EXHIBIT H

TECHNICAL MEMORANDUM

White River Use Attainability Analysis (UAA), Fayetteville, Arkansas: Act 954 Compliance Review

PREPARED FOR: City of Fayetteville

PREPARED BY: CH2M HILL

DATE: July 22, 2013

PROJECT NUMBER: 399884

Purpose

The purpose of this technical memorandum (TM) is to summarize the findings of CH2M HILL's technical review of Act 954 of 2013 (Act) pursuant to the June 10, 2013, letter from the Arkansas Department of Environmental Quality (ADEQ) to the City of Fayetteville (see Attachment A). The letter states:

> *"We request the City of Fayetteville review the Act and address any modifications necessary in the development of site specific criteria for minerals in order to be compliant with Act 954 of 2013."*

The full text of the Act that accompanied ADEQ's letter of June 10, 2013, is included in Attachment A.

Applicable Subsections from Act 954

The subsections below have been copied and paste directly from Act 954 (see Attachment A for full text). These subsections contain provisions most applicable to the UAA for Fayetteville related to the minerals criteria on the White River. All underlines in the original text have been removed and new underlines have been inserted for emphasis:

SECTION 2. Arkansas Code § 8-4-202(b)(3), concerning the rules and regulations the Arkansas Pollution Control and Ecology Commission may promulgate with respect to water pollution, is amended to read as follows:

(3)(A) Water quality standards, performance standards, and pretreatment standards.

(B) Water quality *standards for minerals adopted* under subdivision (b)(3)(A) of this section shall comply with the following requirements without precluding the evaluation of existing and readily available water quality-related data:

(i) The development and implementation of standards and criteria for minerals, including without limitation total dissolved solids, chlorides, and sulfates, and the assessment of a stream's or a stream segment's conformity with or attainment of a standard or criteria for minerals shall be based on the greater of the average flow in the stream or stream segment or four cubic feet per second (4 ft 3/s);

(ii) The development and implementation of standards or criteria for minerals, including without limitation total dissolved solids, chlorides, and sulfates, in order to protect the use of a domestic

water supply, and the assessment of a stream's or a stream segment's conformity with or protection of the use of a domestic water supply shall be based on the greater of the average flow in the stream or stream segment or four cubic feet per second (4 ft 3 /s);

(iii) The assessment of a stream, stream segment, lake, or reservoir by the Arkansas Department of Environmental Quality for conformity with or attainment of a water quality standard for minerals for purposes of 33 U.S.C. § 1313(d) shall be based on the average concentration of minerals in the stream, stream segment, lake, or reservoir using at least sixty (60) actual measured samples taken at regular intervals over at least a five-year period;

Conformance with Act 954

Overview of the Updated Flow and Minerals Database

Section 1 of the Act emphasizes the use of long-term flow data. Subsections 3(B)(i) and 3(B)(ii) specify that the development and implementation of criteria for minerals be based on the greater of the average flow in the stream segment or four (4) cubic feet per second (cfs). Subsection 3(B)(iii), although not directly applicable to the UAA, specifies that the assessment of a stream segment by ADEQ for conformity with or attainment of a water quality standard for minerals, for purposes of 33 U.S.C. §1313(d)[1], shall be based on the average concentration of minerals in the stream segment using at least sixty (60) measured samples taken at regular intervals over at least a five-year period.

To assess minerals concentrations in the White River segment from Lake Sequoyah to Beaver Lake, in conformance with Act 954, flow and minerals data from the four long-term sampling stations used in the UAA were compiled and analyzed. The agency /entity that collected the data, along with the sampling location and period of record are summarized below. Table 1 provides summary statistics and sample sizes for each sampling station. The database includes historical data, data collected during the UAA study period, and data collected after the UAA study period.

White River at Wyman Road (WR-01)

Data for Station WR-01 were compiled on June 18, 2013, and included flow, chloride, sulfate, and TDS data available at this time. The period of record for data collected in the White River at Station WR-01 is shown in Figure 1.

- The U.S. Geological Survey (USGS) has collected continuous flow data at this location (USGS 7048600) during the period October 1963 through April 1995, and since October 1998. USGS collected TDS, chloride, and sulfate samples once in 1958 and approximately monthly since 1999.
- For the White River UAA, the University of Arkansas (U of A) has collected monthly TDS, chloride, and sulfate data at this location since May 2011. Data available for this assessment include the period May 2011 through April 2013.
- The University of Arkansas Water Resources Center (AWRC) collected chloride and sulfate from this location approximately weekly during the period July 2009 through December 2010.

Figure 2 shows daily average flow at this location since October 1, 1963. It is shown as provisional or non-provisional as indicated by the USGS at the time of data compilation. Figures 3 through 5 are scatter plots of flow

[1] 33 U.S.C. §1313(d) deals with the requirement that all states must develop a 303(d) list of impaired waters.

versus mineral concentrations at this location. The source of plotted daily average flow data is USGS; plotted concentration values are from AWRC, U of A, and USGS.

White River at State Highway 45 (WR-03)

At the time this TM was prepared, USGS flow data for Station WR-03 (USGS 7048700) were not available. The "Water-Data Report 2011" (http://wdr.water.usgs.gov/wy2011/pdfs/07048700.2011.pdf) for this gage lists the flow data period of record as December 2002 through September 2011. It states, "water-discharge records poor, including estimated daily discharges." USGS flow data used for this assessment include the database complied on May 10, 2012, for development of the UAA. Minerals data for Station WR-03 were compiled on June 18, 2013, and are described as follows:

- USGS collected TDS at this location (USGS 7048700, near Goshen) approximately monthly from 1978 through 2011, and chloride and sulfate approximately monthly between 1969 and July 2011. At the time of flow data compilation, the period of available data was August 27, 1963 through April 28, 2011.
- For the White River UAA, the U of A has collected monthly TDS, chloride, and sulfate data at this location since May 2011. Results available for this assessment included the period May 2011 through April 2013.
- AWRC collected chloride and sulfate from this location approximately weekly during the period July 2009 through December 2010.
- ADEQ collected sulfate and TDS from this location (ADEQ WHI0052) approximately monthly from 1990 through 2010, and collected chloride from 2002 through 2010.

Figure 6 shows daily average flow at this location between August 27, 1963 and April 28, 2011. It is shown as provisional (actual or estimated) or non-provisional (actual or estimated) as indicated by the USGS at the time of data compilation. Figures 7 through 9 are scatter plots of flow versus mineral concentrations. The source of plotted daily average flow data is USGS; plotted concentration values are from ADEQ, AWRC, U of A, and USGS.

Richland Creek at State Highway 45 (RC-01)

Data for Station RC-01 were compiled on June 18, 2013, and included flow, chloride, sulfate, and TDS data available at this time.

- The USGS has collected continuous flow data at this location (USGS 7048800) since October 1998, and has collected TDS, chloride, and sulfate data approximately monthly since 2001.
- For the White River UAA, the U of A has collected monthly TDS, chloride, and sulfate data at this location since May 2011. Results available for this assessment include the period May 2011 through April 2013.

Figures 10 through 13 show the data collected at this location. USGS daily average flow data is shown as provisional or non-provisional, as indicated by USGS at the time of data compilation. The source of plotted daily average flow data is USGS; plotted concentration values are from USGS and U of A.

Noland Wastewater Treatment Plant (WWTP) Outfall 001

Data for Noland WWTP Outfall 001 were compiled on June 18, 2013, and include flow, chloride, sulfate, and TDS data available at this time.

- The City of Fayetteville monitors effluent discharge from the Noland WWTP in accordance with their National Pollutant Discharge Elimination System (NPDES) wastewater permit. Daily effluent flow is from January 1, 2006 through June 13, 2013. Chloride, TDS, and sulfate concentrations compiled for this assessment were collected at random intervals over the period of July 15, 2010 and June 4, 2013.
- For the White River UAA, the U of A has collected monthly TDS, chloride, and sulfate data in the outfall (WWTP-001) since May 2011. Results available for this assessment included the period May 2011 through April 2013.

Figures 14 through 17 illustrate the data collected at Outfall 001.

Based on the compiled data collected by the City of Fayetteville and the U of A, the 95th percentile mineral concentrations in Outfall 001 are: 420 mg/L TDS, 59 mg/L chloride, and 85 mg/L sulfate.

White River Minerals Concentrations

Long-term Average Concentrations

Based on the updated database (described above) of minerals concentrations collected in the White River between Lake Sequoyah and State Highway 45, the long-term average minerals concentrations at WR-01 (upstream of Noland Outfall 001) and WR-03 (downstream of Noland Outfall 001) are below the existing site-specific minerals water quality criteria of 160 mg/L TDS, and 20 mg/L chloride and sulfate (although the long-term average of sulfate at WR-03 is 19 mg/L). The long-term averages are based on hundreds of samples per constituent, spanning a sampling period of 14 years or more at both WR-01 and WR-03 (see Table 1). This result is significant in light of Act 954 subsection 3(B)(iii), which specifies that, *"the assessment of a stream, stream segment, lake or reservoir by ADEQ for conformity with or attainment of a water quality standard for minerals, for purposes of 33 U.S.C. §1313(d), shall be based on the* ***average*** *concentration of minerals in the stream, stream segment, lake or reservoir using at least sixty (60) measured samples taken at regular intervals over at least a five-year period."* In this case, such conditions have been met.

Additionally, the range of minerals concentrations measured during flow conditions equal to the long-term average flow at Stations WR-01 and WR-03 is below the existing site-specific minerals water quality criteria (see Table 2). This result is significant in light of Act 954 subsections 3(B)(i) and 3(B)(ii) which specify, *"the assessment of a stream's or a stream segment's conformity with or attainment of a standard or criteria for minerals shall be based on the greater of the average flow in the stream or stream segment or four cubic feet per second (4 ft 3/s)".*

Concentrations associated with White River Average Flow Conditions

Act 954 subsections 3(B)(i) and 3(B)(ii) specify that the development and implementation of criteria for minerals be based on the greater of the average flow in the stream segment or four (4) cubic feet per second (cfs). In this case, the average flow in the White River is 556 cfs at WR-01 and 552 cfs at WR-03[2].

Using a mass balance equation to compute White River minerals concentrations just downstream of the Noland WWTP Outfall 001, the results based on design capacity flow and 95th percentile mineral concentrations at Outfall 001 are as follows:

TDS

- WR-01 average flow = 556 cfs
- WR-01 concentration at average flow = 99 mg/L (high-end of the range [see Table 2])
- Outfall 001 design capacity flow = 19.5 cfs
- Outfall 001 95th percentile concentration = 420 mg/L
- Resultant White River flow just downstream of Outfall 001 = 576 cfs
- Resultant White River concentration just downstream of Outfall 001 = **110 mg/L**

Chloride

- WR-01 average flow = 556 cfs
- WR-01 concentration at average flow = 5.7 mg/L (high-end of the range [see Table 2])
- Outfall 001 design capacity flow = 19.5 cfs
- Outfall 001 95th percentile concentration = 59 mg/L
- Resultant White River flow just downstream of Outfall 001 = 576 cfs
- Resultant White River concentration just downstream of Outfall 001 = **8 mg/L**

[2] See Table 1, Note C.

Sulfate

- WR-01 average flow = 556 cfs
- WR-01 concentration at average flow = 16 mg/L (high-end of the range [see Table 2])
- Outfall 001 design capacity flow = 19.5 cfs
- Outfall 001 95th percentile concentration = 85 mg/L
- Resultant White River flow just downstream of Outfall 001 = 576 cfs
- Resultant White River concentration just downstream of Outfall 001 = **18 mg/L**

Using a mass balance equation to compute White River minerals concentrations just downstream of the Noland WWTP Outfall 001, the results based on design capacity flow and proposed site-specific minerals water quality criteria (as outlined in the UAA) at Outfall 001 are as follows:

TDS

- WR-01 average flow = 556 cfs
- WR-01 concentration at average flow = 99 mg/L (high-end of the range [see Table 2])
- Outfall 001 design capacity flow = 19.5 cfs
- Outfall 001 at the proposed site-specific WQC concentration = 440 mg/L
- Resultant White River flow just downstream of Outfall 001 = 576 cfs
- Resultant White River concentration just downstream of Outfall 001 = **111 mg/L**

Chloride

- WR-01 average flow = 556 cfs
- WR-01 concentration at average flow = 5.7 mg/L (high-end of the range [see Table 2])
- Outfall 001 design capacity flow = 19.5 cfs
- Outfall 001 at the proposed site-specific WQC concentration = 60 mg/L
- Resultant White River flow just downstream of Outfall 001 = 576 cfs
- Resultant White River concentration just downstream of Outfall 001 = **8 mg/L**

Sulfate

- WR-01 average flow = 556 cfs
- WR-01 concentration at average flow = 16 mg/L (high-end of the range [see Table 2])
- Outfall 001 design capacity flow = 19.5 cfs
- Outfall 001 at the proposed site-specific WQC concentration = 100 mg/L
- Resultant White River flow just downstream of Outfall 001 = 576 cfs
- Resultant White River concentration just downstream of Outfall 001 = **19 mg/L**

All of the computed concentrations listed above are below the existing site-specific water quality criteria for minerals (20 mg/L chloride and sulfate; 160 mg/L TDS).

