UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

NOV 16 2016

2016 NOV 17 PM 12:59

FILED
EPA REGION VIII
HEARING CLERK

Ref: 8ENF-W-SDW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Walter Hodgson, Owner
361 E. Highland Avenue
Sierra Madre, California 91024

Re: Administrative Order on Consent

Dear Mr. Hodgson:

This letter is in reference to the Administrative Order on Consent (Order) issued to LT Campgrounds, LLC d/b/a Custer/Mount Rushmore KOA, Docket Number SDWA-08-2016-0011, filed on June 15, 2016.

The Order requires you to expand the capacity of the septic system at the Custer/Mount Rushmore KOA Campground in Custer, South Dakota. Paragraph 13(a)(2) of the Order states that "Unless another schedule is approved by the EPA, the construction shall begin no later than September 15, 2016, and shall be completed by October 31, 2016." On October 26, 2016, your consultant, Elmer Claycomb, requested an extension to complete the expansion of the septic system until December 15, 2016.

The EPA is hereby approving your consultant's request. The new construction completion date is December 15, 2016.

The Order also required you to submit a compliance plan describing any work to expand the capacity of your septic system. Enclosed and now included in the Administrative Record are the plans you have submitted to the EPA for approval. Furthermore, this letter serves as approval of your compliance plan with monitoring. Monitoring will be enforced under the Order during the months of May through September, 2017 through 2019. Also enclosed is the list of constituents and sampling methods which will be required as a part of the ongoing monitoring. Additionally, please be aware that the Order requires you to submit a final report of the completed work within 15 days of construction completion.

If you have any questions or concerns, please contact Ms. Britta Copt at 303-312-6229.

Sincerely,

Suzanne J. Bohan
Assistant Regional Administrator
Office of Enforcement, Compliance
And Environmental Justice

Enclosures

cc: Elmer Claycomb, Claycomb Engineering

COMPLIANCE PLAN
CLASS V INJECTION WELL
WASTEWATER SYSTEM
CUSTER/MT. RUSHMORE KOA CAMPGROUND

This Compliance Plan has been prepared to meet the requirements of the Administrative Compliance Order on Consent issued by the Environmental Protection Agency. The Plan has been prepared by Claycomb Engineering in August, 2016.

Exhibit A is a map of the campground showing the general layout of the wastewater systems.

WASTEWATER FLOW AMOUNTS

The design of onsite wastewater systems in South Dakota is normally based on Chapter 74:53.01, Individual and Small On-Site Wastewater Systems, of the South Dakota Administrative Rules for Surface Water Quality. Exhibit B is a copy of Section 74:03:01:20, Wastewater flow capacity requirements of residential and nonresidential establishments, of that chapter. The table is very extensive, giving values for the types of uses common to RV, cabin and tent camping parks.

Previous correspondence from the EPA has questioned the values included in Section 74:03:01:20, indicating that the values were too low. With this in mind, an extensive internet search for references relating to wastewater flows from RV parks was conducted. Only 2 tables of values were found. One was the table included in the EPA publication Onsite Wastewater Treatment Systems Manual (Feb. 2002) and the other was "Sewage Flow Rate Estimating Guide (based on US Standards for Water Usage and Sewage Strength)". These 2 tables are referenced in many standards for design of onsite wastewater systems in the United States and even in Canada. No documentation of the source of the "Sewage Flow Rate Estimating Guide" were annotated in any of the references located, however the values in the two tables are exactly the same. Copies of the 2 tables are included as Exhibits C and D. These tables give high, low and typical flow values for various types of recreational facilities.

One contribution of wastewater flows to the system comes from the holding tanks on RV's that may be partially full when they enter the park. These units would discharge the contents of their tanks when they first enter the park. The amount of wastewater in the tanks would be a function of the length of time the unit has been on the road since the tank was last emptied, the number of persons in the unit, and the size of the holding tanks. The holding tank volumes range from a low of about 40 gallons to a high of about 150 gallons and is generally related to the size of the RV. In addition, if the unit only stays in the park for one day, the entire volume of wastewater discharged from the tanks would be added to the normal daily flow attributed to the unit. Conversely, if the unit stays in the park for 5 days, the tank discharge would only apply to 20% of the unit values. The park attendance records show that the average length of stay for trailers and motorhomes with holding tanks is 2.77 days.

Taking all of the variables into account, the following assumptions have been applied to holding tank discharges:

1. The average tank volume is 100 gallons.
2. The average tank is ½ full when entering the park.
3. The average length of stay in the park is 2.77 days.

The resulting contribution to the wastewater system is therefore:

100 gallons/unit X ½ full / 2.77 days average stay = 18 gallons/unit

A few RV units will stop at the park just to dump their holding tanks without staying at the park. The manager reports that this is infrequent, with less than one per day on the average. An allowance for one dump of 100 gallons per day has been included in the volume calculations.

The park has a swimming pool. All of those using the pool are residents of the park. The swimmers would be using the same central bath house or their own RV, and are therefore counted in the daily use for the individual units.

All of the employees of the park are residents and their contribution is therefore included in the per unit volumes.

The Custer/Mt. Rushmore KOA Campground has 2 wastewater systems. These will be referred to as the Front and Back systems. The Front system consists of a single 3,500 gallon septic tank discharging into a disposal field. The Back system includes 2 septic tanks which intercept flows from different collection lines, both discharging into a single disposal field. Contributions to each system are tabulated in Tables 1 and 2. Table 1 is a spreadsheet of flow values based on Table 2 of Section 74:03:01:20 of the South Dakota regulations. Table 2 is a spreadsheet of flow values based on Typical values in Table 3-6 of the EPA Onsite Wastewater Treatment Systems Manual.

The total contribution to both systems is actually 0.4% greater based on the South Dakota Regulation Values but the distribution between the systems is considerably different. The SD value to the front system is 82% larger than the EPA value. The SD value to the back 4,500 gallon tank is 3% larger than the EPA value. The EPA value to the back 3,500 gallon tank is 31% greater than the SD value.

SEPTIC TANK VOLUME DESIGN CRITERIA

Section 74:53:01:25(2) of the South Dakota Regulations specify a minimum septic tank size when daily flow is greater than 750 gallons but less than 1500 gallons of 1.5 times the average daily flow.

