SETTLEMENT AGREEMENT

WHEREAS the Natural Resources Defense Council, Inc. ("NRDC") filed a petition for review, pursuant to section 509(b)(1) of the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq., ("CWA"), of the final general permit entitled “Final National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges Incidental to the Normal Operation of a Vessel,” 73 Fed. Reg. 79,473 (Dec. 29, 2008) (the “Vessel General Permit” or “VGP”) against Respondent the United States Environmental Protection Agency (“EPA”), which matter is pending in United States Court of Appeals for the District of Columbia Circuit (“the Court”);

WHEREAS the National Wildlife Federation, Indiana Wildlife Federation, League of Ohio Sportsmen, Minnesota Conservation Federation, Prairie Rivers Network, Wisconsin Wildlife Federation, Alliance for the Great Lakes, and Ohio Environmental Council (collectively “NWF”) also filed a petition for review of the VGP;

WHEREAS the Northwest Environmental Advocates, Center for Biological Diversity, and People for Puget Sound (collectively “NWEA”) also filed petitions for review of the VGP and VGP-related action;

WHEREAS NRDC on behalf of itself and NWF has also sent a notice of intent to pursue legal action under the Endangered Species Act, 16 U.S.C.§1531 et seq., with respect to the VGP (“Notice of Intent”);

WHEREAS all of the foregoing petitions for review were consolidated by the Court as Case No. 09-1089;

WHEREAS the VGP expires at midnight, December 19, 2013 and EPA intends to issue by November 30, 2012 a new Vessel General Permit (“Next VGP”) to authorize the types of discharges currently subject to the VGP;
WHEREAS nothing in this Agreement is intended to affect the terms and conditions of the VGP, including its December 19, 2013 expiration date;

WHEREAS the Clean Water Act requires that all point source discharges, including ballast water discharges addressed by the VGP, must meet technology-based effluent limitations representing the applicable levels of technology-based control, and more stringent water quality-based effluent limitations where such technology-based limitations are not sufficient to meet applicable water quality standards (See P.U.D. No. 1 of Jefferson County et al. v Washington Dept. of Ecology, 511 U.S. 700, 704 (1994)) ;

WHEREAS EPA has entered into arrangements with the National Academy of Sciences (“NAS”) and EPA’s Science Advisory Board (“SAB”) to produce, respectively, (1) a report on approaches for deriving ecologically protective numeric concentrations of organisms in ballast water discharges, and (2) a report on the performance and availability of ballast water treatment technologies, both of which EPA intends to consider in developing the Next VGP;

WHEREAS EPA’s primary purpose in arranging for the NAS and SAB reports is to put the Agency in the best position, when it is determining conditions for the next VGP, to: (1) derive numeric technology-based effluent limits for ballast water (SAB Report), (2) determine whether technology-based limits will cause, have reasonable potential to cause, or contribute to an excursion above any applicable state water quality standard, including narrative criteria (NAS Report), and (3) if water quality-based effluent limits are required, derive numeric water quality-based effluent limits for ballast water (NAS Report);
WHEREAS EPA intends to encourage the NAS and the SAB to complete their final reports by May 31, 2011;

WHEREAS EPA intends, when it processes the Next VGP, to improve upon the approach the Agency used to implement CWA §401’s state certification provision for the VGP;

WHEREAS nothing in this Agreement is intended to affect any rights states may have under CWA §401, including paragraph (a)(2) of that section;

WHEREAS the Parties intend this Agreement to set forth terms for certain matters associated with EPA’s issuance of the Next VGP.

NOW, THEREFORE, the Parties agree as follows:

I. General Terms

1. The Parties to this Agreement are NRDC, NWF, NWEA and EPA. The Parties understand that Lisa Jackson was sued in her official capacity as Administrator of the United States Environmental Protection Agency, and that all responsibilities arising under this Agreement are to be performed by EPA and not by Lisa Jackson in her individual capacity.

2. This Agreement applies to, is binding upon, and inures to the benefit of the Parties (and their successors, assigns, and designees).

