure time: 96 h  
Test Type: semi-static test  
GLP: no

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): 4.92  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae : (Chlorella vulgaris (Fresh water algae)): 4.7  
End point: Growth rate  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

### Persistence and degradability

#### Components:

#### **7647-01-0:**

Biodegradability : Remarks: No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available



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#### Other adverse effects

No data available

#### **Product:**

Regulation

40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information

: No data available

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues

: Dispose of in accordance with all applicable local, state and federal regulations.  
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact NEXEO's Environmental Services Group at 800-637-7922.

Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging

: Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

### SECTION 14. TRANSPORT INFORMATION

**IATA (International Air Transport Association):** UN1789, Hydrochloric acid, 8 , II

**IMDG (International Maritime Dangerous Goods):** UN1789, HYDROCHLORIC ACID, 8, II

**DOT (Department of Transportation):** UN1789, Hydrochloric acid, 8, II





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### SECTION 15. REGULATORY INFORMATION

**OSHA Hazards** : Corrosive to skin, Severe eye irritant, Severe respiratory irritant

#### EPCRA - Emergency Planning and Community Right-to-Know Act

##### CERCLA Reportable Quantity

| Components        | CAS-No.   | Component RQ (lbs) | Calculated product RQ (lbs) |
|-------------------|-----------|--------------------|-----------------------------|
| Hydrochloric acid | 7647-01-0 | 5000               | *                           |

\*: Calculated RQ exceeds reasonably attainable upper limit.

##### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

7647-01-0 Hydrochloric acid 36.99 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

##### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

7647-01-0 Hydrochloric acid 36.99 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

7647-01-0 Hydrochloric acid 36.99 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307



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### US State Regulations

#### Massachusetts Right To Know

7647-01-0 Hydrochloric acid 30 - 50 %

#### Pennsylvania Right To Know

7732-18-5 Water 70 - 90 %

7647-01-0 Hydrochloric acid 30 - 50 %

#### New Jersey Right To Know

7732-18-5 Water 70 - 90 %

7647-01-0 Hydrochloric acid 30 - 50 %

#### California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### The components of this product are reported in the following inventories:

|   |   |   |
|---|---|---|
| <b>1907/2006 (EU)</b>   | : | n (Negative listing)<br>(Not in compliance with the inventory)                              |
| <b>Switzerland. New notified substances and declared preparations</b> | : | y (positive listing)<br>(The formulation contains substances listed on the Swiss Inventory) |
| <b>United States TSCA Inventory</b>                                   | : | y (positive listing)<br>(On TSCA Inventory)   |
| <b>Canadian Domestic Substances List (DSL)</b>                        | : | y (positive listing)<br>(All components of this product are on the Canadian DSL.)           |
| <b>Australia Inventory of Chemical Substances (AICS)</b>              | : | y (positive listing)<br>(On the inventory, or in compliance with the inventory)             |
| <b>New Zealand. Inventory of Chemical Substances</b>                  | : | n (Negative listing)<br>(On the inventory, or in compliance with the inventory)             |
| <b>Japan. ENCS - Existing and New Chemical Substances Inventory</b>   | : | n (Negative listing)<br>(Not in compliance)   |



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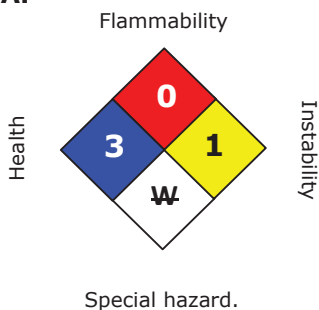
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|   |   |   |
|---|---|---|
|   |   | with the inventory)   |
| <b>Japan. ISHL - Inventory of Chemical Substances (METI)</b>              | : | y (positive listing)<br>(On the inventory,<br>or in compliance<br>with the inventory) |
| <b>Korea. Korean Existing Chemicals Inventory (KECI)</b>                  | : | y (positive listing)<br>(On the inventory,<br>or in compliance<br>with the inventory) |
| <b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b> | : | y (positive listing)<br>(On the inventory,<br>or in compliance<br>with the inventory) |
| <b>China. Inventory of Existing Chemical Substances in China (IECSC)</b>  | : | y (positive listing)<br>(On the inventory,<br>or in compliance<br>with the inventory) |

### SECTION 16. OTHER INFORMATION

#### Further information

#### NFPA:



#### HMIS III:

|                        |          |
|------------------------|----------|
| <b>HEALTH</b>          | <b>3</b> |
| <b>FLAMMABILITY</b>    | <b>0</b> |
| <b>PHYSICAL HAZARD</b> | <b>1</b> |

0 = not significant, 1 = Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to



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confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by NEXEO™ Solutions EHS Product Safety Department (1-855-429-2661) MSDS@nexeosolutions.com.

#### Material number:

16058099, 16058098, 16058097

| Key or legend to abbreviations and acronyms used in the safety data sheet |  |       |  |
|---|--|-------|--|
| ACGIH   | American Conference of Government Industrial Hygienists  | LD50  | Lethal Dose 50%  |
| AICS  | Australia, Inventory of Chemical Substances              | LOAEL | Lowest Observed Adverse Effect Level   |
| DSL   | Canada, Domestic Substances List                         | NFPA  | National Fire Protection Agency  |
| NDSL  | Canada, Non-Domestic Substances List                     | NIOSH | National Institute for Occupational Safety & Health                                  |
| CNS   | Central Nervous System                                   | NTP   | National Toxicology Program  |
| CAS   | Chemical Abstract Service                                | NZIoC | New Zealand Inventory of Chemicals   |
| EC50  | Effective Concentration                                  | NOAEL | No Observable Adverse Effect Level   |
| EC50  | Effective Concentration 50%                              | NOEC  | No Observed Effect Concentration   |
| EGEST   | EOSCA Generic Exposure Scenario Tool                     | OSHA  | Occupational Safety & Health Administration  |
| EOSCA   | European Oilfield Specialty Chemicals Association        | PEL   | Permissible Exposure Limit   |
| EINECS  | European Inventory of Existing Chemical Substances       | PICCS | Philippines Inventory of Commercial Chemical Substances                              |
| MAK   | Germany Maximum Concentration Values                     | PRNT  | Presumed Not Toxic   |
| GHS   | Globally Harmonized System                               | RCRA  | Resource Conservation Recovery Act   |
| >=  | Greater Than or Equal To                                 | STEL  | Short-term Exposure Limit  |
| IC50  | Inhibition Concentration 50%                             | SARA  | Superfund Amendments and Reauthorization Act.  |
| IARC  | International Agency for Research on Cancer              | TLV   | Threshold Limit Value  |
| IECSC   | Inventory of Existing Chemical Substances in China       | TWA   | Time Weighted Average  |
| ENCS  | Japan, Inventory of Existing and New Chemical Substances | TSCA  | Toxic Substance Control Act  |
| KECI  | Korea, Existing Chemical Inventory                       | UVCB  | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <=  | Less Than or Equal To                                    | WHMIS | Workplace Hazardous Materials Information System                                     |
| LC50  |  |       | Lethal Concentration 50%   |



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name:** DOWFROST\* HEAT TRANSFER FLUID

**Issue Date:** 04/09/2015

**Print Date:** 06/11/2015

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

---

## 1. IDENTIFICATION

---

**Product name:** DOWFROST\* HEAT TRANSFER FLUID

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Intended as a heat transfer fluid for closed-loop systems. This product is acceptable for use where there is possibility of incidental food contact and as a product for use in the immersion or spray freezing of wrapped meat and packaged poultry products. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**COMPANY IDENTIFICATION**

THE DOW CHEMICAL COMPANY  
2030 WILLARD H DOW CENTER  
MIDLAND MI 48674-0000  
UNITED STATES

**Customer Information Number:**

800-258-2436

[SDSQuestion@dow.com](mailto:SDSQuestion@dow.com)

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 800-424-9300

**Local Emergency Contact:** 800-424-9300

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## 2. HAZARDS IDENTIFICATION

---

**Hazard classification**

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

**Other hazards**

no data available

---

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

---

**Chemical nature:** Glycol

This product is a mixture.

| Component                      | CASRN     | Concentration |
|--------------------------------|-----------|---------------|
| Propylene glycol               | 57-55-6   | > 95.0 %      |
| Dipotassium hydrogen phosphate | 7758-11-4 | < 3.0 %       |
| Water                          | 7732-18-5 | < 3.0 %       |

---

#### 4. FIRST AID MEASURES

---

##### Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

##### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

---

#### 5. FIREFIGHTING MEASURES

---

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

##### Special hazards arising from the substance or mixture

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

---

## 6. ACCIDENTAL RELEASE MEASURES

---

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.

---

## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** No special precautions required. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**Conditions for safe storage:** Do not store in: Galvanized steel. Opened or unlabeled containers. Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Control parameters**

Exposure limits are listed below, if they exist.

| Component        | Regulation | Type of listing | Value/Notation       |
|------------------|------------|-----------------|----------------------|
| Propylene glycol | US WEEL    | TWA             | 10 mg/m <sup>3</sup> |

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

#### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields).

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Appearance

|   |  |
|---|--|
| <b>Physical state</b>                       | Liquid.  |
| <b>Color</b>                                | Colorless  |
| <b>Odor</b>                                 | Characteristic   |
| <b>Odor Threshold</b>                       | No test data available   |
| <b>pH</b>                                   | 10.0 50% <i>Literature</i>   |
| <b>Melting point/range</b>                  | Not applicable to liquids  |
| <b>Freezing point</b>                       | supercools   |
| <b>Boiling point (760 mmHg)</b>             | 152 °C ( 306 °F) <i>Literature</i>   |
| <b>Flash point</b>                          | <b>closed cup</b> 104 °C ( 219 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i> (based on major component), Propylene glycol.<br><b>open cup</b> <i>Cleveland Open Cup ASTM D92</i> None |
| <b>Evaporation Rate (Butyl Acetate = 1)</b> | <0.5 <i>Estimated.</i>   |
| <b>Flammability (solid, gas)</b>            | Not applicable to liquids  |
| <b>Lower explosion limit</b>                | 2.6 % vol <i>Literature</i> Propylene glycol.  |
| <b>Upper explosion limit</b>                | 12.5 % vol <i>Literature</i> Propylene glycol.   |



|  |   |
|--|---|
| Vapor Pressure                         | 2.2 mmHg <i>Literature</i>                          |
| Relative Vapor Density (air = 1)       | >1.0 <i>Literature</i>                              |
| Relative Density (water = 1)           | 1.05 at 20 °C (68 °F) / 20 °C <i>Literature</i>     |
| Water solubility                       | 100 % <i>Literature</i>                             |
| Partition coefficient: n-octanol/water | no data available                                   |
| Auto-ignition temperature              | 371 °C (700 °F) <i>Literature</i> Propylene glycol. |
| Decomposition temperature              | No test data available                              |
| Kinematic Viscosity                    | 43.4 cSt at 20 °C (68 °F) <i>Literature</i>         |
| Explosive properties                   | no data available                                   |
| Oxidizing properties                   | no data available                                   |
| Molecular weight                       | 76.9 g/mol <i>Literature</i>                        |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

**Incompatible materials:** Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Organic acids.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information on this product or its components appear in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For the major component(s): Propylene glycol.  
LD50, Rat, > 20,000 mg/kg

**Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

For the major component(s): Propylene glycol.  
LD50, Rabbit, > 20,000 mg/kg

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).

For the major component(s):  
LC50, Rat, 4 Hour, vapour, 6.15 mg/l No deaths occurred following exposure to a saturated atmosphere.

**Skin corrosion/irritation**

Prolonged contact is essentially nonirritating to skin.  
Repeated contact may cause flaking and softening of skin.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.  
Corneal injury is unlikely.

**Sensitization**

For the major component(s):  
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

**Carcinogenicity**

Similar formulations did not cause cancer in laboratory animals.

**Teratogenicity**

For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

For the major component(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

**Mutagenicity**

In vitro genetic toxicity studies were negative. For the major component(s): Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information on this product or its components appear in this section when such data is available.*

### Toxicity

#### Propylene glycol

##### **Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 40,613 mg/l, OECD Test Guideline 203

##### **Acute toxicity to aquatic invertebrates**

LC50, Ceriodaphnia dubia (water flea), static test, 48 Hour, 18,340 mg/l, OECD Test Guideline 202

##### **Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, Growth rate inhibition, 19,000 mg/l, OECD Test Guideline 201

##### **Toxicity to bacteria**

NOEC, Pseudomonas putida, 18 Hour, > 20,000 mg/l

##### **Chronic toxicity to aquatic invertebrates**

NOEC, Ceriodaphnia dubia (water flea), semi-static test, 7 d, number of offspring, 13,020 mg/l

#### Dipotassium hydrogen phosphate

##### **Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).  
LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, > 900 mg/l, Method Not Specified.

### Persistence and degradability

#### Propylene glycol

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

**Biodegradation:** 81 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

**Biodegradation:** 96 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 306 or Equivalent

**Theoretical Oxygen Demand:** 1.68 mg/mg

**Chemical Oxygen Demand:** 1.53 mg/mg

**Biological oxygen demand (BOD)**

| Incubation Time | BOD      |
|-----------------|----------|
| 5 d             | 69.000 % |
| 10 d            | 70.000 % |
| 20 d            | 86.000 % |

**Photodegradation**

**Atmospheric half-life:** 10 Hour

**Method:** Estimated.

**Dipotassium hydrogen phosphate**

**Biodegradability:** Biodegradation is not applicable.

**Bioaccumulative potential**

**Propylene glycol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** -1.07 Measured

**Bioconcentration factor (BCF):** 0.09 Estimated.

**Dipotassium hydrogen phosphate**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high water solubility.

**Mobility in soil**

**Propylene glycol**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** < 1 Estimated.

**Dipotassium hydrogen phosphate**

No relevant data found.

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## 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR

UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

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## 14. TRANSPORT INFORMATION

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### DOT

Not regulated for transport

### Classification for SEA transport (IMO-IMDG):

Not regulated for transport

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

Consult IMO regulations before transporting ocean bulk

### Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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### OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

**Components**

**CASRN**

Propylene glycol

57-55-6

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**United States TSCA Inventory (TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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**16. OTHER INFORMATION**


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**Hazard Rating System****NFPA**

| Health | Fire | Reactivity |
|--------|------|------------|
| 0      | 1    | 0          |

**Revision**

Identification Number: 101234106 / A001 / Issue Date: 04/09/2015 / Version: 7.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

|         |   |
|---------|---|
| TWA     | 8-hr TWA  |
| US WEEL | USA. Workplace Environmental Exposure Levels (WEEL) |

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** SULFANILIC ACID

**Other means of identification**

**Product No.:** 2864, 0354

**Recommended use and restriction on use**

**Recommended use:** Not available.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor Information**

**Manufacturer**

Avantor Performance Materials, Inc.  
3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

Telephone:

Customer Service: 855-282-6867

Fax: 610-573-2610

Contact Person: Environmental Health & Safety

E-mail: info@avantormaterials.com

**Emergency telephone number:** CHEMTREC: 1-800-424-9300 within US and Canada

CHEMTREC: 1-703-527-3887 outside US and Canada

## 2. Hazard(s) identification

**Hazard Classification**

**Health Hazards**

|                                   |             |
|-----------------------------------|-------------|
| Skin Corrosion/Irritation         | Category 2  |
| Serious Eye Damage/Eye Irritation | Category 2A |
| Skin sensitizer                   | Category 1  |

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Warning

**Hazard Statement:** Causes serious eye irritation.  
Causes skin irritation.  
May cause an allergic skin reaction.

**Precautionary Statement**

- Prevention:** Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray.
- Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Unknown toxicity - Health**

|  |       |
|--|-------|
| Acute toxicity, oral                     | 100 % |
| Acute toxicity, dermal                   | 100 % |
| Acute toxicity, inhalation, vapor        | 100 % |
| Acute toxicity, inhalation, dust or mist | 100 % |

**Other hazards which do not result in GHS classification:** None.

### 3. Composition/information on ingredients

**Substances**

| Chemical Identity | Common name and synonyms | CAS number | Content in percent (%)* |
|-------------------|--------------------------|------------|-------------------------|
| SULFANILIC ACID   |                          | 121-57-3   | 90 - 100%               |

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

- General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
- Ingestion:** Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.
- Inhalation:** Move to fresh air. Get medical attention if symptoms persist.
- Skin Contact:** Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.
- Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** Irritating to eyes, respiratory system and skin.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Treat symptomatically. Symptoms may be delayed.

### 5. Fire-fighting measures



**General Fire Hazards:** In case of fire and/or explosion do not breathe fumes.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

**Methods and material for containment and cleaning up:** Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

**Notification Procedures:** Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

**Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling:** Use personal protective equipment as required. Avoid inhalation of dust. Wash thoroughly after handling. Avoid contact with eyes. Avoid contact with skin.

**Conditions for safe storage, including any incompatibilities:** Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

**8. Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

None of the components have assigned exposure limits.

**Appropriate Engineering Controls**

No data available.

### Individual protection measures, such as personal protective equipment

|                                |   |
|--------------------------------|---|
| <b>General information:</b>    | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |
| <b>Eye/face protection:</b>    | Use tight fitting goggles if dust is generated.   |
| <b>Skin Protection</b>         |   |
| <b>Hand Protection:</b>        | Wear protective gloves.   |
| <b>Skin protection:</b>        | Wear suitable protective clothing.  |
| <b>Respiratory Protection:</b> | In case of inadequate ventilation use suitable respirator.  |
| <b>Hygiene measures:</b>       | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.  |

## 9. Physical and chemical properties

### Appearance

|  |                              |
|--|------------------------------|
| <b>Physical state:</b>                                       | solid                        |
| <b>Form:</b>   | Crystals or powder.          |
| <b>Color:</b>  | White                        |
| <b>Odor:</b>   | Odorless                     |
| <b>Odor threshold:</b>                                       | No data available.           |
| <b>pH:</b>   | No data available.           |
| <b>Melting point/freezing point:</b>                         | 288 °C                       |
| <b>Initial boiling point and boiling range:</b>              | No data available.           |
| <b>Flash Point:</b>  | No data available.           |
| <b>Evaporation rate:</b>                                     | No data available.           |
| <b>Flammability (solid, gas):</b>                            | No data available.           |
| <b>Upper/lower limit on flammability or explosive limits</b> |                              |
| <b>Flammability limit - upper (%):</b>                       | No data available.           |
| <b>Flammability limit - lower (%):</b>                       | No data available.           |
| <b>Explosive limit - upper (%):</b>                          | No data available.           |
| <b>Explosive limit - lower (%):</b>                          | No data available.           |
| <b>Vapor pressure:</b>                                       | Estimated < 0,01 kPa (25 °C) |
| <b>Vapor density:</b>  | No data available.           |
| <b>Relative density:</b>                                     | 1,485 (4 °C)                 |
| <b>Solubility(ies)</b>                                       |                              |
| <b>Solubility in water:</b>                                  | 10 g/l (20 °C)               |
| <b>Solubility (other):</b>                                   | No data available.           |
| <b>Partition coefficient (n-octanol/water):</b>              | No data available.           |
| <b>Auto-ignition temperature:</b>                            | No data available.           |
| <b>Decomposition temperature:</b>                            | No data available.           |
| <b>Viscosity:</b>  | No data available.           |

### Other information

|                          |                         |
|--------------------------|-------------------------|
| <b>Molecular weight:</b> | 173,84 g/mol (C6H7NO3S) |
|--------------------------|-------------------------|

**10. Stability and reactivity**

|  |  |
|--|--|
| <b>Reactivity:</b>                         | No dangerous reaction known under conditions of normal use.                    |
| <b>Chemical Stability:</b>                 | Material is stable under normal conditions.                                    |
| <b>Possibility of hazardous reactions:</b> | Hazardous polymerization does not occur.                                       |
| <b>Conditions to avoid:</b>                | Contact with incompatible materials.   |
| <b>Incompatible Materials:</b>             | Strong oxidizing agents.   |
| <b>Hazardous Decomposition Products:</b>   | Thermal decomposition may produce oxides of carbon and sulfur. Nitrogen Oxides |

**11. Toxicological information****Information on likely routes of exposure**

|                      |  |
|----------------------|--|
| <b>Ingestion:</b>    | May be harmful if swallowed. May cause irritation of the gastrointestinal tract. |
| <b>Inhalation:</b>   | May be harmful if inhaled. May cause irritation to the respiratory system.       |
| <b>Skin Contact:</b> | Causes skin irritation. May cause an allergic skin reaction.                     |
| <b>Eye contact:</b>  | Causes serious eye irritation.   |

**Information on toxicological effects****Acute toxicity (list all possible routes of exposure)**

**Oral Product:** No data available.

**Dermal Product:** No data available.

**Inhalation Product:** No data available.

**Repeated dose toxicity Product:** No data available.

**Skin Corrosion/Irritation Product:** Causes skin irritation.

**Serious Eye Damage/Eye Irritation Product:** No data available.

**Respiratory or Skin Sensitization Product:** May cause an allergic skin reaction.

**Carcinogenicity Product:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**ACGIH Carcinogens:**

No carcinogenic components identified

**Germ Cell Mutagenicity****In vitro****Product:** No mutagenic components identified**In vivo****Product:** No mutagenic components identified**Reproductive toxicity****Product:** No components toxic to reproduction**Specific Target Organ Toxicity - Single Exposure****Product:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** No data available.**Aspiration Hazard****Product:** Not classified**Other effects:** None known.**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Chronic hazards to the aquatic environment:****Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to Aquatic Plants****Product:** No data available.**Persistence and Degradability****Biodegradation****Product:** There are no data on the degradability of this product.**BOD/COD Ratio****Product:** No data available.

