

Utah Division of Water Quality  
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]  
Addendum: Statement of Basis

29-May-20  
4:00 PM

Facilities: Morgan City Lagoons  
Discharging to: Weber River

UPDES No: UT-0020893

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 in terms 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

Weber River: 1C, 2B, 3A, 4  
Antidegradation Review: Level I review completed. Level II review not required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH <sub>3</sub> )	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)	6.50 mg/l (30 Day Average) 5.00 mg/l (7Day Average) 4.00 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		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aluminum	87.00 ug/l**	0.211 lbs/day	750.00	ug/l	1.819 lbs/day
Arsenic	190.00 ug/l	0.461 lbs/day	340.00	ug/l	0.825 lbs/day
Cadmium	0.54 ug/l	0.001 lbs/day	5.45	ug/l	0.013 lbs/day
Chromium III	183.61 ug/l	0.445 lbs/day	3841.48	ug/l	9.318 lbs/day
ChromiumVI	11.00 ug/l	0.027 lbs/day	16.00	ug/l	0.039 lbs/day
Copper	20.54 ug/l	0.050 lbs/day	33.42	ug/l	0.081 lbs/day
Iron			1000.00	ug/l	2.426 lbs/day
Lead	10.31 ug/l	0.025 lbs/day	264.56	ug/l	0.642 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.006 lbs/day
Nickel	113.94 ug/l	0.276 lbs/day	1024.84	ug/l	2.486 lbs/day
Selenium	4.60 ug/l	0.011 lbs/day	20.00	ug/l	0.049 lbs/day
Silver	N/A ug/l	N/A lbs/day	18.53	ug/l	0.045 lbs/day
Zinc	262.04 ug/l	0.636 lbs/day	262.04	ug/l	0.636 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 251.82 mg/l as CaCO3

**Organics [Pesticides]**

Parameter	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard		
	Concentration	Load*	Concentration		Load*
Aldrin			1.500	ug/l	0.004 lbs/day
Chlordane	0.004 ug/l	5.415 lbs/day	1.200	ug/l	0.003 lbs/day
DDT, DDE	0.001 ug/l	1.259 lbs/day	0.550	ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	2.393 lbs/day	1.250	ug/l	0.003 lbs/day
Endosulfan	0.056 ug/l	70.516 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	2.896 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	4.785 lbs/day	0.260	ug/l	0.001 lbs/day
Lindane	0.080 ug/l	100.737 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	17.629 lbs/day	2.000	ug/l	0.005 lbs/day
Pentachlorophenol	13.00 ug/l	16369.767 lbs/day	20.000	ug/l	0.049 lbs/day
Toxephene	0.0002 ug/l	0.252 lbs/day	0.7300	ug/l	0.002 lbs/day

**Utah Division of Water Quality  
Salt Lake City, Utah**

**IV. Numeric Stream Standards for Protection of Agriculture**

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	0.91 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	1.46 tons/day

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

Metals	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			50.0 ug/l	62.961 lbs/day
Barium			1000.0 ug/l	1259.213 lbs/day
Cadmium			10.0 ug/l	12.592 lbs/day
Chromium			50.0 ug/l	62.961 lbs/day
Lead			50.0 ug/l	62.961 lbs/day
Mercury			2.0 ug/l	2.518 lbs/day
Selenium			10.0 ug/l	12.592 lbs/day
Silver			50.0 ug/l	62.961 lbs/day
Fluoride (3)			1.4 ug/l	1.763 lbs/day
to			2.4 ug/l	3.022 lbs/day
Nitrates as N			10.0 ug/l	12.592 lbs/day

**Chlorophenoxy Herbicides**

2,4-D			100.0 ug/l	125.921 lbs/day
2,4,5-TP			10.0 ug/l	12.592 lbs/day
Endrin			0.2 ug/l	0.252 lbs/day
ocyclohexane (Lindane)			4.0 ug/l	5.037 lbs/day
Methoxychlor			100.0 ug/l	125.921 lbs/day
Toxaphene			5.0 ug/l	6.296 lbs/day

