APPENDIX E. REQUIREMENTS FOR DEVELOPMENT OF SITE-SPECIFIC CRITERIA FOR CERTAIN PARAMETERS

A. General Applicability to Metals

Numerical criteria for metals to protect aquatic life are referenced in OAC 252:730-5-12(f)(6)(G) and Table 2 of Appendix G of this Chapter. For permitting purposes, such criteria for total recoverable Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Silver, and Zinc may be translated into dissolved metals criteria using the conversion factors referenced in OAC 252:730-5-12(f)(6)(H) and Table 3 of Appendix G. Criteria for parameters other than metals are also located in Table 2 of Appendix G.

An additional alternative which may be utilized for permitting purposes is to determine site-specific criteria from either the total recoverable or the dissolved criteria. However, federal regulations found at 40 CFR 122.45(c) require that NPDES permit limits must express metals concentrations as total recoverable, not dissolved. Therefore, if dissolved criteria for metals are implemented, they must be translated to site-specific total metals criteria to be used in the issuance of permit limits consistent with OAC 252:740.

The permitting authority may issue a total recoverable permit limit if statewide total recoverable criteria are appropriate in the permitting authority's view, and/or satisfactory in the permittee's view. If permit limits obtained using total recoverable criteria are unsatisfactory to the permittee, the permittee may attempt to obtain different permit limits by developing site-specific criteria in accordance with the provisions of this Appendix.

Implementation of site-specific criteria may reduce the margin of safety afforded by implementation of criteria per OAC 252:730-5-12(f)(6)(G) and Table 2 of Appendix G. Therefore, it is important that background concentration (which reduces the assimilation capacity of receiving water) be accounted for when site-specific criteria are implemented. Determination of background concentration requires a minimum of twelve samples collected over twelve months.

In order to develop permissible site-specific criteria, this Appendix must be followed to the satisfaction of the permitting authority and DEQ. A work plan explaining sampling and analysis procedures and quality assurance/quality control must be approved by DEQ prior to commencing the site-specific study. Upon completion, results must be submitted to DEQ and the permitting authority. Permittees are strongly encouraged to evaluate both the discharge and receiving water using clean sampling techniques.

Upon DEQ approval, site-specific criteria shall be promulgated as part of this Appendix following the next subsequent permanent rulemaking to amend OAC 252:730. These site-specific criteria supersede other numeric criteria promulgated elsewhere in this Chapter if it is shown to the satisfaction of DEQ that properties of the discharge or the circumstances surrounding the development of the site-specific criteria have not significantly changed since the promulgation of those site-specific criteria. Such criteria and the conditions around which they were derived, including but not limited to local environmental factors and effluent characteristics, shall be re-evaluated by the permit holder with each subsequent discharge permit renewal application or major

modification request to determine if any significant changes have affected the propriety of the site-specific criteria.

B. Site-Specific Criteria Applicability for NPDES Permit Activities

Oklahoma's site-specific criteria, except as otherwise specified, apply where the maximum concentration on the chronic regulatory mixing zone boundary occurs under critical conditions for receiving streams where Q*>0.1823 and on the acute regulatory mixing zone boundary for streams where Q*≤0.1823. Critical conditions include regulatory effluent and receiving stream flows. OAC 252:740-5-2(C) requires that effluent flow, Q_e, be the highest monthly averaged discharge if sufficient data is available or the design flow otherwise. When chronic criteria implementation is appropriate, OAC 252:730-5-4 requires that the receiving stream flow, Q_u, be the larger of 7Q2 or 1 cfs. One cfs shall be used if the regulatory low flow cannot be determined. The discharger shall be required to determine the regulatory low flow per OAC 252:740-1-6 prior to the next permit cycle at which time the permit limits may be revised using the newly calculated Q_u (252:740-1-6(d)).

The maximum concentration on the mixing zone boundary may be simulated by mixing effluent and receiving water. Percent effluent in receiving water, PE, depends upon the dilution capacity of the stream and shall not exceed 100%. Dilution capacity, for streams, is represented as $Q^* = Q_e/Q_u$.

The following formulas shall be used to determine PE for receiving streams:
For streams with large dilution capacities (Q* < or equal to 0.1823), PE equals (194Q*) divided by (1 + Q*). PE for Q*< or equal to 0.1823 shall not be less than 10%.

