Colorado Department of Public Health and Environment

AUTHORIZATION TO DISCHARGE UNDER THE COLORADO DISCHARGE PERMIT SYSTEM PERMIT NUMBER CO0047767

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended), for both discharges to surface and ground waters, and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), for discharges to surface waters only, the

Pioneer Natural Resources USA, Inc.

is authorized to discharge from **the East Spanish Peaks Coalbed Methane Operation** located at Latitude 37° 11' North, Longitude 104° 48' West

to: Cow Canyon, Sarcillo Canyon, Burro Canyon, Santistevan Canyon, Smith Canyon, Unnamed Canyons, and Reilly Canyon, All Tributary to the Purgatoire River Mainstem

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) calendar days of the date of issuance of the final permit determination, per the Colorado Discharge Permit System Regulations, 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS and the Colorado Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the Applicant.

This permit and the authorization to discharge shall expire at midnight June 30, 2020

Modified, Reissued, and Signed this 19th day of June 2015

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Janet S. Kieler

Digitally signed by Janet S. Kieler
DN: dc=local, dc=dphe, ou=Divisions, ou=WQC, ou=Users, cn=Janet S. Kieler, email=janet.kieler@state.co.us
Date: 2015.06.19 13:26:27 -06'00'

Janet Kieler, Permits Section Manager
Water Quality Control Division

<u>Permit Actions Summary:</u>
Modification 1 - Minor Modification - Issued June 19, 2015, Effective July 1, 2015 (Part I)
Originally Issued May 29, 2015 and Effective July 1, 2015

TABLE OF CONTENTS

PART I **3**
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS **3**
1. Permitted Feature(s) 3
2. Limitations, Monitoring Frequencies and Sample Types 4
3. Special Monitoring, Reporting and Notification Conditions: 23
B. TERMS AND CONDITIONS **24**
1. Facilities Operation and Maintenance 24
2. Compliance Schedule(s) 25
3. Chronic WET Testing -Outfall(s): 057-A, 060-A, 065-A, 094-A, 202-A, 230-A, 075-A, 096-A, 105-A, 147-A, 156-A, 228-A, 238-A, 239-A 26
4. Acute WET Testing -Outfall(s): 079-A, 160-A, 183-A, 220-A, 221-A, 004-A, 215A, 007A, 073A, 217A, 016-A, 022-A, 028-A, 061-A, 063-A, 071-A, 090-A, 108-A, 112-A, 152-A, 191-A, 198-A, 210-A, 212-A, 213-A, 222-A 28
Table of IWCs 28
C. DEFINITIONS OF TERMS **30**
D. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS **35**
1. Routine Reporting of Data 35
2. Representative Sampling 35
3. Analytical and Sampling Methods for Monitoring and Reporting 35
4. Records 37
5. Signatory and Certification Requirements 38
PART II **39**
A. NOTIFICATION REQUIREMENTS **39**
1. Notification to Parties 39
2. Change in Discharge 39
3. Noncompliance Notification 39
4. Transfer of Ownership or Control 40
5. Other Notification Requirements 40
6. Bypass Notification 41
7. Bypass 41
8. Upsets 41
9. Submission of Incorrect or Incomplete Information 42
B. RESPONSIBILITIES **42**
1. Reduction, Loss, or Failure of Treatment Facility 42
2. Inspections and Right to Entry 42
3. Duty to Provide Information 43
4. Availability of Reports 43
5. Modification, Suspension, Revocation, or Termination of Permits By the Division 43
6. Oil and Hazardous Substance Liability 45
7. State Laws 46
8. Permit Violations 46
9. Severability 46
10. Confidentiality 46
11. Fees 46
12. Duration of Permit 46
13. Section 307 Toxics 46
14. Effect of Permit Issuance 46
PART III **48**

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Permitted Feature(s)

Beginning no later than the effective date of this permit and lasting through the expiration date, the permittee is authorized to discharge from, and self monitoring samples taken in accordance with the monitoring requirements shall be obtained from permitted feature(s):

Outfalls	Sampling Point	Main Drainage	Latitude	Longitude
004-A	End of discharge pipe	Santisteven Canyon	37.1861	-104.93531
007-A	End of discharge pipe	Unnamed Tributary to Purgatoire River	37.178	-104.94193
016-A	Wellhead	Sarcillo Canyon	37.1865	-104.760265
022-A	End of discharge pipe	Burro Canyon	37.1956	-104.748233
028-A	Wellhead	Burro Canyon	37.1842	-104.746505
057-A	End of discharge pipe	Reilly Canyon	37.2317	-104.713199
060-A	End of discharge pipe	Reilly Canyon	37.2053	-104.68198
061-A	Sampling valve	Reilly Canyon	37.2132	-104.700633
063-A	Wellhead	Sarcillo Canyon	37.1818	-104.75857
065-A	Sampling valve	Reilly Canyon	37.2279	-104.696929
071-A	End of discharge pipe	Cow Canyon	37.0964	-104.852743
073-A	Sampling valve	Unnamed Tributary to Purgatoire River	37.1114	-104.853846
075-A	Sampling valve	Sarcillo Canyon	37.1941	-104.765412
079-A	Sampling valve	Burro Canyon	37.2159	-104.719602
090-A	Sampling valve	Reilly Canyon	37.2478	-104.686342
094-A	End of discharge pipe	Reilly Canyon	37.2511	-104.666492
096-A	End of discharge pipe	Sarcillo Canyon	37.1771	-104.77456
105-A	End of discharge pipe	Sarcillo Canyon	37.1652	-104.776917
108-A	Sampling valve	Reilly Canyon	37.2417	-104.73772
112-A	End of discharge pipe	Burro Canyon	37.1944	-104.687741
147-A	End of discharge pipe	Sarcillo Canyon	37.1774	-104.791918
152-A	Sampling valve	Reilly Canyon	37.2591	-104.738671
156-A	Flow out of lined pit	Sarcillo Canyon	37.2164	-104.832642
160-A	End of discharge pipe	Burro Canyon	37.219	-104.738137
183-A	Sampling valve	Burro Canyon	37.2084	-104.743237
191-A	End of discharge pipe	Burro Canyon	37.2237	-104.783143
198-A	Wellhead	Sarcillo Canyon	37.2153	-104.858234
202-A	Wellhead	Reilly Canyon	37.2325	-104.66177
210-A	End of discharge pipe	Sarcillo Canyon	37.2006	-104.840285
212-A	End of discharge pipe	Burro Canyon	37.2138	-104.77961
213-A	End of discharge pipe	Sarcillo Canyon	37.2264	-104.85043
215-A	Sampling valve	Smith Canyon	37.1776	-104.752582
217-A	End of discharge flume	Unnamed Tributary to Purgatoire River	37.133	-104.80128
220-A	Sampling valve	Burro Canyon	37.2177	-104.746839
221-A	End of discharge pipe	Burro Canyon	37.219	-104.73526
222-A	Sampling valve	Burro Canyon	37.2076	-104.764107
228-A	Wellhead	Sarcillo Canyon	37.181	-104.79656
230-A	End of discharge pipe	Reilly Canyon	37.1967	-104.654401
238-A	Sampling valve	Sarcillo Canyon	37.2527	-104.851901
239-A	Sampling valve	Sarcillo Canyon	37.1939	-104.836705

The location(s) provided above will serve as the point(s) of compliance for this permit and are appropriate as they are located after all treatment and prior to discharge to the receiving water. Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 62.4, and the Colorado Discharge Permit System Regulations, Section 61.8(2), 5 C.C.R. 1002-61, the permitted discharge shall not contain effluent parameter concentrations which exceed the limitations specified below or exceed the specified flow limitation.

2. Limitations, Monitoring Frequencies and Sample Types

In order to obtain an indication of the probable compliance or noncompliance with the effluent limitations specified in Part I.A, the permittee shall monitor all effluent parameters at the frequencies and sample types specified below. Such monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring shall be reported on the Discharge Monitoring Report form (See Part I.D.)

