

FACT SHEET AND STATEMENT OF BASIS
SPRINGVILLE CITY WASTEWATER TREATMENT PLANT FACILITY NAME
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & STORM WATER
UPDES PERMIT NUMBER: UT0020834
UPDES BIOSOLIDS PERMIT NUMBER: UTL-020834
UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR020834
MAJOR MUNICIPAL

FACILITY CONTACTS

Person Name	Position
Juan Garrido	Wastewater Treatment & Sewer Department Superintendent
Thad Monsen	Wastewater Plant Manager
Brad Stapley	Public Works Director

Facility Name:	Springville City Wastewater Treatment Plant
Mailing and Facility Address:	110 South Main Street Springville, Utah 84663
Telephone:	(801) 489-2745
Actual Address:	110 South Main Street

DESCRIPTION OF FACILITY

The population of Springville is about 33,000 people. Over the past 15 to 20 years Springville has been changing from a small town community to a suburban bedroom community to the Provo/Orem area about 55 miles south of the Salt Lake City area.

Nestle' USA-Food Division, Inc., contributes a significant portion of the wastewater flow to the plant and is located just inside the city limits on the north side of Springville. About 30% of the total flow is from Nestle', however, Nestle' contributes about 50% of the total organic loading to the plant. Due to the high percentage of loading coming from Nestle', the wastewater surcharge required of Nestle' has contributed financially to the construction of some of the treatment units operating at the plant.

Historically, after the Nestle' facility (the building is labeled with Stouffers, Stouffer is the food corporation of Nestle') was built (1985), the Springville wastewater treatment plant experienced severe problems with a grease load. Early on, the city constructed 2 dissolved air floatation (DAF) units to pretreat and remove the grease from the trunk line coming from Nestle'. About 15 years ago the city leased the pretreatment facilities to Nestle', and currently Nestle' operates and maintains the facilities (located within the boundaries of the wastewater treatment plant property).

Wastewater comes to the treatment plant from 2 trunk lines, one from Nestle' and the other is the City's main sewer trunk line. The Nestle' trunk line is treated with the two dissolved air floatation (DAF) units (350 gpm; with overflow rate 1 MGD), after which it goes directly to a roughing tower and then to a primary clarifier, bypassing the headwork's. Effluent from the roughing tower mixes with effluent from the primary clarifiers in the pump station to continue to be treated in the system. The plant operator can route the Nestle' flow through the headworks and primary clarifier, but they have chosen not to because of odor problems when it has been routed that way in the past. The roughing tower has counter current ventilation with blowers, plastic media (plastic blocks with square tunnels running diagonally top to

bottom). Engineering specifications indicate it is capable of a 1 MGD flow and 8,340 lbs/day of BOD. The roughing tower takes only the waste stream from Nestle', unless Nestle' is shutdown. When the flow from Nestle' is interrupted the operator routes wastewater from the main sewer trunk line coming from the City to the roughing tower to keep the biologically active film alive until the waste stream from Nestle' resumes.

Under normal operating conditions, wastewater from the City's main sewer trunk line goes directly to the headworks for screening and grit removal, and on to the primary clarifiers. Effluent from the clarifiers goes to the pump station where it mixes with effluent from the roughing tower and is sent to the trickling filters and through a snail trap before returning to the pump station and being pumped back to the activated sludge/aerator basins. Effluent from the basins is split between three secondary clarifiers; effluent from there goes to the granular filters, then ultra violet disinfection and is discharged.

Solids from the secondary clarifiers are sent back to the primary clarifiers, solids from the newest and largest clarifier (#1) can also be routed to the belt press and in the future through a sludge thickener. Solids from the primary clarifiers are routed to the primary digester (#3), then secondary (#2) and then final digester (#1). From the final digester the solids are dewatered in belt presses and processed through composting for distribution. Press-ate from the filter presses and decant from digesters can be sent back to the primary clarifiers, or it can be sent to the roughing tower.