Section 74:53:01:25(3) of the South Dakota Regulations specify a minimum septic tank size when daily flow exceed 1500 gallons based on the following formula:

$V = 1{,}125 + 0.75Q$ where Q is the total daily flow

Applying these formulas to the front and back systems using the SD flow values yields the following:

Front system $V = 1.5 \times 1{,}485$ GPD = 2,228 gallons

Back system 4,500 gal. tank $V = 1{,}125 + .75 \times 7{,}700$ GPD = 6,900 gallons

Back system 3,500 gal. tank $V = 1{,}125 + .75 \times 2{,}708$ GPD = 3,156 gallons

Section 4.6.2 of the EPA publication Onsite Wastewater Treatment Systems Manual recommends the tank volume retain 6 to 24 hours of the daily flow, with a conservative rule of thumb of 24 hours when the tank is ready for pumping. The tanks at the park are pumped annually, so the amount of sludge buildup would be relatively small. Properly sized septic tanks normally require pumping about every 5 to 8 years. It is reasonable to assume that the maximum sludge accumulation in the tanks is about 25% of the volume at the end of the season. The tank volume would therefore need to be:

$V = Q + 0.25\,V$

$V = 1.33\,Q$

Applying the EPA typical flows to the requirement that the tank contain 1.33 times the daily flow results in the following tank volume requirements:

Front system 815 GPD X 1.33 = 1,084 Gallons

Back system 4,500 gal. tank 7,480 GPD X 1.33 = 9,948 Gallons

Back system 3,500 gal. tank 3,548 GPD X 1.33 = 4,718 Gallons

COMPARISON TO EXISTING SEPTIC TANKS

The existing front system septic tank has a volume of 3,500 gallons. This volume exceeds the required amount based on either the SD or EPA criteria.

The 4,500 gallon back septic tank does not meet either the SD or EPA criteria. The 3,500 gallon back septic tank meets the SD criteria but not the EPA criteria. The EPA criteria has been selected for sizing the additional tank volume since this Compliance Plan is to meet the EPA Compliance Order on Consent.

REQUIRED ADDITIONAL VOLUME 4,500 GAL. TANK = 9,948 GAL. – 4,500 GAL. = 5,448 GAL.

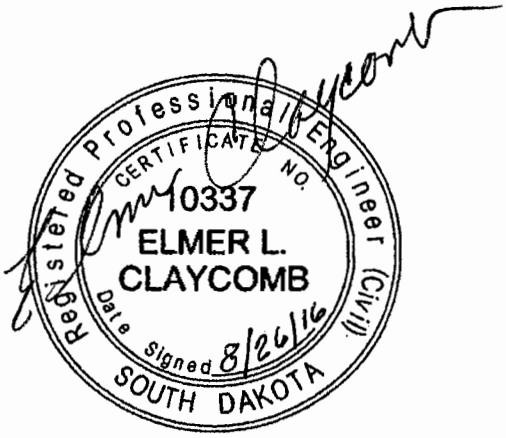
REQUIRED ADDITIONAL VOLUME 3,500 GAL. TANK = 4,719 GAL. – 3,500 GAL. = 1,219 GAL.

CONSTRUCTION CONSTRAINTS

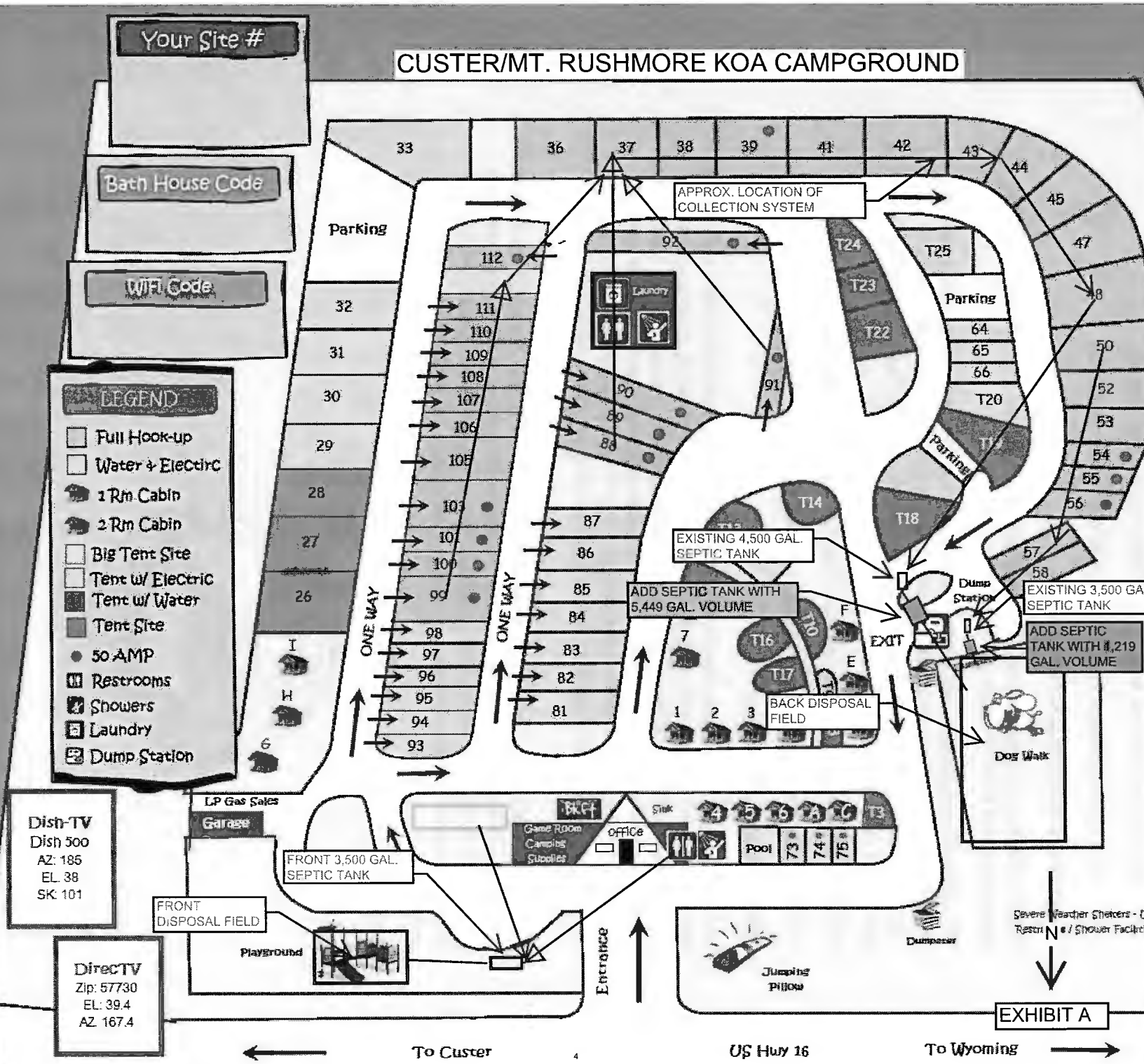
All flow from each back system must flow through both the new and existing tanks in series. This will require modifying the piping from the dump station on the 3,500 gal. tank system. The installer must verify that sufficient grade is available to add tanks in series. If there is insufficient grade, a single tank with adequate volume will be necessary rather than keeping the existing tank and adding additional volume. The discharge from the existing 3,500 gal. tank should be rerouted to enter the main header so that its flow is proportioned along with flow from the 4.500 gal. system.

Maps of the existing back systems are included as Exhibits E, F & G. The maps all show the same basic system, but with different information. The proposed system modifications are identified on Exhibit E. It should be noted that an inspection port exists on the end of each run of pipe in the disposal field and the distribution boxes allow revising the rate of distribution to individual pipes.

