

Official Draft Public Notice Version **November, 30, 2018**

The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

**FACT SHEET AND STATEMENT OF BASIS  
PAYSON CITY WASTEWATER TREATMENT PLANT RENEWAL PERMIT:  
DISCHARGE, BIOSOLIDS & STORM WATER  
UPDES PERMIT NUMBER: UT0020427  
UPDES BIOSOLIDS PERMIT NUMBER: UTL-020427  
UPDES MULTI-SECTOR STORM WATER GENERAL PERMIT NUMBER: UTR000000  
MAJOR MUNICIPAL**

**FACILITY CONTACTS**

Person Name: Jeff Hiatt  
Position: Plant Superintendent

Person Name: Tyler Lowe  
Position: Operator  
Phone Number: (801) 465-5277

Facility Name: Payson City Wastewater Treatment Plant  
Mailing Address: 439 West Utah Ave  
Payson City, Utah 84651

Telephone: (801) 465-5277  
Actual Address: 1062 North Main St.

**DESCRIPTION OF FACILITY**

The Payson City Wastewater Treatment Plant (Payson) is located at 1062 North Main, Payson City, Utah and serves the City of Payson. The State of Utah Storet number is 499541. The population of the City is approximately 20,000. The design flow of the facility is 3.0 MGD average daily flow with a peak flow of 4.5 MGD.

The influent enters the plant through a 30" Parmer Bowlus flume. The headworks contain two (2) 30" step screens followed by rag washers for each screen. The headworks also contain an 8 ft diameter vortex grit removal system with an air lift pump to a grit washer. The wastewater is then pumped to the 70 ft diameter Primary Clarifier followed by the 102 ft diameter primary trickling filter (Rock Media Volume = 57,200 ft<sup>3</sup>). The primary pump station has a capacity of 0.5-7.0 MGD with one standby pump.

The flow then enters the secondary pump station where the wastewater is pumped to one of two 45 ft diameter intermediate clarifiers. The secondary pump station has a capacity of 0.5-6.5 MGD with one standby pump. After leaving the intermediate clarifiers, the flow enters the STM Aerotors. In July 2002, a rectangular tank (92.5 ft x 49.5 ft x 16 ft) fitted with eight (8) STM Aerotors was brought on-line, replacing the secondary trickling filters which were taken off-line to be converted to aeration basins. The aeration basins were only to be used during the cherry processing season, July through September. The flow would leave the intermediate clarifiers, enter the aeration basins, and then flow back to the aerotor tank. Throughout the remainder of the year, the aeration basins would be off-line, and the flow leaving the

intermediate clarifiers will directly enter the aerotor tank. Currently the aeration basins are incomplete and off-line, and the cherry processing is no longer done in Payson.

After leaving the aerotor tank, the process water will enter one of two final clarifiers with diameters of 45 ft and 60 ft. Following the final clarifiers, the flow is directed through 2-shallow bed, traveling bridge rapid sand filters followed by a chlorine contact basin having a sixty (60) minute detention time in the chlorine contact basin and then discharged through Outfall 001.

Payson has three (3) anaerobic digesters. Each digester is 40 ft in diameter with a total digester volume of 91,471 ft<sup>3</sup>. Payson City has nine (9) drying beds. The first five drying beds have an area of 5000 ft<sup>2</sup> each. The remaining four drying beds have a combined area of 16,150 ft<sup>2</sup>. The biosolids are removed from the drying beds and sent to the landfill. Approximately 250 metric tons of dry biosolids are produced each year by the facility.

The renewal permit will include provisions covering the reuse of the effluent.

#### **SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

##### 1. Flow

Consistent with Division of Water Quality (DWQ) process and EPA policy, an effluent flow limit is now included in the permit. Flow is not considered a pollutant, but is included in the permit to help determine pollutant loadings.

##### 2. WLA Model

A new model is used by Water Quality to develop a waste load allocation (WLA) for dischargers to Waters of the State. In preparing for using this model, Water Quality determined that the receiving stream should have a synoptic study completed on it to improve the understanding of the waterway and improve the WLA. This study was conducted during the October 2013 and the information was incorporated in the WLA.

Aqua Engineering performed a study on the receiving stream to determine the decay rate for chlorine, temperature and travel time. The result of the study was submitted to DWQ along with a report describing the flow scenarios between Payson City Waste Water Treatment Plant and Payson Power Plant. The memos were incorporated into the latest WLA and are included in Attachment 3 of the FSSOB.

The use of a different model by DWQ to evaluate receiving waters and develop a WLA for permit limits resulted in more stringent limits for the discharge permit than those limits in the last WLA. The parameters that will change are total residual chlorine (TRC) and ammonia.

##### 3. TRC

The WLA indicates that the acute limit for TRC is lower than the chronic limit for the Fall, Winter, and Spring. This is the result of the difference in the mixing zone requirements for this particular receiving stream. The rules indicate that in these situations the more conservative (acute) limit controls. As a result the chronic limit is removed and the acute limit remains for these seasons.

##### 4. RP

During the previous permit cycle, DWQ worked to improve our reasonable potential analysis (RP) for parameters to have limits included by using an EPA provided model. As a result of the new model, new limits are included in the permit.