The headworks consist of a 36" Palmer-Bowlus flume, fine bar screens and an aerated grit chamber (detention time 7.6 minutes at 7.0 MGD). The primary clarifiers are circular that, combined, have a 4.0 hours detention time at 5.2 MGD with a weir loading of 10,358 gal/ft/day. The trickling filters are counter current (without blowers) with plastic media the same as the roughing tower. Trickling filter #1 is somewhat smaller than trickling filter #2. Together they can handle 6,200 lbs/day of BOD. There are three secondary clarifiers (varying in size), all circular with a total detention time of 3.2 hours at 5.2 MGD, and a weir loading of 7,704 gal/ft/day.

Solids (sludge) are treated in an anaerobic digester that operates with a 56 days detention period. The sludge is dewatered with a belt press. The sludge is composted and then sold to the public as a soil amendment.

The discharge outfall is located approximately a ¼ mile northwest of the treatment plant in a manhole (latitude of 40°10'45.8" and a longitude 111°37'28.8"), with outfall STORET Number 499628.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

1. WLA Model

A new model is used by Water Quality to develop a waste load allocation (WLA) for dischargers to Waters of the State. Since the permit was first issued, Water Quality has managed to acquire more data on the receiving stream. The greater volume of data and the use of the new model have combined to change the possible water quality based effluent limits (WQBEL) from the WLA. Two of the parameters impacted by this change are the WQBEL for ammonia and total residual chlorine (TRC).

2. RP

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. The results of the RP Analysis are included in Attachment 3 of the FSSOB. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at Water Quality.

3. TBPEL Rule

Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. The TBPEL rule as it relates to "non-lagoon" wastewater treatment plants establishes new regulations for the discharge of phosphorus to surface waters and is self-implementing. The TBPEL rule includes the following requirements for non-lagoon wastewater treatment plants:

The TBPEL requires that all non-lagoon wastewater treatment works discharging wastewater to surface waters of the state shall provide treatment processes which will produce effluent less than or equal to an annual mean of 1.0 mg/L for total phosphorus. This TBPEL shall be achieved by January 1, 2020.

The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring of the following beginning July 1, 2015:

- R317-1-3.3, D, 1 Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;
- R317-1-3.3, D, 2. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (as N);

In R317-1-3.3, D, 3 the rule states that all monitoring shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

Coming into full compliance with the TBPEL rule will take some time and planning. Springville requested and was granted a Variance to the compliance deadline for the rule. Springville must remain in compliance with the Variance as approved. A copy of the Variance is included in Attachment 3 at the end of this FSSOB.

DISCHARGE

DESCRIPTION OF DISCHARGE

The discharge flows into an unnamed ditch, which flows to Little Spring Creek, which flows to Spring Creek, thence to Utah Lake.

Outfall

Description of Discharge Point

001

The discharge is located approximately a ¼ mile northwest of the treatment plant in a manhole in the middle of the road where South Pasture Road turns into Spring Creek Place at a right angle turn in the road. Latitude 40° 10' 45.8" Longitude 111° 37' 28.8" (NAD 1983).

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into an unnamed ditch, which flows to Little Spring Creek, which flows to Spring Creek, thence to Utah Lake. The unnamed ditch is Class 4; Little Spring Creek is Class 2B, 3D, and 4; Spring Creek is Class 2B, 3B, and 4; and Utah Lake is Class 2B, 3B, 3D, and 4 (*Utah Administrative Code "UAC" R317-2-13*). A waste load analysis (WLA) was developed (attached in the addendum) at the point of discharge for Little Spring Creek, considering limits protecting the following classes:

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily

- contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.
- Class 3B -- Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 3D -- Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.
- Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD5), *E. coli*, pH and percent removal for BOD5 and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The limits for ammonia and dissolved oxygen are derived from the wasteload analysis. The oil and grease is based on best professional judgment (BPJ). Attached is a Wasteload Analysis for this discharge into the unnamed irrigation ditch. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required

A quantitative RP analysis was performed on cyanide to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis cyanide did not exceeded the most stringent chronic water quality standard and was determined to not have a reasonable potential to exceed the standard. A copy of the RP analysis is included at the end of this Fact Sheet.