Prepared by:



Elmer Claycomb, P.E.


Your Site #
Bath House Code
WiFi Code
CUSTER/MT. RUSHMORE KOA CAMPGROUND
LEGEND
Full Hook-up
Water & Electric
1 Rm Cabin
2 Rm Cabin
Big Tent Site
Tent w/ Electric
Tent w/ Water
Tent Site
50 AMP
Restrooms
Showers
Laundry
Dump Station
Dish-TV
Dish 500
AZ: 185
EL: 38
SK: 101
DirecTV
Zip: 57730
EL: 39.4
AZ: 167.4
APPROX. LOCATION OF COLLECTION SYSTEM
EXISTING 4,500 GAL. SEPTIC TANK
ADD SEPTIC TANK WITH 5,449 GAL. VOLUME
EXISTING 3,500 GAL. SEPTIC TANK
ADD SEPTIC TANK WITH 4,219 GAL. VOLUME
BACK DISPOSAL FIELD
FRONT 3,500 GAL. SEPTIC TANK
FRONT DISPOSAL FIELD
ONE WAY
ONE WAY
EXIT
Entrance
Parking
Laundry
Dump Station
Dog Walk
Jumping Pillow
Dumpster
Playground
LP Gas Sales
Garage
Game Room
Camping Supplies
office
Pool
Severe Weather Shelters
Restrooms / Shower Facilities
N
EXHIBIT A
To Custer
US Hwy 16
To Wyoming

74:53:01:20. Wastewater flow capacity requirements of residential and nonresidential establishments. All individual or small on-site wastewater treatment systems shall be designed to have a capacity at least equal to the anticipated maximum daily flow. For existing facilities where the average daily flow is measured, the anticipated maximum daily wastewater flow shall be assumed to be 150 percent of the average daily flow as the basis for the design of the system. In other cases, the anticipated maximum daily flow capacity shall be determined according to the type of facility as set forth in Table 2.

TABLE 2

	Maximum Daily Flow Gallons/Person/Day {*Gallons/Unit/Day}
Residential	
Boarding Houses (with food service)	50
Hotels and Motels (without private baths)	40
Hotels and Motels (with private baths)	50
Luxury Residences and Estates	150
Mobile Home Parks (minimum of 3.5 persons)	75
Mobile Home Parks (per space)	*250
Motels (with private baths and kitchenettes or laundry)	60
Multiple Family Dwellings or Apartments	75
Rooming Houses (rooms with baths)	40
Single Family Dwellings (minimum of 3.5 persons, or 120 gallons per bedroom, whichever is greater)	75
Commercial	
Airport (per passenger, without food service)	5
Airport (per public toilet room)	*500
Automobile Service Station (per toilet room)	*500
Automobile Service Station (per vehicle served)	*10
Bars and Cocktail Lounges (per patron)	2
Bars and Cocktail Lounges (per seat)	*20
Bus Stations (without food service)	5
Commercial Employees (except factory, plant, or office)	10
Factories and Plants (exclusive of industrial waste)	35
Laundries, Self Service (per washer)	*600
Offices (per employee)	15
Restaurants (kitchen wastes per patron)	3
Restaurants, on Interstate or Through Highways (per seat)	*180
Restaurants, (per seat)	*35
Restaurants (toilet and kitchen wastes per patron)	10
Restaurants (with paper service per patron)	1.5
Shopping Centers (per parking space)	2
Stores (per public toilet room)	*500

EXHIBIT B

Theaters, Drive-in (not including food, per car space)	*10
Theaters, Movie, Auditorium Type (not including food, per seat)	*5
Work or Construction Camps (semipermanent, with flush toilets)	50
Work or Construction Camps (semipermanent, without flush toilets)	25

Institutional

Hospitals (per bed space)	250
Institutional and School Employees	15
Institutions Other Than Hospitals (per bed space)	125
Nursing or Rest Homes (per bed space)	100
Schools, Boarding	100
Schools, Day (without cafeteria, gym, or showers)	15
Schools, Day (with cafeteria, but not gym or showers)	20
Schools, Day (with cafeteria, gym, and showers)	25

Recreational, Seasonal, or Other

Assembly or Dance Halls	2
Bowling Alleys (per lane)	*75
Bowling Alleys (with restaurant, per lane)	*100
Cabins, Resort	60
Campgrounds, Developed	30
Camps, Day (no meals served)	15
Camps, Luxury Resort	125
Churches (per sanctuary seat)	*5
Churches (with kitchens, per sanctuary seat)	*7
Cottages and Small Dwellings (seasonal occupancy)	50
Country Clubs, Employees	15
Country Clubs (per guest)	25
Country Clubs (per resident member)	100
Interstate Rest Areas	5
Parks, Picnic (toilet waste only)	5
Parks, Picnic (with bath houses, showers, and flush toilets)	15
Parks, Travel Trailer (with individual water and sewer hook-ups, per space)	*100
Parks, Travel Trailer (without individual water and sewer hook-ups, per space)	*50
Parks (with central toilet and shower facilities, per space)	*75
Store, Resort	3
Swimming Pools with Bath Houses	10
Visitor Center	5

Table 3-6. Typical wastewater flow rates from recreational facilities[a]

Facility	Unit	Flow, gallons/unit/day		Flow, liters/unit/day	
		Range	Typical	Range	Typical
Apartment, resort	Person	50–70	60	190–260	230
Bowling alley	Alley	150–250	200	570–950	760
Cabin, resort	Person	8–50	40	30–190	150
Cafeteria	Customer	1–3	2	4–11	8
	Employee	8–12	10	30–45	38
Camps:					
Pioneer type	Person	15–30	25	57–110	95
Children's, with central toilet/bath	Person	35–50	45	130–190	170
Day, with meals	Person	10–20	15	38–76	57
Day, without meals	Person	10–15	13	38–57	49
Luxury, private bath	Person	75–100	90	280–380	340
Trailer camp	Trailer	75–150	125	280–570	470
Campground-developed	Person	20–40	30	76–150	110
Cocktail lounge	Seat	12–25	20	45–95	76
Coffee Shop	Customer	4–8	6	15–30	23
	Employee	8–12	10	30–45	38
Country club	Guests onsite	60–130	100	230–490	380
	Employee	10–15	13	38–57	49
Dining hall	Meal served	4–10	7	15–38	26
Dormitory/bunkhouse	Person	20–50	40	76–190	150
Fairground	Visitor	1–2	2	4–8	8
Hotel, resort	Person	40–60	50	150–230	190
Picnic park, flush toilets	Visitor	5–10	8	19–38	30
Store, resort	Customer	1–4	3	4–15	11
	Employee	8–12	10	30–45	38
Swimming pool	Customer	5–12	10	19–45	38
	Employee	8–12	10	30–45	38
Theater	Seat	2–4	3	8–15	11
Visitor center	Visitor	4–8	5	15–30	19

[a] Some systems serving more than 20 people might be regulated under USEPA's Class V UIC Program.