**Bioaccumulative Potential****Bioconcentration Factor (BCF)****Product:** No data available on bioaccumulation.**Partition Coefficient n-octanol / water (log Kow)****Product:** No data available.**Mobility in Soil:** No data available.**Other Adverse Effects:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.**13. Disposal considerations****Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.**14. Transport information****TDG**

Not regulated.

**IMDG**

Not regulated.

**IATA**

Not regulated.

**15. Regulatory information****Canada Federal Regulations****List of Toxic Substances (CEPA, Schedule 1)**

Not Regulated

**Export Control List (CEPA 1999, Schedule 3)**

Not Regulated

**National Pollutant Release Inventory (NPRI)****Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements**

NPRI PT5 Not Regulated

**Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Parts 1-4)**

NPRI Not Regulated

**Greenhouse Gases**

Not Regulated

**Controlled Drugs and Substances Act**

|            |               |
|------------|---------------|
| CA CDSI    | Not Regulated |
| CA CDSII   | Not Regulated |
| CA CDSIII  | Not Regulated |
| CA CDSIV   | Not Regulated |
| CA CDSV    | Not Regulated |
| CA CDSVII  | Not Regulated |
| CA CDSVIII | Not Regulated |

**Precursor Control Regulations**

Not Regulated

**International regulations**

**Montreal protocol**

not applicable

**Stockholm convention**

not applicable

**Rotterdam convention**

not applicable

**Kyoto protocol**

not applicable

**Inventory Status:**

|  |  |
|--|--|
| Australia AICS:                          | On or in compliance with the inventory |
| Canada DSL Inventory List:               | On or in compliance with the inventory |
| EINECS, ELINCS or NLP:                   | On or in compliance with the inventory |
| Japan (ENCS) List:                       | On or in compliance with the inventory |
| China Inv. Existing Chemical Substances: | On or in compliance with the inventory |
| Korea Existing Chemicals Inv. (KECI):    | On or in compliance with the inventory |
| Canada NDSL Inventory:                   | Not in compliance with the inventory.  |
| Philippines PICCS:                       | On or in compliance with the inventory |
| US TSCA Inventory:                       | On or in compliance with the inventory |
| New Zealand Inventory of Chemicals:      | On or in compliance with the inventory |
| Japan ISHL Listing:                      | On or in compliance with the inventory |
| Japan Pharmacopoeia Listing:             | Not in compliance with the inventory.  |

**16. Other information, including date of preparation or last revision**

|                             |                    |
|-----------------------------|--------------------|
| <b>Issue Date:</b>          | 12.02.2016         |
| <b>Revision Date:</b>       | No data available. |
| <b>Version #:</b>           | 1.0                |
| <b>Further Information:</b> | No data available. |

**Disclaimer:**

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**SAFETY DATA SHEET****1. Identification**

**Product identifier** HYDROGEN PEROXIDE 34%

**Other means of identification** None.

**Recommended use** ALL PROPER AND LEGAL PURPOSES

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company name** Brenntag Southwest, Inc.

**Address** 610 Fisher Road  
Longview, TX 75604

**Telephone** 903-759-7151

**E-mail** Not available.

**Emergency phone number** 800-424-9300 CHEMTREC

**2. Hazard(s) identification**

**Physical hazards** Oxidizing liquids Category 2

**Health hazards** Acute toxicity, oral Category 4

Serious eye damage/eye irritation Category 1

Specific target organ toxicity, repeated exposure Category 2

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**



**Signal word** Danger

**Hazard statement** May intensify fire; oxidizer. Harmful if swallowed. Causes serious eye damage. May cause damage to organs through prolonged or repeated exposure.

**Precautionary statement**

**Prevention** Keep away from heat. Keep/Store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection. Wear protective gloves/eye protection/face protection.

**Response** If swallowed: Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Rinse mouth. In case of fire: Use appropriate media to extinguish.

**Storage** Store away from incompatible materials.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

**3. Composition/information on ingredients****Mixtures**



| Chemical name                            | Common name and synonyms | CAS number | %  |
|--|--------------------------|------------|----|
| HYDROGEN PEROXIDE (H2O2)                 |                          | 7722-84-1  | 34 |
| Other components below reportable levels |                          |            | 66 |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

#### 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash off with soap and water. Get medical attention if irritation develops and persists.   |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.   |
| <b>Ingestion</b>  | Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Prolonged exposure may cause chronic effects.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.  |
| <b>General information</b>  | Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse. |

#### 5. Fire-fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).   |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.  |
| <b>Specific hazards arising from the chemical</b>                    | Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed.            |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.   |
| <b>Fire fighting equipment/instructions</b>                          | In case of fire and/or explosion do not breathe fumes. In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.  |
| <b>General fire hazards</b>  | May intensify fire; oxidizer. Contact with combustible material may cause fire.   |

#### 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.   |
| <b>Methods and materials for containment and cleaning up</b>               | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area.<br><br>Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.<br><br>Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.<br><br>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Wear appropriate protective equipment and clothing during clean-up. |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

**Precautions for safe handling** Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Provide adequate ventilation. Do not breathe mist or vapor. Do not get this material in contact with eyes. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components   | Type | Value                 |
|--|------|-----------------------|
| HYDROGEN PEROXIDE (H <sub>2</sub> O <sub>2</sub> ) (CAS 7722-84-1) | PEL  | 1.4 mg/m <sup>3</sup> |
|  |      | 1 ppm                 |

#### US. ACGIH Threshold Limit Values

| Components   | Type | Value |
|--|------|-------|
| HYDROGEN PEROXIDE (H <sub>2</sub> O <sub>2</sub> ) (CAS 7722-84-1) | TWA  | 1 ppm |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Components   | Type | Value                 |
|--|------|-----------------------|
| HYDROGEN PEROXIDE (H <sub>2</sub> O <sub>2</sub> ) (CAS 7722-84-1) | TWA  | 1.4 mg/m <sup>3</sup> |
|  |      | 1 ppm                 |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Chemical respirator with organic vapor cartridge and full facepiece.

#### Skin protection

**Hand protection** Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

**Other** Wear suitable protective clothing. Use of an impervious apron is recommended.

**Respiratory protection** Chemical respirator with organic vapor cartridge and full facepiece.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

**Physical state** Liquid.

**Form** Liquid.

**Color** Colorless

**Odor** SLIGHTLY PUNGENT

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 28 °F (-2.22 °C)

**Initial boiling point and boiling range** 243.82 °F (117.68 °C) estimated

Material name: HYDROGEN PEROXIDE 34%

542235 Version #: 06 Revision date: 07-01-2015 Issue date: 04-15-2015

SDS US

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|   |                               |
|---|-------------------------------|
| <b>Flash point</b>                                  | Not available.                |
| <b>Evaporation rate</b>                             | Not available.                |
| <b>Flammability (solid, gas)</b>                    | Not applicable.               |
| <b>Upper/lower flammability or explosive limits</b> |                               |
| <b>Flammability limit - lower (%)</b>               | Not available.                |
| <b>Flammability limit - upper (%)</b>               | Not available.                |
| <b>Explosive limit - lower (%)</b>                  | Not available.                |
| <b>Explosive limit - upper (%)</b>                  | Not available.                |
| <b>Vapor pressure</b>                               | 0.89 hPa estimated            |
| <b>Vapor density</b>                                | Not available.                |
| <b>Relative density</b>                             | Not available.                |
| <b>Solubility(ies)</b>                              |                               |
| <b>Solubility (water)</b>                           | Not available.                |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                |
| <b>Auto-ignition temperature</b>                    | Not available.                |
| <b>Decomposition temperature</b>                    | Not available.                |
| <b>Viscosity</b>                                    | Not available.                |
| <b>Other information</b>                            |                               |
| <b>Density</b>                                      | 9.42 lbs/gal                  |
| <b>Explosive properties</b>                         | Not explosive.                |
| <b>Oxidizing properties</b>                         | May intensify fire; oxidizer. |
| <b>Percent volatile</b>                             | 66 % estimated                |
| <b>Specific gravity</b>                             | 1.13                          |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | Greatly increases the burning rate of combustible materials. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.                  |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.                     |
| <b>Conditions to avoid</b>                | Heat. Contact with incompatible materials.                   |
| <b>Incompatible materials</b>             | Combustible material. Reducing agents.                       |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.               |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | May cause damage to organs through prolonged or repeated exposure by inhalation. |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected.                             |
| <b>Eye contact</b>  | Causes serious eye damage.   |
| <b>Ingestion</b>    | Harmful if swallowed.  |

**Symptoms related to the physical, chemical and toxicological characteristics** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

### Information on toxicological effects

|  |  |
|--|--|
| <b>Acute toxicity</b>                    | Harmful if swallowed.                                  |
| <b>Skin corrosion/irritation</b>         | Prolonged skin contact may cause temporary irritation. |
| <b>Serious eye damage/eye irritation</b> | Causes serious eye damage.                             |

**Respiratory or skin sensitization**

**Respiratory sensitization** Not a respiratory sensitizer.

**Skin sensitization** This product is not expected to cause skin sensitization.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

HYDROGEN PEROXIDE (H2O2) (CAS 7722-84-1) 3 Not classifiable as to carcinogenicity to humans.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**13. Disposal considerations**

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information**

**DOT**

**UN number** UN2014

**UN proper shipping name** HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS

**Transport hazard class(es)**

**Class** 5.1

**Subsidiary risk** 8

**Packing group** II

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**ERG number** 140

DOT information on packaging may be different from that listed.

## DOT

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>) (CAS 7722-84-1) 1000 LBS

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - Yes  
 Fire Hazard - Yes  
 Pressure Hazard - No  
 Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

| Chemical name                                      | CAS number | Reportable quantity | Threshold planning quantity | Threshold planning quantity, lower value | Threshold planning quantity, upper value |
|--|------------|---------------------|-----------------------------|--|--|
| HYDROGEN PEROXIDE (H <sub>2</sub> O <sub>2</sub> ) | 7722-84-1  | 1000                | 1000 lbs                    |  |  |

**SARA 311/312 Hazardous chemical** No

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations****US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. Massachusetts RTK - Substance List**

HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>) (CAS 7722-84-1)

**US. New Jersey Worker and Community Right-to-Know Act**

HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>) (CAS 7722-84-1)

**US. Pennsylvania Worker and Community Right-to-Know Law**

HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>) (CAS 7722-84-1)

**US. Rhode Island RTK**

HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>) (CAS 7722-84-1)

**US. California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

|                      |   |
|----------------------|---|
| <b>Issue date</b>    | 04-15-2015  |
| <b>Revision date</b> | 07-01-2015  |
| <b>Version #</b>     | 06  |
| <b>HMS® ratings</b>  | Health: 3*<br>Flammability: 0<br>Physical hazard: 2   |
| <b>NFPA ratings</b>  | Health: 3<br>Flammability: 0<br>Instability: 0<br>Special hazards: OX   |
| <b>Disclaimer</b>    | While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale. |

## **SAFETY DATA SHEET**

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910.1200. Standard must be consulted for specific regulations.

## **JARACE CA-FCC**

Quick Identifier  
Common Name (Used on Label and List)

---

### **SECTION I - IDENTIFICATION**

#### **Jarace CA-FCC**

Manufacturer's Name - **JARCHEM INDUSTRIES, INC.**  
Address - **414 Wilson Avenue  
Newark, NJ 07105**  
Emergency Telephone # - **(973) 344-0600**      Secondary Telephone No.: **CHEMTREC  
(800) 424-9300  
24 Hours a Day**  
Other Information Calls - **(973) 344-0600**  
Date Prepared - **7/25/2014**  
Date Revised - **5/21/2015**

---

### **SECTION II - HAZARDS IDENTIFICATION**

#### **EMERGENCY OVERVIEW**

**Signal Word: WARNING**

#### **GHS Classification:**

**Eye Corrosion/Irritation - Category 2B Causes eye irritation**

**Skin Corrosion/Irritation - Category 3**

**Wash hands thoroughly after handling. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.**

#### **HMIS HAZARD RATINGS**

HEALTH 1  
FLAMMABILITY 0  
REACTIVITY 0

#### **Pictograms**

EYES: Dust may cause eye irritation.

SKIN: May cause skin irritation.

INHALATION: Dust may cause respiratory tract irritation.

INGESTION: May cause gastrointestinal (digestive) tract irritation. May affect brain.

(See section for Toxicological Information)

---

### **SECTION III - COMPOSITION / INFORMATION ON INGREDIENT**

PRODUCT NAME: Jarace CA-FCC

SYNONYMS: Calcium Acetate FCC

CHEMICAL NAME: Calcium Acetate

CAS#: 62-54-4

EC#: 200-540-9

#### **Ingredients**

#### **CAS#**

#### **% by Weight**

Calcium Acetate

62-54-4

100

See sections on Exposure Guidelines and Regulatory Classifications.

---

### **SECTION IV - FIRST-AID MEASURES**

## **SAFETY DATA SHEET**

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## **JARACE CA-FCC**

Quick Identifier  
Common Name (Used on Label and List)

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**EYES:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

**SKIN:** Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

**INHALATION:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**INGESTION:** Do NOT induce vomiting unless directed to do so by medical personnel. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

---

### **SECTION V - FIRE-FIGHTING MEASURES**

#### **NFPA Rating**

**FLAMMABLE PROPERTIES:** May be combustible at high temperature.

HEALTH 1

**FLASH POINT:**

CLOSED CUP Higher than  
93.3°C (200°F)

FLAMMABILITY 0

REACTIVITY 0

**AUTO IGNITION TEMPERATURE:** N/A

**FIRE AND EXPLOSION HAZARD:** Risks of explosion of the product in presence of mechanical impact: Not available.  
Risks of explosion of the product in presence of static discharge: Not available.

**EXTINGUISHING MEDIA AND INSTRUCTIONS:**

**SMALL FIRE:** Use DRY chemical powder. **LARGE FIRE:** Use water spray, fog or foam. Do not use water jet.

---

### **SECTION VI - ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE OF SPILL OR LEAK:**

**SMALL SPILLS:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**LARGE SPILLS:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

---

### **SECTION VII - HANDLING AND STORAGE**

**USUAL SHIPPING CONTAINERS:**

**STORAGE/TRANSPORT TEMPERATURE:** Very Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).

**STORAGE/TRANSPORT PRESSURE:**

**PRECAUTIONS:** Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, moisture.

---

### **SECTION VIII - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust,



## **SAFETY DATA SHEET**

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910.1200. Standard must be consulted for specific regulations.

## **JARACE CA-FCC**

Quick Identifier  
Common Name (Used on Label and List)

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fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### **PERSONAL PROTECTIVE EQUIPMENT:**

EYES: Safety glasses.

SKIN: Lab coat and gloves.

RESPIRATORY PROTECTION: Dust respirator. Be sure to use an approved/certified respirator or equivalent.

### **EXPOSURE GUIDELINES:**

---

### **SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: White granules or powder

PHYSICAL STATE: Solid

VAPOR PRESSURE (mm Hg): N/A

VAPOR DENSITY (AIR=1): N/A

MELTING POINT: Decomposes at 160° C

SPECIFIC GRAVITY (H<sub>2</sub>O=1): 1.5 (Water=1)

SOLUBILITY IN WATER: Appreciable

### **ORGANIC VOLATILE IMPURITIES:**

FLAMMABILITY, FLASH POINT, LFL/UFL,  
AUTO IGNITION TEMP: See Section V

DECOMPOSITION TEMP: See Section X

---

### **SECTION X - STABILITY AND REACTIVITY**

CONDITIONS TO AVOID: Excess heat, moisture, incompatible materials.

INCOMPATIBILITY WITH OTHER MATERIALS: Reactive with oxidizing agents, moisture.

HAZARDOUS DECOMPOSITION: Acetone

HAZARDOUS POLYMERIZATION: Will not occur.

---

### **SECTION XI - TOXICOLOGICAL INFORMATION**

EYES: N/A

SKIN: N/A

INHALATION: N/A

INGESTION: N/A

---

### **SECTION XII - ECOLOGICAL INFORMATION**

---

### **SECTION XIII - DISPOSAL CONSIDERATIONS**

SPECIAL INSTRUCTIONS: In accordance with all federal, state and local regulations  
Page 3 of 5

**SAFETY DATA SHEET**

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910.1200. Standard must be consulted for specific regulations.

**JARACE CA-FCC**

Quick Identifier  
Common Name (Used on Label and List)

**SECTION XIV - TRANSPORT INFORMATION**

DOT DESCRIPTION: Class Not regulated Packing Group

PROPER SHIPPING NAME:

ICAO/IATA DESCRIPTION: Class Not regulated Packing Group

IMDG DESCRIPTION: Class Not regulated Packing Group

EMS No.:

**SECTION XV - REGULATORY INFORMATION**

**US FEDERAL REGULATIONS**

OSHA HAZARD COMMUNICATION STANDARD CLASSIFICATION:

**TSCA INVENTORY LISTING:** This material is listed on the TSCA inventory.

COMPONENT: Calcium Acetate

CAS#: 62-54-4

**SARA 302 Status:** Contains no chemicals subject to SARA 302 report

**SARA 311/312 CLASSIFICATION:** Non-Hazardous Substance

**SARA 313 CHEMICALS:** No chemicals subject to SARA 313 report

**CERCLA HAZARDOUS SUBSTANCE:**

**EUROPEAN EINECS LISTING:**

**CANADIAN (DSL) LISTING:**

**CANADIAN (NDSL) LISTING:**

**CHINA INVENTORY LISTING:**

**TAIWAN LISTING:**

**JAPANESE (MITI) LISTING:**

**KOREAN INVENTORY LISTING:**

**AUSTRALIAN (AICS) LISTING:**

**NEW ZEALAND LISTING:**

**PHILIPPINES (PICCS) LISTING:**

**CALIFORNIA PROP. 65 LISTING:**

**SECTION XVI - OTHER INFORMATION**

## **SAFETY DATA SHEET**

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910.1200. Standard must be consulted for specific regulations.

## **JARACE CA-FCC**

Quick Identifier

Common Name (Used on Label and List)

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# Attachment TR1.0-1d

## Facility Map

Required by Technical Report 1.0  
TCEQ-10055, Item 1.d, Page 2



**AECOM** 4402 Antioch Blvd  
Houston, TX 77029  
Phone: (813) 454-4797

0 75 150  
Feet

N

- Drainage Areas
- Irrigation Area
- Outfall
- Spill Kit
- Storm Drain
- Facility Boundary
- Oil-Filled Transformer
- Flow Direction

- AST LEGEND**
1. RD-12 FEEDSTOCK - 11,700 GAL
  2. RD-13 FEEDSTOCK - 11,700 GAL
  3. RD-14 FEEDSTOCK - 12,800 GAL
  4. RD-15 FEEDSTOCK - 45,500 GAL
  5. RD-16 FEEDSTOCK - 23,000 GAL
  6. RD-17 FEEDSTOCK - 45,500 GAL
  7. RD-18 USED FEEDSTOCK - 3,384 GAL (WASTE OIL TANK)
  8. RD-36 DIESEL - 172 GAL
  9. DIESEL - 500 GAL (PORTABLE WITH SECONDARY CONTAINMENT)
  10. RD-35 DIESEL - 240 GAL
  11. CARBON BLACK OIL - 6,351 GAL
  12. SAFETY KLEEN SOLVENT - 321 GAL

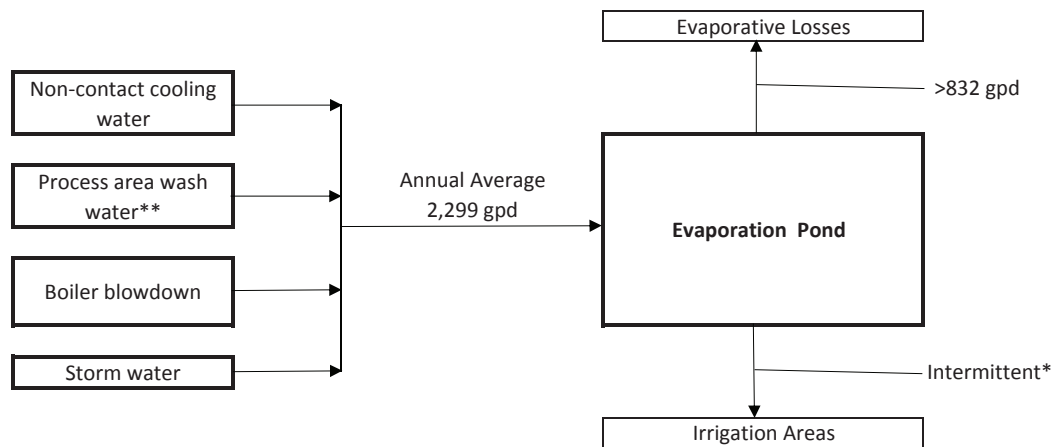
Cabot PDMC  
TR1.0-1e  
Facility Map  
Pampa, TX

## Attachment TR1.0-2b

### Water/Wastewater Flow Balance Schematic

Required by Technical Report 1.0  
TCEQ-10055, Item 2.b, Page 3

**Attachment 6 - Water Flow Schematic**  
**Cabot Corporation Pampa Development and Manufacturing Center**  
**TPDES Permit Major Amendment**  
**WQ0004226000**



\* - As needed to maintain at least 1 feet of freeboard in Evaporation Pond

\*\* - The process area wash water is generated from concrete washing in the process area.