The permit limitations are:

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Annual Average	Daily Minimum	Daily Maximum
Total Flow	6.6	-	-	-	-
BOD ₅ , mg/L	25	35	-	-	-
BOD ₅ Min. % Removal	85	-	-	-	-
TSS, mg/L	25	35	-	-	-
TSS Min. % Removal	85	-	-	-	-
Dissolved Oxygen, mg/L	-	-	-	5.0	-
Total Ammonia (as N), mg/L	1.8	-	-	-	8
<i>E. coli</i> , No./100mL	126	157	-	-	-
WET, Chronic Biomonitoring ²	-	-	-	-	IC ₂₅ > 83% effluent

¹ See Definitions, Part VIII, for definition of terms.

² The Chronic WET must pass with an IC25 of > 83% effluent. If chronic toxicity occurs that might be or is believed to be due to an acute toxicity failure, then the facility may be required to test for acute toxicity. This acute testing will be done in a manner dictated by the Director. Monitoring for Chronic WET is quarterly, but the test may

Parameter	Effluent Limitations ¹				
	Maximum Monthly Avg	Maximum Weekly Avg	Annual Average	Daily Minimum	Daily Maximum
Oil & Grease, mg/L	-	-	-	-	10.0
pH, Standard Units	-	-	-	6.5	9
TBPEL Rule Limit ³					
Interim Limit Total Phosphorous, mg/L	-	-	4.0	-	-
Final Limit ⁴ Total Phosphorous, mg/L	-	-	1.0	-	-

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are the same as in the previous permit. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements ⁵			
Parameter	Frequency	Sample Type	Units
Total Flow ^{6, 7}	Continuous	Recorder	MGD
BOD ₅ , Influent ⁸	2 Times Weekly	Composite	mg/L
Effluent	2 Times Weekly	Composite	mg/L
TSS, Influent ⁸	2 Times Weekly	Composite	mg/L
Effluent	2 Times Weekly	Composite	mg/L
<i>E. coli</i>	2 Times Weekly	Grab	No./100mL
pH	2 Times Weekly	Grab	SU
Total Ammonia (as N)	2 Times Weekly	Composite	mg/L
DO	2 Times Weekly	Grab	mg/L
WET – Biomonitoring ⁹			
Chronic	Quarterly	Composite	Pass/Fail
Oil & Grease ¹⁰	Monthly	Grab/Visual	mg/L
Metals, Influent	Quarterly	Composite/Grab	mg/L
Effluent	Quarterly	Composite/Grab	mg/L

be performed on one species if the testing species are alternated each quarter using Ceriodaphnia dubia one quarter and Pimephales promelas (fathead minnow) the next quarter.

³ TBPEL of 4.0 mg/L goes into effect on January 1, 2020

⁴ The final phosphorus limit goes into effect at the end of the current variance on March 1, 2021, or when the extensions have concluded.

⁵ See Definitions, Part VIII, for definition of terms.

⁶ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

⁷ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

⁸ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

⁹ The chronic Ceriodaphnia will be tested during the 2nd and 4th quarters, and the chronic fathead minnows will be tested during the 1st and 3rd quarters

¹⁰ Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

Self-Monitoring and Reporting Requirements ⁵			
Parameter	Frequency	Sample Type	Units
Organic Toxics, Influent Effluent	Yearly	Grab	mg/L
	Yearly	Grab	mg/L
TBPEL Rule Monitoring ¹¹			
Total Ammonia, Effluent	Monthly	Composite	mg/L
Orthophosphate, (as P) Effluent	Monthly	Composite	mg/L
Phosphorus, Total Influent Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) Influent Effluent	Monthly	Composite	mg/L
	Monthly	Composite	mg/L
Nitrate, NO ₃	Monthly	Composite	mg/L
Nitrite, NO ₂	Monthly	Composite	mg/L

BIOSOLIDS

For clarification purposes, sewage sludge is considered solids, until treatment or testing shows that the solids are safe, and meet beneficial use standards. After the solids are tested or treated, the solids are then known as biosolids. Class A biosolids, may be used for high public contact sites, such as home lawns and gardens, parks, or playing fields, etc. Class B biosolids may be used for low public contact sites, such as farms, rangeland, or reclamation sites, etc.

DESCRIPTION OF TREATMENT AND DISPOSAL

Solids from the secondary clarifiers are sent back to the primary clarifiers, solids from the newest and largest clarifier (#1) can also be routed to the belt press and in the future through a sludge thickener. Solids from the primary clarifiers are routed to the primary digester (#3), then secondary (#2) and then final digester (#1). From the final digester the solids are dewatered in belt presses and processed through composting for distribution.