3. For purposes of this Settlement Agreement, the following terms shall have the meanings provided below:

   a. “EPA” or “Agency” means Lisa Jackson, in her official capacity as the Administrator of EPA, or the Administrator’s duly authorized representative, and the United States Environmental Protection Agency;

c. “Petitioner” or “petitioners” with a lower case “p” means any one or more of the parties listed in subparagraph 3.b., above;

d. The “United States” means the United States of America, including its officers, agencies, departments and instrumentalities;

e. “The Litigation” means the petitions for review filed by NRDC, NWF, and NWEA.

f. “VGP” means the general permit entitled “Final National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges Incidental to the Normal Operation of a Vessel” finalized on December 18, 2008 and announced at 73 Fed. Reg. 79,473 (Dec. 29, 2008);

g. “Next VGP” means the permit EPA intends to issue to authorize the types of discharges incidental to the normal operation of a vessel currently authorized by the VGP to become effective upon the VGP’s expiration;

h. “Draft Next VGP” means the draft permit EPA intends to draft and publish notice of in accordance with 40 CFR §124.6 and other applicable regulations prior to issuing the Next VGP;
i. “NAS Report” means the report that EPA has entered into arrangements with the NAS to produce on approaches for deriving ecologically protective numeric concentrations of organisms in ballast water discharges;

j. “SAB Report” means the report that EPA has entered into arrangements with the SAB to produce on the performance and availability of ballast water treatment technologies.

II. EPA Milestones

4. EPA will obtain final signature(s) of appropriate EPA officials on the Draft Next VGP by November 30, 2011 and promptly submit notice of the Draft Next VGP to the Federal Register for publication.

5. EPA will take final action on the Draft Next VGP by November 30, 2012. If EPA does not issue (i.e., obtain final signatures of appropriate EPA officials on) a final Next VGP by November 30, 2012, Petitioners may invoke their rights under the dispute resolution and remedy for non-compliance provisions in Paragraphs 29 and 30 of this Agreement.


III. Clean Water Act Section 401 Certification

7. EPA will provide states with at least 6 months after publication of the Draft Next VGP to grant, grant with condition, deny or waive certification under CWA §401.
8. EPA will provide information to the states and facilitate communication among the states at a regional (e.g., Great Lakes, Atlantic, Pacific, and Gulf) level regarding state certification of the Next VGP. For purposes of this Paragraph, to “facilitate communication” means, at a minimum, to arrange for at least one conference call or meeting between the states at each regional level during the 6-month period referenced in Paragraph 7 to discuss appropriate interstate coordination on the states’ CWA §401 certifications. For purposes of this Paragraph, to “provide information” means, at a minimum, to explain to the states in a letter or other written format the states’ obligations under 33 U.S.C. § 1341 and 40 C.F.R. §124.53(e) either prior to or upon commencement of the 6-month period referenced in Paragraph 7.

IV. The Draft Next VGP

9. EPA will include in the Draft Next VGP numeric concentration-based effluent limits for discharges of ballast water expressed as organisms per unit of ballast water volume. Such limits will address at least the following three size groupings of organisms: (i) macrofauna/zooplankton, (ii) phytoplankton, and (iii) indicator microbes. Such limits will be either technology-based or water quality-based, or both. The content and applicability of such limits for discharges of ballast water included in the Draft Next VGP pursuant to this paragraph may vary depending upon vessel characteristics.

10. EPA will make every effort to express both any technology and any necessary water quality-based effluent limits for ballast water included in the Draft Next VGP numerically. EPA may express either any technology or any necessary water quality-based effluent limits for ballast water narratively (e.g., as BMPs) only if, in accordance with 40 C.F.R. §122.44(k)(3), EPA concludes that numeric limits are
infeasible to calculate. Under no circumstances, however, will EPA decline to include in the Draft Next VGP the numeric limits to be developed under paragraph 9 for both technology- and water quality-based effluent limits for any given size grouping of organism on the basis that such limits are infeasible to calculate.

11. If EPA concludes that either any technology-based effluent limits or any necessary water quality-based limits for ballast water discharges are infeasible to calculate numerically, EPA will include a detailed explanation for that conclusion in the administrative record for the Draft Next VGP and expressly request comment on it.

12. Regardless of whether the numeric concentration-based effluent limits in the Next Draft VGP are water quality- or technology-based, or both, EPA will include in the administrative record for the Draft Next VGP an explanation of how the Agency complied with 40 C.F.R. §122.44(d)(1)’s requirements for (1) determining whether a discharge will cause, or have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including EPA’s explanation of how it evaluated applicable state water quality standards, including state narrative criteria, and (2) deriving appropriate water-quality based effluent limits (if required).

