March 20, 2000

Response To Comments

Draft NPDES Permit for:

J.R. Simplot Company
(Burley-Heyburn Facility)
NPDES No.: ID-000066-3

On December 30, 1999, the Environmental Protection Agency (EPA) issued a draft National Pollutant Discharge Elimination System (NPDES) permit for the J.R. Simplot Company's Burley-Heyburn Facility. The facility, located in Heyburn, Idaho, processes raw potatoes into frozen potato products (french fries) and dehydrofrozen potato products. The process wastewater from the facility is pumped across the Snake River to the waste treatment facility located in Burley, Idaho. The final effluent is discharged into the Snake River at River Mile 652.2. The public comment period for the draft permit extended from December 30, 1999 to January 28, 2000.

EPA received two comment letters during the public comment period: 1) Don Nichols, State of Washington Department of Ecology, to the Director of EPA Region 10, Office of Water, dated January 6, 2000, and 2) Joan M. Cloonan, Vice President, Environment and Regulatory Affairs, J.R. Simplot Company, to Robert Robichaud, EPA Region 10, dated January 28, 2000.

This document represents EPA's response to comments received during the comment period. The comments are summarized below followed by EPA's response.

Comment 1. Receiving Water. The Washington Department of Ecology (WDOE) suggest that "It would be helpful to know which selected toxic pollutants the Snake River is listed for in the Final Toxics Rule." (Page 4 of the fact sheet)

Response: The Idaho Water Quality Standards contain the following criteria which apply to this stretch of the Snake River: "All toxic substance criteria set forth in 40 CFR 131.36(b)(1), Column D2, revised as of December 22, 1992, effective February 5, 1993 (57 FR 60848, December 22, 1992), 40 CFR 131.36(b)(1) is hereby incorporated by reference in the manner provided in subsection 250.07, provided, however, the standard for arsenic shall be fifty (50) Fg/L for Column D2." Column D2 cited above are the human health criteria for consumption of organisms only.

Comment 2. Calculation of Limitations. WDOE states that it would be helpful for EPA to include in the fact sheet a brief statement on the basis for effluent limitation calculation including flow and concentration values. Alternatively, WDOE suggest that the 1994 and 1999 fact sheets should be appended to the current fact sheet.

Response: EPA Region 10 agrees with the WDOE suggestion that for permits which are being reissued with no change in the effluent limitations, such as the J.R. Simplot Company permit, the previous fact sheet should be included as an appendix. Region 10 plans to do this for future reissuances of this nature and also plans to include the previous response to comment document as an appendix as well. In this particular case, a modification was completed just months before this proposed permit reissuance, therefore, the basis for the limitations for this permit would include both the original and modified fact sheets and response to comments documents. Including four documents to a fact sheet which was not modifying any permit limitations was too much information and EPA instead opted for a reference in the fact sheet that the documents are available upon request. The fact sheet also contained directions for obtaining all the supporting materials.

Comment 3. Dilution Zone. WDOE asked in their comment letter whether there is an authorized dilution zone for the J.R. Simplot outfall. WDOE states that if there is a dilution zone, a description should be provided.

Response: There is an authorized dilution zone for this discharge and a description has been included in the 1994 fact sheet. As discussed in the fact sheet, the effluent limitations are based on an average discharge flow of 1.858 mgd from the facility and the following 7Q10 (seven day/ ten year) low flow conditions in this portion of the Snake River: 213 mgd for October 1 through April 30, and 2140 mgd for May 1 through September 30. An allowable mixing zone consisting of 25% of the volume of the 7Q10 flow was authorized by the State of Idaho as provided by the Idaho Water Quality Standards. This is a flow-based mixing zone and no specific dimensions are specified in the fact sheet or in the State of Idaho certification.

Comment 4. Temperature Units. The WDOE commented that units have not been specified in the permit for the temperature limitations and that the limit should be expressed as both degree Centigrade (EC) and degree Fahrenheit (EF).

Response: The final permit will be edited to include the units of EC for the temperature limitation. Since the limitation has historically been in EC, and the state water quality criteria is in EC, EPA sees no need to include Fahrenheit at this time.