The solids (sewage sludge) at Springville are stabilized in an anaerobic digester that operates with a 56 days detention period, and dewatered with a belt press. The dewatered solids are mixed with green waste and wood chips, then formed into windrows and composted to meet Class A biosolids composting requirements. After the composting process, the windrows are left to cure for odor reduction for an additional 60-90 days.

During the term of the 2007 permit, Springville added a 2 meter belt press for dewatering and started using the old drying beds for various other activities including decanting storm water and sanitary sewer cleaning operation wastes as well and providing a placed to dewater of other liquid wastes and street cleaning operations.

Springville submitted their 2018 annual biosolids report on February 19, 2019. The report states the Permittee produced 999 dry metric tons (DMT) of solids.

¹¹ These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

Biosolids are processed using the Gore Covered Composting System, which is an In-Vessel Aerated Static Pile (IASP) windrow method to meet Class A biosolids requirements. The piles are maintained at minimum operating temperatures of 55° C (131° F) for at least three (3) days. Piles typically exceed the three (3) day temperature requirements. After leaving the IASP process, which is typically six (6) to eight (8) weeks, the composted solids are moved to curing piles for an additional eight (8) to twenty-four (24) weeks until no odor is present and final screening occurs. All composted material is tested for Salmonella in accordance to 503 Regulations.

The last biosolids inspection conducted at the Springville facility was July 2, 2019. The inspection showed that facility was in compliance with all aspects of the biosolids management program.

SELF-MONITORING REQUIREMENTS

Under *40 CFR 503.16(a)(1)*, the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

Springville has disposed of, on average, 1132 DMT of biosolids over the past 10 years, therefore they need to sample at least four times a year.

Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*).

BIOSOLIDS LIMITATIONS

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use

The intent of the heavy metals regulations of Table 3, *40 CFR 503.13* is to ensure the heavy metals do not build up in the soil in home lawn and gardens to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C.* of the permit) to made available to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions of the information sheet are followed to any reasonable degree, the Class A biosolids will be able to be land applied year after year, to the same lawns and garden plots without any deleterious effects to the environment. The information sheet must be provided to the public, because the permittee is not required, nor able to track the quantity of Class A biosolids that are land applied to home lawns and gardens.

Class A Requirements With Regards to Heavy Metals

If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum heavy metals in Table 1 and the monthly average pollutant concentrations in Table 3 (see Table 1 and Table 3 below). If the biosolids do not meet these requirements, the biosolids cannot be sold or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of 40 CFR 503.13 is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see Part III. C. of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the permittee, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of 40 CFR 503.13, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

The maximum heavy metals listed in 40 CFR Part 503.13(b) Table 1 and the heavy metals loading rates in 40 CFR Part 503.13(b) Table 2; or

The maximum heavy metals in 40 CFR Part 503.13(b) Table 1 and the monthly heavy metals concentrations in 40 CFR Part 503.13(b) Table 3.

Tables 1, 2, and 3 of Heavy Metal Limitations

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits, (mg/kg)	CPLR ¹² , (mg/ha)	Pollutant Conc. Limits, (mg/kg)	APLR ¹³ , (mg/ha-yr)
Total Arsenic	75	41	41	41
Total Cadmium	85	39	39	39
Total Copper	4300	1500	1500	1500
Total Lead	840	300	300	300
Total Mercury	57	17	17	17
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	420
Total Selenium	100	100	100	100
Total Zinc	7500	2800	2800	2800

Any violation of these limitations shall be reported in accordance with the requirements of Part III.F.1. of the permit .If the biosolids do not meet these requirements they cannot be land applied.

Pathogens

The Pathogen Control class listed in the table below must be met;

¹² CPLR -- Cumulative Pollutant Loading Rate

¹³ APLR – Annual Pollutant Loading Rate

Pathogen Control Class	
503.32 (a)(1) - (5), (7),-(8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN ¹⁴ per four (4) grams total solids (DWB) ¹⁵ or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU ¹⁶ per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB),	
And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB)	
And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	

Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids. The Springville will achieve PFRP through a method of composting.