13. Nothing in this Agreement shall be read to in any way affect EPA’s obligations under the Clean Water Act and its implementing regulations, including the requirement that effluent limitations in permits for ballast water discharges must represent the applicable levels of technology-based control and permits must include more stringent water quality-based effluent limitations where such technology-based limitations are not sufficient to meet applicable water quality standards.
14. EPA will include in the Draft Next VGP monitoring requirements for ballast water treatment systems onboard vessels specifying the parameter(s) to be monitored (e.g., treatment unit flow, treatment unit pressure, active substance concentration, residual active substances, suspended solids, and/or indicator organisms) as EPA determines necessary to assess compliance with the ballast water effluent limits, consistent with 40 C.F.R. § 122.44(i)(1)(i) & (ii) and 122.45(e), with at least one of these parameters to be monitored on a monthly or more frequent basis. EPA will include in the administrative record for the Next Draft VGP an explanation of how it determined the frequency of reporting of monitoring results by assessing the nature and effect of the discharges, as required by 40 CFR 122.44(i). EPA will propose to make any ballast water monitoring information transmitted to the Agency in electronic form available to the public in electronic form.

15. EPA will include in the Draft Next VGP an expiration date of 4 years from its effective date.

16. EPA will include in the Draft Next VGP a reopener provision substantially the same as that in Attachment A to this Agreement.

17. When EPA publishes notice of the Draft Next VGP for public comment, the Agency will specifically request comment on whether the following numeric limits for ballast water discharges (from *Performance Standards for the Discharge of Ballast Water For Vessels Operating in California Waters, California Code of Regulations Title 2, Division 3, Chapter 1, Article 4.7, §§2293-2294 as codified as of the date of this Agreement*) should be included in the Next VGP:

(a) No detectable living organisms that are greater than 50 micrometers in minimum dimension;
(b) Less than 0.01 living organisms per milliliter that are less than 50 micrometers in minimum dimension and more than 10 micrometers in minimum dimension;

(c) For living organisms that are less than 10 micrometers in minimum dimension:

   (1) less than 1,000 bacteria per 100 milliliter;

   (2) less than 10,000 viruses per 100 milliliter;

   (3) concentrations of microbes that are less than:
       (A) 126 colony forming units per 100 milliliters of *Escherichia coli*;
       (B) 33 colony forming units per 100 milliliters of Intestinal enterococci; and
       (C) 1 colony forming unit per 100 milliliters or 1 colony forming unit per gram of wet weight of zoological samples of Toxicogenic *Vibrio cholerae* (serotypes O1 and O139).

18. When EPA publishes notice of the Draft Next VGP for public comment, the Agency will specifically request comment on whether any ballast water management plans that would be required under the Draft Next VGP should be made available to the public.

V. Other

19. If either the NAS Report or the SAB Report (or both) have not been completed by May 31, 2011, EPA will, no later than June 9, 2011, provide Petitioners with a summary of any information it has regarding the progress of the report(s) and a summary of the Agency’s plans for accomplishing its goal of deriving numeric concentration-based effluent limits for ballast water for inclusion in the Draft Next VGP in light of such delay. After receiving such summaries, Petitioners may invoke their rights under the dispute resolution and remedy for non-compliance provisions of this Agreement in Paragraphs 29 and 30 by providing written notice and a request for negotiations indicating that it is Petitioners’ view that EPA’s plan for how to proceed in light of the delay is unsatisfactory. Completion of the delayed report(s) which
precipitated invocation of the dispute resolution process in paragraphs 29 and 30 during
the pendency of that process shall constitute resolution of the dispute. For purposes of
this Paragraph and Paragraph 20, the NAS Report will be considered “complete” when
the NAS informs EPA that a pre-publication version may be made available to the public,
and the SAB Report will be considered “complete” when the Science Advisory Board
either posts the final report on its official webpage or transmits the report to the
Administrator, whichever is earlier.

