

WATER SYSTEMS MGT., INC.

WSM, Inc.
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Water System Management/Operation
Wastewater System Management/Operation
Backflow Prevention Assembly Testing
Cross Connection Control Inspection
Consulting

January 4, 2021

Matt Plaisted
State of Idaho – DEQ
2110 Ironwood Parkway
Coeur d’Alene, ID 83814-2648
Matthew.Plaisted@deq.idaho.gov

RE: ANNUAL REPORT, Bayview Water and Sewer District, WASTEWATER REUSE PERMIT, M-105-04 – Including Minor Permit Modifications No. 1 & No. 2

Dear Mr. Plaisted:

The following is a summary of activities at Bayview Water and Sewer District (District) municipal wastewater facilities for the period of November 1, 2019 through October 31, 2020.

The current permit, #M-105-04, was issued on July 1, 2015 and expires on July 1, 2025. M-105-04 – Modification 1 was issued on June 4, 2018. M-105-04 – Modification 2 was issued on December 31, 2018.

The District contracted with Water Systems Management, Inc. (Bob Hansen) to operate the wastewater system starting on August 16, 2017. WSM does provide appropriately licensed personnel to fulfill requirements for both responsible-charge and substitute responsible-charge operation of the Districts collection, treatment and reuse land application activities.

During this reporting period, November 1st through October 31st the District’s collection and treatment systems have been operated in substantial compliance with the current Department issued Permit. No land application activity took place during the growing season as the only lagoon was being repaired and seepage tested. WSM continues to be retained as the District contract operating firm providing appropriately licensed operating personnel. The District remains in a pro active posture in reviewing potential system upgrades and addressing aging infrastructure.

6. Reporting Requirements

6.1.1 Due Date

The Annual Report covering the previous reporting period is being submitted as require, no later than January 31.

6.1.2 Required Contents

The Annual Report shall include the following: Status -

1. A brief interpretive discussion of all required monitoring data.
 - a. Data quality objectives are to insure public health and the environment are protected.
 - b. Validation of data collected is a continuing process of calibrating on site constituent testing equipment and measuring devices.
 - c. Verification is a continuing process of redundant testing through an Idaho Certified Laboratory (Accurate Testing Labs, LLC) and daily on site monitoring when the reuse system is in operation.
 - d. Permit compliance is continually being monitored with required constituent monitoring being submitted to an Idaho Certified Laboratory and on site testing and measuring being conducted as required and noted above and throughout this reporting period during times of reuse operation. **No reuse land application took place during this reporting period.** Reuse land application systems were completely shut down during the normal reporting period for lagoon repair and seepage testing.
 - e. There were no environmental impacts noted during this reporting period.

2. Results of the required monitoring as described in section 5 of this permit would normally, when irrigating, be found in the **WASTEWATER REUSE LAND APPLICATION LOGS FOR APRIL 2020 THROUGH OCTOBER 2020**. Detailed constituent loading, described in Section 5 of this permit would normally, when irrigating, be found in the following organized data summary tables for periods of land application reuse.

5.1.1 Constituent Monitoring

Monitoring Point Serial Number and Location	Sample Description	Sample Type and Frequency	Constituents (Units in mg/L Unless Otherwise Specified)	STATUS
WW-105-01 Recycled water from lagoon LG-10501	Recycled water to MU-10501, MU-10502 and MU-10503	Grab/monthly (during periods of use)	-Total Kjeldahl nitrogen, as N -Nitrite + nitrate-nitrogen, as N	There were no periods of use for this reporting period
WW-105-01 Recycled water from lagoon LG-10501	Recycled water to MU-10501, MU-10502 and MU-10503	Grab/weekly (during periods of use)	-Total coliform (total coliform organisms/100mL)	There were no periods of use for this reporting period

No Total Kjeldahl nitrogen, as N and Nitrite + Nitrate nitrogen, as N sampling – Were required during this reporting period. **No reuse land application took place during this reporting period.**