1. Windrow Method- Using the windrow method of composting, the temperature needs to be maintained at 55 °C (131 °F) or higher for fifteen days, with a minimum of five turnings during those fifteen days,

This composting method is found under (40 CFR 503.32(a)(8)(ii)).

The practice of sale or giveaway to the public is an acceptable use of biosolids of this quality as long as the biosolids continue to meet Class A standards with respect to pathogens. If the biosolids do not meet Class A pathogen standards the biosolids cannot be sold or given away to the public, and the permittee will need find another method of beneficial use or disposal.

Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). Springville has indicated the PSRP is to be accomplished through one the following methods:

1. Under 40 CFR 503.32 (b)(2), Springville may test the biosolids and must meet a microbiological limit of less than 2,000,000 MPN or CFU of fecal coliform per gram for the biosolids to be considered Class B biosolids with respect to pathogens.

¹⁴ MPN – Most Probable Number

¹⁵ DWB – Dry Weight Basis.

¹⁶ CFU – Colony Forming Units

2. Under *40 CFR 503.32 (b)(3)* The PSRP may be accomplished through anaerobic digestion that has a minimum retention time of 15 days at 35° to 55°C (95° to 131° F) or 60 days at 20°C (68° F).
3. Under *40 CFR 503.32 (b)(3)* the PSRP may be accomplished through composting. To achieve this, the temperature must be above 40° C (104° F) or higher, and remain at 40° C or higher for a minimum of five days. For four hours, during the five days, the temperature needs to exceed 55° C (131° F).

Vector Attraction Reduction (VAR)

If the biosolids are land applied Springville will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. The Springville intends to meet the vector attraction reduction requirements through the method listed below.

1. Under *40 CFR 503.33(b)(5)* the solids need treated through composting with a temperature of 40° C (104° F) or higher for at least 14 days with an average temperature of over 45° C (113° F).

If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

If the permittee intends to use another one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

Landfill Monitoring

Under *40 CFR 258*, the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill (*40 CFR 258.28(c)(1)*).

Record Keeping

The record keeping requirements from *40 CFR 503.17* are included under *Part III.G.* of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the metals limits of *Table 3* of *40 CFR 503.13*, and are sold or given away the records must be retained for a minimum of five years. If the biosolids are disposed in a landfill the records must retained for a minimum of five years.

Reporting

Springville must report annually as required in *40 CFR 503.18*. This report is to include the results of all monitoring performed in accordance with *Part III.B* of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

MONITORING DATA

METALS MONITORING DATA

The Springville was required to sample for metals at least four times in annually during the previous permit cycle. Springville sampled the biosolids four (4) times a year. All biosolids from 2008 to 2018 met *Table 3* of *40 CFR 503.13*, therefore the biosolids produced at Springville qualify as EQ with regards to metals. The monitoring data is below.

Springville Metals Monitoring Data 2008 to 2018

Springville Metals Monitoring Data			
Parameter	Table 3, mg/kg (Exceptional Quality)	10 Year Average, mg/kg	10 Year Maximum, mg/kg
Arsenic	41.0	6.3	13.8
Cadmium	39.0	1.1	2
Copper	1,500.0	175	412
Lead	300.0	16.1	27.9
Mercury	17.0	0.7	1.8
Molybdenum	75.0	3.3	6.5
Nickel	400.0	11.2	50.7
Selenium	36.0	8.4	99
Zinc	2,800.0	463.5	1050

PATHOGEN MONITORING DATA

The Springville was required to monitor the biosolids for pathogens at least four times a year during the previous permit cycle. The Springville had the choice to sample for *fecal coliform* or *salmonella*, and chose *fecal coliform*. Each monitoring episode consisted of seven samples taken over 14 days, for a total 28 samples a year. The monitoring data is below.

