STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations
Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
Colleen Cripps, Ph.D., Administrator

FACT SHEET
(pursuant to NAC 445A.236)

Applicant: Truckee Meadows Water Reclamation Facility
Cities of Reno and Sparks
P.O. Box 857
Sparks, NV 89432

Contact Entity: City of Sparks

Permit Number: NV0020150

Location: Truckee Meadows Water Reclamation Facility
8500 Clean Water Way
Reno, NV 89502
Section 11, T19N, R20E MDB&M

Discharge Outfall: **Outfall 001:** Truckee River via Steamboat Creek
Latitude: 39° 31' 8.7" N **Longitude: 119° 42' 10" W**

General: The Permittee has applied for renewal of a National Pollutant Discharge Elimination System (NPDES) permit, NV0020150, to discharge tertiary treated municipal wastewater to the Truckee River via Steamboat Creek. The discharge point is approximately 0.1 mile upstream of the confluence of Steamboat Creek and the Truckee River. This facility serves the Cities of Reno and Sparks and portions of Washoe County.

The original plant first began operation in 1964. This permit was initially issued in December 1981 to the Reno-Sparks Joint Wastewater Treatment Facility. The permitted discharge limit is 44 million gallons per day (MGD), the current design capacity of the facility. The current facility is a biological nutrient removal (BNR) plant that utilizes nitrification/denitrification for nitrogen removal. Phosphorus is also removed in the BNR process. Treatment consists of bar screens, grit removal, primary sedimentation using clarifiers, activated sludge to remove biochemical oxygen demand and phosphorus, secondary clarification, nitrification trickling filters, denitrification fluidized sand beds, post aeration, gravity sand/anthracite filters, chlorination, and dechlorination with sodium bisulfite. This facility also includes a 4.4 million gallon flow equalization pond. Biosolids are anaerobically digested and centrifuged.

Existing process units and ancillary equipment have been retrofitted or upgraded to improve the treatment plant efficiency and to extend the life of the units. Major facility upgrades have included: construction of additional primary and secondary sedimentation tanks; a new primary sludge screening facility; an additional aeration tank; a new acid-phase digester with control building; a new ferric chloride and polymer facility; and improvements to the

odor control system. Additional project elements include: retrofit of existing primary sludge pumps with hose pumps; retrofit of existing aeration tanks with fine bubble diffusers; upgrade of existing blowers to single-stage motor driven blowers; and upgrades to the plant electrical and instrumentation system.

Reuse of treated effluent/reclaimed water and biosolids from this facility are authorized under separate State permits. The pretreatment program is authorized through the US Environmental Protection Agency.

In a previous renewal, a mixing zone was included in the permit for temperature and un-ionized ammonia as nitrogen. Per revision to the Nevada Administrative Code (NAC), the water quality criteria for Total Ammonia as N for all surface waters, including the Truckee River, was established. This mixing zone previously established for un-ionized ammonia as N was applied for Total Ammonia as N, with the limits on un-ionized ammonia removed. The zone of mixing is within the Truckee River reach directly below Steamboat Creek and was established such that the standards for these water quality parameters were relaxed within the zone of mixing, while not violating either the aesthetic or acute toxicity water quality values within the zone, or the Truckee River standards at the boundaries of the zone. Since the upstream Truckee River provided the highest quality water in the analysis, river low flow rates were selected for summer, 230 cubic feet per second (cfs), and winter, 480 cfs, conditions to minimize the dilution available in the zone of mixing. Based on two dye tests, complete mixing, at a discharge of 44.0 MGD, occurs just downstream of the third major bend in the river below Steamboat Creek, at a point approximately 3,800 feet downstream of Steamboat Creek. A zone of passage was established to allow passage of aquatic life in accordance with NAC 445A.299. Should the Permittee seek approval of a permit modification to increase the flow above the current 44.0 MGD limit, the Division will require a new mixing zone study to establish an appropriate mixing zone.

Corrective Actions Sites: There are three remediation sites administered by the Washoe County District Health Department (WCDHD) within one mile of the subject facility. The WCDHD has indicated that no significant impact on the remediation site activities is expected from the proposed discharge.

Well Head and Drinking Water Supply Protection: The facility is not within 6000' of a public water supply. A Wellhead Protection Area (WPA) has not been established for this area.

Receiving Water Characteristics: The Truckee River at the Lockwood Bridge, NAC 445A.187, standards apply to this stream segment. The listed beneficial uses of this segment include aquatic life, water contact recreation, wildlife propagation, irrigation, stock watering, municipal or domestic supply, industrial supply, and non-contact recreation.

During the period from January 1999 through October 2008, the following Nevada Division of Environmental Protection (NDEP) Bureau of Water Quality Planning (BWQP) monitoring data was reported.

