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NEW MEXICO ENVIRONMENT DEPARTMENT

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RYAN FLYNN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

Certified Mail - Return Receipt Requested

November 12, 2014

Mr. Jim Helms, General Manager
CDS Rainmakers Utilities, LLC
P.O. Box 1128
Alto, NM 88312

Re: Minor Municipal, SIC 4952, NPDES Compliance Sampling Inspection, Rancho Ruidoso Valley Estates Wastewater Treatment Plant, NM0029238, October 27, 2014

Dear Mr. Helms,

Enclosed please find a copy of the report and check list for the referenced inspection that the New Mexico Environment Department (NMED) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas for their review. These inspections are used by USEPA to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permitting program in accordance with requirements of the federal Clean Water Act.

You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and advised to modify your operational and/or administrative procedures, as appropriate. If you have comments on or concerns with the basis for the findings in the NMED inspection report, please contact us (see the address below) in writing within 30 days from the date of this letter. Further, you are encouraged to notify in writing both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

Racquel Douglas
US Environmental Protection Agency, Region VI
Enforcement Branch (6EN-WM)
1445 Ross Avenue
Dallas, Texas 75202-2733

Bruce Yurdin
New Mexico Environment Department
Surface Water Quality Bureau
Point Source Regulation Section
P.O. Box 5469
Santa Fe, New Mexico 87502

If you have any questions about this inspection report, please contact Shelly Lemon at (505) 827-2819 or at shelly.lemon@state.nm.us.

CDS Rainmakers Utilities, LLC

November 12, 2014

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Sincerely,

/s/ Bruce Yurdin

Bruce J. Yurdin
Program Manager
Point Source Regulation Section
Surface Water Quality Bureau

cc: Rashida Bowlin, USEPA (6EN-AS) by e-mail
Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail
Raquel Douglas, USEPA (6EN-WM) by e-mail
Gladys Gooden-Jackson, USEPA (6EN) by e-mail
Michael Kesler, NMED District III, by e-mail



Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code	NPDES	yr/mo/day	Inspec. Type	Inspector	Fac Type
1 N 2 5 3 N M 0 0 2 9 2 3 8 11 12 1 4 1 0 2 7 17 18 S 19 S 20 1					
Remarks					
W A S T E W A T E R T R E A T M E N T P L A N T					
Inspection Work Days	Facility Evaluation Rating	BI	QA	Reserved	
67 0 0 1 69	70 2	71 N 72 N 73	74 75	80	

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) CDS Rainmakers Utilities, LLC WWTP is at the intersection of Custer's Last Stand Rd & Little Creek Rd, approx. 8 miles north of Ruidoso, NM. From NM 48, turn east on NM 220, travel 4 miles, turn south on CR D003, turn south on Little Creek Rd, pass the condominiums, travel 2.5 miles to facility on left. (Lincoln County)	Entry Time /Date October 27, 2014 0945	Permit Effective Date November 1, 2012
	Exit Time/Date October 27, 2014 1215	Permit Expiration Date October 31, 2017
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Weston (Wes) Laymon/Facility Operator/ 575-336-4488 or 575-937-6362	Other Facility Data	
Name, Address of Responsible Official/Title/Phone and Fax Number Mr. Jim Helms, CDS Rainmakers Utilities, LLC, P.O. Box 1128, Alto, New Mexico, 88312 General Manager/575-336-7500 or 505-681-4000, fax 575-336-4486	Contacted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	GPS: N 33.422890 W -105.574261 SIC 4952

Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	U	Flow Measurement	M	Operations & Maintenance	N	CSO/SSO
M	Records/Reports	U	Self-Monitoring Program	N	Sludge Handling/Disposal	N	Pollution Prevention
S	Facility Site Review	N	Compliance Schedules	N	Pretreatment	N	Multimedia
S	Effluent/Receiving Waters	M	Laboratory	N	Storm Water	N	Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

1. SEE REPORT AND FURTHER EXPLANATIONS.

Name(s) and Signature(s) of Inspector(s) MICHELLE LEMON /s/ Michelle Lemon	Agency/Office/Telephone/Fax NMED/SWQB 505-827-2819	Date 11/12/2014
Signature of Management QA Reviewer BRUCE YURDIN /s/ Bruce Yurdin	Agency/Office/Phone and Fax Numbers NMED/SWQB 505-827-2795	Date 11/12/2014

SECTION A - PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS S M U NA (FURTHER EXPLANATION ATTACHED NO)
 DETAILS: **Address is incorrect on NPDES Permit. Should be PO Box 1128, not PO Box 11288 (typo).**

- 1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE Y N NA
- 2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES Y N NA
- 3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT Y N NA
- 4. ALL DISCHARGES ARE PERMITTED Y N NA

SECTION B - RECORDKEEPING AND REPORTING EVALUATION

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. S M U NA (FURTHER EXPLANATION ATTACHED YES)
 DETAILS:

- 1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRs. Y N NA
- 2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE. S M U NA
 - a) DATES, TIME(S) AND LOCATION(S) OF SAMPLING Y N NA
 - b) NAME OF INDIVIDUAL PERFORMING SAMPLING Y N NA
 - c) ANALYTICAL METHODS AND TECHNIQUES. **E. coli method should be noted as Quanti-Tray (2000), not Quanti-Tray (200)** Y N NA
 - d) RESULTS OF ANALYSES AND CALIBRATIONS. Y N NA
 - e) DATES AND TIMES OF ANALYSES. Y N NA
 - f) NAME OF PERSON(S) PERFORMING ANALYSES. Y N NA
- 3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE. **pH not documented** S M U NA
- 4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR. **No written daily schedule** S M U NA
- 5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA. **See further explanations** Y N NA

SECTION C - OPERATIONS AND MAINTENANCE

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. S M U NA (FURTHER EXPLANATION ATTACHED YES)
 DETAILS:

- 1. TREATMENT UNITS PROPERLY OPERATED. S M U NA
- 2. TREATMENT UNITS PROPERLY MAINTAINED. S M U NA
- 3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED. S M U NA
- 4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE. S M U NA
- 5. ALL NEEDED TREATMENT UNITS IN SERVICE. S M U NA
- 6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED. S M U NA
- 7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED. S M U NA
- 8. OPERATION AND MAINTENANCE MANUAL AVAILABLE. Y N NA
 STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED. Y N NA
 PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED. Y N NA

SECTION C - OPERATIONS AND MAINTENANCE (CONT'D)

9. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR? Y N NA
 IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED? Y N NA
 HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS? Y N NA

10. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT? Y N NA
 IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT? Y N NA

SECTION D - SELF-MONITORING

PERMITTEE SELF-MONITORING MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES).
 DETAILS:

1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT. Y N NA
Samples for effluent compliance monitoring are taken from a sampling port after UV disinfection and before discharge to Outfall 001. Analysis Submittal Form should indicate sample location as “sample port” instead of “contact chamber.”

2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. Y N NA

3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT. Y N NA
Current permit requires 24-hr composites for WET sampling. Inspector informed permittee of this requirement. This has not been done in past.

4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT. **WET testing had not been conducted yet.** Y N NA

5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. Y N NA

6. SAMPLE COLLECTION PROCEDURES ADEQUATE Y N NA

a) SAMPLES REFRIGERATED DURING COMPOSITING. **Composite samples for WET have not collected yet.** Y N NA

b) PROPER PRESERVATION TECHNIQUES USED. **Not documented/records not readily available** Y N NA

c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3. **Types of containers not documented** Y N NA

7. IF MONITORING AND ANALYSES ARE PERFORMED MORE OFTEN THAN REQUIRED BY PERMIT, ARE THE RESULTS REPORTED IN PERMITTEE'S SELF-MONITORING REPORT? Y N NA

SECTION E - FLOW MEASUREMENT

PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES).
 DETAILS: **No factory or other calibration or maintenance records available**

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. Y N NA
 TYPE OF DEVICE: **Closed-channel, inline meter**

2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED. Y N NA

3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED. **No Secondary Device** Y N NA

4. CALIBRATION FREQUENCY ADEQUATE. (DATE OF LAST CALIBRATION _____) Y N NA
 RECORDS MAINTAINED OF CALIBRATION PROCEDURES. **No calibration.** Y N NA
 CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE. Y N NA

5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE. Y N NA

6. HEAD MEASURED AT PROPER LOCATION. Y N NA

7. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES. Y N NA

SECTION F – LABORATORY

PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES).
 DETAILS: **Contract laboratory not inspected. pH monitored on-site. TRC required if chlorine is being used.**

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES) Y N NA

SECTION F - LABORATORY (CONT'D)

2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED Y N NA
3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. S M U NA
4. QUALITY CONTROL PROCEDURES ADEQUATE. S M U NA
5. DUPLICATE SAMPLES ARE ANALYZED. 0 % OF THE TIME. **No Duplicate Samples Analyzed** Y N NA
6. SPIKED SAMPLES ARE ANALYZED. % OF THE TIME. Y N NA
7. COMMERCIAL LABORATORY USED. Y N NA

LAB NAME	Aqua Environmental Testing Laboratory	Bio-Aquatic Testing, Inc.
LAB ADDRESS	103 Via Aguila Ruidoso	2501 Mayes Rd, Ste. 100
	Las Cruces, NM	Carrollton, TX
PARAMETERS PERFORMED	BOD-TSS-E coli	WET Test

SECTION G - EFFLUENT/RECEIVING WATERS OBSERVATIONS. S M U NA (FURTHER EXPLANATION ATTACHED YES).