## Attachment TR1.0-5d

### Boiler Water Chemical Additive SDS Information

Required by Technical Report 1.0  
TCEQ-10055, Item 5.d, Page 9



| Information for Boiler Water Additives & Other Chemicals Used Onsite |   |   |   |                                      |                  |   |   |
|--|---|---|---|--------------------------------------|------------------|---|---|
| Product ID Number/ Name  | Product Use                             | Chemical Composition  | Classification (in water)                 | Product/ Active Ingredient Half-Life | Frequency of Use | Ecotoxicological Effects LC50/NOEC/LOEC/ErC50*** (MSDS)   | Concentration of Whole Product/Active Ingredient in Wastestream |
| Boiler Pro Complete  | Boiler caustic/alkalinity builder       | Sodium Hydroxide<br>CAS No. 1310-73-2   | Non-persistent                            | NA                                   | Daily            | LC50<br>125 mg/L, 96 hrs, Mosquito fish<br>45.4 mg/L, 96 hrs, Rainbow trout   | 80 ppm  |
|  |   | Morpholine<br>CAS No. 110-91-8  | Bioaccumulation not expected              | NA                                   |                  | LC50<br>1000mg/L, 96 hrs, Zebra fish<br>285 mg/L, 48 hrs, Golden orfe<br>180 mg/L, 96 hrs, Rainbow trout<br>100 mg/L, 24 hr, Water flea<br>28 mg/L for 96 hr, Selenastrum capricornutum (algae) |   |
| RLT 10   | Boiler caustic/alkalinity builder       | Morpholine<br>CAS No. 110-91-8  | Bioaccumulation not expected              | NA                                   | 3 times per week | LC50<br>1000mg/L, 96 hrs, Zebra fish<br>285 mg/L, 48 hrs, Golden orfe<br>180 mg/L, 96 hrs, Rainbow trout<br>100 mg/L, 24 hr, Water flea<br>28 mg/L for 96 hr, Selenastrum capricornutum (algae) | 80 ppm  |
| Muriatic Acid  | Adjust pH of external outfall           | Hydrochloric Acid, 20-36.99%<br>CAS No. 7647-01-0   | Bioaccumulation not expected              | NA                                   | As needed        | Acute LC50<br>3.25 mg/L, 96 hrs, Bluegill sunfish   | Variable; approximately 1 gal/every 6 months                    |
| Dow Frost  | Anti-Freeze treatment of incoming water | Propylene Glycol, > 95.0%<br>CAS no. 57-55-6  | Bioaccumulation potential is low, BDF<100 | NA                                   | Daily            | LC50<br>40.613 mg/L, 96 hrs, Rainbow trout<br>18.340 mg/L, 48 hr, Water flea<br>19,000 mg/L for 96 hr, Pseudokirchneriella subcapitata (green algae)  | Variable  |
|  |   | Dipotassium hydrogen phosphate, < 3.0%<br>CAS no. 7758-11-4                                 | Bioaccumulation not expected              | NA                                   |                  | LC50<br>> 900 mg/L, 48 hrs, Golden orfe   |   |
|  |   | Water, < 3.0%<br>CAS no. 7732-18-5  | Non-persistent                            | NA                                   |                  | Not Applicable  |   |
| Sulfanilic Acid  | Carbon black treatment phase            | 90-100%<br>CAS No. 121-57-3   | Bioaccumulation not expected              | NA                                   | As needed        | LC50<br>77.8-129.6 mg/L, 96 hrs, Pimephales promelas  | Variable  |
| Hydrogen Peroxide  | Carbon black treatment phase            | Hydrogen Peroxide, 34%<br>CAS no. 7722-84-1<br>Other components below reporting levels, 66% | Bioaccumulation potential                 | 8 hours – 20 days, in freshwater     | As needed        | LC50<br>16.4 mg/L, 96 hrs, Pimephales promelas<br>35 mg/L, 72 hrs, Leuciscus idus   | Variable  |

| Information for Boiler Water Additives & Other Chemicals Used Onsite |                              |  |                           |                                      |                  |  |   |
|--|------------------------------|--|---------------------------|--------------------------------------|------------------|--|---|
| Product ID Number/ Name  | Product Use                  | Chemical Composition                     | Classification (in water) | Product/ Active Ingredient Half-Life | Frequency of Use | Ecotoxicological Effects LC50/NOEC/LOEC/ErC50*** (MSDS)            | Concentration of Whole Product/Active Ingredient in Wastestream |
| Calcium Acetate  | Carbon black treatment phase | Calcium Acetate, 100%<br>CAS No. 62-54-4 | No data available         | NA                                   | As needed        | ErC50<br>> 1000 mg/L, 72 hrs, Skeletonema costatum (marine diatom) | Variable  |

Source: EPA Persistent, Bioaccumulative, Toxic (PBT) Profiler; <http://www.pbtprofiler.net/default.asp>; individual product MSDSs; Toxicology Data Network Hazardous Substances Data Bank; <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>, <http://datasheets.scbt.com/sc-203142.pdf>

Note: The boiler water additives identified in the table above are used currently. However, these particular brands could change to similar products in the future depending on market conditions.

\* Half-life in water;

\*\* Half-life in the atmosphere;

\*\*\*LC50 - Lethal Concentration 50: concentration in water having 50% chance of causing death to aquatic life/NOEC (no observed effect concentration)/LOEC (lowest observed effect concentration)/ErC50: concentration of substance which results in a 50% reduction in growth rate

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Boiler Pro Complete**

Validation Date: 5/11/15

Company Identification:  
**U.S. Water Services**  
12270 43<sup>rd</sup> St NE  
St. Michael, MN 55376 USA

Contact Information:  
1-800-255-3924 (US & Canada Emergencies – CHEMTEL)  
1-813-248-0585 (International Emergencies – CHEMTEL)  
1-866-663-7632 (Non-emergency)  
SDS@uswaterservices.com (email)  
www.uswaterservices.com (web))

## 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Corrosive to metals (Category 1), H290  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Dermal (Category 3), H311  
Skin corrosion (Category 1A), H314  
Serious eye damage (Category 1), H318  
Acute aquatic toxicity (Category 3), H402

### PICTOGRAM/SYMBOL:



**SIGNAL WORD:** DANGER

### HAZARD STATEMENTS - LABEL ELEMENTS

#### Health Hazards Statement(s)

|      |   |
|------|---|
| H302 | Harmful if swallowed                    |
| H311 | Toxic in contact with skin              |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage               |
| H402 | Harmful to aquatic life                 |

#### Physical Hazards Statement(s)

|      |                            |
|------|----------------------------|
| H290 | May be corrosive to metals |
|------|----------------------------|

#### Precautionary Statement(s) - Prevention

|      |  |
|------|--|
| P264 | Wash skin and contaminated clothing thoroughly after handling                |
| P270 | Do not eat, drink or smoke when using this product                           |
| P260 | Do not breathe dust, fume, gas, mist, vapors, spray                          |
| P280 | Wear protective gloves, protective clothing, eye protection, face protection |
| P273 | Avoid release to the environment   |

#### Precautionary Statement(s) - Response

|                |  |
|----------------|--|
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.   |
| P303+P361+P353 | IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P363           | Wash contaminated clothing before reuse.   |

P333+P313 If skin irritation or rash occurs: Get medical advice/attention  
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P310 Immediately call a POISON CENTER or doctor/physician  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Precautionary Statement(s) - Storage**

P405 Store locked up.

**Precautionary Statement(s) - Disposal**

P501 Dispose of contents/container in accordance with applicable local, regional, national, and/or international regulations

**Hazards Not Otherwise Classified (HNOC)**

Contact with acids liberates a toxic gas.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

| INGREDIENT(S)    | CAS Number | Weight % |
|------------------|------------|----------|
| Sodium Hydroxide | 1310-73-2  | 10-15    |
| Morpholine       | 110-91-8   | 1-5      |

>20% of mixture consists of ingredients of unknown toxicity. Exact percentages are withheld as trade secrets.

**4. FIRST AID MEASURES**

**EYE CONTACT:** Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. After 15 minutes, check for and remove any contact lenses. Continue to rinse for at least 15 minutes.

**SKIN CONTACT:** Get medical attention immediately. Wash with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Destroy contaminated shoes.

**INHALATION:** Get medical aid immediately. Remove from exposure and move to fresh air immediately and keep in position comfortable for breathing. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**INGESTION:** Get medical attention immediately. Do NOT induce vomiting. If victim is conscious and alert, wash out mouth with water then give water. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep airway clear.

**NOTES TO PHYSICIAN:** The absence of visible signs or symptoms of burns does NOT reliably exclude the presence of actual tissue damage. Probable mucosal damage may contraindicate the usage of gastric lavage.

**5. FIRE FIGHTING MEASURES**

**NOTE:** Solid product. Product will melt and combustion may occur when exposed to fire.

**General information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. May react with chemically active metals such as aluminum, zinc, magnesium, copper, etc. to release hydrogen gas.

**Extinguishing Media:** Use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Do NOT use straight streams of water.

**6. ACCIDENTAL RELEASE MEASURES**

**IN CASE OF SPILL OR OTHER RELEASE:** Remove sources of ignition. Ventilate area. Use appropriate personal protective equipment as indicated in Section 8 of the SDS when risk assessment indicates this is necessary. Use non-sparking tools and equipment. Sweep or shovel spilled materials into suitable containers. Dispose of in accordance with all local, state and federal requirements. Do not allow product or residues to enter waterway or any source of drinking water.

## 7. HANDLING AND STORAGE

**HANDLING:** Use appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Keep in the original container. Store and use away from heat, sparks, open flame or any other ignition source. Do not reuse container. Do NOT use aluminum fittings or containers.

**STORAGE:** Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from oxidizing materials and acids. Keep container tightly closed and sealed until ready for use.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower (ANSI Z358.1). Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

| COMPONENT        | CAS NUMBER | ACGIH TWA     | ACGIH STEL | ACGIH CEILING         | OSHA FINAL PEL TWA  | IDLH                |
|------------------|------------|---------------|------------|-----------------------|---------------------|---------------------|
| Sodium Hydroxide | 1310-73-2  | -             | -          | C 2 mg/m <sup>3</sup> | 2 mg/m <sup>3</sup> | 10mg/m <sup>3</sup> |
| Morpholine       | 110-91-8   | 20 ppm (skin) | -          | -                     | 20 ppm              | -                   |

### PERSONAL PROTECTIVE EQUIPMENT

**Eyes:** Wear chemical splash goggles that meet the requirements of 29 CFR 1910.133 or European Standard EN 166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure (29 CFR 1910.138 or EN 374).

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                      |                    |
|--------------------------------------|--------------------|
| <b>FORM:</b>                         | Solid              |
| <b>ODOR:</b>                         | Mild               |
| <b>ODOR THRESHOLD:</b>               | No data available  |
| <b>COLOR:</b>                        | Tan to Green/Brown |
| <b>pH:</b>                           | ~11.5 @ 1%         |
| <b>FREEZING POINT:</b>               | No data available  |
| <b>BOILING POINT:</b>                | No data available  |
| <b>FLASH POINT:</b>                  | No data available  |
| <b>EVAPORATION RATE:</b>             | No data available  |
| <b>FLAMMABILITY:</b>                 | No data available  |
| <b>FLAMMABILITY/EXPLOSIVE LIMIT:</b> | No data available  |
| <b>AUTOIGNITION TEMPERATURE:</b>     | No data available  |
| <b>VAPOR PRESSURE:</b>               | No data available  |
| <b>VAPOR DENSITY:</b>                | No data available  |
| <b>DENSITY:</b>                      | No data available  |

|   |                    |
|---|--------------------|
| <b>SOLUBILITY IN WATER:</b>                   | Complete over time |
| <b>PARTITION COEFFICIENT N-OCTANOL/WATER:</b> | No data available  |
| <b>AUTOIGNITION TEMPERATURE:</b>              | No data available  |
| <b>DECOMPOSTION TEMPERATURE:</b>              | No data available  |

## 10. STABILITY AND REACTIVITY

**STABILITY:** The product is stable.

**INCOMPATIBILITY WITH VARIOUS SUBSTANCES:** Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum, copper, brass, bronze, tin, nitrites.

**HAZARDOUS POLYMERIZATION:** Under normal conditions of storage and use, hazardous polymerization will not occur.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sodium oxide, nitrogen oxides, sulfur dioxide.

## 11. TOXICOLOGICAL INFORMATION

**TOXICITY:** No data available for product.

### CARCINOGENICITY

| Product/Ingredient Name | ACGIH | IARC | NTP |
|-------------------------|-------|------|-----|
| Morpholine              | -     | 3    | -   |

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL INFORMATION:** No Data Available For Product.

## 13. DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. U.S. EPA guidelines for the classifications are listed in 40CFR 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

## 14. TRANSPORTATION INFORMATION

**U.S. DOT Bill of Lading Description:** UN 1759, corrosive solid, n.o.s. (sodium hydroxide, morpholine) 8, 11.

## 15. REGULATORY INFORMATION

### INTERNATIONAL INVENTORIES

All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL).

### U.S. REGULATIONS

**CALIFORNIA PROPOSITION 65:** This product contains a chemical(s) known to the state of California to cause birth defects, other reproductive harm or cancer (cobalt sulfate).

**STATE RIGHT TO KNOW (RTK)**

| INGREDIENT(S)                    | CAS#       | MA | NJ | PA | MN |
|----------------------------------|------------|----|----|----|----|
| Sodium Hydroxide                 | 1310-73-2  | X  | X  | X  | X  |
| Morpholine                       | 110-91-8   | X  | X  | X  | X  |
| Polyphosphoric acid, sodium salt | 68915-31-9 | -  | X  | X  | -  |

**CERCLA/SARA 302**

| INGREDIENT(S)    | CAS#      | Weight % | CERCLA/SARA RQ (lbs) | Section 302 TPQ (lbs) | Section 313 |
|------------------|-----------|----------|----------------------|-----------------------|-------------|
| Sodium Hydroxide | 1310-73-2 | 10-15    | 1000                 | -                     | -           |

**SARA 311/312 Hazard Categories**

**Immediate:** X  
**Delayed:** X  
**Fire:** -  
**Reactivity:** -  
**Sudden Release of Pressure:** -

**SARA 313:**

None

**Clean Air Act:**

Not regulated.

**Clean Water Act:**

CAS No. 1310-73-2 is listed.

**Other Information:**

All active components conform to FDA title 21, Section 173.310 Boiler Water Additives. All inert component conform to FDA Section 21, CFR 184.1733 GRAS.

**16. OTHER INFORMATION**

**Hazardous Material**

**Information System (U.S.A.)**

Health: 3

Flammability: 1

Physical Hazard: 0

**National Fire Protection**

**Association (U.S.A.)**

Health: 3

Flammability: 1

Reactivity: 0

**HMIS and NFPA use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of 0 means that the substance possesses essentially no hazard; a rating of 4 indicates high hazard.**

**Date of Creation: 02/02**

**Issue Number: 5.3**

**Date of Revision: 5/11/2015**

**Prepared By:** Compliance Group

*The information contained in this Safety Data Sheet is intended to comply with the requirements of 29CFR 1910.1200. This information is believed to be accurate and based on data available to APTEch Group at this time. It is intended to be used as a guide to the safe handling and use by properly trained individuals. It is the end users responsibility to determine the suitability of the information for their particular purposes. This information is provided without warranty.*

## 1 PRODUCT AND COMPANY IDENTIFICATION

### Manufacturer

U. S. Water Services  
12270 43rd St. NE  
St. Michael, MN 55376

**Contact:** Non-emergency #: 866-663-7632  
**Email:** SDS@uswaterservices.com  
**Web:** www.uswaterservices.com

**Product Name:** RLT 10  
**Revision Date:** 5/6/2015  
**Version:** 2  
**SDS Number:** 0553  
**Common Name:** Mixture  
**Internal ID:** 211J  
**Product Use:** Water treatment

**EMERGENCY RESPONSE: (ChemTel)**  
US & Canada: 800-255-3924  
International: +01-813-248-0585

## 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 4 Oral  
Health, Skin corrosion/irritation, 1 B  
Health, Acute toxicity, 5 Inhalation  
Health, Specific target organ toxicity - Repeated exposure, 2

### GHS Label elements, including precautionary statements

**GHS Signal Word:** DANGER

#### GHS Hazard Pictograms:



#### GHS Hazard Statements:

H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H333 - May be harmful if inhaled  
H373 - May cause damage to organs through prolonged or repeated exposure

#### GHS Precautionary Statements:

P102 - Keep out of reach of children.



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P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P313 - Get medical advice/attention.  
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P301+310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P302+352 - IF ON SKIN: Wash with soap and water.

### Hazards not otherwise classified (HNOC) or not covered by GHS

HMIS III: Health = 2, Fire = 1, Physical Hazard = 1

HMIS PPE: J - Splash Goggles, Gloves, Apron, Dust and Vapor Respirator

| HMIS                |   |
|---------------------|---|
| HEALTH              | 2 |
| FLAMMABILITY        | 1 |
| PHYSICAL HAZARD     | 1 |
| PERSONAL PROTECTION | J |

3

## COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients:

| Cas#     | %     | Chemical Name |
|----------|-------|---------------|
| 110-91-8 | 5-15% | Morpholine    |

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## FIRST AID MEASURES

**Inhalation:** Remove from contamination. If person has stopped breathing give artificial respiration. Seek medical attention.

**Skin Contact:** Wash thoroughly with soap and water. Remove contaminated garments and wash or destroy. If irritation persists, seek medical attention.

**Eye Contact:** Flush eyes with plenty of running water for at least 15 minutes. Seek medical attention at once. NOTE TO PHYSICIAN: If cornea is burned, instill antibiotic steroid preparation frequently.

**Ingestion:** If ingested, DO NOT induce vomiting. Drink several glasses of water to dilute contents of stomach. Call a physician.

**Most important symptoms & effects (acute & delayed):** Excessive exposures may cause injury to lungs, liver and kidneys.

**Indication of need for immediate medical attention:** No data available

**Special treatment needs:** No data available

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## FIRE FIGHTING MEASURES

**Flash Point:** 201F  
**Flash Point Method:** Pensky Martens Closed Cup  
**Burning Rate:** Not applicable

**Autoignition Temp:** Not applicable  
**LEL:** Not applicable  
**UEL:** Not applicable

### Extinguishing Media

**Suitable:** Use extinguishing media suitable for surrounding fire

**Unsuitable:** No information available

**Hazardous combustion products:** Unknown but carbon monoxide may be released on burning.

**Unusual Fire or Explosion Hazards:** Explosive air-vapor mixtures may form

**Special protective equipment/precautions:** Wear self-contained breathing apparatus

## 6

### ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective equipment, emergency procedures:** Avoid contact with the material. See section 8 of SDS for PPE recommendations

**Environmental Precautions:** Keep runoff from entering drains or waterways

**Spill/Leak procedures:** Contain spill or leak. Dike area if necessary to prevent spill from spreading or entering sewers and waterways. Recover as much as possible then absorb remainder with inert material. Place into closed container for disposal.

**Regulatory Requirements:** Dispose of recovered material in accordance with all applicable state and federal regulations.

## 7

### HANDLING AND STORAGE

**Handling Precautions:** Avoid contact with eyes, skin, or clothing. Do not taste or swallow. Do not inhale vapor or mist. Use with adequate ventilation. For industrial use only!

**Storage Requirements:** Keep away from children. Store in closed containers away from temperature extremes and incompatible materials.  
Store in properly labeled containers in accordance with all local, state and federal guidelines.

## 8

### EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** Provide local exhaust ventilation as needed to control misting.

