Direction de l'évaluation environnementale

des projets industriels et en milieu hydrique

Revue des différentes politiques de gestion des sédiments de dragage non contaminés aux États-Unis

et

Revue de la littérature provenant de la U.S. Army Corps of Engineers sur les impacts de la mise en dépôt des sédiments de dragage non contaminés

Rapport de stage réalisé par

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SIGNIFICATION DES CIGLES UTILISÉS DANS LE DOCUMENT

CFR : Code of Federal Regulation

CWA : Clear Water Act

DMRP : Dredged Material Research Program

EPA : Environmental Protection Agency (ou USEPA)

MPRSA : Marine Protection, Research and Sanctuaries Act (ou ODA)

MEF : Ministère de l'Environment et de la Faune

NEPA : National Environmental Policy Act

ODA : Ocean Dumping Act (ou MPRSA)

USACE : United States Army Corps of Engineers

USEPA : United States Environmental Agency (ou EPA)

INTRODUCTION

Les normes québécoises qui encadrent les opérations de dragage dans le Saint-Laurent concernent surtout la gestion des sédiments contaminés. Cela est dû au fait que les connaissances acquises lors des études antérieures laissaient supposer que le rejet en eaux libres causait peu d'impacts physiques, compte tenu des volumes d'eau et des superficies touchées. Cependant, des observations récentes, conjuguées à la situation précaire actuelle des populations d'esturgeons jaunes et d'esturgeons noirs dans le fleuve, ont suscitées un regain d'inquiétude face aux effets physiques des dépôt de sédiments. C'est pourquoi la Direction des Évaluations Environnementales et la Direction de la Faune et des Habitats s'interrogent de nouveau à ce sujet.

Au Québec et en Ontario, certaines revues de littératures récentes traitent des impacts environnementaux du dragage mais ne cernent jamais complètement le sujet des effets physiques. Celle de Kerr (1995) fait le point seulement sur la turbidité et les sédiments en suspension. Celle d'Environnement Canada (1994), faite dans le cadre du projet *Saint-Laurent Vision 2000*, touche superficiellement la modification à long terme de l'habitat du poisson et s'attarde sur les effets momentanés de la turbidité. Enfin, Gagnon (1997, non publié), dans un travail fait pour la Direction de la faune et des habitats du MEF, tente de faire un tour d'horizon de toute la littérature scientifique existante à ce sujet mais, compte tenue de l'immensité de l'objectif et du court délai de production, se limite à la citation d'exemples de projets de rejet en eaux libres qui ont eu ou non des impacts physiques.

La présente revue de littérature comporte deux objectifs. Le premier est de résumer les principales procédures, normes et outils utilisés par les américains et qui ont trait au rejet en eaux libres de sédiments non contaminés. Le second objectif est de donner un vision globale des impacts physiques possibles dans diverses situations, à la seule consultation des ouvrages produits par la *U.S. Army Corps of Engineers* (USACE), premier intervenant dans les question de dragage aux Etats-Unis. Le devis détaillé du contrat pour le présent travail est présenté en annexe.

PARTIE 1. REVUE DES DIFFÉRENTES POLITIQUES DE GESTION DES SÉDIMENTS DE DRAGAGE NON CONTAMINÉS AUX ÉTATS-UNIS.

Aux États-Unis, la *U.S. Army Corps of Engineers* (USACE) est responsable de l'autorisation de tous les travaux de dragage sur les eaux navigables du pays et en effectue la plus grande partie elle-même (65 %). Elle partage aussi avec la *U.S. Environmental Protection Agency* (EPA) la responsabilité de gérer la totalité des sédiments extraits par ses propres opérations de dragage et celles d'autres organismes. Tous les travaux de dragage faits aux É.-U. (par l'USACE et autres) génèrent près de 355 millions m^3 de sédiments et coûtent 725 $ millions à chaque année. Ils sont essentiels à la construction de nouvelles infrastructures et à l'entretien de plus de 40 000 km de canaux fédéraux et plus de 555 ports (Pequegnat, 1986).

1.1. Lois et Règlements.

Aux États-Unis, les travaux entourant le dragage et le rejet des sédiments se font sous la juridiction du *Marine Protection, Research, and Sanctuaries Act* (MPRSA aussi appelé *Ocean Dumping Act*, ODA), du *Federal Water Pollution Control Act Amendments* de 1972, aussi appelé le *Clean Water Act* (CWA), et du *National Environmental Policy Act* (NEPA). De plus, un certain nombre d'autres lois fédérales doivent être respectés, ce qui rend la réglementation concernant la mise en dépôt des sédiments de dragage plutôt complexe.

Ces autres lois[1] sont : 33 CFR (*Navigation and Navigable Waters*, Part 323, 335*, 336*, 337 et 338*); 40 CFR (*Protection of Environment*, Part 228*, 230*); section 9* et 10* du *Rivers and Harbors Act of 1899*; *London dumping convention of 1972*. La section 33 CFR 335.6* est une liste exhaustive des lois qui touchent moins directement le dragage. Il n'y a pas de loi qui s'applique spécifiquement à la gestion des sédiments noncontaminés mais seulement des lignes directrices et des critères pour l'évaluation et le traitement des sédiments contaminés (40 CFR 230* et 227*).
La juridiction géographique du CWA se limite principalement aux eaux intérieures et aux estuaires alors que le MPRSA réglemente les dépôts dans l'océan. Dans les eaux côtières, les dépôts de matériel de remblayage sont réglementés par le CWA, et ceux de matériel dragué par le MPRSA.

[1] Tout au long du présent document, les textes de loi marqués d'un astérisque (*) sont regroupés en annexe.

1.1.1. MPRSA

Le MPRSA enjoint l'EPA, en consultation avec l'USACE, à établir des critères environnementaux (40 CFR 227*) auxquels tout projet de rejet en océan doit se soumettre (Section 102 : Un résumé du MPRSA* est annexé). L'USACE évalue si les projets peuvent obtenir un permis d'autorisation en fonction de ces critères, et considère aussi les impacts possibles sur la navigation, l'économie, le développement industriel et le commerce (Section 103*). En plus de vérifier les décisions de l'USACE, l'EPA désigne les sites de dépôt en océan (Section 102). L'USACE doit autant que possible utiliser les sites désignés (il y en avait 108 en 1990, selon Pequegnat et al., 1990) mais peut, pour des projets spécifiques, soumettre d'autres sites, qu'elle aura choisis selon les même critères de sélections (40 CFR 228.5*, 228.6*), à l'approbation de l'EPA (Section 103*). Il ne faut pas confondre ces critères de sélection de sites avec les critères d'acceptabilité des projets.

1.1.2. CWA

Le CWA enjoint l'EPA, en consultation avec l'USACE, à promulguer des lignes directrices (40 CFR 230* Section 404b1) visant l'élimination des impacts négatifs inacceptables sur la qualité des eaux des États-Unis (incluant la faune aquatique) lors du rejet de sédiments de dragage ou de remblayage (section 404* du CWA). Conformément à ces lignes directrices, l'USACE a la responsabilité d'autoriser ou non les projets de rejet dans les eaux des États-Unis et d'examiner les alternatives possibles. C'est aussi l'USACE et l'EPA qui font autorité dans le choix des sites adéquats et inadéquats pour ces types de rejets (40 CFR 230.80*), toujours en fonction des lignes Directrices. L'EPA est responsable de la vérification des émissions de permis et possède un veto (Section 404*). L'état aussi a un rôle de certification des projets, par rapport à ses standards en matière de qualité de l'eau (Section 401).

1.1.3. NEPA

Le NEPA exige l'identification et l'évaluation de toutes les alternatives aux projets de dragage par l'agence responsable (Section 102(2)*). Pour ses propres projets, l'USACE est tenue de développer des alternatives non seulement pour la mise en dépôt des sédiments, mais pour toutes les opérations du dragage, les coûts, les difficultés techniques et la protection générale de

l'environnement. Toutes ces informations mènent à la production d'une étude d'impact ou d'une évaluation environnementale. La satisfaction des exigences du MPRSA et du CWA concernant l'évaluation des alternatives permet de rencontrer en bonne partie celles du NEPA. Le NEPA exige aussi la production de certains documents lors de la détermination des sites de rejet en océan (40 CFR 228.4) (§1.2.2).

1.2. Procédures, normes et politiques de gestion des sédiments non contaminés pour le rejet en eaux libres.

Le détail de la procédure de détermination de l'acceptabilité environnementale est expliqué dans le *Framework* fait par l'USEPA et l'USACE en 1992. L'organigramme s'y trouvant a été annexé au présent document et permet d'avoir une vue d'ensemble de la procédure. Celle-ci se divise en cinq grandes étapes : 1) Évaluation des besoins du projet de dragage; 2) identification des alternatives; 3) élimination initiale d'alternatives; 4) évaluation détaillée des alternatives; 5) sélection d'une alternative. Tout cela est fait par le personnel de l'USACE et de l'EPA qui est chargé d'évaluer l'acceptabilité des alternatives. Les résultats entrent dans la production de l'étude d'impact faite par le promoteur, selon les normes du NEPA.

1.2.1. Le début du processus (étapes 1, 2, 3)

Tout d'abord, on identifie les grandes caractéristiques du projet telles que le volume de matériel dragué, le type d'endroit où l'on voudrait le déposer, etc. Deuxièmement, conformément au NEPA, toutes les alternatives potentielles se doivent d'être examinées, y compris celle de la non-réalisation, en tenant compte de la nature du projet. Troisièmement, l'élimination de certaines alternatives peut se faire d'emblée en considérant les capacités du promoteur, les coûts et la faisabilité du point de vue technique, légal et environnemental.

1.2.2. Quatrième étape : l'évaluation détaillée des alternatives.

Selon que l'on considère le rejet en eaux libres, le confinement ou l'utilisation à des fins de valorisation (i.e. aménagement d'habitat, restauration de plage, sol pour cultures diverses, etc.), la procédure générale demeure la même; c'est surtout quand les sédiments sont contaminés que des

mesures particulières à chaque cas doivent être prisent. Certains aspects physiques des sédiments, comme la granulométrie, sont aussi plus ou moins importants selon le type d'alternative étudiée. Seule la procédure pour le rejet en eaux libres est décrite ici; elle est résumée dans un organigramme se trouvant en annexe.

Si le projet consiste en un renouvellement de permis ou de l'entretien, seule une évaluation environnementale est faite pour déterminer la validité de l'étude d'impact faite antérieurement. Si elle est toujours acceptable et qu'elle répond aux critères légaux, on passe à la cinquième étape du processus (§ 1.2.3.), sinon on refait une étude d'impact comme pour un nouveau projet.

À cet effet, on réalise premièrement un examen préliminaire des sédiments dragués, sans relation avec une alternative de mise en dépôt particulière. On cherche alors à connaître les caractéristiques physiques et chimiques générales des sédiments pour être plus en mesure de choisir le site après.

En second lieu, on fait la sélection d'un site de rejet. Cela s'effectue conformément aux Lignes Directrices ou aux Critères, du CWA ou du MPRSA respectivement, et est effectué d'une façon particulière sous chacune de ces juridictions. Dans le cas des eaux intérieures (sous le CWA), l'EPA doit émettre un avis public pour chaque nouveau site identifié comme étant approprié ou non au rejet. Toutes les aires ainsi identifiées sont consignées dans un document public, accompagnées des raisons qui ont servi à déterminer leur statut (40 CFR 230.80*). Chaque projet de rejet doit cependant être évalué spécifiquement, en fonction d'un site particulier. Pour certains sites, il se peut que la seule satisfaction des Lignes Directrices ne soit pas suffisante et que des documents exigés sous le NEPA (étude d'impact, etc.) doivent être produits (40 CFR 230.10*). En milieu océanique (sous le MPRSA), la désignation de tout nouveau site requiert préalablement. sous le NEPA, les raisons du choix, des études environnementales pour toute la région englobant le site et une étude d'impacts (40 CFR 228.4*). C'est une procédure qui se fait indépendamment de celle qui évalue le projet de dragage dans son ensemble. Une description plus détaillée en est faite plus loin dans ce document (§ 1.3.1.). Un suivi par un programme de monitoring peut être fait si jugé nécessaire par l'administrateur régional ou l'ingénieur de district (40 CFR 228.9*).

Troisièmement, que l'on ait précédemment identifié les sédiments dragués comme étant contaminés ou non, on évalue d'abord les impacts physiques et la capacité du site avant d'estimer

les impacts que pourraient avoir les contaminants. Plusieurs impacts physiques potentiels ont déjà été évalués lors du processus de désignation des sites mais d'autres sont spécifiques à chaque mise en dépôt. La partie 2.0 de ce document traite plus en détail des effets physiques du rejet en eaux libres. Parallèlement, on tente de prédire, à l'aide de modèles, le comportement physique du matériel au site de dépôt, pour le court et le long terme : Analyse de dispersion dans la colonne d'eau, de l'établissement et de la stabilité (ou la dispersion) du dépôt qui est parfois sous forme de monticule (Dortch et al. 1990, Poindexter-Rollings 1990, Scheffner 1995 et 1991).

Par la suite, si la précédente évaluation révèle une incompatibilité avec les critères ou les lignes directrices fait par l'EPA, certaines mesures d'atténuation peuvent être faites pour réduire les impacts physiques ou augmenter la capacité du site (Lee et al. 1986 ; 40 CFR 230 sec. 404b1 subpart H*). Par exemple on peut décharger le matériel plus près du fond, utiliser un diffuseur, fournir une digue (naturelle ou artificielle) aux sédiments ou les disposer en une couche mince (<12"). Du monitoring peut aussi être utile pour suivre l'évolution du milieu suite à de tels aménagements.

Lorsque les mesures d'atténuation sont jugées efficaces, on réévalue les impacts de la contamination des sédiments dans le contexte du site choisi. On ne fait pas que mesurer l'abondance des contaminants mais on estime quels impacts ils sont susceptibles d'avoir sur un milieu en particulier. Si le niveau de contamination est négligeable, l'alternative étudiée (ici, celle du rejet en eau libre) peut enfin être considérée comme acceptable du point de vue environnemental. Pour résumer, cela signifie qu'elle rencontre toutes les conditions du MPRSA et du CWA, et que les mesures d'atténuation d'impacts sont convenues efficaces.

1.2.3. Cinquième étape : Sélection d'une alternative.

L'évaluation détaillée peut se terminer en offrant plus d'une alternative qui soit acceptable du point de vue environnemental. Le pour et le contre de chaque alternative doit alors se faire sur la base de considérations techniques, économiques et sociales. C'est à ce moment que la consultation du publique (33 CFR 327) se fait et que l'EPA donne ses commentaires sur le document produit

(Éval. environ. ou Étud. d'impacts). Plusieurs autres documents sont nécessaires pour achever le processus mais leur description dépasse le cadre de ce travail.

1.3. Outils pour la gestion des sédiments de dragage non contaminés.

Pour venir en aide aux divers intervenants de la gestion du dragage et pour assurer une certaine uniformité dans les procédures, plusieurs guides techniques ont été produits et sont mis à jour fréquemment par des scientifiques de l'USACE et de l'EPA. La liste complète de ces rapports est longue et touche tous les aspects du dragage; en voici quelques uns qui traitent de la problématique des sédiments non contaminés rejetés en eaux libres.

Un document de base est le "*Framework for dredged material management*" fait par l'USACE et l'EPA (1992, révisé en 1997 sur Internet), qui leur sert de guide pour faciliter l'évaluation de l'acceptabilité environnementale des alternatives de disposition des sédiments de dragage (rejet en eaux libres, utilisation à des fins bénéfiques, confinement). Ce guide convient aux travaux de construction et d'entretien, impliquant des sédiments contaminés ou non. Il est applicable partout aux États-Unis, donc plutôt général et flexible, et est conforme à toutes les réglementations fédérales américaines (§ 1.1.). Cependant, il ne traite pas en détail l'évaluation des alternatives selon des critères non-environnementaux (sociaux, économiques, techniques, etc.).

Le "*General Decisionmaking Framework for Management of Dredged Material (...)* " (Lee et al. 1986) aide à choisir les mesures d'atténuation à prendre pour rendre possible une mise en dépôt en eaux libres qui aurait trop d'impacts physiques (40 CFR 230 sec. 404b1 subpart H* décrit des exemples de mesure; voir aussi § 1.2.2.). Le manuel technique "*Management Strategy for Disposal of Dredged Material: Contaminant Testing and Controls*" (Francingues et al. 1985) existe dans le même but mais pour les problèmes de sédiments contaminés.

Pour l'analyse et la prédiction du comportement physique des sédiments, il existe des modèles mathématiques complexes, adaptés pour différents types de situations, qui sont expliqués en détails dans des guides méthodologiques (Scheffner et al., 1995; Scheffner et al., 1994; Westerink et al., 1993; Dortch et al., 1990; Ariathurai et al.,1977). Il existe aussi un guide pour orienter le choix des outils de monitoring au site de dépôt (Fredette et al. 1990a, 1990b).

1.3.1. Guide pour la désignation des sites de rejet.

Sites de rejets en milieu océanique

Pour la désignation des sites de rejets océaniques, il existe un "*Revised Procedural guide for Designation Surveys of Ocean Dredged Material Disposal Sites*" (Pequegnat et al. 1990), qui fournit de l'information technique sur la façon d'étudier ce type de site pour assurer qu'il respecte les critères du MPRSA (40 CFR 228*). Les principaux sujets traités dans ce guide sont : 1) La description générale des sites existant actuellement; 2) la synthèse des processus océaniques pouvant affecter un site; 3) une procédure et une technique pour déterminer la position d'un site potentiel; 4) la description des variables qu'il est utile ou essentiel de mesurer pour faire l'évaluation d'un nouveau site; 5) l'équipement et les techniques à utiliser pour l'échantillonnage; 6) la description des procédures à adopter lors de l'analyse des échantillons en laboratoire; 7) un guide pour l'interprétation et l'analyse des donnés; 8) des suggestions sur la nature du programme de monitoring et la façon de le conduire. Le quatrième point est résumé ci-après.

Caractéristiques à mesurer et à prendre en compte lors de l'étude d'un site de rejet océanique

L'importance des impacts causés par le rejet de matériel dans un milieu dépend de certaines caractéristiques de ce dernier. Le choix des paramètres à étudier sur le site est important car certains serviront à étayer les documents d'évaluation et à satisfaire les critères légaux, alors que d'autres peuvent être complètement inutiles et faire perdre temps et argent. Les variables sont listées et expliquées dans le **tableau 1.**

Le plan d'étude de la Partie 228.13 des règlements et critères de 1977 est conçu pour le rejet d'un large éventail de matériaux, principalement les déchets industriels et municipaux, et n'est donc pas applicable directement au rejet de résidus de dragage. La problématique des matériaux de dragage est particulière pour plusieurs raisons : La plupart des résidus de dragage sont de forte densité et coulent donc rapidement ; les matériaux rejetés en eaux libres sont habituellement non contaminés et ont surtout des impacts physiques sur l'écosystème; la majorité des sites océaniques sont de petite taille et en eaux peu profondes (< 20m), requièrant un petit nombre de stations

d'échantillonnage à l'intérieur et à l'extérieur du site, ainsi que peu d'échantillons dans la colonne d'eau.

Sites de rejets dans les eaux intérieures

Pour les sites en eaux douces, aucun document unique servant à la désignation de sites conformes aux lignes directrices de l'EPA (40 CFR 230 sec. 404b1*) ne semble exister. C'est probablement dû au fait que ces dernières sont faciles d'utilisation et qu'elles s'appliquent spécifiquement à la problématique des matériaux de dragage, contrairement aux critères faits sous le MPRSA pour la désignation des sites océaniques, qui eux sont plus généraux. Cependant, le processus de désignation du site et les conditions d'acceptabilité des opérations de rejet sont traités ensemble dans les lignes directrices, ce qui n'éclaircit pas leur analyse. L'information fournie dans le *Code of Federal Regulations* est très dense et il serait inutile de la retranscrire ici. On peut consulter en annexe la section 230.11* qui décrit toutes les caractéristiques à étudier et à estimer lors de l'étude d'un nouveau site. Les *Guideslines* ne fournissent pas autant de détails que dans le "*Revised Procedural Guide for (...) oceans (...) sites*" mais on y exige plus d'informations à mettre dans l'étude d'impact.

Tableau 1. Variables à prendre en considération ou à mesurer pour la caractérisation et la désignation d'un site de rejet en océan, selon Pequegnat et al., 1990.

Variable	Importance
	Procédure de l'étude
Période de l'étude.	Lorsqu'un milieu présente un grande variation saisonnière (niveau de l'eau, salinité, apport de sédiment, température, etc.), l'étude doit être faite à chaque saison pour permettre de caractériser les changements.
Durée de l'étude.	La plupart des études peuvent être faites en 2 à 4 jours, selon la taille et la profondeur du site.
Nombre de station d'échantillonnage.	Pour la préparation de l'étude d'impact de désignation du site, on recommande entre 6 et 9 stations. Ce nombre doit augmenter si une ressource de valeur se trouve à proximité du site étudié.
	Colonne d'eau
Relation entre la salinité, la température et la profondeur.	Peut fournir des renseignements utiles sur les mouvements de l'eau. Peut démontrer la présence d'une thermocline et/ou d'une pycnocline qui peuvent influencer la chute des matériaux de dragage.
Relation entre l'oxygène dissout et la profondeur.	Moins importante que les 2 précédentes. Peut tout de même renseigner sur les mouvements de l'eau. Permet aussi de savoir si le matériel de dragage déposé au fond est responsable d'une baisse d'O_2 dissout à cet endroit.
Turbidité.	Permet de savoir dans quelle mesure le rejet est responsable du degré de turbidité. Doit parfois être mesuré dans la zone d'impact étendue (à l'extérieur du site de rejet).
Contaminants : Hg, Pb, Cd, Cu, hydrocarbures, PCB, pesticides.	Pour savoir ce qui est déjà présent sur le site et ce qui a été libéré par le matériel de dragage.
Vents, vagues, courants et mouvement des eaux.	Pour déterminer les processus hydrodynamiques à l'intérieur et autour du site étudié.
Carbone organique total, pH, nutriments inorganiques.	*PAS nécessaire d'étudier.*

Tableau 1 (suite)	Sédiments
Bathymétrie générale.	Pour connaître la topographie du site et des alentours.
Granulométrie.	Pour éviter que le matériel de dragage déposé soit de nature trop différente de ce qui est déjà présent sur le fond (40 CFR 227.13 (b,3,i)*). À déterminer pour une épaisseur de 10 cm en moyenne.
Carbone organique total.	Les sédiments des cours d'eau intérieurs (incluant les estuaires) contiennent un haut niveau de carbone organique, contrairement à ceux des marges continentales. Le carbone organique total peut être utilisé pour retracer les mouvements du dépôt. Un augmentation de sa concentration entraîne normalement une hausse de la production benthique.
Contaminants : Hg, Pb, Cd, Cu, hydrocarbures, PCB, pesticides, huiles et graisses.	Pour savoir ce qui est déjà présent sur le site et ce qui a été libéré par le matériel de dragage.
Minéralogie, taux de mise en dépôt.	*Variables à ne PAS étudier pour la désignation des sites océaniques.*
	Biologie
Faune macroépibenthithique.	Crevettes, homards, crabes, poissons qui vivent et/ou se nourissent au fond, etc. Des mesures qualitatives permettent d'établir les espèces dominantes, un indice de biomasse, un indice de diversité et un indice de bioaccumulation pour Hg, Cd, Cu, Pb, BPC, hydrocarbures et pesticides.
Faune macroendobenthique.	Organismes de plus de 0,5 mm vivant dans les sédiments (polychètes, bivalves, amphipodes, etc.). Des mesures quantitatives permettent d'établir l'abondance numérique (espèces dominantes) et un indice de diversité.
Nématodes et copépopodes (228.13(e)(4)*).	Organismes entre 0,5 et 0,062 mm vivant dans les sédiments. Ceux-ci peuvent être utiles pour interpréter les données des groupes plus important comme les macroinvertébrés. Ils sont fortement influencés par le type de sédiment du fond et peuvent être à la base de l'alimentation d'espèces importantes pour l'humain.
Necton et plancton.	*PAS nécessaire d'échantillonner car ne subissent que des impacts à très court terme.*
Microbenthos.	*PAS nécessaire d'échantillonner.*

PARTIE 2. IMPACTS PHYSIQUES ET BIOLOGIQUES DU REJET EN EAUX LIBRES DE SÉDIMENTS NON CONTAMINÉS, SELON L'*USACE*.

De 1973 à 1978, l'USACE a dirigé le *Dredged Material Research Program* (DMRP), un programme de 32,8 $ millions, dans le but d'améliorer la compréhension des impacts environnementaux du dragage.

Au Québec, des revues de littératures ont récemment été faites au sujet des impacts de la mise en dépôt de sédiments de dragage (Environnement Canada 1994; Gagnon N. 1997, non publiée). La présente partie se veut une présentation des impacts physiques et biologiques occasionnés à la faune aquatique par la mise en dépôt de sédiments non contaminés. Dans la plupart des cas, ce type d'impact est plus important que les impacts chimiques (Saucier et al., 1978). Les impacts à très court terme, comme ceux reliés à l'augmentation de la turbidité, ne sont pas abordés ici, étant bien souvent éphémères et d'importance mineure; une revue de littérature exhaustive concernant ce sujet a d'ailleurs été réalisée en 1995 en Ontario (Kerr, 1995).