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

Toxic Organics	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	1200.00 ug/l	1511.06 lbs/day	2700.0 ug/l	3399.87 lbs/day
Acrolein	320.00 ug/l	402.95 lbs/day	780.0 ug/l	982.19 lbs/day
Acrylonitrile	0.06 ug/l	0.07 lbs/day	0.7 ug/l	0.83 lbs/day
Benzene	1.20 ug/l	1.51 lbs/day	71.0 ug/l	89.40 lbs/day
Benzidine	0.00012 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	0.25 ug/l	0.31 lbs/day	4.4 ug/l	5.54 lbs/day
Chlorobenzene	680.00 ug/l	856.26 lbs/day	21000.0 ug/l	26443.47 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	0.00075 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	0.38 ug/l	0.48 lbs/day	99.0 ug/l	124.66 lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	1.90 ug/l	2.39 lbs/day	8.9 ug/l	11.21 lbs/day

**Utah Division of Water Quality  
Salt Lake City, Utah**

1,1-Dichloroethane				
1,1,2-Trichloroethane	0.61 ug/l	0.77 lbs/day	42.0 ug/l	52.89 lbs/day
1,1,2,2-Tetrachloroetha Chloroethane	0.17 ug/l	0.21 lbs/day	11.0 ug/l	13.85 lbs/day
			0.0 ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	0.03 ug/l	0.04 lbs/day	1.4 ug/l	1.76 lbs/day
2-Chloroethyl vinyl ether	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2-Chloronaphthalene	1700.00 ug/l	2140.66 lbs/day	4300.0 ug/l	5414.62 lbs/day
2,4,6-Trichlorophenol	2.10 ug/l	2.64 lbs/day	6.5 ug/l	8.18 lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00 lbs/day
Chloroform (HM)	5.70 ug/l	7.18 lbs/day	470.0 ug/l	591.83 lbs/day
2-Chlorophenol	120.00 ug/l	151.11 lbs/day	400.0 ug/l	503.69 lbs/day
1,2-Dichlorobenzene	2700.00 ug/l	3399.87 lbs/day	17000.0 ug/l	21406.62 lbs/day
1,3-Dichlorobenzene	400.00 ug/l	503.69 lbs/day	2600.0 ug/l	3273.95 lbs/day
1,4-Dichlorobenzene	400.00 ug/l	503.69 lbs/day	2600.0 ug/l	3273.95 lbs/day
3,3'-Dichlorobenzidine	0.04 ug/l	0.05 lbs/day	0.1 ug/l	0.10 lbs/day
1,1-Dichloroethylene	0.06 ug/l	0.07 lbs/day	3.2 ug/l	4.03 lbs/day
1,2-trans-Dichloroethyle	700.00 ug/l	881.45 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dichlorophenol	93.00 ug/l	117.11 lbs/day	790.0 ug/l	994.78 lbs/day
1,2-Dichloropropane	0.52 ug/l	0.65 lbs/day	39.0 ug/l	49.11 lbs/day
1,3-Dichloropropylene	10.00 ug/l	12.59 lbs/day	1700.0 ug/l	2140.66 lbs/day
2,4-Dimethylphenol	540.00 ug/l	679.97 lbs/day	2300.0 ug/l	2896.19 lbs/day
2,4-Dinitrotoluene	0.11 ug/l	0.14 lbs/day	9.1 ug/l	11.46 lbs/day
2,6-Dinitrotoluene	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	0.04 ug/l	0.05 lbs/day	0.5 ug/l	0.68 lbs/day
Ethylbenzene	3100.00 ug/l	3903.56 lbs/day	29000.0 ug/l	36517.17 lbs/day
Fluoranthene	300.00 ug/l	377.76 lbs/day	370.0 ug/l	465.91 lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) e	1400.00 ug/l	1762.90 lbs/day	170000.0 ug/l	214066.19 lbs/day
Bis(2-chloroethoxy) met	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methylene chloride (HM	4.70 ug/l	5.92 lbs/day	1600.0 ug/l	2014.74 lbs/day
Methyl chloride (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Methyl bromide (HM)	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Bromoform (HM)	4.30 ug/l	5.41 lbs/day	360.0 ug/l	453.32 lbs/day
Dichlorobromomethane	0.27 ug/l	0.34 lbs/day	22.0 ug/l	27.70 lbs/day
Chlorodibromomethane	0.41 ug/l	0.52 lbs/day	34.0 ug/l	42.81 lbs/day
Hexachlorobutadiene(c)	0.44 ug/l	0.55 lbs/day	50.0 ug/l	62.96 lbs/day
Hexachlorocyclopentadi	240.00 ug/l	302.21 lbs/day	17000.0 ug/l	21406.62 lbs/day
Isophorone	8.40 ug/l	10.58 lbs/day	600.0 ug/l	755.53 lbs/day
Naphthalene				
Nitrobenzene	17.00 ug/l	21.41 lbs/day	1900.0 ug/l	2392.50 lbs/day
2-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4-Nitrophenol	0.00 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
2,4-Dinitrophenol	70.00 ug/l	88.14 lbs/day	14000.0 ug/l	17628.98 lbs/day
4,6-Dinitro-o-cresol	13.00 ug/l	16.37 lbs/day	765.0 ug/l	963.30 lbs/day
N-Nitrosodimethylamine	0.00069 ug/l	0.00 lbs/day	8.1 ug/l	10.20 lbs/day
N-Nitrosodiphenylamine	5.00 ug/l	6.30 lbs/day	16.0 ug/l	20.15 lbs/day
N-Nitrosodi-n-propylami	0.01 ug/l	0.01 lbs/day	1.4 ug/l	1.76 lbs/day
Pentachlorophenol	0.28 ug/l	0.35 lbs/day	8.2 ug/l	10.33 lbs/day
Phenol	2.10E+04 ug/l	2.64E+04 lbs/day	4.6E+06 ug/l	5.79E+06 lbs/day
Bis(2-ethylhexyl)phthala	1.80 ug/l	2.27 lbs/day	5.9 ug/l	7.43 lbs/day
Butyl benzyl phthalate	3000.00 ug/l	3777.64 lbs/day	5200.0 ug/l	6547.91 lbs/day
Di-n-butyl phthalate	2700.00 ug/l	3399.87 lbs/day	12000.0 ug/l	15110.55 lbs/day
Di-n-octyl phthlate				

