State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of Environmental Quality

Amanda Smith
Executive Director

DIVISION OF WATER QUALITY
Walter L. Baker, P.E.
Director

EDU 2-25-2013

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JAN 3 1 2013

CERTIFIED MAIL
(Return Receipt requested)

Mr. Mark Blair, Public Works Director
Lewiston City
29 South Main
PO Box 36
Lewiston, Utah 84320

Document Date 1/31/2013
DWQ-2013-001386 PE

Dear Mr. Blair:

Subject: Issuance for UPDES Renewal Permit No. UT0020214, Lewiston City

Enclosed is a signed copy of the Utah Pollutant Discharge Elimination System (UPDES) Renewal Permit No. UT0020214 for the above referenced facility. The conditions and requirements of the renewal permit are effective as of February 1, 2013 as scheduled, subject to the right to challenge this decision in accordance with the provisions of *Utah Administrative Code*, Section R317-9.

Discharge Monitoring Reports (DMR) forms (EPA form 3320-1) for reporting and self-monitoring requirements as specified in the permit are available upon request, however EPA's NetDMR process for on line DMR submittal is now available and will be required in 2013. As a reminder, DMR forms are due to be completed on line or in our office by the 28th of each month following each monthly monitoring period. To sign up for NetDMR, please visit our website at http://www.waterquality.utah.gov/UPDES/NetDMR.htm.

The Utah Division of Water Quality (DWQ) values your feedback, and as the State agency charged with the administration of issuing UPDES permits, we are continuously looking for ways to improve our quality of service to you. DWQ Director Walter L. Baker is committed to continually assessing and improving the level and quality of services provided to you.

In an effort to improve the State UPDES permitting process, we are asking for your input. Please take a few minutes to comment on the quality of service you received by completing the "Give Feedback to DWQ" form link on DWQ's webpage at www.waterquality.utah.gov. Thank you for assisting us in improving our service to you.

If you have any questions with regards to this matter, please contact Daniel Griffin of this office at (801) 536-4387 or by e-mail at dgriffin@utah.gov.

Sincerely,

John Kennington P.E., Manager
UPDES Engineering Section

JK:DG:mc

Enclosure
1. Permit (DWQ-2012-003502)
2. FSSOB (DWQ-2012-003503)
3. WLA (DWQ-2012-003508)

cc: Amy Clark, EPA Region VIII (w/ encl. 1-3)
Lloyd Berentzen, Bear River Health Department (w/encl. 1-3)

DWQ-2012-003499

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FACT SHEET STATEMENT OF BASIS
CITY OF LEWISTON
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS
UPDES PERMIT NUMBER: UT0020214
UPDES BIOSOLIDS PERMIT NUMBER: UTL-020214
MINOR MUNICIPAL

FACILITY CONTACTS

Person Name:	Mark Blair
Position:	Utilities Manager
Phone Number:	435-770-1696 (Cell)
Facility Name:	Lewiston City
Mailing and Facility Address:	29 South Main Lewiston City, Utah 84320
Telephone:	435-258-2141 435-258-5191 (Shop)

DESCRIPTION OF FACILITY

The Lewiston City treatment facility (Lewiston Lagoons) consists of a three (3) cell lagoon system located east of Lewiston on the west bank of the Cub River which is the receiving stream during discharge periods. The lagoon system is located at 41°58'00" north latitude and 111°49'20" west longitude. The system was built in 1974 with a total surface area of 16.1 acres. The city had a population of 1877 in 2000, with 558 housing units. Approximately 850 persons (estimated) are served by the lagoon system. The rest are on septic tanks. The facility is designed for a flow of 0.11 million gallons per day if operated as a total containment system. It has been estimated that the lagoons can treat 0.21 MGD if they discharge offsite. The system has the ability to use chlorine for disinfection. The lagoon receives a large amount of wastewater from Presto Products Incorporated, a producer of plastic bags. The water from Presto Products is non-contact cooling water and is not considered a significant industrial user at this time. The facility currently discharges one month each year.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There have been no changes to the treatment facility or to the new permit, as compared to the previous permit.

DISCHARGE

The Lewiston Lagoons discharge to a segment of the Cub River that is 303(d) listed for total phosphorous (TP). A TMDL was completed for the Cub River on December 23, 1997. The TMDL cited that the lagoons were "contained with occasional overflow". As a result, the TMDL treated the lagoons as a deminimus source and neither a load allocation nor load reduction for phosphorous were indicated.

The lagoons are currently operated primarily as total containment lagoons with an occasional discharge once or twice a year. The Lewiston Lagoons discharge an average of .135 kg/d (Calculation based on limited flow and concentration data) TP. The TMDL calculated the total TP load attributed to the Cub River basin in Utah at 82 kg/d. The estimated TMDL target load for the Cub is 9 kg/d. Lewiston's lagoons contribute 0.16 percent of the TMDL's current calculated load of 82 kg/d and 1.5 percent of the TMDL target load of 9 kg/d.

In the absence of a TP allocation for the lagoons, the occasional intermittent discharge should be managed such that discharge does not occur during the biologically productive season between June-September. Permit monitoring requirements for flow and TP concentration should be adequate to characterize the intermittent nature of the lagoon's discharge.

Due to changes in the background flows for the receiving stream the total ammonia effluent limitations range

from 40.7 mg/L to 98.8 mg/L on a seasonal basis. Regardless, this would be an increase in the limit and be governed under anti backsliding rules. At this time there is no need to increase the effluent limitation for total ammonia, and the previous limit of 16.4 mg/L will be maintained for this permit cycle.

DESCRIPTION OF DISCHARGE

The City of Lewiston has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. A summary of the data from 2006 through 2011 is attached and there were no violations significant enough to warrant enforcement actions.

Outfall	Description of Discharge Point
001	Located at latitude 41°58'00" and longitude 111°49'20" to the Cub.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge Cub River. The Cub River is classified 2B, 3B and 4 at this location according to *Utah Administrative Code (UAC) R317-2-13.*

Class 2B -Protected for secondary contact recreation such as boating, wading, or similar uses.

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 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 (BOD_5), E-Coli coliform, pH and percent removal for BOD_5 and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2.* The Dissolved Oxygen and Total Ammonia limits are based on the Waste Load Allocation (WLA). The oil and grease limit is based on best professional judgment (BPJ). The Ammonia limit is based BPJ and the WLA. The permit limitations are:

Parameter	Effluent Limitations			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD_5, mg/L	25	35	NA	NA
BOD_5 Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E-coli	126	157	NA	NA
DO	NA	NA	5.0	NA
Ammonia, mg/L as N	NA	NA	NA	16.4
TRC, mg/L	NA	NA	NA	0.31
Oil & Grease, mg/L	NA	NA	NA	10
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable.

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 quarterly, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the quarterly DMRs.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5, Influent Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
TSS, Influent Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
E-Coli,No./100mL	Monthly	Grab	No./100mL
Total Ammonia	Monthly	Grab	mg/l
Phosphorus, mg/L	Monthly	Grab	mg/l
Dissolved Oxygen, mg/L	Monthly	Grab	mg/l
TRC	Monthly	Grab	mg/L
Oil & Grease *d	Monthly	Grab	mg/L
pH	Monthly	Grab	SU

*a See Definitions, *Part VIII*, of Permit for definition of terms.

*b 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.

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

*d Sample when sheen is visible

*e Only sample when disinfection is being used

BIOSOLIDS (SEWAGE SLUDGE)

The State of Utah has adopted the *40 CFR 503* federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a lagoon, there is not any regular sludge production. Therefore *40 CFR 503* does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met

STORM WATER

STORMWATER REQUIREMENTS

Wastewater treatment facilities, which includes treatment lagoons, are required to comply with storm water permit requirements if they meet one or both of the following criteria,

1. The facility has an approved pretreatment program as described in 40 CFR Part 403.
2. The facility has a design flow of 1.0 MGD or greater.

The Lewiston City facility does not meet either of the criteria; therefore a storm water permit is not required at this time. A storm water re-opener provision is included in the permit should a storm water permit be needed in the future.

PRETREATMENT REQUIREMENTS

Any wastewater discharges to the sanitary sewer by industrial users are subject to Federal, State and local pretreatment regulations. Pursuant to *Section 307* of the *Clean Water Act*, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR 403* and the State Pretreatment Requirements found in *UAC R317-8-8*.

Although Lewiston City does not have to develop a State-approved pretreatment program, any wastewater

discharges to the sanitary sewer are subject to Federal, State and local regulations. Pursuant to *Section 307* of the *Clean Water Act*, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR 403* and the State Pretreatment Requirements found in *UAC R317-8-8*.

Lewiston City has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge the permittee must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

It is recommended that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed. It is required that the permittee submit for review any local limits that are developed to the Division of Water Quality. If local limits are developed they must be public noticed.

BIOMONITORING REQUIREMENTS

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*.

The potential for toxicity is not deemed sufficient to require biomonitoring or whole effluent toxicity (WET) limits because there are no present or anticipated industrial dischargers on the system nor are there any anticipated for the duration of this permit. The waste discharge is anticipated to be household waste only. Therefore, biomonitoring is not required in this permit; however the permit will contain a WET reopener provision.

PERMIT DURATION

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

Drafted by
Daniel Griffin, Discharge
Mark Schmitz, Biosolids
Michael George, Storm Water
Utah Division of Water Quality

ADDENDUM TO FSSOB

A public notice for the draft permit was published in The Herald Journal on December 2, 2012. No comments were received regarding the permit. The permit will be issued with an effective date of February 1, 2013.