Conclusions

Pursuant to this review of Act 954 requirements and quantitative assessment of White River average flow conditions and minerals concentrations using an updated, long-term flow and minerals database, the conclusions are as follows:

- The range of minerals concentrations measured in the White River during flow conditions equal to the long-term average flow at Stations WR-01 and WR-03 is *below* the existing site-specific minerals water quality criteria.
- Computed White River minerals concentrations just downstream of Outfall 001 are below the existing site-specific minerals water quality criteria when using the following mass balance inputs: (1) long-term average flow at WR-01 (White River immediately upstream of Outfall 001); (2) maximum minerals concentrations measured at WR-01 during long-term average flow conditions; (3) design capacity flow for the Noland WWTP

Outfall 001; and, (4) minerals concentrations equal to the proposed site-specific minerals water quality criteria as outlined in the UAA for Outfall 001.

- No modifications to the UAA or proposed site-specific minerals water quality criteria are necessary in order to be compliant with Act 954 of 2013.

TABLE 1

Summary of Flow and Mineral Concentration Data Included in Assessment

Station ID and Collecting Agency	Daily Average Flow (cfs)				TDS (mg/L)		Chloride (mg/L)		Sulfate (mg/L)	
	Sample Size	Average	Median	Harmonic Mean [a]	Sample Size	Average	Sample Size	Average	Sample Size	Average
WR-01/7048600										
AWRC							86	**3**	86	**14**
USGS	16,910	**556**	178	2.3 [a]	177	**81**	180	**3**	180	**13**
U of A					22	**103**	22	**4**	22	**17**
Total [b]	16,910	**556**	178	2.3 [a]	199	**83**	288	**3**	288	**13**
WR-03/7048700										
ADEQ					223	**127**	91	**14**	220	**23**
AWRC							83	**9**	83	**16**
USGS [c,d]	3,127	**552**	172	35.1	314	**113**	435	**10**	429	**17**
U of A					22	**145**	22	**14**	22	**23**
Total [b]	3,127	**552**	172	35.1	559	**119**	631	**11**	754	**19**
RC-01/7048800										
USGS	5,374	**177**	39	3.9 [a]	135	**105**	139	**5**	140	**11**
U of A					22	**118**	22	**5**	22	**14**
Total [b]	5,374	**177**	39	3.9 [a]	157	**107**	161	**5**	162	**11**
WWTP-001										
Fayetteville	2,701	**9.1**	8.6	0.2 [a]	100	**358**	102	**43**	98	**59**
U of A					22	**361**	22	**50**	22	**56**
Total [b]	2,701	**9.1**	8.6	0.2 [a]	122	**359**	124	**45**	120	**59**

Notes:

[a] For harmonic mean calculations, 0 cfs flow values were set to 0.01 cfs (applied to one USGS data point at RC-01, 64 USGS data points at WR-01, and 138 City of Fayetteville data points at WWTP-001).

[b] When more than one data source is available for a given parameter, "Total" refers to the statistics of the combined dataset.

[c] Two negative flow values were removed from the USGS database for Station 7048700 (-18 cfs on 2/6/03 and -13 cfs on 10/28/03).

[d] The "Water-Data Report 2011" lists the annual mean as 576 cfs, for water years 2003 through 2011. The lowest and highest annual means are 213 cfs (2006) and 904 cfs (2008), respectively.

TABLE 2

Range of Mineral Concentrations at Long-term Average Flow at Stations WR-01 and WR-03

Station ID	Long-term Average Flow (cfs)	TDS (mg/L)		Chloride (mg/L)		Sulfate (mg/L)	
		Min	Max	Min	Max	Mln	Max
WR-01/7048600	556	50	99	1.8	5.7	5.2	16.0
WR-03/7048700 [a,b]	552	62	81	2.5	4.2	6.0	15.0

Notes:

[a] Two negative flow values were removed from the USGS database for Station 7048700 (-18 cfs on 2/6/03 and -13 cfs on 10/28/03).

[b] The "Water-Data Report 2011" lists the annual mean as 576 cfs, for water years 2003 through 2011. The range of mineral concentrations associated with 576 cfs is no different than those shown for 552 cfs.

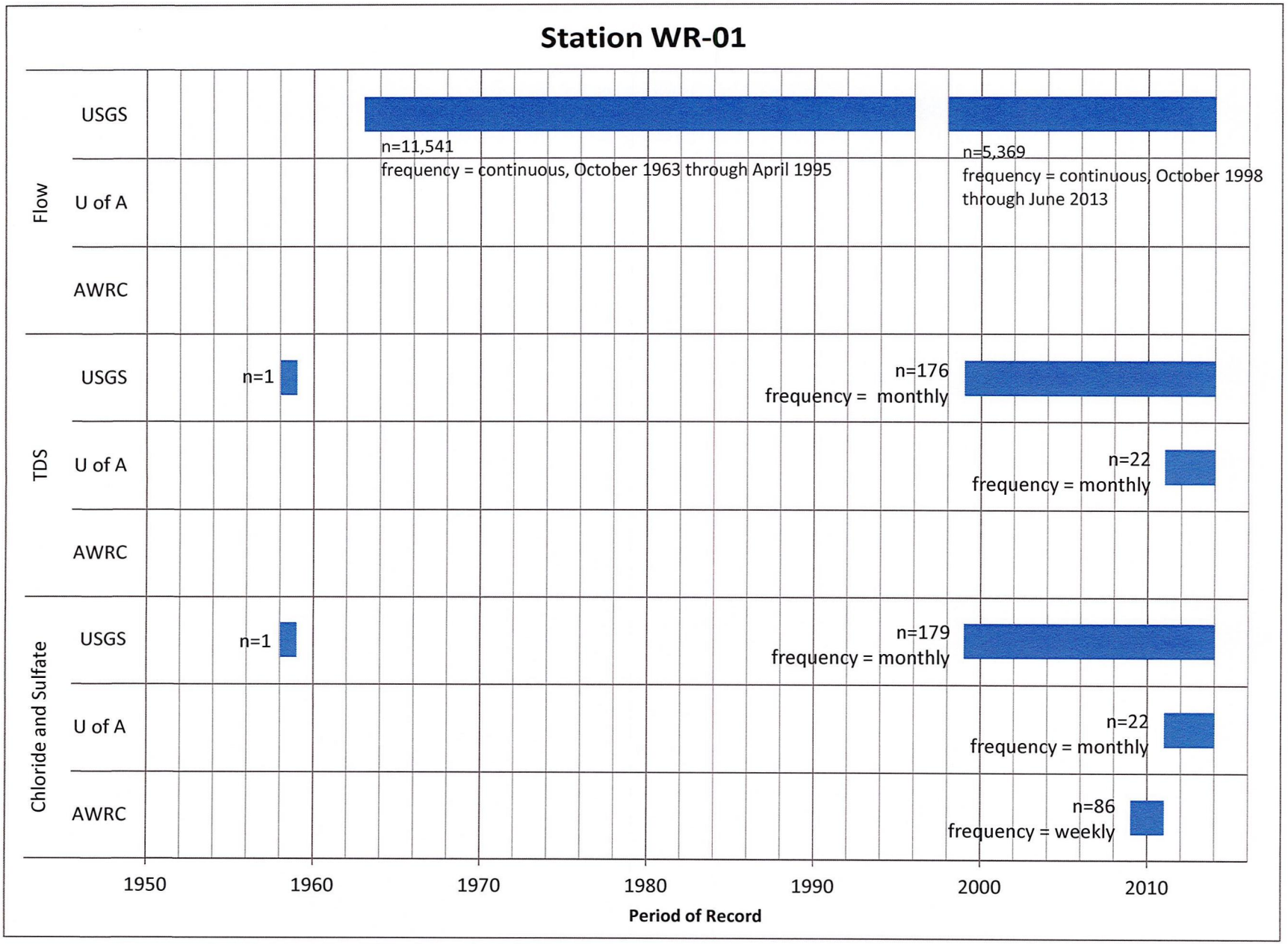
Station WR-01
Flow
USGS
U of A
AWRC
TDS
USGS
U of A
AWRC
Chloride and Sulfate
USGS
U of A
AWRC
n=11,541
frequency = continuous, October 1963 through April 1995
n=5,369
frequency = continuous, October 1998 through June 2013
n=1
n=176
frequency = monthly
n=22
frequency = monthly
n=1
n=179
frequency = monthly
n=22
frequency = monthly
n=86
frequency = weekly
1950
1960
1970
1980
1990
2000
2010
Period of Record

FIGURE 1

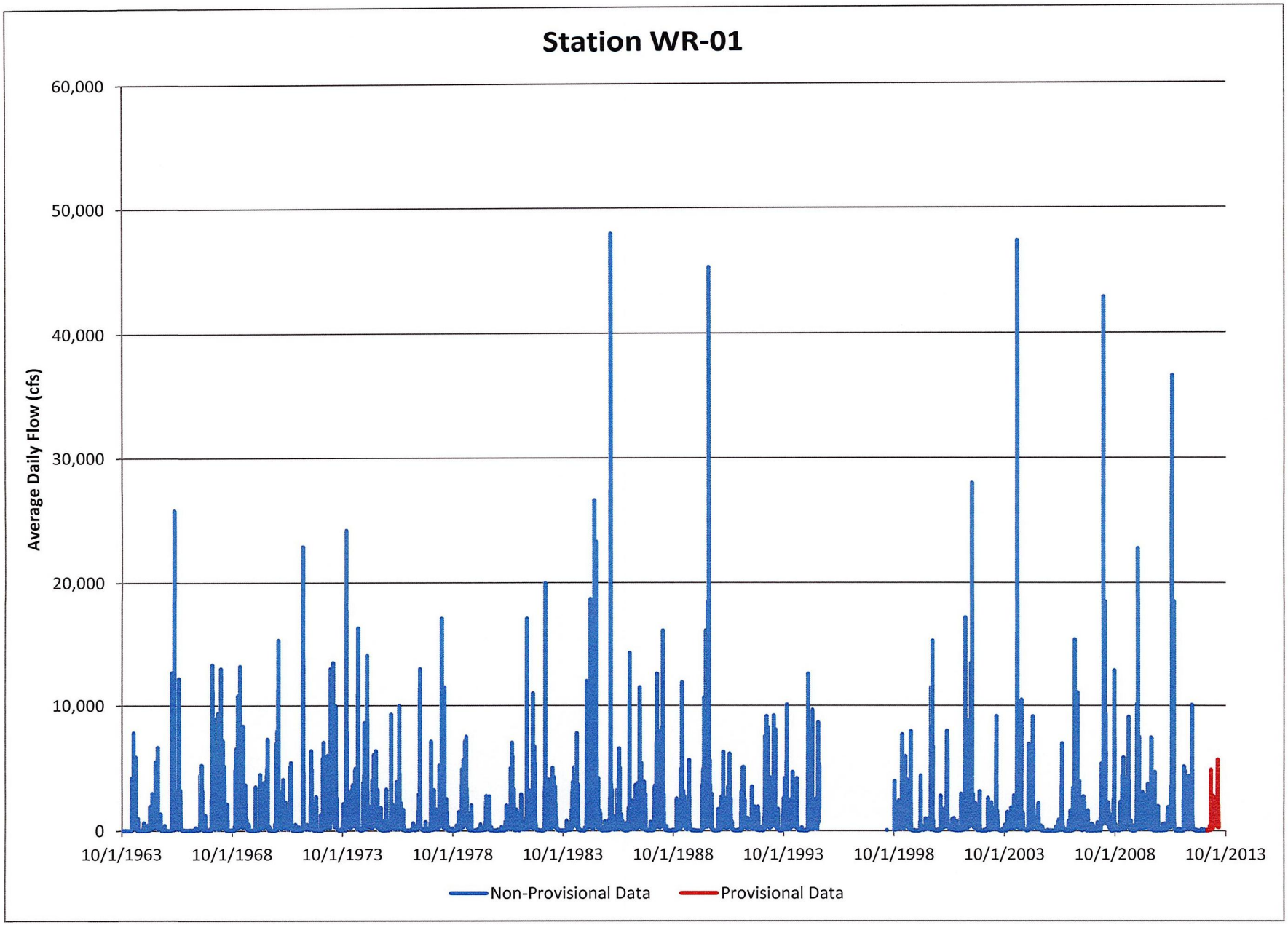
Station WR-01
60,000
50,000
40,000
30,000
20,000
10,000
0
Average Daily Flow (cfs)
10/1/1963
10/1/1968
10/1/1973
10/1/1978
10/1/1983
10/1/1988
10/1/1993
10/1/1998
10/1/2003
10/1/2008
10/1/2013
Non-Provisional Data
Provisional Data