Springville Compost *Fecal Coliform* Monitoring Data

Year	Compost	
	Maximum Annual <i>Fecal Coliform</i> , MPN/gram	Maximum Geomean <i>Fecal Coliform</i> , MPN/gram
2018	2424	41
2017	711	126
2016	5108	118
2015	78	15
2014	750	41
2013	160	45
2012	915	25
2011	234	15
2010	248	67
2009	22	11
2009 - 2018	5108	126

During 2016 and 2018 some results from the *fecal coliform* samples came back above the limit of 1000 MPN/gram. A review of the sample results show that only one sample in 2018 and three samples in 2016 came back above the limit. The results were;

Sample	2018				2016			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
1	<10	25	<10	<10	58	483	<10	188
2	<10	55	<10	<10	250	<10	<10	<10
3	<10	31	<10	<10	L.E.	61	<10	2747
4	<10	489	<10	<10	237	2774	<10	33
5	68	<10	2424	<10	38	68	<10	<10
6	<10	<10	<10	<10	237	<10	<10	<10
7	<10	396	<10	<10	<10	L.E.	<10	39

Sample	2018				2016			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
8					<10	5108		
9						14		

A review of the data and consultation with Springville indicates that the biosolids compost was allowed to further compost and was included with the biosolids being composted in the following quarter. During the following quarter, all samples passed the pathogen monitoring limits. Thus all compost distributed met the Class A Pathogen Requirements.

STORM WATER

STORMWATER REQUIREMENTS

Storm water provisions are included in this combined UPDES permit.

The storm water requirements are based on the UPDES Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, General Permit No. UTR000000 (MSGP). All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Elements of this plan are required to include:

1. The development of a pollution prevention team,
2. Development of drainage maps and materials stockpiles,
3. An inventory of exposed materials,
4. Spill reporting and response procedures,
5. A preventative maintenance program,
6. Employee training,
7. Certification that storm water discharges are not mixed with non-storm water discharges,
8. Compliance site evaluations and potential pollutant source identification, and
9. Visual examinations of storm water discharges.

PRETREATMENT REQUIREMENTS

The permittee administers an approved pretreatment program for Springville City. Any changes to the program must be submitted to the Division of Water Quality, per the requirements of *UAC R317-8-8*. Authority to require a pretreatment program is provided for in *19-5-108 UCA, 1953 ann.* and *UAC R317-8-8*.

The permittee will be required to perform an annual evaluation to determine the need to revise or develop technically based local limits to implement the general and specific prohibitions of *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, or that they must be revised. As part of this evaluation, the permit requires influent and effluent monitoring for metals and organic toxics monitoring listed in *UAC R317-8-7.5* and sludge monitoring for potential pollutants listed in *40 CFR 503*.

Metals analysis must utilize a minimum detection limit to ensure that the metals are not above

the allowable levels determined by the wasteload analysis for the receiving stream, see Part II.H. of the permit. If a test is not available, then the lowest test available must be used, see Part II of permit for additional requirements.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

Since the permittee is a major municipal discharger, the permit will require whole effluent toxicity (WET) testing. Chronic toxicity testing will be conducted using both species, alternating *Ceriodaphnia dubia* quarterly and *Pimephales promelas* (fathead minnow) quarterly. The permit will contain the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary. The IC25 will be > 83% total effluent. The permit will contain the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by
Daniel Griffin, Discharge, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Michael George, Storm Water
Ken Hoffman, Reasonable Potential Analysis
Nick von Stackelberg/Dave Wham, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: Month Day, Year

Ended: Month Day, Year

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Noticed of the draft permit was published in the (NEWSPAPER OF RECORD FOR AREA).

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

Responsiveness Summary

(Explain any comments received and response sent. Actual letters can be referenced, but not required to be included).

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ATTACHMENT 1

Effluent Monitoring Data

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Effluent Monitoring Data.