As a result of the RP evaluation the following changes have been made;

- a. Chronic effluent limits for cyanide, selenium and mercury have been included.
- b. An Acute effluent limit for selenium has been included.
- c. The monitoring frequency increased for cyanide, and selenium from quarterly to once a month.
- d. Monitoring for mercury has been increased from quarterly to once a month, and a more sensitive method is required.

The results of the RP Analysis are included in Attachment 2 of the FSSOB.

5. Old and New Effluent Limits Comparison

Parameter	Previous Effluent Limit		New Effluent Limit	
	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Ammonia, mg/l				
Summer (Jul-Sept)	-	14.1	4	7
Fall (Oct-Dec)	-	13.1	6	9
Winter (Jan-Mar)	-	12.5	8	12
Spring (Apr-Jun)	-	13.1	8	11
TRC, mg/L				
Summer (Jul-Sept)	-	1.1	0.72	0.84
Fall (Oct-Dec)	-	1.6	-	0.49
Winter (Jan-Mar)	-	2.4	-	0.29
Spring (Apr-Jun)	-	1.6	-	0.48
Metals, mg/l				
Cyanide	-	-	0.0067	-
Selenium	-	-	0.0069	0.0241
Mercury	-	-	0.000015	-

6. WET

DWQ completed and adopted a new Whole Effluent Toxicity (WET) – Biomonitoring Policy in 2017. As a result of the new policy the renewal permit will require Chronic WET Testing.

7. TBPEL Rule

DWQ 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 (an 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.

Payson petitioned the Director for a variance to the compliance date for the TBPEL Rule on December 27, 2017. The Variance was public noticed from August 9 through September 10, 2018 and was granted on October 10, 2018. The Variance included a compliance schedule as summarized below. The Variance is included in Appendix 5 of this FSSOB.

As a result of the Variance, no total phosphorus effluent limitation will be added to the Permit before January 1, 2020. Effective January 1, 2020, DWQ will impose the following interim effluent limitation under the Permit: total phosphorus annual average effluent limitation of 4.6 mg/L.

#### 8. Compliance Schedules

As a result of the permit changes based on the new WLA and TBPEL rule, Payson will require a Compliance Schedule to determine and complete the upgrades and changes that will be required to comply with the new effluent limits. The preferred alternative is an Advanced Biological Nutrient Removal. However, if this option isn't feasible, Payson has indicated that the second choice is a Biological Nutrient Removal System and the last choice will be the chemical removal alternative.

TBPEL, Ammonia, Disinfection System compliance schedule:

May 1, 2019	Submit to DWQ a City Council resolution supporting the pursuit of the facility upgrade for the selected biological phosphorus and ammonia removal technology. The resolution shall include the approximate budget for the facility upgrade. If Payson is not pursuing a biological phosphorus removal technology the TBPEL variance will terminate, final limits for ammonia and TRC will continue as per the effluent limits table below.
July 1, 2019	Submit to DWQ an annual report relating to its phosphorus discharges as detailed in the TBPEL Variance.
December 1, 2019	Submit to DWQ a complete Capital Facilities Plan with the recommended biological phosphorus, ammonia removal technology and disinfection system.
July 1, 2020	Submit to DWQ an annual report relating to its phosphorus discharges as detailed in the TBPEL Variance.
January 1, 2021	Submit to DWQ documentation of financial planning for the required facility upgrades. In addition, if rate increases are necessary Payson shall have passed the required rate increase resolution by no later than January 1, 2021.
July 1, 2021	Submit to DWQ an annual report relating to its phosphorus discharges as detailed in the TBPEL Variance.

January 1, 2022	Submit to DWQ an approvable complete construction permit application for new facilities to meet permit effluent limit requirements.
July 1, 2022	Submit to DWQ an annual report relating to its phosphorus discharges as detailed in the TBPEL Variance.
July 1, 2023	Complete facility construction commissioning and start-up.
July 1, 2023	Submit to DWQ an annual report relating to its phosphorus discharges as detailed in the TBPEL Variance.
January 1, 2024	Comply with all permit effluent limits and conditions.

### DISCHARGE

#### DESCRIPTION OF DISCHARGE

Payson discharges into an irrigation ditch which runs approximately one to two miles before entering Beer Creek. Beer Creek runs through Benjamin Slough and hence to Utah Lake. Payson has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. A summary of the last 3 years of data is attached and there were no significant violations.

#### Outfall

001

#### Description of Discharge Point

Located at latitude 40°03'41" and longitude 111°43'49". The discharge is through a concrete pipe to an unnamed irrigation return drainage ditch to Beer Creek then Benjamin Slough to Utah Lake.

#### Outfall

001R

#### Description of Reuse Water Discharge Point

Located at latitude 40°03'41" and longitude 111°43'49". The discharge is to a tank that collects water then sends it to the Payson Power Plant (Nebo Power Station) for use as makeup water in the cooling system.

#### RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge flows into an unnamed ditch hence to Beer Creek. The route that the effluent takes has been classified as 2B & 3C (Beer Creek) and 4 (unnamed ditch and Beer Creek) according to *Utah Administrative Code (UAC) R317-2-13*.

- 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 3C -- Protected for nongame fish and other aquatic life, 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

##### 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, cadmium, selenium and mercury to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: cyanide, selenium and mercury. In addition, the RP analysis for mercury indicates an improved analytical method is required. A copy of the RP analysis is included at the end of this Fact Sheet.