Seuls les documents produits par l'USACE ont été consultés, principalement ceux publiés dans le cadre du DMRP. Les sous-parties C-D-E de 40 CFR 230 sec. 404b1*, résument les impacts physiques, chimiques et biologiques possibles sur les écosystèmes aquatiques.

2.1. Impacts sur le benthos.

Lorsque les sédiments de dragage se déposent sur le fond, les organismes benthiques sont ensevelis et subissent donc un impact direct et immédiat qui varie en importance selon plusieurs facteurs. En général, les espèces opportunistes colonisent le site de dépôt rapidement et la communauté benthique d'origine revient au cours d'une succession qui dure de 1 à 12 mois pour les sédiments à grains fins (Anderlini et al., 1976), mais qui peut aller jusqu'à 3 ans pour les sédiments à granulométrie forte (Oliver et al., 1977). Évidemment, si le milieu est trop modifié par la mise en dépôt, la communauté d'origine peut aussi ne jamais revenir, comme elle peut ne pas être changée si des mesures d'atténuation sont prises.

Suite à la mise en dépôt, il est possible que l'abondance des organismes sur le site soit stable, augmente ou diminue alors que leur diversité reste indépendamment semblable, s'élève ou chute (Wright, 1978). Toutes les combinaisons sont possibles. Quand l'indice de diversité demeure stable, il est tout de même possible que la composition en espèces soit modifiée par des remplacements.

Il y a migration latérale et parfois verticale des organismes, mais la contribution de chacune à la recolonisation doit être évaluée cas par cas (Maurer et al., 1978) : elle dépend entre autres du niveau de survie des organismes enfouis et de la nature des communautés adjacentes non perturbées.

La capacité du benthos à survivre à un enfouissement dépend de la nature des sédiments de dragage, de l'épaisseur du dépôt, du type d'organismes impliqués et des conditions environnementales. L'impact est minimal lorsque la cohésion du sédiment déposé est faible et lorsqu'il possède une distribution de taille de particules similaires à celle du sédiment qui se trouve déjà au site de mise en dépôt. Cette dernière caractéristique, la granulométrie, est d'ailleurs le principal facteur qui détermine l'épaisseur limite que peuvent traverser les organismes (de 10 cm à 1 m selon Oliver et al., 1977) et le type de communauté qui dominera le site à la fin de la succession. De plus, les espèces qui sont endobenthiques et de grande taille sont moins vulnérables aux effets néfastes de l'enterrement (Maurer et al., 1978). La condition physiologique de chaque organisme ainsi que certains facteurs environnementaux, comme la température (pour les ectothermes) et la présence d'oxygène, ont aussi une influence.

2.2. *Impacts sur la faune nectonique et planctonique.*

Les impacts physiques directs touchant les organismes qui vivent "entre deux eaux", comme les poissons, sont souvent temporaires et de faible magnitude. Ces organismes peuvent se déplacer hors de la zone de mise en dépôt pendant les opérations et revenir par la suite. Ce sont davantage des impacts physiques indirects, après la mise en dépôt, qui les affectent et peuvent faire diminuer les populations.

Premièrement, si l'accumulation de sédiments à un endroit est suffisante, il peut y avoir une modification des patrons d'écoulement et aussi de la salinité. En plus, les plantes et les invertébrés benthiques étant à la base du réseau alimentaire aquatique, un recouvrement du fond peut donc avoir des répercussions importantes sur les poissons. Troisièmement, l'installation de nouvelles espèces au site de dépôt, venant du voisinage ou introduites avec les nouveaux sédiments, peut engendrer une compétition néfaste pour les populations initiales. Plus directement, il est possible que la mise en dépôt des sédiments, ou leur transport subséquent, ensevelisse une frayère ou un site important soit pour l'élevage, l'alimentation ou comme lieu de séjour.

2.3. Recommandations pour éviter des impacts négatifs.

La plupart des impacts cités aux paragraphes 2.1. et 2.2. peuvent être grandement atténués si on tient compte de certains éléments. Premièrement, il semble qu'un environnement naturellement instable, habité d'espèces flexibles, sera moins affecté par une mise en dépôt car l'instabilité des sédiments y est fréquente. Le choix d'un site doit aussi être fait pour éviter la présence d'habitats critiques pour la faune, ainsi que pour permettre la similitude des sédiments du site avec ceux à mettre en dépôt. La méthode utilisée pour le dragage et le transport des sédiments est aussi à considérer car elle influence la cohésion de ceux-ci.

La saison des opérations est importante car avec elle varie l'utilisation du site par la faune et les caractéristiques physiques du cours d'eau. Le début du printemps est souvent indiqué pour les opérations de mise en dépôt car c'est à cette période qu'il y a un grand recrutement de larves ainsi que de fortes crues. On y trouve donc associés l'assurance d'une bonne quantité d'organismes, pouvant potentiellement recoloniser le site, et une grande dispersion des sédiments par les courants, empêchant d'épaisses accumulations (Hirsh et al., 1978).

2.4. Cas spéciaux : Impacts positifs de la mise en dépôt.

Il est a noter qu'un amoncellement de sédiments de dragage peut, dans certains cas, attirer ou favoriser des espèces importantes et donc avoir un impact positif. Les exemples sont cependant rares et plus ou moins compris. En voici tout de même quelques-uns où le rapport de cause à effet aurait été démontré : pour un site au nord de Long Island, 4 ans après 75 ans de mise en dépôt, on

note une augmentation du nombre de homards, probablement (Cobb et al., 1978); augmentation du nombre de crevettes sur un site dans la *Duwamish Waterway*, Washington (Tatem & Johnson, 1978); dans un site du Lac Supérieur, il y a eu élévation du nombre de petits détritivores qui servent de nourriture aux poissons d'importance commerciale et sportive (Wright et al., 1975). Ces changements sont probablement causés par l'amélioration du substrat ou l'apport de nutriments et de matières organiques après la mise en dépôt.

2.5. Conclusion.

Les études menées directement sur le terrain sont plutôt rares et leurs résultats ne sont pas applicables universellement. Il manque aussi de l'information sur les impacts à très long terme (plus de 4 ans) et des recherches devront être faites en ce sens avant de conclure que ces impacts sont inexistants. De plus, bien que nous sachions quels sont les effets d'une mise en dépôt sur le benthos, nous connaissons mal leur signification écologique et il est difficile de les qualifier de négatifs, positifs ou neutres.

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ANNEXE 1

DEVIS DÉTAILLÉ DU CONTRAT

DEVIS DU CONTRAT

A. DESCRIPTION DU MANDAT

1. Revue des différentes politiques de gestion des sédiments de dragage non contaminés aux Etats-Unis.

Les normes et les politiques qui s'appliquent dans la gestion des sédiments non contaminés. Les méthodes, procédés et outils développés dans le cadre de ce dossier. Toutefois, avant de traiter ces points, on devra succinctement expliquer la structure administrative qui encadre et qui gère le dragage et les sédiments provenant du dragage aux Etats-Unis de même que les Lois et Réglements qui s'appliquent spécifiquement à la gestion des sédiments non contaminés.

2. Revue de la littérature provenant de la U.S. Army Corps of Engineers sur les impacts de la mise en dépôt des sédiments de dragage non contaminés.

On devra rechercher dans les documents provenant spécifiquement de la *U.S. Army Corps of Engineers*, les impacts physiques et biologiques associés à la mise en dépôt des sédiments de dragage sur le benthos, la faune aquatique et leur habitat. Ne pas considérer les impacts à court terme, c'est-à-dire lors de la mise en dépôt même des sédiments. Ne pas considérer également les aspects toxicologiques, donc les impacts qui pourraient être engendrés par la toxicité rencontrée dans les sédiments.

B. ÉCHÉANCIER

Le contrat est établie pour la période s'étendant du 7 juillet au 29 août 1997.

Un rapport écrit devra être présenté au MEF à la fin de l'échéancier.

ANNEXE 2

TEXTES DE LOIS CITÉS DANS LE DOCUMENT

33 CFR Part 335
Operation and Maintenance of Army Corps of Engineers Civil Works Projects Involving the Discharge of Dredged or Fill Material into Waters of the U.S. or Ocean Waters

AUTHORITY: 33 U.S.C. 1344; 33 U.S.C. 1413.

335.1 - Purpose

This regulation prescribes the practices and procedures to be followed by the Corps of Engineers to ensure compliance with the specific statutes governing Army Civil Works operations and maintenance projects involving the discharge of dredged or fill material into waters of the U.S. or the transportation of dredged material for the purpose of disposal into ocean waters. These practices and procedures should be employed throughout the decision/management process concerning methodologies and alternatives to be used to ensure prudent operation and maintenance activities.

335.2 - Authority

Under authority delegated from the Secretary of the Army and in accordance with section 404 of the Clean Water Act of 1977 (CWA) and section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972, hereinafter referred to as the Ocean Dumping Act (ODA), the Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States and the transportation of dredged material for the purpose of disposal into ocean waters. Section 404 of the CWA requires public notice with opportunity for public hearing for discharges of dredged or fill material into waters of the U.S. and that discharge sites can be specified through the application of guidelines developed by the Administrator of the Environmental Protection Agency (EPA) in conjunction with the Secretary of the Army.

Section 103 of the ODA requires public notice with opportunity for public hearing for the transportation for disposal of dredged material for disposal in ocean waters. Ocean disposal of dredged material must be evaluated using the criteria developed by the Administrator of EPA in consultation with the Secretary of the Army. Section 103(e) of the ODA provides that the Secretary of the Army may, in lieu of permit procedures, issue regulations for Federal projects

involving the transportation of dredged material for ocean disposal which require the application of the same criteria, procedures, and requirements which apply to the issuance of permits. Similarly, the Corps does not issue itself a CWA permit to authorize Corps discharges of dredged material or fill material into U.S. waters, but does apply the 404(b)(1) guidelines and other substantive requirements of the CWA and other environmental laws.

335.3 - Applicability

This regulation (33 CFR parts 335 through 338) is applicable to the Corps of Engineers when undertaking operation and maintenance activities at Army Civil Works projects.

335.4 - Policy

The Corps of Engineers undertakes operations and maintenance activities where appropriate and environmentally acceptable. All practicable and reasonable alternatives are fully considered on an equal basis. This includes the discharge of dredged or fill material into waters of the U.S. or ocean waters in the least costly manner, at the least costly and most practicable location, and consistent with engineering and environmental requirements.

335.5 - Applicable laws

a. The Clean Water Act (33 U.S.C. 1251 et seq.) (also known as the Federal Water Pollution Control Act Amendments of 1972, 1977, and 1987).

b. The Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1401 et seq.) (commonly referred to as the Ocean Dumping Act (ODA)).

335.6 - Related laws and Executive Orders

a. The National Historic Preservation Act of 1966 (16 U.S.C. 470a et seq.), as amended.

b. The Reservoir Salvage Act of 1960 (16 U.S.C. 469), as amended.

c. The Endangered Species Act (16 U.S.C. 1531 et seq.), as amended.

d. The Estuary Protection Act (16 U.S.C. 1221).

e. The Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), as amended.

f. The National Environmental Policy Act (42 U.S.C. 4341 et seq.), as amended.

g. The Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.) as amended.

h. Section 307(c) of the Coastal Zone Management Act of 1976 (16 U.S.C. 1456 (c)), as amended.

i. The Water Resources Development Act of 1976 (Pub. L. 94-587).

j. Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971, (36 FR 8921, May 15, 1971).

k. Executive Order 11988, Floodplain Management, May 24, 1977, (42 FR 26951, May 25, 1977).

l. Executive Order 11990, Protection of Wetlands, May 24, 1977, (42 FR 26961, May 25, 1977).

m. Executive Order 12372, Intergovernmental Review of Federal Programs, July 14, 1982, (47 FR 3959, July 16, 1982).

n. Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, January 4, 1979.

335.7 - Definitions

The definitions of 33 CFR parts 323, 324, 327, and 329 are hereby incorporated. The following terms are defined or interpreted from parts 320 through 330 for purposes of 33 CFR parts 335 through 338.

Beach nourishment means the discharge of dredged or fill material for the purpose of replenishing an eroded beach or placing sediments in the littoral transport process.

Emergency means a situation which would result in an unacceptable hazard to life or navigation, a significant loss of property, or an immediate and unforeseen significant economic hardship if corrective action is not taken within a time period less than the normal time needed under standard procedures.

Federal standard means the dredged material disposal alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting the environmental standards established by the 404(b)(1) evaluation process or ocean dumping criteria.

Navigable waters of the U.S. means those waters of the U.S. that are subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or are presently used, have been used in the past, or may be susceptible to use with or without reasonable improvement to transport interstate or foreign commerce. A more complete definition is provided in 33 CFR part 329. For the purpose of this regulation, the term also includes the confines of Federal navigation approach channels extending into ocean waters beyond the territorial sea which are used for interstate or foreign commerce.

Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Statement of Findings (SOF) means a comprehensive summary compliance document signed by the district engineer after completion of appropriate environmental documentation and public involvement.

Territorial sea means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, extending seaward a distance of three miles as described in the convention on the territorial sea and contiguous zone, 15 U.S.T. 1606.

33 CFR Part 336
Factors to be Considered in the Evaluation of Army Corps of Engineers Dredging Projects Involving the Discharge of Dredged Material into Waters of the U.S. and Ocean Waters

- § 336.0 - General
- § 336.1 - Discharges of dredged or fill material into waters of the U.S.
- § 336.2 - Transportation of dredged material for the purpose of disposal into ocean waters

AUTHORITY: 33 U.S.C. 1344; 33 U.S.C. 1413.

336.0 - General

Since the jurisdiction of the CWA extends to all waters of the U.S., including the territorial sea, and the jurisdiction of the ODA extends over ocean waters including the territorial sea, the following rules are established to assure appropriate regulation of discharges of dredged or fill material into waters of the U.S. and ocean waters.

a. The disposal into ocean waters, including the territorial sea, of dredged material excavated or dredged from navigable waters of the U.S. will be evaluated by the Corps in accordance with the ODA.

b. In those cases where the district engineer determines that the discharge of dredged material into the territorial sea would be for the primary purpose of fill, such as the use of dredged material for beach nourishment, island creation, or construction of underwater berms, the discharge will be evaluated under section 404 of the CWA.

c. For those cases where the district engineer determines that the materials proposed for discharge in the territorial sea would not be adequately evaluated under the section 404(b)(1) guidelines of the CWA, he may evaluate that material under the ODA.

336.1 - Discharges of dredged or fill material into waters of the U.S.

a. **Applicable laws.** Section 404 of the CWA governs the discharge of dredged or fill material into waters of the U.S. Although the Corps does not process and issue permits for its own activities, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the section 404(b)(1) guidelines.

1. The CWA requires the Corps to seek state water quality certification for discharges of dredged or fill material into waters of the U.S.

2. Section 307 of the Coastal Zone Management Act (CZMA) requires that certain activities that a Federal agency conducts or supports be consistent with the Federally-approved state management plan to the maximum extent practicable.

b. **Procedures.** If changes in a previously approved disposal plan for a Corps navigation project warrant re-evaluation under the CWA, the following procedures should be followed by district enginers prior to discharging dredged material into waters of the U.S. except where emergency action as described in 337.7 of this chapter is required.

1. A public notice providing opportunity for a public hearing should be issued at the earliest practicable time. The public notification procedures of 337.1 of this chapter should be followed.

2. The public hearing procedures of 33 CFR part 327 should be followed.

3. As soon as practicable, the district engineer will request from the state a 401 water quality certification and, if applicable, provide a coastal zone consistency determination for the Corps activity using the procedures of 336.1(b) (8) and (9), respectively, of this part.

4. Discharges of dredged material will be evaluated using the guidelines authorized under section 404(b)(1) of the CWA, or using the ODA regulations, where appropriate. If the guidelines alone would prohibit the designation of a proposed discharge site, the economic impact on navigation and anchorage of the failure to use the proposed discharge site will also be considered in evaluating whether the proposed discharge is to be authorized under CWA section 404(b)(2).

5. The EPA Administrator can prohibit or restrict the use of any defined area as a discharge site under 404(c) whenever he determines, after notice and opportunity for public hearing and after consultation with the Secretary of the Army, that the discharge of such materials into such areas will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreation areas. Upon notification of the prohibition of a discharge site by the Administrator the district engineer will complete the administrative processing of the proposed project up to the point of signing the Statement of Findings (SOF) or Record of Decision (ROD). The unsigned SOF or ROD along with a report described in 337.8 of this chapter will be forwarded through the appropriate Division office to the Dredging Division, Office of the Chief of Engineers.

6. In accordance with the National Environmental Policy Act (NEPA), and the regulations of the Council on Environmental Quality (40 CFR parts 1500-1508), an Environmental Impact Statement (EIS) or Environmental Assessment (EA) will be prepared for all Corps of Engineers projects involving the discharge of dredged or fill material, unless such projects are included within a categorical exclusion found at 33 CFR part 230 or addressed within an existing EA or EIS. If a proposed maintenance activity will result in a deviation in the operation and maintenance plan as described in the EA or EIS, the district engineer will determine the need to prepare a new EA, EIS, or supplement. If a new EA, EIS, or supplement is

required, the procedures of 33 CFR part 230 will be followed.

7. If it can be anticipated that related work by other Federal or non-Federal interests will occur in the same area as Corps projects, the district engineer should use all reasonable means to include it in the planning, processing, and review of Corps projects. Related work normally includes, but is not necessarily limited to, maintenance dredging of approach channels and berthing areas connected to Federal navigation channels. The district engineer should coordinate the related work with interested Federal, state, regional, and local agencies and the general public at the same time he does so for the Corps project. The district engineer should ensure that related work meets all substantive and procedural requirements of 33 CFR parts 320 through 330. Documents covering Corps maintenance activities normally should also include an appropriate discussion of ancillary maintenance work. District engineers should assist local interests to obtain from the state any necessary section 401 water quality certification and, if required, the section 307 coastal zone consistency concurrence. The absence of such certification or concurrence by the state or the denial of a Corps permit for related work shall not be cause for delay of the Federal project. Local sponsors will be responsible for funding any related work. If permitting of the related work complies with all legal requirements and is not contrary to the public interest, section 10, 404, and 103 permits normally will be issued by the district engineer in a separate SOF or ROD. Authorization by nationwide or regional general permit may be appropriate. If the related work does not receive a necessary state water quality certification and/or CZMA consistency concurrence, or are determined to be contrary to the public interest the district engineer should re-examine the project viability to ensure that continued maintenance is warranted.

8. State water quality certification: Section 401 of the CWA requires the Corps to seek state water quality certification for dredged material disposal into waters of the U.S. The state certification request must be processed to a conclusion by the state within a reasonable period of time. Otherwise, the certification requirements of section 401 are deemed waived. The district engineer will request water quality certification from the state at the earliest practicable time using the following procedures:

    i. In addition to the Corps section 404 public notice, information and data demonstrating compliance with state water quality standards will be provided to the state water quality certifying agency along with the request for water quality certification. The information and data may be included within the 404(b)(1) evaluation. The district engineer will request water quality certification to be consistent with the maintenance dredging schedule for the project. Submission of the public notice, including information and data demonstrating compliance with the state water quality standards, will constitute a valid water quality certification request pursuant to section 401 of the CWA.
    ii. If the proposed disposal activity may violate state water quality standards, after consideration of disposal site dilution and dispersion, the district engineer will work with the state to acquire data to satisfy compliance with the state water quality standards. The district engineer will use the technical manual "Management Strategy for Disposal of Dredged Material: Contaminant Testing and Controls" or its appropriate updated version as a

guide for developing the appropriate tests to be conducted on such dredged material.

iii. If the state does not take final action on a request for water quality certification within two months from the date of the initial request, the district engineer will notify the state of his intention to presume a waiver as provided by section 401 of the CWA. If the state agency, within the two-month period, requests an extension of time, the district engineer may approve one 30-day extension unless, in his opinion, the magnitude and complexity of the information contained in the request warrants a longer or additional extension period. The total period of time in which the state must act should not exceed six months from the date of the initial request. Waiver of water quality certification can be conclusively presumed after six months from the date of the initial request.

iv. The procedures of 337.2 will be followed if the district engineer determines that the state data acquisition requirements exceed those necessary in establishment of the Federal standard.

9. State coastal zone consistency: Section 307 of the CZMA requires that activities subject to the CZMA which a Federal agency conducts or supports be consistent with the Federally approved state management program to the maximum extent practicable. The state is provided a reasonable period of time as defined in 336.1(b)(9)(iv) to take final action on Federal consistency determinations; otherwise state concurrence can be presumed. The district engineer will provide the state a consistency determination at the earliest practicable time using the following procedures:

i. The Corps section 404 public notice and any additional information that the district engineer determines to be appropriate will be provided the state coastal zone management agency along with the consistency determination. The consistency determination will consider the maintenance dredging schedule for the project. Submission of the public notice and, as appropriate, any additional information as determined by the district engineer will constitute a valid coastal zone consistency determination pursuant to section 307 of the CZMA.

ii. If the district engineer decides that a consistency determination is not required for a Corps activity, he may provide the state agency a written determination that the CZMA does not apply.

iii. The district engineer may provide the state agency a general consistency determination for routine or repetitive activities.

iv. If the state fails to provide a response within 45 days from receipt of the initial consistency determination, the district engineer will presume state agency concurrence. If the state agency, within the 45-day period, requests an extension of time, the district engineer will approve one 15-day extension unless, in his opinion, the magnitude and complexity of the information contained in the consistency determination warrants a longer or additional extension period. The longer or additional extension period shall not exceed six months from the date of the initial consistency determination.

v. If the district engineer determines that the state recommendations to achieve consistency to the maximum degree practicable exceed either his authority or funding for a proposed dredging or disposal activity, he will so notify the state coastal zone management agency indicating that the Corps has complied to

the maximum extent practicable with the state's coastal zone management program. If the district engineer determines that state recommendations to achieve consistency to the maximum degree practicable do not exceed his authority or funding but, nonetheless, are excessive, he will follow the procedures of 337.2.

c. **Evaluation factors.** The following factors will be used, as appropriate, to evaluate the discharge of dredged material into waters of the U.S. Other relevant factors may also be evaluated, as needed.

1. **Navigation and Federal standard.** The maintenance of a reliable Federal navigation system is essential to the economic well-being and national defense of the country. The district engineer will give full consideration to the impact of the failure to maintain navigation channels on the national and, as appropriate, regional economy. It is the Corps' policy to regulate the discharge of dredged material from its projects to assure that dredged material disposal occurs in the least costly, environmentally acceptable manner, consistent with engineering requirements established for the project. The environmental assessment or environmental impact statement, in conjunction with the section 404(b)(1) guidelines and public notice coordination process, can be used as a guide in formulating environmentally acceptable alternatives. The least costly alternative, consistent with sound engineering practices and selected through the 404(b)(1) guidelines or ocean disposal criteria, will be designated the Federal standard for the proposed project.

2. **Water quality.** The 404(b)(1) guidelines at 40 CFR part 230 and ocean dumping criteria at 40 CFR part 220 implement the environmental protection provisions of the CWA and ODA, respectively. These guidelines and criteria provide general regulatory guidance and objectives, but not a specific technical framework for evaluating or managing contaminated sediment that must be dredged. Through the section 404(b)(1) evaluation process (or ocean disposal criteria for the territorial sea), the district engineer will evaluate the water quality impacts of the proposed project. The evaluation will include consideration of state water quality standards. If the district engineer determines the dredged material to be contaminated, he will follow the guidance provided in the most current published version of the technical manual for contaminant testing and controls. This manual is currently cited as: Francingues, N.R., Jr., et al. 1985. ``Management Strategy for Disposal of Dredged Material: Contaminant Testing and Controls,'' Miscellaneous Paper D-85-1, U.S. Army Waterways Experiment Station, Vicksburg, Mississippi. The procedures of 336.1(b)(8) will be followed for state water quality certification requests.

3. **Coastal zone consistency.** As appropriate, the district engineer will determine whether the proposed project is consistent with the state coastal zone management program to the maximum extent practicable. The procedures of 336.1(b)(9) will be followed for coastal zone consistency determinations.

4. **Wetlands.** Most wetland areas constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest. The district engineer will, therefore, follow the guidance in 33 CFR 320.4(b) and EO 11990, dated May 24, 1977, when evaluating Corps operations and maintenance activities in wetlands.

5. **Endangered species.** All Corps operations and maintenance activities will be reviewed for the potential impact on threatened or endangered species, pursuant to the Endangered Species Act of 1973. If the district engineer determines that the proposed activity will not affect listed species or their critical habitat, a statement to this effect should be included in the public notice. If the proposed activity may affect listed species or their critical habitat, appropriate discussions will be initiated with the U.S. Fish and Wildlife Service or National Marine Fisheries Service, and a statement to this effect should be included in the public notice. (See 50 CFR part 402).

6. **Historic resources.** Archeological, historical, or architectural resource surveys may be required to locate and identify previously unrecorded historic properties in navigation channels and at dredged or fill material disposal sites. If properties that may be historic are known or found to exist within the navigation channel or proposed disposal area, field testing and analysis may sometimes be necessary in order to evaluate the properties against the criteria of the National Register of Historic Places. Such testing should be limited to the amount and kind needed to determine eligibility for the National Register; more detailed and extensive work on a property may be prescribed later, as the outcome of review under section 106 of the National Historic Preservation Act. Historic properties are not normally found in previously constructed navigation channels or previously used disposal areas. Therefore, surveys to identify historic properties should not be conducted for maintenance dredging and disposal activities proposed within the boundaries of previously constructed navigation channels or previously used disposal areas unless there is good reason to believe that historic properties exist there.

    i. The district engineer will establish whether historic properties located in navigation channels or at disposal sites are eligible for inclusion in the National Register of Historic Places in accordance with applicable regulations of the Advisory Council on Historic Preservation and the Department of the Interior.
    ii. The district engineer will take into account the effects of any proposed actions on properties included in or eligible for inclusion in the National Register of Historic Places, and will request the comments of the Advisory Council on Historic Preservation, in accordance with applicable regulations of the Advisory Council on Historic Preservation.