**Utah Division of Water Quality  
Salt Lake City, Utah**

Diethyl phthalate	23000.00 ug/l	28961.90 lbs/day	120000.0 ug/l	151105.54 lbs/day
Dimethyl phthalate	3.13E+05 ug/l	3.94E+05 lbs/day	2.9E+06 ug/l	3.65E+06 lbs/day
Benzo(a)anthracene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Benzo(a)pyrene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Benzo(b)fluoranthene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Benzo(k)fluoranthene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Chrysene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)	9600.00 ug/l	12088.44 lbs/day	0.0 ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	0.0028 ug/l	0.00 lbs/day	0.0 ug/l	0.04 lbs/day
Pyrene (PAH)	960.00 ug/l	1208.84 lbs/day	11000.0 ug/l	13851.34 lbs/day
Tetrachloroethylene	0.80 ug/l	1.01 lbs/day	8.9 ug/l	11.21 lbs/day
Toluene	6800.00 ug/l	8562.65 lbs/day	200000 ug/l	251842.57 lbs/day
Trichloroethylene	2.70 ug/l	3.40 lbs/day	81.0 ug/l	102.00 lbs/day
Vinyl chloride	2.00 ug/l	2.52 lbs/day	525.0 ug/l	661.09 lbs/day
			0.0	0.00 lbs/day
			0.0	0.00 lbs/day
<b>Pesticides</b>				
Aldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Dieldrin	0.0001 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Chlordane	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDT	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDE	0.0006 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
4,4'-DDD	0.0008 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
alpha-Endosulfan	0.9300 ug/l	1.17 lbs/day	2.0 ug/l	2.52 lbs/day
beta-Endosulfan	0.9300 ug/l	1.17 lbs/day	2.0 ug/l	2.52 lbs/day
Endosulfan sulfate	0.9300 ug/l	1.17 lbs/day	2.0 ug/l	2.52 lbs/day
Endrin	0.7600 ug/l	0.96 lbs/day	0.8 ug/l	1.02 lbs/day
Endrin aldehyde	0.7600 ug/l	0.96 lbs/day	0.8 ug/l	1.02 lbs/day
Heptachlor	0.0002 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
Heptachlor epoxide				
<b>PCB's</b>				
PCB 1242 (Arochlor 1242)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1254 (Arochlor 1254)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1221 (Arochlor 1221)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1232 (Arochlor 1232)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1248 (Arochlor 1248)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1260 (Arochlor 1260)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
PCB-1016 (Arochlor 1016)	0.000044 ug/l	0.00 lbs/day	0.0 ug/l	0.00 lbs/day
<b>Pesticide</b>				
Toxaphene	0.000750 ug/l	0.00	0.0 ug/l	0.00 lbs/day
<b>Dioxin</b>				
Dioxin (2,3,7,8-TCDD)	1.30E-08 ug/l	0.00 lbs/day	1.40E-08	0.00
<b>Metals</b>				
Antimony	14.0 ug/l	17.63 lbs/day		
Arsenic	50.0 ug/l	62.96 lbs/day	4300.00 ug/l	5414.62 lbs/day
Asbestos	7.00E+06 ug/l	8.81E+06 lbs/day		
Beryllium				
Cadmium				