**Personal Protective Equipment:** HMIS PPE, J | Splash Goggles, Gloves, Apron, Dust and Vapor Resp

Respiratory protection: Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)

General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics. Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

### Exposure Limits:

OSHA (TWA)/PEL: Not Established  
ACGIH (TWA/TLV): Not Established

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## PHYSICAL AND CHEMICAL PROPERTIES

|                               |                 |                              |                   |
|-------------------------------|-----------------|------------------------------|-------------------|
| <b>Appearance:</b>            | Clear to yellow | <b>Odor:</b>                 | Amine odor        |
| <b>Physical State:</b>        | Liquid          | <b>Solubility:</b>           | Complete in water |
| <b>Odor Threshold:</b>        | Not applicable  | <b>Freezing/Melting Pt.:</b> | 22°F              |
| <b>Spec Grav./Density:</b>    | 8.38 lb/gal     | <b>Flash Point:</b>          | 201F              |
| <b>Viscosity:</b>             | Not applicable  | <b>Vapor Density:</b>        | Same to water     |
| <b>Boiling Point:</b>         | Not applicable  | <b>Auto-Ignition Temp:</b>   | Not applicable    |
| <b>Partition Coefficient:</b> | Not applicable  | <b>UFL/LFL:</b>              | Not applicable    |
| <b>Vapor Pressure:</b>        | Same as water   |                              |                   |
| <b>pH:</b>                    | 11.3            |                              |                   |
| <b>Evap. Rate:</b>            | Not applicable  |                              |                   |
| <b>Decomp Temp:</b>           | Not applicable  |                              |                   |

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## STABILITY AND REACTIVITY

|                                  |   |
|----------------------------------|---|
| <b>Stability:</b>                | Product is stable under normal storage and use conditions.  |
| <b>Conditions to Avoid:</b>      | Keep closed when not in use. Empty containers may contain flammable vapors.   |
| <b>Materials to Avoid:</b>       | Strong oxidizing agents, strong acids, strong alkalis   |
| <b>Hazardous Decomposition:</b>  | Possible aminated diethylene glycol, acetaldehyde, formaldehyde. Thermal decomposition and burning may produce carbon monoxide, carbon dioxide or other toxic by products |
| <b>Hazardous Polymerization:</b> | Will not occur  |

11

## TOXICOLOGICAL INFORMATION

|  |                   |
|--|-------------------|
| <b>Acute Toxicity:</b>                                     | No data available |
| <b>Skin Corrosion/Irritation:</b>                          | No data available |
| <b>Serious eye damage/irritation:</b>                      | No data available |
| <b>Respiratory or skin sensitization:</b>                  | No data available |
| <b>Germ cell mutagenicity:</b>                             | No data available |
| <b>Carcinogenicity:</b>                                    | No data available |
| <b>Reproductive Toxicity:</b>                              | No data available |
| <b>Specific target organ toxicity (single exposure):</b>   | No data available |
| <b>Specific target organ toxicity (repeated exposure):</b> | No data available |
| <b>Aspiration hazard:</b>                                  | No data available |

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## ECOLOGICAL INFORMATION

|   |                   |
|---|-------------------|
| <b>Aquatic Toxicity</b>                               | No data available |
| <b>Elimination (persistence &amp; degradability):</b> | No data available |
| <b>Bioaccumulative potential:</b>                     | No data available |
| <b>Mobility in soil:</b>                              | No data available |
| <b>Other adverse effects:</b>                         | No data available |

## 13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

## 14 TRANSPORT INFORMATION

UN1760, Corrosive liquids, n.o.s., 8, PGII, (Morpholine)

DOT Transportation data (49 CFR 172.101)

See section 15 of SDS for information on Reportable Quantity chemicals (RQ)

## 15 REGULATORY INFORMATION

### Component (CAS#) [%] - CODES

Morpholine (110-91-8) [5-15%] MASS, OSHAWAC, PA, TSCA, TXAIR

### Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List  
OSHAWAC = OSHA Workplace Air Contaminants  
PA = PA Right-To-Know List of Hazardous Substances  
TSCA = Toxic Substances Control Act  
TXAIR = TX Air Contaminants with Health Effects Screening Level

### EPA / CERCLA / SARA TITLE III:

**CERCLA List:** This product does not contain any CERCLA listed hazardous substances.

**Toxic Chemical List (SARA 313):** This product does not contain any chemicals subject to routine annual toxic chemical release reporting.

**Extremely Hazardous Substance (SARA 302/304):** This product does not contain any extremely hazardous substances subject to emergency planning requirements.

**SARA 312:** No data available

**California Proposition 65:** This product does not contain any chemicals known to the state of California to cause cancer, birth defects, or any other reproductive harm.

**RCRA:** No data available

**TSCA:** All components of this product are listed (or are not required to be listed) in the TSCA inventory



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RLT 10

Revision Date: 5/6/2015

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## OTHER INFORMATION

**Author:** U.S. Water Services

**Revision Notes:** Updated to GHS format

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# Attachment WKSHT3.0

## Annual Crop Plan With Associated Soil Sampling

Required by Technical Report 1.0  
TCEQ-10055, Worksheet 3.0, page 31

# **Annual Cropping Plan**

**Cabot Corporation  
Pampa Development and Manufacturing Center  
TPDES Permit Major Amendment  
TPDES Permit No. WQ0004226000**

**January 2016**



## Introduction

Cabot Corporation is seeking to amend the industrial wastewater permit (TPDES WQ0004226000) for the Pampa Development and Manufacturing Center (PDMC) to accurately reflect the area of land application of effluent from the East Pond, increase the annual average flow of effluent to the East Pond, and increase the permitted hydraulic loading rate. The East Pond receives non-contact cooling water, boiler blowdown, storm water and wash water from the process area. Typically, the water level in the East Pond is effectively managed through evaporation. However, if and when necessary, Cabot land applies effluent from the East Pond to areas on the north and south sides of the main entrance road to the facility. The area irrigated on the north side is approximately 3.86 acres while the south side is approximately 2.83 acres (irrigation areas), for a total of 6.69 acres. This area is larger than the area of 4.62 acres referenced in the existing permit. The annual average flow to the East Pond in the exiting permit is currently limited to 485 gallons per day (gpd) via evaporation. Cabot wishes to revise the permitted annual average flow to 2,150 gpd day, which will be managed through both evaporation and irrigation (when necessary). The cropping plan and additional information which follows has been developed to support these requested amendments.

## Annual Cropping Plan

Information pertaining to irrigation of these land application areas is summarized below:

1. There are no crops grown on the effluent irrigated land. Vegetation in these areas of irrigation consist of native grasses (Buffalograss and Western Wheatgrass) and planted trees (Russian Olive and Juniper). The salt tolerance for the native grasses and trees is summarized below:
  - a. Buffalograss tolerance ranges from 3 to 6 millimho per centimeter (mmhos/cm)<sup>1</sup>;
  - b. Juniper tolerance ranges from 3 to 6 mmhos/cm<sup>1</sup>;
  - c. Russian Olive tolerance ranges from 6 to 8 mmhos/cm<sup>1</sup>; and,
  - d. Western Wheatgrass tolerance ranges from 7 to 8.5 mmhos/cm<sup>2</sup>.
2. The areas are maintained at a mowing height of no more than 6-inches.
3. As shown on Figure 8-1 – Soil Survey Map, the soil type across the entire 6.69 acres is Pullman Clay Loam.

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<sup>1</sup> Miyamoto, S. (2008). *Salt Tolerance of Landscape Plants Common to the Southwest*. Texas Water Resources Institute.

<sup>2</sup> Moxley, M. G., Berg, W. A., & Barrau, E. M. (1978). Salt Tolerance of Five Varieties of Wheatgrass During Seedling Growth. *Journal of Range Management*.





4. The effluent applied to the land is limited to process wastewater and storm water which may accumulate in the East Pond. As such, no salts or chlorides are added to the irrigation areas through the use of groundwater. No additives are required to reduce salt levels in the effluent.
5. No nitrogen or phosphorus is being applied through the irrigation process or through fertilization. The most recent irrigation events from the East Pond occurred in March, May and June 2015. Analysis of the effluent prior to this irrigation event showed a Total Nitrogen concentrations of 4.04 milligrams per liter (mg/L), 9.25 mg/L, and 2.62 mg/L, respectively, for an average concentration of 5.30 mg/L.
6. Irrigation water is pumped from the East Pond and applied to the irrigation areas with a traveling sprinkler.
7. When irrigating, effluent will be sampled prior to irrigation at a frequency of once per month. The effluent samples will be analyzed for pH, biological oxygen demand (BOD), oil and grease, electrical conductivity, and total nitrogen as N.

## Hydraulic Loading and Nitrogen Loading Requirements

### Water Balance and Storage

At the proposed annual average effluent flow of 2,150 gpd to the East Pond, the annual and monthly amount of effluent available for land application is 4.30 inches per year or 0.36 inches per month. These values were determined using the formula provided in Appendix 6 of the Instructions for Completing the Industrial Wastewater Permit Application. Calculation of these values is summarized below.

Annual Average Effluent Flow (proposed) = 2,150 gpd

Irrigation Area = 6.69 acres

Annual Effluent Available = (Daily Avg. Effluent Flow, gpd) x (365 days/year) x (12 inches/foot) x (1 acre/43,560 ft<sup>2</sup>) x (1 ft<sup>3</sup>/7.48 gallons) / (Irrigation Area, acres)

Annual Effluent Available = (2,150 gpd) x (365 days/year) x (12 inches/foot) x (1 acre/43,560 ft<sup>2</sup>) x (1 ft<sup>3</sup>/7.48 gallons) / (6.69 acres)  
= (28.90 inches/acre/year) / 6.69 acres  
= 4.32 inches/year

Monthly Effluent Available = Annual Effluent Available / 12 months/year

= (4.32 inches/year) / 12 months/year  
= **0.36 inches/month**

As shown on Table 8-1 – East Pond Water Balance, the lowest estimated hydraulic application rate consumption or hydraulic application rate from the East Pond is 0.30 inches (December). Therefore,



with an annual average flow of 2,150 gpd, the effluent can be effectively managed annually through evaporation in the East Pond and through irrigation of the 6.69 acres. As shown in Table 8-2 – East Pond Storage Calculation, the total storage required at an annual average effluent flow of 2,150 gpd is 1.45 acre-feet. The estimated storage capacity of the East Pond with one foot of freeboard is estimated to be 1.74 acre-feet. Therefore, the storage capacity of the East Pond coupled with irrigation of the 6.69-acres is sufficient to manage effluent at the proposed annual average flow.

### Hydraulic Loading

Using the annual maximum hydraulic application rate calculated as the annual total Consumption from East Pond in Table 8-1 – East Pond Water Balance Study, the **hydraulic loading** of the land application area was determined to be **0.36 inches/acre/month**. Calculation of this value is summarized below.

$$\begin{aligned} \text{Hydraulic Loading} &= ((\text{Annual Average Flow, gals/day})(365 \text{ days/year})) / ((\text{Irrigation Area, acres})(43,560 \\ &\quad \text{sf/acre})(7.48 \text{ gals/cf})) \\ \text{Annual Average Flow} &= 2,150 \text{ gallons/day} \\ \text{Irrigation Area} &= 6.69 \text{ acres} \\ \text{Hydraulic Loading} &= ((2,150 \text{ gals/day})(365 \text{ days/year})) / ((6.69 \text{ acres})(43,560 \text{ sf/acre})(7.48 \text{ gals/cf})) \\ &= (784,750 \text{ gals/year}) / (2,179,795 \text{ feet/acre}) \\ &= \mathbf{0.36 \text{ feet/acre/year} = \text{inches/acre/month}} \end{aligned}$$

### Nitrogen Loading

At the proposed annual average effluent flow of 2,150 gpd to the East Pond, the nitrogen loading of the land application area was determined to be 5.18 pounds/acre/year. Calculation of this value is summarized below.

$$\begin{aligned} \text{Nitrogen Loading} &= ((\text{Total N, mg/L}) \times (\text{Annual Average Effluent Flow, million gallons per day [mgd]} \times \\ &\quad 8.34 \text{ pounds/gal}) \times (\text{Number of Irrigation Days})) / \text{Irrigation Area, acres} \\ \text{Total N} &= 5.30 \text{ mg/L} \\ \text{Annual Average Effluent Flow} &= 0.00215 \text{ mgd} \\ \text{Irrigation Area} &= 6.69 \text{ acres} \\ \text{Number of Irrigation Days} &= 365 \text{ (worst case)} \\ \text{Nitrogen Loading} &= ((5.18 \text{ mg/L} \times 0.00215 \text{ mgd} \times 8.34 \text{ lbs/gal}) \times 365 \text{ days}) / 6.69 \text{ acres} \\ &= 34.68 \text{ pounds/year} / 6.69 \text{ acres} \\ &= \mathbf{5.18 \text{ pounds/acre/year}} \end{aligned}$$



# **Table 8-1 East Pond Water Balance**

**Table 8-1  
East Pond Water Balance Study  
Cabot Corporation Pampa Development and Manufacturing Center  
TPDES Permit Major Amendment - TPDES Permit No. WQ0004226000  
January 2016**

|   |                               |
|---|-------------------------------|
| Pond Surface Area                         | 0.29 acres                    |
| Pond Depth with Freeboard                 | 6 feet                        |
| Pond Depth without Freeboard              | 7 feet                        |
| Irrigation Area                           | 6.69 acres                    |
| <b>Annual Average Effluent Flow</b>       | <b>2,150 gpd</b>              |
| Pond Storage Volume                       | 1.74 acre-feet                |
| Storm Water Drainage Area                 | 2.97 acres                    |
| Annual Effluent Available for Irrigation  | <b>4.32 inches/year</b>       |
| Monthly Effluent Available for Irrigation | <b>0.36 inches/month</b>      |
| Maximum Application Rate                  | <b>4.30 inches/month</b>      |
| Hydraulic Loading Rate                    | <b>0.36 inches/acre/month</b> |

|              | 1                             | 2                           | 3  | 4                                       | 5                                    | 6  | 7   | 8                              | 9  | 10  | 11   | 12 |
|--------------|-------------------------------|-----------------------------|--|---|--------------------------------------|--|---|--------------------------------|--|---|--|----|
| Month        | Avg. Rainfall (I)<br>(Inches) | Avg. Runoff (Q)<br>(Inches) | Avg. Rainfall Infiltration (R)<br>(Inches) | Evapo-<br>transpiration (E)<br>(Inches) | Required<br>Leaching (L)<br>(Inches) | Total Water<br>Need (TW)<br>(Inches) (E+L) | Effluent Needed<br>in Root Zone<br>(RZE)<br>(Inches) (TW-R) | Net<br>Evaporation<br>(Inches) | Evaporation<br>from East<br>Pond Surface<br>(Inches) | Effluent to be<br>Land Applied<br>(RZE/K)<br>(Inches) | Consumption<br>from East<br>Pond<br>(Inches) |    |
| January      | 0.75                          | 0.03                        | 0.72                                       | 1.08                                    | 0.06                                 | 1.14                                       | 0.42  | 1.38                           | 0.06   | 0.49  | 0.55   |    |
| February     | 1.04                          | 0.11                        | 0.93                                       | 1.35                                    | 0.07                                 | 1.42                                       | 0.49  | 1.59                           | 0.07   | 0.58  | 0.64   |    |
| March        | 1.62                          | 0.38                        | 1.24                                       | 3.42                                    | 0.34                                 | 3.76                                       | 2.52  | 3.07                           | 0.13   | 2.97  | 3.10   |    |
| April        | 1.98                          | 0.59                        | 1.39                                       | 4.50                                    | 0.49                                 | 4.99                                       | 3.60  | 3.93                           | 0.17   | 4.23  | 4.40   |    |
| May          | 3.58                          | 1.77                        | 1.81                                       | 7.38                                    | 0.87                                 | 8.25                                       | 6.44  | 2.35                           | 0.10   | 7.58  | 7.68   |    |
| June         | 3.40                          | 1.63                        | 1.77                                       | 8.19                                    | 1.00                                 | 9.19                                       | 7.42  | 4.43                           | 0.19   | 8.73  | 8.92   |    |
| July         | 2.51                          | 0.95                        | 1.56                                       | 7.83                                    | 0.98                                 | 8.81                                       | 7.25  | 6.49                           | 0.28   | 8.53  | 8.81   |    |
| August       | 2.59                          | 1.01                        | 1.58                                       | 4.95                                    | 0.53                                 | 5.48                                       | 3.89  | 5.46                           | 0.24   | 4.58  | 4.82   |    |
| September    | 2.43                          | 0.89                        | 1.54                                       | 6.12                                    | 0.72                                 | 6.84                                       | 5.30  | 3.90                           | 0.17   | 6.23  | 6.40   |    |
| October      | 1.98                          | 0.59                        | 1.39                                       | 4.23                                    | 0.44                                 | 4.67                                       | 3.29  | 3.22                           | 0.14   | 3.87  | 4.00   |    |
| November     | 1.17                          | 0.16                        | 1.01                                       | 2.34                                    | 0.21                                 | 2.55                                       | 1.54  | 2.31                           | 0.10   | 1.81  | 1.91   |    |
| December     | 1.01                          | 0.10                        | 0.91                                       | 1.08                                    | 0.03                                 | 1.11                                       | 0.20  | 1.49                           | 0.06   | 0.24  | 0.30   |    |
| <b>Total</b> | <b>24.05</b>                  | <b>8.22</b>                 | <b>15.83</b>                               | <b>52.47</b>                            | <b>5.72</b>                          | <b>58.19</b>                               | <b>42.36</b>  | <b>39.61</b>                   | <b>1.72</b>  | <b>49.84</b>  | <b>51.56</b>                                 |    |

Annual Effluent Available Calculation : AEA = ((Flow gpd)/(365 days/year)(12 inches/foot)(1 acre/43,560 sq. ft)(1 cu ft/7.48 gals))/Irrigation Area Acreage

Rainfall and Evaporation Data obtained from Texas Water Development Board for Gray County.

**Average Runoff Calculation:**  $Q = (I - 0.2S)^2 / (I + 0.8S)$

from Soil Conservation Service Engineering Technical Note No. 210-18-TX5

Q = Avg. Runoff in inches

I = Avg. rainfall in inches (Column 2)

S = Potential Max Retention After Runoff Begins = 1000/N-10 = **2.35**

N = Curve Number = **81**

from Table 2c - Runoff Curve Numbers for Arid and Semiarid Rangelands, Desert Shrub for Pullman Soils, Group C (from Table 1) under 'Fair' hydrologic condition (30-70% ground cover)

**Average Rainfall Infiltration:** R = Avg. Rainfall (I) - Avg. Runoff (Q)

**Evapotranspiration:** E = Evapotranspiration = 90% of Alfalfa Monthly Amount for Area 1A (Upper Texas Panhandle)

from Table 5 - Texas Board of Water Engineers, Bulletin 6019: Consumptive Use of Water by Major Crops in Texas

**Required Leaching:**  $L = [Ce / (CL - Ce)] \times (E - R)$

If E-R is less than zero, L = 0.

Ce = Electrical conductivity of effluent = **0.946 mmhos/cm** (avg. from 3 samples [9-2014, 10-2014, 03-2015])

CL = Max allowable soil conductivity from 30 TAC 309.20 Table 3 = **7.0 mmhos/cm** (middle of 6.0-8.0 range for relatively salt tolerant forage crops)

Net Evaporation = Monthly net evaporation data developed from evaporation and precipitation data available from the Texas Water Development Board for Gray County.