7. **Scenic and recreational values.**

    i. Maintenance dredging and disposal activities may involve areas which possess recognized scenic, recreational, or similar values. Full evaluation requires that due consideration be given to the effect which dredging and disposal of the dredged or fill material may have on the enhancement, preservation, or development of such values. Recognition of these values is often reflected by state, regional, or local land use classification or by similar Federal controls or policies. Operations and maintenance activities should, insofar as possible, be consistent with and avoid adverse effects on the values or purposes for which such resources have been recognized or set aside, and for which those classifications, controls, or policies were established. Special consideration must be given to rivers named in section 3

of the Wild and Scenic Rivers Act and those proposed for inclusion as provided by section 4 and 5 of the Act, or by later legislation.

ii. Any other areas named in Acts of Congress or Presidential Proclamations, such as National Rivers, National Wilderness Areas, National Seashores, National Parks, and National Monuments, should be given full consideration when evaluating Corps operations and maintenance activities.

8. ***Fish and wildlife.***

i. In those cases where the Fish and Wildlife Coordination Act (FWCA) applies, district engineers will consult, through the public notification process, with the Regional Directors of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service and the head of the agency responsible for fish and wildlife for the state in which the work is to be performed, with a view to the conservation of fish and wildlife resources by considering ways to prevent their direct and indirect loss and damage due to the proposed operation and maintenance activity. The district engineer will give full consideration to these views on fish and wildlife conservation in evaluating the activity. The proposed operations may be modified in order to lessen the damage to such resources. The district engineer should include such justifiable means and measures for fish and wildlife resources that are found to be appropriate. Corps funding of Fish and Wildlife Service activities under the Transfer of Funds Agreement between the Fish and Wildlife Service and the Corps is not applicable for Corps operation and maintenance projects.

ii. District engineers should consider ways of reducing unavoidable adverse environmental impacts of dredging and disposal activities. The determination as to the extent of implementation of such measures will be done by the district engineer after weighing the benefits and detriments of the maintenance work and considering applicable environmental laws, regulations, and other relevant factors.

9. **Marine sanctuaries.** Operations and maintenance activities involving the discharge of dredged or fill material in a marine sanctuary established by the Secretary of Commerce under authority of section 302 of the ODA should be evaluated for the impact on the marine sanctuary. In such a case, certification should be obtained from the Secretary of Commerce that the proposed project is consistent with the purposes of Title III of the ODA and can be carried out within the regulations promulgated by the Secretary of Commerce to control activities within the marine sanctuary.

10. ***Other state requirements.*** District engineers will make all reasonable efforts to comply with state water quality standards and Federally approved coastal zone programs using the procedures of 336.1(b) (8), (9), and 337.2. District engineers should not seek state permits or licenses unless authorized to do so by a clear, explicit, and unambiguous Congressional waiver of Federal sovereign immunity, giving the state authority to impose that requirement on Federal activities (e.g., CWA sections 401 and 404(t), and CZMA section 307 (c)(1) and (c)(2)).

11. **Additional factors.** In addition to the factors described in paragraphs (c)(1) through (9) of this section, the following factors should also be considered.

i. The evaluation of Corps operations and maintenance activities involving the discharge of dredged or fill material into waters of the U.S. is a continuing process and should proceed concurrently with the processing of state water quality certification and, if required, the provision of a coastal zone consistency determination to the state. If a local agency having jurisdiction over or concern with the particular activity comments on the project through the public notice coordination, due consideration should be given to those official views as a reflection of local factors.

ii. Where officially adopted state, regional, or local land use classifications, determinations, or policies are applicable, they normally will be presumed to reflect local views and will be considered in addition to other national factors.

336.2 - Transportation of dredged material for the purpose of disposal into ocean waters.

a. **Applicable law.** Section 103(a) of the ODA provides that the Corps of Engineers may issue permits, after notice and opportunity for public hearing, for the transportation of dredged material for disposal into ocean waters.

b. **Procedures.** The following procedures will be followed by district engineers for dredged material disposal into ocean waters except where emergency action as described in 337.7 of this chapter is required.

1. In accordance with the provisions of section 103 of the ODA, the district engineer should issue a public notice giving opportunity for public hearing, following the procedures described in 337.1 of this chapter for Corps operation and maintenance activities involving disposal of dredged material in ocean waters, as well as dredged material transported through the territorial sea for ocean disposal.
2. The public hearing procedures of 33 CFR part 327 should be followed.

c. **State permits and licenses.** The terms and legislative history of the ODA leave some doubt regarding whether a state has legal authority to exert control over ocean dumping activities of the Corps in the territorial sea covered under the Act (see section 106(d)). Notwithstanding this legal question, the Corps will voluntarily as a matter of comity apply for state section 401 water quality certification and determine consistency with a Federally-approved coastal zone management plan for Corps ocean disposal of dredged material within the three-mile extent of the territorial sea. Moreover, the Corps will attempt to comply with any reasonable requirement imposed by a state in the course of the 401 certification process or the CZMA consistency determination process. Nevertheless, the Corps reserves its legal rights regarding any case where a state unreasonably denies or conditions a 401 water quality certification for proposed Corps ocean disposal of dredged material within the limits of the territorial sea, or asserts that such disposal would not be consistent with an approved state CZMA plan. If such a circumstance arises, the district engineer shall so notify the division engineer who then decides on consultation with CECW-D, CECW-Z, and CECC-E for purposes of determining the Corps of Engineers' appropriate response and course of action.

d. **Evaluation factors.**

1. In addition to the appropriate evaluation factors of 336.1(c), activities involving the

transportation of dredged material for the purpose of disposal in ocean waters will be evaluated by the Corps to determine whether the proposed disposal will unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems or economic potentialities. In making this evaluation, the district engineer, in addition to considering the criteria developed by EPA on the effects of the dumping, will also consider navigation, economic and industrial development, and foreign and domestic commerce, as well as the availability of alternatives to ocean disposal, in determining the need for ocean disposal of dredged material. Where ocean disposal is determined to be appropriate, the district engineer will, to the extent feasible, specify disposal sites which have been designated by the Administrator pursuant to section 102(c) of the ODA.

2. As provided by the EPA regulations at 40 CFR 225.2(b-e) for implementing the procedures of section 102 of the ODA, the regional administrator of EPA may make an independent evaluation of dredged material disposal activities regulated under section 103 of the ODA related to the effects of dumping. The EPA regulations provide that the regional administrator make said evaluation within 15 days after receipt of all requested information. The regional administrator may request from the district engineer an additional 15-day period for a total of to 30 days. The EPA regulations provide that the regional administrator notify the district engineer of non-compliance with the environmental impact criteria or with any restriction relating to critical areas on the use of an EPA recommended disposal site designated pursuant to section 102(c) of the ODA. In cases where the regional administrator has notified the district engineer in writing that the proposed disposal will not comply with the criteria related to the effects of dumping or related to critical area restriction, no dredged material disposal may occur unless and until the provisions of 40 CFR 225.3 are followed and the Administrator grants a waiver of the criteria pursuant to section 103(d) of the ODA.

3. If the regional administrator advises the district engineer that the proposed disposal will comply with the criteria, the district engineer will complete the administrative record and sign the SOF.

4. In situations where an EPA-designated site is not feasible for use or where no site has been designated by the EPA, the district engineer, in accordance with the ODA and in consultation with EPA, may select a site pursuant to section 103. Appropriate NEPA documentation should be used to support site selections. District engineers should address site selection factors in the NEPA document. District engineers will consider the criteria of 40 CFR parts 227 and 228 when selecting ocean disposal sites, as well as other technical and economic considerations. Emphasis will be placed on evaluation to determine the need for ocean disposal and other available alternatives. Each alternative should be fully considered on an equal basis, including the no dredging option.

5. If the regional administrator advises the district engineer that a proposed ocean disposal site or activity will not comply with the criteria, the district engineer should proceed as follows:

    i. The district engineer should determine whether there is an economically feasible alternative method or site available other than the proposed ocean

disposal site. If there are other feasible alternative methods or sites available, the district engineer will evaluate the engineering and economic feasibility and environmental acceptability of the alternative sites.

ii. If the district engineer makes a determination that there is no economically feasible alternative method or site available, he will so advise the regional administrator of his intent to proceed with the proposed action setting forth his reasons for such determination.

iii. If the regional administrator advises, within 15 days of the notice of the intent to issue, that he will commence procedures specified by section 103(c) of the ODA to prohibit use of a proposed disposal site, the case will be forwarded through the respective Division office and CECW-D to the Secretary of the Army or his designee for further coordination with the Administrator of EPA and final resolution. The report forwarding the case should be in the format described in 337.8 of this chapter.

iv. The Secretary of the Army or his designee will evaluate the proposed project and make a final determination on the proposed disposal. If the decision of the Secretary of the Army or his designee is that ocean disposal at the proposed site is required because of the unavailability of economically feasible alternatives, he will seek a waiver from the Administrator, EPA, of the criteria or of the critical site designation in accordance with section 103(d) of the ODA.

33 CFR Part 338
Other Corps Activities Involving the Discharge of Dredged Material or Fill into Waters of the U.S.

AUTHORITY: 33 U.S.C. 1344.

338.1 - Purpose

a. The procedures of this part, in addition to the provisions of 33 CFR parts 335 through 337, should be followed when undertaking Corps operations and maintenance activities involving the discharge of fill material into waters of the U.S., except that the procedures of part 336 of this chapter will be used in those cases where the discharge of fill material is also the discharge of dredged material, i.e., beach nourishment, within banks disposal for erosion control, etc.

b. After construction of Corps Civil Works water resource projects, certain operations and maintenance activities involving the discharge of fill material require evaluation under the CWA. These activities generally include lakeshore management, installation of boat ramps, erosion protection along the banks of navigation channels, jetty maintenance, remedial erosion control, etc. While these activities are normally addressed in the existing environmental impact statement for the project, new technology or unexpected events such as storms or high waters may require maintenance or remedial work not fully addressed in existing environmental documents or state permits. In determining compliance with the applicable environmental laws and regulations the district engineer should use the CWA exemptions at 404(f) and NEPA categorical exclusions to the maximum extent practicable. If the district engineer decides that the changes have not been adequately addressed in existing environmental documentation, the procedures of this part should be followed.

338.2 - Activities involving the discharge of dredged or fill material into waters of the U.S.

a. Generally, fill activities conducted by the Corps for operations and maintenance of existing Civil Works water resource and navigation projects are routine and have little, if any, potential for significant degradation of the environment. District engineers are encouraged to develop general authorizations in accordance with section 404 of the CWA and 104 of the ODA following the procedures of 337.5 of this chapter for categories of such routine activities. The general authorization should satisfy all compliance requirements including water quality certifications and, if applicable, coastal

zone consistency determinations. For activities which are not conducive to the development of general authorizations or are more appropriately evaluated on an individual basis, the following procedures should be followed. general authorization should satisfy all compliance requirements including water quality certifications and, if applicable, coastal zone consistency determinations. For activities which are not conducive to the development of general authorizations or are more appropriately evaluated on an individual basis, the following procedures should be followed.

b. A public notice should be issued using the procedures 337.1 of this chapter.

c. Water quality certifications should be requested and, if applicable, coastal zone consistency determinations should be provided using the procedures of 336.1(b) (8) and (9) of this chapter.

d. The discharge site should be specified through the application of the section 404(b)(1) guidelines.

e. The procedures of 40 CFR part 230 should be used to determine the NEPA compliance requirements.

f. The factors of 336.1(c) of this chapter should be followed when evaluating fill activities.

g. Upon completion of all required coordination and after receipt of the necessary state certifications, the district engineer should prepare an SOF in accordance with 337.6.

PART 227_CRITERIA FOR THE EVALUATION OF PERMIT APPLICATIONS FOR OCEAN DUMPING OF MATERIALS

Subpart A_General

Sec.

Subpart B_Environmental Impact

Subpart C_Need for Ocean Dumping

Subpart D_Impact of the Proposed Dumping on Esthetic, Recreational and Economic Values

Authority: 33 U.S.C. 1412 and 1418.

Source: 42 FR 2476, Jan. 11, 1977, unless otherwise noted.

Subpart A_General

227.1 Applicability.

(a) Section 102 of the Act requires that criteria for the issuance of ocean disposal permits be promulgated after consideration of the environmental effect of the proposed dumping operation, the need for ocean dumping, alternatives to ocean dumping, and the effect of the proposed action on esthetic, recreational and economic values and on other uses of the ocean. These parts 227 and 228 of this subchapter H together constitute the criteria established pursuant to section 102 of the Act. The decision of the Administrator, Regional Administrator or the District Engineer, as the case may be, to issue or deny a permit and to impose specific conditions on any permit issued will be based on an

evaluation of the permit application pursuant to -the criteria set forth in this part 227 -and upon the requirements for disposal -site management pursuant to the cri-teria set forth in part 228 of this sub-chapter H.

(b) With respect to the criteria to be used in evaluating disposal of dredged materials, this section and subparts C, D, E, and G apply in their entirety. To determine whether the proposed dumping of dredged material complies with subpart B, only 227.4, 227.5, 227.6, 227.9, 227.10 and 227.13 apply. An applicant for a permit to dump dredged material must comply with all of subparts C, D, E, G and applicable sections of B, to be deemed to have met the EPA criteria for dredged material dumping promulgated pursuant to section 102(a) of the Act. If, in any case, the Chief of Engineers finds that, in the disposition of dredged material, there is no economically feasible method or site available other than a dumping site, the utilization of which would result in noncompliance with the criteria established pursuant to subpart B relating to the effects of dumping or with the restrictions established pursuant to section 102(c) of the Act relating to critical areas, he shall so certify and request that the Secretary of the Army seek a waiver from the Administrator pursuant to part 225.

(c) The Criteria of this part 227 are established pursuant to section 102 of the Act and apply to the evaluation of proposed dumping of materials under title I of the Act. The Criteria of this part 227 deal with the evaluation of proposed dumping of materials on a case-by-case basis from information supplied by the applicant or otherwise available to EPA or the Corps of Engineers concerning the characteristics of the waste and other considerations relating to the proposed dumping.

(d) After consideration of the provisions of 227.28 and 227.29, no permit will be issued when the dumping would result in a violation of applicable water quality standards.

227.2 Materials which satisfy the environmental impact criteria of subpart B.

(a) If the applicant satisfactorily demonstrates that the material proposed for ocean dumping satisfies the environmental impact criteria set forth in subpart B, a permit for ocean dumping will be issued unless:

(1) There is no need for the dumping, and alternative means of disposal are available, as determined in accordance with the criteria set forth in subpart C; or

(2) There are unacceptable adverse effects on esthetic, recreational or economic values as determined in accordance with the criteria set forth in subpart D; or

(3) There are unacceptable adverse effects on other uses of the ocean as determined in accordance with the criteria set forth in subpart E.

(b) If the material proposed for ocean dumping satisfies the environmental impact criteria set forth in subpart B, but the Administrator or the Regional Administrator, as the case may be, determines that any one of the considerations set forth in paragraph (a)(1), (2) or (3) of this section applies, he will deny the permit application; provided however, that he may issue an interim permit for ocean dumping pursuant to paragraph (d) of 220.3 and subpart F of this part 227 when he determines that:

(1) The material proposed for ocean dumping does not contain any of the materials

listed in 227.5 or listed in 227.6, except as trace contaminants; and

(2) In accordance with subpart C there is a need to ocean dump the material and no alternatives are available to such dumping; and

(3) The need for the dumping and the unavailability of alternatives, as determined in accordance with subpart C, are of greater significance to the public interest than the potential for adverse effect on esthetic, recreational or economic values, or on other uses of the ocean, as determined in accordance with subparts D and E, respectively.

227.3 Materials which do not satisfy the environmental impact criteria set forth in subpart B.

If the material proposed for ocean dumping does not satisfy the environmental impact criteria of subpart B, the Administrator or the Regional Administrator, as the case may be, will deny the permit application; provided however, that he may issue an interim permit pursuant to paragraph (d) of 220.3 and subpart F of this part 227 when he determines that:

(a) The material proposed for dumping does not contain any of the materials listed in 227.6 except as trace contaminants, or any of the materials listed in 227.5;

(b) In accordance with subpart C there is a need to ocean dump the material; and

(c) Any one of the following factors is of greater significance to the public interest than the potential for adverse impact on the marine environment, as determined in accordance with Subpart B:

(1) The need for the dumping, as determined in accordance with subpart C; or

(2) The adverse effects of denial of the permit on recreational or economic values as determined in accordance with subpart D; or

(3) The adverse effects of denial of the permit on other uses of the ocean, as determined in accordance with subpart E.

Subpart B_Environmental Impact

227.4 Criteria for evaluating environmental impact.

This subpart B sets specific environmental impact prohibitions, limits, and conditions for the dumping of materials into ocean waters. If the applicable prohibitions, limits, and conditions are satisfied, it is the determination of EPA that the proposed disposal will not unduly degrade or endanger the marine environment and that the disposal will present:

(a) No unacceptable adverse effects on human health and no significant damage to the resources of the marine environment;

(b) No unacceptable adverse effect on the marine ecosystem;

(c) No unacceptable adverse persistent or permanent effects due to the dumping of the particular volumes or concentrations of these materials; and

(d) No unacceptable adverse effect on the ocean for other uses as a result of direct environmental impact.

227.5 Prohibited materials.

The ocean dumping of the following materials will not be approved by EPA or the Corps of Engineers under any circumstances:

(a) High-level radioactive wastes as defined in 227.30;

(b) Materials in whatever form (including without limitation, solids, liquids, semi-liquids, gases or organisms) produced or used for radiological, chemical or biological warfare;

(c) Materials insufficiently described by the applicant in terms of their compositions and properties to permit application of the environmental impact criteria of this subpart B;

(d) Persistent inert synthetic or natural materials which may float or remain in suspension in the ocean in such a manner that they may interfere materially with fishing, navigation, or other legitimate uses of the ocean.

227.6 Constituents prohibited as other than trace contaminants.

(a) Subject to the exclusions of paragraphs (f), (g) and (h) of this section, the ocean dumping, or transportation for dumping, of materials containing the following constituents as other than trace contaminants will not be approved on other than an emergency basis:

(1) Organohalogen compounds;

(2) Mercury and mercury compounds;

(3) Cadmium and cadmium compounds;

(4) Oil of any kind or in any form, including but not limited to petroleum, oil sludge, oil refuse, crude oil, fuel oil, heavy diesel oil, lubricating oils, hydraulic fluids, and any mixtures containing these, transported for the purpose of dumping insofar as these are not regulated under the FWPCA;

(5) Known carcinogens, mutagens, or teratogens or materials suspected to be carcinogens, mutagens, or teratogens by responsible scientific opinion.

(b) These constituents will be considered to be present as trace contaminants only when they are present in materials otherwise acceptable for ocean dumping in such forms and amounts in liquid, suspended particulate, and solid phases that the dumping of the materials will not cause sig-nificant undesirable effects, including -the possibility of danger associated -with their bioaccumulation in marine -organisms.

(c) The potential for significant undesirable effects due to the presence of these constituents shall be determined by application of results of bioassays on liquid, suspended particulate, and solid phases of wastes according to procedures acceptable to EPA, and for dredged material, acceptable to EPA and the Corps of Engineers. Materials shall be deemed environmentally acceptable for ocean dumping only when the following conditions are met:

(1) The liquid phase does not contain any of these constituents in concentrations which will exceed applicable marine water quality criteria after allowance for initial mixing; provided that mercury concentrations in the disposal site, after allowance for initial mixing, may exceed the average normal ambient concentrations of mercury in ocean waters at or near the dumping site which would be present in the absence of dumping, by not more than 50 percent; and

(2) Bioassay results on the suspended particulate phase of the waste do not indicate occurrence of significant mortality or significant adverse sublethal effects due to the dumping of wastes containing the constituents listed in paragraph (a) of this section. These bioassays shall be conducted with appropriate sensitive marine organisms as defined in 227.27(c) using procedures for suspended particulate phase bioassays approved by EPA, or, for dredged material, approved by EPA and the Corps of Engineers. Procedures approved for bioassays under this section will require exposure of organisms for a sufficient period of time and under appropriate conditions to provide reasonable assurance, based on consideration of the statistical significance of effects at the 95 percent confidence level, that, when the materials are dumped, no significant undesirable effects will occur due to chronic toxicity of the constituents listed in paragraph (a) of this section; and

(3) Bioassay results on the solid phase of the wastes do not indicate occurrence of significant mortality or significant adverse sublethal effects due to the dumping of wastes containing the constituents listed in paragraph (a) of this section. These bioassays shall be conducted with appropriate sensitive benthic marine organisms using benthic bioassay procedures approved by EPA, or, for dredged material, approved by EPA and the Corps of Engineers. Procedures approved for bioassays under this section will require exposure of organisms for a sufficient period of time to provide reasonable assurance, based on considerations of statistical significance of effects at the 95 percent confidence level, that, when the materials are dumped, no significant undesirable effects will occur due either to chronic toxicity or to bioaccumulation of the constituents listed in paragraph (a) of this section; and

(4) For persistent organohalogens not included in the applicable marine water quality criteria, bioassay results on the liquid phase of the waste show that such compounds are not present -in concentrations large enough to -cause significant undesirable effects due -either to chronic toxicity or to bio-ac-cumu-la-tion in marine organisms after allowance for initial mixing.

(d) When the Administrator, Regional Administrator or District Engineer, as the case may be, has reasonable cause to believe that a material proposed for ocean dumping contains compounds identified as carcinogens, mutagens, or teratogens for which criteria have not been included in the applicable marine water quality criteria, he may require special studies to be done prior to issuance of a permit to determine the impact of disposal on human health and/or marine ecosystems. Such studies must provide information comparable to that required under paragraph (c)(3) of this section.

(e) The criteria stated in paragraphs (c)(2) and (3) of this section will become mandatory as soon as announcement of the availability of acceptable procedures is made in the Federal Register. At that time the interim criteria contained in paragraph (e) of this section shall no longer be applicable. As interim measures the criteria of paragraphs (c)(2) and (3) of this section may be applied on a case-by-case basis where interim guidance on acceptable bioassay procedures is provided by the Regional Administrator or, in the case of dredged material, by the District Engineer; or, in the absence of such guidance, permits may be issued for the dumping of any material only when the following conditions are met, except under an emergency permit:

(1) Mercury and its compounds are present in any solid phase of a material in concentrations less than 0.75 mg/kg, or less than 50 percent greater than the average total mercury content of natural sediments of similar lithologic characteristics as those at the disposal site; and

(2) Cadmium and its compounds are present in any solid phase of a material in concentrations less than 0.6 mg/kg, or less than 50 percent greater than the average total cadmium content of natural sediments of similar lithologic characteristics as those at the disposal site; and

(3) The total concentration of organohalogen constituents in the waste as transported for dumping is less than a concentration of such constituents known to be toxic to marine organisms. In calculating the concentration of organohalogens, the applicant shall consider that these constituents are all biologically available. The determination of the toxicity value will be based on existing scientific data or developed by the use of bioassays conducted in accordance with approved EPA procedures; and

(4) The total amounts of oils and greases as identified in paragraph (a)(4) of this section do not produce a visible surface sheen in an undisturbed water sample when added at a ratio of one part waste material to 100 parts of water.

(f) The prohibitions and limitations of this section do not apply to the constituents identified in paragraph (a) of this section when the applicant can demonstrate that such constituents are (1) present in the material only as chemical compounds or forms (e.g., inert insoluble solid materials) non-toxic to marine life and non-bioaccumulative in the marine environment upon disposal and thereafter, or (2) present in the material only as chemical compounds or forms which, at the time of dumping and thereafter, will be rapidly rendered non-toxic to marine life and non-bioaccumulative in the marine environment by chemical or biological degradation in the sea; provided they will not make edible marine organisms unpalatable; or will not endanger human health or that of domestic animals, fish, shellfish, or wildlife.

(g) The prohibitions and limitations of this section do not apply to the constituents identified in paragraph (a) of this section for the granting of research permits if the substances are rapidly rendered harmless by physical, chemical or biological processes in the sea; provided they will not make edible marine organisms unpalatable and will not endanger human health or that of domestic animals.

(h) The prohibitions and limitations of this section do not apply to the constituents identified in paragraph (a) of this section for the granting of permits for the transport of these substances for the purpose of incineration at sea if the applicant can demonstrate

that the stack emissions consist of substances which are rapidly rendered harmless by physical, chemical or biological processes in the sea. Incinerator operations shall comply with requirements which will be established on a case-by-case basis.