No Total Coliform Bacteria (organisms/mL) sampling – Was required during this reporting period. **No reuse land application took place during this reporting period.**

PLEASE SEE NOTROGEN LOADING TABLE BELOW

Pounds/acre-year – See the table below for calculated nitrogen loading rates from wastewater irrigation, to the Hydraulic Management Units MU-10501, MU-10502 & MU-10503, applied during the irrigations season. **No reuse land application took place during this reporting period.**

NITROGEN LOADING

MONTH	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
	Nitrogen	Gallons	Nitrogen	Gallons	Nitrogen	Gallons	Nitrogen
	Concentration mg/L	Area MU-10501	lbs./acre MU-10501	Area MU-10502	lbs./acre MU-10502	Area MU-10503	lbs./acre MU-10503
April	N/A	N/A	N/A	N/A	N/A	N/A	N/A
May	N/A	N/A	N/A	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A	N/A
September	N/A	N/A	N/A	N/A	N/A	N/A	N/A
October	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTALS		0.00	0.00	N/A	0.00	0.00	0.00

5.1.2 Management Unit and Other Flow Monitoring

Management Unit or Flow Measurement Serial Number and Location	Sample Description	Sample Type and Frequency	Measured Parameters, each MU	STATUS
MU-10501, MU910502, and MU-10503 Effluent flow meter	Recycled water flow from LG-10501	-Daily meter reading -Monthly compilation of data	-Volume (MG/month) -Application depth (inches/month)	There were no periods of use for this reporting period

Note: No reuse land application took place during this reporting period.

5.2 Ground Water Monitoring

5.2.1 Ground Water Monitoring Point Descriptions

Monitoring Point Serial Number	Common Designation	Well Type	Gradient Location	STATUS
GW-10501	PZ 1	Piezometer	MU-10501	Active –
GW-10502	PZ 2	Piezometer	MU-10502	Active –
GW-10503	PZ 3	Piezometer	MU-10503	Active –

5.2.2 Ground Water Monitoring, Sampling and Analyses

Monitoring Point Serial Number	Sampling Point Description	Sample Type and Frequency	Constituents (Units in mg/L Unless Otherwise Specified)	STATUS
GW-10501 through GW-10503	Piezometers	Monthly (during periods of use)	Depth to groundwater in feet (ft.) or inches (in.)	There were no periods of use for this reporting period

Note: No reuse land application took place during this reporting period.

5.3 Soil Monitoring

5.3.1 Soil Monitoring Unit Descriptions

Monitoring Point Serial Number	Description	Associated Hydraulic Management Unit	STATUS
SU-10501	Area 1	MU-10501	Active –
SU-10502	Area 2	MU-10502	Active –
SU-10503	Area 3	MU-10503	Active –

5.3.2 Soil Monitoring, Sampling, and Analyses

Monitoring Point Serial Number	Sample Type	Sample Frequency	Constituents (Units in mg/kg Soil Unless Otherwise Specified)	STATUS
SU-10501 SU-10502 SU-10503	Composite Samples ^a	Annually, October	-Nitrate-nitrogen -Ammonium nitrogen	Done for SU-10501, SU-10502 & SU-10503 completed at the end of the irrigation season. See attached Accurate Testing Labs Certificate of Analysis #2020100153 and the following summary table.

Soil Monitoring Constituent Summary

CONSTITUENT	Monitoring Point	2020								
		SU-10501			SU-50102			SU-50103		
		0-12"	12-24"	24-36"	0-12"	12-24"	24-36"	0-12"	12-24"	24-36"
Nitrate-nitrogen	SU-10501, 02 & 03	ND	ND	ND	2.78	ND	0.234	7.23	1.67	0.872
Ammonium nitrogen		ND	ND	ND	0.347	ND	ND	0.344	0.282	0.136

Note: All soil samples were collected and composited from each monitoring unit from each soil depth in accordance with Bayview Water and Sewer District M-105-04 – Minor Permit Modification No. 1. Even though no reuse land application took place during this reporting period, soil samples were pulled in October for future use in background and trending analysis.