K = Irrigation Efficiency = **0.85**

|   |   |       |    |   |      |
|---|---|-------|----|---|------|
| Evapotranspiration -<br>Table 5, Alfalfa Area<br>1A | Evapotranspiration (E)<br>- Avg. Rainfall<br>Infiltration (R) | Ce    | CL | K |      |
| 1.2   | 0.36  | 0.946 | 7  |   | 0.85 |
| 1.5   | 0.42  | 0.946 | 7  |   |      |
| 3.8   | 2.18  | 0.946 | 7  |   |      |
| 5   | 3.11  | 0.946 | 7  |   |      |
| 8.2   | 5.57  | 0.946 | 7  |   |      |
| 9.1   | 6.42  | 0.946 | 7  |   |      |
| 8.7   | 6.27  | 0.946 | 7  |   |      |
| 5.5   | 3.37  | 0.946 | 7  |   |      |
| 6.8   | 4.58  | 0.946 | 7  |   |      |
| 4.7   | 2.84  | 0.946 | 7  |   |      |
| 2.6   | 1.33  | 0.946 | 7  |   |      |
| 1.2   | 0.17  | 0.946 | 7  |   |      |
| 58.3  |   |       |    |   |      |

**Maximum Hydraulic Application Rate** = Total (Annual) Consumption from East Pond/12

**Hydraulic Loading Rate** = ((Annual Avg Flow, gpd)(365 days/year))/((Irrigation area, acres)(43,560 sq ft/1 acre)(7.48 gals/cu ft))  
inches/acre/month equivalent to feet/acre/year

## **Table 8-2 East Pond Storage Calculation**

**Table 8-2  
East Pond Storage Calculation  
Cabot Corporation Pampa Development and Manufacturing Center  
TPDES Permit Major Amendment - TPDES Permit No. WQ000422600  
January 2016**

|   |                          |
|---|--------------------------|
| Pond Surface Area                         | 0.29 acres               |
| Pond Depth with Freeboard                 | 6 feet                   |
| Pond Depth without Freeboard              | 7 feet                   |
| Irrigation Area                           | 6.69 acres               |
| <b>Annual Average Effluent Flow</b>       | <b>2,150 gpd</b>         |
| Pond Storage Volume (with Freeboard)      | 1.74 acre-feet           |
| Storm Water Drainage Area                 | 2.97 acres               |
| <br>                                      |                          |
| Annual Effluent Available for Irrigator   | <b>4.32 inches/year</b>  |
| Monthly Effluent Available for Irrigation | <b>0.36 inches/month</b> |
| <br>                                      |                          |
| <b>Total Storage Required</b>             | <b>1.45 acre-feet</b>    |

|           | 13                             | 14                        | 15                      | 16                                     | 17                             | 18                                    | 19   | 20               | 21                           | 22 |
|-----------|--------------------------------|---------------------------|-------------------------|--|--------------------------------|---------------------------------------|--|------------------|------------------------------|----|
| Month     | Mean Rainfall Distribution (%) | Maximum Rainfall (Inches) | Maximum Runoff (Inches) | Maximum Rainfall Infiltration (Inches) | Total Available Water (Inches) | Mean Net Evaporation Distribution (%) | Minimum Net Evaporation from Pond Surface (Inches) | Storage (Inches) | Accumulated Storage (Inches) |    |
| January   | 3.10                           | 1.12                      | 0.04                    | 1.08                                   | 1.44                           | 3.48                                  | 0.04   | 0.25             | 0.86                         |    |
| February  | 4.31                           | 1.56                      | 0.17                    | 1.39                                   | 1.75                           | 4.01                                  | 0.05   | 0.28             | 1.14                         |    |
| March     | 6.72                           | 2.43                      | 0.57                    | 1.86                                   | 2.22                           | 7.76                                  | 0.10   | -1.97            | 0.00                         |    |
| April     | 8.22                           | 2.98                      | 0.89                    | 2.08                                   | 2.44                           | 9.91                                  | 0.13   | -3.18            | 0.00                         |    |
| May       | 14.88                          | 5.39                      | 2.68                    | 2.71                                   | 3.07                           | 5.94                                  | 0.08   | -6.24            | 0.00                         |    |
| June      | 14.16                          | 5.13                      | 2.47                    | 2.66                                   | 3.02                           | 11.18                                 | 0.14   | -7.47            | 0.00                         |    |
| July      | 10.45                          | 3.78                      | 1.44                    | 2.34                                   | 2.70                           | 16.40                                 | 0.21   | -7.46            | 0.00                         |    |
| August    | 10.79                          | 3.91                      | 1.53                    | 2.38                                   | 2.74                           | 13.77                                 | 0.18   | -3.46            | 0.00                         |    |
| September | 10.11                          | 3.66                      | 1.35                    | 2.31                                   | 2.67                           | 9.83                                  | 0.13   | -5.09            | 0.00                         |    |
| October   | 8.24                           | 2.98                      | 0.90                    | 2.09                                   | 2.45                           | 8.12                                  | 0.10   | -2.79            | 0.00                         |    |
| November  | 4.84                           | 1.75                      | 0.24                    | 1.51                                   | 1.87                           | 5.83                                  | 0.08   | -0.93            | 0.00                         |    |
| December  | 4.19                           | 1.52                      | 0.15                    | 1.36                                   | 1.72                           | 3.77                                  | 0.05   | 0.61             | 0.61                         |    |
| Total     | 100.00                         | 36.21                     | 12.43                   | 23.78                                  | 28.10                          | 100.00                                | 1.29   | -37.46           | 2.61                         |    |

Rainfall and Evaporation Data obtained from Texas Water Development Board for Gray County.

DMC - Pullman Soils, Group D

**Maximum Annual 25-year Rainfall** 36.21 Inches

**Maximum Runoff Calculation:**  $Q = (I - 0.2S)^2 / (I + 0.8S)$

from Soil Conservation Service Engineering Technical Note No. 210-18-TX:

Q = Runoff in Inches

I = maximum rainfall in inches (Column C)

S = Potential Max Retention After Runoff Begins =  $1000/N - 10 = 3.51$

N = Curve Number = 74

from Table 2c - Runoff Curve Numbers for Arid/Semiarid Rangelands, Herbaceous; Pullman Soils, Group C (Table 1) under 'Good' Hydrologic Condition (>70% ground cover)

K = Irrigation Efficiency = **0.85**

Annual Effluent Available = [Daily Avg. Effluent Flow X (365 days/year) X (12 inches/foot) X (1 acre/43,560 sq ft) X (1 cu ft/7.48 gals)] / number of acres

Storage = (Monthly Effluent Available - Minimum Net Evaporation from Pond Surface) - [(Total Water Need - Max Rain Infiltration)/K]

If [(Total Water Need - Max Rain Infiltration)/K] is less than 0, enter as [(Total Water Need - Max Rain Infiltration)/K]

|           |       |
|-----------|-------|
| January   | 0.07  |
| February  | 0.03  |
| March     | 2.23  |
| April     | 3.42  |
| May       | 6.52  |
| June      | 7.68  |
| July      | 7.61  |
| August    | 3.64  |
| September | 5.33  |
| October   | 3.05  |
| November  | 1.22  |
| December  | -0.30 |

Total Storage Required = Accumulated Storage (inches) x Irrigated Area (acres) x (1 foot/12 inches)

**Table 8-3**  
**Hydraulic and Nitrogen Loading**  
**Calculations**

**Table 8-3  
 Nitrogen Loading Calculations  
 Cabot Corporation Pampa Development and Manufacturing Center  
 TPDES Permit Major Amendment - TPDES Permit No. WQ0004226000  
 January 2016**

|   |                          |             |
|---|--------------------------|-------------|
| Pond Surface Area                         | 0.29 acres               |             |
| Pond Depth with Freeboard                 | 6 feet                   |             |
| Pond Depth without Freeboard              | 7 feet                   |             |
| Irrigation Area                           | 6.69 acres               |             |
| Annual Average Effluent Flow              | <b>2,150 gpd</b>         | 0.00215 mgd |
| Pond Storage Volume                       | 1.74 acre-feet           |             |
| Storm Water Drainage Area                 | 2.97 acres               |             |
| Annual Effluent Available for Irrigation  | <b>4.32</b> inches/year  |             |
| Monthly Effluent Available for Irrigation | <b>0.36</b> inches/month |             |

Nitrogen Loading = ((Total N, mg/L x Effluent Flow, mgd x 8.34 lbs/gal)(Irrigation Days))/acres  
 Total Nitrogen 5.3 mg/L  
 Irrigation Days 365

**Nitrogen Loading (at annual average flow above) 5.18 lbs/acre/year**



# **Appendix 8-1**

## **Soil Sample Analysis**

Soil Sample Analysis includes 2018 Soil Sampling Analytical Results



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Texas Commission on Environmental Quality  
Enforcement Division (MC-224)  
P.O. Box 13087  
Austin, TX 78711

Re: 2018 Soil Sampling Analytical Results  
Wastewater Permit Number: WQ0004226000  
Cabot Corporation-Pampa Development and Manufacturing Center

Summary: Cabot Corporation is submitting this letter report which summarizes the collection and analysis of samples representative of soil of the irrigation fields for Wastewater Permit Number WQ0004226000. Soil sampling was conducted on January 31, 2018 by Ana-Lab Corporation. Composite samples were obtained using 10 subsamples to represent each composite sample. Soils were sampled individually from 0 to 6 inches, 6 to 18 inches, and 18 to 30 inches below ground level. The samples were collected in laboratory supplied containers and placed in a sample cooler on wet ice at 4 degrees Celsius. Full chain-of-custody control was implemented. A summary of the analytical results are shown in Table 1.

Table 1

| <b>2018 SOIL ANALYSIS PDMC</b> |                |                  |               |
|--------------------------------|----------------|------------------|---------------|
| <b>PARAMETER</b>               |                | <b>SAMPLE ID</b> |               |
|                                | 0"-6"          | 6"-18"           | 18"-30"       |
| Soil Adsorption Ratio          | 0.446          | 0.682            | 1.26          |
| Total Kjeldahl Nitrogen        | 1380 mg/kg     | 551 mg/kg        | 580 mg/kg     |
| Calcium                        | 57.1 mg/L      | 38.2 mg/L        | 35.0 mg/L     |
| Magnesium                      | <10.0 mg/L     | <10.0 mg/L       | <10.0 mg/L    |
| Sulfur, Mehlich-3              | <25.2 mg/L     | <27.3 mg/L       | <27.8 mg/L    |
| Calcium, Mehlich-3             | 7160 mg/kg     | 4500 mg/kg       | 4500 mg/kg    |
| Magnesium, Mehlich-3           | 387 mg/kg      | 578 mg/kg        | 804 mg/kg     |
| Potassium, Mehlich-3           | 471 mg/kg      | 407 mg/kg        | 520 mg/kg     |
| Phosphorus, Mehlich-3          | 32.9 mg/kg     | 13.0 mg/kg       | 8.17 mg/kg    |
| Sodium                         | 12.3           | 15.4             | 27.3          |
| Sodium, Mehlich-3              | <25.2 mg/L     | 84.8 mg/L        | 163 mg/L      |
| pH                             | 8.4 SU         | 8.8 SU           | 8.6 SU        |
| Nitrate-nitrogen               | <2150 mg/kg    | <2290 mg/kg      | <2330 mg/kg   |
| Saturated Water Percentage     | 48.40%         | 62.80%           | 69.10%        |
| Conductance at 25C             | 777 uhmhos/cm  | 784 uhmhos/cm    | 639 uhmhos/cm |
| Total Solids                   | 92.50%         | 86.80%           | 84.60%        |
| Conductance at 25C(filtrate)   | 1610 uhmhos/cm | 1250 uhmhos/cm   | 925 uhmhos/cm |

Cc: Water Section Manager, Texas Commission on Environmental Quality, Region 1  
 3918 Canyon Drive Amarillo, TX 79109  
**VIA HAND DELIVERY**



# Results

**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

*Account*  
**CABC-P**

*Project*  
**815762**

## Results

|  |                   |   |           |                        |                  |                     |  |                             |
|--|-------------------|---|-----------|------------------------|------------------|---------------------|--|-----------------------------|
| <b>1657855</b>                         | <b>0-6</b>        |   |           |                        |                  |                     |  | <i>Received:</i> 02/01/2018 |
| Solid & Chemical Materials             |                   | <i>Collected by:</i> MGB                    |           | Ana-Lab                |                  |                     |  |                             |
|  |                   | <i>Taken:</i> 01/31/2018 14:30:00           |           |                        |                  |                     |  |                             |
| <b>600/2-78-054 3.2.19</b>             |                   | <i>Prepared:</i> 02/05/2018 09:03:14        |           | <i>Calculated</i>      |                  | 02/05/2018 09:03:14 |  | <i>CAL</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>Sodium Adsorption Ratio</b>         | <b>0.446</b>      | <b>1</b>                                    |           |                        |                  |                     |  |                             |
| <b>EPA 351.2 2</b>                     |                   | <i>Prepared:</i> 761822 02/01/2018 11:30:00 |           | <i>Analyzed</i> 762383 |                  | 02/05/2018 16:12:00 |  | <i>CDB</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>N Total Kjeldahl Nitrogen</b>       | <b>1380 *</b>     | <b>mg/kg</b>                                | 10.7      |                        | <b>7727-37-9</b> | 04                  |  |                             |
| * Dry Weight Basis                     |                   |   |           |                        |                  |                     |  |                             |
| <b>EPA 6010B</b>                       |                   | <i>Prepared:</i> 762205 02/02/2018 22:34:00 |           | <i>Analyzed</i> 762205 |                  | 02/02/2018 22:34:00 |  | <i>JBP</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>N Calcium (SAR Extracted)</b>       | <b>57.1</b>       | <b>mg/L</b>                                 | 10.0      |                        | <b>7440-70-2</b> | 02                  |  |                             |
| <b>N Magnesium (SAR Extracted)</b>     | <b>&lt;10.0</b>   | <b>mg/L</b>                                 | 10.0      |                        | <b>7439-95-4</b> | 02                  |  |                             |
| <b>EPA 6010B</b>                       |                   | <i>Prepared:</i> 762972 02/08/2018 11:00:00 |           | <i>Analyzed</i> 763005 |                  | 02/08/2018 13:01:00 |  | <i>JBP</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>z Sulfur, Mehlich-3 extract</b>     | <b>&lt;25.2 *</b> | <b>mg/kg</b>                                | 25.2      | D                      | <b>7704-34-9</b> | 09                  |  |                             |
| <b>EPA 6010B</b>                       |                   | <i>Prepared:</i> 762972 02/08/2018 11:00:00 |           | <i>Analyzed</i> 763010 |                  | 02/08/2018 13:12:00 |  | <i>JBP</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>z Calcium, Mehlich-3 extract</b>    | <b>7160 *</b>     | <b>mg/kg</b>                                | 25.2      |                        | <b>7440-70-2</b> | 09                  |  |                             |
| <b>z Magnesium, Mehlich-3 extract</b>  | <b>387 *</b>      | <b>mg/kg</b>                                | 25.2      |                        | <b>7439-95-4</b> | 09                  |  |                             |
| <b>z Potassium, Mehlich-3 extract</b>  | <b>471 *</b>      | <b>mg/kg</b>                                | 25.2      |                        | <b>7440-09-7</b> | 09                  |  |                             |
| <b>EPA 6010B</b>                       |                   | <i>Prepared:</i> 762972 02/08/2018 11:00:00 |           | <i>Analyzed</i> 763036 |                  | 02/08/2018 13:43:00 |  | <i>JBP</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>z Phosphorus, Mehlich-3 extract</b> | <b>32.9 *</b>     | <b>mg/kg</b>                                | 5.03      |                        |                  | 09                  |  |                             |
| * Dry Weight Basis                     |                   |   |           |                        |                  |                     |  |                             |
| <b>EPA 6010C</b>                       |                   | <i>Prepared:</i> 762205 02/02/2018 22:34:00 |           | <i>Analyzed</i> 762205 |                  | 02/02/2018 22:34:00 |  | <i>JBP</i>                  |
| <i>Parameter</i>                       | <i>Results</i>    | <i>Units</i>                                | <i>RL</i> | <i>Flags</i>           | <i>CAS</i>       | <i>Bottle</i>       |  |                             |
| <b>N Sodium (SAR Extracted)</b>        | <b>12.3</b>       | <b>mg/L</b>                                 | 10.0      |                        | <b>7440-23-5</b> | 02                  |  |                             |





# Results

| 1657855 0-6                               |                   |                                      |       |                                     |                   |        |  | Received: 02/01/2018 |
|---|-------------------|--------------------------------------|-------|-------------------------------------|-------------------|--------|--|----------------------|
| Solid & Chemical Materials                |                   | Collected by: MGB                    |       | Ana-Lab                             |                   |        |  |                      |
|   |                   | Taken: 01/31/2018 14:30:00           |       |                                     |                   |        |  |                      |
| EPA 6010C                                 |                   | Prepared: 762972 02/08/2018 11:00:00 |       | Analyzed 763010 02/08/2018 13:12:00 |                   | JBP    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>z Sodium, Mehlich-3 extract</b>        | <b>&lt;25.2 *</b> | <b>mg/kg</b>                         | 25.2  |                                     | <b>7440-23-5</b>  | 09     |  |                      |
| * Dry Weight Basis                        |                   |                                      |       |                                     |                   |        |  |                      |
| EPA 9045D 4                               |                   | Prepared: 762293 02/05/2018 09:30:00 |       | Analyzed 762293 02/05/2018 09:30:00 |                   | ESG    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>N pH Measured in Water/2:1 water:s</b> | <b>8.4@21C</b>    | <b>SU</b>                            |       |                                     | <b>12408-02-5</b> | 01     |  |                      |
| EPA 9056                                  |                   | Prepared: 762296 02/05/2018 12:15:00 |       | Analyzed 762759 02/06/2018 13:17:00 |                   | AMB    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>N Nitrate-nitrogen (KCl Prep)</b>      | <b>&lt;2150 *</b> | <b>mg/kg</b>                         | 2150  |                                     |                   | 06     |  |                      |
| * Dry Weight Basis                        |                   |                                      |       |                                     |                   |        |  |                      |
| Handbook 60                               |                   | Prepared: 762577 02/06/2018 15:00:00 |       | Analyzed 762577 02/06/2018 15:00:00 |                   | TH2    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>Saturated Water Percentage</b>         | <b>48.4</b>       | <b>%</b>                             | 0.100 |                                     |                   | 01     |  |                      |
| LA29B                                     |                   | Prepared: 762183 02/01/2018 14:50:00 |       | Analyzed 762299 02/05/2018 09:50:00 |                   | ESG    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>N Conductance at 25 C</b>              | <b>777</b>        | <b>umhos/cm</b>                      |       |                                     |                   | 05     |  |                      |
| SM2540 G-1997 /MOD                        |                   | Prepared: 762165 02/01/2018 15:30:00 |       | Analyzed 762165 02/01/2018 15:30:00 |                   | TH2    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>N Total Solids for Dry Wt</b>          | <b>92.5</b>       | <b>%</b>                             | 0.010 |                                     |                   | 01     |  |                      |
| USDA Handbook 60(mod)                     |                   | Prepared: 02/07/2018 12:06:10        |       | Calculated 02/07/2018 12:06:10      |                   | CAL    |  |                      |
| Parameter                                 | Results           | Units                                | RL    | Flags                               | CAS               | Bottle |  |                      |
| <b>N Conductance @ 25C(filtrate)</b>      | <b>1610</b>       | <b>umhos/cm</b>                      |       |                                     |                   |        |  |                      |

| 1657856 6-18               |  |                            |  |         |  |  |  | Received: 02/01/2018 |
|----------------------------|--|----------------------------|--|---------|--|--|--|----------------------|
| Solid & Chemical Materials |  | Collected by: MGB          |  | Ana-Lab |  |  |  |                      |
|                            |  | Taken: 01/31/2018 14:32:00 |  |         |  |  |  |                      |





# Results

| 1657856 6-18                           |                   |                                      |      |                 |                  |                     |  | Received: 02/01/2018 |
|--|-------------------|--------------------------------------|------|-----------------|------------------|---------------------|--|----------------------|
| Solid & Chemical Materials             |                   | Collected by: MGB                    |      | Ana-Lab         |                  |                     |  |                      |
|  |                   | Taken: 01/31/2018 14:32:00           |      |                 |                  |                     |  |                      |
| 600/2-78-054 3.2.19                    |                   | Prepared: 02/05/2018 09:03:14        |      | Calculated      |                  | 02/05/2018 09:03:14 |  | CAL                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>Sodium Adsorption Ratio</b>         | <b>0.682</b>      | <b>1</b>                             |      |                 |                  |                     |  |                      |
| EPA 351.2 2                            |                   | Prepared: 761822 02/01/2018 11:30:00 |      | Analyzed 762190 |                  | 02/02/2018 16:14:00 |  | CDB                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>N Total Kjeldahl Nitrogen</b>       | <b>551 *</b>      | <b>mg/kg</b>                         | 5.59 |                 | <b>7727-37-9</b> | 03                  |  |                      |
| * Dry Weight Basis                     |                   |                                      |      |                 |                  |                     |  |                      |
| EPA 6010B                              |                   | Prepared: 762205 02/02/2018 22:41:00 |      | Analyzed 762205 |                  | 02/02/2018 22:41:00 |  | JBP                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>N Calcium (SAR Extracted)</b>       | <b>38.2</b>       | <b>mg/L</b>                          | 10.0 |                 | <b>7440-70-2</b> | 02                  |  |                      |
| <b>N Magnesium (SAR Extracted)</b>     | <b>&lt;10.0</b>   | <b>mg/L</b>                          | 10.0 |                 | <b>7439-95-4</b> | 02                  |  |                      |
| EPA 6010B                              |                   | Prepared: 762972 02/08/2018 11:00:00 |      | Analyzed 763005 |                  | 02/08/2018 13:07:00 |  | JBP                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>z Sulfur, Mehlich-3 extract</b>     | <b>&lt;27.3 *</b> | <b>mg/kg</b>                         | 27.3 |                 | <b>7704-34-9</b> | 06                  |  |                      |
| EPA 6010B                              |                   | Prepared: 762972 02/08/2018 11:00:00 |      | Analyzed 763010 |                  | 02/08/2018 13:19:00 |  | JBP                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>z Calcium, Mehlich-3 extract</b>    | <b>4500 *</b>     | <b>mg/kg</b>                         | 27.3 |                 | <b>7440-70-2</b> | 06                  |  |                      |
| <b>z Magnesium, Mehlich-3 extract</b>  | <b>578 *</b>      | <b>mg/kg</b>                         | 27.3 |                 | <b>7439-95-4</b> | 06                  |  |                      |
| <b>z Potassium, Mehlich-3 extract</b>  | <b>407 *</b>      | <b>mg/kg</b>                         | 27.3 |                 | <b>7440-09-7</b> | 06                  |  |                      |
| EPA 6010B                              |                   | Prepared: 762972 02/08/2018 11:00:00 |      | Analyzed 763036 |                  | 02/08/2018 13:48:00 |  | JBP                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>z Phosphorus, Mehlich-3 extract</b> | <b>13.0 *</b>     | <b>mg/kg</b>                         | 5.46 |                 |                  | 06                  |  |                      |
| * Dry Weight Basis                     |                   |                                      |      |                 |                  |                     |  |                      |
| EPA 6010C                              |                   | Prepared: 762205 02/02/2018 22:41:00 |      | Analyzed 762205 |                  | 02/02/2018 22:41:00 |  | JBP                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>N Sodium (SAR Extracted)</b>        | <b>15.4</b>       | <b>mg/L</b>                          | 10.0 |                 | <b>7440-23-5</b> | 02                  |  |                      |
| EPA 6010C                              |                   | Prepared: 762972 02/08/2018 11:00:00 |      | Analyzed 763010 |                  | 02/08/2018 13:19:00 |  | JBP                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |
| <b>z Sodium, Mehlich-3 extract</b>     | <b>84.8 *</b>     | <b>mg/kg</b>                         | 27.3 |                 | <b>7440-23-5</b> | 06                  |  |                      |
| * Dry Weight Basis                     |                   |                                      |      |                 |                  |                     |  |                      |
| EPA 9045D 4                            |                   | Prepared: 762293 02/05/2018 09:30:00 |      | Analyzed 762293 |                  | 02/05/2018 09:30:00 |  | ESG                  |
| Parameter                              | Results           | Units                                | RL   | Flags           | CAS              | Bottle              |  |                      |