[42 FR 2476, Jan. 11, 1977; 43 FR 1071, Jan. 6, 1978, as amended at 59 FR 26572, May 20, 1994; 59 FR 52652, Oct. 18, 1994]

227.7 Limits established for specific wastes or waste constituents.

Materials containing the following constituents must meet the additional limitations specified in this section to be deemed acceptable for ocean dumping:

(a) Liquid waste constituents immiscible with or slightly soluble in seawater, such as benzene, xylene, carbon disulfide and toluene, may be dumped only when they are present in the waste in concentrations below their solubility limits in seawater. This provision does not apply to materials which may interact with ocean water to form insoluble materials;

(b) Radioactive materials, other than those prohibited by 227.5, must be contained in accordance with the provisions of 227.11 to prevent their direct dispersion or dilution in ocean waters;

(c) Wastes containing living organisms may not be dumped if the organisms present would endanger human health or that of domestic animals, fish, shellfish and wildlife by:

(1) Extending the range of biological pests, viruses, pathogenic microorganisms or other agents capable of infesting, infecting or extensively and permanently altering the normal populations of organisms;

(2) Degrading uninfected areas; or

(3) Introducing viable species not indigenous to an area.

(d) In the dumping of wastes of highly acidic or alkaline nature into the ocean, consideration shall be given to:

(1) The effects of any change in acidity or alkalinity of the water at the disposal site; and

(2) The potential for synergistic effects or for the formation of toxic compounds at or near the disposal site. Allowance may be made in the permit conditions for the capability of ocean waters to neutralize acid or alkaline wastes; provided, however, that dumping conditions must be such that the average total alkalinity or total acidity of the ocean water after allowance for initial mixing, as defined in 227.29, may be changed, based on stoichiometric calculations, by no more than 10 percent during all dumping operations at a site to neutralize acid or alkaline wastes.

(e) Wastes containing biodegradable constituents, or constituents which consume oxygen in any fashion, may be dumped in the ocean only under conditions in which the dissolved oxygen after allowance for initial mixing, as defined in 227.29, will not be depressed by more than 25 percent below the normally anticipated ambient conditions in the disposal area at the time of dumping.

227.8 Limitations on the disposal rates of toxic wastes.

No wastes will be deemed acceptable for ocean dumping unless such wastes can be dumped so as not to exceed the limiting permissible concentration as defined in 227.27; Provided, That this 227.8 does not apply to those wastes for which specific criteria are established in 227.11 or 227.12. Total quantities of wastes dumped at a site may be limited as described in 228.8.

227.9 Limitations on quantities of waste materials.

Substances which may damage the ocean environment due to the quantities in which they are dumped, or which may seriously reduce amenities, may be dumped only when the quantities to be dumped at a single time and place are controlled to prevent long-term damage to the environment or to amenities.

227.10 Hazards to fishing, navigation, shorelines or beaches.

(a) Wastes which may present a serious obstacle to fishing or navigation may be dumped only at disposal sites and under conditions which will insure no unacceptable interference with fishing or navigation.

(b) Wastes which may present a hazard to shorelines or beaches may be dumped only at sites and under conditions which will insure no unacceptable danger to shorelines or beaches.

227.11 Containerized wastes.

(a) Wastes containerized solely for transport to the dumping site and expected to rupture or leak on impact or shortly thereafter must meet the appropriate requirements of 227.6, 227.7, 227.8, 227.9, and 227.10.

(b) Other containerized wastes will be approved for dumping only under the following conditions:

(1) The materials to be disposed of decay, decompose or radiodecay to environmentally innocuous materials within the life expectancy of the containers and/or their inert matrix; and

(2) Materials to be dumped are present in such quantities and are of such nature that only short-term localized adverse effects will occur should the containers rupture at any time; and

(3) Containers are dumped at depths and locations where they will cause no threat to navigation, fishing, shorelines, or beaches.

227.12 Insoluble wastes.

(a) Solid wastes consisting of inert natural minerals or materials compatible with the ocean environment may be generally approved for ocean dumping provided they are insoluble above the applicable trace or limiting permissible concentrations and are rapidly and completely settleable, and they are of a particle size and density that they

would be deposited or rapidly dispersed without damage to benthic, demersal, or pelagic biota.

(b) Persistent inert synthetic or natural materials which may float or remain in suspension in the ocean as prohibited in paragraph (d) of 227.5 may be dumped in the ocean only when they have been processed in such a fashion that they will sink to the bottom and remain in place.

227.13 *Dredged materials.*

(a) Dredged materials are bottom sediments or materials that have been dredged or excavated from the navigable waters of the United States, and their disposal into ocean waters is regulated by the U.S. Army Corps of Engineers using the criteria of applicable sections of parts 227 and 228. Dredged material consists primarily of natural sediments or materials which may be contaminated by municipal or industrial wastes or by runoff from terrestrial sources such as agricultural lands.

(b) Dredged material which meets the criteria set forth in the following paragraphs (b)(1), (2), or (3) of this section is environmentally acceptable for ocean dumping without further testing under this section:

(1) Dredged material is composed predominantly of sand, gravel, rock, or any other naturally occurring bottom material with particle sizes larger than silt, and the material is found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels; or

(2) Dredged material is for beach nourishment or restoration and is composed predominantly of sand, gravel or shell with particle sizes compatible with material on the receiving beaches; or

(3) When: (i) The material proposed for dumping is substantially the same as the substrate at the proposed disposal site; and

(ii) The site from which the material proposed for dumping is to be taken is far removed from known existing and historical sources of pollution so as to provide reasonable assurance that such material has not been contaminated by such pollution.

(c) When dredged material proposed for ocean dumping does not meet the criteria of paragraph (b) of this section, further testing of the liquid, suspended particulate, and solid phases, as defined in 227.32, is required. Based on the results of such testing, dredged material can be considered to be environmentally acceptable for ocean dumping only under the following conditions:

(1) The material is in compliance with the requirements of 227.6; and

(2)(i) All major constituents of the liquid phase are in compliance with the applicable marine water quality criteria after allowance for initial mixing; or

(ii) When the liquid phase contains major constituents not included in the applicable marine water quality criteria, or there is reason to suspect synergistic effects of certain contaminants, bioassays on the liquid phase of the dredged material show that it can be discharged so as not to exceed the limiting permissible concentration as defined in

paragraph (a) of 227.27; and

(3) Bioassays on the suspended particulate and solid phases show that it can be discharged so as not to exceed the limiting permissible concentration as defined in paragraph (b) of 227.27.

(d) For the purposes of paragraph (c)(2) of this section, major constituents to be analyzed in the liquid phase are those deemed critical by the District Engineer, after evaluating and considering any comments received from the Regional Administrator, and considering known sources of discharges in the area.

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Subpart C_Need for Ocean Dumping

227.14 Criteria for evaluating the need for ocean dumping and alternatives to ocean dumping.

This subpart C states the basis on which an evaluation will be made of the need for ocean dumping, and alternatives to ocean dumping. The nature of these factors does not permit the promulgation of specific quantitative criteria of each permit application. These factors will therefore be evaluated if applicable for each proposed dumping on an individual basis using the guidelines specified in this subpart C.

227.15 Factors considered.

The need for dumping will be determined by evaluation of the following factors:

(a) Degree of treatment useful and feasible for the waste to be dumped, and whether or not the waste material has been or will be treated to this degree before dumping;

(b) Raw materials and manufacturing or other processes resulting in the waste, and whether or not these materials or processes are essential to the provision of the applicant's goods or services, or if other less polluting materials or processes could be used;

(c) The relative environmental risks, impact and cost for ocean dumping as opposed to other feasible alternatives including but not limited to:

(1) Land fill;

(2) Well injection;

(3) Incineration;

(4) Spread of material over open ground;

(5) Recycling of material for reuse;

(6) Additional biological, chemical, or physical treatment of intermediate or final waste streams;

(7) Storage.

(d) Irreversible or irretrievable consequences of the use of alternatives to ocean dumping.

227.16 Basis for determination of need for ocean dumping.

(a) A need for ocean dumping will be considered to have been demonstrated when a thorough evaluation of the factors listed in 227.15 has been made, and the Administrator, Regional Administrator or District Engineer, as the case may be, has determined that the following conditions exist where applicable:

(1) There are no practicable improvements which can be made in process technology or in overall waste treatment to reduce the adverse impacts of the waste on the total environment;

(2) There are no practicable alternative locations and methods of disposal or recycling available, including without limitation, storage until treatment facilities are completed, which have less adverse environmental impact or potential risk to other parts of the environment than ocean dumping.

(b) For purposes of paragraph (a) of this section, waste treatment or improvements in processes and alternative methods of disposal are practicable when they are available at reasonable incremental cost and energy expenditures, which need not be competitive with the costs of ocean dumping, taking into account the environmental benefits derived from such activity, including the relative adverse environmental impacts associated with the use of alternatives to ocean dumping.

(c) The duration of permits issued under subchapter H and other terms and conditions imposed in those permits shall be determined after taking into account the factors set forth in this section. Notwithstanding compliance with subparts B, D, and E of this part 227 permittees may, on the basis of the need for and alternatives to ocean dumping, be required to terminate all ocean dumping by a specified date, to phase out all ocean dumping over a specified period or periods, to continue research and development of alternative methods of disposal and make periodic reports of such research and development in order to provide additional information for periodic review of the need for and alternatives to ocean dumping, or to take such other action as the Administrator, the Regional Administrator, or District Engineer, as the case may be, determines to be necessary or appropriate.

Subpart D_Impact of the Proposed Dumping on Esthetic, Recreational and Economic Values

227.17 Basis for determination.

(a) The impact of dumping on esthetic, recreational and economic values will be evaluated on an individual basis using the following considerations:

(1) Potential for affecting recreational use and values of ocean waters, inshore waters, beaches, or shorelines;

(2) Potential for affecting the recreational and commercial values of living marine resources.

(b) For all proposed dumping, full consideration will be given to such nonquantifiable aspects of esthetic, recreational and economic impact as:

(1) Responsible public concern for the consequences of the proposed dumping;

(2) Consequences of not authorizing the dumping including without limitation, the impact on esthetic, recreational and economic values with respect to the municipalities and industries involved.

227.18 Factors considered.

The assessment of the potential for impacts on esthetic, recreational and economic values will be based on an evaluation of the appropriate characteristics of the material to be dumped, allowing for conservative rates of dilution, dispersion, and biochemical degradation during movement of the materials from a disposal site to an area of significant recreational or commercial value. The following specific factors will be considered in making such an assessment:

(a) Nature and extent of present and potential recreational and commercial use of areas which might be affected by the proposed dumping;

(b) Existing water quality, and nature and extent of disposal activities, in the areas which might be affected by the proposed dumping;

(c) Applicable water quality standards;

(d) Visible characteristics of the materials (e.g., color, suspended particulates) which result in an unacceptable estetic nuisance in recreational areas;

(e) Presence in the material of pathogenic organisms which may cause a public health hazard either directly or through contamination of fisheries or shellfisheries;

(f) Presence in the material of toxic chemical constituents released in volumes which may affect humans directly;

(g) Presence in the material of chemical constituents which may be bioaccumulated or persistent and may have an adverse effect on humans directly or through food chain interactions;

(h) Presence in the material of any constituents which might significantly affect living marine resources of recreational or commercial value.

227.19 Assessment of impact.

An overall assessment of the proposed dumping and possible alternative methods of disposal or recycling will be made based on the effect on esthetic, recreational and economic values based on the factors set forth in this subpart D, including where applicable, enhancement of these values, and the results of the assessment will be expressed, where possible, on a quantitative basis, such as percentage of a resource lost, reduction in use days of recreational areas, or dollars lost in commercial fishery profits or the profitability of other commercial enterprises.

Subpart E_Impact of the Proposed Dumping on Other Uses of the Ocean

227.20 Basis for determination.

(a) Based on current state of the art, consideration must be given to any possible long-range effects of even the most innocuous substances when dumped in the ocean

on a continuing basis. Such a consideration is made in evaluating the relationship of each proposed disposal activity in relationship to its potential for long-range impact on other uses of the ocean.

(b) An evaluation will be made on an individual basis for each proposed dumping of material of the potential for effects on uses of the ocean for purposes other than material disposal. The factors to be considered in this evaluation include those stated in subpart D, but the evaluation of this subpart E will be based on the impact of the proposed dumping on specific uses of the ocean rather than on overall esthetic, recreational and economic values.

227.21 Uses considered.

An appraisal will be made of the nature and extent of existing and potential uses of the disposal site itself and of any areas which might reasonably be expected to be affected by the proposed dumping, and a quantitative and qualitative evaluation made, where feasible, of the impact of the proposed dumping on each use. The uses considered shall include, but not be limited to:

(a) Commercial fishing in open ocean areas;

(b) Commercial fishing in coastal areas;

(c) Commercial fishing in estuarine areas;

(d) Recreational fishing in open ocean areas;

(e) Recreational fishing in coastal areas;

(f) Recreational fishing in estuarine areas;

(g) Recreational use of shorelines and beaches;

(h) Commercial navigation;

(i) Recreational navigation;

(j) Actual or anticipated exploitation of living marine resources;

(k) Actual or anticipated exploitation of non-living resources, including without limitation, sand and gravel places and other mineral deposits, oil and gas exploration and development and offshore marine terminal or other structure development; and

(l) Scientific research and study.

227.22 Assessment of impact.

The assessment of impact on other uses of the ocean will consider both temporary and long-range effects within the state of the art, but particular emphasis will be placed on any irreversible or irretrievable commitment of resources that would result from the

proposed dumping.

Subpart F_Special Requirements for Interim Permits Under Section 102 of the Act

227.23 General requirement.

Each interim permit issued under section 102 of the Act will include a requirement for the development and implementation, as soon as practicable, of a plan which requires, at the discretion of the Administrator or Regional Administrator, as the case may be, either:

(a) Elimination of ocean disposal of the waste, or

(b) Bringing the waste into compliance with all the criteria for acceptable ocean disposal.

227.24 Contents of environmental assessment.

A plan developed pursuant to this subpart F must include an environmental assessment of the proposed action, including without limitation:

(a) Description of the proposed action;

(b) A thorough review of the actual need for dumping;

(c) Environmental impact of the proposed action;

(d) Adverse impacts which cannot be avoided should the proposal be implemented;

(e) Alternatives to the proposed action;

(f) Relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity;

(g) Irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented; and

(h) A discussion of problems and objections raised by other Federal, State and local agencies and by interested persons in the review process.

227.25 Contents of plans.

In addition to the environmental assessment required by 227.24, a plan developed pursuant to this subpart F must include a schedule for eliminating ocean dumping or bringing the wastes into compliance with the environmental impact criteria of subpart B, including without limitation, the following:

(a) If the waste is treated to the degree necessary to bring it into compliance with the ocean dumping criteria, the applicant should provide a description of the treatment and a scheduled program for treatment and a subsequent analysis of treated material to prove

the effectiveness of the process.

(b) If treatment cannot be effected by post-process techniques the applicant should, determining the offending constituents, examine his raw materials and his total process to determine the origin of the pollutant. If the offending constituents are found in the raw material the applicant should consider a new supplier and provide an analysis of the new material to prove compliance. Raw materials are to include all water used in the process. Water from municipal sources complying with drinking water standards is acceptable. Water from other sources such as private wells should be analyzed for contaminants. Water that has been used in the process should be considered for treatment and recycling as an additional source of process water.

(c) If offending constituents are a result of the process, the applicant should investigate and describe the source of the constituents. A report of this information will be submitted to EPA and the applicant will then submit a proposal describing possible alternatives to the existing process or processes and level of cost and effectiveness.

(d) If an acceptable alternative to ocean dumping or additional control technology is required, a schedule and documentation for implementation of the alternative or approved control process shall be submitted and shall include, without limitation:

(1) Engineering plan;

(2) Financing approval;

(3) Starting date for change;

(4) Completiodate;

(5) Operation starting date.

(e) If an acceptable alternative does not exist at the time the application is submitted, the applicant will submit an acceptable in-house research program or employ a competent research institution to study the problem. The program of research must be approved by the Administrator or Regional Administrator, as the case may be, before the initiation of the research. The schedule and documentation for implementation of a research program will include, without limitation:

(1) Approaches;

(2) Experimental design;

(3) Starting date;

(4) Reporting intervals;

(5) Proposed completion date;

(6) Date for submission of final -report.

227.26 Implementation of plans.

Implementation of each phase of a plan shall be initiated as soon as it -is approved by the Administrator or -Regional Administrator, as the case may be.

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Subpart G_Definitions

227.27 Limiting permissible con-cen-tra-tion (LPC).

(a) The limiting permissible concentration of the liquid phase of a material is:

(1) That concentration of a constituent which, after allowance for initial mixing as provided in 227.29, does not exceed applicable marine water quality criteria; or, when there are no applicable marine water quality criteria,

(2) That concentration of waste or dredged material in the receiving water which, after allowance for initial mixing, as specified in 227.29, will not exceed a toxicity threshold defined as 0.01 of a concentration shown to be acutely toxic to appropriate sensitive marine organisms in a bioassay carried out in accordance with approved EPA procedures.

(3) When there is reasonable scientific evidence on a specific waste material to justify the use of an application factor other than 0.01 as specified in paragraph (a)(2) of this section, such alternative application factor shall be used in calculating the LPC.

(b) The limiting permissible concentration of the suspended particulate and solid phases of a material means that concentration which will not cause unreasonable acute or chronic toxicity or other sublethal adverse effects based on bioassay results using appropriate sensitive marine organisms in the case of the suspended particulate phase, or appropriate sensitive benthic marine organisms in the case of the solid phase; and which will not cause accumulation of toxic materials in the human food chain. Suspended particulate phase bioaccumulation testing is not required. These bioassays are to be conducted in accordance with procedures approved by EPA, or, in the case of dredged material, approved by EPA and the Corps of Engineers.G51N

N\1\An implementation manual is being developed jointly by EPA and the Corps of Engineers, and announcement of the availability of the manual will be published in the Federal Register. Until this manual is available, interim guidance on the appropriate procedures can be obtained from the Marine Protection Branch, WH-548, Environmental Protection Agency, 401 M Street SW, Washington, DC 20460, or the Corps of Engineers, as the case may be.

(c) Appropriate sensitive marine organisms means at least one species each representative of phytoplankton or zooplankton, crustacean or mollusk, and fish species chosen from among the most sensitive species documented in the scientific literature or accepted by EPA as being reliable test organisms to determine the anticipated impact of the wastes on the ecosystem at the disposal site. Bioassays, except on phytoplankton or zooplankton, shall be run for a minimum of 96 hours under temperature, salinity, and dissolved oxygen conditions representing the extremes of environmental stress at the disposal site. Bioassays on phytoplankton or zooplankton may be run for shorter periods of time as appropriate for the organisms tested at the discretion of EPA, or EPA and the Corps of Engineers, as the case may be.

(d) Appropriate sensitive benthic marine organisms means at least one species each representing filter-feeding, deposit-feeding, and burrowing species chosen from among the most sensitive species accepted by EPA as being reliable test organisms to determine the anticipated impact on the site; provided, however, that until sufficient species are adequately tested and documented, interim guidance on appropriate

organisms available for use will be provided by the Administrator, Regional Administrator, or the District Engineer, as the case may be.

[42 FR 2476, Jan. 11, 1977; 43 FR 1071, Jan. 6, 1978, as amended at 59 FR 26572, May 20, 1994; 59 FR 52652, Oct. 18, 1994]

227.28 Release zone.

The release zone is the area swept out by the locus of points constantly 100 meters from the perimeter of the conveyance engaged in dumping activities, beginning at the first moment in which dumping is scheduled to occur and ending at the last moment in which dumping is scheduled to occur. No release zone shall exceed the total surface area of the dumpsite.

227.29 Initial mixing.

(a) Initial mixing is defined to be that dispersion or diffusion of liquid, suspended particulate, and solid phases of a waste which occurs within four hours after dumping. The limiting permissible concentration shall not be exceeded beyond the boundaries of the disposal site during initial mixing, and shall not be exceeded at any point in the marine environment after initial mixing. The maximum concentration of the liquid, suspended particulate, and solid phases of a dumped material after initial mixing shall be estimated by one of these methods, in order of preference:

(1) When field data on the proposed dumping are adequate to predict initial dispersion and diffusion of the waste, these shall be used, if necessary, in conjunction with an appropriate mathematical model acceptable to EPA or the District Engineer, as appropriate.

(2) When field data on the dispersion and diffusion of a waste of characteristics similar to that proposed for discharge are available, these shall be used in conjunction with an appropriate mathematical model acceptable to EPA or the District Engineer, as appropriate.

(3) When no field data are available, theoretical oceanic turbulent diffusion relationships may be applied to known characteristics of the waste and the disposal site.

(b) When no other means of estimation are feasible.

(1) The liquid and suspended particulate phases of the dumped waste may be assumed to be evenly distributed after four hours over a column of water bounded on the surface by the release zone and extending to the ocean floor, thermocline, or halocline if one exists, or to a depth of 20 meters, whichever is shallower, and

(2) The solid phase of a dumped waste may be assumed to settle rapidly to the ocean bottom and to be distributed evenly over the ocean bottom in an area equal to that of the release zone as defined in 227.28.

(c) When there is reasonable scientific evidence to demonstrate that other methods of estimating a reasonable allowance for initial mixing are appropriate for a specific material, such methods may be used with the concurrence of EPA after appropriate

scientific review.

227.30 High-level radioactive waste.

High-level radioactive waste means the aqueous waste resulting from the operation of the first cycle solvent extraction system, or equivalent, and the concentrated waste from subsequent extraction cycles, or equivalent, in a facility for reprocessing irradiated reactor fuels or irradiated fuel from nuclear power reactors.

227.31 Applicable marine water quality criteria.

Applicable marine water quality criteria means the criteria given for marine waters in the EPA publication ``Quality Criteria for Water'' as published in 1976 and amended by subsequent supplements or additions.

227.32 Liquid, suspended particulate, and solid phases of a material.

(a) For the purposes of these regulations, the liquid phase of a material, subject to the exclusions of paragraph (b) of this section, is the supernatant remaining after one hour undisturbed settling, after centrifugation and filtration through a 0.45 micron filter. The suspended particulate phase is the supernatant as obtained above prior to centrifugation and filtration. The solid phase includes all material settling to the bottom in one hour. Settling shall be conducted according to procedures approved by EPA.

(b) For dredged material, other material containing large proportions of insoluble matter, materials which may interact with ocean water to form insoluble matter or new toxic compounds, or materials which may release toxic compounds upon deposition, the Administrator, Regional Administrator, or the District Engineer, as the case may be, may require that the separation of liquid, suspended particulate, and solid phases of the material be performed upon a mixture of the waste with ocean water rather than on the material itself. In such cases the following procedures shall be used:

(1) For dredged material, the liq-uid phase is considered to be the centrifuged and 0.45 micron filtered supernatant remaining after one hour undisturbed settling of the mixture resulting from a vigorous 30-minute agitation of one part bottom sediment from the dredging site with four parts water (vol/vol) collected from the dredging site or from the disposal site, as appropriate for the type of dredging operation. The suspended particulate phase is the supernatant as obtained above prior to centrifugation and filtration. The solid phase is considered to be all material settling to the bottom within one hour. Settling shall be conducted by procedures approved by EPA and the Corps of Engineers.

(2) For other materials, the proportion of ocean water used shall be the minimum amount necessary to produce the anticipated effect (e.g., complete neutralization of an acid or alkaline waste) based on guidance provided by EPA on particular cases, or in accordance with approved EPA procedures. For such materials the liquid phase is the filtered and centrifuged supernatant resulting from the mixture after 30 minutes of vigorous shaking followed by undisturbed settling for one hour. The suspended particulate phase is the supernatant as obtained above prior to centrifugation and

filtration. The solid phase is the insoluble material settling to the bottom in that period.

Pt. 228

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PART 228_CRITERIA FOR THE MANAGEMENT OF DISPOSAL SITES FOR OCEAN DUMPING

Sec.

Authority: 33 U.S.C. 1412 and 1418.

Source: 42 FR 2482, Jan. 11, 1977, unless otherwise noted.

228.1 Applicability.

The criteria of this part 228 are established pursuant to section 102 of the Act and apply to the evaluation of proposed ocean dumping under title I of the Act. The criteria of this part 228 deal with the evaluation of the proposed dumping of material in ocean waters in relation to continuing requirements for effective management of ocean disposal sites to prevent unreasonable degradation of the marine environment from all wastes being dumped in the ocean. This part 228 is applicable to dredged material disposal sites only as specified in 228.4(e), 228.9, and 228.12.

228.2 Definitions.

(a) The term disposal site means an interim or finally approved and precise geographical area within which ocean dumping of wastes is permitted under conditions specified in permits issued under sections102 and 103 of the Act. Such sites are identified by boundaries established by (1) coordinates of latitude and longitude for each corner, or by (2) coordinates of latitude and longitude for the center point and a radius in nautical miles from that point. Boundary coordinates shall be identified as precisely as is warranted by the accuracy with which the site can be located with existing navigational aids or by the implantation of transponders, buoys or other means of marking -the site.

(b) The term baseline or trend assessment survey means the planned sampling or measurement of parameters at set stations or in set areas in and near disposal sites for a period of time sufficient to provide synoptic data for determining water quality, benthic, or biological conditions as a result of ocean disposal operations. The minimum requirements for such surveys are given in 228.13.

(c) The term disposal site evaluation study means the collection, analysis, and interpretation of all pertinent information available concerning an existing disposal site, including but not limited to, data and information from trend assessment surveys, monitoring surveys, special purpose surveys of other Federal agencies, public data archives, and social and economic studies and records of affected areas.

(d) The term disposal site designation study means the collection, analysis and interpretation of all available pertinent data and information on a proposed disposal site prior to use, including but not limited to, that from baseline surveys, special purpose surveys of other Federal agencies, public data archives, and social and economic studies and records of areas which would be affected by use of the proposed site.