3. Status of all work described in section 3 of this permit.

3. Compliance Schedule for Required Activities - STATUS

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-105-01 Within 6 months of permit issuance	<p>Plan of Operation (PO): The permittee shall submit for review and approval a Plan of Operation that reflects current operations and incorporates the requirements of this permit. The PO shall comply with the applicable requirements stated in IDAPA 58.01.17.300.05 and shall address applicable items in the Plan of Operation Checklist in the DEQ Guidance.</p> <p>The PO shall include the following site management plans or the permittee may submit the site management plans individually:</p> <ol style="list-style-type: none"> 1. Buffer zone plan; 2. Emergency operating plan; 3. Irrigation management and scheduling plan; 4. Runoff management plan <p>The PO shall be undated as needed to reflect current operations. The permittee shall notify DEQ of material changes to the PO and copies shall be kept on site and made available to DEQ upon request.</p>
<p>STATUS: <u>COMPLETE</u> - As reported in the 2016 Annual Report the Plan of Operation (PO) was submitted to DEQ by T-O Engineers and approved.</p>	

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-105-02 Within 6 months of permit issuance	<p>Quality Assurance Project Plan (QAPP): The permittee shall prepare and implement a QAPP that incorporates all monitoring and reporting required by this permit. A copy of the QAPP along with written notice that the permittee has implemented the QAPP shall be provided to DEQ.</p> <p>The QAPP shall be designed to assist in planning for the collection, analysis, and reporting of all monitoring in support of this permit and in explaining data anomalies when they occur. At a minimum, the QAPP must include the following:</p> <ol style="list-style-type: none"> 1. Details on the number of measurements, number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection, and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements. 2. Maps indicating the location of each monitoring, and sampling point. 3. Qualification and training of personnel. 4. Names, addresses, and telephone numbers of the laboratories used by or proposed to be used by the permittee 5. Example formats and tables that will be used by the permittee to summarize and present all data in the annual report. <p>The format and content of the QAPP should adhere to the recommendations and references in the Quality Assurance and Data Processing sections of the DEQ Guidance.</p> <p>The permittee shall amend the QAPP whenever there is a modification in sample collection, sample analysis, or other procedure addressed by the QAPP. The permittee shall notify DEQ of material changes to the QAPP and copies shall be kept on site and made available to DEQ upon request.</p>
<p>STATUS: COMPLETE - As reported in the 2016 Annual Report the Quality Assurance Project Plan (QAPP) was submitted to DEQ by T-O Engineers and approved.</p>	

