

Computation

PETERS Creek - Turb

Peters

-94

Creek

| | | |
|---------|--------------|--------|
| Project | | Compu |
| Subject | | Checke |
| Task | Peters Creek | Sheet |

Turbidity

- Only sampled thru Areawide Program - Areawide datab
- 32 records at 4 sites between 88 and 92 -
BF only -
- Turbid values range from 0.3 - 180. All values are
11 NTU or less except for 6 values ≥ 140 . These
6 values occurred on 2 days:

| Date | Stn | Turb (NTU) |
|---------|----------|------------|
| 8-5-88 | PET 1000 | 170 |
| | 2000 | 170 |
| | 4000 | 170 |
| 7-17-89 | PET 1000 | 150 |
| | 2000 | 180 |
| | 4000 | 140 |

- No problem @ PET 3010 (little Peters Creek), ^{and} not f
glacial storm

site map
attached

- Both 3010 & 4000 are w/i 1/2 - 1 mi of Chugach State Park, similar land use - no problem @ 3010 tho. - doesn't appear to be point source tho from downstream distribution of high values
- I checked for correl. w/ water temp - high values occur on warm water days - but so do low values - no air temp or Q in my files - could be warm days w/ high glacial melt.

A. ADEC Documentation

The 1988 assessment prepared by MOA and a 1989 assessment prepared by C. Kent appear to be the primary data sources on which the listing of Peters Creek is listed. The pollutants listed are fecal coliform bacteria. The source of these pollutants is listed as industrial point sources, urban runoff, and storm sewer discharges. The 1989 assessment cites the annual quality report 1989 by MOA/DHHS as documenting violations of these pollutants. The 1989 assessment report lists high fecal coliform counts with the data sources as "Water Quality Monitoring Program Annual Report MOA/DHHS. The 1989 assessment also cites the type of documentation as water quality data and current violations are documented. One or more uses are suspected to affected is checked. Under the sources of pollutants section slight surface runoff, slight siltation and suspended solids are listed.

B. Technical Comments

Peters Creek is located approximately 20 miles North of Anchorage near the rural community of Peters Creek. Its watershed is undeveloped with rural subdivisions and undeveloped park land. No storm drain outfall discharges are known to discharge into the stream. Limited surface runoff may enter the stream but no data exists to document the nature and extent of the runoff impact. Surface runoff, siltation, and suspended solids are not adequately documented and not supported by the facts or the existing data.

Peters Creek is a glacial fed watershed so it is not surprising there may be some turbidity and suspended seasonally depending on the amount of glacial runoff feeding into the stream system.

C. Additional Analysis/Comments

The exact sources of data is not referenced other than generally as Water Quality Annual Report, MOA/DHHS. It would be helpful to cite a page number as well as reference a document. If data was used a Xerox of the this information would be helpful. DEC did not specify a reference or data source for this documentation.

D. Conclusions and Recommendations

Recommend removal of creek and turbidity parameter from Section (303)d list. Any short term turbidity and suspended solids is likely caused by glacial runoff from the upper watershed.

WB File
95(C)

PETERS CREEK TURB

1. 1988 SWQA Siltation, Pathogens, SS = TURB
Based on AREAWIDE 1989.

2. Reviewed areawide report - indicates Turbidity is
indicative of natural conditions. Data from lower creek
similar to previous year end.

FC data 88-92 at mouth of creek show
only ~~1 sample of 66~~ the rest 1 sample/13 analyzed
exceeded 20/100 ml. However Little Petus Creek (PET SWA)
shows High FC > 50 for half of 6 samples - zoned residential

3. Recommend not to list for Turbidity
FC should be water of concern for Little Petus Creek
segment. But would not or Suspect
consider impaired

* Supporting data for FC at Little Petus Creek not provided.

Peters Creek

Alaska ID Number 20401-019

A. ADEC Documentation

1. 1988 ADEC assessment forms submitted by MOA and 1989 ADEC assessment forms prepared by C. Kent appear to be the primary data basis for the proposed 1994 303(d) listing of Peters Creek.

B. Technical Review Comments

1. Peters Creek is located approximately 20 miles North of Anchorage near the rural community of Peters Creek. Its watershed is undeveloped with rural subdivisions and undeveloped park land. No storm drain outfall discharges are known to discharge into the stream.

2. Peters Creek is a glacially fed stream. High turbidity is characteristic of glacial meltwater streams, particularly during summer periods when glacial meltwater generation is at its peak.