Table 1. Truckee River Water Quality Monitoring Data (January 1999-December 2011)

Parameter	Requirement to Maintain Higher Quality	Beneficial Use Standard	Average Reported	Maximum Reported	Minimum Reported
Temperature (˚C)	ΔT=0	Nov-Mar: ≤13 Apr: ≤21 May: ≤22 Jun-Oct: ≤23 ΔT=2	11.05	22	1
Dissolved Oxygen (mg/l)	---	Nov-Mar: ≥6.0 Apr-Oct: ≥5.0	10.58	14.2	7.1
pH (S.U.)	7.1-8.5	6.5-9.0	7.87	8.8	6.8
Chloride (mg/l)	Annual Avg: 26.0 SV: 30.0	Single Value (SV): 250	18.95	73.6	4.5
Sulfate (mg/l)	Annual Avg: 39.0 SV: 46.0	Single Value: 250	19.81	79.4	5.2
Total Dissolved Solids (mg/l)	Annual Avg: 210 SV: 260	Annual Avg: 500	155.4	532	65
Total Suspended Solids (mg/l)	Annual Avg: 25	Single Value: 50	11.81	45.3	2
Turbidity (NTU)	---	Single Value: 10	4.84	32.4	1.01
Total Nitrogen (mg/l)	---	Annual Avg: 0.75 Single Value: 1.2	0.51	3.24	0.12
Nitrate as N (mg/l)	---	Single Value: 2.0	0.12	0.8	0.003
Total Phosphates as P (mg/l)	---	Annual Avg.: 0.05	0.075	0.56	0.003
Fecal Coliform (MPN/100 ml)	AGM: 90.00 SV: 300	200 / 400 [1]	30.03	600	<10
Escherichia coli (MPN/100 ml)	---	AGM: 126 SV: 410	30.57	738	<10

AGM: Annual Geometric Mean

1. Based on a minimum of not less than 5 samples taken over a 30 day period, the fecal coliform bacteria may not exceed a geometric mean of 200 MPN/100 ml, and no more than 10 percent of the total samples taken during any 30-day period may exceed 400 MPN per 100 ml.

Flow: The treatment system's maximum daily discharge will be permitted at 44.0 MGD.

Discharge Characteristics: The facility has a design capacity of 44.0 MGD. During the period from January 2004 through December 2011, the following selected discharge characteristics were reported in Discharge Monitoring Reports (DMRs):

Table 2. TMWRF Historical Water Quality Monitoring Data (January 2004-December 2011)

Parameters and Units		Permit Limit	Mean	Maximum	Minimum	Number of Exceedances
Flow, (MGD)	30-Day Average	44.0	28.1	32.4	24.2	0
	Daily Max	M&R	31.1	46.3	26.6	0
BOD_5, Uninhibited	30-Day Average	20 mg/l 7,339 ppd	3.66 770.8	7 1,606	<2 25	0 0
	Daily Max	30 mg/l 11,009 ppd	6.75 1411	17 3,460	<2 26	0 0
TSS	30-Day Average	20 mg/l 7,339 ppd	1.35 298	3 1,142	<1 10	0 0
	Daily Max	30 mg/l 11,009 ppd	3.28 769	13 3,436	<1 130	0 0
TDS	30-Day Average	M&R	80,119	125,377	57,078	NA
	Annual Average	120,168 ppd	80,063	89,340	74,206	0
	Daily Max	500 mg/l	407	492	341	0
Total Nitrogen Species –N (lbs/day)	30-Day Average May-Oct	500 or ∑IWLA <550	354.2	723	220	3
	Annual Average	500 or ∑IWLA <550	430.5	622	335	2
TKN –N (filtered) (mg/l)		M&R	2.21	6.5	1.18	NA
Nitrate – N (mg/l)		2.0	0.69	3.88	0.08	4
Total Ammonia –N (mg/l)	30-Day Average	NAC 445A.118 Calculation	0.28	2.4	<0.1	0
	Daily Max	NAC 445A.118 Calculation	1.13	6.53	<0.1	0
DON –N (mg/l)		M&R	1.54	5.12	1.06	NA
TP –P		0.40 mg/l 134 ppd	0.29 60.97	0.47 115	0.17 29.83	5 0
TRC (mg/L)		0.10	<0.1	<0.1	<0.1	0
Temperature (°C)		$\Delta T \leq 2$ °C	1.39	3.8	0.7	6
Fecal Coliform (MPN/100 ml)	30-Day Average	200	0.71	10	<1	0
	Daily Max	400	4.1	1414	<1	1
E. coli (MPN/100 ml)		410	4.35	1414	<1	1
DO (mg/L)		≥ 5.0	5.61	7.1	4	2
pH (S.U.)		$6.5 \leq pH \leq 9.0$	8.3	6.5	8.5	0

The facility has been in substantial compliance with permit limitations. There have been no exceedances of Total Nitrogen as N limits since June 2006. There have been no exceedances of Total Phosphorus as P limits since August 2007. There were no exceedances during 2011.

Total Maximum Daily Loads and Waste Load Allocations: Section 303 (d) (1) (C) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) shall be established at a level necessary to implement the applicable water quality standards. In February 1994, the Final Truckee River Total Maximum Daily Loads and Waste Load Allocations were adopted by the State. The Truckee River TMDL compliance point was set at Lockwood because the majority of controllable sources are upstream from this point. The April 1998 303 (d) List for the Truckee River Basin, East McCarran to Lockwood, lists existing TMDLs as total nitrogen (TN), total phosphorus (TP), and total dissolved solids (TDS) with the footnote "Planned flow augmentation, nonpoint source reduction, river restoration and water quality model enhancement may result in a revision to the existing TMDLs."