Lewiston City		FLOW		PH EFFLUENT						COLIFORM		TSS				BOD				
UT0020214										FECAL			EFFLUENT				EFFLUENT			
DMR MONTH	RECEIVED DATE	30 DAY AVE	DAILY MAX	DAILY MIN	DAILY MAX	DO DAILY MIN	AMMONIA EFFLUENT	Phosphorus EFFLUENT	TRC EFF	30 DAY AVE	7 DAY AVE	INFLUENT	30 DAY AVE	7 DAY MAX	REMOVAL	INFLUENT	30 DAY AVE	7 DAY MAX	REMOVAL	OIL GREASE
Jan - Dec				6.5	9	5	16.40	Rep.	0.22	126	157	Rep.	25	35	85	Rep.	25	35	85	
Dec-11	Jan-12	0	0																	
Nov-11	Jan-12	0	0																	
Oct-11	Nov-11	0.18	0.28	8.7	8.7	3	2.7	2.1	0.06	5	5	48	35	35	27	43	20	20	53	0
Sep-11	Nov-11	0	0																	
Aug-11	Sep-11	0	0																	
Jul-11	Aug-11	0	0																	
Jun-11	Jul-11	0	0																	
May-11	Jul-11	0	0																	
Apr-11	Jan-11	0.5	0.5	8.7	9	7.5	3.94	2.1	0.12	4	4	48	2.1	2.1	75	43	20	20	48	0
Mar-11	May-11	0	0																	
Feb-11	Mar-11	0	0																	
Jan-11	Mar-11	0	0																	
Dec-10	Jan-11	0	0																	
Nov-10	Dec-10	0	0																	
Oct-10	Dec-10	0	0																	
Sep-10	Dec-10	0	0																	
Aug-10	Sep-10	0	0																	
Jul-10	Aug-10	0	0																	
Jun-10	Jul-10	0	0																	
May-10	Jun-10	0	0																	
Apr-10	Jun-10	0	0																	
Mar-10	Apr-10	0	0																	
Feb-10	Mar-10	0	0																	
Jan-10	Feb-10	0	0																	
Dec-09	Feb-10	0	0																	
Nov-09	Feb-10	0	0																	
Oct-09	Nov-09	0	0																	
Sep-09	Nov-09	0	0																	
Aug-09	Nov-09	0	0																	
Jul-09	Nov-09	0	0																	
Jun-09	Jul-09	0	0																	
May-09	Jun-09	0.01	0.012	8.2	9	5.8	4.04	2.1	0.09	6	6	152	29	29	29	114	13	13	13	0
Apr-09	May-09	0	0																	

Mar-09																				
Feb-09	Mar-09	0	0																	
Jan-09	Mar-09	0	0																	
Dec-08	Jan-09	0	0																	
Nov-08	Jan-09	0	0																	
Oct-08	Nov-08	0	0																	
Sep-08																				
Aug-08																				
Jul-08	Aug-08	0	0																	
Jun-08	Aug-08	0	0																	
May-08	Jun-08	0	0																	
Apr-08	May-08	0	0																	
Mar-08	May-08	0	0																	
Feb-08	Mar-08	0	0																	
Jan-08	Feb-08	0	0																	
Dec-07	Feb-08	0	0																	
Nov-07		0	0																	
Oct-07	Feb-08	0	0																	
Sep-07	Feb-08	0	0																	
Aug-07	Feb-08	0	0																	
Jul-07	Aug-07	0	0																	
Jun-07	Jul-07	0	0																	
May-07	Aug-07	0	0																	
Apr-07	Aug-07	0.5	0.9	8.6	8.7	25	0.29	2.4	0.07	2	2	66	28	28	43	126	25	25	43	0
Mar-07	Apr-07	0	0																	
Feb-07	Apr-07	0	0																	
Jan-07	Feb-07	0	0																	
Dec-06	Jan-07	0	0																	
Nov-06	Dec-06	0	0																	
Oct-06	Nov-06	0	0																	
Sep-06	Oct-06	0	0																	
Aug-06	Sep-06	0	0																	
Jul-06	Aug-06	0	0																	
Jun-06	Jul-06	0	0																	
May-06	Jun-06	0	0																	
Apr-06	May-06	0.01	0.01	8.7	9	6.4	9.5	2	0.22	170	170	50	16	16	28	20	20	20	19	0
Mar-06	Apr-06	0	0																	
Feb-06	Mar-06	0	0																	
Jan-06	Feb-06	0	0																	

	Industrial User	Jurisdiction	SIC Codes	Categorical Standard Number	Total Average Process Flow (gpd)	Total Average Facility Flow (gpd)	Facility Description
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

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Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility:	**Lewiston Lagoons**		
UPDES No:	UT-0020214		
Current Flow:	0.02	MGD	Current flow is intermittent. This value represents an average flow over th
Design Flow	0.21	MGD	

Receiving Water:	**Cub River**		
Stream Classification:	2B, 3B, 4		
Stream Flows [cfs]:	10.0	Summer (July-Sept)	20th Percentile value used for all seasons
	10.0	Fall (Oct-Dec)	20th Percentile
	10.0	Winter (Jan-Mar)	20th Percentile
	10.0	Spring (Apr-June)	20th Percentile
	41.9	Average	
Stream TDS Values:	338.4	Summer (July-Sept)	80th Percentile value used for all seasons
	338.4	Fall (Oct-Dec)	80th Percentile
	338.4	Winter (Jan-Mar)	80th Percentile
	338.4	Spring (Apr-June)	80th Percentile

Effluent Limits:				**WQ Standard:**
Flow, MGD:	0.21	MGD	Design Flow	
BOD, mg/l:	25.0	Summer	5.0	Indicator
Dissolved Oxygen, mg/l	5.0	Summer	5.5	30 Day Average
TNH3, Chronic, mg/l:	40.7	Summer	Varies	Function of pH and Temperature
TDS, mg/l:	27721.4	Summer	1200.0	

Modeling Parameters:	
Acute River Width:	50.0%
Chronic River Width:	100.0%

Level 1 Antidegradation Level Completed: Level II Review not required.

Date: 8/7/2012

Permit Writer:	[signature]	1/23/13
WLA by:	[signature]	8/7/12
WQM Sec. Approval:	[signature]	1/23/13
TMDL Sec. Approval:	Carl Adams	1/23/13

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

7-Aug-12
4:00 PM

Facilities: **Lewiston Lagoons** **UPDES No: UT-0020214**
Discharging to: **Cub River**

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Cub River:	2B, 3B, 4
Antidegradation Review:	Level I review completed. Level II review not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.50 mg/l (30 Day Average) 4.00 mg/l (7Day Average) 3.00 mg/l (1 Day Average
Maximum Total Dissolved Solids	1200.0 mg/l

Utah Division of Water Quality
Salt Lake City, Utah

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Aluminum	87.00 ug/l**	0.152 lbs/day	750.00 ug/l	1.313 lbs/day
Arsenic	190.00 ug/l	0.333 lbs/day	340.00 ug/l	0.595 lbs/day
Cadmium	0.61 ug/l	0.001 lbs/day	6.52 ug/l	0.011 lbs/day
Chromium III	211.92 ug/l	0.371 lbs/day	4433.71 ug/l	7.764 lbs/day
ChromiumVI	11.00 ug/l	0.019 lbs/day	16.00 ug/l	0.028 lbs/day
Copper	23.85 ug/l	0.042 lbs/day	39.41 ug/l	0.069 lbs/day
Iron			1000.00 ug/l	1.751 lbs/day
Lead	12.88 ug/l	0.023 lbs/day	330.60 ug/l	0.579 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40 ug/l	0.004 lbs/day
Nickel	132.13 ug/l	0.231 lbs/day	1188.44 ug/l	2.081 lbs/day
Selenium	4.60 ug/l	0.008 lbs/day	20.00 ug/l	0.035 lbs/day
Silver	N/A ug/l	N/A lbs/day	25.04 ug/l	0.044 lbs/day
Zinc	303.93 ug/l	0.532 lbs/day	303.93 ug/l	0.532 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as $CaCO_3$

Metals Standards Based upon a Hardness of 300 mg/l as $CaCO_3$

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Aldrin			1.500 ug/l	0.003 lbs/day
Chlordane	0.004 ug/l	0.239 lbs/day	1.200 ug/l	0.002 lbs/day
DDT, DDE	0.001 ug/l	0.056 lbs/day	0.550 ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	0.106 lbs/day	1.250 ug/l	0.002 lbs/day
Endosulfan	0.056 ug/l	3.116 lbs/day	0.110 ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.128 lbs/day	0.090 ug/l	0.000 lbs/day
Guthion			0.010 ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.211 lbs/day	0.260 ug/l	0.000 lbs/day
Lindane	0.080 ug/l	4.452 lbs/day	1.000 ug/l	0.002 lbs/day
Methoxychlor			0.030 ug/l	0.000 lbs/day
Mirex			0.010 ug/l	0.000 lbs/day
Parathion			0.040 ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.779 lbs/day	2.000 ug/l	0.004 lbs/day
Pentachlorophenol	13.00 ug/l	723.464 lbs/day	20.000 ug/l	0.035 lbs/day
Toxephene	0.0002 ug/l	0.011 lbs/day	0.7300 ug/l	0.001 lbs/day

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.01 lbs/day
Chromium			100.0 ug/l	lbs/day

Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	1.05 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	**Concentration**	**Load***	**Concentration**	**Load***
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
ocyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		**Class 3A, 3B**	
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	150.26 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	43.41 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.04 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	3.95 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.24 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	1168.67 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	5.51 lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.50 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	2.34 lbs/day
1,1,2,2-Tetrachloroethai	ug/l	lbs/day	11.0 ug/l	0.61 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.08 lbs/day

2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0	ug/l	239.30	lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5	ug/l	0.36	lbs/day
p-Chloro-m-cresol			0.0	ug/l	0.00	lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0	ug/l	26.16	lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0	ug/l	22.26	lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0	ug/l	946.07	lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	144.69	lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	144.69	lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1	ug/l	0.00	lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2	ug/l	0.18	lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0	ug/l	43.96	lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0	ug/l	2.17	lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0	ug/l	94.61	lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0	ug/l	128.00	lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1	ug/l	0.51	lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5	ug/l	0.03	lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0	ug/l	1613.88	lbs/day
Fluoranthene	ug/l	lbs/day	370.0	ug/l	20.59	lbs/day
4-Chlorophenyl phenyl ether						
4-Bromophenyl phenyl ether						
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0	ug/l	9460.68	lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Methylene chloride (HM	ug/l	lbs/day	1600.0	ug/l	89.04	lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0	ug/l	20.03	lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0	ug/l	1.22	lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0	ug/l	1.89	lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0	ug/l	2.78	lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0	ug/l	946.07	lbs/day
Isophorone	ug/l	lbs/day	600.0	ug/l	33.39	lbs/day
Naphthalene						
Nitrobenzene	ug/l	lbs/day	1900.0	ug/l	105.74	lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0	ug/l	779.11	lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0	ug/l	42.57	lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1	ug/l	0.45	lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0	ug/l	0.89	lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4	ug/l	0.08	lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2	ug/l	0.46	lbs/day
Phenol	ug/l	lbs/day	4.6E+06	ug/l	2.56E+05	lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9	ug/l	0.33	lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0	ug/l	289.39	lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0	ug/l	667.81	lbs/day
Di-n-octyl phthlate						
Diethyl phthalate	ug/l	lbs/day	120000.0	ug/l	6678.13	lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06	ug/l	1.61E+05	lbs/day

Benzo(a)anthracene (P/	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Acenaphthylene (PAH)						
Anthracene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0	ug/l	612.16	lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9	ug/l	0.50	lbs/day
Toluene	ug/l	lbs/day	200000.0	ug/l	11130.21	lbs/day
Trichloroethylene	ug/l	lbs/day	81.0	ug/l	4.51	lbs/day
Vinyl chloride	ug/l	lbs/day	525.0	ug/l	29.22	lbs/day
						lbs/day
Pesticides						lbs/day
Aldrin	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Dieldrin	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Chlordane	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4,4'-DDT	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4,4'-DDE	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4,4'-DDD	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.11	lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.11	lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0	ug/l	0.11	lbs/day
Endrin	ug/l	lbs/day	0.8	ug/l	0.05	lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8	ug/l	0.05	lbs/day
Heptachlor	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Heptachlor epoxide						
PCB's						
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1254 (Arochlor 125	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1221 (Arochlor 122	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1232 (Arochlor 123	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1260 (Arochlor 126	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1016 (Arochlor 101	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Pesticide						
Toxaphene	ug/l		0.0	ug/l	0.00	lbs/day
Dioxin						
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day				
Metals						
Antimony	ug/l	lbs/day				
Arsenic	ug/l	lbs/day	4300.00	ug/l	239.30	lbs/day
Asbestos	ug/l	lbs/day				
Beryllium						

Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	12243.23 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.01 lbs/day
Nickel			4600.00 ug/l	255.99 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.35 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the

upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	10.0	20.0	8.2	0.10	0.50	6.92	0.00	338.4
Fall	10.0	12.0	8.1	0.10	0.50	---	0.00	338.4
Winter	10.0	4.0	8.0	0.10	0.50	---	0.00	338.4
Spring	10.0	12.0	8.1	0.10	0.50	---	0.00	338.4

Dissolved	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*

Dissolved	Hg	Ni	Se	Ag	Zn	Boron
Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0

* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.21000	17.0	750.00	0.65664
Fall	0.21000	15.0		
Winter	0.21000	12.0		
Spring	0.21000	15.0		

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.210 MGD	0.325 cfs
Fall	0.210 MGD	0.325 cfs
Winter	0.210 MGD	0.325 cfs
Spring	0.210 MGD	0.325 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.21 MGD. If the discharger is allowed to have a flow greater than 0.21 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements	LC50 >	21.7% Effluent	[Acute]
	IC25 >	3.1% Effluent	[Chronic]

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	43.8 lbs/day
Fall	25.0 mg/l as BOD5	43.8 lbs/day
Winter	25.0 mg/l as BOD5	43.8 lbs/day
Spring	25.0 mg/l as BOD5	43.8 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	40.7	mg/l as N	71.2	lbs/day
	1 Hour Avg. - Acute	82.6	mg/l as N	144.7	lbs/day
Fall	4 Day Avg. - Chronic	66.2	mg/l as N	115.9	lbs/day
	1 Hour Avg. - Acute	87.6	mg/l as N	153.3	lbs/day
Winter	4 Day Avg. - Chronic	75.9	mg/l as N	132.9	lbs/day
	1 Hour Avg. - Acute	98.8	mg/l as N	173.1	lbs/day
Spring	4 Day Avg. - Chronic	66.2	mg/l as N	0.0	lbs/day
	1 Hour Avg. - Acute	87.6	mg/l as N	0.0	lbs/day

Acuté limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 50.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.350	mg/l	0.61	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.55	lbs/day
Fall	4 Day Avg. - Chronic	0.350	mg/l	0.61	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.55	lbs/day
Winter	4 Day Avg. - Chronic	0.350	mg/l	0.61	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.55	lbs/day
Spring	4 Day Avg. - Chronic	0.350	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	27721.4	mg/l	24.27	tons/day
Fall	Maximum, Acute	27721.4	mg/l	24.27	tons/day
Winter	Maximum, Acute	27721.4	mg/l	24.27	tons/day
Spring	4 Day Avg. - Chronic	27721.4	mg/l	24.27	tons/day

Colorado Salinity Form Limits Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 300 mg/l):

	4 Day Average Concentration		Load	1 Hour Average Concentration		Load
Aluminum	N/A		N/A	12,256.4	ug/l	21.5 lbs/day
Arsenic	6,014.02	ug/l	6.8 lbs/day	5,560.6	ug/l	9.7 lbs/day
Cadmium	16.96	ug/l	0.0 lbs/day	105.6	ug/l	0.2 lbs/day
Chromium III	6,710.58	ug/l	7.6 lbs/day	72,659.7	ug/l	127.2 lbs/day
Chromium VI	227.24	ug/l	0.3 lbs/day	201.1	ug/l	0.4 lbs/day
Copper	733.59	ug/l	0.8 lbs/day	633.8	ug/l	1.1 lbs/day
Iron	N/A		N/A	16,371.5	ug/l	28.7 lbs/day
Lead	384.97	ug/l	0.4 lbs/day	5,406.6	ug/l	9.5 lbs/day
Mercury	0.38	ug/l	0.0 lbs/day	39.3	ug/l	0.1 lbs/day
Nickel	4,174.87	ug/l	4.7 lbs/day	19,467.2	ug/l	34.1 lbs/day
Selenium	97.25	ug/l	0.1 lbs/day	303.3	ug/l	0.5 lbs/day
Silver	N/A	ug/l	N/A lbs/day	410.4	ug/l	0.7 lbs/day
Zinc	9,657.05	ug/l	10.9 lbs/day	4,980.5	ug/l	8.7 lbs/day
Cyanide	165.26	ug/l	0.2 lbs/day	360.6	ug/l	0.6 lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	52.8 Deg. C.	127.0 Deg. F
Fall	44.8 Deg. C.	112.6 Deg. F
Winter	36.8 Deg. C.	98.2 Deg. F
Spring	44.8 Deg. C.	112.6 Deg. F

Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

	4 Day Average Concentration		Load		1 Hour Average Concentration		Load	
Aldrin					1.5E+00	ug/l	4.06E-03	lbs/day
Chlordane	4.30E-03	ug/l	7.53E-03	lbs/day	1.2E+00	ug/l	3.25E-03	lbs/day
DDT, DDE	1.00E-03	ug/l	1.75E-03	lbs/day	5.5E-01	ug/l	1.49E-03	lbs/day
Dieldrin	1.90E-03	ug/l	3.33E-03	lbs/day	1.3E+00	ug/l	3.39E-03	lbs/day
Endosulfan	5.60E-02	ug/l	9.81E-02	lbs/day	1.1E-01	ug/l	2.98E-04	lbs/day
Endrin	2.30E-03	ug/l	4.03E-03	lbs/day	9.0E-02	ug/l	2.44E-04	lbs/day
Guthion	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	2.71E-05	lbs/day
Heptachlor	3.80E-03	ug/l	6.65E-03	lbs/day	2.6E-01	ug/l	7.04E-04	lbs/day
Lindane	8.00E-02	ug/l	1.40E-01	lbs/day	1.0E+00	ug/l	2.71E-03	lbs/day
Methoxychlor	0.00E+00	ug/l	0.00E+00	lbs/day	3.0E-02	ug/l	8.13E-05	lbs/day
Mirex	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	2.71E-05	lbs/day
Parathion	0.00E+00	ug/l	0.00E+00	lbs/day	4.0E-02	ug/l	1.08E-04	lbs/day
PCB's	1.40E-02	ug/l	2.45E-02	lbs/day	2.0E+00	ug/l	5.42E-03	lbs/day
Pentachlorophenol	1.30E+01	ug/l	2.28E+01	lbs/day	2.0E+01	ug/l	5.42E-02	lbs/day
Toxephene	2.00E-04	ug/l	3.50E-04	lbs/day	7.3E-01	ug/l	1.98E-03	lbs/day

Effluent Targets for Pollution Indicators
Based upon Water Quality Standards

In-stream indicator criteria of downstream segments for Pollution Indicators would be met by achieving the following effluent targets

	1 Hour Average Concentration		Loading	
Gross Beta (pCi/l)	50.0	pCi/L		
BOD (mg/l)	5.0	mg/l	8.8	lbs/day
Nitrates as N	4.0	mg/l	7.0	lbs/day
Total Phosphorus as P	0.05	mg/l	0.1	lbs/day
Total Suspended Solids	90.0	mg/l	157.6	lbs/day

Note: Pollution indicator targets are for information purposes only.