Month	Flow		pH		O & G	TRC	<i>E. coli</i>		BOD5		TSS	
	Ave	Max	Min	Max	Max	Max	Acute	Chronic	Ave	Max	Ave	Max
Jan-13	18.8	20.2	7.5	7.7	1.7	1.2	10	6	5	6	7	8
Feb-13	21.3	22.9	7.6	7.7	1.7	1.1	13	8	7	9	7	7
Mar-13	24.3	28.6	7.5	7.7	1.7	1.1	11	9	17	21	7	9
Apr-13	20.2	21.2	7.5	7.7	1.7	1.2	20	12	19	21	7	8
May-13	21.4	25.5	7.4	7.6	1.7	1.3	9	7	18	21	10	11
Jun-13	20.5	22.1	7.5	7.7	1.4	1	12	7	18	21	11	14
Jul-13	20.2	22.3	7.4	7.7	1.4	1.3	10	8	10	11	14	16
Aug-13	19.6	20.8	7.5	7.6	1.4	1.2	13	7	8	10	8	9
Sep-13	20	21.8	7.6	7.8	1.4	1.1	78	15	11	12	8	9
Oct-13	17.9	19	7.5	7.7	1.7	0.9	11	8	9	11	8	8
Nov-13	17.2	18.1	7.5	7.7	1.7	0.9	10	8	9	10	8	10
Dec-13	17.2	20.4	7.2	7.6	1.4	1.2	10	12	9	10	10	18
Jan-14	17.5	19.9	7.3	7.5	1.4	0.8	29	6	7	8	8	9
Feb-14	20.3	22.6	7.4	7.6	1.4	1	43	19	8	10	8	8
Mar-14	20.8	27.4	7.4	7.7	1.7	1	30	10	7	8	9	10
Apr-14	19.1	21.2	7.4	7.6	1.4	1.5	8	6	8	9	9	10
May-14	20.2	22.7	7.4	7.5	1.4	1.3	9	6	7	9	8	10
Jun-14	20.6	23	7.5	7.6	1.4	1	16	8	8	10	8	9
Jul-14	20.5	22.3	7.5	7.8	1.4	1.5	10	7	9	10	12	13
Aug-14	21	21.9	7.6	7.7	1.2	1.3	17	14	8	9	9	10
Sep-14	20.2	23.2	7.5	7.7	1.4	1.1	12	8	7	8	8	13
Oct-14	18.2	20.9	7.5	7.6	1.4	1.1	7	5	6	8	9	10
Nov-14	16.6	17.7	7.4	7.6	1.4	1.7	8	6	7	9	14	23
Dec-14	16.9	19.3	7.4	8.9	1.4	1.2	34	8	6	10	11	23
Jan-15	18.1	19.8	7.5	7.6	1.4	0.9	10	6	7	8	10	11
Feb-15	17.8	18.7	7.3	7.5	1.4	1	7	6	5	6	9	10
Mar-15	17.6	18.6	7.3	7.5	1.4	1.3	5	5	5	6	7	8
Apr-15	18.1	22.3	7.2	7.6	1.4	1	7	6	7	8	11	11
May-15	22.5	31.9	7.5	7.6	2	1.1	10	6	7	9	13	16
Jun-15	20.2	22.5	7.5	7.6	1.6	1.3	8	6	6	6	9	10
Jul-15	19.7	21.8	7.5	7.7	1.4	1.5	12	9	5	6	11	11
Aug-15	20.7	22.6	7.5	7.7	1.4	1.1	9	5	5	6	7	13
Sep-15	20.1	23.5	7.6	7.7	1.4	1.1	7	5	5	6	8	10
Oct-15	18.1	20.3	7.5	7.6	1.4	1	12	8	5	6	11	13
Nov-15	16.9	18.3	7.1	7.6	1.4	1.3	11	8	4	6	6	7
Dec-15	18.1	21.6	7.4	7.6	2.63	0.9	8	5	7	8	8	8

WET Results

Month	WET Test	Pass / Fail
Mar-13	48Hr Acute Ceriodaphnia	Pass
Mar-13	96Hr Acute Pimephales Promelas	NA
Jun-13	48Hr Acute Ceriodaphnia	NA
Jun-13	96Hr Acute Pimephales Promelas	Pass
Sep-13	48Hr Acute Ceriodaphnia	Pass
Sep-13	96Hr Acute Pimephales Promelas	NA
Dec-13	48Hr Acute Ceriodaphnia	NA
Dec-13	96Hr Acute Pimephales Promelas	Pass
Mar-14	48Hr Acute Ceriodaphnia	Pass
Mar-14	96Hr Acute Pimephales Promelas	NA
Jun-14	48Hr Acute Ceriodaphnia	Pass
Jun-14	96Hr Acute Pimephales Promelas	NA
Sep-14	48Hr Acute Ceriodaphnia	Pass
Sep-14	96Hr Acute Pimephales Promelas	NA
Dec-14	48Hr Acute Ceriodaphnia	NA
Dec-14	96Hr Acute Pimephales Promelas	Pass
Mar-15	48Hr Acute Ceriodaphnia	Pass
Mar-15	96Hr Acute Pimephales Promelas	NA
Jun-15	48Hr Acute Ceriodaphnia	NA
Jun-15	96Hr Acute Pimephales Promelas	Pass
Sep-15	48Hr Acute Ceriodaphnia	Pass
Sep-15	96Hr Acute Pimephales Promelas	NA
Dec-15	48Hr Acute Ceriodaphnia	NA
Dec-15	96Hr Acute Pimephales Promelas	Pass