For streams with intermediate dilution capacities (0.1823 < Q* < 0.3333), PE equals (100) divided by (6.17 - 15.51Q*).

For streams with small dilution capacities (Q* > or equal to 0.3333), PE equals 100%.

Site-specific criteria in Oklahoma lakes are also based on the maximum concentration on the mixing zone boundary. The following formulas shall be used to determine PE for lakes:

PE equals 4.96D, D > or equal to 3 feet where D is pipe diameter.

PE equals $23.8\sqrt{W}$, W > or equal to 3 feet where W is canal width.

As with streams, PE is always less than or equal to 100% for lakes.

If PE is calculated to be less than 10%, then effluent water effect ratios shall use PE = 10%.

"Waterbody-specific" criteria, such as segment-specific metals, may not have limitations on its applicability. Rather, it may be used a substitute for other applicable statewide criteria for the entire waterbody.

Site-specific criteria are dependent, in part, on specific properties of the effluent that influence the bioavailability and toxicity of metals. Substantial changes in the quality or quantity of the effluent

may affect the resulting site-specific criterion. Therefore, if the existing permit contains requirements for toxicity reduction evaluations (TREs) or pollution prevention efforts, a site-specific criterion should not be developed until after these efforts have been completed. A new site-specific criteria study would likely have to be performed after those requirements are met because the characteristics of the effluent may significantly change (e.g., hardness, pH, TDS). In cases where the quality or quantity of an effluent changes, the burden rests on the permittee to demonstrate that the effluent characteristics are not significantly altered to a degree that would affect the validity of the outcomes of the original site-specific criteria study. A site-specific criterion may need to be re-evaluated periodically to reflect changes in the system that may alter the characteristics of either the receiving water or effluent.

C. Site-Specific Criteria Applicability for Activities Not Related to NPDES Permits

In certain circumstances, statewide numeric criteria for parameters other than metals may be replaced by segment-specific criteria for specific parameters applicable to just one waterbody. These criteria will be applicable to any point in the waterbody. These criteria must be shown to be protective of native aquatic life through procedures similar to those used in the WER procedures detailed here and in DEQ approved technical guidance.

Development of segment-specific criteria for minerals should follow DEQ approved technical guidance. Certain cases may require additional data or justification, but this document should provide sufficient basic guidance for the development of alternative criteria. Development of site-specific or segment-specific criteria for parameters for other than metals or minerals and lacking specific guidance documents will require extensive coordination with technical staff from DEQ and the permitting authority.

D. Sampling Procedures

General guidance for field sampling can be found in DEQ approved technical guidance. The permittee shall collect both receiving water and effluent, and mix them together to obtain PE. Ambient water collections shall be representative of low stream flow events and collected at a location unaffected by the discharge being permitted. Twenty-four (24) hour composite effluent samples representative of normal operation shall be collected at the outfall such that any periodic toxic discharges are captured and average effluent conditions are represented. Outfalls may be combined proportional to flow if in close proximity. Clean sampling techniques shall be used where possible and samples shall be analyzed by an Oklahoma certified laboratory utilizing generally accepted methods. Dilution water must be made in accordance with approved methods. The pH, hardness, conductivity and alkalinity must be similar to that of the receiving water.

Site-specific criteria development for lakes should employ DEQ approved sampling procedures. Deviation from approved procedures and techniques must be justified to DEQ and the permitting authority prior to initiation of the sampling. Excursions from these techniques that occur as a result of on-site conditions must be reported to DEQ and the permitting authority as soon as possible. Implications of these deviations on the data quality and their appropriateness to the outcomes of the study must be reviewed and agreed upon by DEQ and the permitting authority prior to their use in the derivation of any criteria.

For systems lacking NPDES permitted dischargers, sampling procedures for determining background concentration should follow DEQ approved technical guidance for characterizing local conditions.

E. Site-Specific Criteria Development Options for Metals:

Prior to the initiation of any work toward development of a site-specific criterion, interested parties must coordinate with DEQ technical staff. Such coordination will require, at a minimum, a workplan addressing project goals, collection and testing methods, quality assurance measures, and output schedules. This workplan will need to be reviewed and approved by DEQ and the permitting authority prior to initiation of any work.

Five methods are available if the permittee decides to develop site-specific metals criteria for permitting purposes instead of utilizing the total recoverable criteria referenced in OAC 252:730-5-12(f)(6)(G) and Table 2 of Appendix G.