Source: Crites and Tchobanoglous, 1998.

pollutants, the strength of residential wastewater fluctuates throughout the day (University of Wisconsin, 1978). For nonresidential establishments, wastewater quality can vary significantly among different types of establishments because of differences in waste-generating sources present, water usage rates, and other factors. There is currently a dearth of useful data on nonresidential wastewater organic strength, which can create a large degree of uncertainty in design if facility-specific data are not available. Some older data (Goldstein and Moberg, 1973; Vogulis, 1978) and some new information exists, but modern organic strengths need to be verified before design given the importance of this aspect of capacity determination.

Wastewater flow and the type of waste generated affect wastewater quality. For typical residential sources peak flows and peak pollutant loading rates do not occur at the same time (Tchobanoglous and Burton, 1991). Though the fluctuation in wastewater quality (see figure 3-5) is similar to the water use patterns illustrated in figure 3-3, the fluctuations in wastewater quality for an individual home are likely to be considerably greater than the multiple-home averages shown in figure 3-5.

GE FLOW RATE ESTIMATING GUIDE

and Typical are shown in gallons per unit)

es are based on US standards for water usage and strength.

Wastewater Flow Rates from Commercial Sources

Source	Unit	Range	Typical
	Passenger	2-4	3
ice Station	Vehicle Served	7-13	10
	Employee	9-15	12
	Customer	1-5	3
	Employee	10-16	13
nt Store	Toilet Room	400-600	500
	Employee	7-13	10
Building	Employee	7-16	13
y Waste Only)			
Self-Serve)	Machine	450-650	550
	Wash	45-55	50
	Employee	7-16	13
t	Meal	2-4	3
Center	Employee	7-13	10
	Parking Space	1-2	2

Wastewater Flow Rates from Residential Sources

Source	Unit	Range	Typical
nt, High-Rise	Person	35-75	50
se	Person	50-80	65
	Guest	30-55	45
l Residence			
Home	Person	45-90	70
Home	Person	60-100	80
Home	Person	75-150	95
Home	Person	30-60	45
er Cottage	Person	25-50	40
tchen	Unit	90-180	100
t kitchen	Unit	75-150	95
ome Park	Person	30-50	40

Typical Wastewater Flow Rates from Institutional Sources

Source	Unit	Range	Typical
Hospital, Medical	Bed	125-240	155
	Employee	5-15	10
Hospital, Mental Health	Bed	75-140	100
	Employee	5-15	10
Correctional Institution (Prison)	Inmate	75-150	115
	Employee	5-15	10
Rest Home	Resident	50-120	85
School, day			
w/ cafeteria, gym, & showers	Student	15-30	25
w/ cafeteria only	Student	10-20	15
no cafeteria; no gym	Student	5-17	11
School, boarding	Student	50-100	75

Typical Wastewater Flow Rates from Recreational Sources

Source	Unit	Range	Typical
Apartment, Resort	Person	50-70	60
Cabin, Resort	Person	8-50	40
Cafeteria	Customer	1-3	2
	Employee	8-12	10
Campground (developed)	Person	20-40	30
Cocktail Lounge	Seat	12-25	20
Coffee Shop	Customer	4-8	6
	Employee	8-12	10
Country Club	Member Present	60-130	100
	Employee	10-15	13
Day Camp (no meals)	Person	10-15	13
Dining Hall	Meal Served	4-10	7
Dormitory	Person	20-50	40
Hotel, Resort	Person	40-60	50
Store, Resort	Customer	1-4	3
	Employee	8-12	10
Swimming Pool	Customer	5-12	10
	Employee	8-12	10
Theatre	Seat	2-4	3
Visitor Center	Visitor	4-8	5

CLAYCOMB ENGINEERING
ONSITE WASTEWATER SYSTEM DESIGN FLOWS SPREADSHEET
CLASS V INJECTION WELL
PROJECT: CUSTER/MT. RUSHMORE KOA CAMPGROUND
DATE: 8/15/2016

Based on Table 2 in Section 74:03:01:20 of the South Dakota Administrative Rules for Surface Water Quality.

FACILITY	SPACES	UNIT	NUMBER PER UNIT	FLOW, GALLONS/UNIT/DAY FLOW	FLOW, GALLONS/DAY FLOW	X1.5 <1,500gpd	1,125+.75Q >1,500gpd
FRONT SEPTIC SYSTEM							
Resort Cabins large(4)	9	PERSON	6	60	540		
Resort Cabins small(4)	7	PERSON	4	60	420		
Parks with central toilet & showers (5)	7	SPACE	4	75	525		
FRONT SYSTEM TOTAL DAILY FLOW					1485	2227.5	
BACK SEPTIC SYSTEM 4,500 GAL. TANK							
Travel Trailer Park, full hookup (1)	32	SPACE	1	100	3200		
Luxury Resort Camp (3)	4	PERSON	3	125	1500		
Parks with central toilet & showers (5)	8	SPACE	4	75	600		
Laundry, self service	4	WASHER	1	600	2400		
BACK SYSTEM TOTAL DAILY FLOW					7700		6900
BACK SEPTIC SYSTEM 3,500 GAL. TANK							
Travel Trailer Park, full hookup (1)	8	SPACE	1	100	800		
Travel Trailer Park, w/o full hookup (2)	16	SPACE	1	50	800		
Holding tank dump units in park(7)	56	TRAILER	1	18	1008		
Holding tank dump traveling unit (8)	1	TRAILER	1	100	100		
BACK SYSTEM TOTAL DAILY FLOW					2708		3156
COMBINED TOTAL DAILY FLOW					11893		

NOTES
1. Applied to travel trailers with full hookup units
2. Applied to travel trailers without hookups
3. Applied to Deluxe Cabins
4. Applied to cabins without bathrooms
5. Applied to tent sites
6. Applied to 4 washing machines
7. Based on 100 gal/unit X 1/2 X 1/2
8. Allowance for one dump by unit not staying in park.