**Utah Division of Water Quality  
Salt Lake City, Utah**

Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	1636.98 lbs/day	2.2E+05 ug/l	277026.83 lbs/day
Lead	700.0 ug/l	881.45 lbs/day		
Mercury			0.15 ug/l	0.19 lbs/day
Nickel			4600.00 ug/l	5792.38 lbs/day
Selenium	0.1 ug/l	0.18 lbs/day		
Silver	610.0 ug/l	768.12 lbs/day		
Thallium			6.30 ug/l	7.93 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

**Utah Division of Water Quality  
Salt Lake City, Utah**

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**

	<b>Stream</b>								
	<b>Critical Low</b>								
	<b>Flow</b>	<b>Temp.</b>	<b>pH</b>	<b>T-NH3</b>	<b>BOD5</b>	<b>DO</b>	<b>TRC</b>	<b>TDS</b>	
	<b>cfs</b>	<b>Deg. C</b>		<b>mg/l as N</b>	<b>mg/l</b>	<b>mg/l</b>	<b>mg/l</b>	<b>mg/l</b>	<b>mg/l</b>
Summer (Irrig. Season)	250.0	15.9	8.5	0.03	1.75	7.31	0.00	300.2	
Fall	31.2	7.2	8.4	0.02	2.56	---	0.00	426.9	
Winter	17.9	4.2	8.2	0.03	2.00	---	0.00	426.9	
Spring	132.4	10.7	8.4	0.03	1.71	---	0.00	426.9	
Dissolved Metals	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb	
	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 Metals	Hg	Ni	Se	Ag	Zn	Boron			
	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

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Projected Discharge Information**

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.45000	17.6	862.22	1.61764
Fall	0.45000	5.8		
Winter	0.45000	3.1		
Spring	0.45000	14.6		

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	0.450 MGD	0.696 cfs
Fall	0.450 MGD	0.696 cfs
Winter	0.450 MGD	0.696 cfs
Spring	0.450 MGD	0.696 cfs

**Flow Requirement or Loading Requirement**

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.45 MGD. If the discharger is allowed to have a flow greater than 0.45 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occurring, the permit writers must include the discharge flow limitation 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 segments if the values below are met.

WET Requirements	LC50 >	1.9% Effluent	[Acute]
	IC25 >	0.3% Effluent	[Chronic]



**Utah Division of Water Quality  
Salt Lake City, Utah**

**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	45.0 mg/l as BOD5	168.9 lbs/day
Fall	45.0 mg/l as BOD5	168.9 lbs/day
Winter	45.0 mg/l as BOD5	168.9 lbs/day
Spring	45.0 mg/l as BOD5	168.9 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	327.2 mg/l as N	1,227.6 lbs/day
	1 Hour Avg. - Acute	276.1 mg/l as N	1,036.0 lbs/day
Fall	4 Day Avg. - Chronic	227.9 mg/l as N	855.2 lbs/day
	1 Hour Avg. - Acute	182.7 mg/l as N	685.4 lbs/day
Winter	4 Day Avg. - Chronic	44.8 mg/l as N	168.1 lbs/day
	1 Hour Avg. - Acute	43.6 mg/l as N	163.6 lbs/day
Spring	4 Day Avg. - Chronic	55.3 mg/l as N	207.5 lbs/day
	1 Hour Avg. - Acute	52.4 mg/l as N	196.5 lbs/day