FIGURE 2

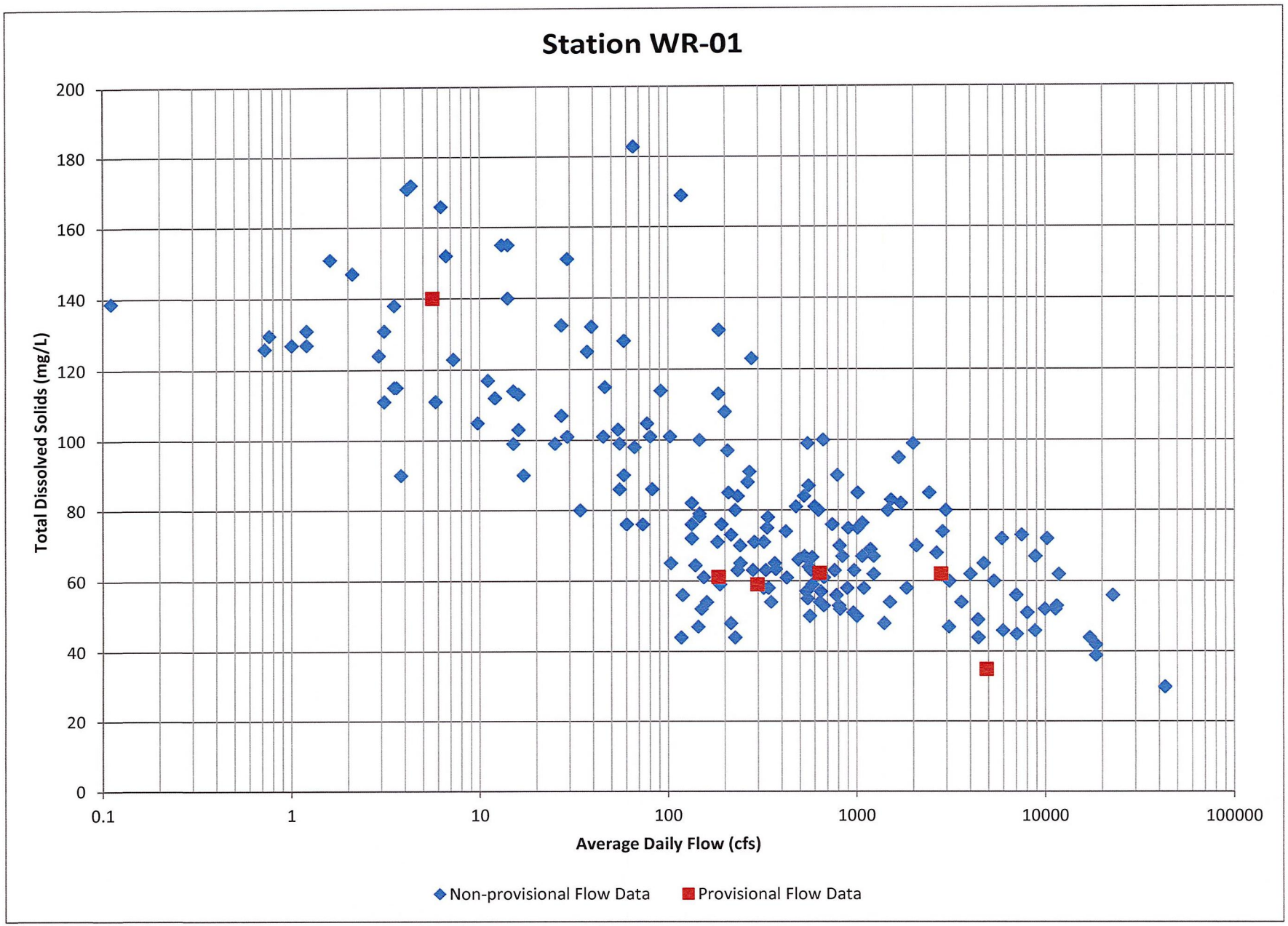
Station WR-01
Total Dissolved Solids (mg/L)
200
180
160
140
120
100
80
60
40
20
0
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 3

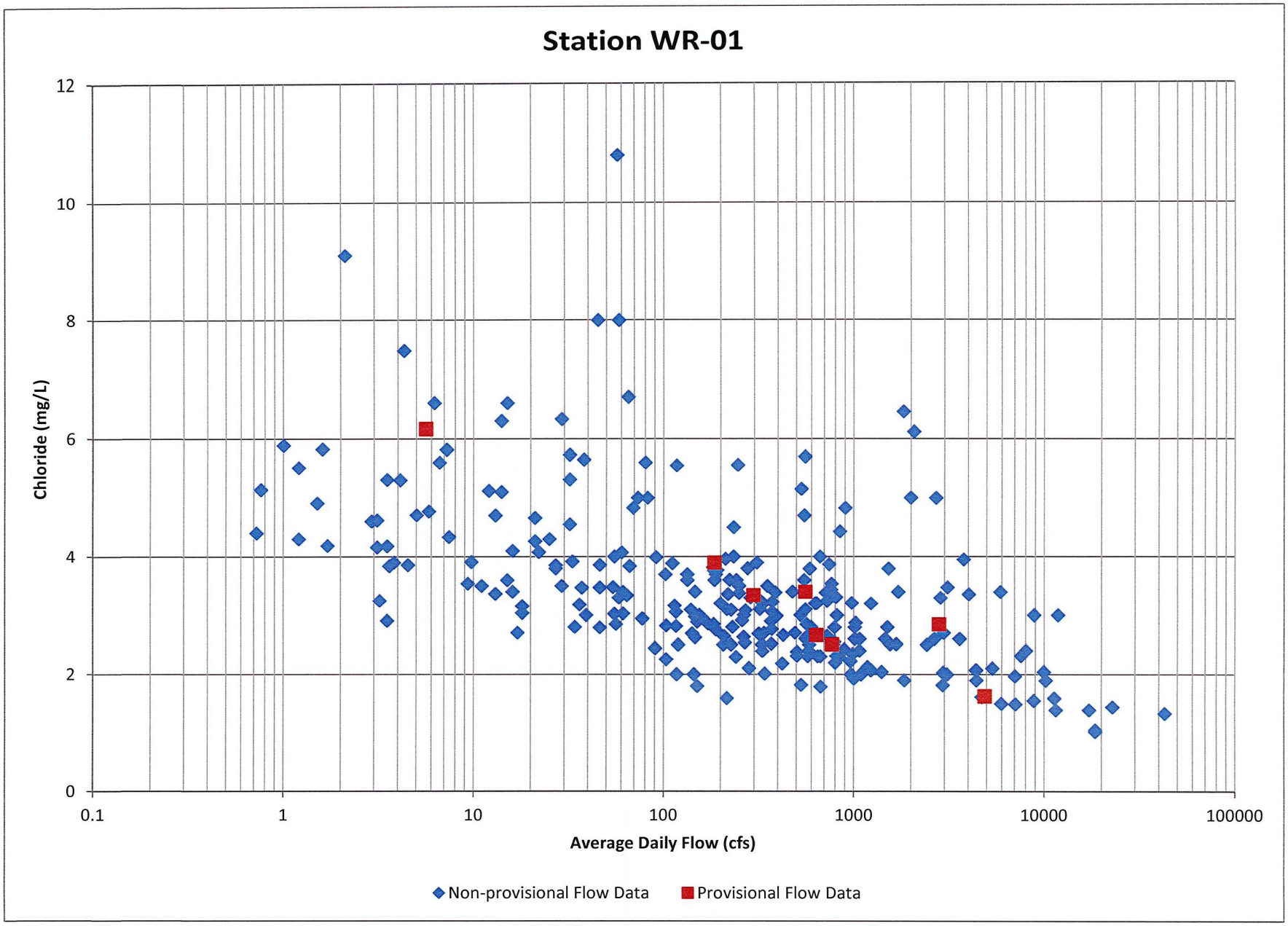
Station WR-01
Chloride (mg/L)
0
2
4
6
8
10
12
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 4

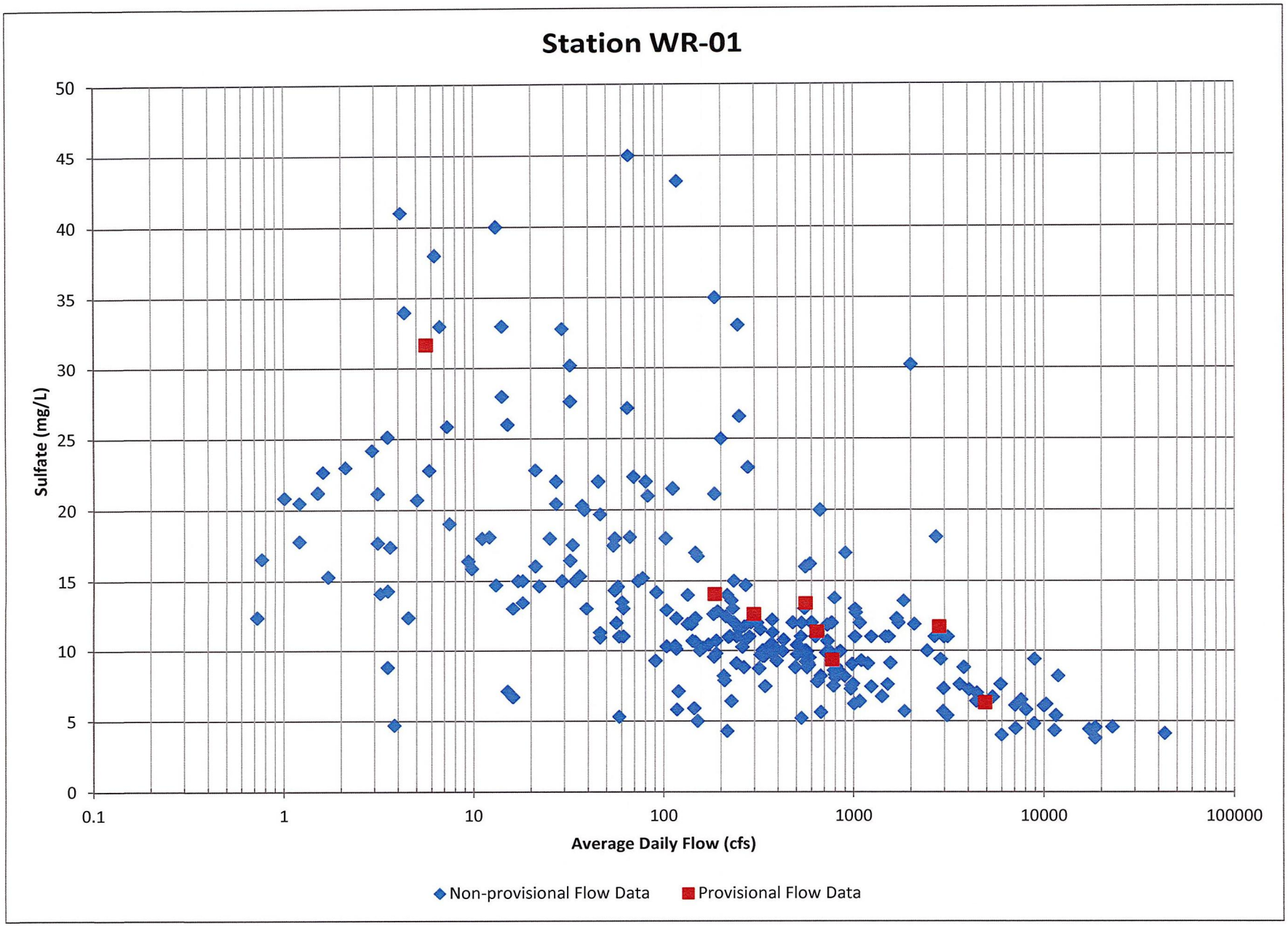
Station WR-01
Sulfate (mg/L)
50
45
40
35
30
25
20
15
10
5
0
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 5