Attached is a Wasteload Analysis for this discharge into the unnamed irrigation return ditch to Beer Creek then Benjamin Slough to Utah Lake. 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 total suspended solids (TSS), biochemical oxygen demand (BOD<sub>5</sub>), *E. coli*, pH and percent removal for BOD<sub>5</sub> and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease is based on best professional judgment (BPJ). The inclusion of effluent limits for cyanide, mercury and selenium are based on RP and the effluent limits are based on the WLA. The inclusion of effluent limits for ammonia and TRC are based on BPJ and the effluent limits are based on the WLA. The inclusion of WET is based on the WET Policy.

The permit limitations are;

Parameter	Effluent Limitations <sup>1</sup>			
	Maximum Monthly Ave	Maximum Weekly Ave	Daily Minimum	Daily Maximum
Total Flow	3.0	-	-	-
BOD <sub>5</sub> , mg/L	25	35	-	-
BOD <sub>5</sub> Min. % Removal	85	-	-	-
TSS, mg/L	25	35	-	-
TSS Min. % Removal	85	-	-	-
Dissolved Oxygen, mg/L	-	-	4.0	-
Interim Ammonia Limits <sup>2</sup>				
Total Ammonia (as N), mg/L				
Summer (Jul-Sep)	-	-	-	14.1
Fall (Oct-Dec)	-	-	-	13.1
Winter (Jan-Mar)	-	-	-	12.5
Spring (Apr-Jun)	-	-	-	13.1
Final Ammonia Limits <sup>3</sup>				
Total Ammonia (as N), mg/L				
Summer (Jul-Sep)	4.0	-	-	7.0
Fall (Oct-Dec)	6.0	-	-	9.0
Winter (Jan-Mar)	8.0	-	-	12.0
Spring (Apr-Jun)	8.0	-	-	11.0

<sup>1</sup> See Definitions, Part VIII, for definition of terms.

<sup>2</sup> Interim ammonia limits are in effect until December 31, 2023.

<sup>3</sup> Final ammonia limits go into effect no later than January 1, 2024.

Parameter	Effluent Limitations <sup>1</sup>			
	Maximum Monthly Ave	Maximum Weekly Ave	Daily Minimum	Daily Maximum
Interim TRC Limits <sup>4</sup>				
TRC, mg/L				
Summer (Jul-Sep)	-	-	-	1.1
Fall (Oct-Dec)	-	-	-	1.6
Winter (Jan-Mar)	-	-	-	2.4
Spring (Apr-Jun)	-	-	-	1.6
Final TRC Limits <sup>5</sup>				
TRC, mg/L				
Summer (Jul-Sep)	0.72	-	-	0.84
Fall (Oct-Dec)	-	-	-	0.49
Winter (Jan-Mar)	-	-	-	0.29
Spring (Apr-Jun)	-	-	-	0.48
<i>E. coli</i> , No./100mL	126	157	-	-
WET, Chronic Biomonitoring				IC <sub>25</sub> > XX% effluent
Summer (Jul-Sep)	-	-	-	54%
Fall (Oct-Dec)	-	-	-	32%
Winter (Jan-Mar)	-	-	-	26%
Spring (Apr-Jun)	-	-	-	32%
Oil & Grease, mg/L	-	-	-	10.0
pH, Standard Units	-	-	6.5	9.0
Cyanide	0.0067	-	-	-
Selenium	0.0069	-	-	0.0241
Mercury	0.000015	-	-	-

#### 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 <sup>1</sup>			
Parameter	Frequency	Sample Type	Units
Total Flow <sup>6,7</sup>	Continuous	Recorder	MGD

<sup>4</sup> Interim TRC limits are in effect until December 31, 2023.

<sup>5</sup> Final TRC limits go into effect no later than January 1, 2024.

<sup>6</sup> 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.

<sup>7</sup> If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

Self-Monitoring and Reporting Requirements <sup>1</sup>			
Parameter	Frequency	Sample Type	Units
BOD <sub>5</sub> , Influent <sup>8</sup>	2 x Weekly	Composite	mg/L
Effluent	2 x Weekly	Composite	mg/L
TSS, Influent <sup>8</sup>	2 x Weekly	Composite	mg/L
Effluent	2 x Weekly	Composite	mg/L
<i>E. coli</i>	2 x Weekly	Grab	No./100mL
pH	2 x Weekly	Grab	SU
Total Ammonia (as N)	2 x Weekly	Composite	mg/L
DO	2 x Weekly	Grab	mg/L
Cyanide	Monthly	Composite	mg/L
Selenium	Monthly	Composite	mg/L
Mercury	Monthly	Grab	mg/L
WET – Biomonitoring <sup>9</sup> Ceriodaphnia - Chronic Fathead Minnows - Chronic	1 <sup>st</sup> & 3 <sup>rd</sup> Quarter 2 <sup>nd</sup> & 4 <sup>th</sup> Quarter	Composite Composite	Pass/Fail Pass/Fail
TRC, mg/L	Daily	Grab	mg/L
Oil & Grease <sup>10</sup>	When Sheen Observed	Grab	mg/L
Orthophosphate, (as P) <sup>11</sup> Effluent	Monthly	Composite	mg/L
Phosphorus, Total <sup>11</sup> Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Total Kjeldahl Nitrogen, TKN (as N), <sup>11</sup> Influent Effluent	Monthly Monthly	Composite Composite	mg/L mg/L
Nitrate, NO <sub>3</sub> , <sup>11</sup>	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub> , <sup>11</sup>	Monthly	Composite	mg/L
Metals <sup>12</sup> , Influent Effluent	Quarterly Quarterly	Composite/Grab Composite/Grab	mg/L mg/L
Organic Toxics <sup>13</sup>	Yearly	Grab	mg/L

The permit limitations for Outfall (001R) (Reuse) are:

Parameter	Outfall 001R Effluent Limitations <sup>14</sup> ,
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<sup>8</sup> 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.