(e) The term management authority means the EPA organizational entity assigned responsibility for implementing the management functions identified in 228.3.

(f) Statistical significance shall mean the statistical significance determined by using appropriate standard techniques of multivariate analysis with results interpreted at the 95 percent confidence level and based on data relating species which are present in sufficient numbers at control areas to permit a valid statistical comparison with the areas being tested.

(g) Valuable commercial and recreational species shall mean those species for which catch statistics are compiled on a routine basis by the Federal or State agency responsible for compiling such statistics for the general geographical area impacted, or which are under current study by such Federal or State agencies for potential development for commercial or recreational use.

(h) Normal ambient value means that concentration of a chemical species reasonably anticipated to be present in the water column, sediments, or biota in the absence of disposal activities at the disposal site in question.

228.3 Disposal site management responsibilities.

(a) Management of a site consists of regulating times, rates, and methods of disposal and quantities and types of materials disposed of;developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation and designation studies;

and recommending modifications in site use and/or designation (e.g., termination of use of the site for general use or for disposal of specific wastes).

(b) Each site, upon interim or final designation, will be assigned to either an EPA Regional office or to EPA Headquarters for management. These designations will be consistent with the delegation of authority in 220.4. The designated management authority is fully responsible for all aspects of the management of sites within the general requirements specified in 220.4 and this section. Specific requirements for meeting the management responsibilities assigned to the designated management authority for each site are outlined in 228.5 and 228.6.

[42 FR 2482, Jan. 11, 1977, as amended at 59 FR 61129, Nov. 29, 1994]

228.4 Procedures for designation of sites.

(a) General Permits. Geographical areas or regions within which materials may be dumped under a general permit will be published as part of the promulgation of each general permit.

(b) Special and Interim Permits. Areas where ocean dumping is permitted subject to the specific conditions of individual special or interim permits, will be designated by promulgation in this part 228, and such designation will be made based on environmental studies of each site, regions adjacent to the site, and on historical knowledge of the impact of waste disposal on areas similar to such sites in physical, chemical, and biological characteristics. All studies for the evaluation and potential selection of dumping sites will be conducted in accordance with the requirements of 228.5 and 228.6.The Administrator may, from time to time, designate specific locations for temporary use for disposal of small amounts of materials under a special permit only without disposal site designation studies when such materials satisfy the Criteria and the Administrator determines that the quantities to be disposed of at such sites will not result in significant impact on the environment. Such designations will be done by promulgation in this part 228, and will be for a specified period of time and for specified quantities of materials.

(c) Emergency Permits. Dumping sites for materials disposed of under an emergency permit will be specified by the Administrator as a permit condition and will be based on an individual appraisal of the characteristics of the waste and the safest means for its -disposal.

(d) Research Permits. Dumping sites for research permits will be determined by the nature of the proposed study. Dumping sites will be specified by the Administrator as a permit condition.

(e) Dredged Material Permits.

(1) Areas where ocean dumping of dredged material is permitted subject to the specific conditions of Dredged Material permits issued by the U.S. Army Corps of Engineers will be designated by EPA promulgation in this part 228, and such designation will be made based on environmental studies of each site, regions adjacent to the site, and on historical knowledge of the impact of dredged material disposal on areas similar to such sites in physical, chemical, and biological characteristics. All studies for the evaluation and potential selection of dredged material disposal sites will be conducted in accordance with the appropriate requirements of 228.5 and 228.6, except that:

(i) Baseline or trend assessment requirements may be developed on a case-by-case basis from the results of research, including that now in progress by the Corps of Engineers.

(ii) An environmental impact assessment for all sites within a particular geographic area may be prepared based on complete disposal site designation or evaluation studies on a typical site or sites in that area. In such cases, sufficient studies to demonstrate the generic similarity of all sites within such a geographic area will be conducted.

(2) In those cases where a recommended disposal site has not been designated by the Administrator, or where it is not feasible to utilize a recommended disposal site that has been designated by the Administrator, the District Engineer shall, in consultation with EPA, select a site in accordance with the requirements of 228.5 and 228.6(a). Concurrence by EPA in permits issued for the use of such site for the dumping of dredged material at the site will constitute EPA approval of the use of the site for dredged material disposal only.

(3) Sites designated for the ocean dumping of dredged material in accordance with the procedures of paragraph (e) (1) or (2) of this section shall be used only for the ocean dumping of dredged material under permits issued by the U.S. Army Corps of Engineers.

228.5 General criteria for the selection of sites.

(a) The dumping of materials into the ocean will be permitted only at sites or in areas selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries, and regions of heavy commercial or recreational navigation.

(b) Locations and boundaries of disposal sites will be so chosen that temporary perturbations in water quality or other environmental conditions during initial mixing caused by disposal operations anywhere within the site can be expected to be reduced to normal ambient seawater levels or to undetectable contaminant concentrations or effects before reaching any beach, shoreline, marine sanctuary, or known geographically limited fishery or shellfishery.

(c) If at any time during or after disposal site evaluation studies, it is determined that existing disposal sites presently approved on an interim basis for ocean dumping do not meet the criteria for site selection set forth in 228.5 through 228.6, the use of such sites will be terminated as soon as suitable alternate disposal sites can be designated.

(d) The sizes of ocean disposal sites will be limited in order to localize for identification and control any immediate adverse impacts and permit the implementation of effective monitoring and surveillance programs to prevent adverse long-range impacts. The size, configuration, and location of any disposal site will be determined as a part of the disposal site evaluation or designation study.

(e) EPA will, wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and other such sites that have been historically used.

228.6 Specific criteria for site selection.

(a) In the selection of disposal sites, in addition to other necessary or appropriate factors determined by the Administrator, the following factors will be considered:

(1) Geographical position, depth of water, bottom topography and distance from coast;

(2) Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or -juvenile phases;

(3) Location in relation to beaches and other amenity areas;

(4) Types and quantities of wastes proposed to be disposed of, and proposed methods of release, including methods of packing the waste, if any;

(5) Feasibility of surveillance and monitoring;

(6) Dispersal, horizontal transport and vertical mixing characteristics of the area, including prevailing current direction and velocity, if any;

(7) Existence and effects of current and previous discharges and dump-ing in the area (including cumulative -effects);

(8) Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance and other legitimate uses of the ocean;

(9) The existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys;

(10) Potentiality for the development or recruitment of nuisance species in the disposal site;

(11) Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.

(b) The results of a disposal site evaluation and/or designation study based on the criteria stated in paragraphs (b)(1) through (11) of this section will be presented in support of the site designation promulgation as an environmental assessment of the impact of the use of the site for disposal, and will be used in the preparation of an environmental impact statement for each site where such a statement is required by EPA policy. By publication of a notice in accordance with this part 228, an environmental impact statement, in draft form, will be made available for public comment not later than the time of publication of the site designation as proposed rulemaking, and a final EIS will be made available at the time of final rulemaking.

228.7 Regulation of disposal site use.

Where necessary, disposal site use will be regulated by setting limitations on times of dumping and rates of discharge, and establishing a disposal site monitoring program.

228.8 Limitations on times and rates of disposal.

Limitations as to time for and rates of dumping may be stated as part of the promulgation of site designation. The times and the quantities of permitted material disposal will be regulated by the EPA management authority so that the limits for the site as specified in the site designation are not exceeded. This will be accomplished by the denial of permits for the disposal of some materials, by the imposition of appropriate conditions on other permits and, if necessary, the designation of new disposal sites under the procedures of 228.4. In no case may the total volume of material disposed of at any site under special or interim permits cause the concentration of the total materials or any

constituent of any of the materials being disposed of at the site to exceed limits specified in the site designation.

228.9 Disposal site monitoring.

(a) The monitoring program, if deemed necessary by the Regional Administrator or the District Engineer, as appropriate, may include baseline or trend assessment surveys by EPA, NOAA, other Federal agencies, or contractors, special studies by permittees, and the analysis and interpretation of data from remote or automatic sampling and/or sensing devices. The primary purpose of the monitoring program is to evaluate the impact of disposal on the marine environment by referencing the monitoring results to a set of baseline conditions. When disposal sites are being used on a continuing basis, such programs may consist of the following components:

(1) Trend assessment surveys conducted at intervals frequent enough to assess the extent and trends of environmental impact. Until survey data or other information are adequate to show that changes in frequency or scope are necessary or desirable, trend assessment and baseline surveys should generally conform to the applicable requirements of 228.13. These surveys shall be the responsibility of the Federal government.

(2) Special studies conducted by the permittee to identify immediate and short-term impacts of disposal operations.

(b) These surveys may be supplemented, where feasible and useful, by data collected from the use of automatic sampling buoys, satellites or in situ platforms, and from experimental programs.

(c) EPA will require the full participation of permittees, and encourage the full participation of other Federal and State and local agencies in the development and implementation of disposal site monitoring programs. The monitoring and research programs presently supported by permittees may be incorporated into the overall monitoring program insofar as feasible.

228.10 Evaluating disposal impact.

(a) Impact of the disposal at each site designated under section 102 of the Act will be evaluated periodically and a report will be submitted as appropriate as part of the Annual Report to Congress. Such reports will be prepared by or under the direction of the EPA management authority for a specific site and will be based on an evaluation of all data available from baseline and trend assessment surveys, monitoring surveys, and other data pertinent to conditions at and near a site.

(b) The following types of effects, in addition to other necessary or appropriate considerations, will be considered in determining to what extent the marine environment has been impacted by materials disposed of at an ocean disposal site:

(1) Movement of materials into estuaries or marine sanctuaries, or onto oceanfront beaches, or shorelines;

(2) Movement of materials toward productive fishery or shellfishery areas;

(3) Absence from the disposal site of pollution-sensitive biota characteristic of the general area;

(4) Progressive, non-seasonal, changes in water quality or sediment composition at the disposal site, when these changes are attributable to materials disposed of at the site;

(5) Progressive, non-seasonal, changes in composition or numbers of pelagic, demersal, or benthic biota at or near the disposal site, when these changes can be attributed to the effects of materials disposed of at the site;

(6) Accumulation of material constituents (including without limitation, human pathogens) in marine biota at or near the site.

(c) The determination of the overall severity of disposal at the site on the marine environment, including without limitation, the disposal site and adjacent areas, will be based on the evaluation of the entire body of pertinent data using appropriate methods of data analysis for the quantity and type of data available. Impacts will be categorized according to the overall condition of the environment of the disposal site and adjacent areas based on the determination by the EPA management authority assessing the nature and extent of the effects identified in paragraph (b) of this section in addition to other necessary or appropriate considerations. The following categories shall be used:

(1) Impact Category I: The effects of activities at the disposal site shall be categorized in Impact Category I when one or more of the following conditions is present and can reasonably be attributed to ocean dumping activities;

(i) There is identifiable progressive movement or accumulation, in detectable concentrations above normal ambient values, of any waste or waste constituent from the disposal site within 12 nautical miles of any shoreline, marine sanctuary designated under title III of the Act, or critical area designated under section 102(c) of the Act; or

(ii) The biota, sediments, or water column of the disposal site, or of any area outside the disposal site where any waste or waste constituent from the disposal site is present in detectable concentrations above normal ambient values, are adversely affected by the toxicity of such waste or waste constituent to the extent that there are statistically significant decreases in the populations of valuable commercial or recreational species, or of specific species of biota essential to the propagation of such species, within the disposal site and such other area as compared to populations of the same organisms in comparable locations outside such site and area; or

(iii) Solid waste material disposed of at the site has accumulated at the site or in areas adjacent to it, to such an extent that major uses of the site or of adjacent areas are significantly impaired and the Federal or State agency responsible for regulating such uses certifies that such significant impairment has occurred and states in its certificate the basis for its determination of such impairment; or

(iv) There are adverse effects on the taste or odor of valuable commercial or recreational species as a result of disposal activities; or

(v) When any toxic waste, toxic waste constituent, or toxic byproduct of waste interaction, is consistently identified in toxic concentrations above normal ambient values outside the disposal site more than 4 hours after disposal.

(2) Impact Category II: The effects of activities at the disposal site which are not categorized in Impact Category I shall be categorized in Impact Category II.

228.11 Modification in disposal site use.

(a) Modifications in disposal site use which involve the withdrawal of designated disposal sites from use or permanent changes in the total specified quantities or types of wastes permitted to be discharged to a specific disposal site will be made through promulgation of an amendment to the disposal site designation set forth in this part 228 and will be based on the results of the analyses of impact described in 228.10 or upon changed circumstances concerning use of the site.

(b) Modifications in disposal site use promulgated pursuant to paragraph (a) of this section shall not automatically modify conditions of any outstanding permit issued pursuant to this subchapter H, and provided further that unless the EPA management authority for such site modifies, revokes or suspends such permit or any of the terms or conditions of such permit in accordance with the provisions of 232.2 based on the results of impact analyses as described in 228.10 or upon changed circumstances concerning use of the site, such permit will remain in force until its expiration date.

(c) When the EPA management authority determines that activities at a disposal site have placed the site in Impact Category I, the Administrator or the Regional Administrator, as the case may be, shall place such limitations on the use of the site as are necessary to reduce the impacts to acceptable levels.

(d) The determination of the Administrator as to whether to terminate or limit use of a disposal site will be based on the impact of disposal at the site itself and on the Criteria.

[42 FR 2482, Jan. 11, 1977; 43 FR 1071, Jan. 6, 1978]

228.12 [Reserved]

228.13 Guidelines for ocean disposal site baseline or trend assessment surveys under section 102 of the Act.

The purpose of a baseline or trend assessment survey is to determine the physical, chemical, geological, and biological structure of a proposed or existing disposal site at the time of the survey. A baseline or trend assessment survey is to be regarded as a comprehensive synoptic and representative picture of existing conditions; each such survey is to be planned as part -of a continual monitoring program through which changes in conditions at a disposal site can be documented and assessed. Surveys will be planned in coordination with the ongoing programs of NOAA and other Federal, State, local, or private agencies with missions in the marine environment. The field survey data collection phase of a disposal site evaluation or designation study shall be planned and conducted to obtain a body of information both representative of the site at the time of study and obtained by techniques reproducible in precision and accuracy in future studies. A full plan of study which will provide a record of sampling, analytical, and data reduction procedures must be developed, documented and approved by the EPA management authority. Plans for all surveys which will produce information to be used in the preparation of environmental impact statements will be approved by the Administrator or his designee. This plan of study also shall be incorporated as an appendix into a technical report on the study, together with notations describing deviations from the plan required in actual operations. Relative emphasis on individual aspects of the environment at each site will depend on the type of wastes disposed of at the site and the manner in which such wastes are likely to affect the local environment, but no major feature of the disposal site may be neglected. The observations made and the data obtained are to be based on the information necessary to evaluate the site for ocean dumping. The parameters measured will be those indicative, either directly or indirectly, of the immediate and

long-term impact of pollutants on the environment at the disposal site and adjacent land or water areas. An initial disposal site evaluation or designation study should provide an immediate baseline appraisal of a particular site, but it should also be regarded as the first of a series of studies to be continued as long as the site is used for waste disposal.

(a) Timing. Baseline or trend assessment surveys will be conducted with due regard for climatic and seasonal impact on stratification and other conditions in the upper layers of the water column. Where a choice of season is feasible, trend assessment surveys should be made during those months when pollutant accumulation within disposal sites is likely to be most severe, or when pollutant impact within disposal sites is likely to be most -noticeable.

(1) Where disposal sites are near large riverine inflows to the ocean, surveys will be done with due regard for the seasonal variation in river flow. In some cases several surveys at various river flows may be necessary before a site can be approved.

(2) When initial surveys show that seasonal variation is not significant and surveys at greater than seasonable intervals are adequate for characterizing a site, resurveys shall be carried out in climatic conditions as similar to those of the original surveys as possible, particularly in depths less than 200 meters.

(b) Duration. The actual duration of a field survey will depend upon the size and depth of the site, weather conditions during the survey, and the types of data to be collected. For example, for a survey of an area of 100 square miles on the continental shelf, including an average dump site and the region contiguous to it, an on-site operation would be scheduled for completion within one week of weather suitable for on-site operations. More on-site operating time may be scheduled for larger or highly complex sites.

(c) Numbers and locations of sampling stations. The numbers and locations of sampling stations will depend in part on the local bathymetry with minimum numbers of stations per site fixed as specified in the following sections. Where the bottom is smooth or evenly sloping, stations for water column measurements and benthic sampling and collections, other than trawls, shall be spaced throughout the survey area in a manner planned to provide maximum coverage of both the disposal site and contiguous control areas, considering known water movement characteristics. Where there are major irregularities in the bottom topography, such as canyons or gullies, or in the nature of the bottom, sampling stations for sediments and benthic communities shall be spaced to provide representative sampling of the major different features.

Sampling shall be done within the dump site itself and in the contiguous sea. Sufficient control stations outside a disposal site shall be occupied to characterize the control area environment at least as well as the disposal site itself. Where there are known persistent currents, sampling in contiguous areas shall include at least two stations downcurrent of the dump site, and at least two stations upcurrent of the site.

(d) Measurements in the water column at and near the dump site

(1) Water quality parameters measured. These shall include the major indicators of water quality, particularly those likely to be affected by the waste proposed to be dumped. Specifically included at all stations are measurements of temperature, dissolved oxygen, salinity, suspended solids, turbidity, total organic carbon, pH, inorganic nutrients, and chlorophyll a.

(i) At one station near the center of the disposal site, samples of the water column shall be taken for the analysis of the following parameters: Mercury, cadmium, copper, chromium, zinc, lead, arsenic, selenium, vanadium, beryllium, nickel, pesticides, petroleum hydrocarbons, and persistent organoha--logens. These samples shall be preserved for subsequent analysis by or under the direct supervision of EPA laboratories in accordance with the approved plan of study.

(ii) These parameters are the basic requirements for all sites. For the evaluation of any specific disposal site additional measurements may be required, depending on the present or intended use of the site. Additional parameters may be selected based on the materials likely to be in wastes dumped at the site, and on parameters likely to be affected by constituents of such wastes. Analysis for other constituents characteristic of wastes discharged to a particular disposal site, or of the impact of such wastes on water quality, will be included in accordance with the approved plan of study.

(2) Water quality sampling requirements. The number of samples collected from the water column should be sufficient to identify representative changes throughout the water column such as to avoid short-term impact due to disposal activities. The following key locations should be considered in selecting water column depths for sampling:

(i) Surface, below interference from surface waves;

(ii) Middle of the surface layer;

(iii) Bottom of the surface layer;

(iv) Middle of the thermocline or halocline, or both if present;

(v) Near the top of the stable layer beneath a thermocline or halocline;

(vi) Near the middle of a stable layer;

(vii) As near the bottom as feasible;

(viii) Near the center of any zone showing pronounced biological activity or lack thereof.

In very shallow waters where only a few of these would be pertinent, as a minimum, surface, mid-depth and bottom samples shall be taken, with samples at additional depths being added as indicated by local conditions. At disposal sites far enough away from the influence of major river inflows, ocean or coastal currents, or other features which might cause local perturbations in water chemistry, a minimum of 5 water chemistry stations should be occupied within the boundaries of a site. Additional stations should be added when the area to be covered in the survey is more than 20 square miles or when local perturbations in water chemistry may be expected because of the presence of one of the features mentioned above. In zones where such impacts are likely, stations shall be distributed so that at least 3 stations are occupied in the transition from one stable regime to another. Each water column chemistry station shall be replicated a minimum of 2 times during a survey except in waters over 200 meters deep.

(3) Water column biota. Sampling stations for the biota in the water column shall be as near as feasible to stations used for water quality; in addition at least two night-time stations in the disposal site and contiguous area are required. At each station vertical or oblique tows

with appropriately-meshed nets shall be used to assess the microzooplankton, the nekton, and the macrozooplankton, Towing times and distances shall be sufficient to obtain representative samples of organisms near water quality stations. Organisms shall be sorted and identified to taxonomic levels necessary to identify dominant organisms, sensitive or indicator organisms, and organism diversity. Tissue samples of representative species shall be analyzed for pesticides, persistent organohalogens, and heavy metals. Discrete water samples shall also be used to quantitatively assess the phytoplankton at each station.

These requirements are the minimum necessary in all cases. Where there are discontinuities present, such as thermoclines, haloclines, convergences, or upwelling, additional tows shall be made in each water mass as appropriate.

(e) Measurements of the benthic region

(1) Bottom sampling. Samples of the bottom shall be taken for both sediment composition and structure, and to determine the nature and numbers of benthic biota.

(i) At each station sampling may consist of core samples, grab samples, dredge samples, trawls, and bottom photography or television, where available and feasible, depending on the nature of the bottom and the type of disposal site. Each type of sampling shall be replicated sufficiently to obtain a representative set of samples. The minimum numbers of replicates of successful samples at each continental shelf station for each type of device mentioned above are as follows:

c2,L0,tp0,p0,6/7,s50,xs42
Cores 3.
GrabsD5.
Dredge 3.
Trawl 20-min. tow.

Lesser numbers of replicates may be allowed in water deeper than 200 meters, at those sites where pollution impacts on the bottom are unlikely in the judgment of the EPA management authority.

(ii) Selection of bottom stations will be based to a large extent on the bottom topography and hydrography as determined by the bathymetric survey. On the continental shelf, where the bottom has no significant discontinuities, a bottom station density of at least three times the water column stations is recommended, depending on the type of site being evaluated. Where there are significant differences in bottom topography, additional stations shall be occupied near the discontinuity and on each side of it. Beyond the continental shelf, lesser densities may be used.

(2) Bathymetric survey. Sufficient tracklines shall be run to develop complete bottom coverage of bathymetry with reasonable assurance of accurate coverage of bottom topography, with trackline direction and spacing as close as available control allows. The site itself is to be developed at the greatest density possible, with data to be collected to a suitable distance about the site as is required to identify major changes in bathymetry which might affect the site. Specifications for each bathymetric survey will vary, depending on control, bottom complexity, depths, equipment, and map scale required. In most cases, a bathymetric map at a scale of 1:25,000 to 1:10,000 will be required, with a minimum of 1-5 meter contour

interval except in very flat areas. When the foregoing bathymetric detail is available from recent surveys of the disposal site, bathymetry during a baseline or trend assessment survey may be limited to sonar profiles of bathymetry on transects between sampling stations.

(3) Nature of bottom. The size distribution of sediments, mineral character and chemical quality of the bottom will be determined to a depth appropriate for the type of bottom. The following parameters will be measured at all stations: Particle size distribution, major mineral constituents, texture, settling rate, and organic carbon.

(i) At several stations near the center of the disposal site, samples of sediments shall be taken for the analysis of the following parameters: Mercury, cadmium, copper, chromium, zinc, lead, arsenic, selenium, vanadium, beryllium, nickel, pesticides, persistent organohalogens, and petroleum hydrocarbons. These samples shall be preserved for subsequent analysis by or under the direct supervision of EPA laboratories in accordance with the approved plan of study.

(ii) These parameters are the basic requirements for all sites. For the evaluation of any specific disposal site additional measurements may be required, depending on the present or intended use of the site. Additional parameters may be selected based on the materials likely to be in wastes dumped at the site, and on parameters likely to be affected by constituents of such wastes. Such additional parameters will be selected by the EPA management authority.

(4) Benthic biota. This shall consist of a quantitative and qualitative evaluation of benthic communities including macroinfauna and macroepifauna, meiobenthos, and microbenthos, and should include an appraisal, based on existing information, of the sensitivity of indigenous species to the waste proposed to be discharged. Organisms, shall be sorted, and identified to taxonomic levels necessary to identify dominant organisms, sensitive or indicator organisms, and organism diversity. Tissue samples of the following types of organisms shall be analyzed for persistent organohalogens, pesticides, and heavy metals:

(i) A predominant species of demersal fish;

(ii) The most abundant macro-in-faunal species; and

(iii) A dominant epifaunal species, with particular preference for a species of economic importance.

(f) Other measurements_(1) Hydrodynamic features. The direction and speed of water movement shall be characterized at levels appropriate for the site and type of waste to be dumped. Where depths and climatic conditions are great enough for a thermocline or halocline to exist, the relationship of water movement to such a feature shall be characterized.

(i) Current measurements. When current meters are used as the primary source of hydrodynamic data, at least 4 current meter stations with at least 3 meters at depths appropriate for the observed or expected discontinuities in the water column should be operated for as long as possible during the survey. Where feasible, current meters should be deployed at the initiation of the survey and recovered after its completion. Stations should be at least a mile apart, and should be placed along the long axis of the dumping site. For dumping sites more than 10 miles along the long axis, one current meter station every 5 miles should be operated. Where there are

discontinuities in surface layers, e.g., due to land runoff, stations should be operated in each water mass.

(ii) Water mass movement. Acceptable methods include: dye, drogues, surface drifters, side scan sonar, bottom drifters, and bottom photography or television. When such techniques are the primary source of hydrodynamic data, coverage should be such that all significant hydrodynamic features likely to affect waste movement are measured.

(2) Sea state. Observations of sea state and of standard meteorological parameters shall be made at 8-hour intervals.

(3) Surface phenomena. Observations shall be made of oil slicks, floating materials, and other visible evidence of pollution; and, where possible, collections of floating materials shall be made.

(g) Survey procedures and techniques. Techniques and procedures used for sampling and analysis shall represent the state-of-the-art in oceanographic survey and analytical practice. Survey plans shall specify the methods to be used and will be subject to approval by EPA.