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

**Utah Division of Water Quality  
Salt Lake City, Utah**

**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	5.187 mg/l	19.46 lbs/day
	1 Hour Avg. - Acute	5.019 mg/l	18.83 lbs/day
Fall	4 Day Avg. - Chronic	0.657 mg/l	2.47 lbs/day
	1 Hour Avg. - Acute	0.643 mg/l	2.41 lbs/day
Winter	4 Day Avg. - Chronic	0.381 mg/l	1.43 lbs/day
	1 Hour Avg. - Acute	0.377 mg/l	1.41 lbs/day
Spring	4 Day Avg. - Chronic	2.752 mg/l	0.00 lbs/day
	1 Hour Avg. - Acute	2.666 mg/l	0.00 lbs/day

**Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards**

Season		Concentration	Load
Summer	Maximum, Acute	324326.4 mg/l	608.48 tons/day
Fall	Maximum, Acute	278849.5 mg/l	523.16 tons/day
Winter	Maximum, Acute	273483.3 mg/l	513.09 tons/day
Spring	4 Day Avg. - Chronic	325304.0 mg/l	610.31 tons/day

Colorado Salinity Forum 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 251.82 mg/l):

	4 Day Average		1 Hour Average	
	Concentration	Load	Concentration	Load
Aluminum	N/A	N/A	134,991.0 ug/l	327.4 lbs/day
Arsenic	63,507.33 ug/l	154.0 lbs/day	61,247.3 ug/l	148.6 lbs/day
Cadmium	153.46 ug/l	0.4 lbs/day	970.6 ug/l	2.4 lbs/day
Chromium III	61,362.64 ug/l	148.8 lbs/day	693,471.6 ug/l	1682.0 lbs/day
Chromium VI	2,361.91 ug/l	5.7 lbs/day	2,175.2 ug/l	5.3 lbs/day
Copper	6,627.59 ug/l	16.1 lbs/day	5,891.5 ug/l	14.3 lbs/day
Iron	N/A	N/A	180,334.6 ug/l	437.4 lbs/day
Lead	3,194.29 ug/l	7.7 lbs/day	47,625.2 ug/l	115.5 lbs/day
Mercury	4.03 ug/l	0.0 lbs/day	433.3 ug/l	1.1 lbs/day
Nickel	37,978.58 ug/l	92.1 lbs/day	184,901.0 ug/l	448.5 lbs/day
Selenium	1,011.89 ug/l	2.5 lbs/day	3,325.7 ug/l	8.1 lbs/day
Silver	N/A ug/l	N/A lbs/day	3,345.8 ug/l	8.1 lbs/day
Zinc	87,925.29 ug/l	213.3 lbs/day	47,298.5 ug/l	114.7 lbs/day

**Utah Division of Water Quality  
Salt Lake City, Utah**

Cyanide	1,745.38 ug/l	4.2 lbs/day	3,972.3	ug/l	9.6 lbs/day
---------	---------------	-------------	---------	------	-------------

**Effluent Limitations for Heat/Temperature based upon  
Water Quality Standards**

Summer	100.0 Deg. C.	212.0 Deg. F
Fall	54.0 Deg. C.	129.2 Deg. F
Winter	31.9 Deg. C.	89.4 Deg. F
Spring	100.0 Deg. C.	212.0 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		1 Hour Average		
	Concentration	Load	Concentration		Load
Aldrin			1.5E+00	ug/l	5.63E-03 lbs/day
Chlordane	4.30E-03 ug/l	1.61E-02 lbs/day	1.2E+00	ug/l	4.50E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	3.75E-03 lbs/day	5.5E-01	ug/l	2.06E-03 lbs/day
Dieldrin	1.90E-03 ug/l	7.13E-03 lbs/day	1.3E+00	ug/l	4.69E-03 lbs/day
Endosulfan	5.60E-02 ug/l	2.10E-01 lbs/day	1.1E-01	ug/l	4.13E-04 lbs/day
Endrin	2.30E-03 ug/l	8.63E-03 lbs/day	9.0E-02	ug/l	3.38E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	3.75E-05 lbs/day
Heptachlor	3.80E-03 ug/l	1.43E-02 lbs/day	2.6E-01	ug/l	9.76E-04 lbs/day
Lindane	8.00E-02 ug/l	3.00E-01 lbs/day	1.0E+00	ug/l	3.75E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	1.13E-04 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	3.75E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	1.50E-04 lbs/day
PCB's	1.40E-02 ug/l	5.25E-02 lbs/day	2.0E+00	ug/l	7.50E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	4.88E+01 lbs/day	2.0E+01	ug/l	7.50E-02 lbs/day
Toxephene	2.00E-04 ug/l	7.50E-04 lbs/day	7.3E-01	ug/l	2.74E-03 lbs/day