<sup>9</sup> The acute Ceriodaphnia will be tested during the 1st and 3rd quarters and the acute fathead minnows will be tested during the 2nd and 4th quarters. 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.

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

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

<sup>12</sup> Testing for metals listed in the table found in Part II, H, 1 of the permit.

<sup>13</sup> A list of the organics to be tested can be found in 40CFR122 appendix D table II.

<sup>14</sup> See Definitions, Part VIII, for definition of terms.



	Max Monthly Average	Max Weekly Median	Max Daily Average	Minimum	Maximum
Turbidity <sup>15</sup> , NTU	-	-	2.0	-	5.0
TRC <sup>16</sup> , mg/L	-	-	-	1.0	-
BOD <sub>5</sub> , mg/L	10	-	-	-	-
<i>E. coli</i> , No/100mL <sup>17</sup>	-	0	-	-	9
pH, Standard Units	-	-	-	6.0	9.0

The following is a summary of the Type I reuse self-monitoring and reporting requirements.

Reuse Outfall 001R Self-Monitoring and Reporting Requirements <sup>18, 19</sup>			
Parameter	Frequency	Sample Type	Units
Total Flow	Continuous	Recorder	MGD
Turbidity	Continuous	Recorder	mg/L
TRC, <sup>20 21</sup>	Daily	Recorder	mg/L
BOD <sub>5</sub>	Weekly	Composite	mg/L
<i>E. coli</i> <sup>22</sup>	Daily	Grab	No./100mL
pH	Daily	Grab	SU

### **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.

### **SUBSTANTIAL BIOSOLIDS TREATMENT CHANGES**

In 2012, Payson added a screw press to the biosolids process and improve the dewatering system

<sup>15</sup> An alternative disposal option or diversion to storage must be automatically activated if turbidity exceeds the maximum instantaneous limit for more than 5 minutes, or chlorine residual drops below the instantaneous required value for more than 5 minutes, where chlorine disinfection is used.

<sup>16</sup> The facility is required to disinfect to destroy, inactivate or remove pathogenic microorganisms by chemical, physical or biological means. Disinfection may be accomplished by chlorination, ozonation, or other chemical disinfectants, UV radiation or other approved processes.

<sup>17</sup> The weekly median *E. coli* concentration shall be non-detect.

<sup>18</sup> See Definitions, Part VIII, for definition of terms.

<sup>19</sup> Reuse monitoring results obtained during the previous month for reuse discharges shall be summarized for each month and reported on a Monthly Operational Report, post-marked no later than the 28th day of the month following the completed reporting period.

<sup>20</sup> The facility is required to disinfect to destroy, inactivate or remove pathogenic microorganisms by chemical, physical or biological means. Disinfection may be accomplished by chlorination, ozonation, or other chemical disinfectants, UV radiation or other approved processes.

<sup>21</sup> Residual is recommended but no longer required. Sampling not required if chlorination is not being used. The total residual chlorine shall be measured continuously and shall at no time be less than 1.0 mg/l after 30 minutes contact time at peak flow. A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.

<sup>22</sup> The weekly median *E. coli* concentration shall be non-detect.

efficiency.

## DESCRIPTION OF TREATMENT AND DISPOSAL

The Permittee submitted their 2016 annual biosolids report on January 18, 2017. The report states the Permittee produced 140 dry metric tons (DMT) of solids.

The biosolids (sewage sludge) are stabilized in anaerobic digesters with a hydraulic retention time of 40 days at an average temperature of 95° F (35° C). Once a week the biosolids are drawn off the bottom of the primary digester and sent to the secondary digester that serves as a holding tank. The biosolids from the secondary digester are wasted to a screw press, and then hauled to the drying beds for holding until they are then hauled to Payson City Landfill.

Payson City has nine (9) drying beds. The first five drying beds have an area of 5000 ft<sup>2</sup> each. The remaining four drying beds have a combined area of 16,150 ft<sup>2</sup>. The biosolids are removed from the drying beds and sent to land fill.

The last inspection conducted at the land application site was September 14, 2016. The inspection showed that Payson 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

In 2016, Payson disposed of 140 DMT of biosolids, therefore they need to sample at least one (1) time 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 <sup>23</sup> , (mg/ha)	Pollutant Conc. Limits, (mg/kg)	APLR <sup>24</sup> , (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

<sup>23</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>24</sup> APLR – Annual Pollutant Loading Rate

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;

Pathogen Control Class	
Class A	Class B
B Salmonella species –less than three (3) MPN <sup>25</sup> per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids)	Fecal Coliforms –less than 2,000,000 colony forming units (CFU) per gram total solids
Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

#### 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.

Payson does not intend to give away biosolids for land application on home lawns or gardens, and will therefore not be required to meet PFRP. If the permittee changes their intentions in the future, they will need to meet a specific PFRP, 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.