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	Maximum Concentration Concentration		Load	
Toxic Organics				
Acenaphthene	8.58E+04	ug/l	1.50E+02	lbs/day
Acrolein	2.48E+04	ug/l	4.34E+01	lbs/day
Acrylonitrile	2.10E+01	ug/l	3.67E-02	lbs/day
Benzene	2.26E+03	ug/l	3.95E+00	lbs/day

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Benzidine	ug/l	lbs/day
Carbon tetrachloride	1.40E+02 ug/l	2.45E-01 lbs/day
Chlorobenzene	6.67E+05 ug/l	1.17E+03 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	2.45E-02 ug/l	4.29E-05 lbs/day
1,2-Dichloroethane	3.15E+03 ug/l	5.51E+00 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	2.83E+02 ug/l	4.95E-01 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	1.33E+03 ug/l	2.34E+00 lbs/day
1,1,2,2-Tetrachloroethane	3.50E+02 ug/l	6.12E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	4.45E+01 ug/l	7.79E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	1.37E+05 ug/l	2.39E+02 lbs/day
2,4,6-Trichlorophenol	2.07E+02 ug/l	3.62E-01 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	1.49E+04 ug/l	2.62E+01 lbs/day
2-Chlorophenol	1.27E+04 ug/l	2.23E+01 lbs/day
1,2-Dichlorobenzene	5.40E+05 ug/l	9.46E+02 lbs/day
1,3-Dichlorobenzene	8.26E+04 ug/l	1.45E+02 lbs/day
1,4-Dichlorobenzene	8.26E+04 ug/l	1.45E+02 lbs/day
3,3'-Dichlorobenzidine	2.45E+00 ug/l	4.29E-03 lbs/day
1,1-Dichloroethylene	1.02E+02 ug/l	1.78E-01 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	2.51E+04 ug/l	4.40E+01 lbs/day
1,2-Dichloropropane	1.24E+03 ug/l	2.17E+00 lbs/day
1,3-Dichloropropylene	5.40E+04 ug/l	9.46E+01 lbs/day
2,4-Dimethylphenol	7.31E+04 ug/l	1.28E+02 lbs/day
2,4-Dinitrotoluene	2.89E+02 ug/l	5.06E-01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	1.72E+01 ug/l	3.01E-02 lbs/day
Ethylbenzene	9.22E+05 ug/l	1.61E+03 lbs/day
Fluoranthene	1.18E+04 ug/l	2.06E+01 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	5.40E+06 ug/l	9.46E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	5.09E+04 ug/l	8.90E+01 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	1.14E+04 ug/l	2.00E+01 lbs/day
Dichlorobromomethane(HM)	6.99E+02 ug/l	1.22E+00 lbs/day
Chlorodibromomethane (HM)	1.08E+03 ug/l	1.89E+00 lbs/day
Hexachlorocyclopentadiene	5.40E+05 ug/l	9.46E+02 lbs/day
Isophorone	1.91E+04 ug/l	3.34E+01 lbs/day
Naphthalene		
Nitrobenzene	6.04E+04 ug/l	1.06E+02 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	4.45E+05 ug/l	7.79E+02 lbs/day

4,6-Dinitro-o-cresol	2.43E+04 ug/l	4.26E+01 lbs/day
N-Nitrosodimethylamine	2.57E+02 ug/l	4.51E-01 lbs/day
N-Nitrosodiphenylamine	5.09E+02 ug/l	8.90E-01 lbs/day
N-Nitrosodi-n-propylamine	4.45E+01 ug/l	7.79E-02 lbs/day
Pentachlorophenol	2.61E+02 ug/l	4.56E-01 lbs/day
Phenol	1.46E+08 ug/l	2.56E+05 lbs/day
Bis(2-ethylhexyl)phthalate	1.88E+02 ug/l	3.28E-01 lbs/day
Butyl benzyl phthalate	1.65E+05 ug/l	2.89E+02 lbs/day
Di-n-butyl phthalate	3.81E+05 ug/l	6.68E+02 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	3.81E+06 ug/l	6.68E+03 lbs/day
Dimethyl phthlate	9.22E+07 ug/l	1.61E+05 lbs/day
Benzo(a)anthracene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Benzo(a)pyrene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Benzo(b)fluoranthene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Benzo(k)fluoranthene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Chrysene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Pyrene (PAH)	3.50E+05 ug/l	6.12E+02 lbs/day
Tetrachloroethylene	2.83E+02 ug/l	4.95E-01 lbs/day
Toluene	6.36E+06 ug/l	1.11E+04 lbs/day
Trichloroethylene	2.57E+03 ug/l	4.51E+00 lbs/day
Vinyl chloride	1.67E+04 ug/l	2.92E+01 lbs/day
Pesticides		
Aldrin	4.45E-03 ug/l	7.79E-06 lbs/day
Dieldrin	4.45E-03 ug/l	7.79E-06 lbs/day
Chlordane	1.88E-02 ug/l	3.28E-05 lbs/day
4,4'-DDT	1.88E-02 ug/l	3.28E-05 lbs/day
4,4'-DDE	1.88E-02 ug/l	3.28E-05 lbs/day
4,4'-DDD	2.67E-02 ug/l	4.67E-05 lbs/day
alpha-Endosulfan	6.36E+01 ug/l	1.11E-01 lbs/day
beta-Endosulfan	6.36E+01 ug/l	1.11E-01 lbs/day
Endosulfan sulfate	6.36E+01 ug/l	1.11E-01 lbs/day
Endrin	2.57E+01 ug/l	4.51E-02 lbs/day
Endrin aldehyde	2.57E+01 ug/l	4.51E-02 lbs/day
Heptachlor	6.67E-03 ug/l	1.17E-05 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1254 (Arochlor 1254)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1221 (Arochlor 1221)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1232 (Arochlor 1232)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1248 (Arochlor 1248)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1260 (Arochlor 1260)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1016 (Arochlor 1016)	1.43E-03 ug/l	2.50E-06 lbs/day

Pesticide				
Toxaphene	2.38E-02	ug/l	4.17E-05	lbs/day
Metals				
Antimony		ug/l		lbs/day
Arsenic		ug/l		lbs/day
Asbestos		ug/l		lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper		ug/l		lbs/day
Cyanide		ug/l		lbs/day
Lead				
Mercury		ug/l		lbs/day
Nickel		ug/l		lbs/day
Selenium				
Silver				
Thallium		ug/l		lbs/day
Zinc				
Dioxin				
Dioxin (2,3,7,8-TCDD)	4.45E-07	ug/l	7.79E-10	lbs/day

Metals Effluent Limitations for Protection of All Beneficial Uses Based upon Water Quality Standards and Toxics Rule

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		12256.4				12256.4	N/A
Antimony				136660.6		136660.6	
Arsenic	3178.2	5560.6			0.0	3178.2	6014.0
Barium						0.0	
Beryllium						0.0	
Cadmium	315.4	105.6			0.0	105.6	17.0
Chromium (III)		72659.7			0.0	72659.7	6710.6
Chromium (VI)	3153.7	201.1			0.0	201.07	227.24
Copper	6331.8	633.8				633.8	733.6
Cyanide		360.6	6991939.5			360.6	165.3
Iron		16371.5				16371.5	
Lead	3153.7	5406.6			0.0	3153.7	385.0
Mercury		39.34		4.77	0.0	4.77	0.381
Nickel		19467.2		146195.1		19467.2	4174.9
Selenium	1540.1	303.3			0.0	303.3	97.3

Silver		410.4		0.0	410.4	
Thallium			200.2		200.2	
Zinc		4980.5			4980.5	9657.0
Boron	23836.2				23836.2	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	12256.4	N/A	
Antimony	136660.64		
Arsenic	3178.2	6014.0	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	105.6	17.0	
Chromium (III)	72659.7	6711	
Chromium (VI)	201.1	227.2	Acute Controls
Copper	633.8	733.6	Acute Controls
Cyanide	360.6	165.3	
Iron	16371.5		
Lead	3153.7	385.0	
Mercury	4.767	0.381	
Nickel	19467.2	4175	
Selenium	303.3	97.3	
Silver	410.4	N/A	
Thallium	200.2		
Zinc	4980.5	9657.0	Acute Controls
Boron	23836.16		

Other Effluent Limitations are based upon R317-1.
E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required. Basic renewal, no increase in effluent flow or concentration.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised.