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description				
CA-105-03 As specified	<p>Seepage Testing: The following table shows the date by which the permittee shall complete seepage testing on the specified lagoons;</p> <table border="1" data-bbox="505 401 1269 464"> <tr> <td>Lagoon:</td> <td>Seepage Test Due Date:</td> </tr> <tr> <td>Storage Lagoon</td> <td>June 30, 2019</td> </tr> </table> <p>Submit to DEQ for review and approval a proposed schedule and procedure for performing the required seepage tests at least 42 days prior to the planned seepage test. Guidance for developing seepage test procedures are available at: http://www.deq.idaho.gov/water-quality/wastewater/lagoon-deepage-testing.aspx</p> <p>The seepage test procedures shall be sealed by the Idaho licensed professional engineer or professional geologist in responsible charge for the test.</p> <p>Seepage tests shall be completed in accordance with the procedures approved by DEQ. The seepage test report shall be sealed by the person in responsible charge and submitted within 90 days after completion of the seepage test.</p> <p>For municipal lagoons, the leakage rate for lagoons constructed after April 15, 2007 shall be no more than zero point one hundred twenty-five (0.125) inches (1/8 inch) per day. The leakage rate for existing lagoons constructed prior to April 15, 2007 shall be no more than zero point twenty-five (0.25) inches (1/4 inch) per day. See IDAPA58.01.16.493.03. Requirements for lagoons leaking above the allowable amount are outlined in IDAPA 58.01.16.493.04.</p>	Lagoon:	Seepage Test Due Date:	Storage Lagoon	June 30, 2019
Lagoon:	Seepage Test Due Date:				
Storage Lagoon	June 30, 2019				
	<p>STATUS: COMPLETE - Seepage Testing, in accordance with the DEQ approved plan was initialed in 2019 and the lagoon was found to be leaking in excess of allowable limits. Testing was halted and DEQ, Mr. Chris Westerman, was notified on June 3, 2019 by Mr. Brett Converse, JUB Engineering. After numerous efforts to identify leaks in the lagoon liner, we were finally successful and repairs were made. The lagoon was seepage tested and the final seepage test results report was submitted to DEQ by Brett Converse, P.E., J-U-B Engineers on October 14, 2020, Michael Stambulis, P.E. at DEQ, acknowledged we had “satisfactorily met the requirements of the Wastewater Rules (IDAPA 58.01.16.493.03) of reuse permit M-105-04 for the storage lagoon.”</p>				
CA-105-04 By December 31, 2019	<p>Silvicultural Plan: An updated silvicultural plan for the reuse site prepared by a professional silviculturist shall be submitted to DEQ. This plan shall include the dominant vegetation species occupying the application site, estimated percentage of the application site occupied by each of the dominant species, land management activities that will maximize ET and nutrient uptake, harvesting schedules, and nutrient uptake estimates with literature references for the dominant species present.. Once completed the silvicultural plan shall be implemented and included in the updated plan of operation.</p>				
	<p>STATUS: COMPLETE – As reported in the 2019 Annual Report the District had contacted a qualified silviculturist who was unable to complete the survey and report to DEQ by December 31, 2019 and it was anticipated the work would be completed during the summer of 2020 and that the report would be submitted to DEQ during the 2020 reporting period. – 2020: The required Silvicultural Plan was completed by Shan Hoover, Forester and William Love, Certified Forester with Inland Forest Management. The Report was submitted to Matt Plaisted, P.E., DEQ on July 24, 2020 by: Bob Hansen, WSM.</p>				

Compliance Activity (CA) Number and Completion Due Date	Compliance Activity Description
CA-105-05 1 year prior to permit expiration	Pre-Application Workshop: If the permittee intends to continue operating the reuse facility beyond the expiration date of this permit, the permittee shall contact DEQ and schedule a pre-application workshop to discuss the compliance status of the facility and the content required for the reuse permit application package.
STATUS: The permittee will contact DEQ, 1 year prior to permit expiration, and schedule a pre-application workshop to discuss the compliance status of the facility and the content required for the reuse permit application package.	
CA-105-06 6 months prior to permit expiration	Renewal Permit Application: The permittee shall submit to DEQ a complete permit renewal application package, which fulfills the requirements specified at the pre-application workshop identified in CA-105-05.
STATUS: The permittee will submit to DEQ, 6 months prior to permit expiration, a complete permit renewal application package which fulfills the requirements specified at the pre-application workshop identified in CA-003-05.	

4. Results of all backflow testing, repairs, and replacements required by Section 9.1.1 of this permit.
 - a. *There are no backflow prevention assemblies at the reuse land application site.*

5. Discussion of major maintenance activities such as major equipment replacement, lagoon liner maintenance, and wastewater treatment and reuse facility maintenance.
 - a. *As reported above in section CA-105-03, initial attempts in 2019 at seepage testing the lagoon failed. Liner repairs were made during the 2020 season.*
 - b. *As new items requiring attention are identified, they are being addressed.*