Self-monitoring sampling by the permittee for compliance with the effluent monitoring requirements specified in this permit, shall be performed at the location(s) noted in Part I.A.1 above. If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

Oil and Grease Monitoring: For every permitted feature with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected, analyzed, and reported on the appropriate DMR. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

Flow limitations for individual outfalls

Parameter	Effluent Limitations Maximum Concentrations		Monitoring Requirements	
	30-Day Average	Daily Maximum	Frequency	Sample Type
Flow, MGD 50050				
004-A	0.393	Report	Monthly	Instantaneous
007-A	0.432	Report	Monthly	Instantaneous
016-A	0.002	Report	Monthly	Instantaneous
022-A	0.015	Report	Monthly	Instantaneous
028-A	0.007	Report	Monthly	Instantaneous
057-A	0.108	Report	Monthly	Instantaneous
060-A	0.287	Report	Monthly	Instantaneous
061-A	0.005	Report	Monthly	Instantaneous
063-A	0.004	Report	Monthly	Instantaneous
065-A	0.456	Report	Monthly	Instantaneous
071-A	0.044	Report	Monthly	Instantaneous
073-A	0.033	Report	Monthly	Instantaneous
075-A	0.089	Report	Monthly	Instantaneous
079-A	0.024	Report	Monthly	Instantaneous
090-A	0.050	Report	Monthly	Instantaneous
094-A	0.393	Report	Monthly	Instantaneous
096-A	0.258	Report	Monthly	Instantaneous
105-A	0.111	Report	Monthly	Instantaneous
108-A	0.088	Report	Monthly	Instantaneous
112-A	0.018	Report	Monthly	Instantaneous
147-A	0.016	Report	Monthly	Instantaneous
152-A	0.321	Report	Monthly	Instantaneous
156-A	0.073	Report	Monthly	Instantaneous
160-A	0.008	Report	Monthly	Instantaneous

Parameter	Effluent Limitations Maximum Concentrations		Monitoring Requirements	
	30-Day Average	Daily Maximum	Frequency	Sample Type
183-A	0.074	Report	Monthly	Instantaneous
191-A	0.026	Report	Monthly	Instantaneous
198-A	0.012	Report	Monthly	Instantaneous
202-A	0.038	Report	Monthly	Instantaneous
210-A	0.013	Report	Monthly	Instantaneous
212-A	0.032	Report	Monthly	Instantaneous
213-A	0.111	Report	Monthly	Instantaneous
215-A	0.048	Report	Monthly	Instantaneous
217-A	0.332	Report	Monthly	Instantaneous
220-A	0.017	Report	Monthly	Instantaneous
221-A	0.092	Report	Monthly	Instantaneous
222-A	0.072	Report	Monthly	Instantaneous
228-A	0.144	Report	Monthly	Instantaneous
230-A	0.131	Report	Monthly	Instantaneous
238-A	0.239	Report	Monthly	Instantaneous
239-A	0.006	Report	Monthly	Instantaneous

SAR limitations for individual outfalls

Parameter	Effluent Limitations Maximum Concentrations		Monitoring Requirements	
	Semiannual 85th Percentile**	Daily Maximum	Frequency	Sample Type
SAR 51613				
004-A	53.4	Report	Monthly	Calculated
007-A	56.4	Report	Monthly	Calculated
073-A	72.0	Report	Monthly	Calculated
075-A	75.8	Report	Monthly	Calculated
096-A	72.0	Report	Monthly	Calculated
105-A	75.0	Report	Monthly	Calculated
147-A	65.4	Report	Monthly	Calculated
156-A	59.1	Report	Monthly	Calculated
215-A	84.8	Report	Monthly	Calculated
217-A	75.0	Report	Monthly	Calculated
228-A	69.8	Report	Monthly	Calculated
238-A	63.1	Report	Monthly	Calculated
239-A	80.2	Report	Monthly	Calculated

* The SAR value of the effluent is to be reported as the adjusted SAR if the bicarbonate is greater than 200 mg/l. See the definitions section for information on calculating the adjusted SAR value.
** The 85th percentile value applies semiannually. Reporting shall be at the LCL concentration. See the definitions section for information on calculating the LCL concentration.

EC limitations for individual outfalls

Parameter	**Effluent Limitations Maximum Concentrations**		**Monitoring Requirements**	
	30-Day Average	**Daily Maximum**	**Frequency**	**Sample Type**
EC, dS/m 00094				
004-A	1.7	Report	Monthly	Grab
007-A	1.7	Report	Monthly	Grab
073-A	2.4	Report	Monthly	Grab
075-A	2.5	Report	Monthly	Grab
096-A	2.3	Report	Monthly	Grab
105-A	2.6	Report	Monthly	Grab
147-A	2.0	Report	Monthly	Grab
156-A	2.0	Report	Monthly	Grab
215-A	3.1	Report	Monthly	Grab
217-A	2.7	Report	Monthly	Grab
228-A	2.1	Report	Monthly	Grab
238-A	2.2	Report	Monthly	Grab
239-A	3.1	Report	Monthly	Grab

Permitted features: 004-A, 007-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l)	1649		NA	495	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l) (Low level)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 ≥IWC		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 ≥ IWC		Quarterly	Grab

The 2 yr average should be reported using the previous 23 months, regardless of the permit term failure

Permitted features: 075-A, 228-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	075-A: Fe, TR (µg/l)	1649		NA	495	Quarterly	Grab
00980	228-A: Fe, TR (µg/l)	1649		NA	567	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l) (Low level)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 ≥100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 ≥100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic *Pimephales promelas* Starting July 1, 2017			NOEC or IC25 ≥ IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic *Ceriodaphnia dubia* Starting July 1, 2017			NOEC or IC25 ≥ IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 202-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l)	1649		NA	495	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 ≥100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 ≥ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 217-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l)	1649		NA	495	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 ≥IWC		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 ≥ IWC		Quarterly	Grab

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted feature: 230A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l)	1649		NA	495	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	452		NA	287	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 ≥100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 ≥ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 057-A, 065-A, 147-A, 156-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l) **057-A**	1649		NA	740	Quarterly	Grab
00980	Fe, TR (µg/l) **065-A**	1649		NA	810	Quarterly	Grab
00980	Fe, TR (µg/l) **147-A**	1649		NA	616	Quarterly	Grab
00980	Fe, TR (µg/l) **156-A**	1649		NA	1096	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 $\geq$100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 $\geq$100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 094-A, 238A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	094-A: Fe, TR (µg/l) until June 30, 2017	Report			643	Quarterly	Grab
00980	094-A: Fe, TR (µg/l) starting July 1, 2017	1649		NA	643	Quarterly	Grab
00980	238-A: Fe, TR (µg/l) until June 30, 2017	Report			1381	Quarterly	Grab
00980	238-A: Fe, TR (µg/l) starting July 1, 2017	1649		NA	1381	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 $\geq$100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 $\geq$ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 073A, 079-A, 221-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	073-A: Fe, TR (µg/l)	1649		NA	650	Quarterly	Grab
00980	079-A: Fe, TR (µg/l)	1649		NA	773	Quarterly	Grab
00980	221-A: Fe, TR (µg/l)	1649		NA	811	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 $\geq$IWC		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 $\geq$ IWC		Quarterly	Grab

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 160-A, 220-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	160-A: Fe, TR (µg/l) until June 30, 2017	Report		NA	Report	Quarterly	Grab
00980	160-A: Fe, TR (µg/l) starting July 1, 2017	1649		NA	970	Quarterly	Grab
00980	220-A: Fe, TR (µg/l) until June 30, 2017	Report				Quarterly	Grab
00980	220-A: Fe, TR (µg/l) starting July 1, 2017	1649				Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 $\geq$IWC		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 $\geq$ IWC		Quarterly	Grab

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 096-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l)	1649		NA	750	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L), until December 31, 2016	8		NA	Report	Quarterly	Grab
13501	Strontium 90 (piC/L) starting January 1, 2017	8		NA	2.3	Quarterly	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 $\geq$100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 $\geq$ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 183-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l) until June 30, 2017	Report		NA	Report	Quarterly	Grab
00980	Fe, TR (µg/l) starting July 1, 2017	1649		NA	1108	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 $\geq$IWC		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 $\geq$ IWC		Quarterly	Grab

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 215-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l)	1649		NA	804	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	452		NA	Report	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 $\geq$IWC		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 $\geq$ IWC		Quarterly	Grab

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 060-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l), until June 30, 2017	Report		5000	Report	Quarterly	Grab
00980	Fe, TR (µg/l) , starting July 1, 2017	1649		NA	771	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	452		NA	287*	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 $\geq$100%		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 $\geq$ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

*Compliance will be determined using the 24 months of effluent subsequent to the permit effective date

Permitted features: 105-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l) until June 30, 2017	Report		5000	Report	Quarterly	Grab
00980	Fe, TR (µg/l) starting July 1, 2017	1649		NA	1353	Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	Report		NA	Report	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 ≥100 %		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 ≥ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 239-A

ICIS Code	Effluent Parameter	Effluent Limitations Maximum Concentrations				Monitoring Requirements	
		30-Day Average	7-Day Average	Daily Maximum	2-Year Average	Frequency	Sample Type
00400	pH (su)			6.5-9		Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45			Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report		Quarterly	Visual
03582	Oil and Grease (mg/l)			10		Contingent	Grab
70295	TDS (mg/l)	Report		3500		Quarterly	Grab
00978	As, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	NA	Annual	Grab
01313	Cd, PD (µg/l)	Report		Report	Report	Annual	Grab
01118	Cr, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		Report	Report	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	NA	Annual	Grab
01306	Cu, PD (µg/l)	Report		Report	Report	Annual	Grab
00980	Fe, TR (µg/l) until June 30, 2017	Report		5000		Quarterly	Grab
00980	Fe, TR (µg/l) starting July 1, 2017	1649				Quarterly	Grab
01114	Pb, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01318	Pb, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Report	Semi-Annual	Grab
50286	Hg, Tot (µg/l)	Report		NA	Report	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01322	Ni, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	NA	Semi-Annual	Grab
01323	Se, PD (µg/l)	Report		Report	Report	Semi-Annual	Grab
01303	Zn, PD (µg/l)	Report		Report	Report	Annual	Grab
00940	Chloride (mg/l)	452		NA	287	Quarterly	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Report	Semi-Annual	Grab
00918	Calcium (mg/l)	Report		Report	NA	Monthly	Grab
00921	Magnesium (mg/l)	Report		Report	NA	Monthly	Grab
00923	Sodium (mg/l)	Report		Report	NA	Monthly	Grab
00440	Bicarbonate as HCO_3 (mg/l)	Report		Report	NA	Monthly	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Report	Annually	Grab
13501	Strontium 90 (piC/L)	Report		NA	Report	Semi-Annual	Grab
	WET, acute						
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas* Until June 30, 2017			LC50 ≥100 %		Quarterly	Grab
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna* Until June 30, 2017			LC50 ≥ 100%		Quarterly	Grab
	WET, chronic						
TKP6C	Static Renewal 7 Day Chronic Pimephales promelas Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test
TKP3B	Static Renewal 7 Day Chronic Ceriodaphnia dubia Starting July 1, 2017			NOEC or IC25 > IWC		Quarterly	3 Grabs / Test