XIV. Special Considerations - TMDL

The Lewiston Lagoons discharge to a segment of the Cub River that is 303(d) listed for total phosphorous (TP). A TP TMDL was completed for the Cub River on December 23, 1997. The TMDL cited that the lagoons were "contained with occasional overflow". As a result, the TMDL treated the lagoons as a de minimis source indicated neither a load allocation nor load reduction for phosphorous. The lagoons are currently operated primarily as total containment lagoons with an occasional discharge once or twice a year.
Lewiston's lagoons contribute an average of .135 kg/d* TP. The TMDL calculated the total TP load attributed to the Cub River basin in Utah at 82 kg/d. The estimated TMDL target load for the Cub is 9 kg/d.
Lewiston's lagoons contribute 0.16 percent of the TMDL's current calculated load of 82 kg/d and 1.5 percent of the TMDL target load of 9 kg/d.

In the absence of a TP allocation for the lagoons, the occasional intermittent discharge should be managed such that discharge does not occur during the biologically productive season between June-September. Permit monitoring requirements for flow and TP concentration monitoring should be adequate to characterize the intermittent nature of the lagoon's discharge by specifying a duration of discharge and an average flow value.

The Cutler Reservoir and Cub River TMDLs are currently scheduled for revision. It is recommended that the revised Cub River TMDL include a specific load allocation for the Lewiston Lagoons.

*Calculation based on limited flow and concentration data

Utah Division of Water Quality
Salt Lake City, Utah

Prepared by:
David Wham
Utah Division of Water Quality
801-538-6052
File Name: Lewiston_Lagoons_8-7-12

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	2.000	25.653	0.000	25.653	0.400	0.400

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	4.000	0.000	0.000	32.000	32.000

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	1.000

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility:	**Lewiston Lagoons**		
UPDES No:	UT-0020214		
Current Flow:	0.02	MGD	Current flow is intermittent. This value represents an average flow over th
Design Flow	0.21	MGD	

Receiving Water:	**Cub River**		
Stream Classification:	2B, 3B, 4		
Stream Flows [cfs]:	10.0	Summer (July-Sept)	20th Percentile value used for all seasons
	10.0	Fall (Oct-Dec)	20th Percentile
	10.0	Winter (Jan-Mar)	20th Percentile
	10.0	Spring (Apr-June)	20th Percentile
	41.9	Average	
Stream TDS Values:	338.4	Summer (July-Sept)	80th Percentile value used for all seasons
	338.4	Fall (Oct-Dec)	80th Percentile
	338.4	Winter (Jan-Mar)	80th Percentile
	338.4	Spring (Apr-June)	80th Percentile

Effluent Limits:				**WQ Standard:**
Flow, MGD:	0.21	MGD	Design Flow	
BOD, mg/l:	25.0	Summer	5.0	Indicator
Dissolved Oxygen, mg/l	5.0	Summer	5.5	30 Day Average
TNH3, Chronic, mg/l:	40.7	Summer	Varies	Function of pH and Temperature
TDS, mg/l:	27721.4	Summer	1200.0	

Modeling Parameters:

Acute River Width:	50.0%
Chronic River Width:	100.0%

Level 1 Antidegradation Level Completed: Level II Review not required.

Date: 8/7/2012

Permit Writer:	[signature]	1/23/13
WLA by:	[signature]	8/7/12
WQM Sec. Approval:	[signature]	1/23/13
TMDL Sec. Approval:	Carl Adams	1/23/13

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

7-Aug-12
4:00 PM

Facilities: **Lewiston Lagoons** **UPDES No: UT-0020214**
Discharging to: **Cub River**

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Cub River:	2B, 3B, 4
Antidegradation Review:	Level I review completed. Level II review not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.50 mg/l (30 Day Average) 4.00 mg/l (7Day Average) 3.00 mg/l (1 Day Average
Maximum Total Dissolved Solids	1200.0 mg/l

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration		Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aluminum	87.00	ug/l**	0.152 lbs/day	750.00	ug/l	1.313 lbs/day
Arsenic	190.00	ug/l	0.333 lbs/day	340.00	ug/l	0.595 lbs/day
Cadmium	0.61	ug/l	0.001 lbs/day	6.52	ug/l	0.011 lbs/day
Chromium III	211.92	ug/l	0.371 lbs/day	4433.71	ug/l	7.764 lbs/day
ChromiumVI	11.00	ug/l	0.019 lbs/day	16.00	ug/l	0.028 lbs/day
Copper	23.85	ug/l	0.042 lbs/day	39.41	ug/l	0.069 lbs/day
Iron				1000.00	ug/l	1.751 lbs/day
Lead	12.88	ug/l	0.023 lbs/day	330.60	ug/l	0.579 lbs/day
Mercury	0.0120	ug/l	0.000 lbs/day	2.40	ug/l	0.004 lbs/day
Nickel	132.13	ug/l	0.231 lbs/day	1188.44	ug/l	2.081 lbs/day
Selenium	4.60	ug/l	0.008 lbs/day	20.00	ug/l	0.035 lbs/day
Silver	N/A	ug/l	N/A lbs/day	25.04	ug/l	0.044 lbs/day
Zinc	303.93	ug/l	0.532 lbs/day	303.93	ug/l	0.532 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 300 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration		Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aldrin				1.500	ug/l	0.003 lbs/day
Chlordane	0.004	ug/l	0.239 lbs/day	1.200	ug/l	0.002 lbs/day
DDT, DDE	0.001	ug/l	0.056 lbs/day	0.550	ug/l	0.001 lbs/day
Dieldrin	0.002	ug/l	0.106 lbs/day	1.250	ug/l	0.002 lbs/day
Endosulfan	0.056	ug/l	3.116 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002	ug/l	0.128 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion				0.010	ug/l	0.000 lbs/day
Heptachlor	0.004	ug/l	0.211 lbs/day	0.260	ug/l	0.000 lbs/day
Lindane	0.080	ug/l	4.452 lbs/day	1.000	ug/l	0.002 lbs/day
Methoxychlor				0.030	ug/l	0.000 lbs/day
Mirex				0.010	ug/l	0.000 lbs/day
Parathion				0.040	ug/l	0.000 lbs/day
PCB's	0.014	ug/l	0.779 lbs/day	2.000	ug/l	0.004 lbs/day
Pentachlorophenol	13.00	ug/l	723.464 lbs/day	20.000	ug/l	0.035 lbs/day
Toxephene	0.0002	ug/l	0.011 lbs/day	0.7300	ug/l	0.001 lbs/day

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.01 lbs/day
Chromium			100.0 ug/l	lbs/day

Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	1.05 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	**Concentration**	**Load***	**Concentration**	**Load***
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
ocyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		**Class 3A, 3B**	
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	150.26 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	43.41 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.04 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	3.95 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.24 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	1168.67 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	5.51 lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	ug/l	lbs/day	8.9 ug/l	0.50 lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	ug/l	lbs/day	42.0 ug/l	2.34 lbs/day
1,1,2,2-Tetrachloroethai	ug/l	lbs/day	11.0 ug/l	0.61 lbs/day
Chloroethane			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4 ug/l	0.08 lbs/day

2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0	ug/l	239.30 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5	ug/l	0.36 lbs/day
p-Chloro-m-cresol			0.0	ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0	ug/l	26.16 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0	ug/l	22.26 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0	ug/l	946.07 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	144.69 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	144.69 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1	ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2	ug/l	0.18 lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0	ug/l	43.96 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0	ug/l	2.17 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0	ug/l	94.61 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0	ug/l	128.00 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1	ug/l	0.51 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5	ug/l	0.03 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0	ug/l	1613.88 lbs/day
Fluoranthene	ug/l	lbs/day	370.0	ug/l	20.59 lbs/day
4-Chlorophenyl phenyl ether					
4-Bromophenyl phenyl ether					
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0	ug/l	9460.68 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methylene chloride (HM	ug/l	lbs/day	1600.0	ug/l	89.04 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0	ug/l	20.03 lbs/day
Dichlorobromomethane(	ug/l	lbs/day	22.0	ug/l	1.22 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0	ug/l	1.89 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0	ug/l	2.78 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0	ug/l	946.07 lbs/day
Isophorone	ug/l	lbs/day	600.0	ug/l	33.39 lbs/day
Naphthalene					
Nitrobenzene	ug/l	lbs/day	1900.0	ug/l	105.74 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0	ug/l	779.11 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0	ug/l	42.57 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1	ug/l	0.45 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0	ug/l	0.89 lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4	ug/l	0.08 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2	ug/l	0.46 lbs/day
Phenol	ug/l	lbs/day	4.6E+06	ug/l	2.56E+05 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9	ug/l	0.33 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0	ug/l	289.39 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0	ug/l	667.81 lbs/day
Di-n-octyl phthlate					
Diethyl phthalate	ug/l	lbs/day	120000.0	ug/l	6678.13 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06	ug/l	1.61E+05 lbs/day