Total Nitrogen (TN): The Truckee River TN TMDL is 1,000 pounds per day (ppd).
The Permittee's TN individual waste load allocation (IWLA) is:

500 ppd	annual average*, and
500 ppd	30-day average (May through October)

Total Phosphorus (TP): The Truckee River TP TMDL is 214 ppd.
The Permittee's TP IWLA is: 134 ppd 30-day average

Total Dissolved Solids (TDS): The Truckee River TDS TMDL is 900,528 ppd.
The Permittee's TDS IWLA is: 120,168 ppd annual average*

*The annual average is calculated as the average of the 12 monthly average loads.

Proposed Discharge Limitations and Special Conditions: During the period beginning on the effective date of this permit and lasting until the permit expires, the Permittee is authorized to discharge from a single pipe located on the northeast side of the discharge structure, Outfall 001, into Steamboat Creek and subsequently the Truckee River.

a. Samples taken in compliance with the monitoring requirements specified below shall be taken at:
   i. The influent headworks weirs;
   ii. The end of the discharge pipe into Steamboat Creek (Outfall 001);
   iii. The downstream boundary of the zone of mixing, approximately 3,800 feet downstream of the confluence of Steamboat Creek and the Truckee River;
   iv. The East McCarran Bridge; and
   v. The Truckee River, approximately 300 feet east of the confluence with the North Truckee Drain.

b. The discharge shall be limited and monitored by the Permittee as specified in Table 3:

Table 3. Discharge Limitations, Sampling and Monitoring Requirements

Parameters	Units	Discharge Limitations			Monitoring Requirements		
		30-Day Average	Daily Max	30-Day Avg Load (ppd)	Sampling Locations	Monitoring Frequency	Monitoring Type
Influent Flow Rate	MGD	44.0	M&R	---	INF (i)	Continuous	Flow meter
Effluent Flow Rate	MGD	M&R	M&R	---	EFF (ii)	Continuous	Flow meter
BOD_5 (uninhibited)	mg/l	M&R	M&R	M&R	INF (i)	3 Times/ Week	Composite
		20	30	7,339 –avg 11,009 – daily max	EFF (ii)		
TSS	mg/l	M&R	M&R	M&R	INF (i)	3 Times/ Week	Composite
		20	30	7,339 –avg 11,009 – daily max	EFF (ii)		
TDS	mg/l	---	500	120,168 [1]	EFF (ii)	Weekly	Composite
TN as N	mg/l	---	---	500 [1]	EFF (ii)	Weekly	Composite
TKN as N	mg/l	M&R	M&R	---	EFF (ii)	Weekly	Composite [9]
Nitrate as N	mg/l	---	2.0	---	EFF (ii)	Daily	Composite
DON as N	mg/l	M&R	M&R	---	EFF (ii)	Weekly	Composite [9]
Total Ammonia as N	mg/l	---	I.A.1.c.2	---	EFF (ii)	Daily	Composite
		---	I.A.1.c.1	---	iii	Weekly [11]	Discrete
TP as P	mg/l	0.40	---	134 [1]	EFF (ii)	Daily	Composite
Alkalinity as $CaCO_3$ [3]	mg/l	M&R	M&R	---	EFF (ii)	Weekly	Composite [9]
Hardness as $CaCO_3$ [3]	mg/l	M&R	M&R	---	iv	Quarterly	Discrete
TRC	mg/l	---	0.10 [2]	---	EFF (ii)	Daily	Discrete
Temperature [4]	°C	M&R			iii, v	Weekly	Discrete
ΔT [4]		< 2.0 [10]					
Fecal Coliform	MPN/ 100ml	200 [5]	400 [6]	---	EFF (ii)	Daily	Discrete
Escherichia Coli	MPN/ 100ml	126 [8]	410	---	EFF (ii)	Daily	Discrete
DO	mg/l	---	≥ 5.0	---	EFF (ii)	Daily	Discrete
pH -SV	S.U.	---	6.5-9.0 [2]	---	EFF (ii)	Daily	Discrete
		M&R			iii	Weekly	
Priority Pollutants –Full Scan	µg/l	---	---	---	INF (i)	Annually (4th qtr)	Composite
Priority Pollutants – Present Pollutants	µg/l	---	[7]	---	EFF (ii)	Quarterly	Composite

