United States Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

AUTHORIZATION TO DISCHARGE
AND TRANSFER SEWAGE SLUDGE (BIOSOLIDS)
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et seq., as amended by the Water Quality Act of 1987, P.L. 100-4, the "Act",

City of Moscow
122 E. Fourth Street
Moscow, Idaho 83843

is authorized to discharge from Outfall 001 at the wastewater treatment facility located in Moscow, Idaho. Outfall 001 is located at latitude 46° 44' 21" and longitude 117° 01' 47".

to receiving waters named Paradise Creek,

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein, and is authorized to transfer Biosolids, in accordance with application sites, specific limitations, monitoring requirements, management practices, and other conditions set forth herein.

This permit shall become effective April 14, 1999.

This permit and the authorization to discharge and transfer biosolids shall expire at midnight, April 14, 2004.

Signed this 12th day of March, 1999.

/s/ Randall F. Smith
Randall F. Smith
Director
Office of Water

TABLE OF CONTENTS

I. SPECIFIC LIMITATIONS AND MONITORING REQUIREMENTS

A. Effluent Limitations and Monitoring Requirements. During the period beginning on the effective date of this permit, and lasting through the expiration date, the Permittee is authorized to discharge wastewater to Paradise Creek from Outfall 001 provided the discharge meets the limitations and monitoring requirements set forth herein.

1.

PARAMETER	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS		
	Average Monthly Limit	Average Weekly Limit	Daily Maximum Limit	Sample Location	Sample Frequency	Sample Type
Flow[1], mgd	---	---	See section I.A.6.	Effluent	Continuous	Recording
Five-day Biochemical Oxygen Demand	30 mg/L	45 mg/L	---	Influent and Effluent	3/week	24-hour composite
	900.7 lbs/day	1351.1 lbs/day	---			
Total Suspended Solids[2]	15 mg/L	30 mg/L	---	Influent and Effluent	3/week	24-hour composite
	450.4 lbs/day	900.7 lbs/day	---			
Fecal Coliform Bacteria[3]	100 / 100 ml	200 / 100 ml	800 / 100 ml	Effluent	5/week	grab
Total Residual Chlorine[4,5]	9.0 µg/L	---	18.0 µg/L	Effluent	1/week	grab
	0.3 lbs/day	---	0.5 lbs/day			
Total Ammonia[2] **April 1- October 31**	1.0 mg/L	---	2.0 mg/L	Effluent	1/ week	24-hour composite
	30.0 lbs/day	---	60.0 lbs/day			
Total Ammonia[2] **November 1- March 31**	1.7 mg/L	---	3.5 mg/L	Effluent	1/ week	24-hour composite
	51.0 lbs/day	---	105.1 lbs/day			
Total Phosphorus[2,6], **May 15 - October 15**	0 .136 mg/L	0.27 mg/L	---	Effluent	1/week	24-hour composite
	4.1 lbs/day	8.2 lbs/day	---			
Temperature, °C	---	---	---	Effluent	Daily	grab
Whole Effluent Toxicity[7], TU_c	---	---	---	Effluent	1/5 years	24-hour composite

Footnotes:

1. Flow shall be monitored as near the outfall as possible, after the diversion of effluent to the University of Idaho.
2. See section I.A.8. for compliance schedule and interim effluent limit requirements.
3. The average monthly fecal coliform count must not exceed a geometric mean of 100 colonies/100 ml based on a minimum of five (5) samples per month. The average weekly fecal coliform count shall not exceed a geometric mean of 200/100 ml based on a minimum of five (5) samples per week.
4. If an analytical value is less than the method detection limit for chlorine, the Permittee shall report "< numerical detection limit" on the discharge monitoring report.
5. The effluent limits for total residual chlorine are not quantifiable using EPA approved analytical methods. EPA will use the Minimum Level of 100 µg/L as the compliance evaluation level for chlorine.
6. Monitoring shall occur from May 15 - October 15 each year.
7. See Section I.C. of the permit for additional information on monitoring requirements for whole effluent toxicity.

2. The pH range of the effluent shall be between 6.5 - 9.0 standard units. The Permittee shall monitor the effluent for pH three (3) times per week. Sample analysis shall be conducted on grab samples from the effluent.

3. At a minimum the dissolved oxygen level of the effluent shall be 8.0 mg/L. The Permittee shall monitor the effluent for dissolved oxygen three (3) times per week. Sample analysis shall be conducted on grab samples from the effluent.

4. There shall be no discharge of floating solids or visible foam other than trace amounts.

5. 85% Removal Requirements for BOD_5 and TSS: For any month, the monthly average effluent concentration shall not exceed 15 percent of the monthly average influent concentration.

   Percent removal of BOD_5 and TSS shall be reported on the Discharge Monitoring Reports (DMRs). For each parameter, the monthly average percent removal shall be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month. Influent and effluent samples shall be taken over approximately the same time period.