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). Payson does not intend to land apply the biosolids and will therefore not be required to meet PSRP. If the permittee intends to land apply in the future, they will need to meet a specific PSRP, 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.

#### Vector Attraction Reduction (VAR)

If the biosolids are land applied Payson will be required to meet VAR through the use of a method of listed under 40 CFR 503.33. Payson does not intend to land apply the biosolids and will therefore not be required to meet VAR. If the permittee intends to land apply in the future, they need to meet 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

<sup>25</sup> MPN –Most Probable Number

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

Payson 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**

Payson disposed of all biosolids at the Payson City Landfill. Therefore they were not required to sample metals.

#### **PATHOGEN MONITORING DATA**

Payson was not required to monitor for pathogens, therefore there is not any monitoring data.

### **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 for 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.

Payson is currently covered under the UPDES Multi Sector General Permit for Industrial Activities.

### **PRETREATMENT REQUIREMENTS**

The pretreatment requirements remain the same as in the current permit with the permittee administering an approved pretreatment program. Changes to the program must be submitted to the Division of Water Quality. 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 of 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.

The permit requires quarterly influent and effluent monitoring for metals and yearly organic toxics listed in *R317-8-7.5* and sludge monitoring for potential pollutants listed in *40 CFR 503*. All metals testing must use a low enough MDL to insure that the metals are not above the allowable levels determined by the wasteload analysis. A summary of the MDLs for the metals can be found in Part II of the permit. If a test method is not available then the lowest test method available must be used, following approval by the Director of the DWQ.

### **BIOMONITORING REQUIREMENTS**

The permittee is a major municipal facility with a pretreatment program with a dilution ratio that is less than 20:1, and a flow less than 20 MGD therefore according to new WET Guidance Payson is required to conduct Quarterly chronic WET testing. The permit will contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring). 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*.

### **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  
Michael George, Storm Water  
Nate Nichols, Reasonable Potential Analysis  
Nick von Stackelberg, Wasteload Analysis  
Lonnie Shull, Biomonitoring

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).

DWQ-2017-010924

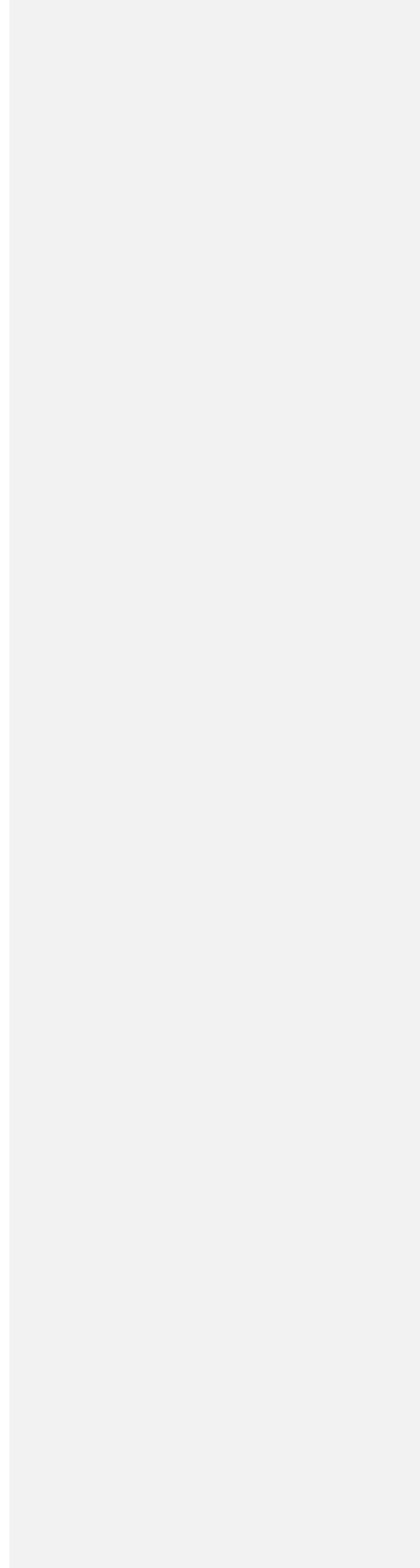
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PND Draft



**ATTACHMENT 1**

*Effluent Monitoring Data*



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### Effluent Monitoring Data.