TABLE 1

'COMB ENGINEERING
TE WASTEWATER SYSTEM DESIGN FLOWS SPREADSHEET
S V INJECTION WELL
JECT: CUSTER/MT. RUSHMORE KOA CAMPGROUND
E: 8/15/2016

UES BASED ON TABLE 3-6 IN EPA PUBLICATON ONSITE WASTEWATER TREATEMENT SYSTEMS MANUAL, FEB. 2002

LITY	SPACES	UNIT	NUMBER PER UNIT	FLOW, GALLONS/UNIT/DAY HIGH	LOW	TYPICAL	FLOW, GALLONS/DAY HIGH	LOW	TYPICAL	REQUIRED X 1.33 GALLONS	LESS EXISTING GALLONS
NT SEPTIC SYSTEM											
rt Cabins large(4)	9	PERSON	6	50	8	40	450	72	360		
rt Cabins small(4)	7	PERSON	4	50	8	40	350	56	280		
p, pioneer type(5)	7	PERSON	4	30	15	25	210	105	175		
NT SYSTEM TOTAL DAILY FLOW							1010	233	815	1083.95	
K SEPTIC SYSTEM 4,500 GAL. TANK											
LER CAMP(1)	32	TRAILER	1	150	75	125	4800	2400	4000		
ry, private bath(3)	4	PERSON	3	100	75	90	1200	900	1080		
p, pioneer type(5)	8	PERSON	4	30	15	25	240	120	200		
dry (self service) (6)	4	WASHER	1	650	450	550	2600	1800	2200		
K SEPTIC SYSTEM 4,500 GAL. TANK TOTAL DAILY FLOW							8840	5220	7480	9948.4	5448.4
K SYSTEM 3,500 GAL. TANK											
LER CAMP(1)	8	TRAILER	1	150	75	125	1200	600	1000		
ELOPED CAMPGROUND(2)	16	PERSON	3	40	20	30	1920	960	1440		
ing tank dump (7)	56	TRAILER	1	18	18	18	1008	1008	1008		
ing tank dump traveling unit (8)	1	TRAILER	1	100	100	100	100	100	100		
K SYSTEM 3,500 GAL. TANK TOTAL DAILY FLOW							4228	2668	3548	4718.84	1218.84
							14078	8121	11843		

ES
pplied to travel trailers with full hookup units
pplied to travel trailers without hookups
pplied to Deluxe Cabins
pplied to cabins without bathrooms
pplied to tent sites
pplied to 4 washing machines
ased on 100 gal/unit X 1/2 X 1/2
llowance for one dump by unit not staying in park.