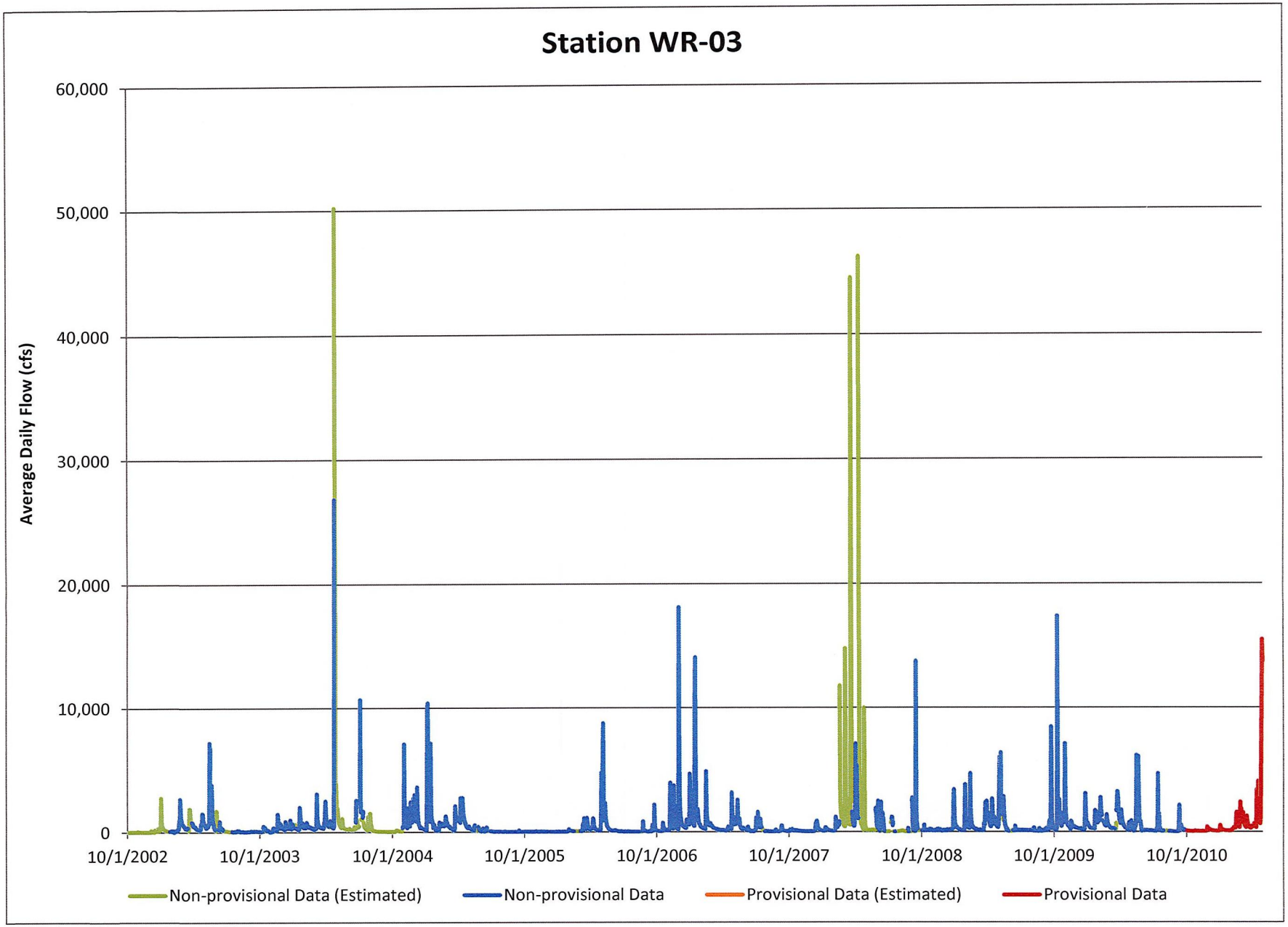
Station WR-03
Average Daily Flow (cfs)
60,000
50,000
40,000
30,000
20,000
10,000
0
10/1/2002
10/1/2003
10/1/2004
10/1/2005
10/1/2006
10/1/2007
10/1/2008
10/1/2009
10/1/2010
Non-provisional Data (Estimated)
Non-provisional Data
Provisional Data (Estimated)
Provisional Data

FIGURE 6

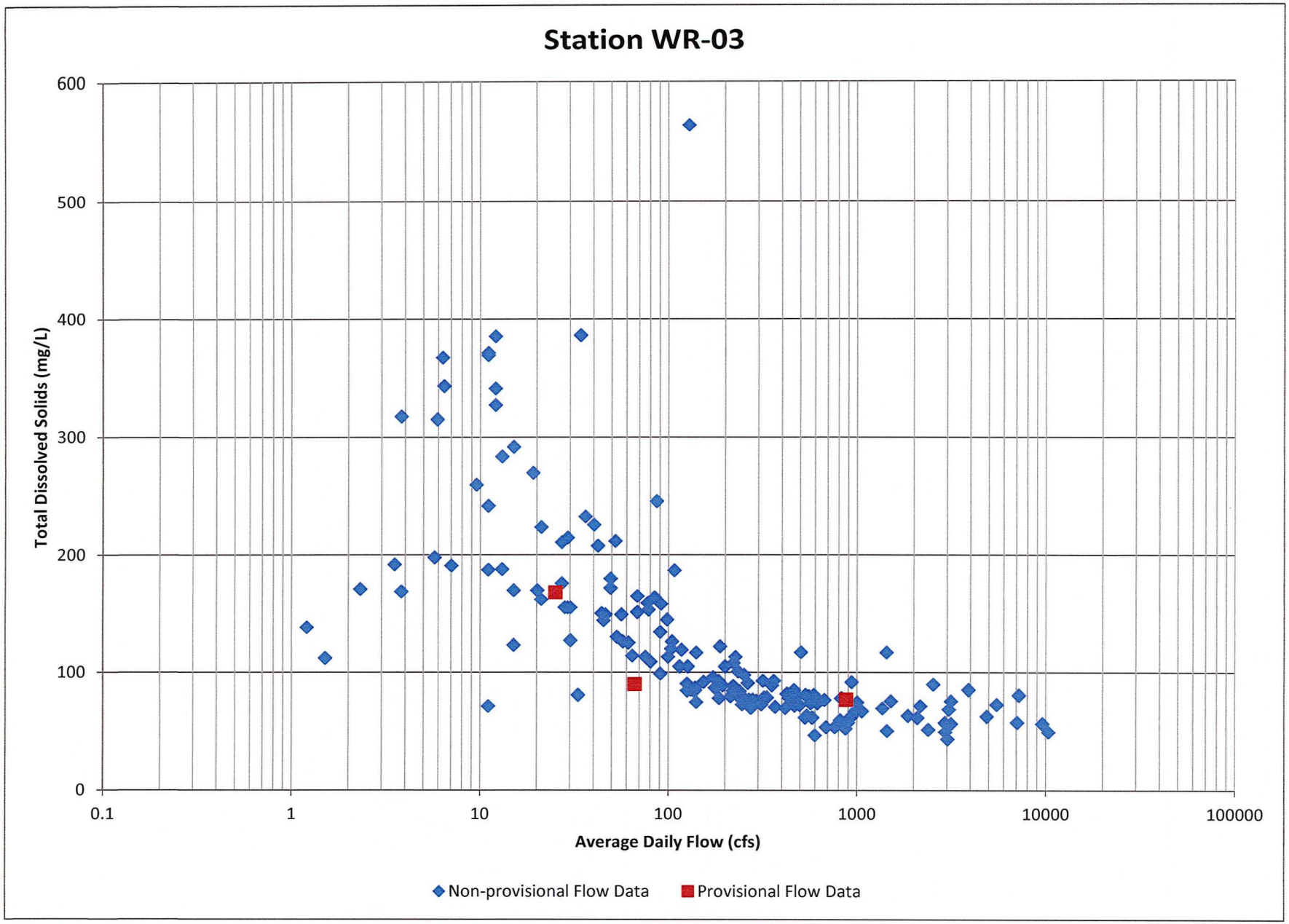
Station WR-03
600
500
400
300
200
100
0
Total Dissolved Solids (mg/L)
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 7

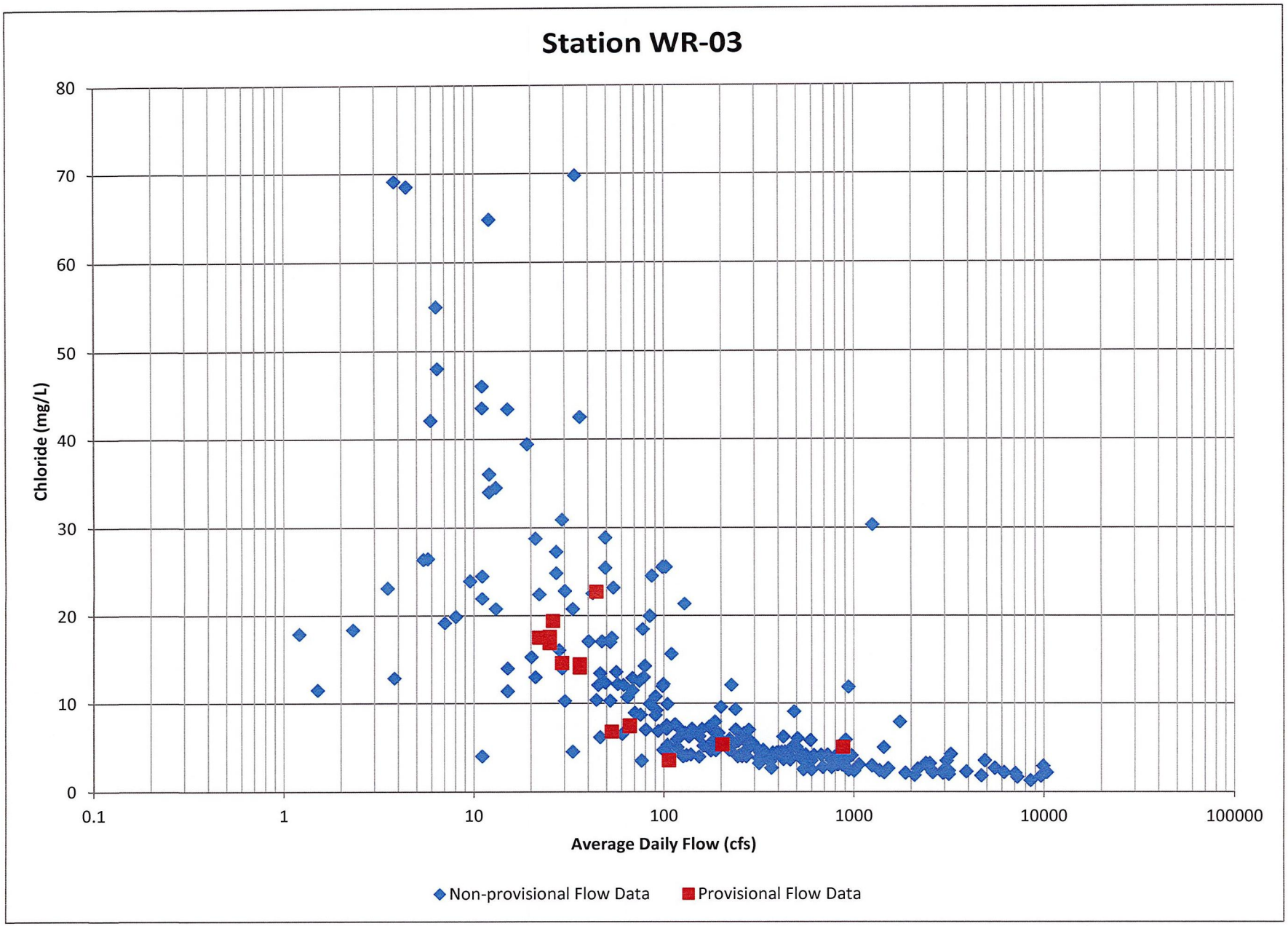
Station WR-03
Chloride (mg/L)
80
70
60
50
40
30
20
10
0
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 8