(h) Quality assurance. The EPA management authority may require that certain samples be submitted on a routine basis to EPA laboratories for analysis as well as being analyzed by the surveyor, and that EPA personnel participate in some field surveys.

228.14 Dumping sites designated on an interim basis.

(a)(1) The sites identified in this section are approved for dumping the indicated materials on an interim basis pending completion of baseline or trend assessment surveys and final designation or termination of use. Unless otherwise specifically provided in the entry for a particular site, such interim use sites are available indefinitely pending completion of the present studies and determination of the need for the continuing use of these sites, the completion of any necessary studies, and evaluation of their suitability. Designation studies for particular sites within this group will begin as soon as feasible after the completion of nearby sites presently being studied. The sizes and use specifications are based on historical usage and do not necessarily meet the criteria stated in this part.

(2) Unless otherwise specifically noted, site management authority for each site set forth in this section is delegated to the EPA Regional office under which the site entry is listed.

(3) Unless otherwise specifically noted, all ocean dumping site coordinates are based upon the North American Datum of 1927.

Suivent une série de sites approuvés par l'EPA (dont voicie un exemple)

(5) Hilo, HI.

(i) Location: (center point): Latitude_19□48□30□□N.;
Longitude_154□58□30□□W.

(ii) Size: Circular with a radius of 920 meters.

(iii) Depth: Ranges from 330 to 340 meters.

(iv) Primary Use: Dredged material.

(v) Period of Use: Continuing use.

(vi) Restriction: Disposal shall be limited to dredged material.

(...)

[59 FR 61130, Nov. 29, 1994, as amended at 60 FR 2699, Jan. 11, 1995; 60 FR 25148, May 11, 1995]

This document was translated on 21.05.96.

By:NVI-DataNet

PART 230_SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OF DISPOSAL SITES FOR DREDGED OR FILL MATERIAL

Subpart A_General

Sec.

Subpart B_Compliance With the Guidelines

Subpart C_Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Subpart D_Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

230.77 Other actions.

Subpart I_Planning To Shorten Permit Processing Time

230.80 Advanced identification of disposal areas.

Authority: Secs. 404(b) and 501(a) of the Clean Water Act of 1977 (33 U.S.C. 1344(b) and 1361(a)).

Source: 45 FR 85344, Dec. 24, 1980, unless otherwise noted.

Subpart A_General

230.1 Purpose and policy.

(a) The purpose of these Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material.

(b) Congress has expressed a number of policies in the Clean Water Act. These Guidelines are intended to be consistent with and to implement those policies.

(c) Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.

(d) From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources.

230.2 Applicability.

(a) These Guidelines have been developed by the Administrator of the Environmental Protection Agency in conjunction with the Secretary of the Army acting through the Chief of Engineers under section 404(b)(1) of the Clean Water Act (33 U.S.C. 1344). The Guidelines are applicable to the specification of disposal sites for discharges of dredged or fill material into waters of the United States. Sites may be specified through:

(1) The regulatory program of the U.S. Army Corps of Engineers under sections 404(a) and (e) of the Act (see 33 CFR Parts 320, 323 and 325);

(2) The civil works program of the U.S. Army Corps of Engineers (see 33 CFR 209.145 and section 150 of Pub. L. 94-587, Water Resources Development Act of 1976);

(3) Permit programs of States approved by the Administrator of the Environmental Protection Agency in -accordance with section 404(g) and (h) -of the Act (see 40 CFR parts 122, 123 -and 124);

(4) Statewide dredged or fill material regulatory programs with best management practices approved under section 208(b)(4)(B) and (C) of the Act (see 40 CFR 35.1560);

(5) Federal construction projects which meet criteria specified in section 404(r) of the Act.

(b) These Guidelines will be applied in the review of proposed discharges of dredged or fill material into navigable waters which lie inside the baseline from which the territorial sea is measured, and the discharge of fill material into the territorial sea, pursuant to the procedures referred to in paragraphs (a)(1) and (2) of this section. The discharge of dredged material into the territorial sea is governed by the Marine Protection, Research, and Sanctuaries Act of 1972, Pub. L. 92-532, and regulations and criteria issued pursuant thereto (40 CFR parts 220 through 228).

(c) Guidance on interpreting and implementing these Guidelines may be prepared jointly by EPA and the Corps at the national or regional level from time to time. No modifications to the basic application, meaning, or intent of these Guidelines will be made without rulemaking by the Administrator under the Administrative Procedure Act (5 U.S.C. 551 et seq.).

230.3 Definitions.

For purposes of this part, the following terms shall have the meanings indicated:

(a) The term Act means the Clean Water Act (also known as the Federal Water Pollution Control Act or FWPCA) Pub. L. 92-500, as amended by Pub. L. 95-217, 33 U.S.C. 1251, et seq.

(b) The term adjacent means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are ``adjacent wetlands."

(c) The terms aquatic environment and aquatic ecosystem mean waters of the United States, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.

(d) The term carrier of contaminant means dredged or fill material that contains contaminants.

(e) The term contaminant means a chemical or biological substance in a form that can be incorporated into, onto or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment, and includes but is not limited to the substances on -the 307(a)(1) list of toxic pollutants -promulgated on January 31, 1978 (43 -FR 4109).

(f)_(g) [Reserved]

(h) The term discharge point means the point within the disposal site at which the dredged or fill material is released.

(i) The term disposal site means that portion of the ``waters of the United States'' where specific disposal activities are permitted and consist of a bottom surface area and any overlying volume of water. In the case of wetlands on which surface water is not present, the disposal site consists of the wetland surface area.

(j) [Reserved]

(k) The term extraction site means the place from which the dredged or fill material proposed for discharge is to be removed.

(l) [Reserved]

(m) The term mixing zone means a limited volume of water serving as a zone of initial dilution in the immediate vicinity of a discharge point where receiving water quality may not meet quality standards or other requirements otherwise applicable to the receiving water. The mixing zone should be considered as a place where wastes and water mix and not as a place where effluents are treated.

(n) The term permitting authority means the District Engineer of the U.S. Army Corps of Engineers or such other individual as may be designated by the Secretary of the Army to issue or deny permits under section 404 of the Act; or the State Director of a permit program approved by EPA under section 404(g) and section 404(h) or his delegated representative.

(o) The term pollutant means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials not covered by the Atomic Energy Act, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. The legislative history of the Act reflects that ``radioactive materials'' as included within the definition of ``pollutant'' in section 502 of the Act means only radioactive materials which are not encompassed in the definition of source, byproduct, or special nuclear materials as defined by the Atomic Energy Act of 1954, as amended, and regulated under the Atomic Energy Act. Examples of radioactive materials not covered by the Atomic Energy Act and, therefore, included within the term ``pollutant'', are radium and accelerator produced isotopes. See Train v. Colorado Public Interest Research Group, Inc., 426 U.S. 1 (1976).

(p) The term pollution means the man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of an aquatic ecosystem.

(q) The term practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

(q-1) Special aquatic sites means those sites identified in subpart E. They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively

contributing to the general overall environmental health or vitality of the entire ecosystem of a region. (See 230.10(a)(3))

(r) The term territorial sea means the belt of the sea measured from the baseline as determined in accordance with the Convention on the Territorial Sea and the Contiguous Zone and extending seaward a distance of three miles.

(s) The term waters of the United States means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under this definition;

(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(t) The term wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and

similar areas.

[45 FR 85344, Dec. 24, 1980, as amended at 58 FR 45037, Aug. 25, 1993]

230.4 Organization.

The Guidelines are divided into eight subparts. Subpart A presents those provisions of general applicability, such as purpose and definitions. Subpart B establishes the four conditions which must be satisfied in order to make a finding that a proposed discharge of dredged or fill material complies with the Guidelines. Section 230.11 of subpart B, sets forth factual determinations which are to be considered in determining whether or not a proposed discharge satisfies the subpart B conditions of compliance. Subpart C describes the physical and chemical components of a site and provides guidance as to how proposed discharges of dredged or fill material may affect these components. Subparts D through F detail the special characteristics of particular aquatic ecosystems in terms of their values, and the possible loss of these values due to discharges of dredged or fill material. Subpart G prescribes a number of physical, chemical, and biological evaluations and testing procedures to be used in reaching the required factual determinations. Subpart H details the means to prevent or mimimize adverse effects. Subpart I concerns advanced identification of disposal areas.

230.5 General procedures to be followed.

In evaluating whether a particular discharge site may be specified, the permitting authority should use these Guidelines in the following sequence:

(a) In order to obtain an overview of the principal regulatory provisions of the Guidelines, review the restrictions on discharge in 230.10(a) through (d), the measures to mimimize adverse impact of subpart H, and the required factual determinations of 230.11.

(b) Determine if a General permit (230.7) is applicable; if so, the applicant needs merely to comply with its terms, and no further action by the permitting authority is necessary. Special conditions for evaluation of proposed General permits are contained in 230.7. If the discharge is not covered by a General permit:

(c) Examine practicable alternatives to the proposed discharge, that is, not discharging into the waters of the U.S. or discharging into an alternative aquatic site with potentially less damaging consequences (230.10(a)).

(d) Delineate the candidate disposal site consistent with the criteria and evaluations of 230.11(f).

(e) Evaluate the various physical and chemical components which characterize the non-living environment of the candidate site, the substrate and the water including its dynamic characteristics (subpart C).

(f) Identify and evaluate any special or critical characteristics of the candidate disposal site, and surrounding areas which might be affected by use of such site, related to their living communities or human uses (subparts D, E, and F).

(g) Review Factual Determinations in 230.11 to determine whether the information in the

project file is sufficient to provide the documentation required by 230.11 or to perform the pre-testing evaluation described in 230.60, or other information is necessary.

(h) Evaluate the material to be discharged to determine the possibility of chemical contamination or physical incompatibility of the material to be discharged (230.60).

(i) If there is a reasonable probability of chemical contamination, conduct the appropriate tests according to the section on Evaluation and Testing (230.61).

(j) Identify appropriate and practicable changes to the project plan to minimize the environmental impact of the discharge, based upon the specialized methods of minimization of impacts in subpart H.

(k) Make and document Factual Determinations in 230.11.

(l) Make and document Findings of Compliance (230.12) by comparing Factual Determinations with the requirements for discharge of 230.10.

This outline of the steps to follow in using the Guidelines is simplified for purposes of illustration. The actual process followed may be iterative, with the results of one step leading to a reexamination of previous steps. The permitting authority must address all of the relevant provisions of the Guidelines in reaching a Finding of Compliance in an individual case.

230.6 Adaptability.

(a) The manner in which these Guidelines are used depends on the physical, biological, and chemical nature of the proposed extraction site, the material to be discharged, and the candidate disposal site, including any other important components of the ecosystem being evaluated. Documentation to demonstrate knowledge about the extraction site, materials to be extracted, and the candidate disposal site is an essential component of guideline application. These Guidelines allow evaluation and documentation for a variety of activities, ranging from those with large, complex impacts on the aquatic environment to those for which the impact is likely to be innocuous. It is unlikely that the Guidelines will apply in their entirety to any one activity, no matter how complex. It is anticipated that substantial numbers of permit applications will be for minor, routine activities that have little, if any, potential for significant degradation of the aquatic environment. It generally is not intended or expected that extensive testing, evaluation or analysis will be needed to make findings of compliance in such routine cases. Where the conditions for General permits are met, and where numerous applications for similar activities are likely, the use of General permits will eliminate repetitive evaluation and documentation for individual discharges.

(b) The Guidelines user, including the agency or agencies responsible for implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity.

(c) An essential part of the evaluation process involves making determinations as to the relevance of any portion(s) of the Guidelines and conducting further evaluation only as

needed. However, where portions of the Guidelines review procedure are ``short form'' evaluations, there still must be sufficient information (including consideration of both individual and cumulative impacts) to support the decision of whether to specify the site for disposal of dredged or fill material and to support the decision to curtail or abbreviate the evaluation process. The presumption against the discharge in 230.1 applies to this decision-making.

(d) In the case of activities covered by General permits or section 208(b)(4)(B) and (C) Best Management Practices, the analysis and documentation required by the Guidelines will be performed at the time of General permit issuance or section 208(b)(4)(B) and (C) Best Management Practices promulgation and will not be repeated when activities are conducted under a General permit or section 208(b)(4)(B) and (C) Best Management Practices control. These Guidelines do not require reporting or formal written communication at the time individual activities are initiated under a General permit or section 208(b)(4)(B) and (C) Best Management Practices. However, a particular General permit may require appropriate reporting.

230.7 General permits.

(a) Conditions for the issuance of General permits. A General permit for a category of activities involving the discharge of dredged or fill material complies with the Guidelines if it meets the applicable restrictions on the discharge in 230.10 and if the permitting authority determines that:

(1) The activities in such category are similar in nature and similar in their impact upon water quality and the aquatic environment;

(2) The activities in such category will have only minimal adverse effects when performed separately; and

(3) The activities in such category will have only minimal cumulative adverse effects on water quality and the aquatic environment.

(b) Evaluation process. To reach the determinations required in paragraph (a) of this section, the permitting authority shall set forth in writing an evaluation of the potential individual and cumulative impacts of the category of activities to be regulated under the General permit. While some of the information necessary for this evaluation can be obtained from potential permittees and others through the proposal of General permits for public review, the evaluation must be completed before any General permit is issued, and the results must be published with the final permit.

(1) This evaluation shall be based upon consideration of the prohibitions listed in 230.10(b) and the factors listed in 230.10(c), and shall include documented information supporting each factual determination in 230.11 of the Guidelines (consideration of alternatives in 230.10(a) are not directly applicable to General permits);

(2) The evaluation shall include a precise description of the activities to be permitted under the General permit, explaining why they are sufficiently similar in nature and in environmental impact to warrant regulation under a single General permit based on subparts C through F of the Guidelines. Allowable differences between activities which

will be regulated under the same General permit shall be specified. Activities otherwise similar in nature may differ in environmental impact due to their location in or near ecologically sensitive areas, areas with unique chemical or physical characteristics, areas containing concentrations of toxic substances, or areas regulated for specific human uses or by specific land or water management plans (e.g., areas regulated under an approved Coastal Zone Management Plan). If there are specific geographic areas within the purview of a proposed General permit (called a draft General permit under a State 404 program), which are more appropriately regulated by individual permit due to the considerations cited in this paragraph, they shall be clearly delineated in the evaluation and excluded from the permit. In addition, the permitting authority may require an individual permit for any proposed activity under a General permit where the nature or location of the activity makes an individual permit more appropriate.

(3) To predict cumulative effects, the evaluation shall include the number of individual discharge activities likely to be regulated under a General permit until its expiration, including repetitions of individual discharge activities at a single location.

Subpart B_Compliance With the Guidelines

230.10 Restrictions on discharge. Note: Because other laws may apply to particular discharges and because the Corps of Engineers or State 404 agency may have additional procedural and substantive requirements, a discharge complying with the requirement of these Guidelines will not automatically receive a permit.

Although all requirements in 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystems posed by specific dredged or fill material discharge activities.

(a) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose -of the proposed activity may be con-sidered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not ``water dependent''), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

(4) For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under this paragraph or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.

(5) To the extent that practicable alternatives have been identified and evaluated under

a Coastal Zone Management program, a section 208 program, or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines. Where such evaluation is less complete than that contemplated under this subsection, it must be supplemented accordingly.

(b) No discharge of dredged or fill material shall be permitted if it:

(1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standard;

(2) Violates any applicable toxic effluent standard or prohibition under section 307 of the Act;

(3) Jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce, as appropriate, to be a critical habitat under the Endangered Species Act of 1973, as amended. If an exemption has been granted by the Endangered Species Committee, the terms of such exemption shall apply in lieu of this subparagraph;

(4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under title III of the Marine Protection, Research, and Sanctuaries Act -of 1972.

(c) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests required by subparts B and G, after consideration of subparts C through F, with special emphasis on the persistence and permanence of the effects outlined in those subparts. Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

(1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

(2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or

(4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

(d) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. Subpart H identifies such possible steps.

230.11 Factual determinations.

The permitting authority shall determine in writing the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment in light of subparts C through F. Such factual determinations shall be used in 230.12 in making findings of compliance or non-compliance with the restrictions on discharge in 230.10. The evaluation and testing procedures described in 230.60 and 230.61 of subpart G shall be used as necessary to make, and shall be described in, such determination. The determinations of effects of each proposed discharge shall include the following:

(a) Physical substrate determinations. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics of the substrate at the proposed disposal site. Consideration shall be given to the similarity in particle size, shape, and degree of compaction of the material proposed for discharge and the material constituting the substrate at the disposal site, and any potential changes in substrate elevation and bottom contours, including changes outside of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharged material. The duration and physical extent of substrate changes shall also be considered. The possible loss of environmental values (230.20) and actions to minimize impact (subpart H) shall also be considered in making these determinations. Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current patterns, water circulation, wind and wave action, and other physical factors that may af-fect the movement of the discharged -material.

(b) Water circulation, fluctuation, and salinity determinations. Determine the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation. Consideration shall be given to water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, and eutrophication plus other appropriate characteristics. Consideration shall also be given to the potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime. Additional consideration of the possible loss of environmental values (230.23 through 230.25) and actions to minimize impacts (subpart H), shall be used in making these determinations. Potential significant effects on the current patterns, water circulation, normal water fluctuation and salinity shall be evaluated on the basis of the proposed method, volume, location, and rate of discharge.

(c) Suspended particulate/turbidity determinations. Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, in terms of potential changes in the kinds and concentrations of suspended particulate/turbidity in the vicinity of the disposal site. Consideration shall be given to the grain size of the material proposed for discharge, the shape and size of the plume of suspended

particulates, the duration of the discharge and resulting plume and whether or not the potential changes will cause violations of applicable water quality standards. Consideration should also be given to the possible loss of environmental values (230.21) and to actions for minimizing impacts (subpart H). Consideration shall include the proposed method, volume, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors on the movement of suspended -par-ticulates.

(d) Contaminant determinations. Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants.

(e) Aquatic ecosystem and organism determinations. Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities. Possible loss of environmental values (230.31), and actions to minimize impacts (subpart H) shall be examined. Tests as described in 230.61 (Evaluation and Testing), may be required to provide information on the effect of the discharge material on communities or populations of organisms expected to be exposed to it.

(f) Proposed disposal site determinations. (1) Each disposal site shall be specified through the application of these Guidelines. The mixing zone shall be confined to the smallest practicable zone within each specified disposal site that is consistent with the type of dispersion determined to be appropriate by the application of these Guidelines. In a few special cases under unique environmental conditions, where there is adequate justification to show that widespread dispersion by natural means will result in no significantly adverse environmental effects, the discharged material may be intended to be spread naturally in a very thin layer over a large area of the substrate rather than be contained within the disposal site.

(2) The permitting authority and the Regional Administrator shall consider the following factors in determining the acceptability of a proposed mixing zone:

(i) Depth of water at the disposal site;

(ii) Current velocity, direction, and variability at the disposal site;

(iii) Degree of turbulence;

(iv) Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site;

(v) Discharge vessel speed and direction, if appropriate;

(vi) Rate of discharge;

(vii) Ambient concentration of constituents of interest;

(viii) Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities;

(ix) Number of discharge actions per unit of time;

(x) Other factors of the disposal site that affect the rates and patterns of mixing.

(g) Determination of cumulative effects on the aquatic ecosystem. (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

(2) Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.

(h) Determination of secondary effects on the aquatic ecosystem. (1) Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities.

(2) Some examples of secondary effects on an aquatic ecosystem are fluctuating water levels in an impoundment and downstream associated with the operation of a dam, septic tank leaching and surface runoff from residential or commercial developments on fill, and leachate and runoff from a sanitary landfill located in waters of the U.S. Activities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands.

230.12 Findings of compliance or non-compliance with the restrictions on discharge.

(a) On the basis of these Guidelines (subparts C through G) the proposed disposal sites for the discharge of dredged or fill material must be:

(1) Specified as complying with the requirements of these Guidelines; or

(2) Specified as complying with the requirements of these Guidelines with the inclusion of appropriate and practicable discharge conditions (see subpart H) to minimize pollution or adverse effects to the affected aquatic ecosystems; or

(3) Specified as failing to comply with the requirements of these Guidelines where:

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or

(ii) The proposed discharge will result in significant degradation of the aquatic ecosystem under 230.10(b) or (c); or

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or

(iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

(b) Findings under this section shall be set forth in writing by the permitting authority for each proposed discharge and made available to the permit applicant. These findings shall include the factual determinations required by 230.11, and a brief explanation of any adaptation of these Guidelines to the activity under consideration. In the case of a General permit, such findings shall be prepared at the time of issuance of that permit rather than for each subsequent discharge under the authority of that permit.

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Subpart C_Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Note: The effects described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

230.20 Substrate.

(a) The substrate of the aquatic ecosystem underlies open waters of the United States and constitutes the surface of wetlands. It consists of organic and inorganic solid materials and includes water and other liquids or gases that fill the spaces between solid -particles.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can result in varying degrees of change in the complex physical, chemical, and biological characteristics of the substrate. Discharges which alter substrate elevation or contours can result in changes in water circulation, depth, current pattern, water fluctuation and water temperature. Discharges may adversely affect bottom-dwelling organisms at the site by smothering immobile forms or forcing mobile forms to migrate. Benthic forms present prior to a discharge are unlikely to recolonize on the discharged material if it is very dissimilar from that of the discharge site. Erosion, slumping, or lateral displacement of surrounding bottom of such deposits can adversely affect areas of the substrate outside the perimeters of the disposal site by changing or destroying habitat. The bulk and composition of the discharged material and the location, method, and timing of discharges may all influence the degree of impact on the substrate.

230.21 Suspended particulates/turbidity.

(a) Suspended particulates in the aquatic ecosystem consist of fine-grained mineral particles, usually smaller than silt, and organic particles. Suspended particulates may enter water bodies as a result of land runoff, flooding, vegetative and planktonic breakdown, resuspension of bottom sediments, and man's activities including dredging and filling. Particulates may remain suspended in the water column for variable periods of time as a result of such factors as agitation of the water mass, particulate specific gravity, particle shape, and physical and chemical properties of particle surfaces.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can result in greatly elevated levels of suspended particulates in the water column for varying lengths of time. These new levels may reduce light penetration and lower the rate of photosynthesis and the primary productivity of an aquatic area if they last long enough. Sight-dependent species may suffer reduced feeding ability leading to limited growth and lowered resistance to disease if high levels of suspended particulates persist. The biological and the chemical content of the suspended material may react with the dissolved oxygen in the water, which can result in oxygen depletion. Toxic metals and organics, pathogens, and viruses absorbed or adsorbed to fine-grained particulates in the material may become biologically available to organisms either in the water column or on the substrate. Significant increases in suspended particulate levels create turbid plumes which are highly visible and aesthetically displeasing. The extent and persistence of these adverse impacts caused by discharges depend upon the relative increase in suspended particulates above the amount occurring naturally, the

duration of the higher levels, the current patterns, water level, and fluctuations present when such discharges occur, the volume, rate, and duration of the discharge, particulate deposition, and the seasonal timing of the discharge.

230.22 Water.

(a) Water is the part of the aquatic ecosystem in which organic and inorganic constituents are dissolved and suspended. It constitutes part of the liquid phase and is contained by the substrate. Water forms part of a dynamic aquatic life-supporting system. Water clarity, nutrients and chemical content, physical and biological content, dissolved gas levels, pH, and temperature contribute to its life-sustaining capabilities.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can change the chemistry and the physical characteristics of the receiving water at a disposal site through the introduction of chemical constituents in suspended or dissolved form. Changes in the clarity, color, odor, and taste of water and the addition of contaminants can reduce or eliminate the suitability of water bodies for populations of aquatic organisms, and for human consumption, recreation, and aesthetics. The introduction of nutrients or organic material to the water column as a result of the discharge can lead to a high biochemical oxygen demand (BOD), which in turn can lead to reduced dissolved oxygen, thereby potentially affecting the survival of many aquatic organisms. Increases in nutrients can favor one group of organisms such as algae to the detriment of other more desirable types such as submerged aquatic vegetation, potentially causing adverse health effects, objectionable tastes and odors, and other problems.

230.23 Current patterns and water circulation.

(a) Current patterns and water circulation are the physical movements of water in the aquatic ecosystem. Currents and circulation respond to natural forces as modified by basin shape and cover, physical and chemical characteristics of water strata and masses, and energy dissipating factors.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can modify current patterns and water circulation by obstructing flow, changing the direction or velocity of water flow, changing the direction or velocity of water flow and circulation, or otherwise changing the dimensions of a water body. As a result, adverse changes can occur in: Location, structure, and dynamics of aquatic communities; shoreline and substrate erosion and depositon rates; the deposition of suspended particulates; the rate and extent of mixing of dissolved and suspended components of the water body; and water stratification.

230.24 Normal water fluctuations.

(a) Normal water fluctuations in a natural aquatic system consist of daily, seasonal, and annual tidal and flood fluctuations in water level. Biological and physical components of such a system are either attuned to or characterized by these periodic water fluctuations.

(b) Possible loss of environmental characteristics and values: The discharge of dredged or fill material can alter the normal water-level fluctuation pattern of an area, resulting in prolonged periods of inundation, exaggerated extremes of high and low water, or a static, nonfluctuating water level. Such water level modifications may change salinity patterns, alter erosion or sedimentation rates, aggravate water temperature extremes, and upset the nutrient and dissolved oxygen balance of the aquatic ecosystem. In addition, these modifications can alter or destroy communities and populations of aquatic animals and vegetation, induce populations of nuisance organisms, modify habitat, reduce food supplies, restrict movement of aquatic fauna, destroy spawning areas, and change adjacent, upstream, and downstream areas.