DEQ will accept studies aimed at developing site-specific metals criteria using any of the listed methods. For copper site-specific criteria studies, DEQ will accept any of the four methods, including the Water Effects Ratio (WER) method.

1. Method 1: Copper Biotic Ligand Model

The BLM for copper uses inputs for ten water chemistry parameters (pH, dissolved organic carbon, calcium, magnesium, sodium, sulfate, potassium, chloride, alkalinity, and temperature) to determine site-specific dissolved copper criteria that are more representative of toxicity to aquatic life than other models. This method for the calculation of site-specific criteria reflects the best available science for determining biologically available copper. Further information about the model can be found in the document "Aquatic Life Ambient Freshwater Quality Criteria - Copper 2007 Revision" (EPA-822-R-07-001).

2. Method 2: Water Effects Ratio (WER)

The permittee may obtain a site-specific water effects ratio (WER) to translate a statewide total criterion to a site-specific total criterion if the existing permit does not contain requirements for toxicity reduction evaluations or implementation of pollution prevention efforts. Toxicity tests using both laboratory dilution water and PE water must be performed. PE water is obtained by first determining the amount of water required for the toxicity test (e.g. 1L). Since $PE = 100V_e/(V_e + V_r)$, where V_e and V_r are volumes of effluent and receiving water required for the toxicity test, respectively, then $V_e = PE/100$ (L). If PE = 25%, then $V_e = 0.25$L. Given that $V_e + V_r = 1$ (L) in this example, $V_r = 1 - PE/100$, or 0.75L.

Toxicity tests using two different species are required. Acute 48-hour static renewal definitive toxicity tests shall be performed by the permittee in accordance with approved methods for acute testing identified above. LC_{50} tests shall be used to determine WERs for both acute and chronic criteria. Toxicity tests require adding metal to both PE and dilution water. It shall not be acceptable to estimate metal concentrations by measuring the amount added. Total recoverable concentrations must be used to obtain LC_{50} values for both test species for PE and laboratory water in Method 2.

Multiple WERs must be performed. At a minimum, three tests in three different seasons must be performed for two test species. WER is computed as $LC_{50dilution}/LC_{50PE}$. A geometric mean of the WERs is the final water effect ratio, FWER. A minimum of four WERs must be used in the computation of FWER. An explanation of any WERs obtained but not used in computation of FWER must be provided to the permitting authority and DEQ. The total criterion specified in Table 2 of Appendix G is divided by FWER to obtain a site-specific total criterion. Background concentration must be determined to use with the site-specific criterion to develop permit limits.

3. Method 3: Dissolved to Total Fraction

Dissolved and total recoverable concentrations must be obtained to determine a dissolved to total fraction. Samples must be taken from the effluent, receiving water and PE water. The dissolved to total fraction must be successfully computed a minimum of ten times.

The dissolved to total fraction is defined as $f_i = C_{Di}/C_{Ti}$, where C_{Di} is the dissolved concentration in the *i*th PE sample, and C_{Ti} is the total recoverable concentration. The dissolved fraction for the site shall be determined as the geometric mean for the n samples.

$$\therefore f = \exp\left[\sum_{i=1}^{n} [\ln(f_i)]/n\right]$$

To develop a site-specific criterion from the dissolved fraction alone, divide the dissolved criterion determined from Table 3 of Appendix G by f. The result is a site-specific total recoverable criterion.

4. Method 4: Combining f and FWER

The most definitive method of developing a site-specific criterion is to modify a dissolved criterion to account for both the fraction of the concentration biologically available and the difference between the toxicity of the metal in the laboratory dilution water and in PE water. In order to perform option 4, WERs must be obtained using dissolved concentrations. This accounts for differences between the toxicity of the dissolved metal in laboratory dilution water and dissolved metal in PE water.

A translator, T, is obtained as the product of f and dissolved FWER. T is divided into the dissolved criterion determined from Table 3 of Appendix G to obtain a site-specific total recoverable criterion.

5. Method 5: Selenium BAF Fish Tissue Study

Site-specific criteria for selenium shall be developed using a BAF study approvable by DEQ. Prior to the start of any study, the workplan and appropriate quality assurance project plan need to be approved by DEQ. A site-specific BAF study requires both fish tissue (muscle or whole-body) and water column data.