Table 4. Tables 1, 2, and 3 Definitions and Footnote Explanations

Term/ Footnote	Definitions and Footnote Explanations
ppd	Pounds per day
MGD	Million gallons per day
M&R	Monitor and report
INF	Influent to treatment facility
EFF	Effluent; discharge from treatment facility at Outfall 001
BOD_5	5-day biological oxygen demand
mg/l	Milligrams per liter
TSS	Total suspended solids
TDS	Total dissolved solids
TN	Total nitrogen species
as N	As nitrogen
TKN	Total Kjeldahl nitrogen, filtered sample
DON	Dissolved organic nitrogen. If the Permittee does not request removal of DON from the WLA, the Permittee may request a minor modification to the permit to remove monitoring.
TP	Total phosphorus species
as P	As phosphorus
as $CaCO_3$	As calcium carbonate
TRC	Total residual chlorine
^oC	Degrees Celsius
ΔT	Delta T (change in temperature)
MPN	Most probable number
DO	Dissolved oxygen
SV	Single value
S.U.	Standard pH units
Priority Pollutants (Attachment A)	Full scan for pollutants listed in Attachment A. Metals shall be total recoverable. Attachment A may be modified by the Division as a minor modification to this permit.
Present Priority Pollutants	Monitor effluent quarterly for priority pollutants that exhibited detectable concentrations in the annual influent full scan.
IWLA	Individual Waste Load Allocations
μg/l	Micrograms per liter
Footnote 1	The limits for TN, TP, and TDS are based on IWLA (see Permit Part I.A.4).
Footnote 2	Except as allowed in Permit Part I.A.7.
Footnote 3	Background River water alkalinity, and hardness, shall be monitored at the East McCarran Bridge.
Footnote 4	River water temperature shall be monitored at iii and v. ΔT shall be calculated as the difference between the temperature readings at sampling locations iii and v.
Footnote 5	The fecal coliform level **may not** exceed a geometric mean of 200 MPN per 100 ml.
Footnote 6	A maximum of 10% of the total fecal coliform samples **may** exceed 400 MPN per 100 ml during any 30-day period, **without permit violation**.
Footnote 7	Exceedance of any of the NAC 445A.144 standards for toxic materials applicable to designated waters.
Footnote 8	Annual geometric mean.
Footnote 9	Seven-day, 24-hour flow weighted composite.

Footnote 10	Not considered an exceedance if the downstream water temperature does not exceed the water quality standards for beneficial uses set forth in NAC 445A.187.
Footnote 11	Comply with Ammonia calculations and reporting requirements outlined below.

Ammonia Calculations and Reporting Requirements (Footnote 11):

Report the calculated limit and the analytical result. For each sample event, formula terms contained in 1 and 2 below shall have the following meaning: ***pH and temperature are field measurements that must be taken at the same time and location as the water sample destined for the laboratory analysis of ammonia.***

1. The chronic criteria of water quality with regard to the concentration of total ammonia are subject to the following:

   (a) The facility discharge Monthly chronic concentration of total ammonia, in milligrams of nitrogen per liter, shall be calculated by the NAC 445A.118 Table 2 chronic concentration **by value from table matrix of temperature and pH or by formula for the 30-Day average** for each discharge sample event as follows:

$$\left[\frac{0.0577}{1+10^{7.688-pH}}\right]+\left[\frac{2.487}{1+10^{pH-7.688}}\right] x\, MIN\ [2.85,\ 1.45\ x\ 10^{0.028\,x\,(25-T)}]$$

   where: MIN = lesser of comma separated values; T = temp. ^{o}C; x = multiply

   (b) The concentration of total ammonia, in milligrams of nitrogen per liter, expressed as a 30-day average must not exceed the applicable chronic criterion as calculated more than once every 3 years on average and the highest 4-day average within the 30-day period must not exceed 2.5 times the applicable chronic criterion.

   Measurement frequency of once per 30-day (Monthly) is an acceptable indicator for evaluating total ammonia chronic criterion and may be used in reporting to demonstrate compliance of discharge event calculated limit. However, if a sample analysis exceeds the allowed calculated chronic limit in part (a), the **measurement frequency** must be increased to a minimum of 4 consecutive days within the 30-day period so that chronic criterion part (b) can be applied for determining permit compliance.

2. The acute criteria for water quality with regard to the concentration of total ammonia are subject to the following:

   (a) The facility discharge Daily Maximum acute concentration of total ammonia, in milligrams of nitrogen per liter, for **cold water fisheries** shall be calculated by the NAC 445A.118 Table 1 acute concentration by **value from table matrix of pH and fishery water type or by formula for the 1-hour average** for each sample event as follows: $\left[\frac{0.275}{1+10^{7.204-pH}}\right]+\left[\frac{39.0}{1+10^{pH-7.204}}\right]$

   (b) The concentration of total ammonia, in milligrams of nitrogen per liter, must not exceed the applicable acute criterion as calculated more than once every 3 years on average.

Measurement frequency for evaluating total ammonia acute criterion as daily maximum shall utilize the same **measurement frequency** required for that of evaluating the chronic criteria of water quality defined in Part 1 above. The total ammonia concentration determined by laboratory analysis for each sample event shall be compared to the same event's calculated acute criterion limit.

Biosolids: If Biosolids are land applied for beneficial reuse, the Permittee shall comply with the following: Biosolids shall be sampled at the discharge of the cake pumps. The biosolids shall be limited and monitored by the Permittee as specified in Table 5.