The 2 yr average should be reported using the previous 23 months, regardless of the permit term

Permitted features: 016-A, 022-A, 028-A, 061-A, 063-A, 071-A, 090-A, 108-A, 112-A, 152-A, 191-A, 198-A, 210-A, 212-A, 213-A, 222-A

ICIS Code	**Effluent Parameter**	**Effluent Limitations Maximum Concentrations**			**Monitoring Requirements**	
		30-Day Average	**7-Day Average**	**Daily Maximum**	**Frequency**	**Sample Type**
00400	pH (su)			6.5-9	Quarterly	Grab
00530	TSS, effluent (mg/l)	30	45		Quarterly	Grab
84066	Oil and Grease (visual)	NA		Report	Quarterly	Visual
03582	Oil and Grease (mg/l)			10	Contingent	Grab
00978	As, TR (µg/l)	Report		NA	Semi-Annual	Grab
01113	Cd, TR (µg/l)	Report		NA	Annual	Grab
01118	Cr, TR (µg/l)	Report		NA	Semi-Annual	Grab
04262	Cr+3, TR (µg/l)	Report		NA	Semi-Annual	Grab
01119	Cu, TR (µg/l)	Report		NA	Annual	Grab
01114	Pb, TR (µg/l)	Report		NA	Semi-Annual	Grab
01129	Mo, TR (µg/l)	Report		NA	Semi-Annual	Grab
01074	Ni, TR (µg/l)	Report		NA	Semi-Annual	Grab
00981	Se, TR (µg/l)	Report		NA	Semi-Annual	Grab
51202	Sulfide as H2S (mg/l)	Report		NA	Semi-Annual	Grab
11503	Radium 226+228 (piC/L)	Report		NA	Semi-Annual	Grab
13501	Strontium 90 (piC/L)	Report		NA	Semi-Annual	Grab
	WET, acute					
TAN6C	LC50 Statre 96Hr Acute *Pimephales promelas*			LC50 ≥IWC		Quarterly
TAM3B	LC50 Statre 48Hr Acute *Daphnia magna*			LC50 ≥ IWC	Quarterly	Grab

Due to the remote location of these discharges, the 3 grab samples for the WET tests may be taken on the same day, as long as the proper techniques are used for sample preservation and storage.

3. **Special Monitoring, Reporting and Notification Conditions:**

In stream EC and SAR Monitoring Requirements and Triggers/Benchmarks applicable to Permitted Features: PR-24.8, PR-16.9, and PR-8.8**:**
Permitted Feature Type: in stream (ambient)

ICIS Code	Parameter	Monitoring Frequency	Sample Type	Benchmarks
00094	EC, dS/m	Quarterly	Grab	1.3
51613	SAR* (calculated)	Quarterly	Grab	6.8
00918	Calcium (mg/l)	Quarterly	Grab	Report
00921	Magnesium (mg/l)	Quarterly	Grab	Report
00923	Sodium (mg/l)	Quarterly	Grab	Report
00440	Bicarbonate (mg/l)	Quarterly	Grab	Report

* The SAR value of the effluent is to be reported as the adjusted SAR if the bicarbonate is greater than 200 mg/l. See the definitions section in Part I.C.17 for information on calculating the adjusted SAR value.

The permittee shall conduct monitoring and reporting as provided below:

1. Level 1 monitoring: Soil salinity monitoring- Benchmark values for those parameters have been set at a two-fold increase in the actual field values, to prevent soils from a change in soil salinity. These values are set to 2.4 for SAR and 0.6 dS/m for EC, based on the actual sampling data submitted by the facility. The permittee shall provide the Division with updates on the sampling results as compared to the benchmarks, twice per year as outlined in flowing table.

Reporting Requirements for the Level 1. Monitoring

Code	Event	Description	Due Date
50008	Study Results	Submit: 1) all the soil pH, EC and SAR/SARadj* analysis results for pre-irrigation sampling as compared to the benchmarks for soil pH, EC and SAR SARadj* 2) Detailed information about any site-specific irrigation management is expected or undertaken	July 31, 2015 and every July 31 thereafter for the remainder of the permit term.
50008	Study Results	Submit: 1) all the soil pH, EC and SAR/SARadj* analysis results for after-irrigation sampling as compared to the benchmarks for soil pH, EC and SAR SARadj* 2) Detailed information about any site-specific irrigation management is expected or undertaken	December 31, 2015 and every December 31 thereafter for the remainder of the permit term.

*The SAR value of the effluent is to be reported as the adjusted SAR if the bicarbonate is greater than 200 mg/l. See the definitions section for information on calculating the adjusted SAR value.

If monitoring results are higher than the soil study benchmark levels, a site-specific evaluation will be undertaken of irrigation management in conjunction with evaluation of CBM discharges, Purgatoire River monitoring data and information of other potential sources to identify the source of soil salinity increase. If monitoring results are higher than the soil benchmark level, the permittee shall:

*Notify the Division within 5 business days after receiving the verified monitoring results.
* Within 15 business days after notification, the Permittee will review and evaluate SAR and/or EC data from outfalls and monitoring stations to determine if specific outfalls are exceeding their discharge limits. If no outfalls are exceeding their benchmarks, then no further evaluation shall be required. If one or more outfalls are exceeding their limits, then permittee shall determine if those outfalls are directly causing the high EC and SAR values in the soils or if the high EC and SAR levels are from other sources in the watershed.

*If the Permittee completes the investigations described above and determines that the discharges are directly causing the EC and SAR levels in the soil above the benchmarks, then the Permittee will implement an appropriate response action.
*If one or more particular outfall(s)' are directly causing the high EC and SAR levels, the Permittee shall develop an implementation plan to reduce SAR and/or EC at those outfalls. The implementation plan will include an appropriate response action to address the exceedance, including increasing other uses to reduce the discharge of produced water, (dust control, livestock/wildlife watering), ceasing a discharge from an outfall or outfalls, or directing the produced water to direct disposal (deep well injection).
If outfalls associated with water for the fields also exceeded their EC or SAR limits, an appropriate response action to address the exceedances shall be proposed, such as, increasing beneficial use (dust control, livestock/wildlife watering), ceasing discharge from outfalls exceeding EC and SAR, soils amendment, or conducting direct disposal (deep well injection).

Any exceedance of soil study benchmark levels will prompt a site-specific evaluation of irrigation management in conjunction with evaluation of CBM discharges, Purgatoire River monitoring data and information of other potential sources to identify the source of soil salinity increase. Results will be submitted to the Division within 30 days of exceedance. If necessary, an appropriate response action to address the exceedance, including increasing beneficial use (dust control, livestock/wildlife watering), ceasing discharge, soils amendment, or conducting direct disposal (deep well injection), will be taken.

2. Level 2 monitoring: Purgatoire River water quality: The 85th percentile of monthly EC and SAR values of the Purgatoire River shall be less than 1.3 dS/m and 6.8, respectively. The data shall be made publicly available.
*if monthly EC and SARadj target values in the Purgatiore River monitoring at monitoring stations PR-24.8, PR-16.9, and PR-8.8 are exceeded, 1.3 dS/m and 6.8, respectively, the Permittee shall:
*Notify the Division **within 5 business days** after receiving the verified monitoring results.
* Within **15 business days** after notification, the Permittee will review and evaluate SAR and/or EC data from outfalls and monitoring stations to determine if specific outfalls are directly causing the exceedances set forth in the notification, or based on evaluation of river monitoring data the source(s) are from another location in the watershed.
*If the Permittee completes the investigations described above and determines that the discharges are directly causing the exceedances in the River, then the Permittee will implement an appropriate response action.
*If one or more particular outfall(s)' SAR and/or EC levels are directly causing the exceedance, the Permittee shall develop an implementation plan to reduce SAR and/or EC at those outfalls. The implementation plan will include an appropriate response action to address the exceedance, including increasing other uses to reduce the discharge of produced water, (dust control, livestock/wildlife watering), ceasing a discharge from an outfall or outfalls, or directing the produced water to direct disposal (deep well injection).