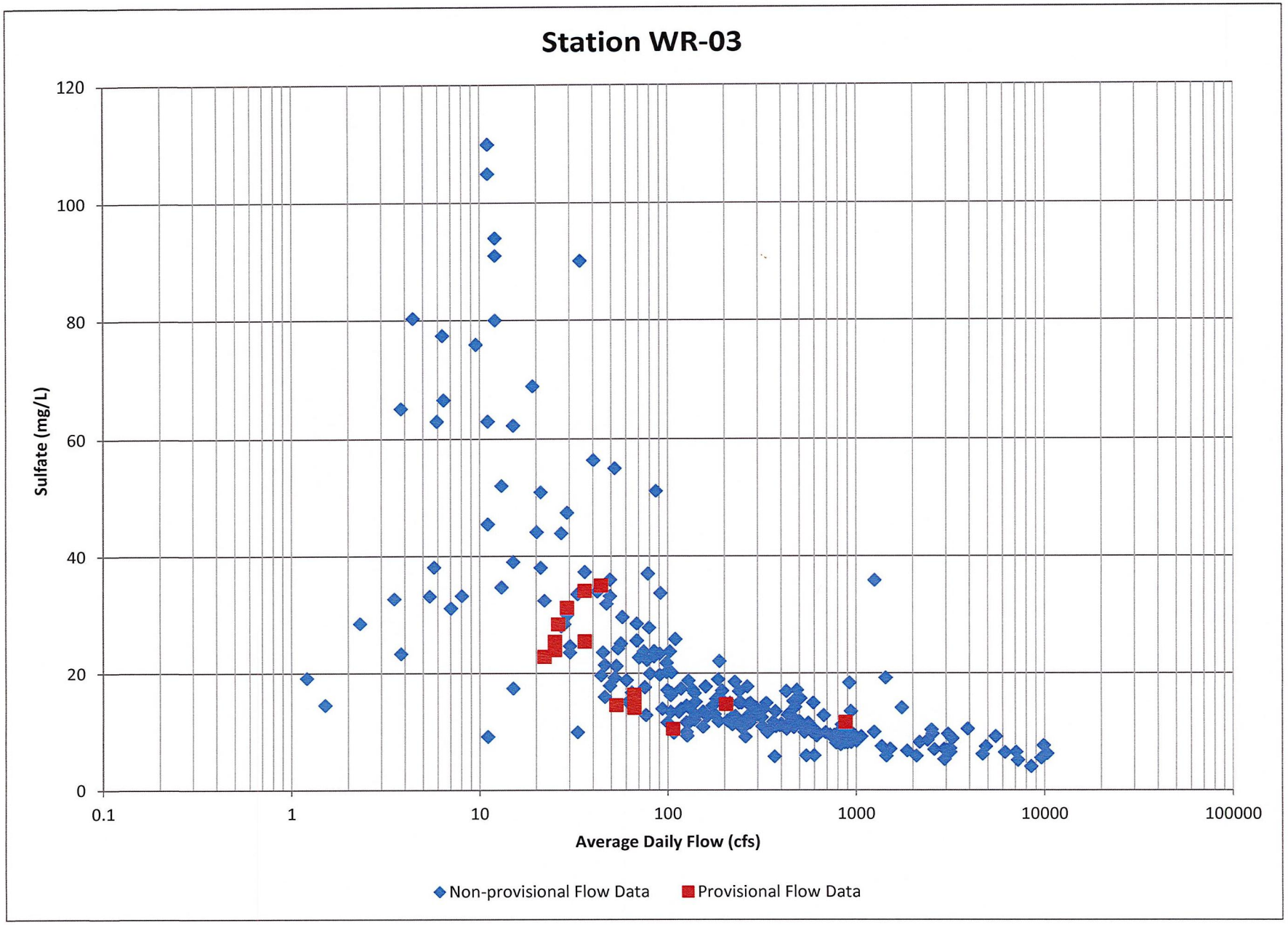
Station WR-03
120
100
80
60
40
20
0
Sulfate (mg/L)
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 9

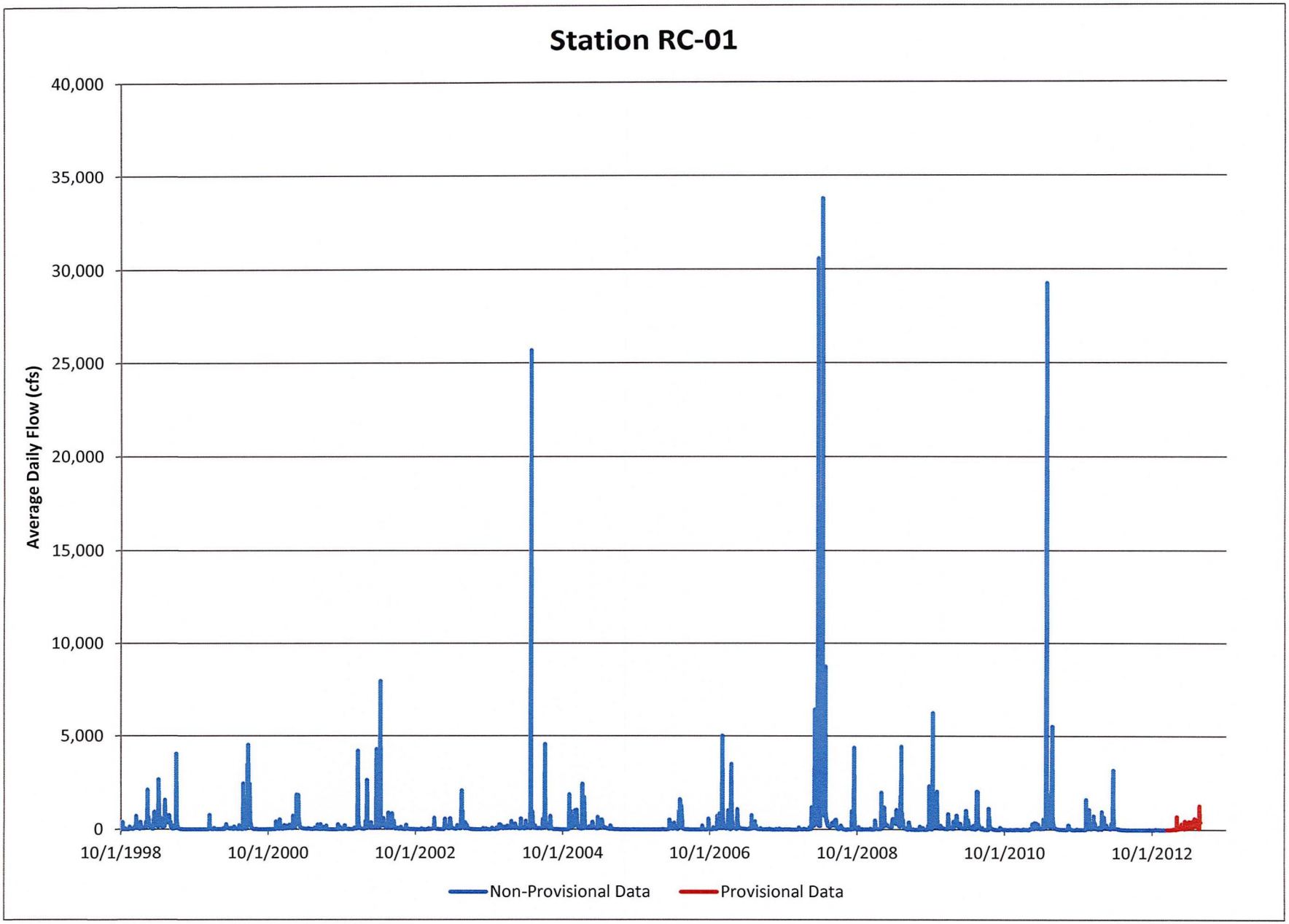
Station RC-01
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Average Daily Flow (cfs)
10/1/1998
10/1/2000
10/1/2002
10/1/2004
10/1/2006
10/1/2008
10/1/2010
10/1/2012
Non-Provisional Data
Provisional Data

FIGURE 10

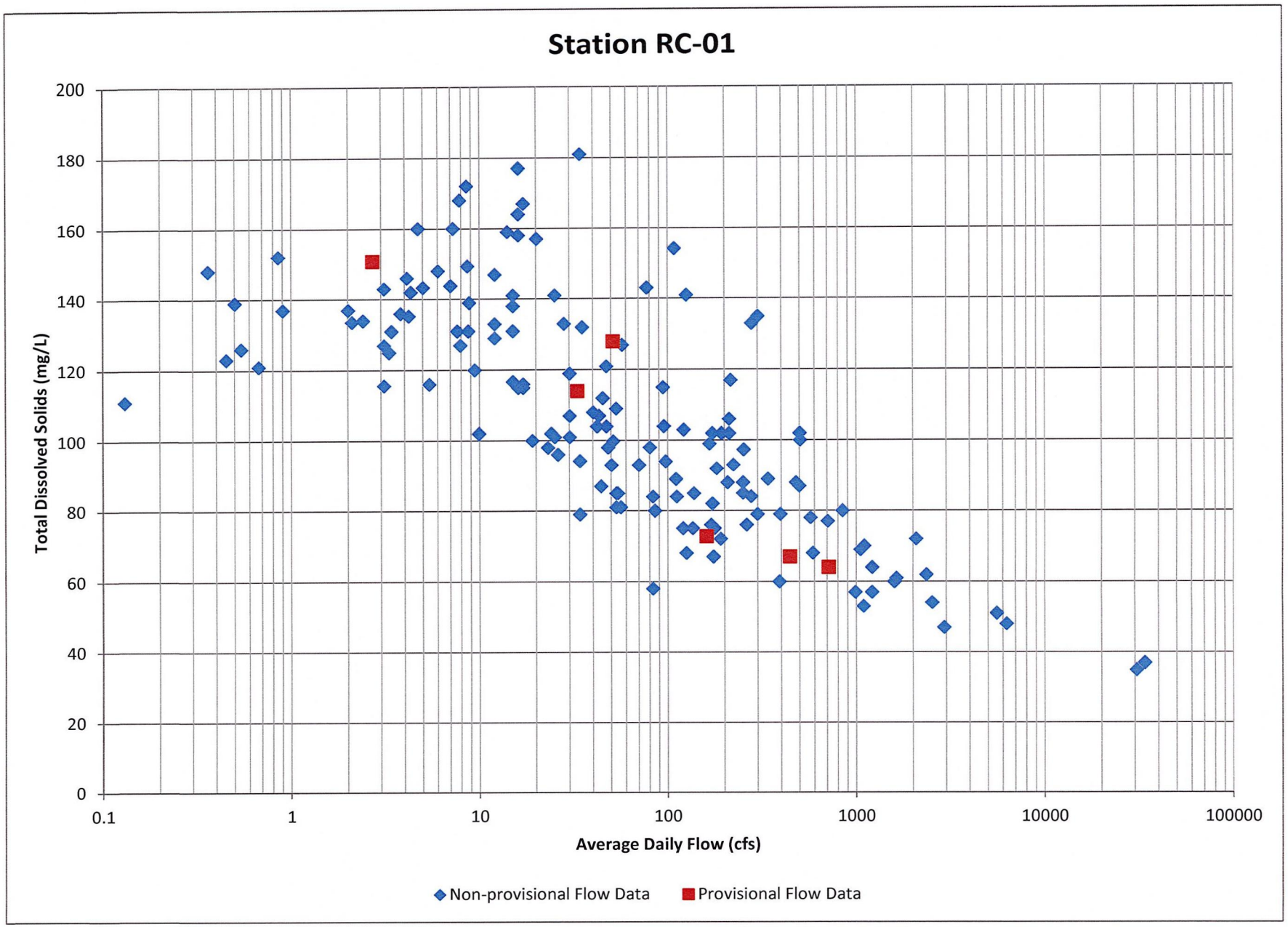
Station RC-01
Total Dissolved Solids (mg/L)
200
180
160
140
120
100
80
60
40
20
0
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 11