230.25 Salinity gradients.

(a) Salinity gradients form where salt water from the ocean meets and mixes with fresh water from land.

(b) Possible loss of environmental characteristics and values: Obstructions which divert or restrict flow of either fresh or salt water may change existing salinity gradients. For example, partial blocking of the entrance to an estuary or river mouth that significantly restricts the movement of the salt water into and out of that area can effectively lower the volume of salt water available for mixing within that estuary. The downstream migration of the salinity gradient can occur, displacing the maximum sedimentation zone and requiring salinity-dependent aquatic biota to adjust to the new conditions, move to new locations if possible, or perish. In the freshwater zone, discharge operations in the upstream regions can have equally adverse impacts. A significant reduction in the volume of fresh water moving into an estuary below that which is considered normal can affect the location and type of mixing thereby changing the characteristic salinity patterns. The resulting changed circulation pattern can cause the upstream migration of the salinity gradient displacing the maximim sedimentation zone. This migration may affect those organisms that are adapted to freshwater environments. It may also affect municipal water supplies.

Note: Possible actions to minimize adverse impacts regarding site characteristics can be found in subpart H.

Subpart D_Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

Note: The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

230.30 Threatened and endangered species.

(a) An endangered species is a plant or animal in danger of extinction throughout all or a significant portion of its range. A threatened species is one in danger of becoming an endangered species in the foreseeable future throughout all or a significant portion of its range. Listings of threatened and endangered species as well as critical habitats are maintained by some individual States and by the U.S. Fish and Wildlife Service of the Department of the Interior (codified annually at 50 CFR 17.11). The Department of

Commerce has authority over some threatened and endangered marine mammals, fish and reptiles.

(b) Possible loss of values: The major potential impacts on threatened or endangered species from the discharge of dredged or fill material include:

(1) Covering or otherwise directly killing species;

(2) The impairment or destruction of habitat to which these species are limited. Elements of the aquatic habitat which are particularly crucial to the continued survival of some threatened or endangered species include adequate good quality water, spawning and maturation areas, nesting areas, protective cover, adequate and reliable food supply, and resting areas for migratory species. Each of these elements can be adversely affected by changes in either the normal water conditions for clarity, chemical content, nutrient balance, dissolved oxygen, pH, temperature, salinity, current patterns, circulation and fluctuation, or the physical removal of habitat; and

(3) Facilitating incompatible activities.

(c) Where consultation with the Secretary of the Interior occurs under section 7 of the Endangered Species Act, the conclusions of the Secretary concerning the impact(s) of the discharge on threatened and endangered species and their habitat shall be considered final.

230.31 Fish, crustaceans, mollusks, and other aquatic organisms in the food web.

(a) Aquatic organisms in the food web include, but are not limited to, finfish, crustaceans, mollusks, insects, annelids, planktonic organisms, and the plants and animals on which they feed and depend upon for their needs. All forms and life stages of an organism, throughout its geographic range, are included in this category.

(b) Possible loss of values: The discharge of dredged or fill material can variously affect populations of fish, crustaceans, mollusks and other food web organisms through the release of contaminants which adversely affect adults, juveniles, larvae, or eggs, or result in the establishment or proliferation of an undesirable competitive species of plant or animal at the expense of the desired resident species. Suspended particulates settling on attached or buried eggs can smother the eggs by limiting or sealing off their exposure to oxygenated water. Discharge of dredged and fill material may result in the debilitation or death of sedentary organisms by smothering, exposure to chemical contaminants in dissolved or suspended form, exposure to high levels of suspended particulates, reduction in food supply, or alteration of the substrate upon which they are dependent. Mollusks are particularly sensitive to the discharge of material during periods of reproduction and growth and development due primarily to their limited mobility. They can be rendered unfit for human consumption by tainting, by production and accumulation of toxins, or by ingestion and retention of pathogenic organisms, viruses, heavy metals or persistent synthetic organic chemicals. The discharge of dredged or fill material can redirect, delay, or stop the reproductive and feeding movements of some species of fish and crustacea, thus preventing their aggregation in accustomed places such as spawning or nursery grounds and potentially leading to reduced populations. Reduction of detrital feeding species or other representatives of lower trophic levels can impair the flow of energy from primary consumers to higher trophic levels. The reduction

or potential elimination of food chain organism populations decreases the overall productivity and nutrient export capability of the ecosystem.

230.32 Other wildlife.

(a) Wildlife associated with aquatic ecosystems are resident and transient mammals, birds, reptiles, and amphibians.

(b) Possible loss of values: The discharge of dredged or fill material can result in the loss or change of breeding and nesting areas, escape cover, travel corridors, and preferred food sources for resident and transient wildlife species associated with the aquatic ecosystem. These adverse impacts upon wildlife habitat may result from changes in water levels, water flow and circulation, salinity, chemical content, and substrate characteristics and elevation. Increased water turbidity can adversely affect wildlife species which rely upon sight to feed, and disrupt the respiration and feeding of certain aquatic wildlife and food chain organisms. The availability of contaminants from the discharge of dredged or fill material may lead to the bioaccumulation of such contaminants in wildlife. Changes in such physical and chemical factors of the environment may favor the introduction of undesirable plant and animal species at the expense of resident species and communities. In some aquatic environments lowering plant and animal species diversity may disrupt the normal functions of the ecosystem and lead to reductions in overall biological productivity.

Note: Possible actions to minimize adverse impacts regarding characteristics of biological components of the aquatic ecosystem can be found in subpart H.

Subpart E_Potential Impacts on Special Aquatic Sites

Note: The impacts described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B. The definition of special aquatic sites is found in 230.3(q-1).

230.40 Sanctuaries and refuges.

(a) Sanctuaries and refuges consist of areas designated under State and Federal laws or local ordinances to be managed principally for the preservation and use of fish and wildlife resources.

(b) Possible loss of values: Sanctuaries and refuges may be affected by discharges of dredged or fill material which will:

(1) Disrupt the breeding, spawning, migratory movements or other critical life requirements of resident or transient fish and wildlife resources;

(2) Create unplanned, easy and incompatible human access to remote aquatic areas;

(3) Create the need for frequent maintenance activity;

(4) Result in the establishment of undesirable competitive species of plants and animals;

(5) Change the balance of water and land areas needed to provide cover, food, and other fish and wildlife habitat requirements in a way that modifies sanctuary or refuge management practices;

(6) Result in any of the other adverse impacts discussed in subparts C and D as they relate to a particular sanctuary or refuge.

230.41 Wetlands.

(a)(1) Wetlands consist of areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

(2) Where wetlands are adjacent to open water, they generally constitute the transition to upland. The margin between wetland and open water can best be established by specialists familiar with the local environment, particularly where emergent vegetation merges with submerged vegetation over a broad area in such places as the lateral margins of open water, headwaters, rainwater catch basins, and groundwater seeps. The landward margin of wetlands also can best be identified by specialists familiar with the local environment when vegetation from the two regions merges over a broad area.

(3) Wetland vegetation consists of plants that require saturated soils to survive (obligate wetland plants) as well as plants, including certain trees, that gain a competitive advantage over others because they can tolerate prolonged wet soil conditions and their competitors cannot. In addition to plant populations and communities, wetlands are

delimited by hydrological and physical characteristics of the environment. These characteristics should be considered when information about them is needed to supplement information available about vegetation, or where wetland vegetation has been removed or is dormant.

(b) Possible loss of values: The discharge of dredged or fill material in wetlands is likely to damage or destroy habitat and adversely affect the biological productivity of wetlands ecosystems by smothering, by dewatering, by permanently flooding, or by altering substrate elevation or periodicity of water movement. The addition of dredged or fill material may destroy wetland vegetation or result in advancement of succession to dry land species. It may reduce or eliminate nutrient exchange by a reduction of the system's productivity, or by altering current patterns and velocities. Disruption or elimination of the wetland system can degrade water quality by obstructing circulation patterns that flush large expanses of wetland systems, by interfering with the filtration function of wetlands, or by changing the aquifer recharge capability of a wetland. Discharges can also change the wetland habitat value for fish and wildlife as discussed in subpart D. When disruptions in flow and circulation patterns occur, apparently minor loss of wetland acreage may result in major losses through secondary impacts. Discharging fill material in wetlands as part of municipal, industrial or recreational development may modify the capacity of wetlands to retain and store floodwaters and to serve as a buffer zone shielding upland areas from wave actions, storm damage and erosion.

230.42 Mud flats.

(a) Mud flats are broad flat areas along the sea coast and in coastal rivers to the head of tidal influence and in inland lakes, ponds, and riverine systems. When mud flats are inundated, wind and wave action may resuspend bottom sediments. Coastal mud flats are exposed at extremely low tides and inundated at high tides with the water table at or near the surface of the substrate. The substrate of mud flats contains organic material and particles smaller in size than sand. They are either unvegetated or vegetated only by algal mats.

(b) Possible loss of values: The discharge of dredged or fill material can cause changes in water circulation patterns which may permanently flood or dewater the mud flat or disrupt periodic inundation, resulting in an increase in the rate of erosion or accretion. Such changes can deplete or eliminate mud flat biota, foraging areas, and nursery areas. Changes in inundation patterns can affect the chemical and biological exchange and decomposition process occurring on the mud flat and change the deposition of suspended material affecting the productivity of the area. Changes may reduce the mud flat's capacity to dissipate storm surge runoff.

230.43 Vegetated shallows.

(a) Vegetated shallows are permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as turtle grass and eelgrass in estuarine or marine systems as well as a number of freshwater species in rivers and lakes.

(b) Possible loss of values: The discharge of dredged or fill material can smother

vegetation and benthic organisms. It may also create unsuitable conditions for their continued vigor by: (1) Changing water circulation patterns; (2) releasing nutrients that increase undesirable algal populations; (3) releasing chemicals that adversely affect plants and animals; (4) increasing turbidity levels, thereby reducing light penetration and hence photosynthesis; and (5) changing the capacity of a vegetated shallow to stabilize bottom materials and decrease channel shoaling. The discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. It may also encourage the growth of nuisance vegetation.

230.44 Coral reefs.

(a) Coral reefs consist of the skeletal deposit, usually of calcareous or silicaceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

(b) Possible loss of values: The discharge of dredged or fill material can adversely affect colonies of reef building organisms by burying them, by releasing contaminants such as hydrocarbons into the water column, by reducing light penetration through the water, and by increasing the level of suspended particulates. Coral organisms are extremely sensitive to even slight reductions in light penetration or increases in suspended particulates. These adverse effects will cause a loss of productive colonies which in turn provide habitat for many species of highly specialized aquatic organisms.

230.45 Riffle and pool complexes.

(a) Steep gradient sections of streams are sometimes characterized by riffle and pool complexes. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. Pools are characterized by a slower stream velocity, a steaming flow, a smooth surface, and a finer substrate. Riffle and pool complexes are particularly valuable habitat for fish and wildlife.

(b) Possible loss of values: Discharge of dredged or fill material can eliminate riffle and pool areas by displacement, hydrologic modification, or sedimentation. Activities which affect riffle and pool areas and especially riffle/pool ratios, may reduce the aeration and filtration capabilities at the discharge site and downstream, may reduce stream habitat diversity, and may retard repopulation of the disposal site and downstream waters through sedimentation and the creation of unsuitable habitat. The discharge of dredged or fill material which alters stream hydrology may cause scouring or sedimentation of riffles and pools. Sedimentation induced through hydrological modification or as a direct result of the deposition of unconsolidated dredged or fill material may clog riffle and pool areas, destroy habitats, and create anaerobic conditions. Eliminating pools and meanders by the discharge of dredged or fill material can reduce water holding capacity of streams and cause rapid runoff from a watershed. Rapid runoff can deliver large quantities of flood water in a short time to downstream areas resulting in the destruction of natural habitat, high property loss, and the need for further hydraulic modification.

Note: Possible actions to minimize adverse impacts on site or material characteristics can be found in subpart H.

Subpart F_Potential Effects on Human Use Characteristics

Note: The effects described in this subpart should be considered in making the factual determinations and the findings of compliance or non-compliance in subpart B.

230.50 Municipal and private water supplies.

(a) Municipal and private water supplies consist of surface water or ground water which is directed to the intake of a municipal or private water supply system.

(b) Possible loss of values: Discharges can affect the quality of water supplies with respect to color, taste, odor, chemical content and suspended particulate concentration, in such a way as to reduce the fitness of the water for consumption. Water can be rendered unpalatable or unhealthy by the addition of suspended particulates, viruses and pathogenic organisms, and dissolved materials. The expense of removing such substances before the water is delivered for consumption can be high. Discharges may also affect the quantity of water available for municipal and private water supplies. In addition, certain commonly used water treatment chemicals have the potential for combining with some suspended or dissolved substances from dredged -or fill material to form other prod-ucts that can have a toxic effect on -con-sumers.

230.51 Recreational and commercial fisheries.

(a) Recreational and commercial fisheries consist of harvestable fish, crustaceans, shellfish, and other aquatic organisms used by man.

(b) Possible loss of values: The discharge of dredged or fill materials can affect the suitability of recreational and commercial fishing grounds as habitat for populations of consumable aquatic organisms. Discharges can result in the chemical contamination of recreational or commercial fisheries. They may also interfere with the reproductive success of recreational and commercially important aquatic species through disruption of migration and spawning areas. The introduction of pollutants at critical times in their life cycle may directly reduce populations of commercially important aquatic organisms or indirectly reduce them by reducing organisms upon which they depend for food. Any of these impacts can be of short duration or prolonged, depending upon the physical and chemical impacts of the discharge and the biological availability of contaminants to aquatic organisms.

230.52 Water-related recreation.

(a) Water-related recreation encompasses activities undertaken for amusement and relaxation. Activities encompass two broad categories of use: consumptive, e.g., harvesting resources by hunting and fishing; and non-comsumptive, e.g. canoeing and sight-seeing.

(b) Possible loss of values: One of the more important direct impacts of dredged or fill

disposal is to impair or destroy the resources which support recreation activities. The disposal of dredged or fill material may adversely modify or destroy water use for recreation by changing turbidity, suspended particulates, temperature, dissolved oxygen, dissolved materials, toxic materials, pathogenic organisms, quality of habitat, and the aesthetic qualities of sight, taste, odor, and color.

230.53 Aesthetics.

(a) Aesthetics associated with the aquatic ecosystem consist of the perception of beauty by one or a combination of the senses of sight, hearing, touch, and smell. Aesthetics of aquatic ecosystems apply to the quality of life enjoyed by the general public and property owners.

(b) Possible loss of values: The discharge of dredged or fill material can mar the beauty of natural aquatic ecosystems by degrading water quality, creating distracting disposal sites, inducing inappropriate development, encouraging unplanned and incompatible human access, and by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area. The discharge of dredged or fill material can adversely affect the particular features, traits, or characteristics of an aquatic area which make it valuable to property owners. Activities which degrade water quality, disrupt natural substrate and vegetational characteristics, deny access to or visibility of the resource, or result in changes in odor, air quality, or noise levels may reduce the value of an aquatic area to private property owners.

230.54 Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves.

(a) These preserves consist of areas designated under Federal and State laws or local ordinances to be managed for their aesthetic, educational, historical, recreational, or scientific value.

(b) Possible loss of values: The discharge of dredged or fill material -into such areas may modify the aes-thetic, educational, historical, rec-re-a-tional and/or scientific qualities there-by reducing or eliminating the uses -for which such sites are set aside and -managed.

Note: Possible actions to minimize adverse impacts regarding site or material characteristics can be found in subpart H.

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By:NVI-DataNet

Subpart G_Evaluation and Testing

230.60 General evaluation of dredged or fill material.

The purpose of these evaluation procedures and the chemical and biological testing sequence outlined in 230.61 is to provide information to reach the determinations required by 230.11. Where the results of prior evaluations, chemical and biological tests, scientific research, and experience can provide information helpful in making a determination, these should be used. Such prior results may make new testing unnecessary. The information used shall be documented. Where the same information applies to more than -one determination, it may be docu-mented once and referenced in later deter-minations.

(a) If the evaluation under paragraph (b) indicates the dredged or fill material is not a carrier of contaminants, then the required determinations pertaining to the presence and effects of contaminants can be made without testing. Dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. Dredged material so composed is generally found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels. However, when such material is discolored or contains other indications that contaminants may be present, further inquiry should be made.

(b) The extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants. Factors to be considered include but are not limited to:

(1) Potential routes of contaminants or contaminated sediments to the extraction site, based on hydrographic or other maps, aerial photography, or other materials that show watercourses, surface relief, proximity to tidal movement, private and public roads, location of buildings, municipal and industrial areas, and agricultural or forest lands.

(2) Pertinent results from tests previously carried out on the material at the extraction site, or carried out on similar material for other permitted projects in the vicinity. Materials shall be considered similar if the sources of contamination, the physical configuration of the sites and the sediment composition of the materials are comparable, in light of water circulation and stratification, sediment accumulation and general sediment characteristics. Tests from other sites may be relied on only if no changes have occurred at the extraction sites to render the results irrelevant.

(3) Any potential for significant introduction of persistent pesticides from land runoff or percolation;

(4) Any records of spills or disposal of petroleum products or substances designated as hazardous under section 311 of the Clean Water Act (See 40 CFR part 116);

(5) Information in Federal, State and local records indicating significant introduction of pollutants from industries, municipalities, or other sources, including types and amounts of waste materials discharged along the potential routes of contaminants to the extraction site: and

(6) Any possibility of the presence of substantial natural deposits of minerals or other substances which could be released to the aquatic environment in harmful quantities by man-induced discharge activities.

(c) To reach the determinations in 230.11 involving potential effects of the discharge on the characteristics of the disposal site, the narrative guidance in subparts C through F shall be used along with the general evaluation procedure in 230.60 and, if necessary, the chemical and biological testing sequence in 230.61. Where the discharge site is adjacent to the extraction site and subject to the same sources of contaminants, and materials at the two sites are substantially similar, the fact that the material to be discharged may be a carrier of contaminants is not likely to result in degradation of the disposal site. In such circumstances, when dissolved material and suspended particulates can be controlled to prevent carrying pollutants to less contaminated areas, testing will not -be required.

(d) Even if the 230.60(b) evaluation (previous tests, the presence of polluting industries and information about their discharge or runoff into waters of the U.S., bioinventories, etc.) leads to the conclusion that there is a high probability that the material proposed for discharge is a carrier of contaminants, testing may not be necessary if constraints are available to reduce contamination to acceptable levels within the disposal site and to prevent contaminants from being transported beyond the boundaries of the disposal site, if such constraints are acceptable to the permitting authority and the Regional Administrator, and if the potential discharger is willing and able to implement such constraints. However, even if tests are not performed, the permitting authority must still determine the probable impact of the operation on the receiving aquatic ecosystem. Any decision not to test must be explained in the determinations made under 230.11.

230.61 Chemical, biological, and physical evaluation and testing. Note: The Agency is today proposing revised testing guidelines. The evaluation and testing procedures in this section are based on the 1975 section 404(b)(1) interim final Guidelines and shall remain in effect until the revised testing guidelines are published as final regulations.

(a) No single test or approach can be applied in all cases to evaluate the effects of proposed discharges of dredged or fill materials. This section provides some guidance in determining which test and/or evaluation procedures are appropriate in a given case. Interim guidance to applicants concerning the applicability of specific approaches or procedures will be furnished by the permitting authority.

(b) Chemical-biological interactive effects. The principal concerns of discharge of dredged or fill material that contain contaminants are the potential effects on the water column and on communities of aquatic organisms.

(1) Evaluation of chemical-biological interactive effects. Dredged or fill material may be excluded from the evaluation procedures specified in paragraphs (b) (2) and (3) of this section if it is determined, on the basis of the evaluation in 230.60, that the likelihood of contamination by contaminants is acceptably low, unless the permitting authority, after evaluating and considering any comments received from the Regional Administrator, determines that these procedures are necessary. The Regional Administrator may require, on a case-by-case basis, testing approaches and procedures by stating what additional information is needed through further analyses and how the results of the

analyses will be of value in evaluating potential environmental effects.

If the General Evaluation indicates the presence of a sufficiently large number of chemicals to render impractical the identification of all contaminants by chemical testing, information may be obtained from bioassays in lieu of chemical tests.

(2) *Water column effects.* (i) Sediments normally contain constituents that exist in various chemical forms and in various concentrations in several locations within the sediment. An elutriate test may be used to predict the effect on water quality due to release of contaminants from the sediment to the water column. However, in the case of fill material originating on land which may be a carrier of contaminants, a water leachate test is appropriate.

(ii) Major constituents to be analyzed in the elutriate are those deemed critical by the permitting authority, after evaluating and considering any comments received from the Regional Administrator, and considering results of the evaluation in 230.60. Elutriate concentrations should be compared to concentrations of the same constituents in water from the disposal site. Results should be evaluated in light of the volume and rate of the intended discharge, the type of discharge, the hydrodynamic regime at the disposal site, and other information relevant to the impact on water quality. The permitting authority should consider the mixing zone in evaluating water column effects. The permitting authority may specify bioassays when such procedures will be of value.

(3) Effects on benthos. The permitting authority may use an appropriate benthic bioassay (including bio-ac-cum-u-la-tion tests) when such procedures will be of value in assessing eco-logical effects and in establishing dis-charge conditions.

(c) Procedure for comparison of sites.

(1) When an inventory of the total concentration of contaminants would be of value in comparing sediment at the dredging site with sediment at the disposal site, the permitting authority may require a sediment chemical analysis. Markedly different concentrations of contaminants between the excavation and disposal sites may aid in making an environmental assessment of the proposed disposal operation. Such differences should be interpreted in terms of the potential for harm as supported by any pertinent scientific literature.

(2) When an analysis of biological community structure will be of value to assess the potential for adverse environmental impact at the proposed disposal site, a comparison of the biological characteristics between the excavation and disposal sites may be required by the permitting authority. Biological indicator species may be useful in evaluating the existing degree of stress at both sites. Sensitive species representing community components colonizing various substrate types within the sites should be identified as possible bioassay organisms if tests for toxicity are required. Community structure studies should be performed only when they will be of value in determining discharge conditions. This is particularly applicable to large quantities of dredged material known to contain adverse quantities of toxic materials. Community studies should include benthic organisms such as microbiota and harvestable shellfish and finfish. Abundance, diversity, and distribution should be documented and correlated with substrate type and other appropriate physical and chemical environmental

characteristics.

(d) Physical tests and evaluation. The effect of a discharge of dredged or fill material on physical substrate characteristics at the disposal site, as well as on the water circulation, fluctuation, salinity, and suspended particulates content there, is important in making factual determinations in 230.11. Where information on such effects is not otherwise available to make these factual determinations, the permitting authority shall require appropriate physical tests and evaluations as are justified and deemed necessary. Such tests may include sieve tests, settleability tests, compaction tests, mixing zone and suspended particulate plume determinations, and site assessments of water flow, circulation, and salinity characteristics.

Subpart H_Actions To Minimize Adverse Effects

Note: There are many actions which can be undertaken in response to 203.10(d) to minimize the adverse effects of discharges of dredged or fill material. Some of these, grouped by type of activity, are listed in this subpart.

230.70 Actions concerning the location of the discharge.

The effects of the discharge can be minimized by the choice of the disposal site. Some of the ways to accomplish this are by:

(a) Locating and confining the discharge to minimize smothering of -organisms;

(b) Designing the discharge to avoid a disruption of periodic water inundation patterns;

(c) Selecting a disposal site that has been used previously for dredged ma-terial discharge;

(d) Selecting a disposal site at which the substrate is composed of material similar to that being discharged, such as discharging sand on sand or mud -on mud;

(e) Selecting the disposal site, the discharge point, and the method of -discharge to minimize the extent of -any plume;

(f) Designing the discharge of dredged or fill material to minimize or prevent the creation of standing bodies of water in areas of normally fluctuating water levels, and minimize or prevent the drainage of areas subject to such fluctuations.

230.71 Actions concerning the material to be discharged.

The effects of a discharge can be minimized by treatment of, or limitations on the material itself, such as:

(a) Disposal of dredged material in such a manner that physiochemical conditions are maintained and the potency and availability of pollutants are reduced.

(b) Limiting the solid, liquid, and gaseous components of material to be discharged at a

particular site;

(c) Adding treatment substances to the discharge material;

(d) Utilizing chemical flocculants to enhance the deposition of suspended particulates in diked disposal areas.

230.72 Actions controlling the material after discharge.

The effects of the dredged or fill material after discharge may be controlled by:

(a) Selecting discharge methods and disposal sites where the potential for erosion, slumping or leaching of materials into the surrounding aquatic ecosystem will be reduced. These sites or methods include, but are not limited to:

(1) Using containment levees, sediment basins, and cover crops to reduce erosion;

(2) Using lined containment areas to reduce leaching where leaching of chemical constituents from the discharged material is expected to be a problem;

(b) Capping in-place contaminated material with clean material or selectively discharging the most contaminated material first to be capped with the remaining material;

(c) Maintaining and containing discharged material properly to prevent point and nonpoint sources of pollution;

(d) Timing the discharge to minimize impact, for instance during periods of unusual high water flows, wind, wave, and tidal actions.