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	FLOAT SOL.	COLOR	OTHER
001	No	No	No	No	No	Slight yellow	

RECEIVING WATER OBSERVATIONS: **No discharge at time of inspection**

SECTION H - SLUDGE DISPOSAL

- SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED NO).
 DETAILS: **Sludge sent to Roswell WWTP for disposal.**
1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY. S M U NA
2. SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503. S M U NA
3. FOR LAND APPLIED SLUDGE, TYPE OF LAND APPLIED TO: _____ (e.g., FOREST, AGRICULTURAL, PUBLIC CONTACT SITE)

SECTION I - SAMPLING INSPECTION PROCEDURES (FURTHER EXPLANATION ATTACHED YES).

1. SAMPLES OBTAINED THIS INSPECTION. **E. coli** Y N NA
2. TYPE OF SAMPLE OBTAINED
 GRAB X COMPOSITE SAMPLE _____ METHOD Colilert-18 FREQUENCY One (1) sample on day of inspection
3. SAMPLES PRESERVED. **E. coli sample: 0.0008% Na₂S₂O₃, on ice, approximately 10°C** Y N NA
4. FLOW PROPORTIONED SAMPLES OBTAINED. Y N NA
5. SAMPLE OBTAINED FROM FACILITY'S SAMPLING DEVICE. Y N NA
6. SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE. Y N NA
7. SAMPLE SPLIT WITH PERMITTEE. Y N NA
8. CHAIN-OF-CUSTODY PROCEDURES EMPLOYED. Y N NA
9. SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT. Y N NA

Rancho Ruidoso CDS Rainmakers WWTP
NPDES Permit No. NM0029238
Compliance Sampling Inspection
October 27, 2014

Introduction

On October 27, 2014, Shelly Lemon, of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) conducted a Compliance Sampling Inspection (CSI) at the Rancho Ruidoso CDS Rainmakers Wastewater Treatment Plant (WWTP) in Alto, Lincoln County, New Mexico.

The WWTP was constructed in 1983 and serves approximately 290 connections from Rancho Ruidoso Valley Estates Subdivision, including condominiums and Rainmakers Golf Community. The Golf Club includes one small restaurant (snack bar). The State of New Mexico 20.7.4 NMAC Regulations for Wastewater and Water Supply Facilities per 20.7.4.13 NMAC require an operator be a certified Waste Water Level 3 for a secondary treatment, aeration facility if the population served is over 500. The facility operator Mr. Laymon is a certified Waste Water Level II. When the population served is over 500, it will trigger the need for a WWTP Level 3 Operator.

Rancho Ruidoso CDS Rainmakers WWTP is classified as a minor non-municipal discharger under the federal Clean Water Act, Section 402, of the National Pollutant Discharge Elimination System (NPDES) permit program. It is assigned NPDES permit number NM0029238. The facility's design flow is 0.04 MGD (million gallons per day). The facility discharges into Little Creek; thence to Eagle Creek; thence to the Rio Ruidoso of the Pecos River Basin. Little Creek is an intermittent stream classified under Segment 20.6.4.98 NMAC. Designated uses include livestock watering, wildlife habitat, marginal warmwater aquatic life, and primary contact. The facility also has a NMED Ground Water Quality Bureau (GWQB) Discharge Permit (DP-313) that allows a lagoon and discharge into Little Creek.

The NMED performs a certain number of CSIs each year for the U.S. Environmental Protection Agency (USEPA), Region VI. The purpose of this inspection is to provide the USEPA with information to evaluate the Permittee's compliance with the NPDES permit. This inspection report is based on information provided by the Permittee's representatives, observations made by the NMED inspector, and records and reports kept by the Permittee and/or NMED.

Upon arrival at approximately 0945 hours on the day of this inspection, the inspector made introductions, explained the purpose of the inspection and presented her credentials to Mr. Wes Laymon, Operator, CDS Rainmakers Utilities, LLC. The inspector and Mr. Laymon toured the facility. At the end of the tour, the inspector conducted an exit interview to discuss preliminary findings with Mr. Laymon at CDS Rainmakers Utilities, LLC offices. The meeting concluded at approximately 1215 hours.

Treatment Scheme

Raw sewage gravity flows through the collection system and enters a single lift station that pumps influent into the plant headworks. The lift station is equipped with a high level alarm and Sensaphone call-back system. A magnetic flow meter is installed at the headworks. A wire basket and aluminum bar screen with 1-inch gaps collect solids at the headworks. The headworks also include a drying deck for debris. Collected grit and solids are placed in a lined trash container and transported to a dumpster at the Rainmakers offices to be disposed of by the Lincoln County Solid Waste Authority.

The treatment process consists of an extended aeration activated sludge system with de-nitrification. After the headworks, wastewater flows sequentially through seven aeration basins before entering a de-nitrification tank followed by an aeration tank. The facility has two blowers (one on duty, one on standby). The facility has a back-up generator, but it is not operational. A back-up generator may be rented when needed.

Following the aeration tank, wastewater is sent through a splitter box into two separate clarifiers. Sludge collected in the clarifiers is routed to aeration basin #1 at the headworks, where it either remains in the system as Return Activated Sludge (RAS) or goes to the aerobic sludge digester as Waste Activated Sludge (WAS). Following the clarifiers, the wastewater is recombined and flows to a divided, synthetically-lined lagoon (approximately 5 million gallons). The aerated lagoon serves as an evaporation pond for polishing and holding.

Treated wastewater enters one side of the lagoon, travels over the divide, and is pumped to the lab house for final disinfection before discharge to Little Creek. A float system is used in the lagoon to control flow. At a certain level, the treated wastewater is pumped out of the lagoon through three polishing bag filters (200 micron each) and then through the ultraviolet (UV) disinfection system. UV lights are manually cleaned. During maintenance, flow can be diverted to one of the two UV light banks (one 6 and one 8 bulb units). Effluent flow is measured with a totalizing meter before discharge to Little Creek. Samples for effluent compliance monitoring are taken from a sampling port in the effluent line before discharge to Outfall 001.

Solids Management

Solids are pumped from the aeration basin to an aerated sludge digester. When the digester becomes relatively full, a septage hauler is called and the contents are pumped into the truck and transported to the Roswell Wastewater Treatment Plant for disposal. Sludge removal occurs an average of four times per year. A log is kept of when and how much sludge is removed. Solids from the lagoon are pumped less frequently. The last time solids were pumped from the lagoon was about 4 years ago.

FURTHER EXPLANATIONS

Note: The sections are arranged according to the format of the enclosed EPA Inspection Checklist (Form 3560-3), rather than being ranked in order of importance.

Section B – Recordkeeping and Reporting Evaluation – Overall Rating of “Marginal”

Permit Requirements for Recordkeeping & Reporting

Part I.A of the permit states:

The daily maximum TRC shall be measured 5 times per week by grab samples during periods when chlorine is used...

The EPA Region 6 Reporting Requirements Handbook, Part H.2 states:

...Always be sure to use the flow measurement determined on the day when sampling was done.

Part III.D.6. and Part III.F.22 of the permit state:

Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean...

7-DAY AVERAGE or WEEKLY AVERAGE, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

30-DAY AVERAGE or MONTHLY AVERAGE, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Findings for Recordkeeping and Reporting:

Chlorine tablets are sometimes placed in the flow at the clarifier to control algal growth in the lagoon. The effluent should be periodically monitored for TRC to determine if this addition of chlorine in the treatment system would change the quantity or quality of pollutants in the discharge or if de-chlorination may be needed prior to discharging into Little Creek. DMRs since the last inspection (7/10/2013) indicate only two months (August and September 2013) when chlorine was measured. See below for further explanations on proper preservation for E.coli bacteria samples if chlorine is present in the wastewater.

For the months of June, July, and August 2014, loading values were not calculated correctly nor rounded correctly. Please refer to the calculation check located below.

Discharge Monitoring Report Calculation Check

The DMR calculation check was conducted for the parameters of BOD, TSS and *E. coli* for the months of June, July, and August 2014.

✓ = in agreement with calculation result submitted on facility's NetDMR.