B. TERMS AND CONDITIONS

1. <u>Facilities Operation and Maintenance</u>

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 as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes effective performance, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems when installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

Any sludge produced at the wastewater treatment facility shall be disposed of in accordance with State and Federal guidelines and regulations. The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

2. Compliance Schedule(s)

a. Activities to Meet Strontium 90 Final Limits: outfall 096A

Code	Event	Description	Due Date
25099	Compliance Plan	Submit a progress report summarizing the progress in implementing the strategies such that compliance with the Strontium 90Final Limits may be attained.	12/31/2015
25099	Compliance Plan	Submit a progress report summarizing the progress in implementing the strategies such that compliance with the Strontium 90 Final Limits may be attained.	06/30/2016
CS017	Achieve Final Compliance with Discharge Limits	Submit study results that show compliance has been attained with the Strontium 90 Final Limits.	01/01/2017

b. Activities to Meet Total Recoverable Iron – During the previous permit term, the permittee was given time to conduct research into resolving potential compliance issues with dissolved copper, dissolved selenium, boron, chloride, and total recoverable iron. Building upon the work already conducted including evaluating initial treatment or water management options, the Division is including an abbreviated compliance schedule to give the permittee time to finalize the work already done, and implement one of the strategies to meet the final iron limitation of 1,000 ug/l.

Code	Event	Description	Due Date
06599	Hire a Consultant/ Professional Engineer	Submit a letter of notification that a Colorado licensed engineering consultant has been obtained to design treatment processes or indicate that underground injection or other method is selected	12/31/2015
CS015	Commence Required Work or On-Site Construction	Submit a letter of notification that construction has commenced, or if underground injection was selected provide a progress update.	07/01/2016
CS016	Complete Required Work or On-Site Construction	Complete construction of facilities or other appropriate actions, which will allow the permittee to meet the final limitations.	06/30/2017

c. Activities to Meet Chronic Whole Effluent Toxicity (WET) – During the previous permit term, the permittee was given time to conduct research into determining causes of chronic toxicity. Building upon the work already conducted, the Division is allowing an abbreviated compliance schedule to give the permittee time to finalize the work already done and implement strategies to eliminate toxicity.

Code	Event	Description	Due Date
06599	Hire a Consultant/ Professional Engineer	Submit a letter of notification that a Colorado licensed engineering consultant has been obtained to design treatment processes or indicate that underground injection or other method is selected	12/31/2015
CS015	Commence Required Work or On-Site Construction	Submit a letter of notification that construction has commenced, or if underground injection was selected provide a progress update.	07/01/2016
CS016	Complete	Complete construction of facilities or other appropriate actions,	06/30/2017

Required Work or On-Site Construction	which will allow the permittee to meet the final limitations.

Regulation 61.8(3)(n)(i) states that a report should be submitted to the Division no later than 14 calendar days following each date identified in the schedule of compliance. The 14 days have already been incorporated into the above dates and therefore all reports are due on or before the date listed in the table.

3. Chronic WET Testing -Outfall(s): 057-A, 060-A, 065-A, 094-A, 202-A, 230-A, 075-A, 096-A, 105-A, 147-A, 156-A, 228-A, 238-A, 239-A

Table of IWCs

List of OutfallsFlows (cfs), Receiving Streams, and IWC		
Outfalls	Total Contributing Flow (cfs)	IWC
Reilly Canyon– COARLA06a		
057-A, 060-A, 065-A, 094-A, 202-A, 230-A	2.19	17% - CHRONIC
Sarcillo Canyon– COARLA06a		
075-A, 096-A, 105-A, 147-A, 156-A, 228-A, 238-A, 239-A	1.45	12% - CHRONIC

a. General Chronic WET Testing and Reporting Requirements

The permittee shall conduct the chronic WET test using *Ceriodaphnia dubia and Pimephales promelas*, as a static renewal 7-day test using three separate grab samples. The permittee shall conduct each chronic WET test in accordance with the 40 CFR Part 136 methods described in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002 (EPA-821-R-02-013) or the most current edition.

The following minimum dilution series should be used: 0% effluent (control), IWC/4%, IWC/2%, IWC%, (IWC+100)/2%, and 100% effluent. If the permittee uses more dilutions than prescribed, and accelerated testing is to be performed, the same dilution series shall be used in the accelerated testing (if applicable) as was initially used in the failed test.

Tests shall be done at the frequency listed in Part I.A.2. Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting period when the sample was taken. (i.e., WET testing results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, etc.) The permittee shall submit all laboratory statistical summary sheets, summaries of the determination of a valid, invalid or inconclusive test, and copies of the chain of custody forms, along with the DMR for the reporting period.

If a test is considered invalid, the permittee is required to perform additional testing during the monitoring period to obtain a valid test result. Failure to obtain a valid test result during the monitoring period shall result in a violation of the permit for failure to monitor.

b. Violations of the Permit Limit, Failure of One Test Statistical Endpoint and Division Notification

A chronic WET test is considered a violation of a permit limitation when both the NOEC and the IC25 are at any effluent concentration less than the IWC. The IWC for this permit are listed in the above tables.

A chronic WET test is considered to have failed one of the two statistical endpoints when either the NOEC or the IC_{25} are at any effluent concentration less than the IWC. The IWC for this permit are listed in the above tables.

In the event of a permit violation, or during a report only period when both the NOEC and the IC25 are at any effluent concentration less than the IWC, or when two consecutive reporting periods have resulted in failure of one of the two statistical endpoints (regardless of which statistical endpoints are failed), the permittee must provide written notification to the Division. Such notification should explain whether it was a violation or two consecutive failures of a single endpoint, and must indicate whether accelerated testing or a Toxicity Identification Evaluation or Toxicity Reduction Evaluation (TIE or TRE) is being performed, unless otherwise exempted, in writing, by the Division. If the permittee is already conducting a TRE from previous failures, or as a result of a compliance schedule, no additional TREs are required. **Regardless of the nature of the failure, notification must be received by the Division within 14 calendar days of the permittee receiving notice of the WET testing results.**

c. Automatic Compliance Response

The permittee is responsible for implementing the automatic compliance response provisions of this permit when one of the following occurs:

- there is a violation of the permit limit (both the NOEC and the IC25 endpoints are less than the applicable IWC)
- during a report only period when both the NOEC and the IC25 are at any effluent concentration less than the IWC
- two consecutive monitoring periods have resulted in failure of one of the two statistical endpoints (either the IC25 or the NOEC)
- the permittee is otherwise informed by the Division that a compliance response is necessary

When one of the above listed events occurs, the following automatic compliance response shall apply. The permittee shall:

- Conduct a Toxicity Identification Evaluation (TIE) or a Toxicity Reduction Evaluation (TRE) investigation as described below.

ii. Toxicity Identification Evaluation (TIE) or Toxicity Reduction Evaluation (TRE)

If a TIE or a TRE is being performed, the results of the investigation are to be received by the Division within 180 calendar days of the demonstration chronic WET in the routine test, as defined above, or by the deadline in a compliance schedule. A status report is to be provided to the Division at the 60 and 120 calendar day points of the TIE or TRE investigation, or as directed under a compliance schedule.

The Division recommends that the EPA guidance documents regarding TIEs or TREs be followed. If another method is to be used, this procedure should be submitted to the Division (Compliance Section) for approval prior to initiating the TIE or TRE.

If the pollutant(s) causing toxicity is/are identified, and is/are controlled by a permit effluent limitation(s), this permit may be modified upon request to adjust permit requirements regarding the automatic compliance response.

If the pollutant(s) causing toxicity is/are identified, and is/are not controlled by a permit effluent limitation(s), the Division may develop limitations the parameter(s), and the permit may be reopened to include these limitations.

If the pollutant causing toxicity is not able to be identified, or is unable to be specifically identified, or is not able to be controlled by an effluent limit, the permittee will be required to; .

Move to a TRE by identifying the necessary control program or activity and proceed with elimination of the toxicity so as to meet the WET effluent limit.

The control program developed during a TRE consists of the measures determined to be the most feasible to eliminate WET. This may happen through the identification of the toxicant(s) and then a control program aimed specifically at that toxicant(s) or through the identification of more general toxicant treatability processes. A control program is to be developed and submitted to the Division within 180 calendar days of beginning a TRE,or as directed under a compliance schedule. Status reports on the TRE are to be provided to the Division at the 60 and 120 calendar day points of the TRE investigation, or as directed under a compliance schedule.

d. Toxicity Reopener

This permit may be reopened and modified to include additional or modified numerical permit limitations, new or modified compliance response requirements, changes in the WET testing protocol, the addition of both acute and chronic WET requirements, or any other conditions related to the control of toxicants.

4. Acute WET Testing -Outfall(s): 079-A, 160-A, 183-A, 220-A, 221-A, 004-A, 215A, 007A, 073A, 217A, 016-A, 022-A, 028-A, 061-A, 063-A, 071-A, 090-A, 108-A, 112-A, 152-A, 191-A, 198-A, 210-A, 212-A, 213-A, 222-A

Table of IWCs

List of OutfallsFlows (cfs), Receiving Streams, and IWC		
Outfalls	Total Contributing Flow (cfs)	IWC
Burro Canyon – COARLA06a		
079-A, 160-A, 183-A, 220-A, 221-A	0.332	3% - ACUTE
Santisteven Canyon– COARLA06		
004-A	0.749	6% - ACUTE
Smith Canyon– COARLA06a		
215-A	0.074	1% - ACUTE
Unnamed Tributary to Purgatoire River – COARLA06a		
007-A	0.67	6% - ACUTE
073-A	0.05	0.5% - ACUTE
217-A	0.51	4% - ACUTE
Acute Outfalls that do not reach downstream segment		
016-A, 022-A, 028-A, 061-A, 063-A, 071-A, 090-A, 108-A, 112-A, 152-A, 191-A, 198-A, 210-A, 212-A, 213-A, 222-A	100% - ACUTE	

a. General Acute WET Testing and Reporting Requirements

The permittee shall conduct an acute 48-hour WET test using *Daphnia magna*, and an acute 96-hour WET test using *Pimephales promelas*. Acute tests shall be conducted as a static replacement test using a single effluent grab sample. The permittee shall conduct each acute WET test in accordance with the 40 CFR Part 136 methods described in Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, Fifth Edition, October 2002 (EPA-821-R-02-012) or its most current edition

The following minimum dilution series should be used: 0% effluent (control), IWC/4%, IWC/2%, IWC%, (IWC+100)/2%, and 100% effluent. If the permittee uses more dilutions than prescribed, and accelerated testing is to be performed, the same dilution series shall be used in the accelerated testing as was used in the failed test.