C. Other Analysis

1. We do not believe it is possible for ADEC to reasonably conclude that "excursions beyond criteria" occurred for turbidity at this stream. State standards for turbidity are based on threshold exceedances above natural conditions. We did not receive any analyses performed by the state which reasonably established natural turbidity conditions for Peters Creek. Without such an analysis, it is not possible to confirm the occurrence of any exceedances.

2. Inspection of the MOA areawide monitoring record (DHHS Water Quality Database, 1994) show remarkably few potentially elevated turbidity levels. Of a total of 32 records only 6 values were greater than 140 NTU. These are not unexpected of a glacially fed stream and are considered to reflect a natural range in water conditions.

D. Conclusions and Recommendations

1. The state does not provide reasonable data supporting exceedance of turbidity standards for this stream.

2. We recommend that:

- a) Peters be removed from the proposed 1994 303(d) list on basis of lack of anthropogenic source [18 AAC 70.010(b)] and criterion requiring higher quality than natural conditions [18 AAC 70.025(a)(2)].

MOA Fecal Coliform Data Summary

*WB File
95(e)*

Water Body Name: Peters Creek

ID: 20401-019

I. Are There Regulatory Exceedances of Fecal Coliform greater than 20 colonies/100 ml?

No, only data available was collected quarterly or every three months from 1988-1992 as part of MOA Areawide Water Quality Monitoring Program.

MOA Statement

AIRSTRIPE
NR BIRCHWOOD

FROM DATE: 01/01/80 WATERSHED: PET - PETERS CREEK NR BIRCHWOOD
TO DATE: 02/09/95 STATION #: 1000

WB File
95(9)

PARAMETERS SELECTED:

| DATABASE | ABBREVIATION | DESCRIPTION |
|----------|--------------|--------------------|
| NTL1 LAB | FE_COL | Fecal Coliform Col |
| NTL1 LAB | E_COLI | E. Coli Col |
| NTL1 LAB | ENTEROC | Enterococci Col |

| DATE | WSH | STA# | NTL1 LAB FE_COL | NTL1 LAB E_COLI | NTL1 LAB ENTEROC |
|----------|-----|------|--------------------|--------------------|---------------------|
| 06/23/88 | PET | 1000 | 4.0000 | 2.0000 | 6.0000 |
| 08/05/88 | PET | 1000 | 12.0000 | 6.0000 | 220.0000 |
| 10/17/88 | PET | 1000 | 8.0000 | 2.0000 | 6.0000 |
| 03/15/89 | PET | 1000 | 2.0000< | 2.0000< | 2.0000< |
| 06/09/89 | PET | 1000 | 16.0000 | 10.0000 | 4.0000 |
| 06/09/89 | PET | 1000 | 16.0000 | 10.0000 | 4.0000 |
| 07/17/89 | PET | 1000 | 4.0000 | 4.0000 | 6.0000 |
| 03/02/90 | PET | 1000 | 2.0000< | 2.0000< | 6.0000 |
| 03/11/91 | PET | 1000 | 3 | | |
| 10/13/91 | PET | 1000 | 61 | | |
| 06/12/92 | PET | 1000 | 2 | | |
| 08/14/92 | PET | 1000 | 6 | | |
| 11/30/92 | PET | 1000 | 2 | | |

No Fecal violations. (All < detection)
PET-1000 is most downstream sampling location.

SUMMARY:

| | | | |
|---------------------|---------|---------|----------|
| NUMBER OF ENTRYS | 13 | 8 | 8 |
| AVERAGE VALUE | 10.6154 | 4.7500 | 31.7500 |
| STANDARD DEVIATION | 15.9924 | 3.5355 | 76.0784 |
| NUM BELOW DETECTION | 2 | 2 | 1 |
| (%) BELOW DETECTION | 15.38 | 25.00 | 12.50 |
| MAXIMUM VALUE | 61.0000 | 10.0000 | 220.0000 |
| MINIMUM VALUE | 2.0000 | 2.0000 | 2.0000 |
| GEOMETRIC MEAN | 5.7131 | 3.7415 | 7.4135 |
| MEDIAN | 4.0000 | 4.0000 | 6.0000 |

RESULTS BY LOCATION REPORT

02/10/95 pg 1

FROM DATE: 01/01/80 WATERSHED: PET
 TO DATE: 02/10/95 STATION #: 1000

PETERS CREEK NEAR
 MOUTH AT BIRCHWOOD
 AIRSTRIP.