BOD

<u>Date</u>	<u>BOD Result</u>	<u>Flow Rate on day of sampling</u>
6-3-2014	7.01 mg/L	0.0305 MGD

Loading:

June's 30-day average: $7.01 \text{ mg/L} \times 8.34 \times 0.0305 \text{ mgd} = 1.783134 \text{ lbs/day}$ (This was reported as 1.75 lbs/day)

June's 7-day average = 1.783134 lbs/day (This was reported as 1.75 lbs/day)

Concentration:

June's 30-day average = 7.01 mg/L (This was reported as 7.01 mg/L) ✓
June's 7-day average = 7.01 mg/L (This was reported as 7.01 mg/L) ✓

TSS

<u>Date</u>	<u>TSS Result</u>	<u>Flow Rate on day of sampling</u>
6-3-2014	11.3 mg/L	0.0305 MGD

Loading:

June's 30-day average: 11.3 mg/L x 8.34 x 0.0305 mgd = 2.874381 lbs/day (This was reported as 2.82 lbs/day)
June's 7-day average = 2.874381 lbs/day (This was reported as 2.82 lbs/day)

Concentration:

June's 30-day average = 11.3 mg/L (This was reported as 11.3 mg/L) ✓
June's 7-day average = 11.3 mg/L (This was reported as 11.3 mg/L) ✓

E. coli

<u>Date</u>	<u>E. coli Result</u>
6-3-2014	11.0 cfu/100 ml

June's 30-day average: 11.0 cfu/100 ml (This was reported as 11.0 cfu/100 ml) ✓
June's daily max: 11.0 cfu/100 ml (This was reported as 11.0 cfu/100 ml) ✓

BOD

<u>Date</u>	<u>BOD Result</u>	<u>Flow Rate on day of sampling</u>
7-8-2014	7.38 mg/L	0.0241 MGD

Loading:

July's 30-day average: 7.38 mg/L x 8.34 x 0.0241 mgd = 1.48426 lbs/day (This was reported as 1.47 lbs/day)
July's 7-day average = 1.48426 lbs/day (This was reported as 1.47 lbs/day)

Concentration:

July's 30-day average = 7.38 mg/L (This was reported as 7.38 mg/L) ✓
July's 7-day average = 7.38 mg/L (This was reported as 7.38 mg/L) ✓

TSS

<u>Date</u>	<u>TSS Result</u>	<u>Flow Rate on day of sampling</u>
7-8-2014	2.67 mg/L	0.0241 MGD

Loading:

July's 30-day average: 2.67 mg/L x 8.34 x 0.0241 mgd = 0.536988 lbs/day (This was reported as 0.53 lbs/day)
July's 7-day average = 0.536988 lbs/day (This was reported as 0.53 lbs/day)

Concentration:

July's 30-day average = 2.67 mg/L (this was reported as 2.67 mg/L) ✓
July's 7-day average = 2.67 mg/L (This was reported as 2.67 mg/L) ✓

E. coli

<u>Date</u>	<u>E. coli Result</u>
7-8-2014	<1 cfu/100 mls

July's 30-day average: <1 cfu/100 ml (This was reported as <1 cfu/100 ml) ✓
July's daily max: <1 cfu/100 ml (This was reported as <1 cfu/100 ml) ✓

BOD

<u>Date</u>	<u>BOD Result</u>	<u>Flow Rate on day of sampling</u>
8-4-2014	10.0 mg/L	0.0303 MGD

Loading:

August's 30-day average: 10.0 mg/L x 8.34 x 0.0303 mgd = 2.52702 lbs/day (This was reported as 2.5 lbs/day) ✓
August's 7-day average = 2.52702 lbs/day (This was reported as 2.5 lbs/day) ✓

Concentration:

August's 30-day average = 10.0 mg/L (This was reported as 10 mg/L) ✓
August's 7-day average = 10.0 mg/L (This was reported as 10 mg/L) ✓

TSS

<u>Date</u>	<u>TSS Result</u>	<u>Flow Rate on day of sampling</u>
8-4-2014	6.00 mg/L	0.0303 MGD

Loading:

August's 30-day average: 6.00 mg/L x 8.34 x 0.0303 mgd = 1.51621 lbs/day (This was reported as 1.5 lbs/day) ✓
August's 7-day average = 1.51621 lbs/day (This was reported as 1.5 lbs/day) ✓

Concentration:

August's 30-day average = 6.00 mg/L (this was reported as 6 mg/L) ✓
August's 7-day average = 6.00 mg/L (This was reported as 6 mg/L) ✓

E. coli

<u>Date</u>	<u>E. coli Result</u>
8-4-2014	10.3 cfu/100 mls

August's 30-day average: 10.3 cfu/100 ml (This was reported as 10.3 cfu/100 ml) ✓
August's daily max: 10.3 cfu/100 ml (This was reported as 10.3 cfu/100 ml) ✓

The NPDES Reporting Requirements Handbook for EPA Region 6 answers the following FAQs:

How do I calculate and report loadings?

Some parameters in the permit are limited in terms of pounds per day (lbs/day). Although all of these parameters are measured initially in milligrams per liter (mg/L), conversion to lbs/day can be achieved by using the following formula. **Always be sure to use the flow measurement determined on the day when sampling was done.**

$$\text{Flow on day of sampling (MGD)} \times \text{concentration (mg/L)} \times 8.34 \text{ (lbs/gal)} = \text{Loading (lbs/day)}$$

How do I round numbers and ratios?

Permits sometimes require the rounding of numbers or ratios. These numbers or ratios should be rounded as follows:

- 1) If the digit 6, 7, 8, or 9 is dropped, increase preceding digit by one unit.
Example: a value of 1.06 should be rounded to 1.1 and reported as a violation of the permit limit if the permit limit is 1.0.

- 2) If the digit 0, 1, 2, 3, or 4 is dropped, do not alter the preceding digit.
Example: a value of 1.04 should be rounded to 1.0 and reported to EPA as compliant with the permit limit if the permit limit is 1.0.
- 3) If the digit 5 is dropped, round off preceding digit to the nearest even number.
Example 1: a value of 1.05 should be rounded to 1.0 and reported to EPA as compliant with the permit limit if the permit limit is 1.0.
Example 2: a value of 11.5 should be rounded to 12 and reported to EPA as a violation of the permit limit if the permit limit is 11.

There were also discrepancies with the flow measurements being reported on the facility’s DMRs. The inspector did not obtain the daily flow values for an entire month to verify reported values, but she did obtain a summary page of the facility’s flows for the months of June, July, and August 2014:

	June 2014			July 2014			August 2014		
	30-day avg	7-day avg	Daily max	30-day avg	7-day avg	Daily max	30-day avg	7-day avg	Daily max
Records (mgd)	0.028620	0.026536	0.034802	0.029248	0.028947	0.044085	0.028438	0.028794	0.038056
Reported (mgd)	0.03	0.03	0.034	0.028	0.027	0.044	0.027	0.028	0.038

In general, the 30-day average should be less than the 7-day average because statistically there are more data to “even out” the calculation (30 versus 7 data points) and the *highest* weekly average flow value for the calendar month should be reported on the DMR as the 7-day average. The NPDES Reporting Requirements Handbook for EPA Region 6 addresses these issues and reporting requirements as follows:

How do I calculate and report 7-day averages?

We recognize that calendar weeks and calendar months rarely coincide. Therefore, for the purpose of calculating and reporting 7-day averages, you should follow the process below:

- a) Define your week (SUN-SAT, MON-SUN, etc.).
- b) Calculate the averages of all sample data obtained for each week.
- c) The **highest calculated weekly average will be reported on the DMR** for the month in which (1) the week ends or (2) the week begins, or (3) the month which contains the greatest number of days. It is the choice of the facility. However, the choice should be consistent month to month, year to year. SET A RULE AND STICK WITH IT.

**It is important to write down the facility’s standard procedures and have them readily available to reference, as needed, for consistency and to insure accurate and reliable reporting practices.

Section C – Operations and Maintenance – Overall Rating of “Marginal”

Permit Requirements for Operation and Maintenance:

Part III.B.3.a (Standard Conditions, Proper Operation and Maintenance) of the permit states:

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

Findings for Operation and Maintenance:

- General housekeeping – weeds were high on property.
- No backup power.
- No backup flow meter.
- No written inventory.
- No written/readily available SOPs or maintenance schedules.
- No written backup disinfection procedure.
- No written emergency procedures.
- Weir in final settling tank was corroded in some places causing short circuiting. Weir also had build-up of algae and needed to be cleaned. See Photo #2.
- A new grease trap at the golf course snack bar was installed about 3 months ago and has reduced/eliminated interference and improved the quality of influent and overall treatment process.

Section D - Self-Monitoring – Overall Rating of “Unsatisfactory”

Permit Requirements for Self-Monitoring:

Part I.A (Effluent Limitations and Monitoring Requirements) of the permit states:

The daily maximum TRC shall be measured 5 times per week by grab samples during periods when chlorine is used...