20. EPA will make appropriate Agency staff (as determined by EPA)
available for at least two meetings with Petitioners after the later of the NAS and SAB
reports is complete, with the first meeting to take place within 30 days of the receipt of
the later of the two reports and the second to take place within 30 days of the first
meeting. The primary purpose of the first meeting will be for Petitioners to present their
views to EPA staff regarding appropriate numeric concentration-based effluent limits for
ballast water and appropriate timeframes for regulated entities to come into compliance
with such limits for the Draft Next VGP. The primary purpose of the second meeting
will be for EPA staff to explain to Petitioners their expectations at that time regarding
appropriate numeric concentration-based effluent limits for ballast water and timeframes
for regulated entities to come into compliance with such limits for the Draft Next VGP.
For purposes of this Paragraph, EPA will be deemed to have made appropriate staff
available if EPA has provided Petitioners with their choice of three two-hour periods
within the prescribed timeframes during which such staff are available to meet with
Petitioners either in person or by conference call. EPA will schedule and hold the
meetings during the time Petitioners choose.
21. If within 21 days after the second meeting described in Paragraph 20, any petitioner provides EPA with written notice that such petitioner believes EPA is unlikely to establish appropriate effluent limits and compliance timeframes for ballast water for the Draft Next VGP, EPA will provide Petitioners with an opportunity for a meeting with appropriate Agency political management (as determined by EPA). For the purposes of this Paragraph, EPA will be deemed to have provided Petitioners with an “opportunity for a meeting” if EPA has provided Petitioners with their choice of two one-hour periods during which Agency political management is available to meet with Petitioners either in person or by conference call. Barring unforeseen circumstances, EPA will schedule and hold the meeting during the time Petitioners choose. In the event of unforeseen circumstances, EPA will promptly reschedule the meeting after conferring with Petitioners.

22. In the event any petitioner chooses to attend any meeting scheduled by EPA under Paragraphs 20 or 21 in person rather than via conference call, such petitioner will bear all of their costs associated with attendance.

23. EPA will promptly provide Petitioners with copies of the NAS and SAB reports when they are “complete” as defined in Paragraph 19.

VI. Effective Date

24. This Agreement shall become effective on the date (the “Effective Date”) that a fully executed copy of the Agreement is delivered by EPA to Petitioners. Such delivery shall be accomplished by sending such executed copy to Petitioners by electronic transmission promptly upon final execution of the Agreement by the United States.
VII. Release and Reservation of Rights

25. This Agreement shall not constitute or be construed as an admission or adjudication by the United States or EPA of any question of fact or law with respect to any claim related to the VGP. Nor is it an admission of violation of any law, rule, regulation, or policy by the United States or EPA.

26. This Agreement does not waive any petitioner’s right to challenge any final agency action following compliance with the terms of this Agreement. EPA does not waive any defenses to such a challenge.

VII. Termination of Settlement Agreement

27. This Agreement shall terminate on the earlier of (a) the date that EPA fulfills the last of its obligations under this Agreement, or (b) the date that Petitioners notify EPA that Petitioners have elected to terminate this Agreement and reactivate the Litigation.

VIII. Abeyance, Dispute Resolution and Remedy for Non-Compliance

28. Promptly after the Effective Date, the Parties agree to file with the Court a joint motion to hold the Litigation in abeyance. Said joint motion will request that the Court hold said litigation in abeyance until such time as this Agreement is terminated. In the event that this Agreement is terminated because Petitioners have chosen to reactivate the Litigation, the Parties will file motions to govern further proceedings. In the event that this Agreement is terminated because EPA has discharged its obligations hereunder, the Parties agree to join in a motion to dismiss the Litigation with prejudice. The Parties understand and agree that EPA’s discharge of its obligations hereunder will render moot the Notice of Intent.
29. In the event of a disagreement concerning any aspect of this Agreement, including any asserted noncompliance with the Agreement, EPA or Petitioners (whichever is dissatisfied) shall provide the other with written notice of the dispute and a request for negotiations. EPA and Petitioners shall meet and confer in order to attempt to resolve the dispute within 21 days of the written notice, or, for a dispute concerning the failure of the NAS or the SAB to complete its report by May 31, 2011, within 14 days of the written notice, or such time thereafter as is mutually agreed. If EPA and Petitioners are unable to resolve the dispute within 21 days of such meeting, or, for a dispute concerning the failure of the NAS or the SAB to complete its report by May 31, 2011, within 14 days of the meeting, then Petitioners’ sole remedy for asserted noncompliance is to reactivate the Litigation, and any such reactivation renders any remaining EPA obligations under this Agreement null and void. EPA does not waive or limit any defense relating to such litigation. The Parties agree that contempt of court is not an available remedy under this Agreement.