6. Allowable Daily Effluent Flow Volume: Beginning March 12, 2004 the Permittee shall regulate the volume of flow at Outfall 001 in accordance with the following requirements.

   a. At the same time each day the Permittee shall record the temperature and flow of Paradise Creek upstream of the facility, the effluent temperature, and the time and date of recording.

   b. Using the above information the Permittee shall determine, and record, the allowable daily effluent flow volume for the following 24-hour period. The tables in Appendix A shall be used to determine the allowable daily effluent flow volume.

   c. The effluent discharge shall not exceed the effluent flow volume calculated in Part I.A.6.b.

   d. The Permittee shall summarize the results in Part I.A.6.a. and b. and submit them with the monthly discharge monitoring report. The Permittee shall report any exceedances of the allowable daily discharge flow volume and submit the report with the monthly discharge monitoring report.

7. This permit does not authorize the discharge of any waste streams, including spills and other unintentional or non-routine discharges of pollutants, that are not part of the normal operation of the facility as disclosed in the permit application

8. Compliance Schedule/Interim Effluent Limitations

a. Compliance dates: The Permittee shall achieve compliance with the effluent limitations for total suspended solids, and ammonia, listed in section I.A.1 and the effluent limitations for dissolved oxygen, listed in section I.A.3., by February 1, 2002. The Permittee shall achieve compliance with the total phosphorus effluent limitations listed in section I.A.1, and the allowable daily flow in section I.A.6. no later than March 12, 2004.

b. Interim effluent limitations:

(1) Total Suspended Solids: During the period beginning on the effective date of the permit, and lasting until January 31, 2002, the Outfall 001 discharge shall meet the following effluent limitations for total suspended solids:

Average Monthly Limit:	30 mg/L (876 lbs/day)
Average Weekly Limit:	45 mg/L (1314 lbs/day)

(2) Total Phosphorus: During the period from February 1, 2002 through March 12, 2004, the Outfall 001 discharge shall meet the following effluent limitations for total phosphorus:

Average Monthly Limit:	1.45 mg/L (43.5 lbs/day)
Average Weekly Limit:	2.91 mg/L (87.5 lbs/day)

c. Reporting: The Permittee shall submit an annual "Report of Progress" which outlines the progress made towards reaching the compliance date for each of the parameters listed above in Section I.A.8.a. The annual report shall include:

(1) An assessment of total suspended solids, dissolved oxygen, temperature and effluent flow, total ammonia, and phosphorus data from the previous year and comparison to final effluent limitations,

(2) report on progress made towards meeting the final limitations, and

(3) milestones targeted for the upcoming year.

The first annual "Report of Progress" shall be submitted with the June 1999 discharge monitoring report. Thereafter, the reports shall be submitted annually with the January DMR, until compliance with the effluent limitations is achieved.

B. Ambient Monitoring Requirements. The Permittee shall implement an ambient monitoring program. The ambient monitoring program shall start 90 days from the effective date of the permit and shall meet the following requirements:

1. Monitoring stations shall be established in Paradise Creek. The location of the monitoring stations shall be

   - above the influence of the facility's discharge, and
   - below the facility's discharge.

   Monitoring stations shall be approved by the Idaho Division of Environmental Quality (IDEQ) and EPA.

2. To the extent practicable, ambient sample collection shall occur concurrently with effluent sample collection.

3. Ambient sampling shall be conducted as follows:

Parameter	Upstream Sampling Frequency	Downstream Sampling Frequency	Sample Type
Flow, mgd	Continuous Recording	-----	---
BOD_5, mg/L	3/week	-----	Grab
Dissolved Oxygen, mg/L	3/week	3/week	Grab
Temperature, °C	Daily	Daily	Grab
pH, standard units	3/week	---	Grab

C. Whole Effluent Toxicity Testing. Chronic toxicity tests shall be performed once during the fourth year of the permit term.

1. Test Species and Methods:

   a. The Permittee shall conduct short-term tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test), and the fathead minnow, *Pimephales promelas* (larval survival and growth test).

   b. The presence of chronic toxicity shall be estimated as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Third Edition, EPA/600-4-91-002, July 1994.

2. Quality Assurance

   a. A series of five dilutions and a control shall be tested. The dilution series shall include 6.25, 12.5, 25, 50, and 100 percent.

   b. If organisms are not cultured in-house, concurrent testing with reference toxicants shall be conducted. Where organisms are cultured in-house,

monthly reference toxicant testing is sufficient.

c. If either the reference toxicant tests or the effluent tests do not meet all test acceptability criteria as specified in the test methods manual, then the Permittee must re-sample and re-test as soon as possible.

d. Reference toxicant test shall be conducted using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.).

e. Control and dilution water should be laboratory water as described in the manual. If the dilution water used is different from the culture water, a second control, using culture water shall also be used.

f. Chemical testing for the parameters listed in Part I.A.1., and I.A.2 of this permit shall be performed on a split sample collected for whole effluent toxicity testing. To the extent that the timing of sample collection coincides with that of the sampling required in Part I.A.1, and I.A.2 of this permit, chemical analysis of the split sample will fulfill the requirements of that Part as well.