Part III.C.5 (Standard Conditions, Monitoring Procedures) of the permit states:

- Monitoring must be conducted according to test procedures approved under 40 CFR Part 136...*
- An adequate analytical quality control program, including the analyses of sufficient standards, spikes and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.*

Part III.B.3.a (Standard Conditions, Proper Operation and Maintenance) of the permit states:

Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.

Part I.A (Effluent Limitations and Monitoring Requirements) and Part III.C.2 (Representative Sampling) state:

“Samples taken in compliance with the monitoring requirements specified above shall be taken at the discharge from the final treatment unit prior to the discharge into the receiving stream from the following approximate location: Outfall 001”

“Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.”

Part I.A (Effluent Limitations and Monitoring Requirements) requires the following:

The Whole Effluent Toxicity (WET) 7-day No Observed Lethal Effect Concentration (NOEC) should be monitored once per permit term. The permittee is required to collect a 24-hour composite sample for this analysis. The WET test should occur in winter or springtime when most sensitive juvenile life forms are likely to be present in receiving water and colder ambient temperatures might adversely affect treatment processes. This will generally be defined as between November 1 and April 30.

Findings for Self-Monitoring:

- The facility uses UV for the final treatment before discharging. However, chlorine is sometimes used to suppress the growth of algae. The permit requires testing for TRC when chlorine is being used.
- It is not documented that sample containers and preservation techniques are adequate for compliance monitoring. Preservation techniques (e.g., pH, temperature) are not recorded on the Sample Submittal Forms (see Attachment A and Attachment B).

40 CFR PART 136.3 TABLE II

Parameter number/name	Container ¹	Preservation	Maximum holding time
1-5. Coliform, total, fecal, and <i>E. coli</i>	PA, G	Cool, <10 °C, 0.0008% Na ₂ S ₂ O ₃ ⁵	8 hours.
4. Ammonia (NH ₃ -N)	P, FP, G	Cool, ≤6 °C, H ₂ SO ₄ to pH <2	28 days.
9. Biochemical oxygen demand (BOD)	P, FP, G	Cool, ≤6 °C	48 hours.
31, 43. Kjeldahl N (TKN)	P, FP, G	Cool, ≤6 °C, H ₂ SO ₄ to pH <2	28 days.
38. Nitrate (NO ₃ -N)	P, FP, G	Cool, ≤6 °C	48 hours.
55. Residue, Nonfilterable (TSS)	P, FP, G	Cool, ≤6 °C	7 days.

- 1 "P" is for polyethylene; "FP" is fluoropolymer (polytetrafluoroethylene (PTFE); Teflon®), or other fluoropolymer; "G" is glass; "PA" is any plastic that is made of a sterilizable material (polypropylene or other autoclavable plastic).
- 5 ASTM D7365-09a specifies treatment options for samples containing oxidants (e.g., chlorine). Also, Section 9060A of Standard Methods for the Examination of Water and Wastewater (20th and 21st editions) addresses dechlorination procedures.

- It is not documented that sample collection procedures are adequate for bacteria monitoring. As previously discussed, there is a potential for chlorine to be in the effluent. Preservation requirements in Table IA-Bacterial Tests of 40 CFR 136.3 states, "Add a reducing agent only if an oxidant (e.g., chlorine) is present." Proper preservation techniques, in this case 0.0008% Na₂S₂O₃, to de-chlorinate the sample were not documented on reviewed records.
- A Quality Assurance/Quality Control (QA/QC) program is not documented or readily available from the permittee.
- The sample site documented on Sample Submittal Forms indicates "Contact Chamber" (see Attachment A). The contact chamber is located prior to discharge to the evaporation pond and prior to final UV treatment (see Attachment C). According to the facility's representative, samples for effluent compliance monitoring are taken from a sampling port after UV disinfection and before discharge to Outfall 001. Depending on where the actual compliance sample is taken, the Sample Submittal Form should be changed to indicate the correct sample location OR the actual location needs to be changed such that the sample is "taken at the discharge from the final treatment unit (UV) ..."
- WET testing has not been conducted yet. The permit became effective on November 1, 2012 and expires on October 31, 2017. The WET test should occur during the winter or springtime, generally defined as November 1 through April 30. The sample must be a 24-hour composite.

Section E – Flow Measurement – Overall Rating “Unsatisfactory”

Permit Requirements for Flow Measurement:

Part III, Section C.5.b of the permit states:

The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities.

Part III, Section C.6 of the permit states:

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.

Findings for Flow Measurement:

There were no secondary flow instruments nor any readily available flow measurement calibration records or other measurements to verify accuracy and reliability of flow measurements. Flow measurement accuracy is important because this information is used to calculate mass loading calculations. Simple checks, like using the *Bucket Flow Method*, should be used at intervals frequent enough to insure accuracy of the closed-channel flow meter. In addition, USEPA’s NPDES Inspection Manual, Chapter 6 states, “The facility must ensure that their flow measurement systems are calibrated by a qualified source at least once a year [emphasis added] to ensure their accuracy.” This is a repeat finding.

Section F – Laboratory Evaluation – Overall Rating of “Marginal”

Permit Requirements for Laboratory Evaluation:

The permit states in Part III.C.5:

- a. *Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator.*
- b. *The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities.*

40 CFR Part 136.3 (Table II):

<i>Parameter</i>	<i>Method</i>	<i>EPA</i>	<i>Standard Methods</i>	<i>AOC, ASTM, USGS</i>	<i>Other</i>
28. Hydrogen ion (pH), pH units	<i>Electrometric measurement</i>		4500-H ⁺ B-2000	D1293-99 (A or B)	973.41, ³ I-1586-85. ²
	<i>Automated electrode</i>	150.2 (Dec. 1982) ¹			See footnote, ²¹ I-2587-85. ²

EPA Method 150.2 states:

7.0 Calibration

7.1 Immersion type electrodes easily removed from mounting.

7.1.1 The electrode should be calibrated at a minimum of two points that bracket the expected pH of the water/waste and are approximately three pH units or more apart.

7.1.2 Repeat calibration adjustments on successive portions of the two buffer solutions until readings are within ± 0.05 pH units of the buffer value. If calibration problems occur, see 4.3.

7.1.3 Because of the wide variety of instruments available, no detailed operating instructions are provided. Instead, the analyst should refer to the particular manufacturer's instructions.

7.1.4 Calibration against two buffers should be carried out at least daily. If the pH of the fluid being measured fluctuates considerably, the calibration should be carried out more often. Calibration frequencies may be relaxed if historical data supports a longer period between calibration.

Findings for Laboratory Evaluation:

According to the permittee's representative, the only analytical procedure for compliance conducted on site in the laboratory is pH. During the inspection, the permittee's representative indicated that calibrations are performed once a month. EPA Method 150.2, under 40 CFR Part 136, requires that the calibration be conducted at least once a day, and Standard Method 4500-H+ B states that when only occasional pH measurements are made, the instrument should be calibrated before each measurement. EPA-approved methods also require that the electrode be calibrated with buffers that bracket the expected pH value. For example, if the expected pH of the sample is 8.0 SU, the calibration should be conducted with the 7.0 and 10.0 buffers, and then checked with the 4.0 buffer. The electrode should be *inspected* once a month for oily deposits or buildup of lime. If oil, grease, fine solids, or lime is present, the electrode should be cleaned and checked. The permittee should have standard operating procedures (SOPs) readily available in the laboratory to insure consistency and proper maintenance and operation of equipment. This is a repeat finding.

Sample Submittal Forms indicate E. coli samples were filtered at the contract lab (see Attachment B); however the method (Colilert-18[®]) uses whole water samples, not filtered water samples. The permittee should verify that samples are not being filtered. Proper preservation of E. coli includes keeping the samples below 10°C. The sample temperature at receipt in the lab is not recorded on the Sample Submittal Form. Also, if chlorine is being used in the treatment process, E. coli samples should be de-chlorinated with 0.0008% Na₂S₂O₃. This is not documented either.