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Effluent Targets for Pollution Indicators  
Based upon Water Quality Standards**

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

	<b>1 Hour Average</b>	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	12.1 lbs/day
Nitrates as N	4.0 mg/l	9.7 lbs/day
Total Phosphorus as P	0.05 mg/l	0.1 lbs/day
Total Suspended Solids	90.0 mg/l	218.3 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:

	<b>Maximum Concentration</b>	
	Concentration	Load
<b>Toxic Organics</b>		
Acenaphthene	4.32E+05 ug/l	1.62E+03 lbs/day
Acrolein	1.15E+05 ug/l	4.32E+02 lbs/day
Acrylonitrile	2.12E+01 ug/l	7.97E-02 lbs/day
Benzene	4.32E+02 ug/l	1.62E+00 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	9.00E+01 ug/l	3.38E-01 lbs/day
Chlorobenzene	2.45E+05 ug/l	9.19E+02 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	2.70E-01 ug/l	1.01E-03 lbs/day
1,2-Dichloroethane	1.37E+02 ug/l	5.13E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	6.84E+02 ug/l	2.57E+00 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	2.20E+02 ug/l	8.24E-01 lbs/day
1,1,2,2-Tetrachloroethane	6.12E+01 ug/l	2.30E-01 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.12E+01 ug/l	4.19E-02 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	6.12E+05 ug/l	2.30E+03 lbs/day
2,4,6-Trichlorophenol	7.56E+02 ug/l	2.84E+00 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	2.05E+03 ug/l	7.70E+00 lbs/day
2-Chlorophenol	4.32E+04 ug/l	1.62E+02 lbs/day
1,2-Dichlorobenzene	9.72E+05 ug/l	3.65E+03 lbs/day
1,3-Dichlorobenzene	1.44E+05 ug/l	5.41E+02 lbs/day
1,4-Dichlorobenzene	1.44E+05 ug/l	5.41E+02 lbs/day
3,3'-Dichlorobenzidine	1.44E+01 ug/l	5.41E-02 lbs/day

**Utah Division of Water Quality  
Salt Lake City, Utah**

1,1-Dichloroethylene	2.05E+01 ug/l	7.70E-02 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	3.35E+04 ug/l	1.26E+02 lbs/day
1,2-Dichloropropane	1.87E+02 ug/l	7.03E-01 lbs/day
1,3-Dichloropropylene	3.60E+03 ug/l	1.35E+01 lbs/day
2,4-Dimethylphenol	1.94E+05 ug/l	7.30E+02 lbs/day
2,4-Dinitrotoluene	3.96E+01 ug/l	1.49E-01 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	1.44E+01 ug/l	5.41E-02 lbs/day
Ethylbenzene	1.12E+06 ug/l	4.19E+03 lbs/day
Fluoranthene	1.08E+05 ug/l	4.05E+02 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	5.04E+05 ug/l	1.89E+03 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.69E+03 ug/l	6.35E+00 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	1.55E+03 ug/l	5.81E+00 lbs/day
Dichlorobromomethane(HM)	9.72E+01 ug/l	3.65E-01 lbs/day
Chlorodibromomethane (HM)	1.48E+02 ug/l	5.54E-01 lbs/day
Hexachlorocyclopentadiene	8.64E+04 ug/l	3.24E+02 lbs/day
Isophorone	3.02E+03 ug/l	1.14E+01 lbs/day
Naphthalene		
Nitrobenzene	6.12E+03 ug/l	2.30E+01 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	2.52E+04 ug/l	9.46E+01 lbs/day
4,6-Dinitro-o-cresol	4.68E+03 ug/l	1.76E+01 lbs/day
N-Nitrosodimethylamine	2.48E-01 ug/l	9.32E-04 lbs/day
N-Nitrosodiphenylamine	1.80E+03 ug/l	6.76E+00 lbs/day
N-Nitrosodi-n-propylamine	1.80E+00 ug/l	6.76E-03 lbs/day
Pentachlorophenol	1.01E+02 ug/l	3.78E-01 lbs/day
Phenol	7.56E+06 ug/l	2.84E+04 lbs/day
Bis(2-ethylhexyl)phthalate	6.48E+02 ug/l	2.43E+00 lbs/day
Butyl benzyl phthalate	1.08E+06 ug/l	4.05E+03 lbs/day
Di-n-butyl phthalate	9.72E+05 ug/l	3.65E+03 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	8.28E+06 ug/l	3.11E+04 lbs/day
Dimethyl phthlate	1.13E+08 ug/l	4.23E+05 lbs/day
Benzo(a)anthracene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Benzo(a)pyrene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Benzo(b)fluoranthene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Benzo(k)fluoranthene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Chrysene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	1.01E+00 ug/l	3.78E-03 lbs/day
Pyrene (PAH)	3.46E+05 ug/l	1.30E+03 lbs/day
Tetrachloroethylene	2.88E+02 ug/l	1.08E+00 lbs/day
Toluene	2.45E+06 ug/l	9.19E+03 lbs/day
Trichloroethylene	9.72E+02 ug/l	3.65E+00 lbs/day
Vinyl chloride	7.20E+02 ug/l	2.70E+00 lbs/day