Tests shall be done at the frequency listed in Part I.A.2. Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting period when the sample was taken. (i.e., WET testing results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, etc.) The permittee shall submit all laboratory statistical summary sheets, summaries of the determination of a valid, invalid or inconclusive test, and copies of the chain of custody forms, along with the DMR for the reporting period.

If a test is considered invalid, the permittee is required to perform additional testing during the monitoring period to obtain a valid test result. Failure to obtain a valid test result during the monitoring period shall result in a violation of the permit for failure to monitor.

b. Violations of the Permit Limit and Division Notification

An acute WET test is failed whenever the LC_{50}, which represents an estimate of the effluent concentration which is lethal to 50% of the test organisms in the time period prescribed by the test, is found to be less than or equal to 100% effluent. The permittee must provide written notification of the failure of a WET test to the Division, along with a statement as to whether accelerated testing or a Toxicity Identification Evaluation (TIE) is being performed, unless otherwise exempted, in writing, by the Division. **Notification must be received by the Division within 14 calendar days of the permittee receiving notice of the WET testing results.**

c. Automatic Compliance Response

The permittee is responsible for implementing the automatic compliance response provisions of this permit when one of the following occurs:

- there is a violation of the permit limit (the LC50 endpoint is less than the applicable IWC)
- the permittee is otherwise informed by the Division that a compliance response is necessary

When one of the above listed events occurs, the following automatic compliance response shall apply. The permittee shall either:

- conduct accelerated testing using the single species found to be more sensitive
- conduct a Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE) investigation as described below.

i. Accelerated Testing

If accelerated testing is being performed, testing will be at least once every two weeks for up to five tests, at the appropriate IWC, but only one test should be run at a time. Accelerated testing shall continue until; 1) two consecutive tests fail or three of five tests fail, in which case a pattern of toxicity has been demonstrated or 2) two consecutive tests pass or three of five tests pass, in which case no pattern of toxicity has been found. Note that the same dilution series should be used in the accelerated testing as was used in the initial test(s) that result in the accelerated testing requirement.

If no pattern of toxicity is found the toxicity episode is considered to be ended and routine testing is to resume. If a pattern of toxicity is found, a TIE/TRE investigation is to be performed. If a pattern of toxicity is not demonstrated but a significant level of erratic toxicity is found, the Division may require an increased frequency of routine monitoring or some other modified approach. The permittee shall provide written notification of the results within 14 calendar days of completion of the Pattern of Toxicity/No Toxicity demonstration.

ii. Toxicity Identification Evaluation / Toxicity Reduction Evaluation (TIE/TRE)

If a TIE/TRE is being performed, the results of the investigation are to be received by the Division within 180 calendar days of the demonstration of acute WET in the routine test, as defined above, or if accelerated testing was performed, the date the pattern of toxicity is demonstrated. A status report is to be provided to the Division at the 60 and 120 calendar day points of the TIE/TRE investigation. The Division may extend the time frame for investigation where reasonable justification exists. A request for an extension must be made in writing and received prior to the 180 calendar day deadline. Such request must include a justification and supporting data for such an extension.

Under a TIE, the permittee may use the time for investigation to conduct a preliminary TIE (PTIE) or move directly into the TIE. A PTIE consists of a brief search for possible sources of WET, where a specific parameter(s) is reasonably suspected to have caused such toxicity, and could be identified more simply and cost effectively than a formal TIE. If the PTIE allows resolution of the WET incident, the TIE need not necessarily be conducted in its entirety. If, however, WET is not identified or resolved during the PTIE, the TIE must be conducted within the allowed 180 calendar day time frame.

The Division recommends that the EPA guidance documents regarding TIEs be followed. If another method is to be used, this procedure should be submitted to the Division prior to initiating the TIE.

If the pollutant(s) causing toxicity is/are identified, and is/are controlled by a permit effluent limitation(s), this permit may be modified upon request to adjust permit requirements regarding the automatic compliance response.

If the pollutant(s) causing toxicity is/are identified, and is/are not controlled by a permit effluent limitation(s), the Division may develop limitations the parameter(s), and the permit may be reopened to include these limitations.

If the pollutant causing toxicity is not able to be identified, or is unable to be specifically identified, or is not able to be controlled by an effluent limit, the permittee will be required to perform either item 1 or item 2 below.

l) Conduct an investigation which demonstrates actual instream aquatic life conditions upstream and downstream of the discharge, or identify, for Division approval, and conduct an alternative investigation which demonstrates the actual instream impact. This should include WET testing and chemical analyses of the ambient water. Depending on the results of the study, the permittee may also be required to identify the control program necessary to eliminate the toxicity and its cost. Data collected may be presented to the WQCC for consideration at the next appropriate triennial review of the stream standards;

2) Move to a TRE by identifying the necessary control program or activity and proceed with elimination of the toxicity so as to meet the WET effluent limit.

If toxicity spontaneously disappears in the midst of a TIE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency of WET testing for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

The control program developed during a TRE consists of the measures determined to be the most feasible to eliminate WET. This may happen through the identification of the toxicant(s) and then a control program aimed specifically at that toxicant(s) or through the identification of more general toxicant treatability processes. A control program is to be developed and submitted to the Division within 180 calendar days of beginning a TRE. Status reports on the TRE are to be provided to the Division at the 60 and 120 calendar day points of the TRE investigation.

If toxicity spontaneously disappears in the midst of a TRE, the permittee shall notify the Division within 10 calendar days of such disappearance. The Division may require the permittee to conduct accelerated testing to demonstrate that no pattern of toxicity exists, or may amend the permit to require an increased frequency for some period of time. If no pattern of toxicity is demonstrated through the accelerated testing or the increased monitoring frequency, the toxicity incident response will be closed and normal WET testing shall resume.

d. Toxicity Reopener

This permit may be reopened and modified to include additional or modified numerical permit limitations, new or modified compliance response requirements, changes in the WET testing protocol, the addition of both acute and chronic WET requirements, or any other conditions related to the control of toxicants.

C. DEFINITIONS OF TERMS

1. “Antidegradation limits” – See “Two (2) - Year Rolling Average”.

2. "Chronic toxicity", which includes lethality and growth or reproduction, occurs when the NOEC and IC25 are at an effluent concentration less than the IWC indicated in this permit.

3. "Composite" sample is a minimum of four (4) grab samples collected at equally spaced two (2) hour intervals and proportioned according to flow. For a SBR type treatment system, a composite sample is defined as sampling equal aliquots during the beginning, middle and end of a decant period, for two consecutive periods during a day (if possible).

4. "Continuous" measurement, is a measurement obtained from an automatic recording device which continually measures the effluent for the parameter in question, or that provides measurements at specified intervals.

5. "Daily Maximum limitation" for all parameters (except temperature, pH and dissolved oxygen) means the limitation for this parameter shall be applied as an average of all samples collected in one calendar day. For these parameters the DMR shall include the highest of the daily averages. For pH and dissolved oxygen, this means an instantaneous maximum (and/or

instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. For pH and dissolved oxygen, DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit. For temperature, see Daily Maximum Temperature.

6. "Dissolved (D) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a water and suspended sediment sample which passed through a 0.40 or 0.45 UM (micron) membrane filter. Determinations of "dissolved" constituents are made using the filtrate. This may include some very small (colloidal) suspended particles which passed through the membrane filter as well as the amount of substance present in true chemical solution.

7. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.

8. "IC25" or "Inhibition Concentration" is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal biological measurement (e.g. growth or reproduction) calculated from a continuous model (i.e. interpolation method). IC25 is a point estimate of the toxic concentration that would cause a 25-percent reduction in a non-lethal biological measurement.

9. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.

10. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.

11. "LC50" or "Lethal Concentration" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

12. "LCL Concentration" or " Lower Confidence Limit Concentration is calculated using the following method:

    Determine the sample size, N, based on the number of calculated values available for the semiannual reporting period. Note this must include values based on the minimum sampling frequency (e.g,. six values) plus additional values collected during the reporting period. Note a minimum of 5 values is required to utilize this methodology.

    Based on the sample size, N, select the LCL corresponding to the 85th percentile (Excel compatible value)

N	p
5	0.191
6	0.265
7	0.319
8	0.362
9	0.396
10	0.425
11	0.449
12	0.470
13	0.489
14	0.505
15	0.519
16	0.532
17	0.544
18	0.555
19	0.564
20	0.573
21	0.582
22	0.589
23	0.596
24	0.603

    Calculate the LCL concentration using the LCL percentile for the sample set. For example if the sample size is six the LCL percentile is 0.265 and the LCL concentration is the 26.5th percentile value of the sample set.