TABLE 2

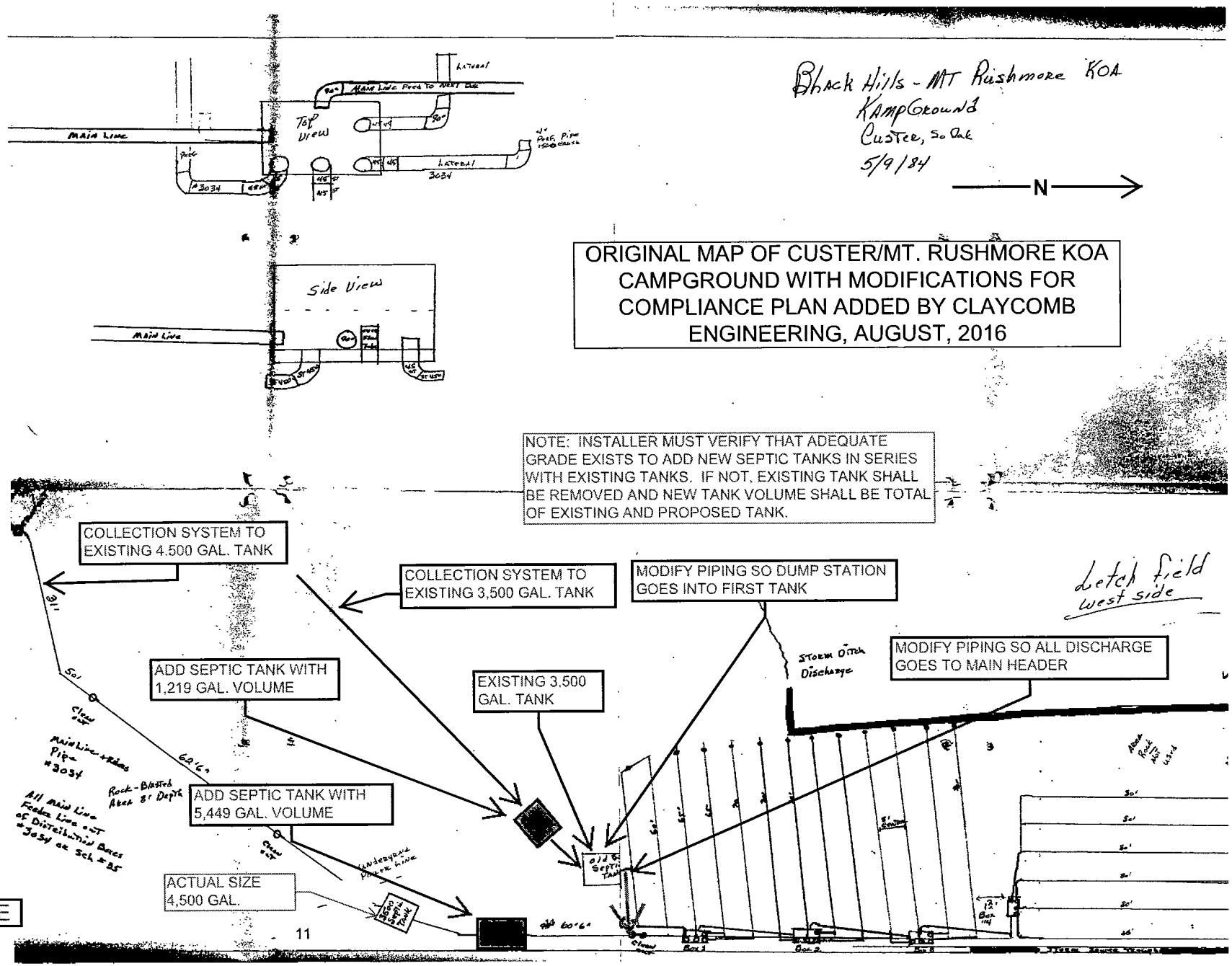
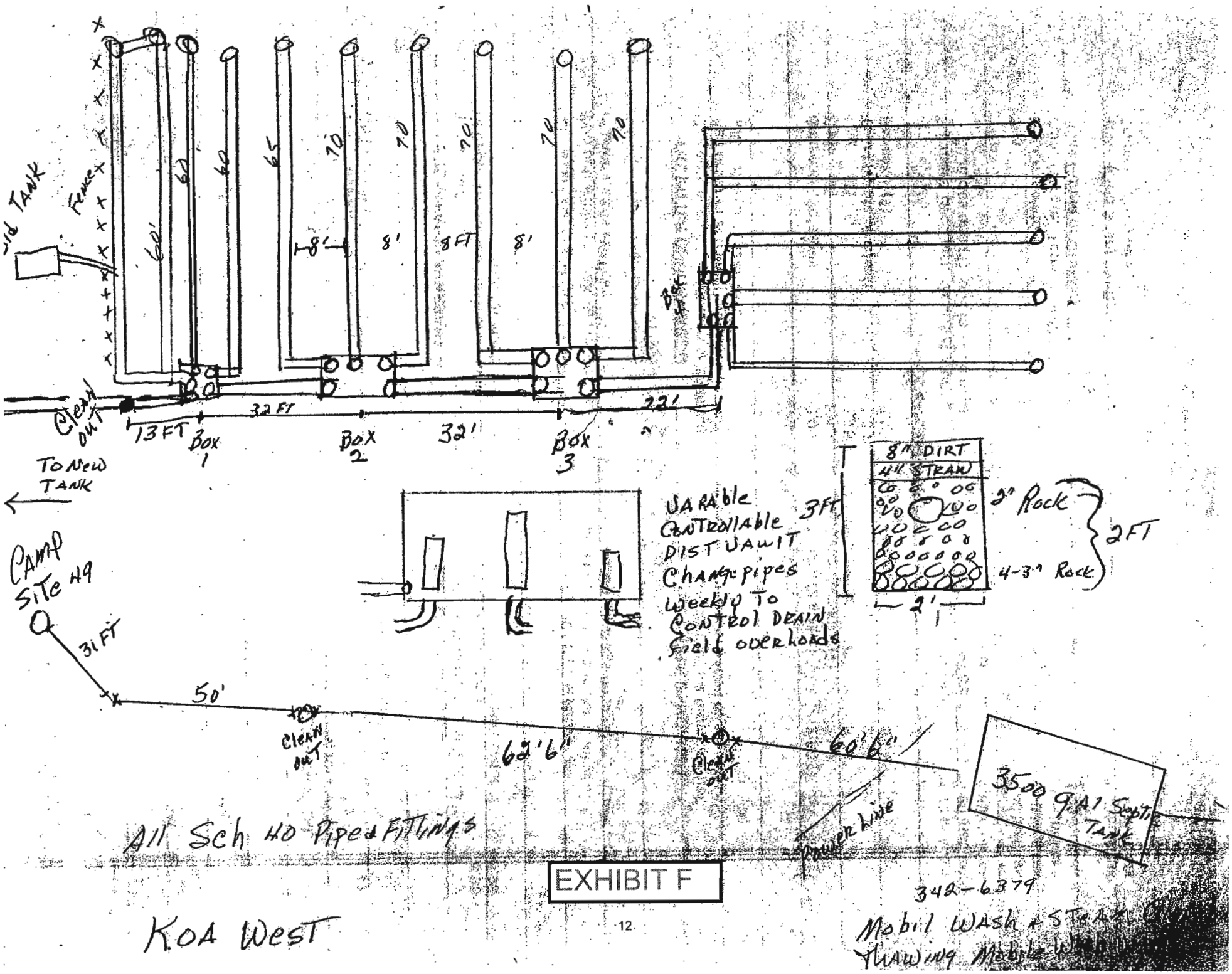
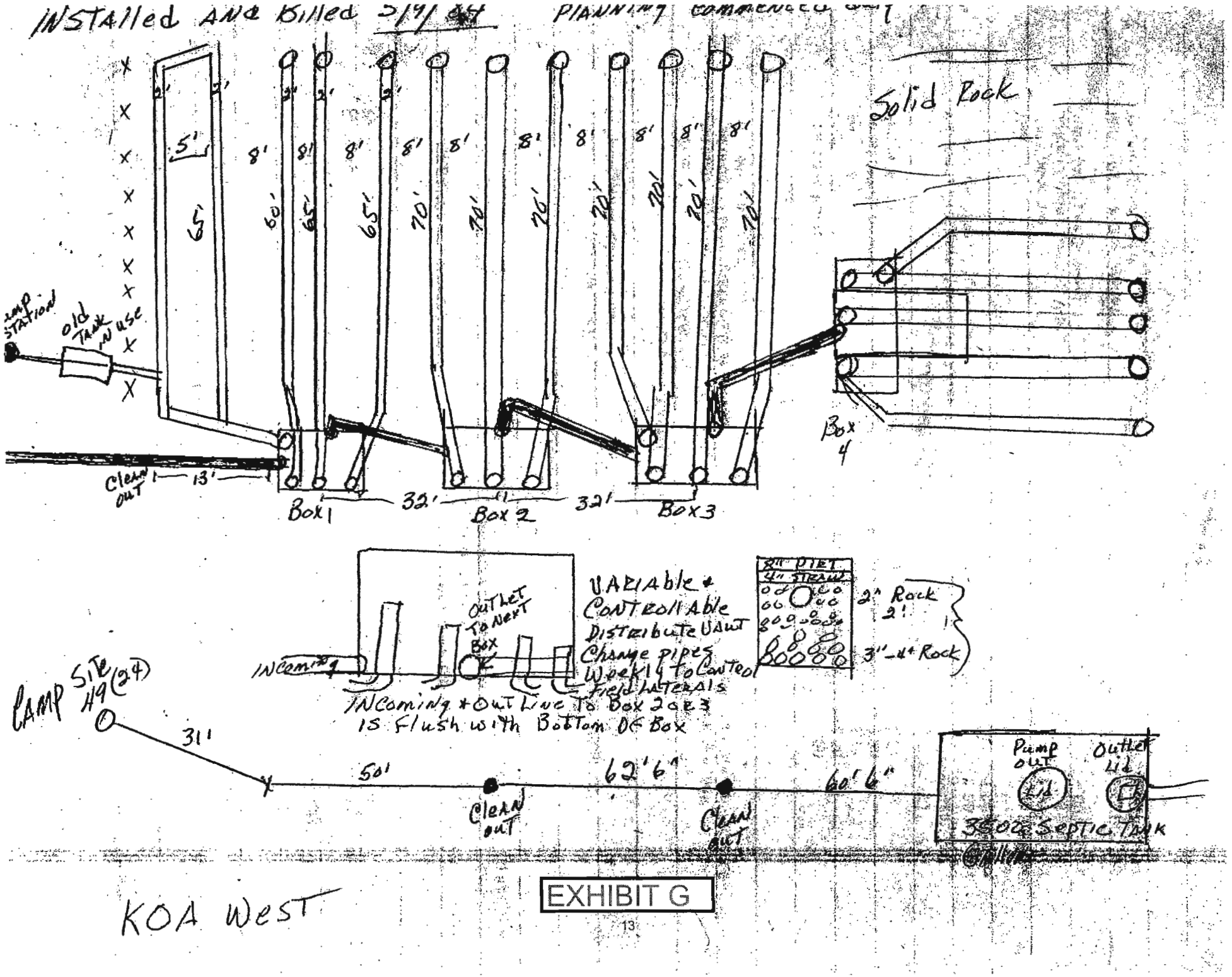

Black Hills - MT Rushmore KOA
Kampground
Custer, So Dak
5/9/84
N
Top View
Main Line
Lateral
3034
Side View
ORIGINAL MAP OF CUSTER/MT. RUSHMORE KOA CAMPGROUND WITH MODIFICATIONS FOR COMPLIANCE PLAN ADDED BY CLAYCOMB ENGINEERING, AUGUST, 2016
NOTE: INSTALLER MUST VERIFY THAT ADEQUATE GRADE EXISTS TO ADD NEW SEPTIC TANKS IN SERIES WITH EXISTING TANKS. IF NOT, EXISTING TANK SHALL BE REMOVED AND NEW TANK VOLUME SHALL BE TOTAL OF EXISTING AND PROPOSED TANK.
COLLECTION SYSTEM TO EXISTING 4,500 GAL. TANK
COLLECTION SYSTEM TO EXISTING 3,500 GAL. TANK
MODIFY PIPING SO DUMP STATION GOES INTO FIRST TANK
Leach field west side
ADD SEPTIC TANK WITH 1,219 GAL. VOLUME
EXISTING 3,500 GAL. TANK
Storm Ditch Discharge
MODIFY PIPING SO ALL DISCHARGE GOES TO MAIN HEADER
ADD SEPTIC TANK WITH 5,449 GAL. VOLUME
ACTUAL SIZE 4,500 GAL.
Old Septic Tank
Underground Power Line
Main Line - Plastic Pipe #3034
Rock - Blasted Area 8' Depth
All Main Line Feeder Line & T of Distribution Boxes #3034 or Sch #35
Clean out
60'6"
Box 1
Box 2