Benzo(a)anthracene (P/	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Acenaphthylene (PAH)						
Anthracene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0	ug/l	612.16	lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9	ug/l	0.50	lbs/day
Toluene	ug/l	lbs/day	200000.0	ug/l	11130.21	lbs/day
Trichloroethylene	ug/l	lbs/day	81.0	ug/l	4.51	lbs/day
Vinyl chloride	ug/l	lbs/day	525.0	ug/l	29.22	lbs/day
						lbs/day
Pesticides						lbs/day
Aldrin	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Dieldrin	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Chlordane	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4,4'-DDT	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4,4'-DDE	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
4,4'-DDD	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.11	lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.11	lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0	ug/l	0.11	lbs/day
Endrin	ug/l	lbs/day	0.8	ug/l	0.05	lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8	ug/l	0.05	lbs/day
Heptachlor	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Heptachlor epoxide						
PCB's						
PCB 1242 (Arochlor 124	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1254 (Arochlor 125	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1221 (Arochlor 122	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1232 (Arochlor 123	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1248 (Arochlor 124	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1260 (Arochlor 126	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
PCB-1016 (Arochlor 10	ug/l	lbs/day	0.0	ug/l	0.00	lbs/day
Pesticide						
Toxaphene	ug/l		0.0	ug/l	0.00	lbs/day
Dioxin						
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day				
Metals						
Antimony	ug/l	lbs/day				
Arsenic	ug/l	lbs/day	4300.00	ug/l	239.30	lbs/day
Asbestos	ug/l	lbs/day				
Beryllium						

Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	12243.23 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.01 lbs/day
Nickel			4600.00 ug/l	255.99 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.35 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the

upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	10.0	20.0	8.2	0.10	0.50	6.92	0.00	338.4
Fall	10.0	12.0	8.1	0.10	0.50	---	0.00	338.4
Winter	10.0	4.0	8.0	0.10	0.50	---	0.00	338.4
Spring	10.0	12.0	8.1	0.10	0.50	---	0.00	338.4

Dissolved Metals All Seasons	Al ug/l	As ug/l	Cd ug/l	CrIII ug/l	CrVI ug/l	Copper ug/l	Fe ug/l	Pb ug/l
	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.83*	0.53*

Dissolved Metals All Seasons	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l
	0.0000	0.53*	1.06*	0.1*	0.053*	10.0

* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.21000	17.0	750.00	0.65664
Fall	0.21000	15.0		
Winter	0.21000	12.0		
Spring	0.21000	15.0		

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.210 MGD	0.325 cfs
Fall	0.210 MGD	0.325 cfs
Winter	0.210 MGD	0.325 cfs
Spring	0.210 MGD	0.325 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.21 MGD. If the discharger is allowed to have a flow greater than 0.21 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements	LC50 >	21.7% Effluent	[Acute]
	IC25 >	3.1% Effluent	[Chronic]

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	43.8 lbs/day
Fall	25.0 mg/l as BOD5	43.8 lbs/day
Winter	25.0 mg/l as BOD5	43.8 lbs/day
Spring	25.0 mg/l as BOD5	43.8 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	Concentration
Summer	5.00
Fall	5.00
Winter	5.00
Spring	5.00

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	40.7	mg/l as N	71.2	lbs/day
	1 Hour Avg. - Acute	82.6	mg/l as N	144.7	lbs/day
Fall	4 Day Avg. - Chronic	66.2	mg/l as N	115.9	lbs/day
	1 Hour Avg. - Acute	87.6	mg/l as N	153.3	lbs/day
Winter	4 Day Avg. - Chronic	75.9	mg/l as N	132.9	lbs/day
	1 Hour Avg. - Acute	98.8	mg/l as N	173.1	lbs/day
Spring	4 Day Avg. - Chronic	66.2	mg/l as N	0.0	lbs/day
	1 Hour Avg. - Acute	87.6	mg/l as N	0.0	lbs/day

Acuté limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 50.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.350	mg/l	0.61	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.55	lbs/day
Fall	4 Day Avg. - Chronic	0.350	mg/l	0.61	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.55	lbs/day
Winter	4 Day Avg. - Chronic	0.350	mg/l	0.61	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.55	lbs/day
Spring	4 Day Avg. - Chronic	0.350	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.311	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	27721.4	mg/l	24.27	tons/day
Fall	Maximum, Acute	27721.4	mg/l	24.27	tons/day
Winter	Maximum, Acute	27721.4	mg/l	24.27	tons/day
Spring	4 Day Avg. - Chronic	27721.4	mg/l	24.27	tons/day

Colorado Salinity Form Limits — Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 300 mg/l):

	4 Day Average Concentration		Load	1 Hour Average Concentration		Load
Aluminum	N/A		N/A	12,256.4	ug/l	21.5 lbs/day
Arsenic	6,014.02	ug/l	6.8 lbs/day	5,560.6	ug/l	9.7 lbs/day
Cadmium	16.96	ug/l	0.0 lbs/day	105.6	ug/l	0.2 lbs/day
Chromium III	6,710.58	ug/l	7.6 lbs/day	72,659.7	ug/l	127.2 lbs/day
Chromium VI	227.24	ug/l	0.3 lbs/day	201.1	ug/l	0.4 lbs/day
Copper	733.59	ug/l	0.8 lbs/day	633.8	ug/l	1.1 lbs/day
Iron	N/A		N/A	16,371.5	ug/l	28.7 lbs/day
Lead	384.97	ug/l	0.4 lbs/day	5,406.6	ug/l	9.5 lbs/day
Mercury	0.38	ug/l	0.0 lbs/day	39.3	ug/l	0.1 lbs/day
Nickel	4,174.87	ug/l	4.7 lbs/day	19,467.2	ug/l	34.1 lbs/day
Selenium	97.25	ug/l	0.1 lbs/day	303.3	ug/l	0.5 lbs/day
Silver	N/A	ug/l	N/A lbs/day	410.4	ug/l	0.7 lbs/day
Zinc	9,657.05	ug/l	10.9 lbs/day	4,980.5	ug/l	8.7 lbs/day
Cyanide	165.26	ug/l	0.2 lbs/day	360.6	ug/l	0.6 lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	52.8 Deg. C.	127.0 Deg. F
Fall	44.8 Deg. C.	112.6 Deg. F
Winter	36.8 Deg. C.	98.2 Deg. F
Spring	44.8 Deg. C.	112.6 Deg. F

Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

	4 Day Average Concentration		4 Day Average Load		1 Hour Average Concentration		1 Hour Average Load	
Aldrin					1.5E+00	ug/l	4.06E-03	lbs/day
Chlordane	4.30E-03	ug/l	7.53E-03	lbs/day	1.2E+00	ug/l	3.25E-03	lbs/day
DDT, DDE	1.00E-03	ug/l	1.75E-03	lbs/day	5.5E-01	ug/l	1.49E-03	lbs/day
Dieldrin	1.90E-03	ug/l	3.33E-03	lbs/day	1.3E+00	ug/l	3.39E-03	lbs/day
Endosulfan	5.60E-02	ug/l	9.81E-02	lbs/day	1.1E-01	ug/l	2.98E-04	lbs/day
Endrin	2.30E-03	ug/l	4.03E-03	lbs/day	9.0E-02	ug/l	2.44E-04	lbs/day
Guthion	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	2.71E-05	lbs/day
Heptachlor	3.80E-03	ug/l	6.65E-03	lbs/day	2.6E-01	ug/l	7.04E-04	lbs/day
Lindane	8.00E-02	ug/l	1.40E-01	lbs/day	1.0E+00	ug/l	2.71E-03	lbs/day
Methoxychlor	0.00E+00	ug/l	0.00E+00	lbs/day	3.0E-02	ug/l	8.13E-05	lbs/day
Mirex	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	2.71E-05	lbs/day
Parathion	0.00E+00	ug/l	0.00E+00	lbs/day	4.0E-02	ug/l	1.08E-04	lbs/day
PCB's	1.40E-02	ug/l	2.45E-02	lbs/day	2.0E+00	ug/l	5.42E-03	lbs/day
Pentachlorophenol	1.30E+01	ug/l	2.28E+01	lbs/day	2.0E+01	ug/l	5.42E-02	lbs/day
Toxephene	2.00E-04	ug/l	3.50E-04	lbs/day	7.3E-01	ug/l	1.98E-03	lbs/day

Effluent Targets for Pollution Indicators
Based upon Water Quality Standards

In-stream indicator criteria of downstream segments for Pollution Indicators would be met by achieving the following effluent targets

	1 Hour Average Concentration		1 Hour Average Loading	
Gross Beta (pCi/l)	50.0	pCi/L		
BOD (mg/l)	5.0	mg/l	8.8	lbs/day
Nitrates as N	4.0	mg/l	7.0	lbs/day
Total Phosphorus as P	0.05	mg/l	0.1	lbs/day
Total Suspended Solids	90.0	mg/l	157.6	lbs/day

Note: Pollution indicator targets are for information purposes only.