Section G – Effluent/Receiving Waters – Overall Rating of “Satisfactory”

Permit Requirements for Effluent/Receiving Waters:

PART I.A Effluent Limitations and Monitoring Requirements states:

1. Effluent limits – 0.04 MGD design flow – OUTFALL 001

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit (unless otherwise noted), the permittee is authorized to discharge treated municipal wastewater to Little Creek; thence to Eagle Creek; thence to Rio Ruidoso in Segment 20.6.4.98 of the Pecos River Basin, from outfall number 001. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	Standard Units			
POLLUTANT	MINIMUM	MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH	6.6	9	Five/Week	Instantaneous Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
	lbs/day, unless noted			mg/l, unless noted				
POLLUTANT	30-DAY AVG	DAILY MAX	7-DAY AVG	30-DAY AVG	DAILY MAX	7-DAY AVG	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow (MGD)	Report	Report	Report	***	***	***	Daily	Instantaneous Grab
BOD, 5-day	10	N/A	15	30	N/A	45	Once/Month	Grab
BOD, 5-day % removal	≥ 85%	---	---	---	---	---	Once/Month	Calculation
Total Suspended Solids	10	N/A	15	30	N/A	45	Once/Month	Grab
TSS % removal	≥ 85%	---	---	---	---	---	Once/Month	Calculation
E. Coli Bacteria	N/A	N/A	N/A	206	940	N/A	Once/Month	Grab
Total Residual Chlorine	N/A	N/A	N/A	N/A	11 ug/l	N/A	Five/Week	Instantaneous Grab

Findings for Effluent/Receiving Waters:

There was no discharge at time of inspection but water in clarifier and pond was clear and free of smell. Review of DMRs found the following:

Effluent exceedences since the last inspection (July 10, 2013):

July 2013	E. coli	1570 cfu/100 mL
March 2014	TSS % removal	84.6%
8/12/2014	E. coli	>2419.6 cfu/100 mL (SWQB sample in response to a complaint)

Section I – Sampling Inspection Findings

Site Location	Lab ID	Method	Date of Analysis	Analyte Name	Reported Value	Units
sampling port	SWQB Lab	Colilert-182000	10/28/14	E. coli	157.6	cfu/100ml

Results from another SWQB grab sample were also within the facility's permit limit for E. coli:

Site Location	Lab ID	Method	Date of Analysis	Analyte Name	Reported Value	Units
effluent	SWQB Lab	Colilert-182000	9/25/14	E. coli	2.0	cfu/100ml

NMED/SWQB
Official Photograph Log
Photo # 1

Photographer: Shelly Lemon	Date: 10-27-2014	Time: 0954 hours
City/County: Alto, Lincoln County, NM		
Location: Rancho Ruidoso CDS Rainmakers WWTP		
Subject: Aeration tanks with two blower houses. Notice weeds growing around tanks and along fence line.		



NMED/SWQB
Official Photograph Log
Photo # 2

Photographer: Shelly Lemon	Date: 10-27-2014	Time: 0953 hours
City/County: Alto, Lincoln County, NM		
Location: Rancho Ruidoso CDS Rainmakers WWTP		
Subject: Weir in final settling tank is corroded causing uneven flow over weir. There also is some buildup of algae.		



NMED/SWQB
Official Photograph Log
Photo # 3

Photographer: Shelly Lemon	Date: 10-27-2014	Time: 1009 hours
City/County: Alto, Lincoln County, NM		
Location: Rancho Ruidoso CDS Rainmakers WWTP		
Subject: Rockwell International closed channel, in-line effluent flow meter. No calibration sticker or evidence/records that flow meter has been calibrated and/or checked since it was installed.		



NMED/SWQB
Official Photograph Log
Photo # 4

Photographer: Shelly Lemon	Date: 10-27-2014	Time: 1009 hours
City/County: Alto, Lincoln County, NM		
Location: Rancho Ruidoso CDS Rainmakers WWTP		
Subject: At a certain level, water is pumped out of evaporation pond, through 3 polishing filters, and then past the UV banks before final discharge into Little Creek.		



NMED/SWQB
Official Photograph Log
Photo # 5

Photographer: Shelly Lemon	Date: 10-27-2014	Time: 1013 hours
City/County: Alto, Lincoln County, NM		
Location: Rancho Ruidoso CDS Rainmakers WWTP		
Subject: Effluent pipe (Outfall 001) into Little Creek.		



NMED/SWQB
Official Photograph Log
Photo # 5

Photographer: Shelly Lemon	Date: 10-27-2014	Time: 1013 hours
City/County: Alto, Lincoln County, NM		
Location: Rancho Ruidoso CDS Rainmakers WWTP		
Subject: Little Creek looking downstream of Outfall 001.		



**ATTACHMENT A:
SAMPLE SUBMITTAL FORMS**

103 Via Aguila
Ruidoso, NM 88345
NM Lab # 0701

Aqua Environmental Testing Lab, LLLP
dba AETLab NM Lab # 0701

Phone: 575-336-1107
Fax: 575-336-1017
E-mail: aetlab@windstream.net

CHEMICAL ANALYSIS SUBMITTAL & CUSTODY FORM			
Lab personnel will complete shaded areas. Clients please fill in and check all other areas as needed.		Lab Sample Number(s): R060314-C1	
System/Owner's Name: CDS Rinmakers WWTP		Date Received: 6-3-14	Time Received: 1130
Contact Name: Wester Laymon		Received By: M	Analyzed By: CS
Mailing Address: P.O. 1128 Alto N.M. 88312		Client ID: CDR	Sample Matrix: ww
Phone/Fax:	E-mail: wlaymon@rinmakersusa.com	Condition Upon Receipt	
Permit No. (NPDES/DEMP): NM 0029238	<input checked="" type="checkbox"/> Intact Container	<input checked="" type="checkbox"/> Chilled / Cool Temp	
Sample Location (address): Custer's Last Stand	<input checked="" type="checkbox"/> Sufficient Volume	Preservative:	
Sample Site (ex: wellhead): HEADWORKS	<input checked="" type="checkbox"/> Labeled	Chain Of Custody & Seal	
Date Collected: 6-3-14	Time Collected: 9:45	Test(s) Requested	
Collected By: W. Laymon	Transported By: W. Laymon	Alkalinity (HCO ₃ /OH)	Manganese (Mn)
Type of System	Sample Type	Ammonia (NH ₃ -N)	Minerals: Ca, K, Mg, Na
<input checked="" type="checkbox"/> Community/Municipal	Drinking water	<input checked="" type="checkbox"/> BOD (5-day)	Nitrate (NO ₃ -N)
<input type="checkbox"/> Industrial/Commercial	Agricultural water	COD	Nitrite (NO ₂ -N)
<input type="checkbox"/> Non-Community	<input checked="" type="checkbox"/> Wastewater	Chloride (Cl ⁻)	pH/Temp.
<input type="checkbox"/> Private	Monitoring well	Chlorine (Cl ₂)	Phosphate (PO ₄ -P)
Other(specify):	Other(specify):	Color (Pt-Co units)	Sulfate (SO ₄)
Special Testing Panels		Copper (Cu)	Sulfide (S ²⁻)
Water Quality: pH, TDS/Cond./Salinity, Hardness, Turbidity		Fluoride (F ₂)	TKN
Taste&Odor: Alkalinity, Sulfide/Sulfate, Iron, Manganese		Hardness (as CaCO ₃)	TDS/ Cond./ Salinity
Contaminates: Copper, Lead, Phosphate, Nitrate		Iron (Fe)	TDS Gravimetric
Septic Tank Check: BOD, TSS, TKN, NH ₃ -N, NO ₃ -N, NO ₂ -N		Lead (Pb)	<input checked="" type="checkbox"/> TSS Gravimetric
Comments		Other (specify):	

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Ruidoso, NM 88345
NM Lab # 0701

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dba AETLab NM Lab # 0701

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E-mail: aetlab@windstream.net

CHEMICAL ANALYSIS SUBMITTAL & CUSTODY FORM			
Lab personnel will complete shaded areas. Clients please fill in and check all other areas as needed.		Lab Sample Number(s): R060314-C2	
System/Owner's Name: CDS Rinmakers WWTP		Date Received: 6-3-14	Time Received: 1130
Contact Name: Wester Laymon		Received By: M	Analyzed By: CS
Mailing Address: P.O. 1128 Alto N.M. 88312		Client ID: CDR	Sample Matrix: ww
Phone/Fax:	E-mail: wlaymon@rinmakersusa.com	Condition Upon Receipt	
Permit No. (NPDES/DEMP): NM 0029238	<input checked="" type="checkbox"/> Intact Container	<input checked="" type="checkbox"/> Chilled / Cool Temp	
Sample Location (address): Custer's Last Stand	<input checked="" type="checkbox"/> Sufficient Volume	Preservative:	
Sample Site (ex: wellhead): Contact Chamber	<input checked="" type="checkbox"/> Labeled	Chain Of Custody & Seal	
Date Collected: 6-3-14	Time Collected: 9:50	Test(s) Requested	
Collected By: W. Laymon	Transported By: W. Laymon	Alkalinity (HCO ₃ /OH)	Manganese (Mn)
Type of System	Sample Type	Ammonia (NH ₃ -N)	Minerals: Ca, K, Mg, Na
<input checked="" type="checkbox"/> Community/Municipal	Drinking water	<input checked="" type="checkbox"/> BOD (5-day)	<input checked="" type="checkbox"/> Nitrate (NO ₃ -N)
<input type="checkbox"/> Industrial/Commercial	Agricultural water	COD	Nitrite (NO ₂ -N)
<input type="checkbox"/> Non-Community	<input checked="" type="checkbox"/> Wastewater	Chloride (Cl ⁻)	pH/Temp.
<input type="checkbox"/> Private	Monitoring well	Chlorine (Cl ₂)	Phosphate (PO ₄ -P)
Other(specify):	Other(specify):	Color (Pt-Co units)	Sulfate (SO ₄)
Special Testing Panels		Copper (Cu)	Sulfide (S ²⁻)
Water Quality: pH, TDS/Cond./Salinity, Hardness, Turbidity		Fluoride (F ₂)	<input checked="" type="checkbox"/> TKN
Taste&Odor: Alkalinity, Sulfide/Sulfate, Iron, Manganese		Hardness (as CaCO ₃)	TDS/ Cond./ Salinity
Contaminates: Copper, Lead, Phosphate, Nitrate		Iron (Fe)	TDS Gravimetric
Septic Tank Check: BOD, TSS, TKN, NH ₃ -N, NO ₃ -N, NO ₂ -N		Lead (Pb)	<input checked="" type="checkbox"/> TSS Gravimetric
Comments		Other (specify):	