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Pesticides**

Aldrin	4.68E-02 ug/l	1.76E-04 lbs/day
Dieldrin	5.04E-02 ug/l	1.89E-04 lbs/day
Chlordane	2.05E-01 ug/l	7.70E-04 lbs/day
4,4'-DDT	2.12E-01 ug/l	7.97E-04 lbs/day
4,4'-DDE	2.12E-01 ug/l	7.97E-04 lbs/day
4,4'-DDD	2.99E-01 ug/l	1.12E-03 lbs/day
alpha-Endosulfan	3.35E+02 ug/l	1.26E+00 lbs/day
beta-Endosulfan	3.35E+02 ug/l	1.26E+00 lbs/day
Endosulfan sulfate	3.35E+02 ug/l	1.26E+00 lbs/day
Endrin	2.74E+02 ug/l	1.03E+00 lbs/day
Endrin aldehyde	2.74E+02 ug/l	1.03E+00 lbs/day
Heptachlor	7.56E-02 ug/l	2.84E-04 lbs/day
Heptachlor epoxide		

**PCB's**

PCB 1242 (Arochlor 1242)	1.58E-02 ug/l	5.95E-05 lbs/day
PCB-1254 (Arochlor 1254)	1.58E-02 ug/l	5.95E-05 lbs/day
PCB-1221 (Arochlor 1221)	1.58E-02 ug/l	5.95E-05 lbs/day
PCB-1232 (Arochlor 1232)	1.58E-02 ug/l	5.95E-05 lbs/day
PCB-1248 (Arochlor 1248)	1.58E-02 ug/l	5.95E-05 lbs/day
PCB-1260 (Arochlor 1260)	1.58E-02 ug/l	5.95E-05 lbs/day
PCB-1016 (Arochlor 1016)	1.58E-02 ug/l	5.95E-05 lbs/day

**Pesticide**

Toxaphene	2.63E-01 ug/l	9.86E-04 lbs/day
-----------	---------------	------------------

**Metals**

Antimony	5041.65 ug/l	18.92 lbs/day
Arsenic	17720.40 ug/l	66.49 lbs/day
Asbestos	2.52E+09 ug/l	9.46E+06 lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	468153.41 ug/l	1756.63 lbs/day
Cyanide	252082.60 ug/l	945.88 lbs/day
Lead	0.00	0.00
Mercury	50.41 ug/l	0.19 lbs/day
Nickel	219671.98 ug/l	824.26 lbs/day
Selenium	0.00	0.00
Silver	0.00	0.00
Thallium	612.20 ug/l	2.30 lbs/day
Zinc		

**Dioxin**

Dioxin (2,3,7,8-TCDD)	4.68E-06 ug/l	1.76E-08 lbs/day
-----------------------	---------------	------------------