3. Reporting:

a. Results of toxicity tests shall be reported on the discharge monitoring report for the month in which the tests are conducted. Results shall be reported in chronic toxic units (TU_c), where $TU_c = 100/NOEC$ (NOEC is no observed effect concentration).

b. The full report shall be submitted by the end of the month in which the DMR is submitted.

c. The full report shall consist of : (1) the toxicity test results; (2) the dates of sample collection and initiation of each toxicity test; (3) the flow rate at the time of sample collection; and (4) the results of the effluent analysis for chemical parameters required for the outfall as defined in Part I.A.1., and I.A.2 of the permit.

d. Test results for chronic tests shall be reported according to the chronic manual chapter on Report Preparation.

D. <u>Sludge (Biosolids) Management Requirements.</u>

1. The Permittee may transfer Biosolids from the Moscow Wastewater Treatment Facility to a processing facility that derives a Class A material from the biosolids, provided the processing facility complies with the applicable provisions of 40 CFR 503.

2. Each year the Permittee shall take reasonable steps to ensure they are transferring their biosolids to a facility that operates in compliance with the applicable provisions of 40 CFR 503. Steps taken shall be documented and made available to EPA upon request.

3. The Permittee shall comply with all existing federal and state laws and regulations that apply to its biosolids use or disposal practice .

4. The Permittee shall handle and dispose of biosolids so the public health and the environment are protected from any reasonably anticipated adverse effects due to any toxic pollutants that may be present.

5. The Permittee shall ensure that pollutants from biosolids within the Permittee's direct control do not reach surface waters of the United States.

6. The Permittee shall provide the processing facility with information necessary to comply with 40 CFR 503 Subpart A, B, and D.

7. The Permittee shall collect and analyze biosolids samples as follows:

    a. The samples shall be representative of the variability in biosolids quality considering location, season, processing, and handling;

    b. At a minimum, the biosolids sampling frequency must be in accordance with 40 CFR 503.16.

    c. Analytical protocols shall be in accordance with 40 CFR 503.8.

8. The Permittee shall prepare a contingency plan within 18 months of the effective date of this permit. The contingency plan shall include:

    a. An estimate of the maximum duration of any period when the processing facility may be unavailable for biosolids disposal.

    b. Options for biosolids storage, or alternate disposal, sufficient to cover the estimated maximum duration of any period when the processing facility may be unavailable. These options must be in accordance with the provisions of 40 CFR 503.

    c. Any implementation measures necessary for part (b) above shall be fully implemented within 36 months of the effective date of this permit. The dates of plan completion and implementation shall be reported on the DMR.

9. Record keeping. The Permittee must develop the following information, and must retain the information for 5 years.

a. The dry weight concentration of each pollutant monitored under (Section 6 above) in the biosolids.

b. Identification of the processing facility, and the company that transfers the biosolids to the processing facility.

10. Reporting. The Permittee shall submit a report to EPA by February 19 of each year that includes the following information:

a. All information retained under Part I.D.9 of this permit (Record keeping).

b. The number of samples collected during the monitoring period.

c. Sample collection techniques and analytical methods.

11. Inspection Access: The Permittee shall notify the processing facility and any other affected party that the provisions in section IV.J (Property Rights) of this permit are applicable to all facilities where biosolids are transported, treated, stored, used, or disposed. This notice shall be in writing.

12. The Permittee shall notify EPA within twenty four (24) hours of any change in their sludge disposal methods.

E. Quality Assurance Requirements.

1. The Permittee shall develop a Quality Assurance Plan. The primary purpose of the Quality Assurance Plan shall be to assist in planning for the collection and analysis of samples in support of the permit and in explaining data anomalies when they occur.

2. Throughout all sample collection and analysis activities, the Permittee shall use the EPA approved quality assurance, quality control, and chain-of-custody procedures described in
(a) *Requirements for Quality Assurance Project Plans*, EPA QA/R-5, and
(b) *Guidance on Quality Assurance Project Plans*, EPA QA/G-5.

The following references may be helpful in preparing the Quality Assurance Plan for this permit:
(a) *You and Quality Assurance in Region 10*, EPA, Region 10, Quality and Data Management Program, March 1988 and
(b) *The Volunteer Monitors Guide to Quality Assurance Project Plans*, EPA 841-B-96-003, September 1996.

3. The plan shall be submitted to EPA within 90 days of the effective date of the permit.

4. At a minimum the plan shall include the following:

   - Sampling techniques (field blanks, replicates, duplicates, control samples, etc).
   - Sampling preservation methods.
   - Sampling shipment procedures.
   - Instrument calibration procedures and preventive maintenance (frequency, standard, spare parts).
   - Qualification and training of personnel.
   - Analytical methods (including quality control checks, quantification/detection levels).

5. Name(s), address(es) and telephone number(s) of the laboratories, used by or proposed to be used by the Permittee, shall be specified in the Quality Assurance Plan.