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CHEMICAL ANALYSIS SUBMITTAL & CUSTODY FORM

Lab personnel will complete shaded areas. Clients please fill in and check all other areas as needed.		Lab Sample Number(s): R070814-C2	
System/Owner's Name: CDS Rainmakers WWTP		Date Received: 7-8-14	Time Received: 1100
Contact Name: Walter Layman		Received By: ML	Analyzed By: CS
Mailing Address: P.O. 1128 Albuquerque N.M. 88312		Client ID: CDSR	Sample Matrix: ww
Phone/Fax:	E-mail: wlayman@rainmakersusa.com	Condition Upon Receipt	
Permit No. (NPDES/BPILWP): NM 0029238	<input checked="" type="checkbox"/> Intact Container	<input checked="" type="checkbox"/> Chilled / Cool Temp	
Sample Location (address): Custer's Lost Stand	<input checked="" type="checkbox"/> Sufficient Volume	Preservative:	
Sample Site (ex: wellhead): HEADWORKS	<input checked="" type="checkbox"/> Labeled	Chain Of Custody & Seal	
Date Collected: 7-8-14	Time Collected: 9:55	Test(s) Requested	
Collected By: W. Layman	Transported By: W. Layman	Alkalinity (HCO ₃ /OH)	Manganese (Mn)
Type of System	Sample Type	Ammonia (NH ₃ -N)	Minerals: Ca, K, Mg, Na
<input checked="" type="checkbox"/> Community/Municipal	Drinking water	<input checked="" type="checkbox"/> BOD (5-day)	Nitrate (NO ₃ -N)
<input type="checkbox"/> Industrial/Commercial	Agricultural water	COD	Nitrite (NO ₂ -N)
<input type="checkbox"/> Non-Community	<input checked="" type="checkbox"/> Wastewater	Chloride (Cl ⁻)	pH/Temp.
<input type="checkbox"/> Private	Monitoring well	Chlorine (Cl ₂)	Phosphate (PO ₄ -P)
Other(specify):	Other(specify):	Color (Pt-Co units)	Sulfate (SO ₄)
Special Testing Panels		Copper (Cu)	Sulfide (S ²⁻)
Water Quality: pH, TDS/Cond./Salinity, Hardness, Turbidity		Fluoride (F ₂)	TKN
Taste&Odor: Alkalinity, Sulfide/Sulfate, Iron, Manganese		Hardness (as CaCO ₃)	TDS/ Cond./ Salinity
Contaminates: Copper, Lead, Phosphate, Nitrate		Iron (Fe)	TDS Gravimetric
Septic Tank Check: BOD, TSS, TKN, NH ₃ -N, NO ₃ -N, NO ₂ -N		Lead (Pb)	<input checked="" type="checkbox"/> TSS Gravimetric
Comments:		Other (specify):	

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CHEMICAL ANALYSIS SUBMITTAL & CUSTODY FORM

Lab personnel will complete shaded areas. Clients please fill in and check all other areas as needed.		Lab Sample Number(s): R070814-C3	
System/Owner's Name: CDS Rainmakers WWTP		Date Received: 7-8-14	Time Received: 1100
Contact Name: Walter Layman		Received By: ML	Analyzed By: CS
Mailing Address: P.O. 1128		Client ID: CDSR	Sample Matrix: ww
Phone/Fax:	E-mail: wlayman@rainmakersusa.com	Condition Upon Receipt	
Permit No. (NPDES/BPILWP): NM 0029238	<input checked="" type="checkbox"/> Intact Container	<input checked="" type="checkbox"/> Chilled / Cool Temp	
Sample Location (address): Custer's Lost Stand Contact Chamber	<input checked="" type="checkbox"/> Sufficient Volume	Preservative:	
Sample Site (ex: wellhead): Contact Chamber	<input checked="" type="checkbox"/> Labeled	Chain Of Custody & Seal	
Date Collected: 7-8-14	Time Collected: 9:40	Test(s) Requested	
Collected By: W. Layman	Transported By: W. Layman	Alkalinity (HCO ₃ /OH)	Manganese (Mn)
Type of System	Sample Type	Ammonia (NH ₃ -N)	Minerals: Ca, K, Mg, Na
<input checked="" type="checkbox"/> Community/Municipal	Drinking water	<input checked="" type="checkbox"/> BOD (5-day)	<input checked="" type="checkbox"/> Nitrate (NO ₃ -N)
<input type="checkbox"/> Industrial/Commercial	Agricultural water	COD	Nitrite (NO ₂ -N)
<input type="checkbox"/> Non-Community	<input checked="" type="checkbox"/> Wastewater	Chloride (Cl ⁻)	pH/Temp.
<input type="checkbox"/> Private	Monitoring well	Chlorine (Cl ₂)	Phosphate (PO ₄ -P)
Other(specify):	Other(specify):	Color (Pt-Co units)	Sulfate (SO ₄)
Special Testing Panels		Copper (Cu)	Sulfide (S ²⁻)
Water Quality: pH, TDS/Cond./Salinity, Hardness, Turbidity		Fluoride (F ₂)	<input checked="" type="checkbox"/> TKN
Taste&Odor: Alkalinity, Sulfide/Sulfate, Iron, Manganese		Hardness (as CaCO ₃)	TDS/ Cond./ Salinity
Contaminates: Copper, Lead, Phosphate, Nitrate		Iron (Fe)	TDS Gravimetric
Septic Tank Check: BOD, TSS, TKN, NH ₃ -N, NO ₃ -N, NO ₂ -N		Lead (Pb)	<input checked="" type="checkbox"/> TSS Gravimetric
Comments:		Other (specify):	

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CHEMICAL ANALYSIS SUBMITTAL & CUSTODY FORM			
Lab personnel will complete shaded areas. Clients please fill in and check all other areas as needed.		Lab Sample Number(s): RO80414-C3	
System/Owner's Name: CDS Rainmakers WWTP		Date Received: 8-4-14	Time Received: 1125
Contact Name: W. Layman		Received By: ML	Analyzed By: JD
Mailing Address: P.O. 1128 Alto N.M. 88312		Client ID: CDSR	Sample Matrix: w
Phone/Fax: 575 336 4488	E-mail: wlayman@rainmakersusa.com	Condition Upon Receipt	
Permit No. (NPDES/DP/LWP): NM 0029238	<input checked="" type="checkbox"/> Intact Container	<input checked="" type="checkbox"/> Chilled / Cool Temp	
Sample Location (address): Customers Last Stand	<input checked="" type="checkbox"/> Sufficient Volume	Preservative:	
Sample Site (ex. wellhead): Hand Works	<input checked="" type="checkbox"/> Labeled	Chain Of Custody & Seal	
Date Collected: 8-4-14	Time Collected: 9:35	Test(s) Requested	
Collected By: W Layman	Transported By: W Layman	Alkalinity (HCO ₃ /OH)	Manganese (Mn)
Type of System	Sample Type	Ammonia (NH ₃ -N)	Minerals: Ca, K, Mg, Na
<input checked="" type="checkbox"/> Community/Municipal	Drinking water	<input checked="" type="checkbox"/> BOD (5-day)	Nitrate (NO ₃ -N)
<input type="checkbox"/> Industrial/Commercial	Agricultural water	COD	Nitrite (NO ₂ -N)
<input type="checkbox"/> Non-Community	<input checked="" type="checkbox"/> Wastewater	Chloride (Cl)	pH/Temp.
<input type="checkbox"/> Private	Monitoring well	Chlorine (Cl ₂)	Phosphate (PO ₄ -P)
Other(specify):	Other(specify):	Color (Pt-Co units)	Sulfate (SO ₄)
Special Testing Panels		Copper (Cu)	Sulfide (S ²⁻)
Water Quality: pH, TDS/Cond./Salinity, Hardness, Turbidity		Fluoride (F ₂)	TKN
Taste&Odor: Alkalinity, Sulfide/Sulfate, Iron, Manganese		Hardness (as CaCO ₃)	TDS/ Cond./ Salinity
Contaminates: Copper, Lead, Phosphate, Nitrate		Iron (Fe)	TDS Gravimetric
Septic Tank Check: BOD, TSS, TKN, NH ₃ -N, NO ₃ -N, NO ₂ -N		Lead (Pb)	<input checked="" type="checkbox"/> TSS Gravimetric
Comments:		Other (specify):	