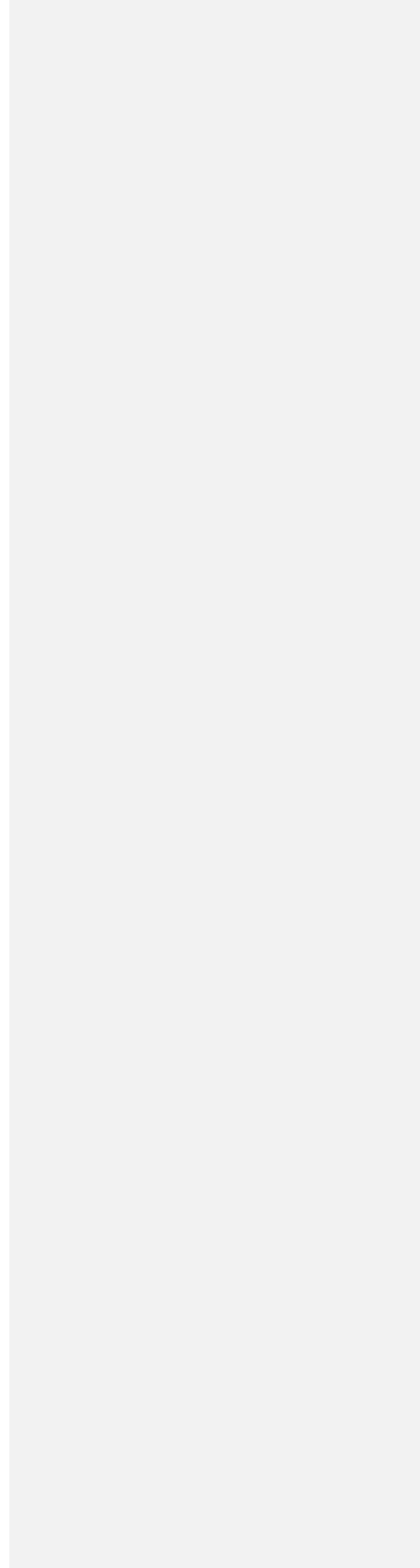
Month	Flow		pH		O & G	TRC	<i>E. coli</i>		BOD5		TSS	
	Ave	Max	Min	Max	Max	Max	Acute	Chronic	Ave	Max	Ave	Max
Jan-13	18.8	20.2	7.5	7.7	1.7	1.2	10	6	5	6	7	8
Feb-13	21.3	22.9	7.6	7.7	1.7	1.1	13	8	7	9	7	7
Mar-13	24.3	28.6	7.5	7.7	1.7	1.1	11	9	17	21	7	9
Apr-13	20.2	21.2	7.5	7.7	1.7	1.2	20	12	19	21	7	8
May-13	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*



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**Comment [DG1]:** Insert Printed WLA after this page. WLA s included in Workflow and is document DWQ-2017-010923

**ATTACHMENT 3**

*Supplemental Reports*

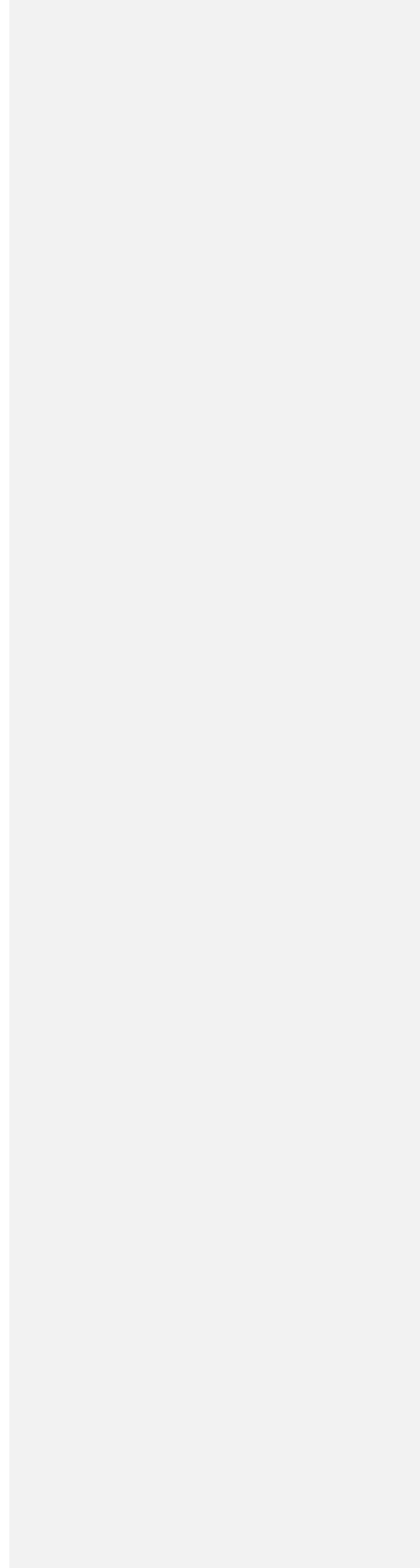
*Parameter Memo and Flow Memo*

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**Comment [DG2]:** Insert printed Payson Permit Parameter Memo and Payson City Payson Power Flow Memo after this page. Both are included in the Workflow. Payson Permit Parameter Memo is document DWQ-2017-010927, Payson City Payson Power Flow Memo is document DWQ-2017-010922



**ATTACHMENT 4**  
**(Payson City)**  
*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 Analysis<sup>26</sup>. 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.

The lab of choice for Payson is Chemtech-Ford Laboratories. Improvements near the end of 2009 and early 2010 resulted in an improvement in the method detection level (MDL) for numerous parameters. Excluding data prior to 2010 leaves 28 data point for use in the RP Analysis and only impacts the metals with data reported as ND during this time. Consequently all data points prior to 2010 are being excluded.

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some 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, cadmium, selenium and mercury.

### Cyanide RP Analysis

The RP model was run on cyanide using the most recent data back through 2010. This resulted in 28 data points and that there is a Reasonable Potential indicated for chronic limit for cyanide. Reviewing the data showed that there could be at least one outlier in the data, and the EPA ProUCL model was used to evaluate the data. This produced four possible outliers. Reviewing the lab data sheets shows there is no indication from the lab that there was an issue with the results, and that there is one ND reported that appears to be an outlier. This evidence directs us to only exclude the indicated ND from the data for the RP model.