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	Maximum Concentration Concentration		Maximum Concentration Load	
Toxic Organics				
Acenaphthene	8.58E+04	ug/l	1.50E+02	lbs/day
Acrolein	2.48E+04	ug/l	4.34E+01	lbs/day
Acrylonitrile	2.10E+01	ug/l	3.67E-02	lbs/day
Benzene	2.26E+03	ug/l	3.95E+00	lbs/day

Benzidine		ug/l		lbs/day
Carbon tetrachloride	1.40E+02	ug/l	2.45E-01	lbs/day
Chlorobenzene	6.67E+05	ug/l	1.17E+03	lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	2.45E-02	ug/l	4.29E-05	lbs/day
1,2-Dichloroethane	3.15E+03	ug/l	5.51E+00	lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	2.83E+02	ug/l	4.95E-01	lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	1.33E+03	ug/l	2.34E+00	lbs/day
1,1,2,2-Tetrachloroethane	3.50E+02	ug/l	6.12E-01	lbs/day
Chloroethane				
Bis(2-chloroethyl) ether	4.45E+01	ug/l	7.79E-02	lbs/day
2-Chloroethyl vinyl ether				
2-Chloronaphthalene	1.37E+05	ug/l	2.39E+02	lbs/day
2,4,6-Trichlorophenol	2.07E+02	ug/l	3.62E-01	lbs/day
p-Chloro-m-cresol				
Chloroform (HM)	1.49E+04	ug/l	2.62E+01	lbs/day
2-Chlorophenol	1.27E+04	ug/l	2.23E+01	lbs/day
1,2-Dichlorobenzene	5.40E+05	ug/l	9.46E+02	lbs/day
1,3-Dichlorobenzene	8.26E+04	ug/l	1.45E+02	lbs/day
1,4-Dichlorobenzene	8.26E+04	ug/l	1.45E+02	lbs/day
3,3'-Dichlorobenzidine	2.45E+00	ug/l	4.29E-03	lbs/day
1,1-Dichloroethylene	1.02E+02	ug/l	1.78E-01	lbs/day
1,2-trans-Dichloroethylene1				
2,4-Dichlorophenol	2.51E+04	ug/l	4.40E+01	lbs/day
1,2-Dichloropropane	1.24E+03	ug/l	2.17E+00	lbs/day
1,3-Dichloropropylene	5.40E+04	ug/l	9.46E+01	lbs/day
2,4-Dimethylphenol	7.31E+04	ug/l	1.28E+02	lbs/day
2,4-Dinitrotoluene	2.89E+02	ug/l	5.06E-01	lbs/day
2,6-Dinitrotoluene				
1,2-Diphenylhydrazine	1.72E+01	ug/l	3.01E-02	lbs/day
Ethylbenzene	9.22E+05	ug/l	1.61E+03	lbs/day
Fluoranthene	1.18E+04	ug/l	2.06E+01	lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	5.40E+06	ug/l	9.46E+03	lbs/day
Bis(2-chloroethoxy) methane				
Methylene chloride (HM)	5.09E+04	ug/l	8.90E+01	lbs/day
Methyl chloride (HM)				
Methyl bromide (HM)				
Bromoform (HM)	1.14E+04	ug/l	2.00E+01	lbs/day
Dichlorobromomethane(HM)	6.99E+02	ug/l	1.22E+00	lbs/day
Chlorodibromomethane (HM)	1.08E+03	ug/l	1.89E+00	lbs/day
Hexachlorocyclopentadiene	5.40E+05	ug/l	9.46E+02	lbs/day
Isophorone	1.91E+04	ug/l	3.34E+01	lbs/day
Naphthalene				
Nitrobenzene	6.04E+04	ug/l	1.06E+02	lbs/day
2-Nitrophenol				
4-Nitrophenol				
2,4-Dinitrophenol	4.45E+05	ug/l	7.79E+02	lbs/day

4,6-Dinitro-o-cresol	2.43E+04 ug/l	4.26E+01 lbs/day
N-Nitrosodimethylamine	2.57E+02 ug/l	4.51E-01 lbs/day
N-Nitrosodiphenylamine	5.09E+02 ug/l	8.90E-01 lbs/day
N-Nitrosodi-n-propylamine	4.45E+01 ug/l	7.79E-02 lbs/day
Pentachlorophenol	2.61E+02 ug/l	4.56E-01 lbs/day
Phenol	1.46E+08 ug/l	2.56E+05 lbs/day
Bis(2-ethylhexyl)phthalate	1.88E+02 ug/l	3.28E-01 lbs/day
Butyl benzyl phthalate	1.65E+05 ug/l	2.89E+02 lbs/day
Di-n-butyl phthalate	3.81E+05 ug/l	6.68E+02 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	3.81E+06 ug/l	6.68E+03 lbs/day
Dimethyl phthlate	9.22E+07 ug/l	1.61E+05 lbs/day
Benzo(a)anthracene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Benzo(a)pyrene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Benzo(b)fluoranthene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Benzo(k)fluoranthene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Chrysene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	9.85E-01 ug/l	1.73E-03 lbs/day
Pyrene (PAH)	3.50E+05 ug/l	6.12E+02 lbs/day
Tetrachloroethylene	2.83E+02 ug/l	4.95E-01 lbs/day
Toluene	6.36E+06 ug/l	1.11E+04 lbs/day
Trichloroethylene	2.57E+03 ug/l	4.51E+00 lbs/day
Vinyl chloride	1.67E+04 ug/l	2.92E+01 lbs/day
Pesticides		
Aldrin	4.45E-03 ug/l	7.79E-06 lbs/day
Dieldrin	4.45E-03 ug/l	7.79E-06 lbs/day
Chlordane	1.88E-02 ug/l	3.28E-05 lbs/day
4,4'-DDT	1.88E-02 ug/l	3.28E-05 lbs/day
4,4'-DDE	1.88E-02 ug/l	3.28E-05 lbs/day
4,4'-DDD	2.67E-02 ug/l	4.67E-05 lbs/day
alpha-Endosulfan	6.36E+01 ug/l	1.11E-01 lbs/day
beta-Endosulfan	6.36E+01 ug/l	1.11E-01 lbs/day
Endosulfan sulfate	6.36E+01 ug/l	1.11E-01 lbs/day
Endrin	2.57E+01 ug/l	4.51E-02 lbs/day
Endrin aldehyde	2.57E+01 ug/l	4.51E-02 lbs/day
Heptachlor	6.67E-03 ug/l	1.17E-05 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1254 (Arochlor 1254)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1221 (Arochlor 1221)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1232 (Arochlor 1232)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1248 (Arochlor 1248)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1260 (Arochlor 1260)	1.43E-03 ug/l	2.50E-06 lbs/day
PCB-1016 (Arochlor 1016)	1.43E-03 ug/l	2.50E-06 lbs/day

Pesticide				
Toxaphene	2.38E-02	ug/l	4.17E-05	lbs/day
Metals				
Antimony		ug/l		lbs/day
Arsenic		ug/l		lbs/day
Asbestos		ug/l		lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper		ug/l		lbs/day
Cyanide		ug/l		lbs/day
Lead				
Mercury		ug/l		lbs/day
Nickel		ug/l		lbs/day
Selenium				
Silver				
Thallium		ug/l		lbs/day
Zinc				
Dioxin				
Dioxin (2,3,7,8-TCDD)	4.45E-07	ug/l	7.79E-10	lbs/day

Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		12256.4				12256.4	N/A
Antimony				136660.6		136660.6	
Arsenic	3178.2	5560.6			0.0	3178.2	6014.0
Barium						0.0	
Beryllium						0.0	
Cadmium	315.4	105.6			0.0	105.6	17.0
Chromium (III)		72659.7			0.0	72659.7	6710.6
Chromium (VI)	3153.7	201.1			0.0	201.07	227.24
Copper	6331.8	633.8				633.8	733.6
Cyanide		360.6	6991939.5			360.6	165.3
Iron		16371.5				16371.5	
Lead	3153.7	5406.6			0.0	3153.7	385.0
Mercury		39.34		4.77	0.0	4.77	0.381
Nickel		19467.2		146195.1		19467.2	4174.9
Selenium	1540.1	303.3			0.0	303.3	97.3

Silver		410.4		0.0	410.4	
Thallium			200.2		200.2	
Zinc		4980.5			4980.5	9657.0
Boron	23836.2				23836.2	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	12256.4	N/A	
Antimony	136660.64		
Arsenic	3178.2	6014.0	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	105.6	17.0	
Chromium (III)	72659.7	6711	
Chromium (VI)	201.1	227.2	Acute Controls
Copper	633.8	733.6	Acute Controls
Cyanide	360.6	165.3	
Iron	16371.5		
Lead	3153.7	385.0	
Mercury	4.767	0.381	
Nickel	19467.2	4175	
Selenium	303.3	97.3	
Silver	410.4	N/A	
Thallium	200.2		
Zinc	4980.5	9657.0	Acute Controls
Boron	23836.16		

Other Effluent Limitations are based upon R317-1.

E. coli	126.0	organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required. Basic renewal, no increase in effluent flow or concentration.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised.

XIV. Special Considerations - TMDL

The Lewiston Lagoons discharge to a segment of the Cub River that is 303(d) listed for total phosphorous (TP). A TP TMDL was completed for the Cub River on December 23, 1997. The TMDL cited that the lagoons were "contained with occasional overflow". As a result, the TMDL treated the lagoons as a de minimis source indicated neither a load allocation nor load reduction for phosphorous. The lagoons are currently operated primarily as total containment lagoons with an occasional discharge once or twice a year.
Lewiston's lagoons contribute an average of .135 kg/d* TP. The TMDL calculated the total TP load attributed to the Cub River basin in Utah at 82 kg/d. The estimated TMDL target load for the Cub is 9 kg/d.
Lewiston's lagoons contribute 0.16 percent of the TMDL's current calculated load of 82 kg/d and 1.5 percent of the TMDL target load of 9 kg/d.

In the absence of a TP allocation for the lagoons, the occasional intermittent discharge should be managed such that discharge does not occur during the biologically productive season between June-September. Permit monitoring requirements for flow and TP concentration monitoring should be adequate to characterize the intermittent nature of the lagoon's discharge by specifying a duration of discharge and an average flow value.

The Cutler Reservoir and Cub River TMDLs are currently scheduled for revision. It is recommended that the revised Cub River TMDL include a specific load allocation for the Lewiston Lagoons.

*Calculation based on limited flow and concentration data

Prepared by:
David Wham
Utah Division of Water Quality
801-538-6052
File Name: Lewiston_Lagoons_8-7-12

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	2.000	25.653	0.000	25.653	0.400	0.400

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	4.000	0.000	0.000	32.000	32.000

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	1.000

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

FILE COPY

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Municipal Permit No. **UT0020214**

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated ("UCA") 1953, as amended* (the *"Act"*),

CITY OF LEWISTON LAGOONS

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named

CUB RIVER,

in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit shall become effective on February 1, 2013

This permit expires at midnight on July 31, 2017.