6. The Permittee shall require the laboratory director of each laboratory providing measurement results in support of this permit to sign and submit to EPA the following statement on a monthly basis with the DMR:

   I certify that this data is in compliance with requirements under 40 CFR 136 and other analytical requirements specified in NPDES permit No. ID-002149-1.

   *Signature:*_____ *Date:*_____

   *Name and Address of Laboratory:*_____

F. Design Criteria Requirements. The design criteria for the permitted facility is as follows:

Design Criteria		
Criteria	**Value**	**Units**
Average Flow	4.0	mgd
Influent Five-day Biochemical Oxygen Demand Loading	7035	lbs/day
Influent Total Suspended Solids Loading	4379	lbs/day

Each month, the Permittee shall compute an annual average value for flow, and BOD_5 and TSS loading entering the facility based on the previous twelve months data or all data available, whichever is less. If the facility performs plant upgrades that affect design criteria listed in the table, only data collected after the upgrade should be used in determining the annual average value. When the average annual

values exceed 85% of the design criteria values listed in the table, the Permittee shall develop a facility plan and schedule within one year from the date of first exceedance. The plan must include the Permittees strategy for continuing to maintain compliance with effluent limits and will be made available to the Director or authorized representative upon request.

G. 401 Certification Requirements

1. The City of Moscow shall submit an updated facilities plan within 120 days of the effective date of the NPDES permit. The updated facility plan shall be reviewed and approved by IDEQ. If IDEQ comments on the plan, the City shall provide a plan revised in accordance with the comments within 14 days after the City reviews the comments. Once approved, the City shall implement the plan. The updated facilities plan shall include the following:

   a) alternative, costs and financing to bring the City's wastewater system into permanent compliance with state water quality standards and describe the alternatives selected,

   b) a description of the facility's long term plans and goals for re-use and/or discharge of generated wastewater,

   c) post construction and on-line predicted effluent loads for temperature and total phosphorus and their effect on in-stream quality,

   d) an effluent and in-stream water quality monitoring program to verify actual post construction and on-line effluent loads for temperature and phosphorus and their effect on in-stream water quality,

   e) post construction procedures to be followed for plant mechanical, structural and operational revisions and other on-site improvements to be implemented to achieve water quality standards, TMDL developed targets or full support of designated beneficial uses in response to documented effluent effects on in-stream water quality conditions.

H. Definitions.

1. “Annual Average” means the sum all values reported in a twelve month period divided by the number of values.

2. “Application Site or Land Application Site” means all contiguous areas of a users’ property intended for biosolids application.

3. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

4. "Average weekly discharge limitation" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

5. “Biosolids” means any sewage sludge or material derived form sewage sludge

6. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

7. “Chronic toxicity” measures a sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to effluent or ambient water compared to that of the control organism.

8. Class A material are biosolids that meet the Class A pathogen reduction requirements in 40 CFR 503.32.

9. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

10. A “grab” sample, for monitoring requirements, is a single “dip and take” sample or measurement taken at a specific time or over as short a period of time at a representative point anywhere in wastewater treatment or biosolids land application processes, as is feasible.

11. “Interim Minimum Level” is calculated when a method-specified ML does not exist. It is equal to 3.18 times the method-specified method detection limit rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc.

12. "Maximum daily discharge limitation" means the highest allowable "daily discharge."

13. “Minimum Level” is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed. Quantifying measurements below the ML requires extrapolation of the calibration relationship below the range of data used to establish the calibration. Such an extrapolation is not a preferred practice and leads to greater uncertainty in the quantitative result.

14. “No Observed Effect Concentration” (NOEC) is the highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle 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 significantly different from the controls).

15. “Sewage Sludge” means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in a Treatment Works. Sewage sludge (biosolids) includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from biosolids. Biosolids does not include ash generated during the incineration of biosolids or grit and screenings generated during preliminary treatment of domestic sewage in a Treatment Works. These must be disposed of in accordance with 40 CFR 258.

16. "Severe property damage" means substantial physical damage to property, 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.

17. A "24-hour composite" sample shall mean a flow-proportioned mixture of not less than 8 discrete aliquots. Each aliquot shall be a grab sample of not less than 100 ml and shall be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*.

18. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based 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 preventive maintenance, or careless or improper operation.

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Effluent samples taken in compliance with the monitoring requirements established under Part I shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

C. Reporting of Monitoring Results. Monitoring results shall be summarized each month on the Discharge Monitoring Report (DMR) form (EPA No. 3320-1). The reports shall be submitted monthly and are to be postmarked by the 10th day of the following month. Legible copies of these, and all other reports, shall be signed and certified in accordance with the requirements of Part IV.J., Signatory Requirements, and submitted to the Director, Water Division and the State agency at the following addresses:

original to: United States Environmental Protection Agency (EPA) Region 10
1200 Sixth Avenue, OW-133
Seattle, Washington 98101

copy to: Idaho Division of Environmental Quality
Lewiston Regional Office
1118 F. Street
Lewiston, Idaho 83501

D. Additional Monitoring by the Permittee. If the Permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or Biosolids Report. Such increased frequency shall also be indicated.

E. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;

2. The individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;

4. The individual(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of such analyses.

F. Retention of Records. The Permittee shall retain records of all monitoring information, including

all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. Data collected on-site, copies of Discharge Monitoring Reports, and a copy of this NPDES permit must be maintained on-site for a period of three years. After three years the information may be stored off site. Data stored off site must be retained for an additional three years.

G. Twenty-four Hour Notice of Noncompliance Reporting.

1. The following occurrences of noncompliance shall be reported by telephone within 24 hours from the time the Permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass which exceeds any effluent limitation in the permit (See Part III.G,. Bypass of Treatment Facilities.);

   c. Any upset which exceeds any effluent limitation in the permit (See Part III.H., Upset Conditions.); or

   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit to be reported within 24 hours.

2. The Permittee shall report any noncompliance, including transportation accidents, spills, and uncontrolled runoff from biosolid transfer which may seriously endanger health or the environment as soon as possible, but no later than 24 hours from the time the Permittee first became aware of the circumstances. The report shall be made to the EPA, Region 10, Emergency Response Branch at (206) 553-1263.

3. A written submission shall also be provided within five days of the time that the Permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the NPDES Compliance Unit in Seattle, Washington, by

phone, (206) 553-1846.

5. Reports shall be submitted to the addresses in Part II.C., Reporting of Monitoring Results.

H. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part II.C. are submitted. The reports shall contain the information listed in Part II.G.3.

I. Inspection and Entry. The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit including, but not limited to, biosolids treatment, collection, storage facilities or area, and transport vehicles and containers; and

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites, or biosolids, soils, or vegetation on the land application sites.

J. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit (Part I) shall be submitted no later than 10 days following each schedule date.

K. Changes in Discharge of Toxic Substances. The Permittee shall notify the Director and IDEQ as soon as it knows, or has reason to believe:

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

a. One hundred micrograms per liter (100 µg/L);

b. 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 for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

d. The level established by the Director in accordance with 40 CFR 122.44(f).

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

a. Five hundred micrograms per liter (500 µg/L);

b. One milligram per liter (1 mg/L) for antimony;

c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

d. The level established by the Director in accordance with 40 CFR 122.44(f).

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.

1. Civil Penalty. The Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act shall be subject to a civil penalty, not to exceed the maximum amount specified in Sections 309(d) and 309(g) of the Act.

2. Criminal Penalties:

   a. Negligent Violations. The Act provides that any person who negligently violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act; or negligently introduces into a sewer system or into a publicly owned treatment works any pollutant or hazardous substance which such person knew or reasonably should have known could cause personal injury or property damage or, other than in compliance with all applicable federal, state, or local requirements or permits, which causes such treatment works to violate any effluent limitation or condition in a permit issued to the treatment works under Section 402 of this Act; shall be punished by a fine and/or imprisonment as specified in Section 309 ((c)(1) of the Act.

   b. Knowing Violations. The Act provides that any person who knowingly violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act; or knowingly introduces into a sewer system or into a publicly owned treatment works any pollutant or hazardous substance which such person knew or reasonably should have known could cause personal injury or property damage or, other than in compliance with all applicable federal, state, or local requirements or permits, which causes such treatment works to violate any effluent limitation or condition in a permit issued to the treatment works under Section 402 of this Act; shall, upon conviction be punished by a fine and/or imprisonment as specified in Section 309(c)(1) of the Act.

   c. Knowing Endangerment. Any person who knowingly violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine and /or imprisonment as specified in Section 309 of the Act.

   d. False Statements. Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this Act or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this Act, shall upon conviction, be punished by a fine and or imprisonment as specified in Section 309 of the Act .

3. Administrative Penalties. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA shall be subject to an administrative penalty, as follows:

   a. Class I penalty:

Not to exceed $11,000 per violation nor shall the maximum amount exceed $27,500.

b. Class II penalty:
Not to exceed $11,000 per day for each day during which the violation continues nor shall the maximum amount exceed $127,500.

Except as provided in permit conditions in Part III.G., Bypass of Treatment Facilities and Part III.H., Upset Conditions, nothing in this permit shall be construed to relieve the Permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance. 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 to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances. Collected screenings, grit, solids, biosolids, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

G. Bypass of Treatment Facilities.

1. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2 and 3 of this section.

2. Notice.

a. Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.

b. Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required under Part II.G., Twenty-four Hour Notice of Noncompliance Reporting.

3. Prohibition of bypass.

a. Bypass is prohibited and the Director may take enforcement action against a Permittee for a bypass, unless:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to the 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

(3) The Permittee submitted notices as required under paragraph 2 of this section.

b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 3.a. of this section.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 2 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.

2. 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:

a. An upset occurred and that the Permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The Permittee submitted notice of the upset as required under Part II.G.,

Twenty-four Hour Notice of Noncompliance Reporting; and

d. The Permittee complied with any remedial measures required under Part III.D., Duty to Mitigate.