The value was excluded from the data set and RP was rerun at both the 95% and 99% confidence levels. The results of the model are that there is a chronic RP at the 95% and the 99% confidence levels. This result indicates that the inclusion of a chronic effluent limit for cyanide is required at this time. (Outcome A from Reasonable Potential Guide)

### Cadmium RP Analysis

The RP model was run on cadmium using the most recent data back through 2010. This resulted in 28 data points. The Reasonable Potential model returns an invalid response due to the nature of the data. Cadmium has been monitored for quarterly since prior to 2010, and has continuously returned a non-detect (ND) result. Over time the method detection level (MDL) for the outside lab (Chemtech-Ford) has improved and been lowered over time. It is the earlier MDL values that result in the RP Model being run from the screening. When the higher MDL's are eliminated the model indicates that the inclusion of an

<sup>26</sup> See Reasonable Potential Analysis Guidance for definitions of terms

effluent limit for cadmium is not required at this time, and that routine monitoring requirements can be added or increased in the permit.  
(Outcome C from Reasonable Potential Guide)

### Selenium RP Analysis

The RP model was run on selenium using the most recent data back through 2010. This resulted in 28 data points and that there is a Reasonable Potential indicated for both the chronic and acute limits for selenium. Reviewing the data showed that there could be at least one outlier in the data and the EPA ProUCL model was used to evaluate the data. This produced two potential outliers for 5% and 1% significance. These outlier's were from the 2<sup>nd</sup> quarter of 2014 (0.0266 mg/L) and 3<sup>rd</sup> quarter of 2013 (0.0062 mg/L). Removing those points and rerunning ProUCL resulted in no new outliers being identified. Reviewing the lab data sheets shows there is no indication from the lab that there was an issue with the results, and that there is only one ND reported over the past six years. This evidence directs us to not eliminate the data for the RP model, and it was not rerun.

The results of the model are that there is acute and chronic RP at the 95%, and the 99% confidence level. This result indicates that the inclusion of acute and chronic effluent limit for selenium is required at this time.  
(Outcome A from Reasonable Potential Guide)

### Mercury RP Analysis

The RP model was run on mercury using the most recent data back through 2010. This resulted in 28 data points and that there is a Reasonable Potential indicated for the chronic limit for mercury. Reviewing the data showed that there could be at least one outlier in the data, and the EPA ProUCL model was used to evaluate the data. This produced four potential outliers for 5% and 1% significance. These outlier's were from the 2<sup>nd</sup> quarter of 2010 (0.0000124 mg/L), 1<sup>st</sup> quarter of 2013 (0.0000352 mg/L), 4<sup>th</sup> quarter 2013 (0.00000803 mg/L) and 1<sup>st</sup> quarter of 2016 (0.0000077 mg/L). Excluding these four data points from the pool and rerunning ProUCL on the data resulted in no outliers being identified. Reviewing the lab data sheets shows there is no indication from the lab that there was an issue with the results, and that there are only two ND results reported over the past six years. This evidence directs us to not eliminate the data for the RP model, and it was not rerun.

The results of the model are that there is chronic RP at the 95%, and the 99% confidence level. This result indicates that the inclusion of a chronic effluent limit for mercury is required at this time.  
(Outcome A from Reasonable Potential Guide)

Table of limits to include.

Metals	Chronic	Acute
Parameter	Limit (mg/L)	Limit (mg/L)
Cyanide	0.0067	-
Selenium	0.0069	0.0241
Mercury	0.000015	-

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

RP input/output summary

RP Procedure Output	Outfall Number:	001	Data Units	mg/L
Parameter	Cyanide		Cadmium	
Distribution	Modified Delta-Lognormal		Default	
Reporting Limit	0		0.0002	
Significant Figures	2		2	
Maximum Reported Effluent Conc.	0.01		0	
Coefficient of Variation (CV)	.55		0.6	
Acute Criterion	0.0284		0.0112	
Chronic Criterion	0.0067		0.0006	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	0.013	0.02	#N/A	#N/A
RP Multiplier	1.3	2	#N/A	#N/A
RP for Acute?	NO	NO	#N/A	#N/A
RP for Chronic?	YES	YES	#N/A	#N/A
Outcome	A		C	