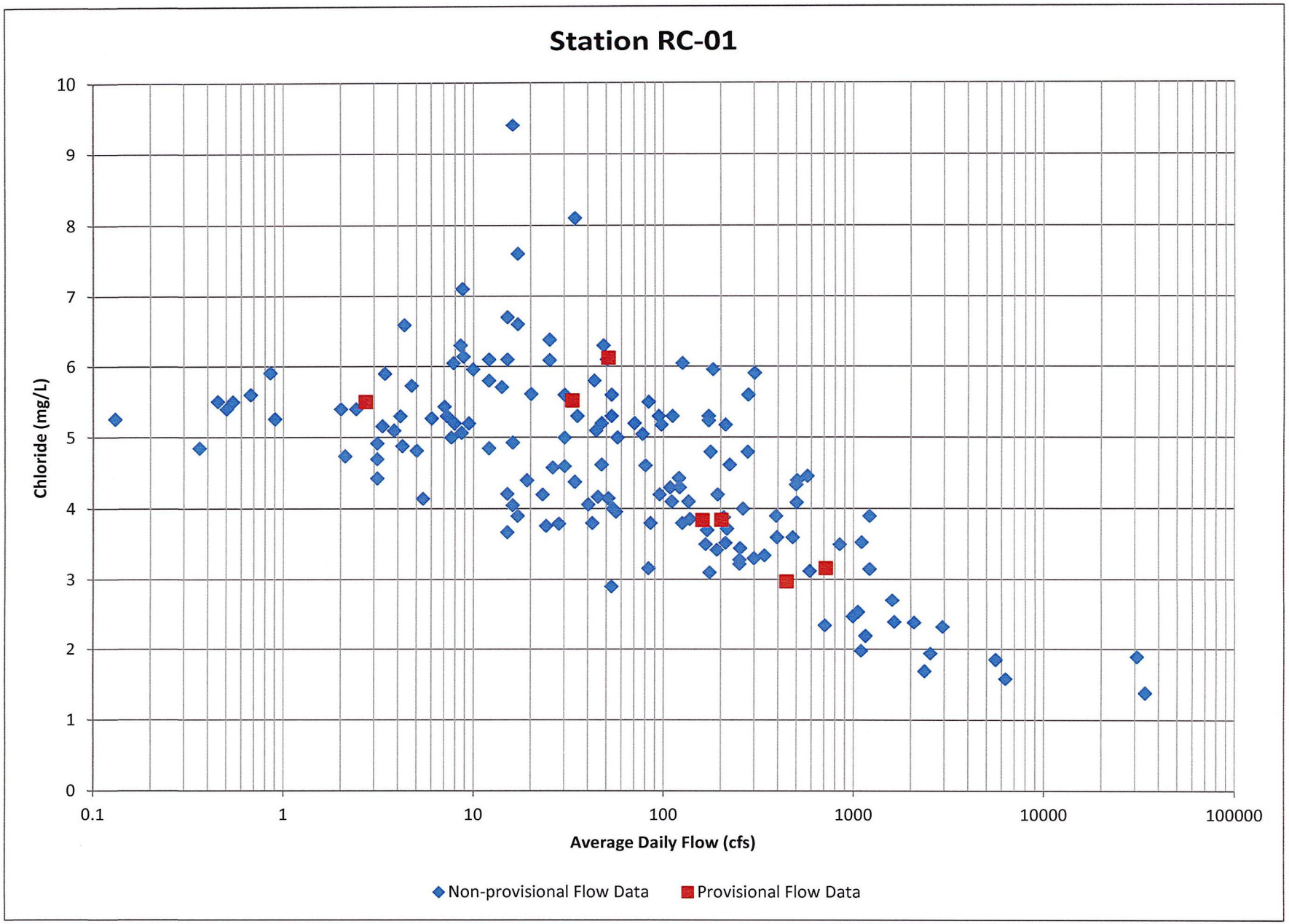
Station RC-01
Chloride (mg/L)
0
1
2
3
4
5
6
7
8
9
10
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 12

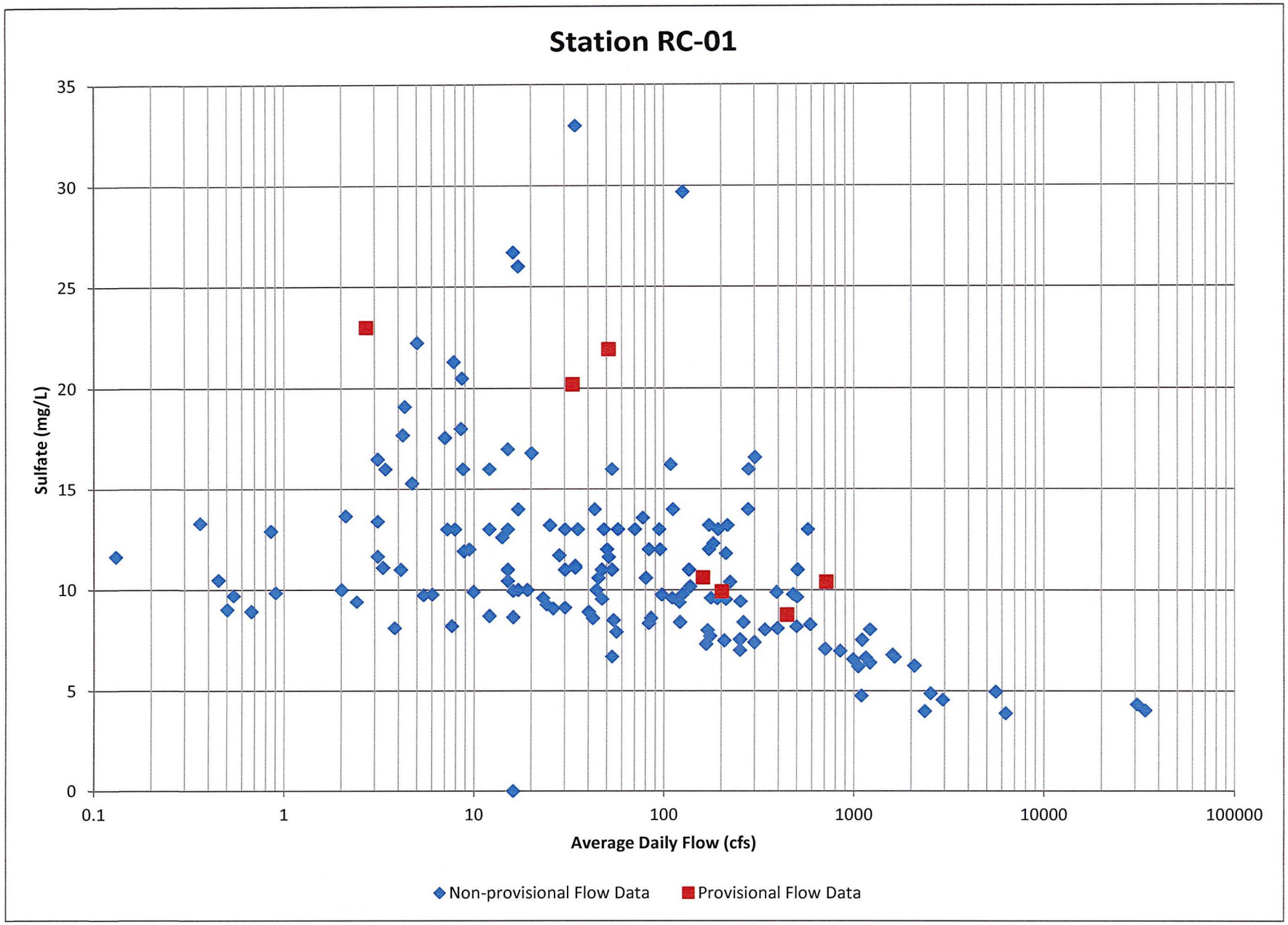
Station RC-01
Sulfate (mg/L)
35
30
25
20
15
10
5
0
0.1
1
10
100
1000
10000
100000
Average Daily Flow (cfs)
Non-provisional Flow Data
Provisional Flow Data

FIGURE 13

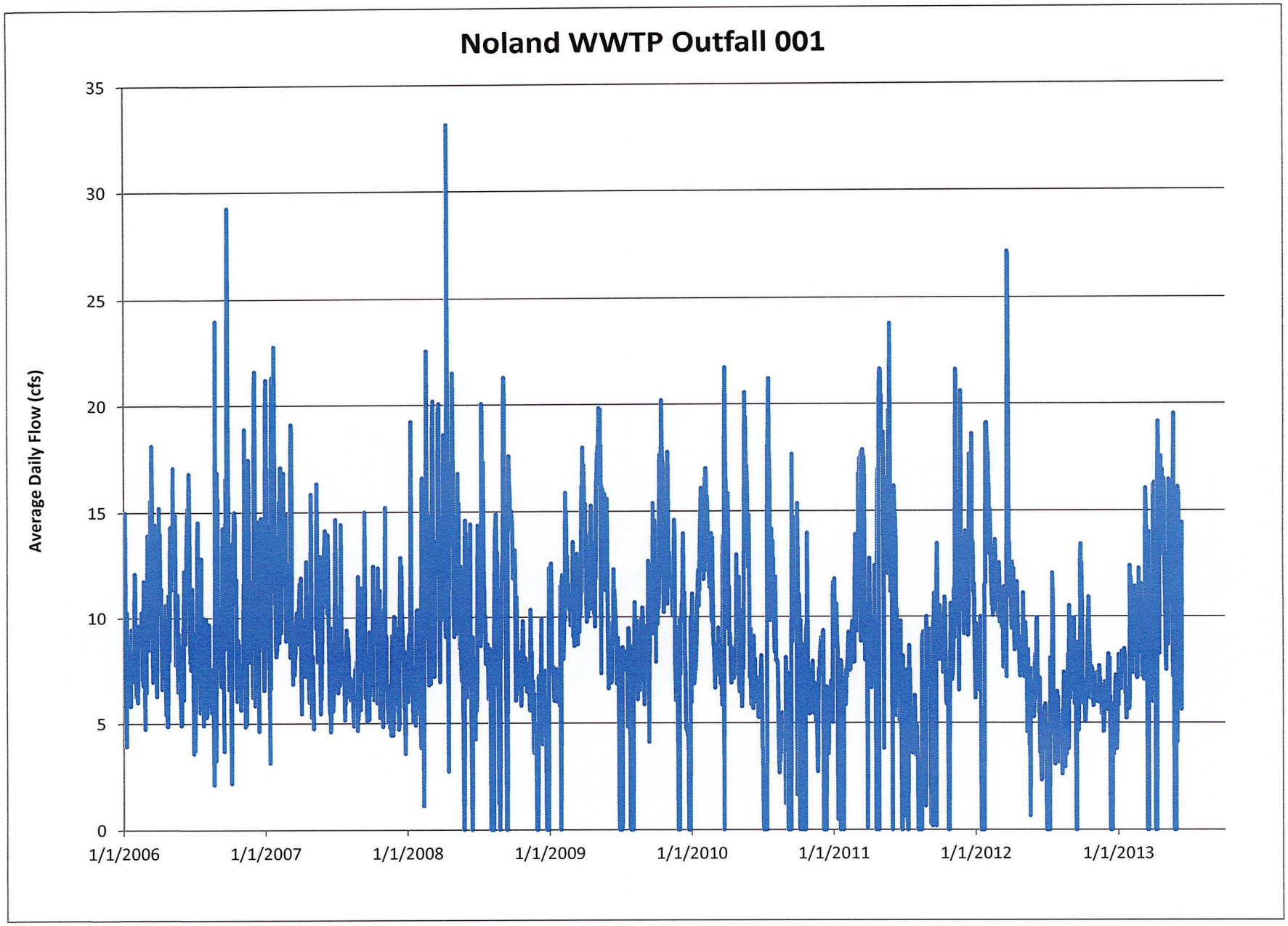
Noland WWTP Outfall 001
Average Daily Flow (cfs)
35
30
25
20
15
10
5
0
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013