Table 5. Biosolids Limitations and Monitoring Requirements

Parameters and Units	Limitations		Monitoring Requirements	
	Pollutant Concentrations	Ceiling Concentrations	Frequency	Sample Type
Arsenic (mg/kg)	41	75	1/60 days	Representative [1]
Cadmium (mg/kg)	39	85	1/60 days	Representative [1]
Chromium (mg/kg)	1200	3000	1/60 days	Representative [1]
Copper (mg/kg)	1500	4300	1/60 days	Representative [1]
Lead (mg/kg)	300	840	1/60 days	Representative [1]
Mercury (mg/kg)	17	57	1/60 days	Representative [1]
Molybdenum (mg/kg)	---	75	1/60 days	Representative [1]
Nickel (mg/kg)	420	420	1/60 days	Representative [1]
Selenium (mg/kg)	36	100	1/60 days	Representative [1]
Zinc (mg/kg)	2800	7500	1/60 days	Representative [1]
Organic Nitrogen as N (mg/kg)	Monitor and Report		1/60 days	Representative [1]
Ammonia as N (mg/kg)	Monitor and Report		1/60 days	Representative [1]
Nitrate as N (mg/kg)	Monitor and Report		1/60 days	Representative [1]
Total Nitrogen as N (mg/kg)	Monitor and Report		1/60 days	Representative [1]
Total Phosphorus as P (mg/kg)	Monitor and Report		1/60 days	Representative [1]
Potassium as K (mg/kg)	Monitor and Report		1/60 days	Representative [1]
Pathogen Reduction	15 days at 35 to 60° C		1/60 days	Operations Log [2]
Vector Attractant Reduction	38% Volatile Solids Reduction		1/60 days	Calculated [3]

TABLE 5 NOTES:
1. A representative sample consists of a dry weight grab sample.
2. Provide brief information from the Operations log as support.
3. Per "Environmental Regulations and Technology--Control of Pathogens and Vector Attraction in Sewage Sludge" EPA-625/R-92/013.

mg/kg: milligrams per kilogram, dry weight basis.
as K: as potassium.

a. The Permittee shall ensure that all biosolids generated at the facility shall be used or disposed of in compliance with the applicable sections of the following regulations whether the Permittee uses or disposes of the biosolids or transfers them to another party for further treatment, use, or disposal. Regulations applicable for the proper treatment, handling, or disposal of biosolids include:

i. 40 CFR 503: for non-hazardous biosolids that are land applied, placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated;

ii. 40 CFR 258: for biosolids disposed in municipal solid waste landfills as approved by the Administrator and the County;

iii. 40 CFR 257: for all biosolids use and disposal practices not covered under 40 CFR 258 or 503; and

iv. 40 CFR 261: for hazardous biosolids or 40 CFR 761 for biosolids with a polychlorinated biphenyl (PCB) concentration greater than 50 milligrams per kilogram (mg/kg).

b. The Permittee is responsible for informing any person or entity that prepares, applies, or disposes of biosolids of the requirement to comply with the applicable regulations listed in Parts I.A.1 and I.A.25.

c. If biosolids are stored at any facility for over two (2) years from the time they are generated, the Permittee shall notify the Division within 30 days and shall ensure compliance with all requirements of surface disposal set forth in 40 CFR 503, Subpart C. Otherwise, the Permittee must submit a written notification to the Division and the EPA providing the information required in 40 CFR 503.20 (b) and demonstrating the need for longer temporary storage.

d. Biosolids treatment, storage, or disposal facilities shall be designed to divert stormwater run-on accommodating conditions representing a 100-year storm event, including engineering controls designed to prevent any erosion which could cause biosolids to discharge (run-off) from the facility.

e. The Permittee shall ensure that transporters of biosolids use all necessary measures to contain biosolids material during transport.

f. Biosolids shall be characterized annually pursuant to 40 CFR 261 to determine if they are hazardous.

g. The Permittee shall comply with the following notification requirements either directly or through contractual arrangements with a biosolids management contractor:

i. If biosolids are shipped to another state or to Indian territories, the Permittee shall send notice of the shipment to the appropriate state permitting authority(ies), the collaborating EPA Regional office, and/or the Indian authority(ies) with jurisdiction over the receiving location; and

ii. For land application of biosolids, the Permittee must notify the Division 180 days prior to shipment to enable the receiving site to obtain a permit.

Stream and River Monitoring: The Permittee shall actively participate in an overall watershed monitoring program and is responsible to support the plan listed as Permit Attachment B (**TMWRF Stream and River Monitoring Plan**). Upon coordination with the signatories of the Memorandum of Understanding for the Development and Maintenance of the Truckee River Coordinated Monitoring Program, adopted in June 2009, and with Division approval, this plan may be adjusted as a minor permit modification. A summary of stream and monitoring data collected during each calendar year

shall be submitted to the Division by **June 1st** of the year following data collection, as required in Permit Part I.B.2.vi.

Rationale for Permit Requirements: The Permittee is proposing to continue to discharge treated domestic and industrial wastewater that meets all Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, at the treatment plant outfall (001), except for Total Nitrogen and Temperature. The applicable Total Nitrogen and Temperature standards will be achieved at the downgradient boundary of the zone of mixing. Monitoring is required to assess the level of treatment being provided and to determine when design capacity is being approached. The basic limits for secondary treatment are included.