3. Burden of proof. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

IV. GENERAL REQUIREMENTS

A. Planned Changes. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit.

B. Anticipated Noncompliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The Permittee shall furnish to the Director, within a reasonable time, any information which the Director 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 Director, upon request, copies of records required to be kept by this permit.

F. Other Information. When 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 any report to the Director, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Director, and

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

3. Changes to authorization. If an authorization under paragraph IV.J.2. 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 paragraph IV.J.2. must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

   "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."

H. Availability of Reports. Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control

agency and the Director. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.

I. Oil and Hazardous Substance Liability. 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 under Section 311 of the Act.

J. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

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

L. Transfers. This permit may be automatically transferred to a new Permittee if:

1. The current Permittee notifies the Director at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new Permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

3. The Director does not notify the existing Permittee and the proposed new Permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

M. 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 preserved by Section 510 of the Act.

APPENDIX A
Allowable Effluent Flow

The following tables provide the effluent flow (cfs) the City of Moscow wastewater treatment facility is allowed to discharge to Paradise Creek. To determine the allowable effluent flow the temperature and flow of Paradise Creek upstream of the facility's outfall, and the effluent temperature must be known. Once these parameters are known the allowable effluent flow can be found in the following tables. For example if the Paradise Creek temperature is 4°C, the Paradise Creek flow is 5 cfs, and the effluent temperature is 19°C then the allowable flow that the facility can discharge is 70cfs (see Table C-1).

TABLE A-1

Allowable Effluent Flow (cfs) When Effluent Temperature = 19°C

Paradise Creek Flow (cfs)	Paradise Creek Temperature, °C																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0.5	9	8.5	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	0.5	0
1	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
2	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
3	54	51	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3	0
4	72	68	64	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	0
5	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
6	108	102	96	90	84	78	72	66	60	54	48	42	36	30	24	18	12	6	0
7	126	119	112	105	98	91	84	77	70	63	56	49	42	35	28	21	14	7	0
8	144	136	128	120	112	104	96	88	80	72	64	56	48	40	32	24	16	8	0
9	162	153	144	135	126	117	108	99	90	81	72	63	54	45	36	27	18	9	0
10	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
15	270	255	240	225	210	195	180	165	150	135	120	105	90	75	60	45	30	15	0
20	360	340	320	300	280	260	240	220	200	180	160	140	120	100	80	60	40	20	0
25	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
30	540	510	480	450	420	390	360	330	300	270	240	210	180	150	120	90	60	30	0
40	720	680	540	600	560	520	480	440	400	360	320	280	240	200	160	120	80	40	0
50	900	850	300	750	700	650	600	550	500	450	400	350	300	250	200	150	100	50	0
100	1800	1700	1600	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
150	2700	2550	2400	2250	2100	1950	1800	1650	1500	1350	1200	1050	900	750	600	450	300	150	0
200	3600	3400	3200	3000	2800	2600	2400	2200	2000	1800	1600	1400	1200	1000	800	600	400	200	0
250	4500	4250	4000	3750	3500	3250	3000	2750	2500	2250	2000	1750	1500	1250	1000	750	500	250	0
300	5400	5100	4800	4500	4200	3900	3600	3300	3000	2700	2400	2100	1800	1500	1200	900	600	300	0
400	7200	6800	6400	6000	5600	5200	4800	4400	4000	3600	3200	2800	2400	2000	1600	1200	800	400	0
800	14400	13600	12800	12000	11200	10400	9600	8800	8000	7200	6400	5600	4800	4000	3200	2400	1600	800	0

TABLE A-2
Allowable Effluent Flow (cfs) When
Effluent Temperature = 20°C

Paradise Creek Flow (cfs)	Paradise Creek Temperature, °C																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0.5	4.5	4.3	4	3.8	3.5	3.3	3	2.8	2.5	2.3	2	1.8	1.5	1.3	1	0.8	0.5	0.3	0
1	9	8.5	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	0.5	0
2	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3	27	26	24	23	21	20	18	17	15	14	12	11	9	7.5	6	4.5	3	1.5	0
4	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
5	45	43	40	38	35	33	30	28	25	23	20	18	15	13	10	7.5	5.0	2.5	0
6	54	51	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3	0
7	63	60	56	53	49	46	42	39	35	32	28	25	21	18	14	11	7	3.5	0
8	72	68	64	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	0
9	81	77	72	68	63	59	54	50	45	41	36	32	27	23	18	14	9	4.5	0
10	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
15	135	128	120	113	105	98	90	83	75	68	60	53	45	38	30	23	15	7.5	0
20	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
30	270	255	240	225	210	195	180	165	150	135	120	105	90	75	60	45	30	15	0
50	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
100	900	850	800	750	700	650	600	550	500	450	400	350	300	250	200	150	100	50	0
150	1350	1275	1200	1125	1050	975	900	825	750	675	600	525	450	375	300	225	150	75	0
200	1800	1700	1600	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
250	2250	2125	2000	1875	1750	1625	1500	1375	1250	1125	1000	875	750	625	500	375	250	125	0
300	2700	2550	2400	2250	2100	1950	1800	1650	1500	1350	1200	1050	900	750	600	450	300	150	0
400	3600	3400	3200	3000	2800	2600	2400	2200	2000	1800	1600	1400	1200	1000	800	600	400	200	0
800	7200	6800	6400	6000	5600	5200	4800	4400	4000	3600	3200	2800	2400	2000	1600	1200	800	400	0