F. Site-Specific Criteria for Metals Which Have Been Developed for Particular Waterbodies

Subsequent to the initial promulgation of this Appendix, there have been cases in which interested persons have developed site-specific criteria for particular discharges or other circumstances in accordance with this Appendix. Such site-specific criteria are set forth below. These site-specific criteria shall be interpreted according to the following:

C_{ast} = acute statewide total criterion
C_{cst} = chronic statewide total criterion
C_{asd} = acute statewide dissolved criterion
C_{csd} = chronic statewide dissolved criterion
S_{ast} = acute site-specific total criterion
S_{cst} = chronic site-specific total criterion
$FWER_t$ = final total water effects ratio
$FWER_d$ = final dissolved water effect ratio
f = dissolved to total fraction

Acute site-specific criteria are appropriate for large streams and chronic site-specific criteria are appropriate for small and medium size streams.

Options Allowed in Appendix E:

Method 2

$$S_{ast} = C_{ast}/FWER_t$$
$$S_{cst} = C_{cst}/FWER_t$$

Method 3

$$S_{ast} = C_{csd}/f$$
$$S_{cst} = C_{csd}/f$$

Method 4

$$S_{ast} = C_{csd}/(fxFWER_d)$$
$$S_{cst} = C_{csd}/(fxFWER_d)$$

1. City of Blackwell Discharge to Chikaskia River (OK621100000010_10): Cadmium

A site-specific criteria modification study has been satisfactorily completed for cadmium for the City of Blackwell.

$FWER_t = 0.0989$
$FWER_d = 0.2905$
$f = 0.18$

The results of the study allow any of the four following criteria to be utilized.

$C_{cst} = 0.51$ µg/L	Statewide criterion
$S_{cst} = 5.1$ µg/L	Method 2
$S_{cst} = 2.45$ µg/L	Method 3
$S_{cst} = 8.45$ µg/L	Method 4

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

2. AES Shady Point Discharge to Poteau River (OK220100010010_20): Copper

A site-specific criteria modification study has been satisfactorily completed for copper for AES Shady Point.

$FWER_t = 0.0876$
$FWER_d = 0.1306$
$f = 0.5936$

The results of the study allow any of the four following criteria to be utilized.

$C_{cst} = 9.50$ µg/L	Statewide criterion
$S_{cst} = 65$ µg/L	Method 2
$S_{cst} = 15.3$ µg/L	Method 3
$S_{cst} = 74$ µg/L	Method 4

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

3. City of Idabel Discharge to Mud Creek (OK410200010210_00) at SW 1/4 of SW 1/4 of SW 1/4 of Section 15, T8S, R24E, IM, McCurtain County, Oklahoma (Latitude 33° 51’ 14.621" North, Longitude 94° 47’ 22.200" West)

A. Lead

A site-specific criteria modification study has been satisfactorily completed for lead for the City of Idabel.

$FWER_t = 2.5912$
$FWER_d = 0.2914$
$f = 0.7157$

The results of the study allow any of the four following criteria to be utilized.

$C_{cst} = 2.3492$ µg/L	Statewide criterion
$S_{cst} = 0.9066$ µg/L	Method 2
$S_{cst} = 2.7104$ µg/L	Method 3
$S_{cst} = 9.3036$ µg/L	Method 4

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

B. Nickel

A site-specific criteria modification study has been satisfactorily completed for nickel for the City of Idabel.

$FWER_t = 1.1244$
$FWER_d = 0.9735$
$f = 0.5798$

The results of the study allow any of the four following criteria to be utilized.

$C_{cst} = 46.82$ µg/L	Statewide criterion
$S_{cst} = 41.6$ µg/L	Method 2
$S_{cst} = 80.50$ µg/L	Method 3
$S_{cst} = 82.69$ µg/L	Method 4

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

C. Zinc

A site-specific criteria modification study has been satisfactorily completed for zinc for the City of Idabel.

$FWER_t = 0.6714$
$FWER_d = 0.7178$
$f = 0.6213$

The results of the study allow any of the four following criteria to be utilized.