EXHIBIT E


Fence
60'
60'
60'
65'
70'
70'
70'
70'
70'
8'
8'
8FT
8'
Box 4
Clean Out
13FT
Box 1
32 FT
Box 2
32'
Box 3
22'
To New Tank
CAMP SITE 49
31 FT
50'
Clean Out
62'6"
Clean Out
60'6"
Power Line
3500 GAL Septic Tank
All Sch 40 Pipes Fittings
UARable
Controllable
Distuawit
Change pipes
weekly To
Control Drain
Field overloads
3FT
8" DIRT
4" STRAW
2" Rock
2FT
4-3" Rock
2'
EXHIBIT F
342-6379
Mobil Wash + Steam
Drawing Mobile Wash
KOA West



KOA West

EXHIBIT G

SECOND SUPPLEMENT TO
COMPLIANCE PLAN
CLASS V INJECTION WELL
WASTEWATER SYSTEM
CUSTER/MT. RUSHMORE KOA CAMPGROUND
PREPARED BY CLAYCOMB ENGINEERING
OCTOBER, 2016

This Supplement to the Compliance Plan addresses the points in an email from Britta Copt dated 10/6/16.

MONITORING PLAN

Samples of the effluent from each of the septic tanks that discharge into the disposal field monthly from May through September. These samples will be taken through the outlet inspection port of the septic tank. The septic tank outlet is separated from the interior of the tank by a baffle so that the sample taken from this point will be representative of the effluent flowing into the disposal field. Samples will be taken by a third party certified to take samples. A list of certified parties is attached. The samples will be delivered to a qualified testing laboratory such as Mid Continent Testing. The results of the tests will be sent to the EPA on a monthly basis. It is understood that EPA will notify us of the constituents that we will be sampling for and the method to be used for the analysis.

Drinking water well sample reports will also be sent to EPA on a monthly basis for the same time period.

The 15 inspection ports in the drain field will be checked each month for the presence of effluent. The results will be entered into the attached Monitoring Form. The entry will indicate if the port is dry or the depth of effluent when present. A copy of the Monitoring Form will be sent to EPA Monthly.

Enlargement of the disposal area would take place if the monitoring reveals that the disposal field has become saturated. A revised Compliance Plan detailing the enlargement of the disposal field would be filed at that time.

Elmer Claycomb

Digitally signed by Elmer Claycomb
DN: cn=Elmer Claycomb, o, ou, email=elclaycomb@goldenwest.net, c=US
Date: 2016.10.24 10:34:24 -06'00'

Certified Operator Listing

Clearwater Consulting & Water Management, LLC
Ed Striebel
7005 Timberline Rd
Black Hawk, SD 57718
Phone: (605) 787-5653
E-mail: estriebel@rap.midco.net

Sage Water Works
Al Sage
5310 Ebony Place
Piedmont, SD 57769
Phone: (605) 391-7483
E-mail: msagebrush@aol.com

Water Management Services
Ron Waterland
801 Glover St.
Sturgis, SD 57785
Phone: (605) 490-2065
E-mail: ronwaterland@rushmore.com

Pump & Well Work
Dan Work
23011 Radar Hill Road
Rapid City, SD 57701
Phone: (605) 393-1716

Jay's Water Service
Jay Chittim
P.O. Box 9662
Rapid City, SD 57709
Phone (605) 721-6529

Kyte Enterprises
Mike Kyte
1221 N. Main
Spearfish, SD 57783
Phone: (605) 642-4932

Frank Karas
5118 Airport Rd
Spearfish, SD 57783
Phone (605) 642-4285

Please mention Mid-Continent Testing when requesting services. Thank you!

MONITORING FORM
DRAINFIELD INSPECTION PORTS
CUSTER/MT. RUSHMORE KOA

Enter depth of effluent in inspection port in inches. 0 indicates dry or not enough depth to measure. Enter date of inspection next to month.

		INSPECTION PORT NUMBER														
YEAR	MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2017	MAY															
	JUNE															
	JULY															
	AUG															
	SEPT															
2018	MAY															
	JUNE															
	JULY															
	AUG															
	SEPT															
2019	MAY															
	JUNE															
	JULY															
	AUG															
	SEPT															

List of Constituents to be analyzed

All analytical testing must be done in a state certified laboratory to ensure that permit limits can be met

Metals

Parameter Name	Permit Limit (mg/L)	Standard Type	Analytical Methods
Antimony	0.006	MCL	EPA 200.8, 200.9
Arsenic	0.01	MCL	EPA 200.7, 200.8, 200.9
Barium	2	MCL	EPA 200.7, 200.8
Beryllium	0.004	MCL	EPA 200.7, 200.8, 200.9
Boron	6	HA-Lifetime	EPA 200.7, 212.3
Cadmium	0.005	MCL	EPA 200.7, 200.8, 200.9
Chromium(total)	0.1	MCL	EPA 200.7, 200.8, 200.9
Copper	1.3	MCL-TT	EPA 200.7, 200.8, 200.9
Iron	5	Region 8 Permit Limit	EPA 200.7, 200.9
Lead	0.015	MCL-TT	EPA 200.8, 200.9
Manganese	0.3	HA-Lifetime	EPA 200.7, 200.8, 200.9
Mercury (inorganic)	0.002	MCL	EPA 245.1, 245.2, 200.8
Molybdenum	0.04	HA-Lifetime	EPA 200.7, 246.1, 246.2
Nickel	0.1	HA-Lifetime	EPA 200.7, 200.8, 200.9
Selenium	0.05	MCL	EPA 200.8, 200.9
Silver	0.1	HA-Lifetime	EPA 200.7, 200.8, 200.9
Strontium	4	HA-Lifetime	EPA 272.1, 272.2, 200.7
Thallium	0.002	MCL	EPA 200.8, 200.9
Zinc	2	HA-Lifetime	EPA 200.7, 200.8