Influent Flow: The influent flow rate limitation is based on the design capacity of the Truckee Meadows Water Reclamation Facility.

Effluent flow: Effluent flow is monitored to calculate the mass of TDS, TN, and TP discharged to the river for TMDL compliance. The mass of BOD_5 and TSS discharged are also monitored.

Biochemical Oxygen Demand, 5-day (BOD_5): The uninhibited effluent BOD_5 limits of 20 mg/L and 30 mg/L for the 30-day average and the daily maximum, respectively, are based on the design criteria of the facility. The proposed permit limits are retained from the previous permit. The State requires any discharge to waters of the State to achieve a minimum of secondary treatment as nationally defined with the exception that the maximum limitation is to be met as a daily maximum rather than a 7-day average. Based on DMR data submitted from January 2004 through December 2011, the BOD_5 permit limit was not exceeded.

The influent uninhibited BOD_5 concentrations are monitored to determine the plant's treatment efficiency. The plant has been designed to remove 99% of the influent BOD_5.

Total Suspended Solids: The effluent TSS limitations are based on the design performance standards of the facility. The proposed permit limits are retained from the previous permit. Based on DMR data submitted from January 2004 through December 2011, the TSS permit limit was not exceeded.

The influent TSS concentration is monitored to determine the plant's treatment efficiency. The plant has been designed to remove 95% of the influent TSS.

Total Dissolved Solids (TDS): The TDS limitations are based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses, and the Permittee's IWLA, as discussed in the Quantities section of this fact sheet. The daily maximum, 500 mg/L, is the annual average limitation with municipal or domestic supply as the most restrictive use. Based on DMR data submitted from January 2004 through December 2011, the TDS permit limit (annual average) was not exceeded.

Total Nitrogen Species as N: The TN species as nitrogen limitation is based on the Permittee's IWLA, as discussed in the Quantities section of this fact sheet. The Permittee's IWLA is more restrictive than the Truckee River water quality standard for beneficial uses (NAC 445A.187); therefore, the only TN limitation included in the permit is the IWLA. The proposed permit limit is retained from the previous permit.

Total Kjeldahl Nitrogen (TKN) as N: TKN as nitrogen, filtered, is used to quantify the dissolved organic nitrogen, less ammonia, in the effluent. The proposed permit requirement to monitor and

report TKN is retained from the previous permit.

Nitrate as N: The nitrate as nitrogen limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187. The daily maximum, 2.0 mg/L, is the nitrate single value limitation for aquatic life, the most restrictive beneficial use. During the period from January 2004 through December 2011, the permit limit was exceeded four times. Process changes have reduced the frequency of exceedances, and the last exceedance was in July 2009. The average of the effluent nitrate concentrations reported in the DMRs is 0.69 mg/L. The proposed permit limit is retained from the previous permit.

Total Ammonia as N: The total ammonia as nitrogen limitation is based on NAC 445A.118. The 30-Day Average and the Daily Maximum limits listed are the chronic and acute limits, respectively, for cold water fisheries where fish in early stages of life are present. The 30 day average Total Ammonia reported in DMRs ranged from <0.1 mg/L to 2.4 mg/L. The Daily Maximum reported ranged from <0.1 to 6.53 mg/L, with an average of 1.13 mg/L. The proposed permit limit is retained from the previous permit.

Dissolved Organic Nitrogen as N (DON): In the previous permit, the DON as nitrogen was monitored weekly without limitations because the Permittee was conducting a study to determine the effect of DON on their IWLA. If the Permittee decides to discontinue the study, the permit requirement to monitor DON may be removed from the permit at the Permittee's request as a minor modification.

Total Phosphorus as P: The Total Phosphorus as phosphorus limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses, with aquatic life and water contact recreation as the most restrictive beneficial uses, and the Permittee's IWLA, as discussed in the Quantities section of this fact sheet. The concentration limit was exceeded five times during the period from January 2004 through December 2011, with the last exceedance occurring in August 2007. However, the Permittee's IWLA was not exceeded. The proposed permit limit is retained from the previous permit.

Total Phosphates as P: The monitoring of total phosphates as phosphorus has been retained from the previous permit.

Alkalinity as $CaCO_3$: Weekly monitoring without effluent limitations of the alkalinity as calcium carbonate has been carried over from the previous permit. The Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, include a water quality standard for beneficial uses of less than 25% change from natural conditions that has not been incorporated into the permit.

Hardness as $CaCO_3$: Hardness as calcium carbonate has been added to the permit monitored parameters because the aquatic life standards, NAC 445A.144, for cadmium, chromium, copper, lead, silver, and zinc are a function of the hardness. The proposed monitoring requirement has been retained from the previous permit.

Total Chlorine Residual: The treated effluent is disinfected with chlorine, and is then de-chlorinated with sodium bisulfite. Total chlorine residual is monitored to verify that the free chlorine has been removed to a level below the analytical detection limit, thereby protecting aquatic life. The total chlorine residual permit limit of 0.10 mg/L has been retained from the previous permit.