13. "NOEC" or "No-Observed-Effect-Concentration" is the highest concentration of toxicant to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms (i.e. the highest concentration of toxicant in which the values for the observed responses are not statistically different from the controls). This value is used, along with other factors, to determine toxicity limits in permits.

14. "Potentially dissolved (PD) metals fraction" is defined in the Basic Standards and Methodologies for Surface Water 1002-31, as that portion of a constituent measured from the filtrate of a water and suspended sediment sample that was first treated with nitric acid to a pH of 2 or less and let stand for 8 to 96 hours prior to sample filtration using a 0.40 or 0.45-UM (micron) membrane filter. Note the "potentially dissolved" method cannot be used where nitric acid will interfere with the analytical procedure used for the constituent measured.

15. "Practical Quantitation Limit (PQL)" means the minimum concentration of an analyte (substance) that can be measured with a high degree of confidence that the analyte is present at or above that concentration. The use of PQL in this document may refer to those PQLs shown in Part I.D of this permit or the PQLs of an individual laboratory.

16. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.

17. "Recorder" requires the continuous operation of a chart and/or totalizer (or drinking water rotor meters or pump hour meters where previously approved.)

18. SAR and Adjusted SAR - The equation for calculation of SAR-adj is:

$$SAR\text{-}adj = \frac{Na^{+}}{\sqrt{\frac{Ca_x + Mg^{++}}{2}}}$$

Where:
Na^{+} = Sodium in the effluent reported in meq/l
Mg^{++} = Magnesium in the effluent reported in meq/l
Ca_x = calcium (in meq/l) in the effluent modified due to the ratio of bicarbonate to calcium

The values for sodium (Na^{+}), calcium (Ca^{++}), bicarbonate (HCO_3^{-}) and magnesium (Mg^{++}) in this equation are expressed in units of milliequivalents per liter (meq/l). Generally, data for these parameters are reported in terms of mg/l, which must then be converted to calculate the SAR. The conversions are:

$$\text{meq/l} = \frac{Concentration\ in\ mg/l}{Equivalent\ weight\ in\ mg/meq}$$

Where the equivalent weights are determined based on the atomic weight of the element divided by the ion's charge:

Na^{+} = 23.0 mg/meq (atomic weight of 23, charge of 1)
Ca^{++} = 20.0 mg/meq (atomic weight of 40.078, charge of 2)
Mg^{++} = 12.15 mg/meq (atomic weight of 24.3, charge of 2)
HCO_3^{-} = 61 mg/mep (atomic weight of 61, charge of 1)

The *EC* and the HCO_3^{-}/Ca^{++} ratio in the effluent (calculated by dividing the HCO_3^{-} in meq/l by the Ca^{++} in meq/l) are used to determine the Ca_x using the following table.

Table – Modified Calcium Determination for Adjusted Sodium Adsorption Ratio

HCO_3/Ca Ratio And *EC* [1], [2], [3]													
Salinity of Effluent (*EC*)(dS/m)													
		0.1	**0.2**	**0.3**	**0.5**	**0.7**	**1.0**	**1.5**	**2.0**	**3.0**	**4.0**	**6.0**	**8.0**
Ratio of HCO_3/Ca	**.05**	13.20	13.61	13.92	14.40	14.79	15.26	15.91	16.43	17.28	17.97	19.07	19.94
	.10	8.31	8.57	8.77	9.07	9.31	9.62	10.02	10.35	10.89	11.32	12.01	12.56

	.15	6.34	6.54	6.69	6.92	7.11	7.34	7.65	7.90	8.31	8.64	9.17	9.58
	.20	5.24	5.40	5.52	5.71	5.87	6.06	6.31	6.52	6.86	7.13	7.57	7.91
	.25	4.51	4.65	4.76	4.92	5.06	5.22	5.44	5.62	5.91	6.15	6.52	6.82
	.30	4.00	4.12	4.21	4.36	4.48	4.62	4.82	4.98	5.24	5.44	5.77	6.04
	.35	3.61	3.72	3.80	3.94	4.04	4.17	4.35	4.49	4.72	4.91	5.21	5.45
	.40	3.30	3.40	3.48	3.60	3.70	3.82	3.98	4.11	4.32	4.49	4.77	4.98
	.45	3.05	3.14	3.22	3.33	3.42	3.53	3.68	3.80	4.00	4.15	4.41	4.61
	.50	2.84	2.93	3.00	3.10	3.19	3.29	3.43	3.54	3.72	3.87	4.11	4.30
	.75	2.17	2.24	2.29	2.37	2.43	2.51	2.62	2.70	2.84	2.95	3.14	3.28
	1.00	1.79	1.85	1.89	1.96	2.01	2.09	2.16	2.23	2.35	2.44	2.59	2.71
	1.25	1.54	1.59	1.63	1.68	1.73	1.78	1.86	1.92	2.02	2.10	2.23	2.33
	1.50	1.37	1.41	1.44	1.49	1.53	1.58	1.65	1.70	1.79	1.86	1.97	2.07
	1.75	1.23	1.27	1.30	1.35	1.38	1.43	1.49	1.54	1.62	1.68	1.78	1.86
	2.00	1.13	1.16	1.19	1.23	1.26	1.31	1.36	1.40	1.48	1.54	1.63	1.70
	2.25	1.04	1.08	1.10	1.14	1.17	1.21	1.26	1.30	1.37	1.42	1.51	1.58
	2.50	0.97	1.00	1.02	1.06	1.09	1.12	1.17	1.21	1.27	1.32	1.40	1.47
	3.00	0.85	0.89	0.91	0.94	0.96	1.00	1.04	1.07	1.13	1.17	1.24	1.30
	3.50	0.78	0.80	0.82	0.85	0.87	0.90	0.94	0.97	1.02	1.06	1.12	1.17
	4.00	0.71	0.73	0.75	0.78	0.80	0.82	0.86	0.88	0.93	0.97	1.03	1.07
	4.50	0.66	0.68	0.69	0.72	0.74	0.76	0.79	0.82	0.86	0.90	0.95	0.99
	5.00	0.61	0.63	0.65	0.67	0.69	0.71	0.74	0.76	0.80	0.83	0.88	0.93
	7.00	0.49	0.50	0.52	0.53	0.55	0.57	0.59	0.61	0.64	0.67	0.71	0.74
	10.00	0.39	0.40	0.41	0.42	0.43	0.45	0.47	0.48	0.51	0.53	0.56	0.58
	20.00	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.30	0.32	0.33	0.35	0.37
	30.00	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.27	0.28

[1] Adapted from Suarez (1981).
[2] Assumes a soil source of calcium from lime ($CaCO_3$) or silicates; no precipitation of magnesium, and partial pressure of CO_2 near the soil surface (P_{CO2}) is 0.0007 atmospheres.
[3] Ca_x, HCO_3, Ca are reported in meq/l; EC is in dS/m (deciSiemens per meter).

Because values will not always be quantified at the exact *EC* or HCO_3^- / Ca^{++} ratio in the table, the resulting Ca_x must be determined based on the closest value to the calculated value. For example, for a calculated *EC* of 2.45 dS/m, the column for the *EC* of 2.0 would be used. However, for a calculated *EC* of 5.1, the corresponding column for the *EC* of 6.0 would be used. Similarly, for a HCO_3^- / Ca^{++} ratio of 25.1, the row for the 30 ratio would be used.

The Division acknowledges that some effluents may have electrical conductivity levels that fall outside of this table, and others have bicarbonate to calcium ratios that fall outside this table. For example, some data reflect HCO_3^- / Ca^{++} ratios greater than 30 due to bicarbonate concentrations reported greater than 1000 mg/l versus calcium concentrations generally less than 10 mg/l (i.e., corresponding to HCO_3^- / Ca^{++} ratios greater than 100). Despite these high values exceeding the chart's boundaries, it is noted that the higher the HCO_3^- / Ca^{++} ratio, the greater the SAR-adj. Thus, using the Ca_x values corresponding to the final row containing bicarbonate/calcium ratios of 30, the permittee will actually calculate an SAR-adj that is less than the value calculated if additional rows reflecting HCO_3^- / Ca^{++} ratios of greater than 100 were added.

19. "Seven (7) day average" means, with the exception of fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on Sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.3 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

20. "Thirty (30) day average" means, except for fecal coliform or *E. coli* bacteria (see geometric mean), the arithmetic mean of all samples collected during a thirty (30) consecutive-day period. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used

for more than one (1) reporting period. **(See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.3 for guidance on calculating averages and reporting analytical results that are less than the PQL).**

21. Toxicity Identification Evaluation (TIE) is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

22. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in Manual of Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979, or its equivalent.

23. "Total Recoverable Metals" means that portion of a water and suspended sediment sample measured by the total recoverable analytical procedure described in Methods for Chemical Analysis of Water and Wastes, U.S. Environmental Protection Agency, March 1979 or its equivalent.