TABLE A-3
Allowable Effluent Flow (cfs) When
Effluent Temperature = 21 °C

Paradise Creek Flow (cfs)	Paradise Creek Temperature, °C																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0.5	.3	2.8	3	2.5	2.3	2.2	2	1.8	1.7	1.5	1	1.2	1	0.8	1	0.5	0.3	0.2	0
1	6	5.7	5.3	5	4.7	4.3	4	3.7	3.3	3	2.7	2.3	2	1.7	1.3	1	0.7	0.3	0
2	12	11	11	10	9.3	8.7	8	7.3	6.7	6	5.3	4.7	4	3.3	2.7	2	1.3	0.7	0
3	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4	24	23	21	20	19	17	16	15	13	12	11	9.3	8	6.7	5.3	4	2.7	1.3	0
5	30	28	27	25	23	22	20	18	17	15	13	12	10	8.3	6.7	5	3.3	1.7	0
6	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
7	42	40	37	35	33	30	28	26	23	21	19	16	14	12	9.3	7	4.7	2.3	0
8	48	45	43	40	37	35	32	29	27	24	21	19	16	13	11	8	5.3	2.7	0
9	54	51	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3	0
10	60	57	53	50	47	43	40	37	33	30	27	23	20	17	13	10	6.7	3.3	0
15	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
20	120	113	107	100	93	87	80	73	67	60	53	47	40	33	27	20	13	7	0
30	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
50	300	283	267	250	233	217	200	183	167	150	133	117	100	83	67	50	33	17	0
100	600	567	533	500	467	433	400	367	333	300	267	233	200	167	133	100	67	33	0
150	900	850	800	750	700	650	600	550	500	450	400	350	300	250	200	150	100	50	0
200	1200	1133	1067	1000	933	867	800	733	667	600	533	467	400	333	267	200	133	67	0
250	1500	1417	1333	1250	1167	1083	1000	917	833	750	667	583	500	417	333	250	167	83	0
300	1800	1700	1600	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
400	2400	2267	2133	2000	1867	1733	1600	1467	1333	1200	1067	933	800	667	533	400	267	133	0
800	4800	4533	4267	4000	3733	3467	3200	2933	2667	2400	2133	1867	1600	1333	1067	800	533	267	0

TABLE A-4

Allowable Effluent Flow (cfs) When
Effluent Temperature = 22°C

Paradise Creek Flow (cfs)	Paradise Creek Temperature, °C																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0.5	2.3	2.1	2	1.9	1.8	1.6	1.5	1.4	1.3	1.1	1	0.9	0.8	0.6	0.5	0.4	0.3	0.1	0
1	4.5	4.3	4	3.8	3.5	3.3	3	2.8	2.5	2.3	2	1.8	1.5	1.3	1	0.8	0.5	0.3	0
2	9	8.5	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3.0	2.5	2	1.5	1	0.5	0
3	14	13	12	11	11	9.8	9	8.3	7.5	6.8	6	5.3	4.5	3.8	3	2.3	1.5	0.8	0
4	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5	23	21	20	19	18	16	15	14	13	11	10	8.8	7.5	6.3	5	3.8	2.5	1.3	0
6	27	26	24	23	21	20	18	17	15	14	12	11	9	7.5	6	4.5	3	1.5	0
7	32	30	28	26	25	23	21	19	18	16	14	12	11	8.8	7	5.3	3.5	1.8	0
8	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
9	41	38	36	34	32	29	27	25	23	20	18	16	14	11	9	6.8	4.5	2.3	0
10	45	43	40	38	35	33	30	28	25	23	20	18	15	13	10	7.5	5	2.5	0
15	68	64	60	56	53	49	45	41	38	34	30	26	23	19	15	11	7.5	3.8	0
20	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
30	135	128	120	113	105	98	90	83	75	68	60	53	45	38	30	23	15	7.5	0
50	225	213	200	188	175	163	150	138	125	113	100	88	75	63	50	38	25	13	0
100	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
150	675	638	600	563	525	488	450	413	375	338	300	263	225	188	150	113	75	38	0
200	900	850	800	750	700	650	600	550	500	450	400	350	300	250	200	150	100	50	0
250	1125	1063	1000	938	875	813	750	688	625	563	500	438	375	313	250	188	125	63	0
300	1350	1275	1200	1125	1050	975	900	825	750	675	600	525	450	375	300	225	150	75	0
400	1800	1700	1600	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
800	3600	3400	3200	3000	2800	2600	2400	2200	2000	1800	1600	1400	1200	1000	800	600	400	200	0