# Results

| 1657856 6-18  |         |                                      |       |                                     |            |        |  | Received: 02/01/2018 |
|---|---------|--------------------------------------|-------|-------------------------------------|------------|--------|--|----------------------|
| Solid & Chemical Materials                          |         | Collected by: MGB                    |       | Ana-Lab                             |            |        |  |                      |
|   |         | Taken: 01/31/2018 14:32:00           |       |                                     |            |        |  |                      |
| EPA 9045D 4   |         | Prepared: 762293 02/05/2018 09:30:00 |       | Analyzed 762293 02/05/2018 09:30:00 |            | ESG    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| N pH Measured in Water/2:1 water:s                  | 8.8@21C | SU                                   |       |                                     | 12408-02-5 | 01     |  |                      |
| EPA 9056  |         | Prepared: 762296 02/05/2018 12:15:00 |       | Analyzed 762759 02/06/2018 14:05:00 |            | AMB    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| N Nitrate-nitrogen (KCl Prep)<br>* Dry Weight Basis | <2290 * | mg/kg                                | 2290  |                                     |            | 05     |  |                      |
| Handbook 60   |         | Prepared: 762577 02/06/2018 15:00:00 |       | Analyzed 762577 02/06/2018 15:00:00 |            | TH2    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| Saturated Water Percentage                          | 62.8    | %                                    | 0.100 |                                     |            | 01     |  |                      |
| LA29B   |         | Prepared: 762183 02/01/2018 14:50:00 |       | Analyzed 762299 02/05/2018 09:50:00 |            | ESG    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| N Conductance at 25 C                               | 784     | umhos/cm                             |       |                                     |            | 04     |  |                      |
| SM2540 G-1997 /MOD                                  |         | Prepared: 762165 02/01/2018 15:30:00 |       | Analyzed 762165 02/01/2018 15:30:00 |            | TH2    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| N Total Solids for Dry Wt                           | 86.8    | %                                    | 0.010 |                                     |            | 01     |  |                      |
| USDA Handbook 60(mod)                               |         | Prepared: 02/07/2018 12:06:10        |       | Calculated 02/07/2018 12:06:10      |            | CAL    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| N Conductance @ 25C(filtrate)                       | 1250    | umhos/cm                             |       |                                     |            |        |  |                      |
| 1657857 18-30                                       |         |                                      |       |                                     |            |        |  | Received: 02/01/2018 |
| Solid & Chemical Materials                          |         | Collected by: MGB                    |       | Ana-Lab                             |            |        |  |                      |
|   |         | Taken: 01/31/2018 14:35:00           |       |                                     |            |        |  |                      |
| 600/2-78-054 3.2.19                                 |         | Prepared: 02/05/2018 09:03:15        |       | Calculated 02/05/2018 09:03:15      |            | CAL    |  |                      |
| Parameter   | Results | Units                                | RL    | Flags                               | CAS        | Bottle |  |                      |
| Sodium Adsorption Ratio                             | 1.26    | 1                                    |       |                                     |            |        |  |                      |





# Results

| 1657857 18-30              |                                  |                                      |       |                                     |       |            |        | Received: 02/01/2018 |
|----------------------------|----------------------------------|--------------------------------------|-------|-------------------------------------|-------|------------|--------|----------------------|
| Solid & Chemical Materials |                                  | Collected by: MGB                    |       | Ana-Lab                             |       |            |        |                      |
|                            |                                  | Taken: 01/31/2018 14:35:00           |       |                                     |       |            |        |                      |
| EPA 351.2.2                |                                  | Prepared: 761822 02/01/2018 11:30:00 |       | Analyzed 762190 02/02/2018 16:16:00 |       | CDB        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| N                          | Total Kjeldahl Nitrogen          | 580 *                                | mg/kg | 5.90                                |       | 7727-37-9  | 03     |                      |
| * Dry Weight Basis         |                                  |                                      |       |                                     |       |            |        |                      |
| EPA 6010B                  |                                  | Prepared: 762205 02/02/2018 22:44:00 |       | Analyzed 762205 02/02/2018 22:44:00 |       | JBP        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| N                          | Calcium (SAR Extracted)          | 35.0                                 | mg/L  | 10.0                                |       | 7440-70-2  | 02     |                      |
| N                          | Magnesium (SAR Extracted)        | <10.0                                | mg/L  | 10.0                                |       | 7439-95-4  | 02     |                      |
| EPA 6010B                  |                                  | Prepared: 762972 02/08/2018 11:00:00 |       | Analyzed 763005 02/08/2018 13:10:00 |       | JBP        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| z                          | Sulfur, Mehlich-3 extract        | <27.8 *                              | mg/kg | 27.8                                |       | 7704-34-9  | 06     |                      |
| EPA 6010B                  |                                  | Prepared: 762972 02/08/2018 11:00:00 |       | Analyzed 763010 02/08/2018 13:23:00 |       | JBP        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| z                          | Calcium, Mehlich-3 extract       | 4500 *                               | mg/kg | 27.8                                |       | 7440-70-2  | 06     |                      |
| z                          | Magnesium, Mehlich-3 extract     | 804 *                                | mg/kg | 27.8                                |       | 7439-95-4  | 06     |                      |
| z                          | Potassium, Mehlich-3 extract     | 520 *                                | mg/kg | 27.8                                |       | 7440-09-7  | 06     |                      |
| EPA 6010B                  |                                  | Prepared: 762972 02/08/2018 11:00:00 |       | Analyzed 763036 02/08/2018 13:51:00 |       | JBP        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| z                          | Phosphorus, Mehlich-3 extract    | 8.17 *                               | mg/kg | 5.54                                |       |            | 06     |                      |
| * Dry Weight Basis         |                                  |                                      |       |                                     |       |            |        |                      |
| EPA 6010C                  |                                  | Prepared: 762205 02/02/2018 22:44:00 |       | Analyzed 762205 02/02/2018 22:44:00 |       | JBP        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| N                          | Sodium (SAR Extracted)           | 27.3                                 | mg/L  | 10.0                                |       | 7440-23-5  | 02     |                      |
| EPA 6010C                  |                                  | Prepared: 762972 02/08/2018 11:00:00 |       | Analyzed 763010 02/08/2018 13:23:00 |       | JBP        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| z                          | Sodium, Mehlich-3 extract        | 163 *                                | mg/kg | 27.8                                |       | 7440-23-5  | 06     |                      |
| * Dry Weight Basis         |                                  |                                      |       |                                     |       |            |        |                      |
| EPA 9045D 4                |                                  | Prepared: 762293 02/05/2018 09:30:00 |       | Analyzed 762293 02/05/2018 09:30:00 |       | ESG        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |
| N                          | pH Measured in Water/2:1 water:s | 8.6@21C                              | SU    |                                     |       | 12408-02-5 | 01     |                      |
| EPA 9056                   |                                  | Prepared: 762296 02/05/2018 12:15:00 |       | Analyzed 762759 02/06/2018 14:29:00 |       | AMB        |        |                      |
| Parameter                  |                                  | Results                              | Units | RL                                  | Flags | CAS        | Bottle |                      |







# Results

|                               |                    |                   |            |          |                 |            |          |                      |
|-------------------------------|--------------------|-------------------|------------|----------|-----------------|------------|----------|----------------------|
| <b>1657857</b>                | <b>18-30</b>       |                   |            |          |                 |            |          | Received: 02/01/2018 |
| Solid & Chemical Materials    |                    | Collected by: MGB | Ana-Lab    |          |                 |            |          |                      |
|                               |                    | Taken: 01/31/2018 | 14:35:00   |          |                 |            |          |                      |
| <hr/>                         |                    |                   |            |          |                 |            |          |                      |
| EPA 9056                      |                    | Prepared: 762296  | 02/05/2018 | 12:15:00 | Analyzed 762759 | 02/06/2018 | 14:29:00 | AMB                  |
| Parameter                     | Results            | Units             | RL         |          | Flags           | CAS        |          | Bottle               |
| N Nitrate-nitrogen (KCl Prep) | <2330 *            | mg/kg             | 2330       |          |                 |            |          | 05                   |
|                               | * Dry Weight Basis |                   |            |          |                 |            |          |                      |
| <hr/>                         |                    |                   |            |          |                 |            |          |                      |
| Handbook 60                   |                    | Prepared: 762577  | 02/06/2018 | 15:00:00 | Analyzed 762577 | 02/06/2018 | 15:00:00 | TH2                  |
| Parameter                     | Results            | Units             | RL         |          | Flags           | CAS        |          | Bottle               |
| Saturated Water Percentage    | 69.1               | %                 | 0.100      |          |                 |            |          | 01                   |
| <hr/>                         |                    |                   |            |          |                 |            |          |                      |
| LA29B                         |                    | Prepared: 762183  | 02/01/2018 | 14:50:00 | Analyzed 762299 | 02/05/2018 | 09:50:00 | ESG                  |
| Parameter                     | Results            | Units             | RL         |          | Flags           | CAS        |          | Bottle               |
| N Conductance at 25 C         | 639                | umhos/cm          |            |          |                 |            |          | 04                   |
| <hr/>                         |                    |                   |            |          |                 |            |          |                      |
| SM2540 G-1997 /MOD            |                    | Prepared: 762165  | 02/01/2018 | 15:30:00 | Analyzed 762165 | 02/01/2018 | 15:30:00 | TH2                  |
| Parameter                     | Results            | Units             | RL         |          | Flags           | CAS        |          | Bottle               |
| N Total Solids for Dry Wt     | 84.6               | %                 | 0.010      |          |                 |            |          | 01                   |
| <hr/>                         |                    |                   |            |          |                 |            |          |                      |
| USDA Handbook 60(mod)         |                    | Prepared:         | 02/07/2018 | 12:06:10 | Calculated      | 02/07/2018 | 12:06:10 | CAL                  |
| Parameter                     | Results            | Units             | RL         |          | Flags           | CAS        |          | Bottle               |
| N Conductance @ 25C(filtrate) | 925                | umhos/cm          |            |          |                 |            |          |                      |

## Sample Preparation

|                                 |                  |                  |            |          |                 |            |          |                      |
|---------------------------------|------------------|------------------|------------|----------|-----------------|------------|----------|----------------------|
| <b>1657855</b>                  | <b>0-6</b>       |                  |            |          |                 |            |          | Received: 02/01/2018 |
| <hr/>                           |                  |                  |            |          |                 |            |          |                      |
| 600/2-78-054 3.2.19             |                  | Prepared: 761809 | 02/01/2018 | 11:00:00 | Analyzed 761809 | 02/01/2018 | 11:00:00 | ALH                  |
| Sodium Adsorption Ratio Extract | PREPARED/PRE PAR | grams            |            |          |                 |            |          | 01                   |
| <hr/>                           |                  |                  |            |          |                 |            |          |                      |
| Black's 84.2                    |                  | Prepared: 762296 | 02/05/2018 | 12:15:00 | Analyzed 762296 | 02/05/2018 | 12:15:00 | MLC                  |
| z KCl Extraction                | 100/10.06        | grams            |            |          |                 |            |          | 01                   |





# Results

|  |  |                   |              |            |            |            |          |                      |                  |     |
|--|--|-------------------|--------------|------------|------------|------------|----------|----------------------|------------------|-----|
| <b>1657855</b>                         | <b>0-6</b>                               |                   |              |            |            |            |          | Received: 02/01/2018 |                  |     |
| <b>Calculation</b>                     |  | Prepared:         | 02/08/2018   | 16:46:04   | Calculated | 02/08/2018 | 16:46:04 | CAL                  |                  |     |
| <b>As Received to Dry Weight Basis</b> |  | <b>Calculated</b> |              |            |            |            |          |                      |                  |     |
| EPA 351.2 2                            |  | Prepared:         | 761822       | 02/01/2018 | 11:30:00   | Analyzed   | 761822   | 02/01/2018           | 11:30:00         | CDB |
| N                                      | <b>TKN Block Digestion</b>               | <b>20/1.0090</b>  | <b>grams</b> |            |            |            |          |                      | 01               |     |
| EPA 6010B                              |  | Prepared:         | 02/05/2018   | 09:03:14   | Calculated | 02/05/2018 | 09:03:14 | CAL                  |                  |     |
| N                                      | <b>Calcium (SAR) meq/L calculation</b>   | <b>2.86</b>       | <b>meq/L</b> | 0.500      |            |            |          |                      | <b>7440-70-2</b> |     |
| N                                      | <b>Magnesium (SAR) meq/L calculation</b> | <b>&lt;0.833</b>  | <b>meq/L</b> | 0.833      |            |            |          |                      | <b>7439-95-4</b> |     |
| EPA 6010C                              |  | Prepared:         | 02/05/2018   | 09:03:14   | Calculated | 02/05/2018 | 09:03:14 | CAL                  |                  |     |
| N                                      | <b>Sodium (SAR) meq/L calculation</b>    | <b>0.535</b>      | <b>meq/L</b> | 0.435      |            |            |          |                      | <b>7440-23-5</b> |     |
| LA29B                                  |  | Prepared:         | 762183       | 02/01/2018 | 14:50:00   | Analyzed   | 762183   | 02/01/2018           | 14:50:00         | CBO |
| z                                      | <b>Dry Sample ( pH,EC CEC, Ba)</b>       | <b>DRIED</b>      |              |            |            |            |          |                      | 01               |     |
| LA29B (pg. 9)                          |  | Prepared:         | 02/05/2018   | 15:30:41   | Calculated | 02/05/2018 | 15:30:41 | CAL                  |                  |     |
| N                                      | <b>EC 29 Extraction</b>                  | <b>Completed</b>  |              |            |            |            |          |                      |                  |     |
| Mehlich-3 Extraction                   |  | Prepared:         | 762972       | 02/08/2018 | 11:00:00   | Analyzed   | 762972   | 02/08/2018           | 11:00:00         | TES |
| z                                      | <b>Mehlich-3 Extraction</b>              | <b>20/2.15</b>    | <b>grams</b> |            |            |            |          |                      | 01               |     |
| SM 2540 G-1997                         |  | Prepared:         | 761865       | 02/01/2018 | 15:30:00   | Analyzed   | 761865   | 02/01/2018           | 15:30:00         | TH2 |
| N                                      | <b>Total Solids Start Code</b>           | <b>Started</b>    |              |            |            |            |          |                      |                  |     |





# Results

|   |             |                         |            |              |                 |            |          |                      |
|---|-------------|-------------------------|------------|--------------|-----------------|------------|----------|----------------------|
| <b>1657856</b>                            | <b>6-18</b> |                         |            |              |                 |            |          | Received: 02/01/2018 |
| 600/2-78-054 3.2.19                       |             | Prepared: 761809        | 02/01/2018 | 11:00:00     | Analyzed 761809 | 02/01/2018 | 11:00:00 | ALH                  |
| <b>Sodium Adsorption Ratio Extract</b>    |             | <b>PREPARED/PRE PAR</b> |            | <b>grams</b> |                 |            |          | 01                   |
| Black's 84.2                              |             | Prepared: 762296        | 02/05/2018 | 12:15:00     | Analyzed 762296 | 02/05/2018 | 12:15:00 | MLC                  |
| <b>z KCl Extraction</b>                   |             | <b>100/10.04</b>        |            | <b>grams</b> |                 |            |          | 01                   |
| Calculation                               |             | Prepared:               | 02/08/2018 | 16:46:04     | Calculated      | 02/08/2018 | 16:46:04 | CAL                  |
| <b>As Received to Dry Weight Basis</b>    |             | <b>Calculated</b>       |            |              |                 |            |          |                      |
| EPA 351.2 2                               |             | Prepared: 761822        | 02/01/2018 | 11:30:00     | Analyzed 761822 | 02/01/2018 | 11:30:00 | CDB                  |
| <b>N TKN Block Digestion</b>              |             | <b>20/1.0311</b>        |            | <b>grams</b> |                 |            |          | 01                   |
| EPA 6010B                                 |             | Prepared:               | 02/05/2018 | 09:03:14     | Calculated      | 02/05/2018 | 09:03:14 | CAL                  |
| <b>N Calcium (SAR) meq/L calculation</b>  |             | <b>1.91</b>             |            | <b>meq/L</b> | <b>0.500</b>    |            |          | <b>7440-70-2</b>     |
| <b>N Magnesium (SAR) meq/L calculatio</b> |             | <b>&lt;0.833</b>        |            | <b>meq/L</b> | <b>0.833</b>    |            |          | <b>7439-95-4</b>     |
| EPA 6010C                                 |             | Prepared:               | 02/05/2018 | 09:03:14     | Calculated      | 02/05/2018 | 09:03:14 | CAL                  |
| <b>N Sodium (SAR) meq/L calculation</b>   |             | <b>0.670</b>            |            | <b>meq/L</b> | <b>0.435</b>    |            |          | <b>7440-23-5</b>     |
| LA29B                                     |             | Prepared: 762183        | 02/01/2018 | 14:50:00     | Analyzed 762183 | 02/01/2018 | 14:50:00 | CBO                  |
| <b>z Dry Sample ( pH,EC CEC, Ba)</b>      |             | <b>DRIED</b>            |            |              |                 |            |          | 01                   |
| LA29B (pg. 9)                             |             | Prepared:               | 02/05/2018 | 15:30:41     | Calculated      | 02/05/2018 | 15:30:41 | CAL                  |
| <b>N EC 29 Extraction</b>                 |             | <b>Completed</b>        |            |              |                 |            |          |                      |
| Mehlich-3 Extraction                      |             | Prepared: 762972        | 02/08/2018 | 11:00:00     | Analyzed 762972 | 02/08/2018 | 11:00:00 | TES                  |
| <b>z Mehlich-3 Extraction</b>             |             | <b>20/2.11</b>          |            | <b>grams</b> |                 |            |          | 01                   |





# Results

|   |              |                         |            |              |                 |            |          |                      |
|---|--------------|-------------------------|------------|--------------|-----------------|------------|----------|----------------------|
| <b>1657856</b>                            | <b>6-18</b>  |                         |            |              |                 |            |          | Received: 02/01/2018 |
| SM 2540 G-1997                            |              | Prepared: 761865        | 02/01/2018 | 15:30:00     | Analyzed 761865 | 02/01/2018 | 15:30:00 | TH2                  |
| <b>N Total Solids Start Code</b>          |              | <b>Started</b>          |            |              |                 |            |          |                      |
| <b>1657857</b>                            | <b>18-30</b> |                         |            |              |                 |            |          | Received: 02/01/2018 |
| 600/2-78-054 3.2.19                       |              | Prepared: 761809        | 02/01/2018 | 11:00:00     | Analyzed 761809 | 02/01/2018 | 11:00:00 | ALH                  |
| <b>Sodium Adsorption Ratio Extract</b>    |              | <b>PREPARED/PRE PAR</b> |            | <b>grams</b> |                 |            |          | <b>01</b>            |
| Black's 84.2                              |              | Prepared: 762296        | 02/05/2018 | 12:15:00     | Analyzed 762296 | 02/05/2018 | 12:15:00 | MLC                  |
| <b>z KCl Extraction</b>                   |              | <b>100/10.17</b>        |            | <b>grams</b> |                 |            |          | <b>01</b>            |
| Calculation                               |              | Prepared:               | 02/08/2018 | 16:46:04     | Calculated      | 02/08/2018 | 16:46:04 | CAL                  |
| <b>As Received to Dry Weight Basis</b>    |              | <b>Calculated</b>       |            |              |                 |            |          |                      |
| EPA 351.2 2                               |              | Prepared: 761822        | 02/01/2018 | 11:30:00     | Analyzed 761822 | 02/01/2018 | 11:30:00 | CDB                  |
| <b>N TKN Block Digestion</b>              |              | <b>20/1.0013</b>        |            | <b>grams</b> |                 |            |          | <b>01</b>            |
| EPA 6010B                                 |              | Prepared:               | 02/05/2018 | 09:03:14     | Calculated      | 02/05/2018 | 09:03:14 | CAL                  |
| <b>N Calcium (SAR) meq/L calculation</b>  |              | <b>1.75</b>             |            | <b>meq/L</b> | <b>0.500</b>    |            |          | <b>7440-70-2</b>     |
| <b>N Magnesium (SAR) meq/L calculatio</b> |              | <b>&lt;0.833</b>        |            | <b>meq/L</b> | <b>0.833</b>    |            |          | <b>7439-95-4</b>     |
| EPA 6010C                                 |              | Prepared:               | 02/05/2018 | 09:03:14     | Calculated      | 02/05/2018 | 09:03:14 | CAL                  |
| <b>N Sodium (SAR) meq/L calculation</b>   |              | <b>1.19</b>             |            | <b>meq/L</b> | <b>0.435</b>    |            |          | <b>7440-23-5</b>     |
| LA29B                                     |              | Prepared: 762183        | 02/01/2018 | 14:50:00     | Analyzed 762183 | 02/01/2018 | 14:50:00 | CBO                  |