6. A summary of all noncompliance events that occurred during the reporting year. Examples of noncompliance events that must be discussed include, but are not limited to: exceedance of permit limits, complaints, missed monitoring events, incorrect monitoring dates or frequencies, dry monitoring wells, uncontained spills causing runoff, construction without DEQ engineering plan approval, construction without engineering inspection, and reporting incorrect acreage.
 - a. *As reported above, no Total Coliform bacteria test exceeded permit limits. See section 5.1.1, above.*
 - b. *No complaints were received during this reporting period.*
 - c. *Missed monitoring events – As no reuse land application occurred during this reporting period, no monitoring was required. For future background and trending analysis, soil monitoring was completed during this monitoring period.*
 - d. *Incorrect Monitoring dates or frequencies – With no reuse land application taking place during this reporting period, no monitoring was required.*
 - e. *Dry monitoring wells (Piezometer) – No depth to ground water was required or measured during this reporting period.*
 - f. *There were no uncontained spills causing runoff during this reporting period.*
 - g. *No construction took place without DEQ engineering plan approval.*
 - h. *No construction took place during this reporting period without engineering inspection.*
 - i. *No reporting of incorrect acreage took place during this reporting period.*

7. Submittal of the calculations and observations for hydraulic management units specified in the table below.

See, Reporting Requirement Number 2, Section 5.1.1 Constituent Monitoring, table (NITROGEN LOADING) and Section 5.1.2 Management Unit and Other Flow monitoring and IWR table below.

Monitoring Point Serial Number	Parameter (Calculate for each MU)	Units	STATUS
MU-10501 MU-10502 MU-10503	Recycled water loading rate	Million gallons/month Inches/month	NO WASTEWATER REUSE LAND APPLICATION TOOK PLACE DURING THE 2020 GROWING SEASON
	Irrigation water requirement (IWR) for each crop grown	Inches/month Inches/GS	NO WASTEWATER REUSE LAND APPLICATION TOOK PLACE DURING THE 2020 GROWING SEASON
	Recycled water nitrogen loading rates	Pounds N/acre-year	NO WASTEWATER REUSE LAND APPLICATION TOOK PLACE DURING THE 2020 GROWING SEASON

Irrigation water requirement (IWR) Gallons & Inches/month & year

Month	Average IWR in/month	Average IWR MG/mo.	MU-10501 ACTUAL IRRIGATION		MU-10502 ACTUAL IRRIGATION		MU-10503 ACTUAL IRRIGATION	
			in/month	MG/mo.	in/month	MG/mo.	in/month	MG/mo.
April	1.620	0.905	0	0	0	0	0	0
May	4.330	2.420	0	0	0	0	0	0
June	5.830	3.259	0	0	0	0	0	0
July	8.720	4.878	0	0	0	0	0	0
August	7.300	4.083	0	0	0	0	0	0
September	4.040	2.259	0	0	0	0	0	0
October	0.880	0.480	0	0	0	0	0	0
TOTALS	32.720	18.284	0.000	0.000	0.000	0.000	0.000	0.000

Note: No wastewater reuse land application took place during the 2020 growing season.

8. Laboratory analytical reports for monitoring specified in Section 5 of the permit. Chain of custody forms, supporting information for laboratory analytical reports and quality assurance documentation shall be available for review upon request by DEQ.

With no reuse land application taking place during the 2020 growing season, testing Soils in each of the monitoring units, for background reference, was the only testing performed. All tests are performed by Accurate Testing Labs, LLC, an Idaho Licensed laboratory and all associated paperwork is available for review upon request by the Department. All laboratory analysis reports (soils only) are attached.

9. The parameters in the following table:

See item number 7, above.

Response to DEQ 2019 Annual Report Review Comments:

1. **CA-105-03 Seepage testing – Now Complete** – See Compliance Activity Section above.
2. **CA-105-04 Silvicultural report – Now Complete** – See Compliance Activity Section above.
3. **Soil monitoring: - Now Complete** – Soil sampling for the 2020 reporting period was pulled during the month of October, See attached, Accurate Testing Labs Certificate of Analysis #2020100153. All future sampling will take place during the month of October.

6.1.3 Submittals

This annual report is being submitted in accordance with:

2. Annual reports and other information required by this permit is being signed by the a duly Authorized Representative of the Responsible Official in accordance with:
 - a. The authorization is made in writing by the responsible official;
 - b. The authorization specified an individual or position having responsibility for the overall operation of the regulated facility.
 - c. The written authorization is submitted to DEQ.