103 Via Aguila
Ruidoso, NM 88345
NM Lab # 0701

Aqua Environmental Testing Lab, LLC db
AETLab NM Lab # 0701

Phone: 575-336-1107
Fax: 575-336-1018
E-mail: aetlab@windstream.net

CHEMICAL ANALYSIS SUBMITTAL & CUSTODY FORM			
Lab personnel will complete shaded areas. Clients please fill in and check all other areas as needed.		Lab Sample Number(s): RO80414-C2	
System/Owner's Name: CDS Rainmakers WWTP		Date Received: 8-4-14	Time Received: 1125
Contact Name: W. Layman		Received By: ML	Analyzed By: JD
Mailing Address: P.O. 1128 Alto N.M. 88312		Client ID: CDSR	Sample Matrix: w
Phone/Fax: 575 336 4488	E-mail: wlayman@rainmakersusa.com	Condition Upon Receipt	
Permit No. (NPDES/DP/LWP): NM 0029238	<input checked="" type="checkbox"/> Intact Container	<input checked="" type="checkbox"/> Chilled / Cool Temp	
Sample Location (address): Customers Last Stand	<input checked="" type="checkbox"/> Sufficient Volume	Preservative:	
Sample Site (ex. wellhead): Contact Chamber	<input checked="" type="checkbox"/> Labeled	Chain Of Custody & Seal	
Date Collected: 8-4-14	Time Collected: 9:45	Test(s) Requested	
Collected By: W Layman	Transported By: W Layman	Alkalinity (HCO ₃ /OH)	Manganese (Mn)
Type of System	Sample Type	Ammonia (NH ₃ -N)	Minerals: Ca, K, Mg, Na
<input checked="" type="checkbox"/> Community/Municipal	Drinking water	<input checked="" type="checkbox"/> BOD (5-day)	<input checked="" type="checkbox"/> Nitrate (NO ₃ -N)
<input type="checkbox"/> Industrial/Commercial	Agricultural water	COD	Nitrite (NO ₂ -N)
<input type="checkbox"/> Non-Community	<input checked="" type="checkbox"/> Wastewater	Chloride (Cl)	pH/Temp.
<input type="checkbox"/> Private	Monitoring well	Chlorine (Cl ₂)	Phosphate (PO ₄ -P)
Other(specify):	Other(specify):	Color (Pt-Co units)	Sulfate (SO ₄)
Special Testing Panels		Copper (Cu)	Sulfide (S ²⁻)
Water Quality: pH, TDS/Cond./Salinity, Hardness, Turbidity		Fluoride (F ₂)	<input checked="" type="checkbox"/> TKN
Taste&Odor: Alkalinity, Sulfide/Sulfate, Iron, Manganese		Hardness (as CaCO ₃)	TDS/ Cond./ Salinity
Contaminates: Copper, Lead, Phosphate, Nitrate		Iron (Fe)	TDS Gravimetric
Septic Tank Check: BOD, TSS, TKN, NH ₃ -N, NO ₃ -N, NO ₂ -N		Lead (Pb)	<input checked="" type="checkbox"/> TSS Gravimetric
Comments:		Other (specify):	

**ATTACHMENT B:
MICROBIOLOGICAL SAMPLE SUBMITTAL FORMS**

103 Via Agulla
Ruidoso, NM 88345

Aqua Environmental Testing Lab, LLC
Lab # NM0701

Phone: 575-338-1107
E-mail: aetlab@windstream.net

MICROBIOLOGICAL SAMPLE SUBMITTAL & ANALYSIS RESULTS FORM

Received by: <i>ML</i>	Date Received: <i>6-3-14</i>	Time Received: <i>1130</i>	Sample Lab Number(s): <i>R060314-M1</i>	
Condition Upon Receipt: <input checked="" type="checkbox"/> Intact Bottle <input type="checkbox"/> Ambient Temp. <input checked="" type="checkbox"/> Chilled/Cool Temp. <input checked="" type="checkbox"/> Sufficient Volume <input type="checkbox"/> Protected From Sunlight				
System Name: <i>CDS Rainmakers WWTP</i>		BWS/NPDES/DRAWP #: <i>NM0329238</i>		
Contact person, mailing address, and telephone number (to convey results): <i>Waymon Laymon waymon@rainmakersusa.com</i>				
Regulatory Agency, Contact Person, and Address (to receive report):				
Collection Location* (Physical Address): <i>Customers East Stand</i>	Collection Site* (e.g. WWTP Outfall): <i>Post UV</i>	Collected By: <i>Waymon Laymon</i>		
Collection Date*: <i>6-3-14</i>	Collection Time*: <i>0955</i>	Transported By: <i>Waymon Laymon</i>		
Type of Sample	Type of System	Reason for Sampling	Type of Analysis	Target Organisms
<input type="checkbox"/> Ground water	<input checked="" type="checkbox"/> Community/Municipal	<input checked="" type="checkbox"/> Routine Compliance	<input type="checkbox"/> Membrane Filtration	<input type="checkbox"/> Fecal Coliforms
<input type="checkbox"/> Surface water	<input type="checkbox"/> Non-Community	<input type="checkbox"/> Special Non-compliance	<input checked="" type="checkbox"/> Quanti-Tray	<input checked="" type="checkbox"/> TC / E coli
<input type="checkbox"/> Industrial water	<input type="checkbox"/> Industrial/Commercial	<input type="checkbox"/> NMED Monitoring	<input type="checkbox"/> HPC	<input type="checkbox"/> Enterococci
<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Private/Homeowner	<input type="checkbox"/> Private Testing	<input type="checkbox"/> A-1 Media	<input type="checkbox"/> Total Bacteria
<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:
ENUMERATION RESULTS				
A-1 Media Dilutions	1:1 <u> </u> positive tubes	1:10 <u> </u> positive tubes	1:100 <u> </u> positive tubes	MPN INDEX
Filtered Volume	<i>100</i> mL	mL	mL	Total Volume
Colonies Counted	FC	FC	FC	CFU/100mL
Positive Well Count	<i>50</i> Yellow Lg	<i>21</i> Yellow Sm	<i>10</i> Fluor. Lg	<i>0</i> Fluor. Sm
Analyst: <i>ML</i>	Confirmed by		Verification	
Notes: <i>3-3-14</i>	Sample Temperature:	°C	Sample Turbidity:	NTU

* Should be completed at time of collection. Shaded areas to be completed by lab personnel.

MICROBIOLOGICAL SAMPLE SUBMITTAL & ANALYSIS RESULTS FORM

Received by: *ML* Date Received: *7-8-14* Time Received: *1100* Sample Lab Number(s): *R070814-M1*

Condition Upon Receipt: Intact Bottle Ambient Temp. Chilled/Cool Temp. Sufficient Volume Protected From Sunlight

System Name: *CDS Rainmakers (WWTP)* PWS/NPDES/DPL/WP #: *N.M. 0029238*

Contact person, mailing address, and telephone number (to convey results)
Western Laymon
P.O. 1128 Alto N.M. 88312 *Wlaymon@rainmakersusa.com*

Regulatory Agency, Contact Person, and Address (to receive report)

Collection Location* (Physical Address): *Custers Last Stand* Collection Site* (e.g. WWTP Outfall): *Post UV* Collected By* *W. Laymon*

Collection Date* *7-8-14* Collection Time* *10:00* Transported By *W. Laymon*

Type of Sample	Type of System	Reason for Sampling	Type of Analysis	Target Organisms
<input type="checkbox"/> Ground water	<input checked="" type="checkbox"/> Community/Municipal	<input checked="" type="checkbox"/> Routine Compliance	<input type="checkbox"/> Membrane Filtration	<input type="checkbox"/> Faecal Coliforms
<input type="checkbox"/> Surface water	<input type="checkbox"/> Non-Community	<input type="checkbox"/> Special Non-compliance	<input checked="" type="checkbox"/> Quanti-Tray	<input checked="" type="checkbox"/> TC / E coli
<input type="checkbox"/> Industrial water	<input type="checkbox"/> Industrial/Commercial	<input type="checkbox"/> NMED Monitoring	<input type="checkbox"/> HPC	<input type="checkbox"/> Enterococci
<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Private/Homeowner	<input type="checkbox"/> Private Testing	<input type="checkbox"/> A-1 Media	<input type="checkbox"/> Total Bacteria
<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:

ENUMERATION RESULTS

A-1 Media Dilutions	1:1 positive tubes	1:10 positive tubes	1:100 positive tubes	MPN INDEX
Filtered Volume	<i>100</i> mL	mL	mL	Total Volume
Colonies Counted	FC	FC	FC	CFU/100mL
Positive Well Count	<i>48</i> Yellow Lg	<i>48</i> Yellow Sm	<i>0</i> Fluor. Lg	<i>0</i> Fluor. Sm
				<i><1</i> MPN INDEX

Analyst: *ML* Confirmed by: _____ Verification: _____

Notes: _____ Sample Temperature: _____ °C Sample Turbidity: _____ NTU

* Should be completed at time of collection. Shaded areas to be completed by lab personnel.