Signed this 30 day of January 2013

Walter L. Baker, P.E.
Director

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Point.
The authorization to discharge wastewater provided under this part is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall Number	Location of Discharge Outfall
001	Located at latitude 41°58'00" and longitude 111°49'20" to the Cub

B. Narrative Standard.
It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in Outfall 001.

2. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Effluent Limitations *a			
	Maximum Monthly Average	Maximum Weekly Average	Daily Minimum	Daily Maximum
BOD_5, mg/L	25	35	NA	NA
BOD_5 Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E-coli	126	157	NA	NA
DO	NA	NA	5.0	NA
Ammonia, mg/L as N	NA	NA	NA	16.4
TRC, mg/L	NA	NA	NA	0.31
Oil & Grease, mg/L	NA	NA	NA	10
pH, Standard Units	NA	NA	6.5	9.0

NA – Not Applicable

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5, Influent *d Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
TSS, Influent *d Effluent	Monthly Monthly	Grab Grab	mg/L mg/L
E-Coli, No./100mL	Monthly	Grab	No./100mL
Total Ammonia	Monthly	Grab	mg/l
Phosphorus	Monthly	Grab	mg/L
Dissolved Oxygen	Monthly	Grab	mg/L
TRC	Monthly	Grab	mg/L
Oil & Grease	Monthly	Grab	mg/L
PH	Monthly	Grab	SU

*a See Definitions, *Part VIII*, for definition of terms.

*b 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.

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

*d 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.

D. Reporting of Wastewater Monitoring Results.
Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1) or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on March 28, 2013. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G)*, and submitted by NetDMR, or to the Division of Water Quality at the following address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

II. INDUSTRIAL PRETREATMENT PROGRAM

A. Pretreatment Reporting Requirements.

1. Because the design capacity of this municipal wastewater treatment facility is less than 5 MGD, the permittee will not be required to develop a State-approved industrial pretreatment program at this time. However, in order to determine if development of an industrial pretreatment program is warranted, the permittee shall conduct an **industrial waste survey**, as described in *Part II.B.1*, and submit it to the Division of Water Quality within **sixty (60) calendar days** of the effective date of this permit.

B. Industrial Wastes.

1. The "Industrial Waste Survey" as required by *Part II.A.1.* consists of; identifying each significant industrial user (SIU), determination of the qualitative and quantitative characteristics of each discharge, and appropriate production data. A (SIU) is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following: (1) has a process wastewater flow of 25,000 gallons or more per average work day; (2) has a flow greater than five percent of the flow carried by the municipal system receiving the waste; (3) is subject to Categorical Pretreatment Standards, or (4) has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

2. The permittee must notify the Executive Secretary of any new introductions by new or existing SIUs or any substantial change in pollutants from any major industrial source. Such notice must contain the information described in 1. above and be forwarded no later than sixty (60) days following the introduction or change.

3. Pretreatment Standards (*40 CFR 403.5*) developed pursuant to *Section 307* of *The Water Quality Act of 1987* require that under no circumstances shall the permittee allow introduction of the following pollutants into the waste treatment system from any source of non-domestic discharge:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140˚F (60˚C);

   b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

   d. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at such volume or strength as to cause interference in the POTW;

   e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104˚F (40˚C);

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

g. Pollutants which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems; or,

h. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

i. Any pollutant that causes pass through or interference at the POTW.

4. In addition to the general and specific limitations expressed above, more specific pretreatment limitations have been and will be promulgated for specific industrial categories under *Section 307* of *the Water Quality Act of 1987 as amended (WQA). (See 40 CFR, Subchapter N, Parts 400* through *500*, for specific information).

5. The permittee shall provide adequate notice to the Executive Secretary and the Division of Water Quality Industrial Pretreatment Coordinator of;

   a. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to *Sections 301* or *306* of the *WQA* if it were directly discharging those pollutants;

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit; and

   c. For the purposes of this section, adequate notice shall include information on:

      (1) The quality and quantity of effluent to be introduced into such treatment works; and,

      (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.

6. At such time as a specific pretreatment limitation becomes applicable to an industrial user of the permittee, the Executive Secretary may, as appropriate, do the following:

   a. Amend the permittee's UPDES discharge permit to specify the additional pollutant(s) and corresponding effluent limitation(s) consistent with the applicable national pretreatment limitation;

   b. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the *General Pretreatment Regulations* at *40 CFR 403*; and/or,

   c. Require the permittee to monitor its discharge for any pollutant, which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste.

7. The Executive Secretary retains, at all times, the right to take legal action against the industrial user and/or the treatment works, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level. If the permittee has failed to properly delineate maximum acceptable industrial contributor

levels, the Executive Secretary will look primarily to the permittee as the responsible party.

8. If local limits are developed per R317-8-8.5(4)(b) to protect the POTW from pass-through or interference, then the POTW must submit limits to DWQ for review and public notice R317-8-8.5(4)(c).

III. BIOSOLIDS REQUIREMENTS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a lagoon, there is not any regular sludge production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met.

IV. STORM WATER REQUIREMENTS

Wastewater treatment facilities, which include treatment lagoons, are required to comply with storm water permit requirements if they meet one or both of the following criteria:

1. The facility has an approved pretreatment program as described in 40 CFR Part 403.
2. The facility has a design flow of 1.0 MGD or greater.

The Lewiston City Lagoon facility does not meet either of the criteria; therefore a storm water permit is not required at this time. A storm water re-opener provision is included in the permit should a storm water permit be needed in the future.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling
Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.

B. Monitoring Procedures
Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503*, unless other test procedures have been specified in this permit.

C. Penalties for Tampering
The *Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Compliance Schedules.
Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

E. Additional Monitoring by the Permittee.
If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* and *40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

F. Records Contents.
Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

G. Retention of Records.
The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Executive Secretary at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 231-5729.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H, Upset Conditions*.);

   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit; or,

   e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected;

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Executive Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

5. Reports shall be submitted to the addresses in *Part I.D, Reporting of Monitoring Results*.

I. <u>Other Noncompliance Reporting.</u> Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*

J. Inspection and Entry The permittee shall allow the Executive Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including but not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Executive Secretary, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

VI. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply
The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.
The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions or the Act is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part VI.G, Bypass of Treatment Facilities* and *Part VI.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense.
It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate
The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit, which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.

E. Proper Operation and Maintenance
The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances.
Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential

maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Executive Secretary may take enforcement action against a permittee for bypass, unless:

      (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

      (2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

      (3) The permittee submitted notices as required under *section VI.G.3*.

   b. The executive Secretary may approve an anticipated bypass, after considering its adverse effects, if the Executive Secretary determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.

3. Notice.

   a. *Anticipated bypass*. Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Executive Secretary:

      (1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

      (2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Executive Secretary in advance of any changes to the bypass schedule;

      (3) Description of specific measures to be taken to minimize environmental and public health impacts;

      (4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

      (5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,

      (6) Any additional information requested by the Executive Secretary.

b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Executive Secretary, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Executive Secretary the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.

c. *Unanticipated bypass*. The permittee shall submit notice of an unanticipated bypass to the Executive Secretary as required under *Part IV.H*, Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph 2 of this section are met. Executive Secretary's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under *Part V.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part VI.D*, *Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

VII. GENERAL REQUIREMENTS

A. Planned Changes
The permittee shall give notice to the Executive Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Executive Secretary of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance
The permittee shall give advance notice to the Executive Secretary of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.

C. Permit Actions
This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee shall apply for and obtain a new permit. The application shall be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information
The permittee shall furnish to the Executive Secretary, within a reasonable time, any information which the Executive Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Executive Secretary, upon request, copies of records required to be kept by this permit.

F. Other Information
When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Executive Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements
All applications, reports or information submitted to the Executive Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Executive Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the Executive Secretary, and,

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may thus be either a named individual or any individual occupying a named position.

3. Changes to authorization. If an authorization under *paragraph VII.G.2* is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph VII.G.2.* must be submitted to the Executive Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports
The *Act* provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports
Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Executive Secretary. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability
Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. Property Rights
The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability
The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers
This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Executive Secretary at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee's containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Executive Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph *2* above.

N. State or Federal Laws
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.

O. Water Quality - Reopener Provision
This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.

P. Biosolids – Reopener Provision
This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations

for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.

Q. Toxicity Limitation - Reopener Provision
This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limitation, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

R. Storm Water-Reopener Provision
At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

S. Total Maximum Daily Load-Reopener Provision.
This permit may be reopened and modified (following proper administrative procedures) to include Total Maximum Daily Load (TMDL) monitoring, related effluent limits, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the TMDL Process and activity in effected impaired water body.

VIII. DEFINITIONS

A. Wastewater

1. The "7-day (and weekly) average", other than for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.

2. The "30-day (and monthly) average," other than for e-coli bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for e-coli bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

3. "Act," means the *Utah Water Quality Act.*

4. "Bypass," means the diversion of waste streams from any portion of a treatment facility.

5. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

   d. Continuous sample volume, with sample collection rate proportional to flow rate.

6. "CWA," means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987.*

7. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

8. "EPA," means the United States Environmental Protection Agency.

9. "Executive Secretary," means Executive Secretary of the Utah Water Quality Board.

10. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

11. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

12. "Severe Property Damage," means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

13. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.