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

**Utah Division of Water Quality  
Salt Lake City, Utah**

	<b>Class 4 Acute Agricultural ug/l</b>	<b>Class 3 Acute Aquatic Wildlife ug/l</b>	<b>Acute Toxics Drinking Water Source ug/l</b>	<b>Acute Toxics Wildlife ug/l</b>	<b>1C Acute Health Criteria ug/l</b>	<b>Acute Most Stringent ug/l</b>	<b>Class 3 Chronic Aquatic Wildlife ug/l</b>
Aluminum		134991.0				134991.0	N/A
Antimony			5041.7	1548507.4		5041.7	
Arsenic	36011.8	61247.3	17720.4		0.0	17720.4	63507.3
Barium					360118.0	360118.0	
Beryllium						0.0	
Cadmium	3572.6	970.6			0.0	970.6	153.5
Chromium (III)		693471.6			0.0	693471.6	61362.6
Chromium (VI)	35726.3	2175.2			0.0	2175.20	2361.91
Copper	71738.1	5891.5	468153.4			5891.5	6627.6
Cyanide		3972.3	79225961.4			3972.3	1745.4
Iron		180334.6				180334.6	
Lead	35726.3	47625.2			0.0	35726.3	3194.3
Mercury		433.34	50.4	54.02	0.0	50.41	4.026
Nickel		184901.0	219672.0	1656542.8		184901.0	37978.6
Selenium	17434.9	3325.7			0.0	3325.7	1011.9
Silver		3345.8			0.0	3345.8	
Thallium			612.2	2268.7		612.2	
Zinc		47298.5				47298.5	87925.3
Boron	270088.5					270088.5	

**Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]**

[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	<b>WLA Acute ug/l</b>	<b>WLA Chronic ug/l</b>	
Aluminum	134991.0	N/A	
Antimony	5041.65		
Arsenic	17720.4	63507.3	Acute Controls
Asbestos	2.52E+09		
Barium			
Beryllium			
Cadmium	970.6	153.5	
Chromium (III)	693471.6	61363	
Chromium (VI)	2175.2	2361.9	Acute Controls
Copper	5891.5	6627.6	Acute Controls
Cyanide	3972.3	1745.4	
Iron	180334.6		
Lead	35726.3	3194.3	
Mercury	50.414	4.026	
Nickel	184901.0	37979	
Selenium	3325.7	1011.9	
Silver	3345.8	N/A	
Thallium	612.2		
Zinc	47298.5	87925.3	Acute Controls
Boron	270088.50		





**Utah Division of Water Quality  
Salt Lake City, Utah**

**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. See special provisions in Utah Water Quality

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Utah Division of Water Quality  
Salt Lake City, Utah**

Utah Division of Water Quality  
801-538-6052  
File Name: MorganLagoons\_WLA\_2020-final

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Utah Division of Water Quality  
Salt Lake City, Utah**

**APPENDIX - Coefficients and Other Model Information**

CBOD Coeff. (Kd)20 1/day 0.830	CBOD Coeff. FORCED (Kd)/day 0.000	CBOD Coeff. (Ka)T 1/day 0.688	REAER. Coeff. (Ka)20 (Ka)/day 3.885	REAER. Coeff. FORCED 1/day 0.000	REAER. Coeff. (Ka)T 1/day 3.525	NBOD Coeff. (Kn)20 1/day 0.400	NBOD Coeff. (Kn)T 1/day 0.292
Open Coeff. (K4)20 1/day 0.000	Open Coeff. (K4)T 1/day 0.000	NH3 LOSS (K5)20 1/day 4.000	NH3 (K5)T 1/day 3.313	NO2+NO3 LOSS (K6)20 1/day 0.000	NO2+NO3 (K6)T 1/day 0.000	TRC Decay K(CI)20 1/day 32.000	TRC K(CI)(T) 1/day 25.200
BENTHIC DEMAND (SOD)20 gm/m2/day 1.000	BENTHIC DEMAND (SOD)T gm/m2/day 0.772						
K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(CI) TRC {theta}	S Benthic {theta}

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Utah Division of Water Quality  
Salt Lake City, Utah**

**Antidegradation Review**

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that a Level II antidegradation Review is not required.