TABLE A-5
Allowable Effluent Flow (cfs) When
Effluent Temperature = 23 °C

Paradise Creek Flow (cfs)	Paradise Creek Temperature, °C																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0.5	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0
1	3.6	3.4	3.2	3	2.8	2.6	2.4	2.2	2	1.8	1.6	1.4	1.2	1	0.8	0.6	0.4	0.2	0
2	7.2	6.8	6.4	6	5.6	5.2	4.8	4.4	4	3.6	3.2	2.8	2.4	2	1.6	1.2	0.8	0.4	0
3	11	10	9.6	9	8.4	7.8	7.2	6.6	6	5.4	4.8	4.2	3.6	3	2.4	1.8	1.2	0.6	0
4	14	14	13	12	11	10	9.6	8.8	8	7.2	6.4	5.6	4.8	4	3.2	2.4	1.6	0.8	0
5	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
6	22	20	19	18	17	16	14	13	12	11	9.6	8.4	7.2	6	4.8	3.6	2.4	1.2	0
7	25	24	22	21	20	18	17	15	14	13	11	9.8	8.4	7	5.6	4.2	2.8	1.4	0
8	29	27	26	24	22	21	19	18	16	14	13	11	9.6	8	6.4	4.8	3.2	1.6	0
9	32	31	29	27	25	23	22	20	18	16	14	13	11	9	7.2	5.4	3.6	1.8	0
10	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
15	54	51	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3	0
20	72	68	64	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	0
30	108	102	96	90	84	78	72	66	60	54	48	42	36	30	24	18	12	6	0
50	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
100	360	340	320	300	280	260	240	220	200	180	160	140	120	100	80	60	40	20	0
150	540	510	480	450	420	390	360	330	300	270	240	210	180	150	120	90	60	30	0
200	720	680	640	600	560	520	480	440	400	360	320	280	240	200	160	120	80	40	0
250	900	850	800	750	700	650	600	550	500	450	400	350	300	250	200	150	100	50	0
300	1080	1020	960	900	840	780	720	660	600	540	480	420	360	300	240	180	120	60	0
400	1440	1360	1280	1200	1120	1040	960	880	800	720	640	560	480	400	320	240	160	80	0
800	2880	2720	2560	2400	2240	2080	1920	1760	1600	1440	1280	1120	960	800	640	480	320	160	0

TABLE A-6
Allowable Effluent Flow (cfs) When
Effluent Temperature = 24°C

Paradise Creek Flow (cfs)	Paradise Creek Temperature, °C																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0.5	1.5	1.4	1.3	1.3	1.2	1.1	1	0.9	0.8	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.1	0
1	3	2.8	2.7	2.5	2.3	2.2	2	1.8	1.7	1.5	1.3	1.2	1	0.8	0.7	0.5	0.3	0.2	0
2	6	5.7	5.3	5	4.7	4.3	4	3.7	3.3	3	2.7	2.3	2	1.7	1.3	1	0.7	0.3	0
3	9	9	8	7.5	7	6.5	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	0.5	0
4	12	11	11	10	9	9	8	7.3	6.7	6	5.3	4.7	4	3.3	2.7	2	1.3	0.7	0
5	15	14	13	13	12	11	10	9.2	8.3	7.5	6.7	5.8	5	4.2	3.3	2.5	1.7	0.8	0
6	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7	21	20	19	18	16	15	14	13	12	11	9	8.2	7	5.8	4.7	3.5	2.3	1.2	0
8	24	23	21	20	19	17	16	15	13	12	11	9	8	6.7	5.3	4	2.7	1.3	0
9	27	26	24	23	21	20	18	17	15	14	12	11	9	7.5	6	4.5	3	1.5	0
10	30	28	27	25	23	22	20	18	17	15	13	12	10	8.3	6.7	5	3.3	1.7	0
15	45	43	40	38	35	33	30	28	25	23	20	18	15	13	10	7.5	5	2.5	0
20	60	57	53	50	47	43	40	37	33	30	27	23	20	17	13	10	6.7	3.3	0
30	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
50	150	142	133	125	117	108	100	92	83	75	67	58	50	42	33	25	17	8	0
100	300	283	267	250	233	217	200	183	167	150	133	117	100	83	67	50	33	17	0
150	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
200	600	567	533	500	467	433	400	367	333	300	267	233	200	167	133	100	67	33	0
250	750	708	667	625	583	542	500	458	417	375	333	292	250	208	167	125	83	42	0
300	900	850	800	750	700	650	600	550	500	450	400	350	300	250	200	150	100	50	0
400	1200	1133	1067	1000	933	867	800	733	667	600	533	467	400	333	267	200	133	67	0
800	2400	2267	2133	2000	1867	1733	1600	1467	1333	1200	1067	933	800	667	533	400	267	133	0