30. In order to invoke the procedures and remedies in Paragraph 29, any written notice of a dispute and request for negotiations under that Paragraph provided by Petitioners must be signed by authorized representatives of NRDC, NWF and NWEA.

IX. Force Majeure

31. The Parties recognize that performance of this Agreement is subject to fiscal and procurement laws and regulations of the United States which include, but are not limited to, the Anti-Deficiency Act, 31 U.S.C. § 1341, et seq. The possibility exists that circumstances outside the reasonable control of EPA could delay EPA’s compliance with the deadlines, responsibilities or other expectations specified or contained in this
Agreement. Such situations include, but are not limited to, a government shutdown; or an extreme weather event that prevents EPA staff (or, in the case of matters addressed in Paragraph 19, the NAS or SAB) from meeting the deadlines, fulfilling the responsibilities, or meeting the expectations specified or contained in this Agreement; or a catastrophic environmental event that diverts EPA’s staff resources away from meeting the deadlines, fulfilling the responsibilities, or meeting the expectations specified or contained in this Agreement. Should a delay occur due to such circumstances, any resulting failure by EPA to meet the responsibilities set forth herein shall not constitute a failure to comply with the terms of this Agreement, and any deadlines (including the May 31, 2011 date for completion of the NAS and SAB reports) so affected shall be extended one day for each day of the delay. EPA will provide Petitioners with reasonable notice and explanation for the delay (including an explanation of how EPA staff assigned to the VGP were affected by the event causing the delay) in the event that EPA invokes this provision. Any dispute regarding invocation of this provision, or the length of the claimed delay, shall be resolved in accordance with the dispute resolution provision of Paragraphs 29 and 30 of this Agreement.

X. Modifications

32. If a subsequent change in law relieves EPA of its responsibilities concerning matters addressed in this Agreement, then the Parties shall amend the Agreement to conform to such changes. Any dispute regarding invocation of this provision shall be resolved in accordance with the dispute resolution provision of Paragraphs 29 and 30 of this Agreement.
33. The Parties may modify any deadline or other term of this Agreement in writing.

XI. Agency Discretion

34. Except as expressly provided herein, or in any subsequent amendment to this Settlement Agreement, nothing in this Settlement Agreement shall be construed to limit or modify the discretion accorded to EPA by the CWA, the Administrative Procedure Act, or by any other law, including general principles of administrative law.

XII. Notice

35. All notices required or made with respect to this Agreement shall be in writing and shall be effective, unless otherwise stated, on the date that notice is delivered by an overnight mail/delivery service. For any matter relating to this Agreement, the contact persons for Petitioners and EPA are:

For Petitioner, NRDC:

Thomas Cmar
Natural Resources Defense Council, Inc.
2 N. Riverside, Ste. 2250
Chicago, IL 60606

For Petitioner NWF:

Neil S. Kagan
National Wildlife Federation
213 West Liberty Street, Suite 200
Ann Arbor, MI 48104-1398

For Petitioner NWEA:

Allison LaPlante
Staff Attorney & Clinical Professor
Pacific Environmental Advocacy Center
at Lewis & Clark Law School
10015 SW Terwilliger Blvd
Portland, OR 97219-7799
For EPA:

Associate General Counsel, Water Law Office  
Office of General Counsel (2355)  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, DC  20460

Chief  
Environmental Defense Section  
Environment & Natural Resources Division  
United States Department of Justice  
P.O. Box 23986  
Washington, D.C.  20026-3986

36. Upon written notice to the other Parties, any Party may designate a successor contact person for any matter relating to this Agreement.

XIII. Representative Authority

37. Each undersigned representative of the Parties certifies that he or she is fully authorized by the Party to enter into, execute, and bind such Party to this Agreement.

XIV. Mutual Drafting

38. This Agreement was negotiated between EPA and Petitioners and jointly drafted by the Parties. Accordingly, the Parties hereby agree that any and all rules of construction to the effect that ambiguity is construed against the drafting Party shall be inapplicable in any dispute concerning the terms, meaning, or interpretation of this Agreement.