Temperature: The temperature limitation on the discharge is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, with aquatic life as the most restrictive

beneficial use. The temperature is to be monitored at a discharge of 44.0 MGD, at the downstream boundary of the zone of mixing, approximately 3,800 feet downstream of the confluence of Steamboat Creek and the Truckee River , and at a point approximately 300 feet east of the confluence of the North Truckee Drain and the Truckee River.

During the period from January 2004 through December 2011, the change in temperature (ΔT) limit of 2°C was exceeded 5 times; the highest ΔT reported was 3.8. The proposed permit limit is retained from the previous permit.

Fecal Coliform: The fecal coliform limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, water quality standards for beneficial uses with water contact recreation as the most restrictive beneficial use. During the period from January 2004 through December 2011, the fecal coliform limit was exceeded one time. The proposed permit limit is retained from the previous permit.

Escherichia Coli: The permit E. coli limit is based on the Truckee River E. coli water quality standard, as listed in NAC 445A.187. During the period from January 2004 through December 2011, the E. coli limit was exceeded once. The proposed permit limit is retained from the previous permit.

Dissolved Oxygen: The dissolved oxygen limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, with aquatic life as the most restrictive beneficial use. The single value limitation for April through October is 5.0 mg/L. This value has been applied to the discharge year round. The average of the effluent dissolved oxygen concentration reported in the DMRs was 5.6 mg/L. The permit limit was not met on two occasions. The proposed permit limit is retained from the previous permit.

pH: The 30-day average pH limitation is based on the Truckee River at Lockwood Bridge, Standards of Water Quality, NAC 445A.187, with water contact recreation and wildlife propagation as the most restrictive beneficial uses. During the period from January 2004 through December 2011, the permit limit was not violated. The proposed permit limit is retained from the previous permit.

Priority Pollutants, Full Scan: Annual influent and effluent analyses are required for the Attachment A list of priority pollutants, as required by the federal pretreatment regulations. There will be no effluent limitations included in the permit for the toxic constituents of Attachment A – Priority Pollutants but the Permittee will continue to monitor these pollutants using laboratory methods that obtain quantified data at or below one-half the water quality standards with the exception of mercury.

Present Priority Pollutants: Influent and effluent samples must be analyzed quarterly for those pollutants detected in the annual influent full scan, as required by the federal pretreatment regulations.

Biosolids: Biosolids to be land applied as beneficial soil amendments are monitored by the Permittee to verify that the biosolids meet pollutant limits, and the nutrient content of the applied biosolids are accounted. All biosolids to be land applied must meet the ceiling concentrations for each of the ten metals listed in the biosolids permit table. Biosolids applied to the land must also meet pollutant concentration limits, cumulative pollutant loading rate limits, or annual pollutant loading rate limits for these same ten metals. Nutrient concentrations are monitored to determine the agronomic application rate. 40 CFR Part 503 requires pathogen and vector attraction reduction for land applied biosolids.

All biosolids must be managed and/or monitored as prescribed in appropriate sections of 40 CFR:

i. 40 CFR 503: for non-hazardous biosolids that are land applied, placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated;

ii. 40 CFR 258: for biosolids disposed in municipal solid waste landfills as approved by the Administrator and the County;

iii. 40 CFR 257: for all biosolids use and disposal practices not covered under 40 CFR 258 or 503; and

iv. 40 CFR 261: for hazardous biosolids or 40 CFR 761 for biosolids with a polychlorinated biphenyl (PCB) concentration greater than 50 milligrams per kilogram (mg/kg).

The Permittee is responsible for providing biosolids land appliers the required characterization of the biosolids and for preventing the land application of biosolids that exceed the ceiling concentrations. The land appliers are permitted separately and are responsible for land application of biosolids at rates that do not exceed the agronomic rates, based on data provided by the Permittee.

Treatment Efficiency – Part I.A.2: The minimum design BOD_5 and TSS removal efficiency for a secondary treatment plant is 85%. This advanced treatment plant is designed to remove 99% of the BOD_5 and 95% of the TSS from the influent. The proposed permit requirement is retained from the previous permit.

Waste Load Allocations - Part I.A.3: The waste load allocations section allows discharge flexibility among the Permittee, the City of Sparks – Sparks Marina Park, NV0022918, and Vista Canyon Group LLC, NV0020893. The individual Permittees have first rights to their assigned IWLA. Any remaining allocation may be shared by the dischargers. No discharger shall be penalized for the IWLA violations of the other discharges. Similar transfer language has been incorporated into the Marina Park and Vista Canyon permits. The proposed permit limits based on IWLA have been retained from the previous permit.

Stream and River Monitoring Plan: The Stream and River Monitoring Plan defines proposed off-site stream monitoring. Upon coordination with the signatories of the Memorandum of Understanding for the Development and Maintenance of the Truckee River Coordinated Monitoring Program, adopted in June 2009, and with Division approval, this plan may be adjusted as a minor permit modification. A summary of stream and monitoring data collected during each calendar year shall be submitted to the Division by **June 1st** of the year following data collection.