C_{ast} = 107.52 µg/L	Statewide criterion
S_{ast} = 160.14 µg/L	Method 2
S_{ast} = 169.24 µg/L	Method 3
S_{ast} = 235.78 µg/L	Method 4

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

4. Oklahoma Gas & Electric Mustang Generating Station Discharge to North Canadian River (OK520520000250_00) at NE 1/4 of NE 1/4 of SE 1/4 of Section 36, T12N, R5W, IM, Canadian County, Oklahoma: Copper

A site-specific criteria modification study has been satisfactorily completed for copper for the Oklahoma Gas & Electric Mustang Generating Station discharge to the North Canadian River.

$FWER_t$ = 0.053
$FWER_d$ = 0.224
f = 0.368 (0.37)

The results of the study allow any of the four following criteria to be utilized. All criteria are calculated at an in-stream hardness of 334 mg/L.

C_{cst} = 35.9 µg/L	Statewide criterion
S_{cst} = 677 µg/L	Method 2
S_{cst} = 94.0 µg/L	Method 3
S_{cst} = 416.0 µg/L	Method 4 (Recommended in OG&E study)

C_{ast} = 59.8 µg/L	Statewide criterion
S_{ast} = 1128 µg/L	Method 2
S_{ast} = 156.0 µg/L	Method 3
S_{ast} = 692.0 µg/L	Method 4 (Recommended in OG&E study)

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

5. City of Poteau Discharge to Poteau River (OK220200010010_40) at SE 1/4 of NW 1/4 of Section 30, T7N, R26E, IM, LeFlore County, Oklahoma

A. Copper

A site-specific criteria modification study has been satisfactorily completed for copper for the City of Poteau discharge to the Poteau River.

$FWER_t = 0.1850$
$FWER_d = 0.1765$
$f = 0.2969$

The results of the study allow any of the four following criteria to be utilized. All criteria are calculated at an in-stream hardness of 25.75 mg/L.

$C_{cst} = 4.02$ µg/L Statewide criterion
$S_{cst} = 21.73$ µg/L Method 2
$S_{cst} = 13.0$ µg/L Method 3
$S_{cst} = 73.66$ µg/L Method 4 (Recommended in Poteau study)

$C_{ast} = 5.35$ µg/L Statewide criterion
$S_{ast} = 28.92$ µg/L Method 2
$S_{ast} = 17.31$ µg/L Method 3
$S_{ast} = 98.09$ µg/L Method 4(Recommended in Poteau study)

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

B. Zinc

A site-specific criteria modification study has been satisfactorily completed for zinc for the City of Poteau discharge to the Poteau River.

$FWER_t = 0.4040$
$FWER_d = 0.4276$

The results of the study allow any of the four following criteria to be utilized. All criteria are calculated at an in-stream hardness of 25.75 mg/L. However, method 2was deemed sufficient to provide relief from a zinc limit in the discharge permit.

$C_{ast} = 37.95$ µg/L Statewide criterion
$S_{ast} = 93.95$ µg/L Method 2 (Recommended in Poteau study)

6. City of Heavener Discharge to Morris Creek (OK220100020100_00) at SE 1/4 of NW 1/4 of Section 30, T7N, R26E, IM, LeFlore County, Oklahoma: Copper

A site-specific criteria modification study has been satisfactorily completed for copper for the City of Heavener discharge to Morris Creek.

$FWER_t = 0.1294$
$FWER_d = 0.1216$
$f = 0.8595$

The results of the study allow any of the four following criteria to be utilized. All criteria are calculated at an in-stream hardness of 25.75 mg/L.

C_{cst} = 4.02 µg/L Statewide criterion
S_{cst} = 31.07 µg/L Method 2
S_{cst} = 4.68 µg/L Method 3
S_{cst} = 38.50 µg/L Method 4 (Recommended in Morris Ck. study)

C_{ast} = 5.35 µg/L Statewide criterion
S_{ast} = 41.34 µg/L Method 2
S_{ast} = 6.22 µg/L Method 3
S_{ast} = 51.19 µg/L Method 4 (Recommended in Morris Ck. study)

The discharger may choose the above criterion it wishes to use for discharge permit calculations.

7. City of Broken Bow to Unnamed Tributary of Yanubbe Creek (OK410200010155_00) at SE 1/4 of SE 1/4 of SE 1/4 of Section 18, T6S, R24E, IM, McCurtain County, Oklahoma (Latitude 34° 01' 37.165" North, Longitude 94° 43' 22.270" West)

A. Copper

A site-specific criteria modification study has been satisfactorily completed for copper for the City of Broken Bow Public Works Authority discharge to Unnamed Tributary of Yanubbe Creek. All criteria are calculated at an in-stream hardness of 34.9 mg/L.