# Results

1657857 18-30 Received: 02/01/2018

LA29B Prepared: 762183 02/01/2018 14:50:00 Analyzed 762183 02/01/2018 14:50:00 CBO

z Dry Sample ( pH,EC CEC, Ba) DRIED 01

LA29B (pg. 9) Prepared: 02/05/2018 15:30:41 Calculated 02/05/2018 15:30:41 CAL

N EC 29 Extraction Completed

Mehlich-3 Extraction Prepared: 762972 02/08/2018 11:00:00 Analyzed 762972 02/08/2018 11:00:00 TES

z Mehlich-3 Extraction 20/2.13 grams 01

SM 2540 G-1997 Prepared: 761865 02/01/2018 15:30:00 Analyzed 761865 02/01/2018 15:30:00 TH2

N Total Solids Start Code Started





# Results

Qualifiers:

D - Duplicate RPD was higher than expected

We report results on an 'As Received' or wet basis unless marked 'Dry Weight'. Unless otherwise noted, testing was performed at Ana-lab's corporate laboratory that holds the following Federal and State certificates: Texas Department of Health Lead Firm Certificate 2110076, US Department of Agriculture Soil Import Permit S-37592, Texas Commission on Environmental Quality Drinking Water Laboratory Certificate TX219, Texas Commission on Environmental Quality NELAP T104704201, Oklahoma Department of Environmental Quality Drinking Water Certification Lab ID# D9913, EPA Lab Number TX00063, USEPA Approved Perchlorate Testing Lab, Oklahoma Department of Environmental Quality Laboratory Certificate 8125, Arkansas Department of Environmental Quality Certification #03-070-0, Louisiana Department of Environmental Quality Laboratory Certification (NELAP, LELAP) #02008, Louisiana Department of Health and Hospitals Drinking Water (NELAP) # LA030020, US Department of Energy Approved, State of Kansas Department of Health and Environment Waste Water and Solid/Hazardous Waste Cert. E-10365. The Accredited column designates accreditation by N -- NELAC, or z -- not covered under NELAC scope of accreditation.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp. Unless otherwise specified, these test results meet the requirements of NELAC.

RL is the Reporting Limit (sample specific quantitation limit) and is at or above the Method Detection Limit (MDL). CAS is Chemical Abstract Service number. RL is our Reporting Limit, or Minimum Quantitation Level. The RL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL). Our analytical result must be above this RL before we report a value in the 'Results' column of our report (without a 'J' flag). Otherwise, we report ND (Not Detected above RL), because the result is "<" (less than) the number in the RL column. MAL is Minimum Analytical Level and is typically from regulatory agencies. Unless we report a result in the result column, or interferences prevent it, we work to have our RL at or below the MAL.

Bill Peery, MS, VP Technical Services





# Quality Control

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**Report To**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**SOIL**

*Account*  
**CABC-P**

*Project*  
**815762**

Analytical Set **762190**

**EPA 351.2 2**

**Blank**

| <u>Parameter</u>        | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>SQL</u> | <u>Units</u> | <u>File</u> |
|-------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Total Kjeldahl Nitrogen | 761822         | ND             | 0.190      | 1.00       | mg/kg        | 118385092   |

**CCV**

| <u>Parameter</u>        | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Total Kjeldahl Nitrogen | 5.19           | 5.00         | mg/kg        | 104             | 90.0 - 110     | 118385072   |
|                         | 5.04           | 5.00         | mg/kg        | 101             | 90.0 - 110     | 118385082   |
|                         | 5.09           | 5.00         | mg/kg        | 102             | 90.0 - 110     | 118385083   |
|                         | 4.82           | 5.00         | mg/kg        | 96.4            | 90.0 - 110     | 118385084   |
|                         | 5.01           | 5.00         | mg/kg        | 100             | 90.0 - 110     | 118385091   |
|                         | 5.14           | 5.00         | mg/kg        | 103             | 90.0 - 110     | 118385101   |
|                         | 4.97           | 5.00         | mg/kg        | 99.4            | 90.0 - 110     | 118385106   |

**Duplicate**

| <u>Parameter</u>        | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|-------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Total Kjeldahl Nitrogen | 1657051       | 255           | 274            | mg/kg       | 7.18       | 20.0          |
|                         | 1657052       | 174           | 176            | mg/kg       | 1.14       | 20.0          |

**ICV**

| <u>Parameter</u>        | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Total Kjeldahl Nitrogen | 5.32           | 5.00         | mg/kg        | 106             | 90.0 - 110     | 118385071   |

**LCS Dup**

| <u>Parameter</u>        | <u>PrepSet</u> | <u>LCS</u> | <u>LCSD</u> | <u>Known</u> | <u>Limits%</u> | <u>LCS%</u> | <u>LCSD%</u> | <u>Units</u> | <u>RPD</u> | <u>Limit%</u> |
|-------------------------|----------------|------------|-------------|--------------|----------------|-------------|--------------|--------------|------------|---------------|
| Total Kjeldahl Nitrogen | 761822         | 98.8       | 98.9        | 100          | 90.0 - 110     | 98.8        | 98.9         | mg/kg        | 0.101      | 20.0          |

**Mat. Spike**

| <u>Parameter</u>        | <u>Sample</u> | <u>Spike</u> | <u>Unknown</u> | <u>Known</u> | <u>Units</u> | <u>Recovery %</u> | <u>Limits %</u> | <u>File</u> |
|-------------------------|---------------|--------------|----------------|--------------|--------------|-------------------|-----------------|-------------|
| Total Kjeldahl Nitrogen | 1657051       | 326          | 274            | 496          | mg/kg        | 10.5              | 80.0 - 120      | 118385097   |
|                         | 1657052       | 234          | 176            | 199          | mg/kg        | 29.1              | 80.0 - 120      | 118385100   |

Analytical Set **762383**

**EPA 351.2 2**

**Blank**

| <u>Parameter</u>        | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>SQL</u> | <u>Units</u> | <u>File</u> |
|-------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Total Kjeldahl Nitrogen | 761822         | ND             | 0.190      | 1.00       | mg/kg        | 118389194   |

**CCV**

| <u>Parameter</u>        | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|-------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Total Kjeldahl Nitrogen | 5.12           | 5.00         | mg/kg        | 102             | 90.0 - 110     | 118389181   |
|                         | 5.03           | 5.00         | mg/kg        | 101             | 90.0 - 110     | 118389191   |
|                         | 5.18           | 5.00         | mg/kg        | 104             | 90.0 - 110     | 118389192   |
|                         | 4.85           | 5.00         | mg/kg        | 97.0            | 90.0 - 110     | 118389193   |
|                         | 5.11           | 5.00         | mg/kg        | 102             | 90.0 - 110     | 118389200   |
|                         | 5.04           | 5.00         | mg/kg        | 101             | 90.0 - 110     | 118389203   |





# Quality Control

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### Duplicate

| Parameter               | Sample  | Result | Unknown | Unit  | RPD  | Limit% |
|-------------------------|---------|--------|---------|-------|------|--------|
| Total Kjeldahl Nitrogen | 1657051 | 277    | 300     | mg/kg | 7.97 | 20.0   |

### ICV

| Parameter               | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------|---------|-------|-------|----------|------------|-----------|
| Total Kjeldahl Nitrogen | 5.09    | 5.00  | mg/kg | 102      | 90.0 - 110 | 118389180 |

### LCS Dup

| Parameter               | PrepSet | LCS | LCSD | Known | Limits%    | LCS% | LCSD% | Units | RPD  | Limit% |
|-------------------------|---------|-----|------|-------|------------|------|-------|-------|------|--------|
| Total Kjeldahl Nitrogen | 761822  | 102 | 108  | 100   | 90.0 - 110 | 102  | 108   | mg/kg | 5.71 | 20.0   |

### Mat. Spike

| Parameter               | Sample  | Spike | Unknown | Known | Units | Recovery % | Limits %   | File      |   |
|-------------------------|---------|-------|---------|-------|-------|------------|------------|-----------|---|
| Total Kjeldahl Nitrogen | 1657051 | 361   | 300     | 496   | mg/kg | 12.3       | 80.0 - 120 | 118389199 | * |

Analytical Set 762165

SM2540 G-1997 /MOD

### ControlBlk

| Parameter               | PrepSet | Reading | MDL | MQL | Units | File      |
|-------------------------|---------|---------|-----|-----|-------|-----------|
| Total Solids for Dry Wt | 762165  | 0.0004  |     |     | grams | 118384560 |

### Duplicate

| Parameter               | Sample  | Result | Unknown | Unit | RPD   | Limit% |
|-------------------------|---------|--------|---------|------|-------|--------|
| Total Solids for Dry Wt | 1657838 | 5.85   | 5.79    | %    | 1.03  | 20.0   |
|                         | 1657920 | 93.5   | 95.6    | %    | 2.22  | 20.0   |
|                         | 1658122 | 81.4   | 81.6    | %    | 0.245 | 20.0   |

Analytical Set 762577

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### ControlBlk

| Parameter                  | PrepSet | Reading | MDL | MQL | Units | File      |
|----------------------------|---------|---------|-----|-----|-------|-----------|
| Saturated Water Percentage | 762577  | -0.0004 |     |     | grams | 118392446 |

### Duplicate

| Parameter                  | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|----------------------------|---------|--------|---------|------|------|--------|
| Saturated Water Percentage | 1657855 | 53.0   | 48.4    | %    | 9.07 | 20.0   |

Analytical Set 762759

EPA 9056

### Blank

| Parameter                   | PrepSet | Reading | MDL     | MQL   | Units | File        |
|-----------------------------|---------|---------|---------|-------|-------|-------------|
| Nitrate-nitrogen (KCl Prep) | 762296  | 2.03    | 0.00185 | 0.200 | mg/kg | * 118395984 |

### CCV

| Parameter                   | Reading | Known | Units | Recover% | Limits%    | File      |
|-----------------------------|---------|-------|-------|----------|------------|-----------|
| Nitrate-nitrogen (KCl Prep) | 2.23    | 2.26  | mg/kg | 98.7     | 90.0 - 110 | 118395980 |
|                             | 2.26    | 2.26  | mg/kg | 100      | 90.0 - 110 | 118395989 |

### Duplicate

| Parameter                   | Sample  | Result | Unknown | Unit  | RPD  | Limit% |
|-----------------------------|---------|--------|---------|-------|------|--------|
| Nitrate-nitrogen (KCl Prep) | 1657855 | 22.4   | 18.0    | mg/kg | 21.8 | 30.0   |

Analytical Set 762205

EPA 6010C

### Blank

| Parameter               | PrepSet | Reading | MDL    | MQL   | Units | File      |
|-------------------------|---------|---------|--------|-------|-------|-----------|
| Calcium (SAR Extracted) | 762205  | 0.074   | 0.0618 | 0.500 | mg/L  | 118386064 |







# Quality Control

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### Blank

| <u>Parameter</u>          | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MDL</u> | <u>Units</u> | <u>File</u> |
|---------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Magnesium (SAR Extracted) | 762205         | ND             | 0.187      | 0.500      | mg/L         | 118386064   |
| Sodium (SAR Extracted)    | 762205         | ND             | 0.145      | 0.500      | mg/L         | 118386064   |

### CCV

| <u>Parameter</u>          | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|---------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium (SAR Extracted)   | 27.3           | 25.0         | mg/L         | 109             | 90.0 - 110     | 118386063   |
|                           | 26.3           | 25.0         | mg/L         | 105             | 90.0 - 110     | 118386069   |
| Magnesium (SAR Extracted) | 27.4           | 25.0         | mg/L         | 110             | 90.0 - 110     | 118386063   |
|                           | 26.4           | 25.0         | mg/L         | 106             | 90.0 - 110     | 118386069   |
| Sodium (SAR Extracted)    | 26.4           | 25.0         | mg/L         | 106             | 90.0 - 110     | 118386063   |
|                           | 25.5           | 25.0         | mg/L         | 102             | 90.0 - 110     | 118386069   |

### Duplicate

| <u>Parameter</u>          | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|---------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Calcium (SAR Extracted)   | 1657855       | 51.6          | 57.1           | mg/L        | 10.1       | 15.0          |
| Magnesium (SAR Extracted) | 1657855       | 6.46          | 6.71           | mg/L        | 3.80       | 15.0          |
| Sodium (SAR Extracted)    | 1657855       | 12.3          | 12.3           | mg/L        | 0          | 15.0          |

### ICL

| <u>Parameter</u>          | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|---------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium (SAR Extracted)   | 49.8           | 50.0         | mg/L         | 99.6            | 95.0 - 105     | 118386007   |
| Magnesium (SAR Extracted) | 49.5           | 50.0         | mg/L         | 99.0            | 95.0 - 105     | 118386007   |
| Sodium (SAR Extracted)    | 49.9           | 50.0         | mg/L         | 99.8            | 95.0 - 105     | 118386007   |

### ICV

| <u>Parameter</u>          | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|---------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium (SAR Extracted)   | 26.1           | 25.0         | mg/L         | 104             | 90.0 - 110     | 118386010   |
| Magnesium (SAR Extracted) | 26.2           | 25.0         | mg/L         | 105             | 90.0 - 110     | 118386010   |
| Sodium (SAR Extracted)    | 27.2           | 25.0         | mg/L         | 109             | 90.0 - 110     | 118386010   |

Analytical Set **763005**

**EPA 6010B**

### Blank

| <u>Parameter</u>         | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MDL</u> | <u>Units</u> | <u>File</u> |
|--------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Sulfur,Mehlich-3 extract | 762972         | ND             | 0.102      | 0.500      | mg/kg        | 118400680   |

### CCV

| <u>Parameter</u>         | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|--------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Sulfur,Mehlich-3 extract | 19.4           | 20.0         | mg/kg        | 97.0            | 90.0 - 110     | 118400679   |
|                          | 19.0           | 20.0         | mg/kg        | 95.0            | 90.0 - 110     | 118400686   |

### Duplicate

| <u>Parameter</u>         | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|--------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Sulfur,Mehlich-3 extract | 1657855       | 0.931         | ND             | mg/kg       | 200 *      | 15.0          |

### ICL

| <u>Parameter</u>         | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|--------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Sulfur,Mehlich-3 extract | 40.7           | 40.0         | mg/kg        | 102             | 95.0 - 105     | 118400677   |

### ICV

| <u>Parameter</u>         | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|--------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Sulfur,Mehlich-3 extract | 20.3           | 20.0         | mg/kg        | 102             | 90.0 - 110     | 118400678   |

Analytical Set **763010**

**EPA 6010C**





# Quality Control

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### Blank

| <u>Parameter</u>             | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MDL</u> | <u>Units</u> | <u>File</u> |
|------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Calcium, Mehlich-3 extract   | 762972         | ND             | 0.500      | 0.500      | mg/kg        | 118400780   |
| Magnesium, Mehlich-3 extract | 762972         | ND             | 0.500      | 0.500      | mg/kg        | 118400780   |
| Potassium, Mehlich-3 extract | 762972         | ND             | 0.500      | 0.500      | mg/kg        | 118400780   |
| Sodium, Mehlich-3 extract    | 762972         | ND             | 0.500      | 0.500      | mg/kg        | 118400780   |

### CCV

| <u>Parameter</u>             | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium, Mehlich-3 extract   | 25.0           | 25.0         | mg/kg        | 100             | 90.0 - 110     | 118400779   |
|                              | 25.4           | 25.0         | mg/kg        | 102             | 90.0 - 110     | 118400786   |
| Magnesium, Mehlich-3 extract | 24.1           | 25.0         | mg/kg        | 96.4            | 90.0 - 110     | 118400779   |
|                              | 24.2           | 25.0         | mg/kg        | 96.8            | 90.0 - 110     | 118400786   |
| Potassium, Mehlich-3 extract | 25.2           | 25.0         | mg/kg        | 101             | 90.0 - 110     | 118400779   |
|                              | 25.0           | 25.0         | mg/kg        | 100             | 90.0 - 110     | 118400786   |
| Sodium, Mehlich-3 extract    | 23.4           | 25.0         | mg/kg        | 93.6            | 90.0 - 110     | 118400779   |
|                              | 23.2           | 25.0         | mg/kg        | 92.8            | 90.0 - 110     | 118400786   |

### Duplicate

| <u>Parameter</u>             | <u>Sample</u> | <u>Result</u> | <u>Unknown</u> | <u>Unit</u> | <u>RPD</u> | <u>Limit%</u> |
|------------------------------|---------------|---------------|----------------|-------------|------------|---------------|
| Calcium, Mehlich-3 extract   | 1657855       | 6980          | 6620           | mg/kg       | 5.29       | 15.0          |
| Magnesium, Mehlich-3 extract | 1657855       | 382           | 358            | mg/kg       | 6.49       | 15.0          |
| Potassium, Mehlich-3 extract | 1657855       | 469           | 436            | mg/kg       | 7.29       | 15.0          |
| Sodium, Mehlich-3 extract    | 1657855       | 21.8          | 21.0           | mg/kg       | 3.74       | 15.0          |

### ICL

| <u>Parameter</u>             | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium, Mehlich-3 extract   | 49.7           | 50.0         | mg/kg        | 99.4            | 95.0 - 105     | 118400769   |
| Magnesium, Mehlich-3 extract | 49.7           | 50.0         | mg/kg        | 99.4            | 95.0 - 105     | 118400769   |
| Potassium, Mehlich-3 extract | 49.7           | 50.0         | mg/kg        | 99.4            | 95.0 - 105     | 118400769   |
| Sodium, Mehlich-3 extract    | 50.2           | 50.0         | mg/kg        | 100             | 95.0 - 105     | 118400769   |

### ICV

| <u>Parameter</u>             | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium, Mehlich-3 extract   | 25.4           | 25.0         | mg/kg        | 102             | 90.0 - 110     | 118400772   |
| Magnesium, Mehlich-3 extract | 24.3           | 25.0         | mg/kg        | 97.2            | 90.0 - 110     | 118400772   |
| Potassium, Mehlich-3 extract | 24.2           | 25.0         | mg/kg        | 96.8            | 90.0 - 110     | 118400772   |
| Sodium, Mehlich-3 extract    | 22.7           | 25.0         | mg/kg        | 90.8            | 90.0 - 110     | 118400772   |

### LDR

| <u>Parameter</u>             | <u>Reading</u> | <u>Known</u> | <u>Units</u> | <u>Recover%</u> | <u>Limits%</u> | <u>File</u> |
|------------------------------|----------------|--------------|--------------|-----------------|----------------|-------------|
| Calcium, Mehlich-3 extract   | 280            | 300          | mg/kg        | 93.3            | 90.0 - 110     | 118400774   |
| Magnesium, Mehlich-3 extract | 97.1           | 100          | mg/kg        | 97.1            | 90.0 - 110     | 118400770   |
| Sodium, Mehlich-3 extract    | 110            | 100          | mg/kg        | 110             | 90.0 - 110     | 118400770   |

Analytical Set **763036**

**EPA 6010B**

### Blank

| <u>Parameter</u>              | <u>PrepSet</u> | <u>Reading</u> | <u>MDL</u> | <u>MDL</u> | <u>Units</u> | <u>File</u> |
|-------------------------------|----------------|----------------|------------|------------|--------------|-------------|
| Phosphorus, Mehlich-3 extract | 762972         | ND             | 0.100      | 0.100      | mg/kg        | 118401300   |