Comment 5. Phosphorus Daily Limitations. J.R. Simplot submitted comments related to the phosphorus limitations of the permit. Simplot requests change to the phosphorus permit conditions. Simplot states that the use of a daily maximum is not appropriate for phosphorus and suggest a longer averaging period should be used in the permit. Simplot states that phosphorus is not a toxic, therefore, daily limitations are not necessary. Simplot cites EPA's preamble to the Proposed Revisions to the Water Quality Planning and Management Regulation; Proposed Rule (40 CFR 130, August 23, 1999) where EPA discusses how to express load allocations under the Total Maximum Daily Load (TMDL) program. As noted by the Simplot comment letter, the preamble states "...For a pollutant like phosphorus, the average annual load is the best indicator of actual conditions in the lake and best way to express the allocations established in any

TMDL." Simplot cites this and other portions of the preamble to support the argument that it is appropriate to use a longer averaging period other than the daily maximum for phosphorus.

Response: The proposed Water Quality Planning and Management Regulation cited by the commentor is applicable to EPA's regulatory requirements for establishing TMDL's under the Clean Water Act. The example cited in the preamble to the regulation is relevant to the development of TMDL's for phosphorus, under certain conditions and not necessarily to development of permit limits. Even if a TMDL is finalized with an annual load, the permitting authority would still need to evaluate the appropriate permit limitations to ensure that the load is implemented effectively. For facilities in the Middle Snake River watershed, the phosphorus limits were developed under the terms of the 1997 TMDL that expressed the load as pounds per day without specifying an averaging period.

Along with the proposed Water Quality Planning and Management Regulations, EPA also proposed a companion rule amending the NPDES Permit Regulations. The NPDES permit regulation changes were proposed to support the TMDL regulation. Neither the TMDL nor the NPDES proposed regulations revise the requirement at 40 CFR 122.45(d) that NPDES permit limitations be expressed as maximum daily limitations for industrial facilities.

Similar comments regarding the need for daily limitations were received during the comment period on the modification to the NPDES permit which was issued final in 1999. EPA's response to the daily limitation comments received during the modification process provides EPA's justification for the daily limit:

> "The NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly limits (AMLs) and maximum daily limits (MDLs) for all discharges other than publicly owned treatment works (POTWs), and as average weekly limits (AWLs) and AMLs for POTWs.
>
> The objective in setting effluent limits is to establish limits that will result in the effluent meeting the wasteload allocation (WLA) under normal operating conditions virtually all the time. While not possible to guarantee, through permit limits, that a WLA will never be exceeded, it is possible to use procedures which can account for extreme values. Permit limits can be established that will have low statistical probability of exceeding the WLA and will achieve the desired loading. The statistical procedures used by EPA to determine effluent limitations are described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA March 1991). As discussed in the fact sheet accompanying the draft permit, EPA followed the statistical procedures of the TSD in developing the AML and MDL for facilities in the Middle Snake River watershed.
>
> Developing both an average monthly limit and a maximum daily limit (average

> weekly limit for POTWs) meets the requirements of EPA regulations and also assures that the long-term average loading requirements of total phosphorus to Middle Snake River system, as specified in the management plan, is being met. Having both an AML and MDL also ensures good performance of the treatment system. Setting a MDL establishes an upper bound on effluent values used to determine the monthly average and provides a measure of effluent compliance during operational periods between monthly sampling."

Aquaculture facilities and food processing facilities in the Middle Snake River watershed received daily and monthly limits for phosphorus while all publically owned treatment works in the watershed received weekly and monthly limits. Also, the regulation at 40 CFR 122.45(d) does not distinguish between toxic and non-toxic pollutants. The final permit will retain the daily phosphorus limit as proposed.

Comment 6. Phosphorus Limitations, Statistical Analysis. J.R. Simplot recognizes EPA regulation 40 CFR 122.45(d) that requires permit limits to be expressed as average monthly and maximum daily values unless impracticable. Simplot states the daily limit is not practicable since complying with the daily limit would require Simplot to increase phosphorus reduction beyond the 20% agreed upon in the TMDL. Simplot states the upper bound of the daily limit is well below the actual variability of the data submitted by Simplot during development of the TMDL. Simplot states that they will be required to construct significantly more treatment capacity than would otherwise be required, at a much higher cost.