As always, if you have any questions please feel free to contact me at any time.

"I certify that the information provided in this submittal was prepared in conformance with the Quality Assurance Project Plan required by permit M-105-04, and is to the best of my knowledge, true, accurate and complete and I acknowledge that knowing submission of false or incomplete information may result in permit revocation as provided for in IDAPA-58.01.17.920.01 or other enforcement action as provided for under Idaho law."

Sincerely,



Bob Hansen
Bayview RCO

c: BWSD Board, bwsd637@gmail.com
Scott McNee, P.E., T-O Engineers, smcnee@to-engineers.com
Brett Converse, JUB Engineering, bconverse@jub.com

Attachments: Certificates of Analysis, Accurate Testing Labs #2020100153

Accurate Testing Labs, LLC

7950 Meadowlark Way
Coeur d'Alene, ID 83815
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Certificate of Analysis

Order No.: 2020100153

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Bayview Water & Sewer Distr.
P.O. Box 637
Bayview, ID 83803

Project: Soil - Bayview Land App

Date Received: 10/07/2020 13:10

Sample: 1 Matrix: Soil
Location: Soil, SU-10501 - 0-12" D/T Collected: 10/07/2020 09:30
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	ND	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	ND	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	89.22	%	SM 2540G		10/20/20	GM

Sample: 2 Matrix: Soil
Location: Soil, SU-10501 - 12-24" D/T Collected: 10/07/2020 09:30
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	ND	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	ND	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	89.63	%	SM 2540G		10/20/20	GM

Sample: 3 Matrix: Soil
Location: Soil, SU-10501 - 24-36" D/T Collected: 10/07/2020 09:30
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	ND	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	ND	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	89.12	%	SM 2540G		10/20/20	GM

Comments:



Laboratory Supervisor, Digitally signed by: Walter Mueller Date: 10/21/20

Accurate Testing Labs, LLC

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Certificate of Analysis

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Sample: 4 Matrix: Soil
Location: Soil, SU-10502 - 0-12" D/T Collected: 10/07/2020 10:30
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	0.347	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	2.78	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	86.42	%	SM 2540G		10/20/20	GM

Sample: 5 Matrix: Soil
Location: Soil, SU-10502 - 12-24" D/T Collected: 10/07/2020 10:30
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	ND	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	ND	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	90.85	%	SM 2540G		10/20/20	GM

Sample: 6 Matrix: Soil
Location: Soil, SU-10502 - 24-36" D/T Collected: 10/07/2020 10:30
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	ND	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	0.234	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	91.85	%	SM 2540G		10/20/20	GM

Sample: 7 Matrix: Soil
Location: Soil, SU-10503 - 0-12" D/T Collected: 10/07/2020 11:45
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	0.344	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	7.23	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	82.75	%	SM 2540G		10/20/20	GM

Comments:



Laboratory Supervisor, Digitally signed by: Walter Mueller Date: 10/21/20

Accurate Testing Labs, LLC

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Certificate of Analysis

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Sample: **8** Matrix: Soil
Location: Soil, SU-10503 - 12-24" D/T Collected: 10/07/2020 11:45
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	0.282	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	1.67	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	86.77	%	SM 2540G		10/20/20	GM

Sample: **9** Matrix: Soil
Location: Soil, SU-10503 - 24-36" D/T Collected: 10/07/2020 11:45
Sample Type: Composites Collected by: Claire Hansen

Analyte	Result	Unit	Method	PQL	Analysis Date	Analyst
Ammonia-N (KCl Extract)	0.136	mg/Kg	S-3.50	0.1	10/20/20	JD
Nitrate-N (KCl Extract)	0.872	mg/Kg	S-3.10	0.1	10/19/20	WM
Total Solids	88.34	%	SM 2540G		10/20/20	GM

If the RESULT is 'ND' (Not Detected) or 'Absent', that means the concentration is less than the PQL (Practical Quantitation Limit for this method).

Comments:



Laboratory Supervisor, Digitally signed by: Walter Mueller Date: 10/21/20