# Quality Control

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## CCV

| Parameter                     | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------------|---------|-------|-------|----------|------------|-----------|
| Phosphorus, Mehlich-3 extract | 10.2    | 10.0  | mg/kg | 102      | 90.0 - 110 | 118401299 |
|                               | 9.98    | 10.0  | mg/kg | 99.8     | 90.0 - 110 | 118401306 |

## Duplicate

| Parameter                     | Sample  | Result | Unknown | Unit  | RPD  | Limit% |
|-------------------------------|---------|--------|---------|-------|------|--------|
| Phosphorus, Mehlich-3 extract | 1657855 | 29.2   | 30.4    | mg/kg | 4.03 | 15.0   |

## ICL

| Parameter                     | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------------|---------|-------|-------|----------|------------|-----------|
| Phosphorus, Mehlich-3 extract | 26.0    | 25.0  | mg/kg | 104      | 95.0 - 105 | 118401297 |

## ICV

| Parameter                     | Reading | Known | Units | Recover% | Limits%    | File      |
|-------------------------------|---------|-------|-------|----------|------------|-----------|
| Phosphorus, Mehlich-3 extract | 10.5    | 10.0  | mg/kg | 105      | 90.0 - 110 | 118401298 |

Analytical Set **762293**

**EPA 9045D 4**

## Duplicate

| Parameter                        | Sample  | Result | Unknown | Unit | RPD  | Limit% |
|----------------------------------|---------|--------|---------|------|------|--------|
| pH Measured in Water/2:1 water:s | 1657855 | 8.5    | 8.4     | SU   | 1.18 | 20.0   |

## Standard

| Parameter                        | Sample | Reading | Known | Units | Recover% | Limits%    | File      |
|----------------------------------|--------|---------|-------|-------|----------|------------|-----------|
| pH Measured in Water/2:1 water:s | 762293 | 7.01    | 7.00  | SU    | 100      | 90.0 - 110 | 118387854 |
|                                  | 762293 | 4.01    | 4.00  | SU    | 100      | 90.0 - 110 | 118387855 |
|                                  | 762293 | 10.04   | 10.00 | SU    | 100      | 90.0 - 110 | 118387856 |
|                                  | 762293 | 6.05    | 6.00  | SU    | 101      | 90.0 - 110 | 118387857 |
|                                  | 762293 | 8.04    | 8.00  | SU    | 100      | 90.0 - 110 | 118387858 |
|                                  | 762293 | 6.05    | 6.00  | SU    | 101      | 90.0 - 110 | 118387863 |
|                                  | 762293 | 8.04    | 8.00  | SU    | 100      | 90.0 - 110 | 118387864 |

Analytical Set **762299**

**LA29B**

## Blank

| Parameter           | PrepSet | Reading | MDL | MQL | Units    | File      |
|---------------------|---------|---------|-----|-----|----------|-----------|
| Conductance at 25 C | 762183  | 0.94    |     |     | umhos/cm | 118387940 |

## Duplicate

| Parameter           | Sample  | Result | Unknown | Unit     | RPD  | Limit% |
|---------------------|---------|--------|---------|----------|------|--------|
| Conductance at 25 C | 1657855 | 766    | 777     | umhos/cm | 1.43 | 20.0   |

## ICV

| Parameter           | Reading | Known | Units    | Recover% | Limits%    | File      |
|---------------------|---------|-------|----------|----------|------------|-----------|
| Conductance at 25 C | 12900   | 12900 | umhos/cm | 100      | 90.0 - 110 | 118387943 |

## Standard

| Parameter           | Sample | Reading | Known | Units    | Recover% | Limits%    | File      |
|---------------------|--------|---------|-------|----------|----------|------------|-----------|
| Conductance at 25 C | 762299 | 1410    | 1410  | umhos/cm | 100      | 90.0 - 110 | 118387941 |
|                     | 762299 | 100     | 100   | umhos/cm | 100      | 90.0 - 110 | 118387942 |
|                     | 762299 | 1430    | 1410  | umhos/cm | 101      | 90.0 - 110 | 118387948 |





# Quality Control

\* Out RPD is Relative Percent Difference:  $\text{abs}(r1-r2) / \text{mean}(r1,r2) * 100\%$

Recover% is Recovery Percent:  $\text{result} / \text{known} * 100\%$

Blank - Method Blank; CCV - Continuing Calibration Verification; ICV - Initial Calibration Verification; LDR - Linear Dynamic Range Standard



815762 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

# Chain of Custody

01/23/2018 Page 1 of 2

Report To:

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

**CABC**

**107**

Phone 806/661-3130  
Fax 806/661-3134

*Soil*

Accredited Test Name Method

Matrix: Solid & Chemical Materials

| Sampler Printed Name | Sampler Affiliation | Sampler Signature  |
|----------------------|---------------------|--------------------|
| Milan Bonina         | ANA-LAB             | <i>[Signature]</i> |

| Class | Qt w/Teflon lined lid | Method   |
|-------|-----------------------|--|
| 1     | SAR                   | Sodium Adsorption Ratio 600/2-78-054 3.2.19                          |
|       | *SAR                  | Sodium Adsorption Ratio Extract 600/2-78-054 3.2.19 (180 days)       |
|       | *Pm                   | Phosphorus, Mehlich-3 extract EPA 6010B (180 days)                   |
| N     | *Mg                   | Magnesium (SAR Extracted) EPA 6010B CAS:7439-95-4 (180 days)         |
| N     | *Mgq                  | Magnesium (SAR) meq/L calculation EPA 6010B CAS:7439-95-4 (180 days) |
|       | *Mgn                  | Magnesium, Mehlich-3 extract EPA 6010B CAS:7439-95-4 (180 days)      |
|       | *Kp                   | Potassium, Mehlich-3 extract EPA 6010B CAS:7440-09-7 (180 days)      |
| N     | *Ca                   | Calcium (SAR Extracted) EPA 6010B CAS:7440-70-2 (180 days)           |
| N     | *Caq                  | Calcium (SAR) meq/L calculation EPA 6010B CAS:7440-70-2 (180 days)   |
|       | *Can                  | Calcium, Mehlich-3 extract EPA 6010B CAS:7440-70-2 (180 days)        |
|       | *Sm                   | Sulfur, Mehlich-3 extract EPA 6010B CAS:7704-34-9 (180 days)         |
| N     | *Na                   | Sodium (SAR Extracted) EPA 6010C CAS:7440-23-5 (180 days)            |
| N     | *Naq                  | Sodium (SAR) meq/L calculation EPA 6010C CAS:7440-23-5 (180 days)    |
|       | *Nan                  | Sodium, Mehlich-3 extract EPA 6010C CAS:7440-23-5 (180 days)         |
|       | SWP                   | Saturated Water Percentage Handbook 60                               |
|       | *MPE                  | Mehlich-3 Extraction Mehlich-3 Extraction (180 days)                 |

| Class | 8 oz w/Teflon lined lid | Method  |
|-------|-------------------------|---|
| N     | IN3K                    | Nitrate-nitrogen (KCl Prep) EPA 9056 (28.0 days)  |
|       | SWPX                    | Saturated Water Percentage w/Ext USDA Handbook 60 |

| Class | 4 oz w/Teflon lined lid | Method   |
|-------|-------------------------|--|
|       | *KCL                    | KCl Extraction Black's 84.2 (180 days)                                 |
| N     | TKN                     | Total Kjeldahl Nitrogen EPA 351.2 2 CAS:7727-37-9 (28.0 days)          |
| N     | pHLZ                    | pH Measured in Water/2:1 water:s EPA 9045D 4 CAS:12408-02-5 (180 days) |
| N     | TS%                     | Total Solids for Dry Wt SM2540 G-1997 /MOD                             |
| N     | EC61                    | Conductance @ 25C(filtrate) USDA Handbook 60(mod)                      |

| Class | Z - No bottle required | Method                                      |
|-------|------------------------|---|
|       | ARDW                   | As Received to Dry Weight Basis Calculation |

| Ana-Lab # | Sample ID | Bottles | Date    | Time | Notes |
|-----------|-----------|---------|---------|------|-------|
| 1657855   | 0-6       |         | 1/21/18 | 1430 |       |

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Pauhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201

815762 CoC Print Group 001 of 001



Ana-Lab Corp. P.O. Box 9000 Kilgore, TX 75663

Phone 903/984-0551 FAX 903/984-5914 e-Mail corp@ana-lab.com LELAP-accredited #02008

# Chain of Custody

01/23/2018 Page 2 of 2

Report To

**CABC**

Cabot Corp.  
Ashlee Green  
P. O. Box 5001  
Pampa, TX 79065

107

Phone 806/661-3130  
Fax 806/661-3134

Soil

|         |       |         |      |
|---------|-------|---------|------|
| 1657856 | 6-18  | 1-31-18 | 1432 |
| 857     | 18-30 | 2-4-18  | 1435 |

Ambient Conditions/Comments

| Date    | Time | Relinquished   | Received  |
|---------|------|--|---|
| 1-31-18 | 1820 | Printed Name <i>M. Heath</i> Affiliation<br>Signature <i>[Signature]</i> | Printed Name <i>LD</i> Affiliation<br>Signature   |
| 2/1/18  | 815  | Printed Name <b>Lone Star</b> Affiliation<br>Signature                   | Printed Name <i>Christi Parker</i> <b>Ana-Lab</b> Affiliation<br>Signature <i>[Signature]</i> |
|         |      | Printed Name Affiliation   | Printed Name Affiliation  |
|         |      | Signature  | Signature   |
|         |      | Printed Name Affiliation   | Printed Name Affiliation  |
|         |      | Signature  | Signature   |

Sample Received on Ice?  Yes  No Method of Shipment:  UPS  Bus  FedEx  Lone Star  Hand Delivered  Other  
 Cooler/Sample Secure?  Yes  No Tracking/Shipping Label Attached *74421516*  
 The accredited column designates accreditation by A - A2LA, N - NELAC, or z - not listed under scope of accreditation. Unless otherwise specified, ANA-LAB shall provide these ordered services pursuant to our Standard Terms & Conditions Agreement (available for download from the welcome page at <<http://www.ana-lab.com>>). Ana-Lab personnel collect samples as specified by Ana-Lab SOP #000323.

Comments



See Attached for Tracking # and Temp

Corporate Shipping: 2600 Dudley Rd. Kilgore, TX 75662

Panhandle Region: 6501 Storage Dr Amarillo TX 79110



NELAP-accredited #T104704201

3 of 3

815762 CoC Print Group 001 of 001

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Airbill No. Z4421536

Lone Star Overnight  
1-800-800-3934  
www.lso.com

SHIP TO:  
LOGIN  
ANA-LAB CORP  
2600 DUDLEY RD.  
KILGORE, TX 75662  
9039840551

From:  
MB  
ANA-LAB CORP  
6501 STORAGE DR  
AMARILLO, TX 79110  
8063553556

1.6°C

6205   
6092  020  
6093

**B GGG**

**LSO PRIORITY NEXT DAY**  
10:30 IN MOST CITIES  
LATER IN REMOTE CITIES

PRINT DATE: 1/24/2018  
QUICKCODE: 1      WEIGHT: 20.00LBS  
REF 1: 1D00V.0000

Fold on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned.  
Shipping Instructions

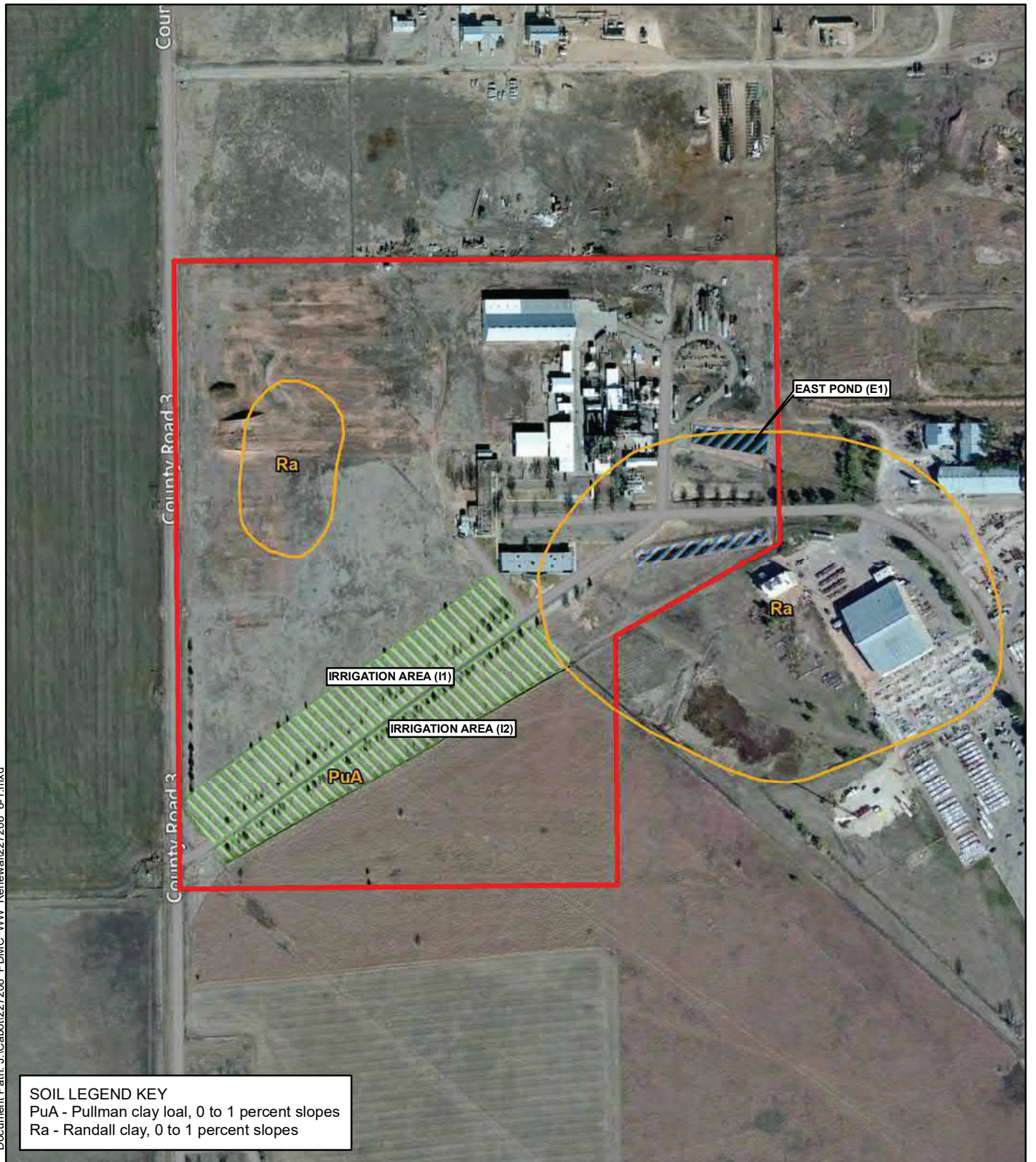
1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find A Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**.

WARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone Star Overnight account number. This label is valid for use for 3 months from the date printed. Use of expired labels may result in delayed billing and / or additional research charges. **LIMIT OF LIABILITY:** We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. **NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.**

# Figure 8-1 USDA Soil Survey Map







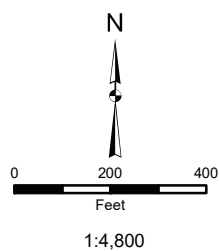
Document Path: J:\Cabot\227208\_PDMC\_WW\_Renewal\227208\_8-1.mxd



**SOIL LEGEND KEY**  
 PuA - Pullman clay loam, 0 to 1 percent slopes  
 Ra - Randall clay, 0 to 1 percent slopes

**LEGEND**

-  Soils
-  Ponds
-  Irrigation Areas
-  Property Boundary



SOURCE: USDA NRCS Soil Survey Map - Gray County; ESRI and their data partners (2015)

**TPDES INDUSTRIAL WASTEWATER  
 PERMIT MAJOR AMENDMENT**  
 CABOT CORPORATION  
 PAMPA DEVELOPMENT AND MANUFACTURING CENTER  
 8430 COUNTY RD 3, PAMPA, TEXAS 79065

|                        |                       |
|------------------------|-----------------------|
| PROJECT NUMBER: 227202 | FILE NAME: 227208_8-1 |
| AUTHOR: MLOVELACE      | DATE: 9/17/2015       |



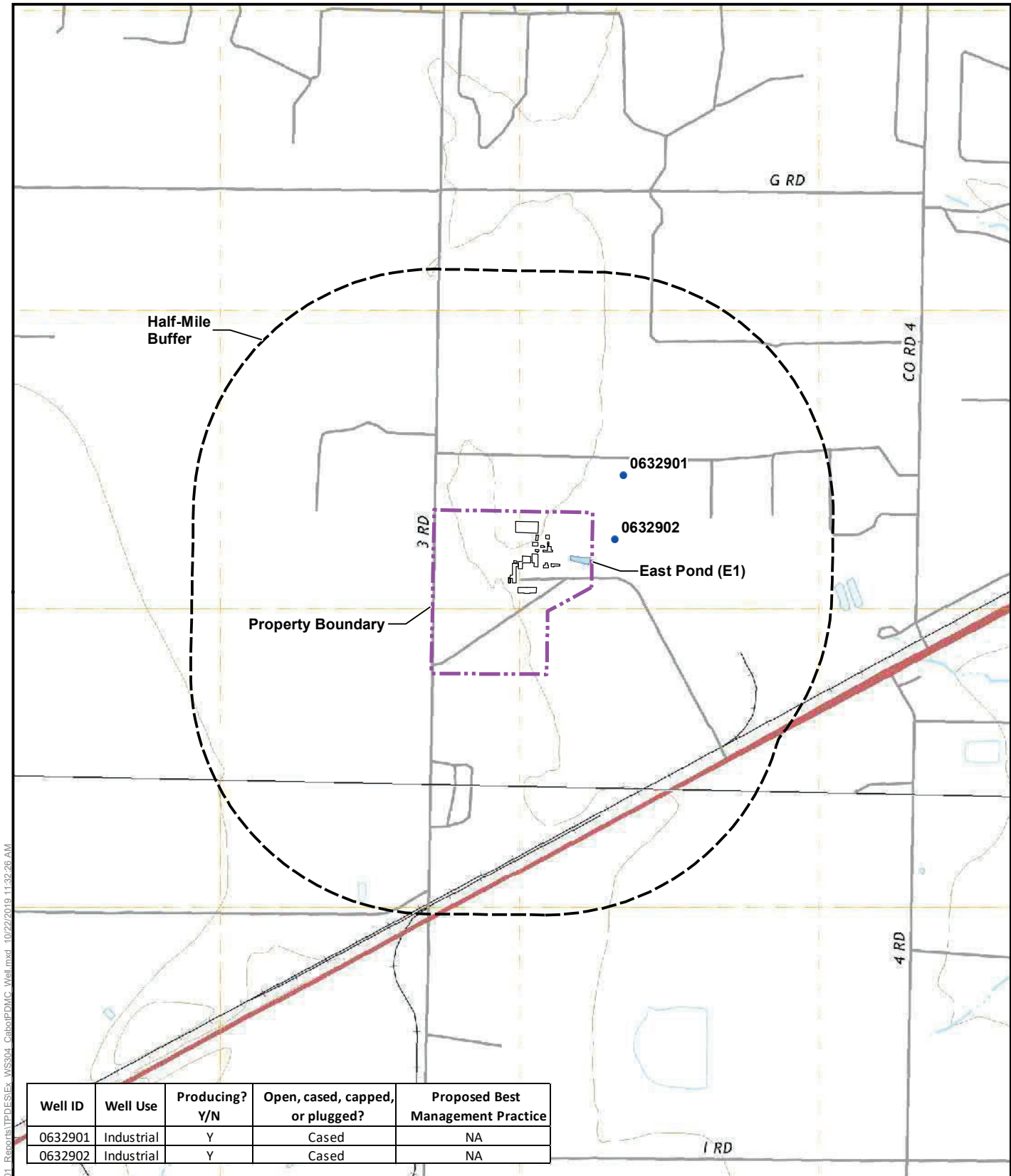
505 E. HUNTLAND DR.  
 SUITE 250  
 AUSTIN, TX 78752  
 PH:512-329-6080

**FIGURE  
 8-1**

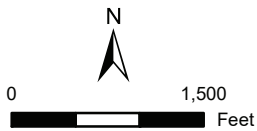
# Attachment WKSHT3.0-4

## Well Map

Required by Technical Report 1.0  
TCEQ-10055, Worksheet 3.0-4, page 32



| Well ID | Well Use   | Producing?<br>Y/N | Open, cased, capped,<br>or plugged? | Proposed Best<br>Management Practice |
|---------|------------|-------------------|-------------------------------------|--------------------------------------|
| 0632901 | Industrial | Y                 | Cased                               | NA                                   |
| 0632902 | Industrial | Y                 | Cased                               | NA                                   |



Legend

- Groundwater Well Within 500-Feet of Property
- Property Boundary
- Half-Mile Buffer
- Building
- Pond

Cabot PDMC  
WS3.0-4  
Well Map  
Pampa, Texas