Simplot believes an average monthly limit or an annual limit is protective of receiving water but, if a daily limit is required, EPA should reconsider the variability of the data and the overall lack of toxicity of phosphorus. Simplot states that after reducing their baseline daily values by 20%, they still exceed the daily phosphorus limitation 4% of the time. To meet the daily limit 99.9% of the time, Simplot states they "need to reduce phosphorus concentrations overall by an estimated 53%." Detailed statistical calculation were provided by Simplot.

Response: EPA has reviewed the statistical calculations provided by Simplot. Simplot states that the 2-year data used to develop the TMDL fits a normal distribution versus the lognormal distribution assumed by EPA. Graphics provided by Simplot appear to show that the data is normally distributed. Simplot reduced each value in the 2-year data set by 20%, the stated goal for food processors under the TMDL agreement. Statistics performed on this reduced data set showed that 2.1% of the data is expected to exceed the permit maximum daily limit (MDL) of 750 lbs/day (see Appendix for details). This result corresponds to the facility being in compliance with the MDL 97.9% of the time. As discussed in the fact sheet for the phosphorus permit modification, EPA Region 10 uses 99.0% as the probability basis when establishing a maximum daily limit. This is also the probability basis recommended in EPA's guidance document for water quality-based permitting (TSD, March, 1991, page 110). With the sample statistics of the reduced data set, the MDL can be adjusted upward until a probability that 99.0% of the data will be less than the MDL is attained. For this 2-year data set, a MDL set equal to 800 lbs/day is expected to result in compliance 99.0% of the time. Therefore, using the statistics

provided by Simplot, the TMDL 20% reduction target, and a 99.0% probability assumption results in a MDL of 800 lbs/day versus the 750 lbs/day in the draft permit. In order to meet TMDL goals and in response to Simplot's comment regarding daily value statistics, EPA will revise the final permit and include a MDL of 800 lbs/day. No change in the monthly limit will be made.

Response to Comment Appendix:
Statistical Calculations for Daily Phosphorus Limitation

EPA has reviewed the statistical calculations provided by Simplot. Simplot states that the 2-year data used to develop the TMDL fits a normal distribution versus the lognormal distribution assumed by EPA. Graphics provided by Simplot appear to show that the data is normally distributed. Simplot reduced each value in the 2-year data set by 20%, the stated goal for food processors under the TMDL agreement. After the 20% reduction, the mean value is 428 lbs/day and the standard deviation is 158 lbs/day. The maximum daily limitation (MDL) of the permit is 750 lbs/day.

To investigate the probability of compliance, Simplot utilizes the Z equation, which is a statistical relationship, employed to determine the area of the normal distribution curve:

Z = (X- F) / *, where X is a value, F is the sample mean, and * is the sample standard deviation.

For a MDL of 750 lbs/day as the X, and a mean of 428 lbs/day, and a standard deviation of 158 lbs/day, the Z score is 2.03. With this Z score, Simplot shows the area under the normal curve, or the f(Z), is equal to 0.979. This implies that 97.9% of the data falls within the MDL of 750 lbs/day or that 2.1% of the time the value will exceed the MDL.

As discussed in the fact sheet for the phosphorus permit modification, EPA Region 10 uses 99.0% as the probability basis when establishing a maximum daily limit. This is also the probability basis recommended in EPA's guidance document for water quality-based permitting (TSD, March, 1991, page 110). With an assumed f(Z) probability and with sample statistics, the Z equation can be solved for an X value, or daily limit, that will result in compliance 99.0% of the time. With f(Z) set equal to 0.990, Z is equal to 2.33 (Source: Probability and Statistics for Engineering and the Sciences, Second Edition, Jay L. Devore). Using the sample statistics (mean of 428 lbs/day, standard deviation of 158 lbs/day) and solving for X yields an X value of 796 which is rounded to 800 lbs/day. The X value represents the MDL within which 99.0% of the data will fall below. For this 2-year data set (reduced by 20%), a MDL set equal to 800 lbs/day is expected to result in compliance 99.0% of the time.