FIGURE 14

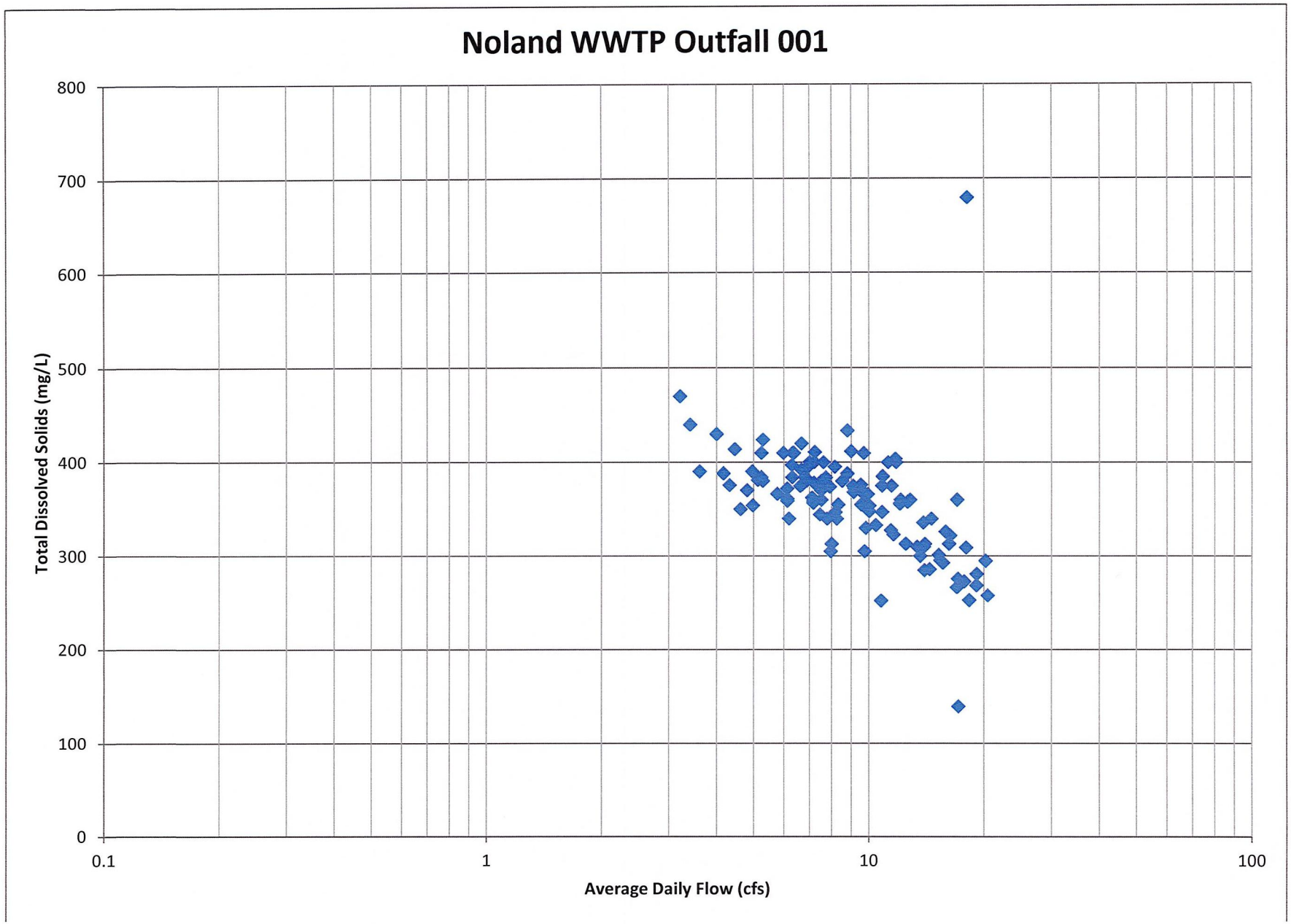
Noland WWTP Outfall 001
800
700
600
500
400
300
200
100
0
Total Dissolved Solids (mg/L)
0.1
1
10
100
Average Daily Flow (cfs)

FIGURE 15

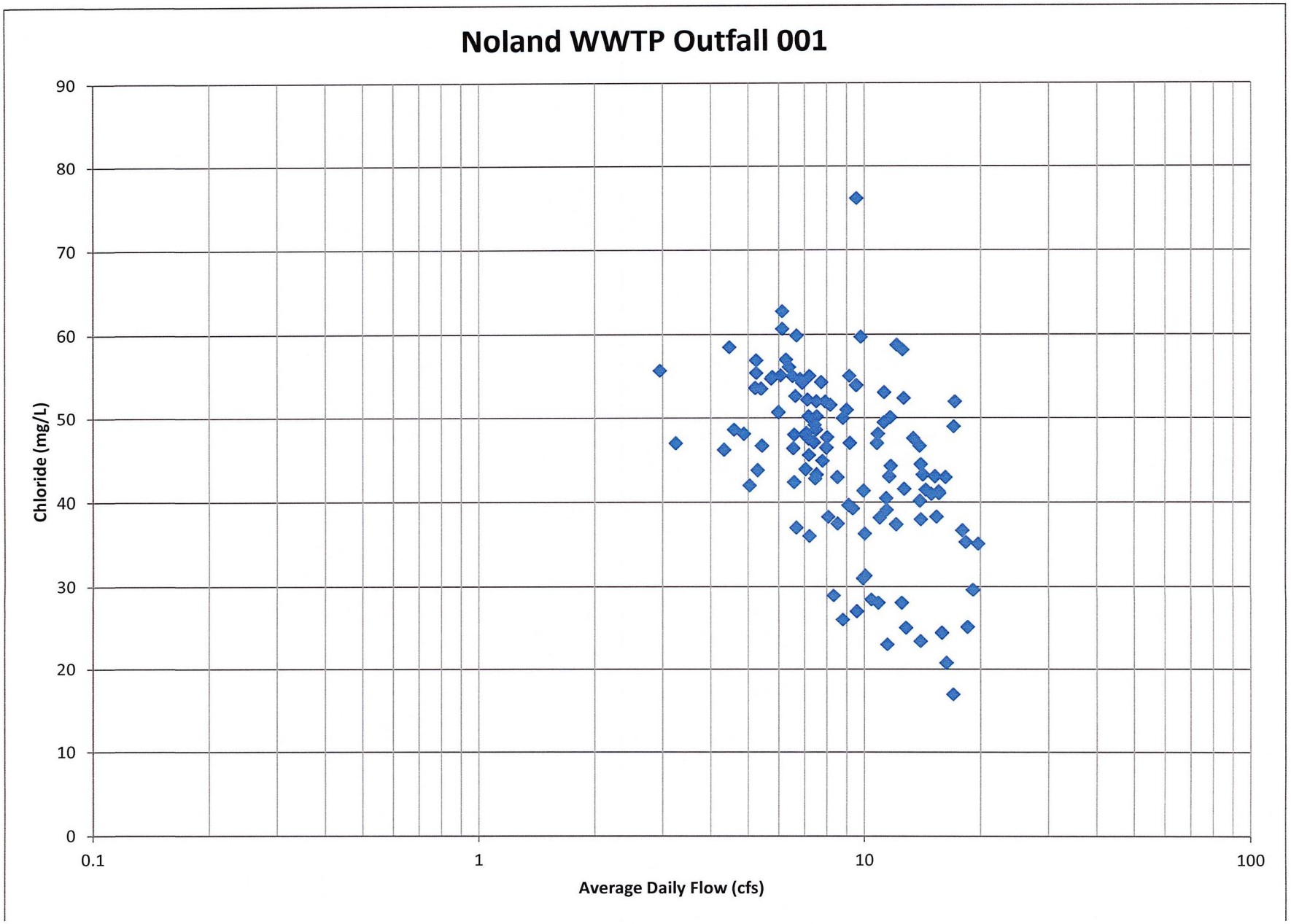
Noland WWTP Outfall 001
Chloride (mg/L)
90
80
70
60
50
40
30
20
10
0
0.1
1
10
100
Average Daily Flow (cfs)

FIGURE 16

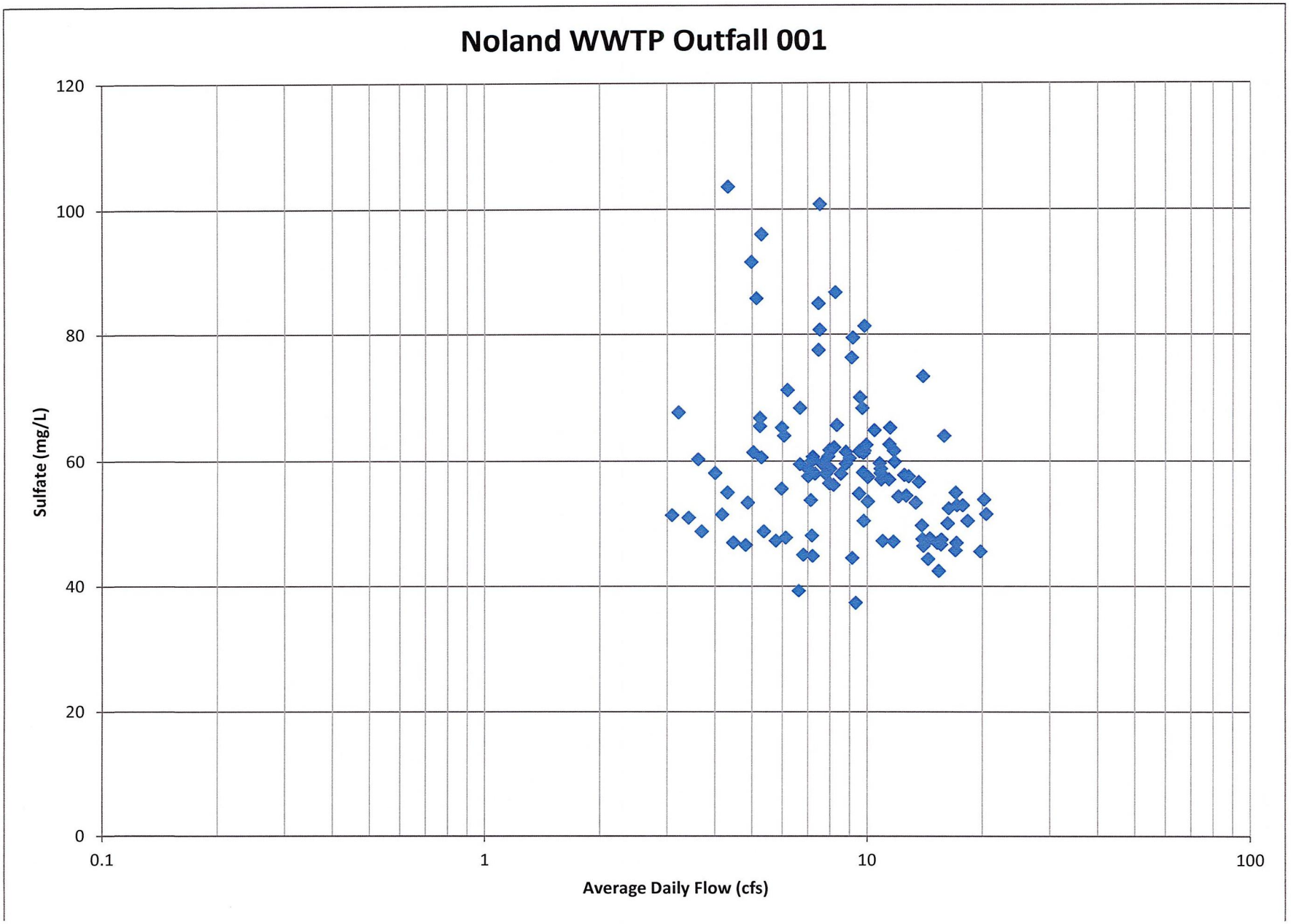
Noland WWTP Outfall 001
120
100
80
60
40
20
0
Sulfate (mg/L)
0.1
1
10
100
Average Daily Flow (cfs)

FIGURE 17

Attachment A

ADEQ

ARKANSAS
Department of Environmental Quality

June 10, 2013

Mr. David Jurgens, P.E.
City of Fayetteville
113 West Mountain
Fayetteville, AR 72701

Re: White River Use Attainability Analysis (UAA), Fayetteville, Arkansas

Dear Mr. Jurgens,

Thank you for the submission for the revised Use Attainability Analysis (UAA) on behalf of the City of Fayetteville, Arkansas. Planning Branch staff would like to bring to your attention the recent passing of Act 954 of 2013 (attached). It is the responsibility of the City to comply with state law when presenting proposed regulatory changes to the Arkansas Pollution Control and Ecology Commission. We request the City of Fayetteville review the Act and address any modifications necessary in the development of site specific criteria for minerals in order to be compliant with Act 954 of 2013.

Additionally, based on data submitted, Planning Branch staff still has concerns regarding the negative impact to the macroinvertebrate assemblage downstream of Outfall 001; however, these impacts are most likely not due to mineral concentrations. Therefore, the City of Fayetteville can move forward with the third-party rulemaking process.

If you have any questions you may contact me at 501-682-0660 or by e-mail at clem@adeq.state.ar.us.