XV. Counterparts

39. This Agreement may be executed in any number of counterpart originals, each of which shall be deemed to constitute an original Agreement, and all of which shall
constitute one Agreement. The execution of one counterpart by any Party shall have the same force and effect as if that Party had signed all other counterparts.

XVI. Use of Settlement Agreement

40. This Agreement shall not constitute an admission or evidence of any fact, wrongdoing, misconduct, or liability on the part of any Party.

XVII. Compliance with Other Laws

41. No provision of this Agreement shall be interpreted as or constitute a commitment or requirement that EPA obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or take any action in contravention of the APA, the CWA, or any other law or regulation, either substantive or procedural.

XVIII. Applicable Law

42. This Agreement shall be governed by and construed under the laws of the United States.

XIX. Third Party Beneficiaries

43. Nothing in this Agreement shall be construed to make any other person or entity not executing this Agreement a third-party beneficiary to this Agreement.

44. The Parties consent to the form and substance of the foregoing Agreement.

XX. Attorneys’ Fees

45. The United States shall pay, no later than 45 days after final execution of this agreement, (1) $64,672 to NWEA; (2) $20,408 to NWF; and (3) $37,390 to NRDC, by electronic funds transfer in accordance with instructions provided to EPA’s counsel by counsel for each such party. Any obligation of the United States to expend funds under this Settlement Agreement are subject to the availability of appropriations in accordance
with the Anti-Deficiency Act, 31 U.S.C. § 1341, and this Settlement Agreement shall not
be construed to require the United States to obligate or pay funds in contravention of said
Act. NWEA, NWF, and NRDC each agrees that payment pursuant to this paragraph will
constitute full and final payment of all costs of litigation (including reasonable attorneys’
fees) incurred by such party in connection with these consolidated cases. Upon payment,
each such party releases the United States, including EPA, from any claims regarding
such fees and costs in connection with these consolidated cases. Nothing in this
agreement shall be construed to waive any right NWEA, NWF, or NRDC may have to
seek attorneys’ fees for any costs of litigation associated with any reactivation of
litigation pursuant to paragraph 29 of this Agreement and nothing in this agreement shall
be construed to limit the United States right to oppose any such claims.

DATE: ______________

MARTIN F. MCDERMOTT
United States Department of Justice
Environment and Natural Resources Division
Environmental Defense Section
P.O. Box 23986
Washington, D.C. 20026-3986
(202)514-4122

Counsel for EPA

DATE: ______________

THOMAS CMAR
Natural Resources Defense Council, Inc.
2 N. Riverside, Ste. 2250
Chicago, IL 60606
(312)651-7906

Counsel for NRDC
DATE: ____________

NEIL S. KAGAN
National Wildlife Federation
213 West Liberty Street, Suite 200
Ann Arbor, MI 48104-1398
(734)887-7106

*Counsel for NWF*

DATE: ____________

ALLISON LAPLANTE
Staff Attorney & Clinical Professor
Pacific Environmental Advocacy Center
at Lewis & Clark Law School
10015 SW Terwilliger Blvd
Portland, OR 97219-7799
(503)768-6894

*Counsel for NWEA*
ATTACHMENT A

§ XXX – Modification of the VGP: This permit is subject to modification in accordance with 40 CFR 124.5 and 122.62. Grounds for such modification include receipt of new information that was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of permit issuance. With respect to ballast water discharges, new information that will be considered in determining whether to modify this permit includes, but is not limited to, data or information from permittees, the general public, states, academia, scientific or technical articles or studies, and results of monitoring conducted under this permit indicating that:

- Treatment technology has improved such that these improved technologies would have justified the application of significantly more stringent effluent limitations or other permit conditions had they been known at the time of permit issuance;

- Treatment technologies known of at the time of permit issuance perform significantly better than understood at the time of permit issuance such that this improved performance would have justified the application of significantly more stringent effluent limitations or other permit conditions had this been understood at the time of permit issuance;

- Scientific understanding of pollutant effects or of invasion biology has evolved such that this new information would have justified the application of significantly more stringent effluent limitations or other permit conditions had this been understood of at the time of permit issuance; or

- The cumulative effects of any discharge authorized by the VGP on the environment are unacceptable.