Inorganics

Parameter Name	Permit Limit	Standard Type	Analytical Methods
Ammonia	30 mg/L	HA-Lifetime	EPA 350.1, 350.2, 350.3
Asbestos (fibers/1>10µm in length)	7 million fibers/L	MCL	EPA 100.1,100.2
Cyanide	0. 2 mg/L	MCL	EPA 335.4
Fluoride	4 mg/L	MCL	EPA 300.0
Nitrate (as N)	10 mg/L	MCL	EPA 300.0
Nitrate-Nitrite (both as N)	10 mg/L	MCL	EPA 300.0
Nitrite (as N)	1 mg/L	MCL	EPA 300.0

Volatile Organics using EPA Method 524.2 or 8260

Parameter Name	CAS No	Permit Limit (mg/L)	Standard Type
1,1,1,2-Tetrachloroethane	630-20-6	0.07	HA-Lifetime
1,1,1-Trichloroethane	71-55-6	0.2	MCL
1,1,2,2-Tetrachloroethane	79-34-5	0.04	Region 8 Permit Limit 10^{-4} Cancer Risk
1,1,2-Trichloroethane	79-00-5	0.005	MCL
1,1-Dichloroethylene	75-35-4	0.007	MCL
1,2-(cis)Dichloroethylene	156-59-2	0.07	MCL
1,2-(trans)Dichloroethylene	156-60-5	0.1	MCL
1,2,3-Trichloropropane	96-18-4	0.02	Region 8 Permit Limit
1,2,4-Trichlorobenzene	120-82-1	0.07	MCL
1,2-Dibromomethane (Ethylene Dibromide EDB)	106-93-4	0.00005	MCL
1,2-Dichlorobenzene o-	95-50-1	0.6	MCL
1,2-Dichloroethane	107-06-2	0.005	MCL
1,2-Dichloropropane	78-87-5	0.005	MCL
1,3-Dichlorobenzene m-	541-73-1	0.6	HA-Lifetime
1,4-Dichlorobenzene p-	106-46-7	0.075	MCL
2-Chlorotoluene (o-)	95-49-8	0.1	HA-Lifetime
4-Chlorotoluene (p-)	106-43-4	0.1	HA-Lifetime
Acetone	67-64-1	6	Region 8 Permit Limit
Acrylonitrile	107-13-1	0.006	Region 8 Permit Limit 10^{-4} Cancer Risk
Benzene	71-43-2	0.005	MCL
Bromobenzene	108-86-1	0.06	HA-Lifetime
Bromochloromethane	74-97-5	0.09	HA-Lifetime
Bromodichloromethane (THM)	75-27-4	0.02	Region 8 Permit Limit
Bromoform (THM)	75-25-2	0.2	Region 8 Permit Limit
Bromomethane	74-83-9	0.01	HA-Lifetime

Parameter Name	CAS No	Permit Limit (mg/L)	Standard Type
Carbon tetrachloride	56-23-5	0.005	MCL
Chlorobenzene (Monochlorobenzene)	108-90-7	0.1	MCL
Chlorodibromomethane (Dibromochloromethane) (THM)	124-48-1	0.06	HA-Lifetime
Chloroform (THM)	67-66-3	0.07	HA-Lifetime
Chloromethane	74-87-3	0.4	10-day HA for a 10 kg child
Cyanogen Chloride (testing not needed if cyanide is present in source water and alkaline chlorination is used, pH 8.5)	506-77-4	0.4	Region 8 Permit Limit
Dichlorodifluoromethane	75-71-8	1	HA-Lifetime
Dichloromethane (Methylene chloride)	75-09-2	0.005	MCL
Ethylbenzene	100-41-4	0.7	MCL
Hexachlorobutadiene	87-68-3	0.002	Region 8 Permit Limit
Hexachloroethane	67-72-1	0.001	HA-Lifetime
Isopropylbenzene (cumene)	98-82-8	0.8	Region 8 Permit Limit
Methyl Ethyl Ketone	78-93-3	4	HA-Lifetime
Naphthalene	91-20-3	0.1	HA-Lifetime
Perchloroethylene (PCE) (Tetrachloroethylene)	127-18-4	0.005	MCL
Styrene	100-42-5	0.1	MCL
Toluene	108-88-3	1	MCL
Total Trihalomethanes		0.08	MCL
Trichloroethylene (TCE)	79-01-6	0.005	MCL
Trichlorofluoromethane	75-69-4	2	HA-Lifetime
Vinyl chloride	75-01-4	0.002	MCL
Total Xylenes	1330-20-7	10	MCL

Disinfectants and Disinfection Byproducts

Parameter Name	Permit Limit (mg/L)	Standard Type	Analytical Method
Bromate	0.01	MCL	EPA 317.0, Revision 2 321.8, 326.0
Chloramine (as free chlorine)	4	MCL	
Chlorine (free chlorine, combined)	4	MCL	Standard Methods 20th edition: 4500-Cl D 4500-Cl F 4500-Cl G 4500-Cl H
Chlorine dioxide	0.8	MCL	EPA 327, Revision 1 Standard Method 20th edition:

Parameter Name	Permit Limit (mg/L)	Standard Type	Analytical Method
			4500-ClO_2 D 4500-CLO_2 E
Chlorite	1.0	MCL	EPA 300.0, 300.1
Total Haloacetic Acids (HAA5s) Bromoacetic acid Dibromoacetic acid Dichloroacetic acid Monochloroacetic acid Trichloroacetic acid	0.06	MCL	EPA 552.3
Total Trihalomethanes (TTHMs) Chloroform Bromodichloromethane Dibromocloromethane Bromoform	0.08	MCL	EPA 502.2, 524.2
N-nitroso-dimethylamine (NDMA)	NA		EPA 521
N-nitroso-diethylamine (NDEA)	NA		EPA 521
N-nitroso-di-n-butylamine (NDBA)	NA		EPA 521
N-nitroso-di-n-propylamine (NDPA)	NA		EPA 521
N-nitroso-methylethylamine (NMEA)	NA		EPA 521
N-nitroso-pyrrolidine (NPYR)	NA		EPA 521

MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available analytical and treatment technologies and taking cost into consideration. MCLs are enforceable standards.

MCLG: Maximum Contaminant Level Goal. A non-enforceable health goal which is set at a level at which no known or anticipated adverse effect on the health of persons occurs and which allows an adequate margin of safety.

TT: Treatment Technique. A required process intended to reduce the level of a contaminant in drinking water.

HA: Health Advisory. An estimate of acceptable drinking water levels for a chemical substance based on health effects information; a Health Advisory is not a legally enforceable Federal standard, but serves as technical guidance to assist Federal, State, and local officials.

HA-Lifetime: The concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects for a lifetime of exposure. The Lifetime HA is based on exposure of a 70-kg adult consuming 2 liters of water per day. The Lifetime HA for Group C carcinogens includes an adjustment for possible carcinogenicity.

Region 8 Permit Limit: Permit limit calculated by Region 8 Drinking Water Toxicologist based on human health criteria.

10^{-4} Cancer Risk: The concentration of a chemical in drinking water corresponding to an excess estimated lifetime cancer risk of 1 in 10,000

HA-Ten Day: The concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects for up to ten days of exposure for a 10 kg child consuming 1 liter per day.