Sincerely,

Sarah Clem
ADEQ Branch Manager
Water Quality Planning Section
Water Division

Attachment

Cc: Steve Miller, CH2M Hill

Stricken language would be deleted from and underlined language would be added to present law.
Act 954 of the Regular Session

State of Arkansas *As Engrossed H3/18/13*
89th General Assembly **A Bill**
Regular Session, 2013 HOUSE BILL 1929

By: Representatives Davis, Alexander, D. Altes, C. Armstrong, E. Armstrong, Baine, Ballinger, Baltz, Barnett, Bragg, Branscum, J. Burris, Clemmer, Cozart, Dotson, C. Douglas, Eubanks, Farrer, Ferguson, Gillam, Harris, Hickerson, Hobbs, House, Hutchison, Jett, Lea, Lowery, McElroy, D. Meeks, S. Meeks, Miller, Neal, Payton, Ratliff, Rice, Steel, Wardlaw, Westerman, B. Wilkins, Wren
By: Senators D. Sanders, Burnett, Caldwell, E. Cheatham, J. Dismang, J. English, Files, K. Ingram, Irvin, B. King, B. Sample, D. Wyatt

For An Act To Be Entitled

AN ACT TO AMEND THE LAWS PERTAINING TO THE PROMULGATION OF WATER QUALITY STANDARDS; TO IMPROVE THE PROCESS FOR DEVELOPING AND IMPLEMENTING WATER QUALITY STANDARDS; TO DECLARE AN EMERGENCY; AND FOR OTHER PURPOSES.

Subtitle

TO AMEND THE LAWS PERTAINING TO THE PROMULGATION OF WATER QUALITY STANDARDS; TO IMPROVE THE PROCESS FOR DEVELOPING AND IMPLEMENTING WATER QUALITY STANDARDS; AND TO DECLARE AN EMERGENCY.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

SECTION 1. DO NOT CODIFY. Legislative findings and intent.

(a) The General Assembly finds that:

(1) Under current interpretations by the United States Environmental Protection Agency, the development, implementation, and assessment of water quality standards required under the Clean Water Act, 33 U.S.C. § 1251 et seq., are to be based on sound scientific and statistical principles, among other things, and should consider readily available data

that is consistent with and relevant to the water use to be maintained;

(2) Federal law requires the consideration of certain relevant factors, including natural variability and statistical variability over periods of time that are relevant to the water use to be maintained;

(3) After consideration of readily available data, reliance on data that is not significant or meaningful, is incomplete, is not indicative of conditions relevant to the water use to be maintained, is speculative, is inconclusive or reasonably supportive of different conclusions, or is otherwise not well-suited to the purpose for which it is being used, has the potential to lead to unnecessary regulation and the inefficient use and allocation of scarce resources;

(4) The State of Arkansas has a well-developed and long-standing program of sampling the quality of waters subject to various uses;

(5) There is a rational basis found in sound scientific and statistical principles for using long-term averages in assessing mineral concentrations in a stream;

(6) The Arkansas Department of Environmental Quality's analysis of data from Arkansas streams demonstrates that four cubic feet per second (4 ft^3/s) is the median flow for small streams, which makes this measure an appropriate indicator for stream flow when long-term flow data is not available, thereby avoiding unnecessary regulation and the inefficient use of state resources;

(7) It is appropriate and consistent with sound scientific and statistical principles to use the greater of long-term average flows or four cubic feet per second (4 ft^3/s) for assessing mineral concentrations in streams; and

(8) Because of the existing technological and economic limits on treatability of dissolved minerals and the likely localized economic impacts of the treatability requirement, it is an inefficient use of scarce resources to apply domestic water supply uses and criteria to streams, stream segments, or other bodies of water that do not have an existing domestic water supply use or that do not have a demonstrated and reasonable potential to be used as a domestic water supply source.

(b) The intent of this act is to:

(1) Provide for the consideration of existing and readily available data and information relevant to the development, implementation,

and assessment of water quality standards for minerals;

(2) Provide standards for determining the data that should be considered and relied on by the State of Arkansas and its agencies for the development, implementation, and assessment of water quality standards for minerals; and

(3) Direct state agencies to support the development, implementation, and assessment of water quality standards according to the provisions of this act.

SECTION 2. Arkansas Code § 8-4-202(b)(3), concerning the rules and regulations the Arkansas Pollution Control and Ecology Commission may promulgate with respect to water pollution, is amended to read as follows:

(3)(A) Water quality standards, performance standards, and pretreatment standards.

(B) Water quality *standards for minerals adopted* under subdivision (b)(3)(A) of this section shall comply with the following requirements without precluding the evaluation of existing and readily available water quality-related data:

(i) The development and implementation of standards and criteria for minerals, including without limitation total dissolved solids, chlorides, and sulfates, and the assessment of a stream's or a stream segment's conformity with or attainment of a standard or criteria for minerals shall be based on the greater of the average flow in the stream or stream segment or four cubic feet per second (4 ft^3/s);

(ii) The development and implementation of standards or criteria for minerals, including without limitation total dissolved solids, chlorides, and sulfates, in order to protect the use of a domestic water supply, and the assessment of a stream's or a stream segment's conformity with or protection of the use of a domestic water supply shall be based on the greater of the average flow in the stream or stream segment or four cubic feet per second (4 ft^3/s);

(iii) The assessment of a stream, stream segment, lake, or reservoir by the Arkansas Department of Environmental Quality for conformity with or attainment of a water quality standard for minerals for purposes of 33 U.S.C. § 1313(d) shall be based on the average concentration of minerals in the stream, stream segment, lake, or reservoir using at least

sixty (60) actual measured samples taken at regular intervals over at least a five-year period;

(iv)(a) Except as provided in subdivision (b)(3)(B)(iv)(b) of this section, a water quality standard to protect or maintain the use of a domestic water supply may be developed and implemented only for a stream segment, lake, or reservoir that:

(1) Has an existing use as a domestic water supply; or

(2) Is listed in the Arkansas Water Plan as a planned or potential domestic water supply.

(b) The domestic water supply use shall be *designated for all bodies of water within the watershed of a lake or reservoir used as a public water supply* unless the designated use is or has been removed under the regulations of the commission.

(c) The commission shall regularly publish in Regulation No. 2 a list of the stream segments or reservoirs to which subdivision (b)(3)(B)(iv)(a) of this section applies;

(v)(a) Before commencing a study that would purport to allocate loads for permissible discharges to a stream, stream segment, lake, or reservoir in order to conform to a water quality standard, including without limitation a total maximum daily load study under 33 U.S.C. § 1313(d), the person conducting the study shall give written notice to all persons who are permitted to discharge directly or indirectly into the stream, stream segment, lake, or reservoir.

(b) The notice required under subdivision (b)(3)(B)(v)(a) of this section shall:

(1) Identify the person responsible for conducting the study;

(2) Explain the purpose of the study and the method that will be used to conduct the study; and

(3) Provide instructions on obtaining additional information about the study.

(c) At the time a draft report of the study under this subdivision (b)(3)(B)(v) is prepared, a copy of the draft report shall be sent to each:

(1) Person that holds a permit to

discharge into the stream, stream segment, lake, or reservoir;

(2) Public drinking water treatment system whose source water's watershed contains the stream, stream segment, lake, or reservoir; and

(3) Person that has requested a copy of the results or report of the study.

(d) Before the study under this subdivision (b)(3)(B)(v) is finalized, the Arkansas Department of Environmental Quality shall conduct a public hearing on the study if requested by a:

(1) Person holding a permit to discharge to the stream, stream segment, or reservoir; or

(2) Public drinking water treatment system whose source water's watershed contains the stream, stream segment, lake, or reservoir.

(e) A study conducted under this subdivision (b)(3)(B)(v) shall not establish a waste load allocation for a stream, stream segment, lake, or reservoir for purposes of protecting the use of a domestic water supply unless the department has first certified that:

(1) There is an existing domestic water supply use for the stream, stream segment, lake, or reservoir; or

(2) The stream segment or reservoir is listed in the Arkansas Water Plan as a planned or potential domestic water supply;

(vi) Within thirty (30) days after the receipt of an application for an individual permit to discharge into a stream, stream segment, or reservoir, the department shall certify to the permit applicant whether the stream segment or reservoir that will receive the proposed discharge is:

(a) An existing domestic water supply; or

(b) Listed in the Arkansas Water Plan as a planned or potential domestic water supply; and

(vii) The values for dissolved minerals listed in Arkansas Pollution Control and Ecology Commission Regulation No. 2, § 2.511(B) shall not be used to evaluate or assess the attainment of water quality standards.

(C) A term or provision in a National Pollutant Discharge

Elimination System permit or an order related to a National Pollutant Discharge Elimination System permit that exists as of the effective date of this act but that has not yet become effective and does not comply with or was not developed according to subdivisions (b)(3)(B)(i)-(iv) of this section shall be:

(i) Stayed upon application to the commission by a person regulated under the noncompliant National Pollutant Discharge Elimination System permit term or condition or an order related to the noncompliant National Pollutant Discharge Elimination System permit; or

(ii) Waived upon application to the commission by a person regulated under the noncompliant National Pollutant Discharge Elimination System permit term or condition or an order related to the noncompliant National Pollutant Discharge Elimination System permit until an applicable National Pollutant Discharge Elimination System permit term or condition or an order related to an applicable National Pollutant Discharge Elimination System permit that complies with subdivisions (b)(3)(B)(i)-(iv) of this section becomes effective.

/s/Davis

Unsigned by Governor

Fayetteville
ARKANSAS
www.accessfayetteville.org

THE CITY OF FAYETTEVILLE, ARKANSAS
UTILITIES DEPARTMENT
113 West Mountain
Fayetteville, AR 72701
P (479) 575-8330 F (479) 575-8257

July 22, 2013

Sarah Clem, Branch Manager, Water Division
Arkansas Department of Environmental Quality
5301 North Shore Drive
North Little Rock, AR 72118-5317

RE: White River Use Attainability Analysis (UAA), Fayetteville, Arkansas

Dear Sarah:

Pursuant to your letter of June 10, 2013, the City's consultant team has reviewed Act 954 (Act), as recently passed, in relation to the White River UAA for minerals. Our team reviewed the requirements of the Act and conducted a quantitative assessment of White River average flow conditions (pursuant to the Act) and associated minerals concentrations using an updated, long-term flow and minerals database. The conclusions are as follows:

- The range of minerals concentrations measured in the White River during flow conditions equal to the long-term average flow at Stations WR-01 and WR-03, locations that bound the Noland WWTP Outfall 001, is *below* the existing site-specific minerals water quality criteria of 20 mg/L chloride and sulfate, and 160 mg/L total dissolved solids, respectively.
- Computed White River minerals concentrations just downstream of Outfall 001 are also below the existing site-specific minerals water quality criteria when using the following mass balance inputs: (1) long-term average flow at WR-01 (White River immediately upstream of Outfall 001); (2) maximum minerals concentrations measured at WR-01 during long-term average flow conditions; (3) design capacity flow for the Noland WWTP Outfall 001; and, (4) minerals concentrations equal to the proposed site-specific minerals water quality criteria as outlined in the UAA for Outfall 001.
- No modifications to the UAA or proposed site-specific minerals water quality criteria are necessary to be compliant with Act 954.

For reference, please find the enclosed technical memorandum (TM) that summarizes our quantitative assessment and includes summary data tables and figures.

The Act includes provisions for the assessment of a waterbody by ADEQ for conformity with or attainment of a water quality standard for minerals for purposes of 33 U.S.C. § 1313(d). It says such an assessment "...shall be based on the average concentration of minerals in the (waterbody)...using at least sixty (60) actual measured samples taken at regular intervals over at least a five-year period." You will see in the enclosed TM, these averages are all below the existing site-specific water quality criteria for minerals. Therefore, at some point we anticipate that ADEQ will reevaluate the attainment status of this segment using the assessment methodology required by the Act. Should the new methodology result in delisting the segment, it would likely not be finalized until 2015 or beyond.

Given the anticipated time-consuming and potentially evolving events associated with this new Act; and the importance of both the Act and third-party rulemaking process to our NPDES permit limits for minerals; I propose we meet to discuss these findings and work together to agree on the critical path forward at this juncture.

We continue to appreciate and value the cooperation, communication and timely responsiveness received from ADEQ through this process. I will contact you with some proposed dates for a meeting. In the meantime, please do not hesitate to contact me at 479-575-8330, djurgens@ci.fayetteville.ar.us, if you have any questions or wish any additional information.

Sincerely,

City of Fayetteville

David Jurgens, P.E.
Utilities Director

Cc:
Mo Shafii, ADEQ

Enclosure: Technical Memorandum - *White River Use Attainability Analysis UAA, Fayetteville, Arkansas: Act 954 Compliance Review*