Form WML-10-02 Rev 11-14-08

Filtered 7-8-14 at 1500 - Recd 7-9-14 at 1500 0900

MICROBIOLOGICAL SAMPLE SUBMITTAL & ANALYSIS RESULTS FORM

Received by: <i>ML</i>	Date Received: <i>8-4-14</i>	Time Received: <i>1125</i>	Sample Lab Number(s) <i>R080414-M1</i>
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Condition Upon Receipt: Intact Bottle Ambient Temp. Chilled/Cool Temp. Sufficient Volume Protected From Sunlight

System Name <i>CUS Rainmakers WWTP</i>	PAWS/NPDES/DFEWP # <i>NM 0029238</i>
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Contact person, mailing address, and telephone number (to convey results)
Weston Layman wlayman@RAINMAKERSUSA.COM
575 336 4488 P.O. 1128 Aft. N.M. 88312

Regulatory Agency, Contact Person, and Address (to receive report)

Collection Location* (Physical Address): <i>Customers Last Stand</i>	Collection Site* (e.g. WWTP Outfall) <i>Post U.V.</i>	Collected By* <i>Weston Layman</i>
Collection Date* <i>8-4-14</i>	Collection Time* <i>9:55</i>	Transported By <i>Weston Layman</i>

Type of Sample	Type of System	Reason for Sampling	Type of Analysis	Target Organisms
<input type="checkbox"/> Ground water	<input checked="" type="checkbox"/> Community/Municipal	<input checked="" type="checkbox"/> Routine Compliance	<input type="checkbox"/> Membrane Filtration	<input type="checkbox"/> Fecal Coliforms
<input type="checkbox"/> Surface water	<input type="checkbox"/> Non-Community	<input type="checkbox"/> Special Non-compliance	<input checked="" type="checkbox"/> Quanti-Tray	<input checked="" type="checkbox"/> TC / E coli
<input type="checkbox"/> Industrial water	<input type="checkbox"/> Industrial/Commercial	<input type="checkbox"/> NMED Monitoring	<input type="checkbox"/> HPC	<input type="checkbox"/> Enterococci
<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Private/Homeowner	<input type="checkbox"/> Private Testing	<input type="checkbox"/> A-1 Media	<input type="checkbox"/> Total Bacteria
<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:

ENUMERATION RESULTS

A-1 Media Dilutions	1:1 positive tubes	1:10 positive tubes	1:100 positive tubes	MPN INDEX
Filtered Volume	<i>100</i> mL	mL	mL	Total Volume
Colonies Counted	FC	FC	FC	CFU/100mL
Positive Well Count	<i>48</i> Yellow Lg	<i>48</i> Yellow Sm	<i>3</i> Fluor. Lg	<i>7</i> Fluor. Sm
				<i>10.3</i> MPN INDEX

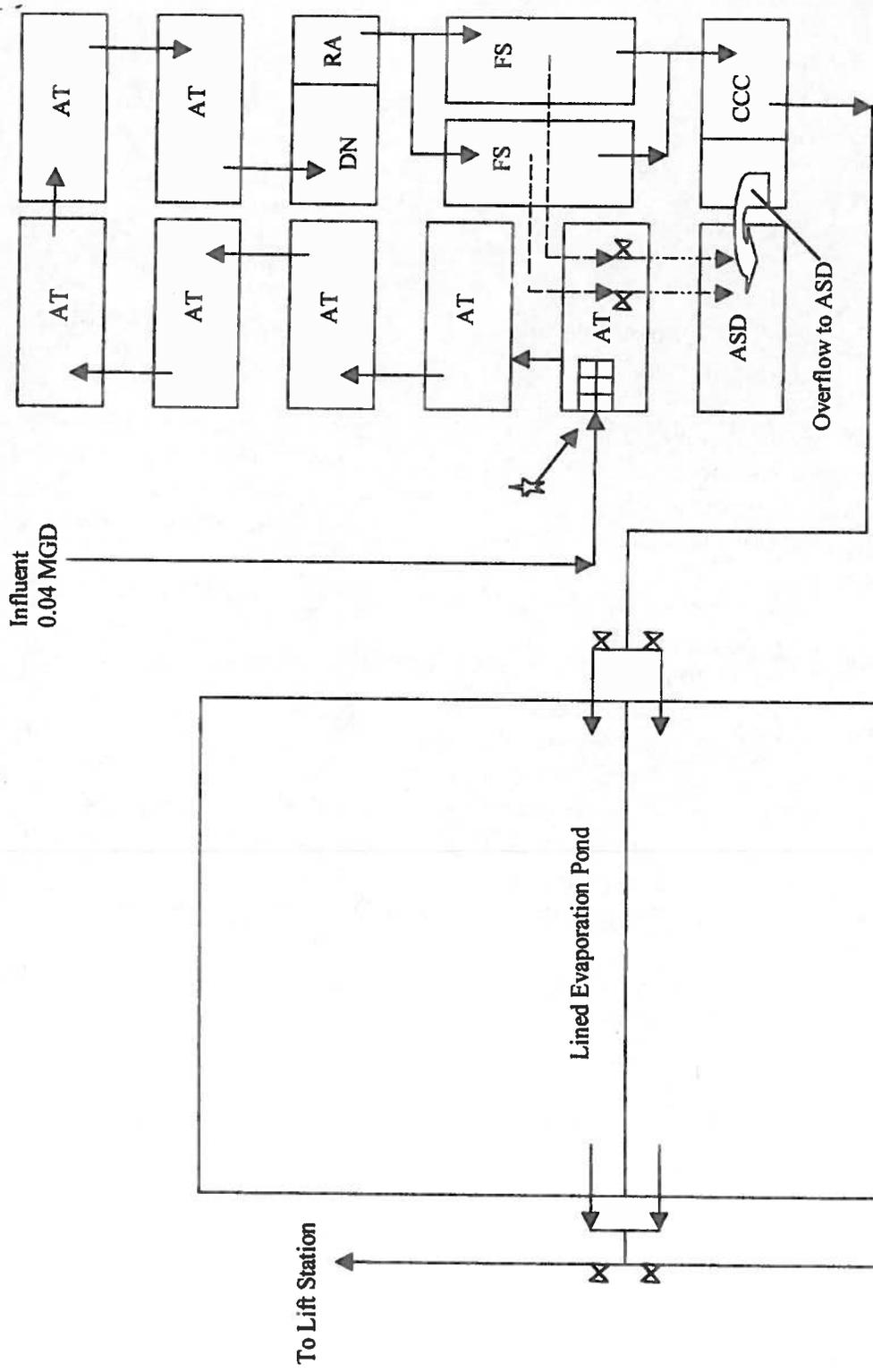
Analyst	Confirmed by	Verification
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Notes:	Sample Temperature: °C	Sample Turbidity: NTU
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* Should be completed at time of collection. Shaded areas to be completed by lab personnel.

Filtered 8-4-14 at 1600 - Read 8-5-14 at 1000

**ATTACHMENT C:
SCHEMATIC OF WASTEWATER FLOW – RANCHO RUIDOSO CDS RAINMAKERS WWTP**



Schematic of Wastewater Flow
 Rancho Ruidoso Valley Estates
 Rancho Ruidoso, Lincoln County,
 New Mexico

Kaba
Kistner

File No. AEF96-223-05
 Date: 7/1/99
 Plate No. 3

LEGEND:

- ★ = Aluminum Bar Screen w/ Drying Deck
- AT = Aeration Tanks
- DN = Denitrification Tank
- RA = Reaeration Tank
- ⊗ = Gate Valves
- FS = Final Settling Tanks
- CCC = Chorine Contact Chamber
- ASD = Aerobic Sludge Digester
- > = Sludge Return Lines
- - -> = Sludge Draw-Off Lines

LEGEND:

- ★ = Aluminum Bar Screen w/ Drying Deck
- AT = Aeration Tanks
- DN = Denitrification Tank
- RA = Reaeration Tank
- ⊗ = Gate Valves
- FS = Final Settling Tanks
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