$FWER_t = 0.0995$
$FWER_d = 0.1253$
$f = 0.6544$

The results of the study allow any of the four following criteria to be utilized

C_{cst} = 5.20 µg/L Statewide criterion
S_{cst} = 52.28 µg/L Method 2
S_{cst} = 7.628 µg/L Method 3
S_{cst} = 60.87 µg/L Method 4

C_{ast} = 7.12 µg/L Statewide criterion
S_{ast} = 71.58 µg/L Method 2
S_{ast} = 10.45 µg/L Method 3

S_{ast} = 83.34 µg/L Method 4

B. Zinc

A site-specific criteria modification study has been satisfactorily completed for zinc for the City of Broken Bow Public Works Authority discharge to Unnamed Tributary of Yanubbe Creek. All criteria are calculated at an in-stream hardness of 34.9 mg/L.

$FWER_t$ = 0.6312
$FWER_d$ = 0.7502
f = 0.7343

C_{ast} = 49.11 µg/L	Statewide criterion
S_{ast} = 77.77 µg/L	Method 2
S_{ast} = 65.32 µg/L	Method 3
S_{ast} = 86.87 µg/L	Method 4

G. Site-Specific Criteria for Parameters Other Than Metals

The purpose of site-specific criteria investigations may not necessarily be intended to prevent toxicity as a result of the substance of concern. Various substances may produce various types of adverse impacts in the environment. For example, minerals may produce a toxic response due to ionic imbalance while nutrients may produce various impacts depending upon algal response to various conditions within the system. Examples of such systems include those where there may be nitrogen, phosphorus or light limitations. Resulting site-specific criteria may involve seasonal, spatial or other limitations as well as specific numeric limitations.
"Waterbody-specific" criteria, such as certain nutrients in waters designated SWS or SWS-R, or segment-specific metals, may not have limitations on its applicability. Rather, it may be used a substitute for other applicable statewide criteria.

Development of site-specific criteria for minerals should follow approved methods. Certain cases may require additional data or justification, but approved guidance documents should provide sufficient basic guidance for the development of site-specific criteria.

Development of site-specific criteria for parameters other than metals or minerals and lacking specific guidance documents will require extensive coordination with technical staff from DEQ and the permitting authority. Such coordination will require, at a minimum, a workplan addressing project goals, collection and testing methods, quality assurance measures and output schedules. This workplan will need to be reviewed and approved by DEQ and the permitting authority prior to initiation of any work.

Those instances in which site-specific phosphorus or nitrogen criteria may be promulgated pursuant to OAC 252:730-5-10(7) titled "Chlorophyll-a numerical criterion for certain waters" will be limited to those waterbodies that have been shown to be impaired by nutrients and a numeric nutrient criterion has been determined to be the best way to affect reductions in the target nutrient. Such a

demonstration will follow procedures outlined in OAC 252:740-15-10. Criteria may be derived from the result of "Clean Lake Studies" or other site-specific investigations performed by an agency of competent authority or a designee.

In cases where toxicity may be a concern due to the parameter in question, toxicity testing using two different species is required. Such testing should comply with the procedures detailed in OAC 252:606 and approved guidance. Exceptions to or deviations from these protocols should be brought to the attention of DEQ and the permitting authority prior to completion of the testing and thoroughly detailed in the final report.

H. Site-Specific Criteria for Nutrients Which Have Been Developed for Particular Waterbodies

(reserved)

I. Site-Specific Criteria for Other Parameters Which Have Been Developed for Particular Waterbodies

1. **PSO Comanche Power Station discharge to a tributary of Ninemile Creek (OK311300020032_00) and Ninemile Creek (OK311300020030_00) upstream of the confluence with East Cache Creek (OK31130020010_00) at Section 4, T1S, R11W, IM, Comanche County.**

   A site-specific mineral study has been satisfactorily completed on these waterbodies indicating that the actual agricultural uses of the waterbody are capable of tolerating more mineral input than currently allowed by the default values in Appendix F for segment 311300. The following criteria are allowed for the protection of the actual agricultural usage of the water.

	Total Dissolved Solids	Sulfate	Chloride
Yearly mean standard (mg/L)	1680	338	499
Sample standard (mg/L)	2100	423	624