ATTACHMENT 2

*Wasteload Analysis
and
Spring Creek QUAL2Kw Calibration Report*

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ATTACHMENT 3

TBPEL Rule Variance

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ATTACHMENT 4

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis¹⁷. They are;

- Outcome A: A new effluent limitation will be placed in the permit.
- Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
- Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
- Outcome D: No limitation or routine monitoring requirements are in the permit.

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at one of the metals is needed. A copy of the initial screening is included in the “Effluent Metals and RP Screening Results” table in this attachment. The initial screening check for metals showed that the full model needed to be run on cyanide.

The RP model was run on Cyanide using the most recent data back through 2014. This resulted in 20 data points and that there is no Reasonable Potential for an acute or chronic effluent limit for cyanide.

This result indicates that the inclusion of an effluent limit for cyanide is not required at this time, and that routine monitoring requirements may remain as they currently are in the permit.(Outcome C from Reasonable Potential Guide)

This result indicates that the inclusion of an effluent limit for (metal) is not required at this time, but routine monitoring requirements will be added or increased in the permit. (Outcome C from Reasonable Potential Guide)

A Summary of the RP Model inputs and outputs are included in the table below.

The Metals Initial Screening Table and RP Outputs Table are included in this attachment.

¹⁷ See Reasonable Potential Analysis Guidance for definitions of terms

RP input/output summary

RP Procedure Output	Outfall Number:	001	Data Units	mg/L
Parameter	Cyanide (Total)			
Distribution	Lognormal			
Reporting Limit	0.001			
Significant Figures	2			
Maximum Reported Effluent Conc.	0.004			
Coefficient of Variation (CV)	0.14			
Acute Criterion	0.0269			
Chronic Criterion	0.0057			
Confidence Interval	95	99		
Projected Maximum Effluent Conc. (MEC)	0.0035	0.003		
RP Multiplier	1.2	1.3		
RP for Acute?	NO	NO		
RP for Chronic?	NO	NO		
Outcome	(A,B,C,D)			

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Cyanide RP Results

RP Procedure Output			Effluent Data			
Facility Name:	Springville		#		#	#
Permit Number:	UT 0020834		1	ND	41	81
Outfall Number:	001		2	ND	42	82
Parameter	Cyanide (Total)		3	ND	43	83
Distribution	Lognormal		4	ND	44	84
Data Units	mg/L		5	ND	45	85
Reporting Limit	0.001		6	ND	46	86
Significant Figures	2		7	ND	47	87
Confidence Interval	99		8	ND	48	88
			9	ND	49	89
Maximum Reported Effluent Conc.	0.003	mg/L	10	ND	50	90
Coefficient of Variation (CV)	0.14		11	ND	51	91
RP Multiplier	1.3		12	0.002	52	92
Projected Maximum Effluent Conc. (MEC)	0.004	mg/L	13	0.002	53	93
			14	0.002	54	94
Acute Criterion	0.0269	0	15	0.002	55	95
Chronic Criterion	0.0057	0	16	0.002	56	96
Human Health Criterion	NA	0	17	0.002	57	97
			18	0.002	58	98
RP for Acute?	NO		19	0.002	59	99
RP for Chronic?	NO		20	0.003	60	100
RP for Human Health?	N/A		21		61	101
			22		62	102
			23		63	103
			24		64	104
			25		65	105
			26		66	106
			27		67	107
			28		68	108
			29		69	109
			30		70	110
			31		71	111
			32		72	112
			33		73	113
			34		74	114
			35		75	115
			36		76	116
			37		77	117
			38		78	118
			39		79	119
			40		80	120