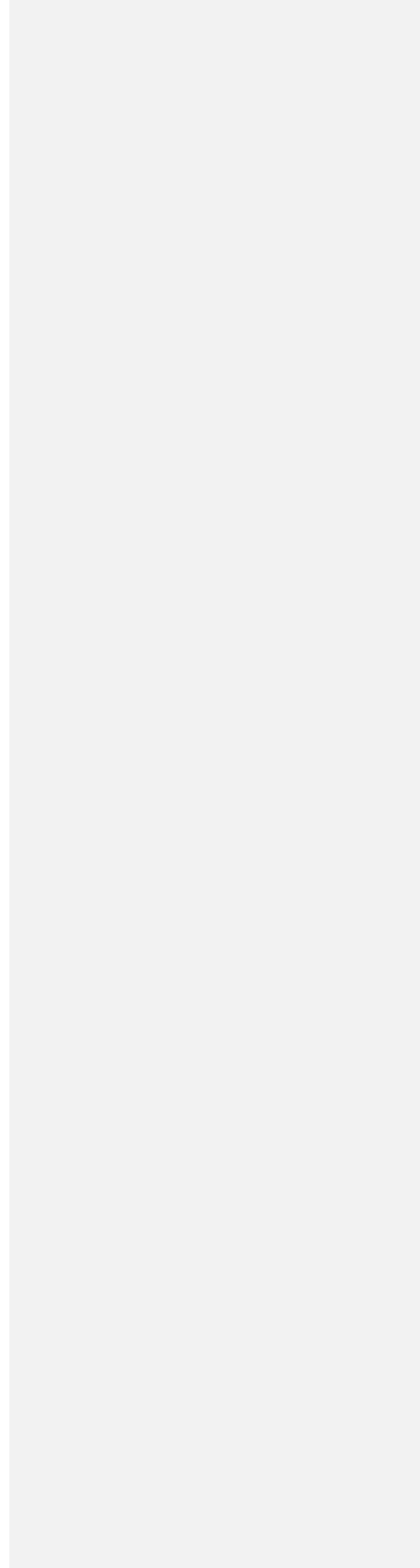
RP Procedure Output	Outfall Number:	001	Data Units	mg/L
Parameter	Selenium		Mercury	
Distribution	Delta-Lognormal		Delta-Lognormal	
Reporting Limit	0.0005		5E-07	
Significant Figures	2		2	
Maximum Reported Effluent Conc.	0.0266		3.52E-5	
Coefficient of Variation (CV)	0.71		1.2	
Acute Criterion	0.0241		0.0032	
Chronic Criterion	0.0069		0.000015	
Confidence Interval	95	99	95	99
Projected Maximum Effluent Conc. (MEC)	0.034	0.061	0.00005	0.00012
RP Multiplier	1.3	2.3	1.4	3.5
RP for Acute?	YES	YES	NO	NO
RP for Chronic?	YES	YES	YES	YES
Outcome	A		A	

Metals Monitoring and RP Check

Effluent												
Date	Cn	As	Cd	Cr	Cu	Pb	Mo	Ni	Ag	Zi	Se	Hg
ARP Val	0.0284	0.452	0.0112	0.0183	0.066	0.617	1	1.983	0.0525	0.505	0.0241	0.0032
CRP Val	0.0067	0.273	0.001	0.0207	0.051	0.0332	1	0.307	1	0.698	0.0069	0.000015
Metals, mg/l	ND	ND	ND	ND	0.007	ND	ND	ND	ND	0.05	0.0015	0.0000033
	ND	0.02	ND	ND	0.006	ND	ND	ND	ND	0.04	0.0019	0.0000124
	ND	0.02	ND	ND	0.007	ND	ND	ND	ND	0.04	0.0012	0.00000135
		0.02	ND	ND	0.005	ND	ND	ND	ND	0.04	ND	0.00000803
	ND	ND	ND	ND	0.006	ND	ND	ND	ND	0.04	0.0012	0.0000023
	ND	0.06	ND	ND	ND	ND	0.01	ND	ND	0.03	0.0017	0.00000026
	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.0019	ND
	ND	ND	ND	ND	0.005	ND	ND	ND	ND	0.01	0.0026	0.0000005
	ND	ND	ND	ND	0.007	ND	ND	ND	ND	0.04	0.0027	0.0000036
	0.004	ND	ND	ND	0.011	ND	ND	ND	ND	0.05	0.0021	0.0000035
	ND	ND	ND	ND	0.006	ND	ND	ND	ND	0.03	0.0062	0.0000017
	ND	ND	ND	ND	0.007	ND	ND	ND	ND	0.03	0.0021	0.0000034
	0.003	ND	ND	ND	0.009	ND	ND	ND	ND	0.05	0.0017	0.0000352
	ND	ND	ND	ND	0.005	ND	ND	ND	ND	0.04	0.0016	0.0000004
	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.0027	0.0000019
	ND	ND	ND	ND	0.007	ND	ND	ND	ND	0.04	0.0014	0.0000024
	0.002	ND	ND	ND	0.008	ND	ND	ND	ND	0.05	0.0018	0.0000033
	ND	ND	ND	ND	0.005	ND	ND	ND	ND	0.05	0.0266	0.0000051
	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.0024	0.0000029
	ND	ND	ND	ND	0.005	ND	ND	ND	ND	0.04	0.0022	0.0000027
	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.0018	0.0000018	
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04	0.0008	0.0000017	
ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.0016	0.0000038	
	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.002	0.0000023	
ND	ND	ND	ND	ND	0.02	0.0007	ND	ND	ND	0.05	0.0025	0.0000077
0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.0021	0.0000023
0.005	ND	ND	ND	ND	0.007	ND	ND	ND	ND	0.04	0.0024	0.0000017
0.004	ND	ND	ND	ND	0.006	ND	ND	ND	0.0007	0.03	0.0019	ND
ND Value	0.002	0.05	0.005	0.005	0.005	0.0005	0.01	0.005	0.0005	0	0.0005	0.0000005
Max	0.005	0.06	0.005	0.005	0.02	0.0007	0.01	0.005	0.0007	0.05	0.0266	0.0000352
A RP?	No	No	No	No	No	No	No	No	No	No	YES	No
C RP?	YES	No	YES	No	No	No	No	No	No	No	YES	YES

**ATTACHMENT 5**

*TBPEL Variance*



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**Comment [DG3]:** Insert printed finalized copy of TBPEL Variance, document DWQ-2018-007958