Water Quality Offset Projects – Part I.A.5**:** The Division may modify the permit, without further public notice, to include specific water quality offset projects based upon review of the results of scientific studies. Water quality offsets entail the reduction in a pollutant load through implementation of a water quality management project that is credited towards the Permittee's IWLA, thereby increasing the Permittee's allowable discharge load for a specific pollutant. Potential water quality offset opportunities include, but are not limited to: water augmentation, river restoration, septic system conversion, and stormwater management practices. These potential water quality management projects will be evaluated as to their effectiveness through watershed/water quality modeling simulations, field pilot studies and on-going water quality monitoring. Based on the results of the model simulations and pilot projects, the permit may be modified to incorporate the Permittee's increased IWLA(s).

A three-phase approach will be taken in implementing a water quality offset program and in incorporating specific trades, or offsets, into the permit:

a. Phase I involves the inclusion of this permit reopener clause allowing for consideration of potential water quality trades on a case-by-case basis without reopening other provisions of the permit.

b. Phase II involves the development of proposals to evaluate demonstration projects to substantiate the benefits of specific water quality offset project proposals for presentation to the Division by the Permittee. Components of the proposal will include: the demonstration project description, calculated pollutant reductions, an assessment of potential water quality benefits, and an implementation plan. Upon concurrence by the Division, the Permittee will proceed with the implementation plan, including conducting watershed and water quality model simulations to evaluate the water quality impacts of the proposed project under various receiving water conditions. The proposal will include monitoring program requirements to demonstrate the effectiveness of the proposed trades and determinations of standards of adequacy. Upon agreement of the proposal by the Division and the Permittee, the demonstration project shall be implemented and results monitored. A Water Quality Management Demonstration Project Report (Report) summarizing the findings, conclusions and recommendations of the demonstration project analysis must be submitted to the Division. Based on the conclusions reached in the Report, and with the consensus of the Division, a decision will be made on whether to proceed with full implementation of the project.

Proof of non-point source reductions implemented subsequent to the effective date of the permit may also be included in project proposals.

c. Phase III involves the full implementation of the water quality management project, and the development of the final trade ratio. The full implementation of the water quality management scenarios will also include consideration of the timing of adoption of appropriate increases in the applicable WLAs. This is anticipated to include the development of a "phase-in" schedule for credits and the development of applicable monitoring and enforcement provisions. The "phase-in" schedule for credits will be developed to provide for time to implement the project and to demonstrate the anticipated water quality benefits.

Seasonal Discharge – Part I.A.6: During the term of this permit, the Division may review and adjust, if appropriate, the Truckee River TMDL. A seasonal WLA is one of the TMDL modifications the Permittee has requested that the Division consider. A TMDL revision will require public input, therefore, it will not be necessary to obtain public comment regarding the incorporation of any TMDL revision into the individual permits. This proposed permit provision is retained from the previous permit.

Chlorine Residual and pH Effluent – Part I.A.7: The permit allows short-term exceedances to give the Permittee time to respond to values beyond the discharge limitations. The guidelines cited in 40 CFR Part 401.17 for pH will be followed in interpreting compliance with chlorine residual and pH limits for facilities that monitor more frequently than is required in the discharge permit. This proposed permit provision is retained from the previous permit.

Zone of Passage – Part I.A.19: Per NAC 445A.299, stream-mixing zones in which the standards for water quality may be exceeded must be designed to ensure that a zone of passage is maintained.

The allowable stream-mixing zone must be oriented in the stream in a manner which permits the greatest effectiveness of the zone of passage. This proposed permit provision is retained from the previous permit.

Whole Effluent Toxicity (WET) – Part I.A.27: WET protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degrees of response of exposed aquatic test organisms to an effluent. This permit requires both acute and chronic toxicity testing. During the period from January 2004 through December 2011, the WET indicated no effluent toxicity. This proposed permit provision is retained, with revisions, from the previous permit.

Pretreatment of Industrial Wastewaters – Part I.A.28: This section requires the Permittee to comply with an approved pretreatment program. This program requires the Permittee to cause industrial users to be subject to Federal Categorical Standards, 40 CFR Part 403. This proposed permit provision is retained from the previous permit.

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance:

- The Permittee shall achieve compliance with the discharge limitations upon issuance of the permit.

- By **MM DD, 2012,** the Permittee shall submit to the Division for review and approval a revised Operations and Maintenance (O&M) Manual, compiled in accordance with Division guidance document WTS-2, "*Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant*". The revised O&M Manual shall also include an updated emergency notification plan.

- The Permittee shall submit reports illustrating compliance or noncompliance with specified compliance dates no later than 14 days of any respective, scheduled compliance date.

Proposed Determination: The Division has made the tentative determination to issue the proposed permit for a period of five (5) years.

Procedures for Public Comment: The Notice of the Division's intent to issue a new NPDES permit for a five-year period, authorizing this facility to discharge to the Truckee River via Steamboat Creek, subject to the conditions contained within the permit, is being sent to the **Reno Gazette Journal** and to the **Sparks Tribune** for publication. The Notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **April 30, 2012 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Jeryl R. Gardner, P.E.
Date: March 2012

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