24. Toxicity Reduction Evaluation (TRE) is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

25. "Twenty four (24) hour composite" sample is a combination of at least eight (8) sample aliquots of at least 100 milliliters, collected at equally spaced intervals during the operating hours of a facility over a twenty-four (24) hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the wastewater or effluent flow at the time of sampling or the total wastewater or effluent flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

26. "Twice Monthly" monitoring frequency means that two samples shall be collected each calendar month on separate weeks with at least one full week between the two sample dates. Also, there shall be at least one full week between the second sample of a month and the first sample of the following month.

27. "Two (2) -Year Rolling Average" - Antidegradation limits apply as the average of all data collected in a two (2) year (24-month) period. These limits become effective upon the effective date of the permit, but are not reportable on a DMR until two years (typically 24 months) of data have been collected, unless otherwise directed in Part I.A.2 of the permit. After data has been collected for 24 months, the 30-day averages for each month are then averaged together to determine the two-year rolling average (using data from month 1 to month 24, then month 2 to month 25, month 3 to month 26, etc).

    Where several months have the same two-year average limit, it is reportable on the DMR after two months of data have been collected for every month in the group.

    Example: Permit is effective Jan 2010 and there is a two-year rolling average limit specific to the months of Jan, Feb, June.

    1st Reportable DMR – June 2011 - 2-Year Average Jan 2010 Feb 2010 June 2010 Jan 2011 Feb 2011 June 2011
    2nd Reportable DMR – Jan 2012 - 2-Year Average Feb 2010 June 2010 Jan 2011 Feb 2011 June 2011 Jan 2012
    3rd Reportable DMR – Feb 2012 - 2-Year Average June 2010 Jan 2011 Feb 2011 June 2011 Jan 2012 Feb 2012, etc.

    (See the "Analytical and Sampling Methods for Monitoring and Reporting Section in Part I.D.3 for guidance on calculating averages and reporting analytical results that are less than the PQL).

28. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.

29. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

    Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the Colorado Discharge Permit System Regulations, Regulation 61 (5 CCR 1002-61) and other applicable regulations.

D. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting of Data

Reporting of the data gathered in compliance with Part I.A or Part I.B shall be on a **monthly** basis where sampling is monthly and on a **quarterly** basis when sampling is quarterly and on a **semi-annual** basis when sampling is where sampling is semi-annual and on an **annual** basis when sampling is annual. Reporting of all data gathered shall comply with the requirements of Part I.D. (General Requirements). Monitoring results shall be summarized for each calendar month and reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1).

The permittee must submit these forms either by mail, or by using the Division's Net-DMR service (when available). If mailed, one form shall be mailed to the Division, as indicated below, so that the DMR is received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th). If no discharge occurs during the reporting period, "No Discharge" shall be reported.

The original signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.D.8.

2. Representative Sampling

Samples and measurements taken for the respective identified monitoring points as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by the Division.

3. Analytical and Sampling Methods for Monitoring and Reporting

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. Part 136.

Numeric Limits

If the permit contains a numeric effluent limit for a parameter, the analytical method and PQL selected for all monitoring conducted in accordance with this permit for that parameter shall be the one that can measure at or below the numeric effluent limit. If all specified analytical methods and corresponding PQLs are greater than the numeric effluent limit, then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL greater than the permit limit, and the permittee's analytical result is less than the PQL (the PQL achieved by the lab), the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the PQL obtained is lower or equal to the PQL in the table below.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Report Only Limits

If the permit contains a report only requirement for a parameter, the analytical method and PQL chosen shall be one that can measure at or below the potential numeric effluent limit(s) (maximum allowable pollutant concentration as shown in the WQA or fact sheet). If all analytical methods and corresponding PQLs are greater than the potential numeric effluent limit(s), then the analytical method with the lowest PQL shall be used.

When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

Interim Report Only Followed By a Numeric Limit

If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the analytical method and PQL chosen for all monitoring conducted in accordance with this permit for the parameter shall be one that can measure to the final numeric effluent limit. If all analytical methods and corresponding PQLs are greater than the final numeric effluent limit (s), then the analytical method with the lowest PQL shall be used.

While the report only limit is effective, the reporting requirements shall follow those under the Report Only Limits section. Once the numeric limit is effective, the reporting requirements shall follow the numeric limits reporting requirements.

T.I.N.

For parameters such as TIN, the analytical methods chosen shall be those that can measure to the potential or final numeric effluent limit, based on the sum of the PQLs for nitrate, nitrite and ammonia.

Calculating Averages

In the calculation of average concentrations (i.e. daily average, 7- day average, 30-day average, 2-year rolling average) any individual analytical result that is less than the PQL shall be considered to be zero for the calculation purposes. When reporting:

If all individual analytical results are less than the PQL, the permittee shall report either "BDL" or "<X" (where X = the actual PQL achieved by the laboratory), following the guidance above.

If one or more individual results is greater than the PQL, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the PQL, **it must be reported as a value**.

Note that when calculating T.I.N. for a single sampling event, any value less than the PQL (for total ammonia, total nitrite, or total nitrate) shall be treated as zero. The T.I.N. concentration for a single sampling event shall then be determined as the sum of the analytical results (zeros if applicable) of same day sampling for total ammonia and total nitrite and total nitrate. From these calculated T.I.N. concentrations, the daily maximum and thirty day average concentrations shall be calculated and must be reported as a value.

PQLs

The PQLs for specific parameters, as determined by the State Laboratory (November 2008) are provided below for reference. If the analytical method cannot achieve a PQL that is less than or equal to the permit limit, then the method, or a more precise method, must achieve a PQL that is less than or equal to the PQL in the table below. A listing of the PQLs for further organic parameters that must meet the above requirement can be found in the Division's Practical Quantitation Limitation Guidance Document, July 2008. This document is available on the Division's website at www.coloradowaterpermits.com.

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

Effluent Parameter	Practical Quantitation Limits	Effluent Parameter	Practical Quantitation Limits
Aluminum	50 µg/l		
Arsenic	1 µg/l	N-Ammonia	1 mg/l
Barium	5 µg/l	N-Ammonia (low-level)	50 µg/l
Beryllium	1 µg/l	N-Nitrate/Nitrite	0.5 mg/l
BOD / CBOD	1 mg/l	N-Nitrate	0.5 mg/l
Boron	50 µg/l	N-Nitrite	10 µg/l
Cadmium	1 µg/l	Total Nitrogen	0.5 mg/l
Calcium	20 µg/l	Total Phosphorus	10 µg/l
Chloride	2 mg/l		
Chlorine	0.1 mg/l	Radium 226	1 pCi/l
Total Residual Chlorine		Radium 228	1 pCi/l
DPD colorimetric	0.10 mg/l	Selenium	1 µg/l
Amperometric titration	0.05 mg/l	Silver	0.5 µg/l
Chromium	20 µg/l	Sodium	0.2 mg/l
Chromium, Hexavalent	20 µg/l	Sulfate	5 mg/l
Copper	5 µg/l	Sulfide	0.2 mg/l
Cyanide (Direct / Distilled)	10 µg/l	Total Dissolved Solids	10 mg/l
Cyanide, WAD+A47	10 µg/l	Total Suspended Solids	10 mg/l
Fluoride	0.1 mg/l	Thallium	1 µg/l
Iron	10 µg/l	Uranium	1 µg/l
Lead	1 µg/l	Zinc	10 µg/l
Magnesium	20 µg/l		
Manganese	2 µg/l	Phenols	15 µg/l
Mercury	0.1 µg/l	Nonylphenol D7065	10 µg/l
Mercury (low-level)	0.003 µg/l	Nonylphenol D7485	0.33 µg/l
Nickel	50 µg/l		

4. <u>Records</u>

a. The permittee shall establish and maintain records. Those records shall include, but not be limited to, the following:

i. The date, type, exact place, and time of sampling or measurements;
ii. The individual(s) who performed the sampling or measurements;
iii. The date(s) the analyses were performed;
iv. The individual(s) who performed the analyses;
v. The analytical techniques or methods used; and
vi. The results of such analyses.
vii. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).

b. The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or Regional Administrator.

5. <u>Signatory and Certification Requirements</u>

a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:

i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;

ii) In the case of a partnership, by a general partner;

iii) In the case of a sole proprietorship, by the proprietor;

iv) In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;

v) By a duly authorized representative of a person described above, only if:

1) The authorization is made in writing by a person described in i, ii, iii, or iv above;

2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,

3) The written authorization is submitted to the Division.

b. If an authorization as described in this section 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 this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"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."

PART II

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section – Industrial Compliance Program
Water Quality Control Division
Telephone: (303) 692-3500

b. Written notification shall be to:

Water Quality Protection Section – Industrial Compliance Program
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

2. Change in Discharge

The permittee shall give advance notice to the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged, or;

b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

3. Noncompliance Notification

The permittee shall give advance notice to the Division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division with the following information:

i) A description of the noncompliance and its cause;

ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.4 (a) **within five (5) working days** after becoming aware of the following circumstances:

i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

iv) Daily maximum violations for any of the pollutants limited by Part I.A of this permit as specified in Part III of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

4. Transfer of Ownership or Control

The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of the permit.

a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.

b. A permit may be automatically transferred to a new permittee if:

i) The current permittee notifies the Division in writing 30 calendar days in advance of the proposed transfer date; and

ii) 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

iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

5. Other Notification Requirements

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) One hundred micrograms per liter (100 µg/l);

ii) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2.4-dinitrophenol and 2-methyl-4.6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;

iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) Five hundred micrograms per liter (500 µg/l);

ii) One milligram per liter (1 mg/l) for antimony; and

iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. <u>Bypass Notification</u>

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten (10) calendar days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. <u>Bypass</u>

a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility.

b. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:

i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii) 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 back-up 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

iii) Proper notices were submitted in compliance with Part II.A.5.

c. "Severe property damage" as used in this Subsection means substantial physical 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.

d. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.

e. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

8. <u>Upsets</u>

a. “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with 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.

b. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. 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:

i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and

ii) The permitted facility was at the time being properly operated and maintained; and

iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and
iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

d. Burden of Proof

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

9. Submission of Incorrect or Incomplete Information

Where 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 in any report to the Division, the permittee shall promptly submit such facts or information.

B. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

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

2. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and

c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

3. <u>Duty to Provide Information</u>

The permittee shall furnish to the Division, within a reasonable time, any information which the Division 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 Division, upon request, copies of records required to be kept by this permit.

4. <u>Availability of Reports</u>

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. <u>Modification, Suspension, Revocation, or Termination of Permits By the Division</u>

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:

   i) Violation of any terms or conditions of the permit;

   ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or

   iii) Materially false or inaccurate statements or information in the permit application or the permit.

   iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.

b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:

   i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

   ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit

conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.

iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:

(A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and

(B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and

(C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or

(D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) calendar days of judicial remand.

iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.

v) Where the Division has completed, and EPA approved, a total maximum daily load (TMDL) which includes a wasteload allocation for the discharge(s) authorized under the permit.

vi) The permittee has received a variance.

vii) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.

viii) When required by the reopener conditions in the permit.

ix) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.

x) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.

xi) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.

xii) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.

xiii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

xiv) When another State whose waters may be affected by the discharge has not been notified.

xv) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.

c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:

   i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) calendar days of receipt of notification,

   ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;

   iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and

   iv) Requirements of public notice have been met.

d. For permit modification, termination, or revocation and reissuance, the Division may request additional information from the permittee. In the case of a modified permit, the Division may require the submission of an updated application. In the case of revoked and reissued permit, the Division shall require the submission of a new application.

e. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 calendar days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.

f. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:

   i) Correcting typographical errors; or

   ii) Increasing the frequency of monitoring or reporting by the permittee; or

   iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 calendar days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or

   iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or

   v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or

   vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

   vii) Incorporating conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 (or a modification thereto that has been approved in accordance with the procedures in 40 CFR 403.18) as enforceable conditions of the POTW's permits.

g. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

h. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.

i. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).

j. If cause does not exist under this section, the Division shall not modify or revoke and reissue the permit.

6. <u>Oil and Hazardous Substance Liability</u>

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 to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. State 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 granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

8. Permit Violations

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Except as provided elsewhere in this permit, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

9. Severability

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

10. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

11. Fees

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (l) (b), and the Colorado Discharge Permit System Regulations 5 CCR l002-61, Section 61.l5 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-60l et. seq., C.R.S. l973 as amended.

12. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications.If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.4.

13. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

14. Effect of Permit Issuance

a. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.

b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

d. Compliance with a permit condition which implements a particular standard for biosolid use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for biosolid use or disposal.

PART III
CATEGORICAL INDUSTRIES

Aluminum Forming
Asbestos Manufacturing
Battery Manufacturing
Builders' Paper and Board Mills
Canned & Preserved Fruits and Vegetables Processing
Canned & Preserved Seafood Processing
Carbon Black Manufacturing
Cement Manufacturing
Coal Mining
Coil Coating
Copper Forming
Dairy Products Processing
Electrical and Electronic Components
Electroplating
Explosives Manufacturing
Feedlots
Ferroalloy Manufacturing
Fertilizer Manufacturing
Glass Manufacturing
Grain Mills
Gum and Wood Chemicals Manufacturing
Hospital
Ink Formulation
Inorganic Chemicals Manufacturing
Iron and Steel Manufacturing
Leather Tanning and Finishing
Meat Products
Metal Finishing
Metal Molding and Casting (Foundries)
Mineral Mining and Processing
Nonferrous Metals Manufacturing
Nonferrous Metals Forming and Metal Powders
Oil and Gas Extraction
Organic Chemicals, Plastics, and Synthetic Fibers
Ore Mining and Dressing
Paint Formulation
Paving and Roofing Materials (Tars and Asphalt)
Pesticide Chemicals
Petroleum Refining
Pharmaceutical Manufacturing
Phosphate Manufacturing
Photographic
Plastics Molding and Forming
Porcelain Enameling
Pulp, Paper, and Paperboard Manufacturing
Rubber Manufacturing
Soap and Detergent Manufacturing
Steam Electric Power Generating
Sugar Processing
Textile Mills
Timber Products Processing

PRIORITY POLLUTANTS AND HAZARDOUS SUBSTANCES
ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS
IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GC/MS)

Volatiles	**Base/Neutral**	**Acid Compounds**	**Pesticides**
acrolein	acenaphthene	2-chlorophenol	aldrin
acrylonitrile	acenaphthylene	2,4-dichlorophenol	alpha-BHC
benzene	anthracene	2,4,-dimethylphenol	beta-BHC
bromoform	benzidine	4,6-dinitro-o-cresol	gamma-BHC
carbon tetrachloride	benzo(a)anthracene	2,4-dinitrophenol	delta-BHC
chlorobenzene	benzo(a)pyrene	2-nitrophenol	chlordane
chlorodibromomethane	3,4-benzofluoranthene	4-nitrophenol	4,4'-DDT
chloroethane	benzo(ghi)perylene	p-chloro-m-cresol	4,4'-DDE
2-chloroethylvinyl ether	benzo(k)fluoranthene	pentachlorophenol	4,4'-DDD
chloroform	bis(2-chloroethoxy)methane	phenol	dieldrin
dichlorobromomethane	bis(2-chloroethyl)ether	2,4,6-trichlorophenol	alpha-endosulfan
1,1-dichlorethane	bis(2-chloroisopropyl)ether		beta-endosulfan
1,2-dichlorethane	bis(2-ethylhexyl)phthalate		endosulfan sulfate
1,1-dichlorethylene	4-bromophenyl phenyl ether		endrin
1,2-dichlorpropane	butylbenzyl phthalate		endrin aldehyde
1,3-dichlorpropylene	2-chloronaphthalene		heptachlor
ethylbenzene	4-chlorophenyl phenyl ether		heptachlor epoxide
methyl bromide	chrysene		PCB-1242
methyl chloride	dibenzo(a,h)anthracene		PCB-1254
methylene chloride	1,2-dichlorobenzene		PCB-1221

PRIORITY POLLUTANTS AND HAZARDOUS SUBSTANCES

ORGANIC TOXIC POLLUTANTS IN EACH OF FOUR FRACTIONS
IN ANALYSIS BY GAS CHROMATOGRAPHY/MASS SPECTROSCOPY (GC/MS)

Volatiles	Base/Neutral	Acid Compounds	Pesticides
1,1,2,2-tetrachloroethane	1,3-dichlorobenzene		PCB-1232
tetrachloroethylene	1,4-dichlorobenzene		PCB-1248
toluene	3,3-dichlorobenzidine		PCB-1260
1,2-trans-dichloroethylene	diethyl phthalate		PCB-1016
1,1,1-trichloroethane	dimethyl phthalate		toxaphene
1,1,2-trichloroethane	di-n-butyl phthalate		
trichloroethylene	2,4-dinitrotoluene		
vinyl chloride	2,6-dinitrotoluene		
	di-n-octyl phthalate		
	1,2-diphenylhydrazine (as azobenzene)		
	fluorene		
	fluoranthene		
	hexachlorobenzene		
	hexachlorobutadiene		
	hexachlorcyclopentadiene		
	hexachloroethane		
	indeno(1,2,3-cd)pyrene		
	isophorone		
	naphthalene		
	nitrobenzene		
	N-nitrosodimethylamine		
	N-nitrosodi-n-propylamine		
	N-nitrosodiphenylamine		
	phenanthrene		
	pyrene		
	1,2,4-trichlorobenzene		

OTHER TOXIC POLLUTANTS (AMMONIA, METALS AND CYANIDE) AND TOTAL PHENOLS

Antimony, Total
Arsenic, Total
Beryllium, Total
Cadmium, Total
Chromium, Total
Copper, Total
Lead, Total
Mercury, Total
Nickel, Total
Selenium, Total
Silver, Total
Thallium, Total
Zinc, Total
Cyanide, Total
Phenols, Total

TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES
REQUIRED TO BE IDENTIFIED BY EXISTING DISCHARGERS
IF EXPECTED TO BE PRESENT

Toxic Pollutants

Asbestos

Hazardous Substances

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlorpyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D(2,4-Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2,2-Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethyl amine
Dinitrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethanolamine
Ethion
Ethylene diamine
Ethylene dibromide
Formaldehyde
Furfural
Guthion
Isoprene
Isopropanolamine
Keithane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Methyl parathion
Mexacarbate
Monoethyl amine
Monomethyl amine
Naled
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfanate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Styrene
TDE (Tetrachlorodiphenylethane)
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]
Trichlorofan
Triethylamine
Trimethylamine
Uranium
Vandium
Vinyl Acetate
Xylene
Xylenol
Zirconium