PARAMETERS SELECTED:

| DATABASE | ABBREVIATION | DESCRIPTION |
|----------|--------------|---------------|
| NTL1 LAB | TSS | TSS mg/l |
| NTL1 LAB | TURBID | Turbidity NTU |

WB File
 95(A)

| DATE | WSH | STA# | NTL1 LAB TSS | NTL1 LAB TURBID | |
|----------|-----|------|--------------|-----------------|---------|
| 06/23/88 | PET | 1000 | 12.0000 | 5.6000 | |
| 08/05/88 | PET | 1000 | 294.5000 | 170.0000 | 12 FC |
| 10/17/88 | PET | 1000 | 9.0000 | 1.9000 | |
| 03/15/89 | PET | 1000 | 9.2000 | 0.7500 | |
| 06/09/89 | PET | 1000 | 48.0000 | 14.0000 | - 16 FC |
| 06/09/89 | PET | 1000 | 48.0000 | 14.0000 | 16 FC |
| 07/17/89 | PET | 1000 | 233.0000 | 150.0000 | 4 FC |
| 03/02/90 | PET | 1000 | 4.8000 | 1.6000 | |
| 03/11/91 | PET | 1000 | 34.0 | 9.0 | 3 FC |
| 10/13/91 | PET | 1000 | 2.7 | 0.60 | |
| 06/12/92 | PET | 1000 | 45 | 27 | - 2 FC |
| 08/14/92 | PET | 1000 | 16 | 5.4 | |
| 11/30/92 | PET | 1000 | 3.7 | 0.60 | |

SUMMARY:

| | | |
|---------------------|----------|----------|
| NUMBER OF ENTRIES | 13 | 13 |
| AVERAGE VALUE | 58.4538 | 30.8038 |
| STANDARD DEVIATION | 93.5409 | 57.9760 |
| NUM BELOW DETECTION | 0 | 0 |
| (%) BELOW DETECTION | 0.00 | 0.00 |
| MAXIMUM VALUE | 294.5000 | 170.0000 |
| MINIMUM VALUE | 2.7000 | 0.6000 |
| GEOMETRIC MEAN | 21.2880 | 6.3987 |
| MEDIAN | 16.0000 | 5.6000 |

** end of report **

RESULTS BY LOCATION REPORT

02/10/95 pg 1

FROM DATE: 01/01/80 WATERSHED: PET
 TO DATE: 02/10/95 STATION #: 2000

PETERS CREEK ~~NEAR LAUREL~~
~~AT BIRCHWOOD ARS TRAIL~~
 AT BLAIR AVE

PARAMETERS SELECTED:

| DATABASE | ABBREVIATION | DESCRIPTION |
|----------|--------------|---------------|
| NTL1 LAB | TSS | TSS mg/l |
| NTL1 LAB | TURBID | Turbidity NTU |

WBFile
 95(I)

| DATE | WSH | STA# | NTL1 LAB TSS | NTL1 LAB TURBID |
|---------------------|----------------|-----------------|--------------------|--------------------|
| 06/24/88 | PET | 2000 | 6.0000 | 5.2000 |
| 08/05/88 | PET | 2000 | 261.0000 | 170.0000 |
| 10/17/88 | PET | 2000 | 8.0000 | 2.5000 |
| 03/15/89 | PET | 2000 | | |
| 06/09/89 | PET | 2000 | 41.0000 | 13.0000 |
| 06/09/89 | PET | 2000 | 41.0000 | 13.0000 |
| 07/17/89 | PET | 2000 | 243.0000 | 180.0000 |
| 03/02/90 | PET | 2000 | 4.8000 | 0.9500 |

SUMMARY:

| | | |
|---------------------|----------|----------|
| NUMBER OF ENTRYS | 7 | 7 |
| AVERAGE VALUE | 86.4000 | 54.9500 |
| STANDARD DEVIATION | 114.3098 | 82.1946 |
| NUM BELOW DETECTION | 0 | 0 |
| (%) BELOW DETECTION | 0.00 | 0.00 |
| MAXIMUM VALUE | 261.0000 | 180.0000 |
| MINIMUM VALUE | 4.8000 | 0.9500 |
| GEOMETRIC MEAN | 30.5020 | 13.0328 |
| MEDIAN | 41.0000 | 13.0000 |

** end of report **