230.73 Actions affecting the method of dispersion.

The effects of a discharge can be minimized by the manner in which it is dispersed, such as:

(a) Where environmentally desirable, distributing the dredged material widely in a thin layer at the disposal site to maintain natural substrate contours and elevation;

(b) Orienting a dredged or fill material mound to minimize undesirable obstruction to the water current or circulation pattern, and utilizing natural bottom contours to minimize the size of the mound;

(c) Using silt screens or other appropriate methods to confine suspended particulate/turbidity to a small area where settling or removal can occur;

(d) Making use of currents and circulation patterns to mix, disperse and dilute the discharge;

(e) Minimizing water column turbidity by using a submerged diffuser system. A similar effect can be accomplished by submerging pipeline discharges or otherwise releasing materials near the bottom;

(f) Selecting sites or managing discharges to confine and minimize the release of suspended particulates to give decreased turbidity levels and to maintain light penetration for organisms;

(g) Setting limitations on the amount of material to be discharged per unit of time or volume of receiving water.

230.74 Actions related to technology.

Discharge technology should be adapted to the needs of each site. In determining whether the discharge operation sufficiently minimizes adverse environmental impacts, the applicant should consider:

(a) Using appropriate equipment or machinery, including protective devices, and the use of such equipment or machinery in activities related to the discharge of dredged or fill material;

(b) Employing appropriate maintenance and operation on equipment or machinery, including adequate training, staffing, and working procedures;

(c) Using machinery and techniques that are especially designed to reduce damage to wetlands. This may include machines equipped with devices that scatter rather than mound excavated materials, machines with specially designed wheels or tracks, and the use of mats under heavy machines to reduce wetland surface compaction and -rutting;

(d) Designing access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high water flows, accommodate fluctuating water levels, and maintain circulation and faunal movement;

(e) Employing appropriate machinery and methods of transport of the material for discharge.

230.75 Actions affecting plant and animal populations.

Minimization of adverse effects on populations of plants and animals can be achieved by:

(a) Avoiding changes in water current and circulation patterns which would interfere with the movement of animals;

(b) Selecting sites or managing discharges to prevent or avoid creating habitat conducive to the development of undesirable predators or species which have a competitive edge ecologically over indigenous plants or -animals;

(c) Avoiding sites having unique habitat or other value, including habitat of threatened or endangered -species;

(d) Using planning and construction practices to institute habitat development and restoration to produce a new or modified environmental state of higher ecological value by displacement of some or all of the existing environmental characteristics. Habitat development and restoration techniques can be used to minimize adverse impacts and to compensate for destroyed habitat. Use techniques that have been demonstrated to be effective in circumstances similar to those under consideration wherever possible. Where proposed development and restoration techniques have not yet advanced to the pilot demonstration stage, initiate their use on a small scale to allow corrective action if unanticipated adverse impacts occur;

(e) Timing discharge to avoid spawning or migration seasons and other biologically critical time periods;

(f) Avoiding the destruction of remnant natural sites within areas already affected by development.

230.76 Actions affecting human use.

Minimization of adverse effects on human use potential may be achieved by:

(a) Selecting discharge sites and following discharge procedures to prevent or minimize any potential damage to the aesthetically pleasing features of the aquatic site (e.g. viewscapes), particularly with respect to water quality;

(b) Selecting disposal sites which are not valuable as natural aquatic areas;

(c) Timing the discharge to avoid the seasons or periods when human recreational activity associated with the aquatic site is most important;

(d) Following discharge procedures which avoid or minimize the disturbance of aesthetic features of an aquatic site or ecosystem;

(e) Selecting sites that will not be detrimental or increase incompatible human activity, or require the need for frequent dredge or fill maintenance activity in remote fish and wildlife areas;

(f) Locating the disposal site outside of the vicinity of a public water supply intake.

230.77 Other actions.

(a) In the case of fills, controlling runoff and other discharges from activities to be conducted on the fill;

(b) In the case of dams, designing water releases to accommodate the needs of fish and wildlife;

(c) In dredging projects funded by Federal agencies other than the Corps of Engineers, maintain desired water quality of the return discharge through agreement with the Federal funding authority on scientifically defensible pollutant concentration levels in addition to any applicable water quality standards;

(d) When a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.

This document was translated on 21.05.96.

By:NVI-DataNet

Subpart I_Planning To Shorten Permit Processing Time

230.80 Advanced identification of disposal areas.

(a) Consistent with these Guidelines, EPA and the permitting authority, on their own initiative or at the request of any other party and after consultation with any affected State that is not the permitting authority, may identify sites which will be considered as:

(1) Possible future disposal sites, including existing disposal sites and non-sensitive areas; or

(2) Areas generally unsuitable for disposal site specification;

(b) The identification of any area as a possible future disposal site should not be deemed to constitute a permit for the discharge of dredged or fill material within such area or a specification of a disposal site. The identification of areas that generally will not be available for disposal site specification should not be deemed as prohibiting applications for permits to discharge dredged or fill material in such areas. Either type of identification constitutes information to facilitate individual or General permit application and processing.

(c) An appropriate public notice of the proposed identification of such areas shall be issued;

(d) To provide the basis for advanced identification of disposal areas, and areas unsuitable for disposal, EPA and the permitting authority shall consider the likelihood that use of the area in question for dredged or fill material disposal will comply with these Guidelines. To facilitate this analysis, EPA and the permitting authority should review available water resources management data including data available from the public, other Federal and State agencies, and information from approved Coastal Zone Management programs and River Basin Plans;

(e) The permitting authority should maintain a public record of the identified areas and a written statement of the basis for identification.

Section 9 of the Rivers and Harbors Act of 1899

That it shall not be lawful to construct or commence the construction of any bridge, dam, dike, or causeway over or in any port, roadstead, haven, harbor, canal, navigable river, or other navigable water of the United States until the consent of Congress to the building of such structures shall have been obtained and until the plans for the same shall have been submitted to and approved by the Chief of Engineers and by the Secretary of War: Provided, That such structures may be built under authority of the legislature of a State across rivers and other waterways the navigable portions of which lie wholly within the limits of a single State, provided the location and plans thereof are submitted to and approved by the Chief of Engineers and by the Secretary of War before construction is commenced: And provided further, That when plans for any bridge or other structure have been approved by the Chief of Engineers and by the Secretary of War; it shall not be lawful to deviate from such plans either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Chief of Engineers and of the Secretary of War.

Section 10 of the Rivers and Harbors Act of 1899

That the creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is hereby prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of War; and it shall not be lawful to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor of refuge, or inclosure within the limits of any breakwater, or of the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of War prior to beginning the same.

Section 404 of the Clean Water Act

A. The Secretary may issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at specified disposal sites. Not later than the fifteenth day after the date an applicant submits all the information required to complete an application for a permit under this subsection, the Secretary shall publish the notice required by this subsection.

B. Subject to subsection (c) of this section, each such disposal site shall be specified for each such permit by the Secretary

   1. through the application of guidelines developed by the Administrator, in conjunction with the Secretary, which guidelines shall be based upon criteria comparable to the criteria applicable to the territorial seas, the contiguous zone, and the ocean under section 403(c), and

   2. in any case where such guidelines under clause (1) alone would prohibit the specification of a site, through the application additionally of the economic impact of the site on navigation and anchorage.

C. The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection.

D. The term "Secretary" as used in this section means the Secretary of the Army, acting through the Chief of Engineers.

E. 1. In carrying out his functions relating to the discharge of dredged or fill material under this section, the Secretary may, after notice of opportunity for public hearing, issue general permits on a State, regional, or nationwide basis for any category of activities involving discharges of dredged or fill material if the Secretary determines that the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effects on the environment. Any general permit issued under this subsection shall

      a. be based on the guidelines described in subsection (b)(l) of this section, and
      b. set forth the requirements and standards which shall apply to any activity authorized by such general permit.

   2. No general permit issued under this subsection shall be for a period of more than

five years after the date of its issuance and such general permit may be revoked or modified by the Secretary if, after opportunity for public hearing, the Secretary determines that the activities authorized by such general permit have an adverse impact on the environment or such activities are more appropriately authorized by individual permits.

F. **1.** Except as provided in paragraph (2) of this subsection, the discharge of dredge or fill material -

- **a.** from normal farming, silviculture, and ranching activities such as plowing, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices;
- **b.** for the purpose of maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures;
- **c.** for the purpose of construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance of drainage ditches;
- **d.** for the purpose of construction of temporary sedimentation basins on a construction site which does not include placement of fill material into the navigable waters;
- **e.** for the purpose of construction or maintenance or farm roads or forest roads, or temporary roads for moving mining equipment, where such roads are constructed and maintained, in accordance with best management practices, to assure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized;
- **f.** resulting from any activity with respect to which a State has an approved program, under section 208(b)(4) which meets the requirements of subparagraphs (B) and (C) of such section, is not prohibited by or otherwise subject to regulation under this section or section 301(a) or 402 of this Act (except for effluent standards or prohibitions under section 307).

2. Any discharge of dredged or fill material into the navigable waters incidental to any activity having as its purpose bringing an area of the navigable waters into a use to which it was not previously subject, where the flow or circulation of navigable waters may be impaired or the reach of such waters be reduced, shall be required to have a permit under this section.

G. **1.** The Governor of any State desiring to administer its own individual and general permit program for the discharge of dredged or fill material into the navigable waters (other than those waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark, or mean higher high water mark on the west coast, including wetlands adjacent thereto), within its jurisdiction may submit to the Administrator a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. In addition, such State shall submit a statement from the attorney general (or the

attorney for those State agencies which have independent legal counsel), or from the chief legal officer in the case of an interstate agency, that the laws of such State, or the interstate compact, as the case may be, provide adequate authority to carry out the described program.

2. Not later than the tenth day after the date of the receipt of the program and statement submitted by any State under paragraph (1) of this subsection, the Administrator shall provide copies of such program and statement to the Secretary and the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service.

3. No later than the ninetieth day after the date of the receipt by the Administrator of the program and statement submitted by any State, under paragraph (1) of this subsection, the Secretary and the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service, shall submit any comments with respect to such program and statement to the Administrator in writing.

H. 1. Not later than the one-hundred-twentieth day after the date of the receipt by the Administrator of a program and statement submitted by any State under paragraph (1) of this subsection, the Administrator shall determine, taking into account any comments submitted by the Secretary and the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service, pursuant to subsection (g) of this section, whether such State has the following authority with respect to the issuance of permits pursuant to such program:

   a. To issue permits which -

      i. apply, and assure compliance with, any applicable requirements of this section, including, but not limited to, the guidelines established under subsection (b)(l) of this section, and sections 307 and 403 of this Act;
      ii. are for fixed terms not exceeding five years; and
      iii. can be terminated or modified for cause including, but not limited to, the following:

         I. *violation of any condition of the permit;*
         II. obtaining a permit by misrepresentation, or failure to disclose fully all relevant facts;
         III. change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

   b. To issue permits which apply, and assure compliance with, all applicable requirements of section 308 of this Act, or to inspect, monitor, enter, and require reports to at least the same extent as required in section 308 of this Act.
   c. To assure that the public, and any other State the waters of which may be affected, receive notice of each application for a permit and to provide an opportunity for public hearing before a ruling on each such application.
   d. To assure that the Administrator receives notice of each application (including a copy thereof) for a permit.
   e. To assure that any State (other than the permitting State), whose waters may be affected by the issuance of a permit may submit written recommendation

to the permitting State (and the Administrator) with respect to any permit application and, if any part of such written recommendations are not accepted by the permitting State, that the permitting State will notify such affected State (and the Administrator) in writing of its failure to so accept such recommendations together with its reasons for so doing.

f. To assure that no permit will be issued if, in the judgement of the Secretary, after consultation with the Secretary of the department in which the Coast Guard is operating, anchorage and navigation of any of the navigable waters would be substantially impaired thereby.

g. To abate violations of the permit or the permit program, including civil and criminal penalties and other ways and means of enforcement.

h. To assure continued coordination with Federal and Federal-State water-related planning and review processes.

2. If, with respect to a State program submitted under subsection (g)(l) of this section, the Administrator determines that such State -

A. has the authority set forth in paragraph (1) of this subsection, the Administrator shall approve the program and so notify (i) such State, and (ii) the Secretary, who upon subsequent notification from such State that it is administering such program, shall suspend the issuance of permits under subsections (a) and (e) of this section for activities with respect to which a permit may be issued pursuant to such State program; or

B. does not have the authority set forth in paragraph (1) of this subsection, the Administrator shall so notify such State, which notification shall also describe the revisions or modifications necessary so that such State may resubmit such program for a determination by the Administrator under this subsection.

3. If the Administrator fails to make a determination with respect to any program submitted by a State under subsection (g)(l) of this section within one-hundred-twenty days after the date of the receipt of such program, such program shall be deemed approved pursuant to paragraph (2)(A) of this subsection and the Administrator shall so notify such State and the Secretary who, upon subsequent notification from such State that it is administering such program, shall suspend the issuance of permits under subsection (a) and (e) of this section for activities with respect to which a permit may be issued by such State.

4. After the Secretary receives notification from the Administrator under paragraph (2) or (3) of this subsection that a State permit program has been approved, the Secretary shall transfer any applications for permits pending before the Secretary for activities with respect to which a permit may be issued pursuant to such State program to such State for appropriate action.

5. Upon notification from a State with a permit program approved under this subsection that such State intends to administer and enforce the terms and conditions of a general permit issued by the Secretary under subsection (e) of this section with respect to activities in such State to which such general permit applies, the Secretary shall suspend the administration and enforcement of such general permit with respect to such activities.

I. Whenever the Administrator determines after public hearing that a State is not

administering a program approved under section (h)(2)(A) of this section, in accordance with this section, including, but not limited to, the guidelines established under subsection (b)(l) of this section, the Administrator shall so notify the State, and, if appropriate corrective action is not taken within a reasonable time, not to exceed ninety days after the date of the receipt of such notification, the Administrator shall:

1. withdraw approval of such program until the Administrator determines such corrective action has been taken, and

2. notify the Secretary that the Secretary shall resume the programs for the issuance of permits under subsection (a) and (e) of this section for activities with respect to which the State was issuing permits and that such authority of the Secretary shall continue in effect until such time as the Administrator makes the determination described in clause (1) of this subsection and such State again has an approved program.

J. Each State which is administering a permit program pursuant to this section shall transmit to the Administrator

1. a copy of each permit application received by such State and provide notice to the Administrator of every action related to the consideration of such permit application, including each permit proposed to be issued by such State, and

2. a copy of each proposed general permit which such State intends to issue. Not later than the tenth day after the date of the receipt of such permit application or such proposed general permit, the Administrator shall provide copies of such permit application or such proposed general permit to the Secretary and the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service. If the Administrator intends to provide written comments to such State with respect to such permit application or such proposed general permit, he shall so notify such State not later than the thirtieth day after the date of the receipt of such application or such proposed general permit and provide such written comments to such State, after consideration of any comments made in writing with respect to such application or such proposed general permit by the Secretary and the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service, not later than the ninetieth day after the date of such receipt. If such State is so notified by the Administrator, it shall not issue the proposed permit until after the receipt of such comments from the Administrator, or after such ninetieth day, whichever first occurs. Such State shall not issue such proposed permit after such ninetieth day if it has received such written comments in which the Administrator objects (A) to the issuance of such proposed permit and such proposed permit is one that has been submitted to the Administrator pursuant to subsection (h)(l)(E), or (B) to the issuance of such proposed permit as being outside the requirements of this section, including, but not limited to, the guidelines developed under subsection (b)(l) of this section unless it modified such proposed permit in accordance with such comments. Whenever the Administrator objects to the issuance of a permit under the preceding sentence such written objection shall contain a statement of the reasons for such objection and the conditions which such permit would include if it were issued by the Administrator. In any case where the Administrator objects to the issuance of a permit, on request of the State, a public hearing shall be held by the Administrator on such objection. If the State

does not resubmit such permit revised to meet such objection within 30 days after completion of the hearing or, if no hearing is requested within 90 days after the date of such objection, the Secretary may issue the permit pursuant to subsection (a) or (e) of this section, as the cause may be, for such source in accordance with the guidelines and requirements of this Act.

K. In accordance with guidelines promulgated pursuant to subsection (i)(2) of section 304 of this Act, the Administrator is authorized to waive the requirements of subsection (j) of this section at the time of the approval of a program pursuant to subsection (h)(2)(A) of this section or any category (including any class, type, or size within such category) of discharge within the State submitting such program.

L. The Administrator shall promulgate regulations establishing categories of discharges which he determines shall not be subject to the requirements of subsection (j) of this section in any State with a program approved pursuant to subsection (h)(2)(A) of this section. The Administrator may distinguish among classes, types, and sizes within any category of discharges.

M. Not later than the ninetieth day after the date on which the Secretary notifies the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service that

1. an application for a permit under subsection (a) of this section has been received by the Secretary, or

2. the Secretary proposes to issue a general permit under subsection (e) of this section, the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service, shall submit any comments with respect to such application or such proposed general permit in writing to the Secretary.

N. Nothing in this section shall be construed to limit the authority of the Administrator to take action pursuant to section 309 of this Act.

O. A copy of each permit application and each permit issued under this section shall be available to the public. Such permit application or portion thereof, shall further be available on request for the purpose of reproduction.

P. Compliance with a permit issued pursuant to this section, including any activity carried out pursuant to a general permit issued under this section, shall be deemed compliance, for purposes of sections 309 and 505, with sections 301, 307, and 403.

Q. Not later than the one-hundred-eightieth day after the date of enactment of this subsection, the Secretary shall enter into agreements with the Administrator, the Secretaries of the Departments of Agriculture, Commerce, Interior, and Transportation, and the heads of other appropriate Federal agencies to minimize, to the maximum extent practicable, duplication, needless paperwork, and delays in the issuance of permits under this section. Such agreements shall be developed to assure that, to the maximum extent practicable, a decision with respect to an application for a permit under subsection (a) of this section will be made not later than the ninetieth day after the date the notice of such application is published under subsection (a) of this section.

R. The discharge of dredged or fill material as part of the construction of a Federal project specifically authorized by Congress, whether prior to or on or after the date of enactment of his subsection, is not prohibited by or otherwise subject to regulation under this section, or a State program approved under this section, or section 301(a) or 402 of the Act (except for effluent standards or prohibitions under section 307), if information on the effects of such discharge, including consideration of the guidelines developed under subsection (b)(l) of this section, is included in an environmental impact statement for such project pursuant to the National Environmental Policy Act of 1969 and such environmental impact statement has been submitted to Congress before the actual discharge of dredged or fill material in connection with the construction of such project and prior to either authorization of such project or an appropriation of funds for each construction.

S. **1.** Whenever on the basis of any information available to him the Secretary finds that any person is in violation of any condition or limitation set forth in a permit issued by the Secretary under this section, the Secretary shall issue an order requiring such persons to comply with such condition or limitation, or the Secretary shall bring a civil action in accordance with paragraph (3) of this subsection.

2. A copy of any order issued under this subsection shall be sent immediately by the Secretary to the State in which the violation occurs and other affected States. Any order issued under this subsection shall be by personal service and shall state with reasonable specificity the nature of the violation, specify a time for compliance, not to exceed thirty days, which the Secretary determines is reasonable, taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. In any case in which an order under this subsection is issued to a corporation, a copy of such order shall be served on any appropriate corporate officers.

3. The Secretary is authorized to commence a civil action for appropriate relief, including a permanent or temporary injunction for any violation for which he is authorized to issue a compliance order under paragraph (1) of this subsection. Any action under this paragraph may be brought in the district court of the United States for the district in which the defendant is located or resides or is doing business, and such court shall have jurisdiction to restrain such violation and to require compliance. Notice of the commencement of such action shall be given immediately to the appropriate State.

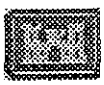
4. **A.** Any person who willfully or negligently violates any condition or limitation in a permit issued by the Secretary under this section shall be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or by both. If the conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by fine of not more than $50,000 per day of violation, or by imprisonment for not more than two years, or by both.

B. For the purposes of this paragraph, the term "person" shall mean, in addition to the definition contained in section 502(5) of this Act, any responsible corporate officer.

5. Any person who violates any condition or limitation in a permit issued by the Secretary under this section, and any person who violates any order issued by the

Secretary under paragraph (1) of this subsection, shall he subject to a civil penalty not to exceed $10,000 per day of such violation.

T. Nothing in this section shall preclude or deny the right of any State or interstate agency to control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency, and each such agency shall comply with such State or interstate requirements both substantive and procedural to control the discharge of dredged or fill material to the same extent that any person is subject to such requirements. This section shall not be construed as affecting or impairing the authority of the Secretary to maintain navigation.



Maintained by Chris Mayo (chrism@wetland.usace.mil), Sacramento District Corps of Engineers
[URL: http://wetland.usace.mil /regs/section404.html, last revised August 8, 1996]

The National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969, as amended

(Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982)

An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Environmental Policy Act of 1969."

TITLE I

CONGRESSIONAL DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

Sec. 102 [42 USC § 4332].

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal Government shall --

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on --

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 52 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes;

(D) Any detailed statement required under subparagraph (C) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,

(ii) the responsible Federal official furnishes guidance and participates in such preparation,

(iii) the responsible Federal official independently evaluates such statement prior to its approval and adoption, and

(iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this Act; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) assist the Council on Environmental Quality established by title II of this Act.

Section 103 of the Marine Protection Research and Sanctuaries Act of 1972

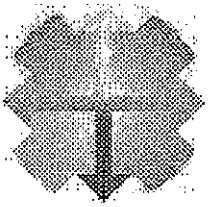
a. Subject to the provisions of subsections (b), (c), and d) of this section, the Secretary may issue permits, after notice and opportunity for public hearings, for the transportation of dredged material for the purpose of dumping it into ocean waters, where the Secretary determines that the dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological system, or economic potentialities.

b. In making the determination required by subsection (a), the Secretary shall apply those criteria, established pursuant to section 102(a), relating to the effects of the dumping. Based upon an evaluation of the potential effect of a permit denial on navigation, economic and industrial development, and foreign and domestic commerce of the United States, the Secretary shall make an independent determination as to the need for the dumping. The Secretary shall also make an independent determination as to other possible methods of disposal and as to appropriate locations for the dumping. In considering appropriate locations, he shall, to the extent feasible, utilize the recommended sites designated by the Administrator pursuant to section 102(c).

c. Prior to issuing any permit under this section, the Secretary shall first notify the Administrator of his intention to do so. In any case in which the Administrator disagrees with the determination of the Secretary as to compliance with the criteria established pursuant to section 102(a) relating to the effects of the dumping or with the restrictions established pursuant to section 102(c) relating to critical areas, the determination of the Administrator shall prevail. Unless the Administrator grants a waiver pursuant to subsection (d) , the Secretary shall not issue a permit which does not comply with such criteria and with such restrictions.

d. If, in any case, the Secretary finds that, in the disposition of dredged material, there is no economically feasible method or site available other than a dumping site the utilization of which would result in non-compliance with the criteria established pursuant to section 102(a) relating to the effects of dumping or with the restrictions established pursuant to section 102(c) relating to critical areas, he shall so certify and request a waiver from the Administrator of the specific requirements involved. Within thirty days of the receipt of the waiver request, unless the Administrator finds that the dumping of the material will result in an unacceptably adverse impact on municipal water supplies, shell-fish beds, wildlife, fisheries (including spawning and breeding area), or recreational areas, he shall grant the waiver.

e. In connection with Federal projects involving dredged material, the Secretary may, in lieu of the permit procedure, issue regulations which will require the application to such projects of the same criteria, other factors to be evaluated, the same procedures, and the same requirements which apply to the issuance of permits under subsections (a), (b), (c) and (d) of this section.



OEPA Environmental Law Summary: Marine Protection, Research, and Sanctuaries Act

Purpose and Organization

The Marine Protection, Research, and Sanctuaries Act (MPRSA) regulates the ocean dumping of waste, provides for a research program on ocean dumping, and provides for the designation and regulation of marine sanctuaries. Often known as the Ocean Dumping Act, the act regulates the ocean dumping of all material beyond the territorial limit (three miles from shore) and prevents or strictly limits dumping material that "would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities."

Material includes, but is not limited to dredged material; solid waste; incinerator residue; garbage; sewage; sewage sludge; munitions; chemical and biological warfare agents; radioactive materials; chemicals; biological and laboratory waste; wrecked or discarded equipment; rocks; sand; excavation debris; and industrial, municipal, agricultural. and other waste. The term does not include sewage from vessels or oil, unless the oil is transported via a vessel or aircraft for the purpose of dumping. Disposal by means of a pipe, regardless of how far at sea the discharge occurs, is regulated by the Clean Water Act, through the NPDES permit process.

Some of the waste material as defined above may be transported to and dumped into the ocean by DOE under conditions stipulated in a permit issued by the EPA or the Corps of Engineers (COE or the Corps), depending upon the type of waste involved. Ocean dumping, however, is only possible if no other reasonable alternatives, such as landfilling, are available.

Section 102 of MPRSA authorizes EPA to issue ocean dumping permits for the transport to and disposal of materials into the oceans, excluding wastes regulated by COE (primarily dredged spoils). Other wastes categorically excluded from EPA permitting because of their hazardous nature are "radiological, chemical, and biological warfare agents and high- level radioactive waste. . . ."

Section 102 also directs the EPA Administrator to set criteria for the review of ocean dumping permits. To protect critical ocean areas, EPA may designate the sites and time periods at which ocean disposal can occur. Federal agencies, including DOE, must obtain EPA permits to conduct ocean dumping under MPRSA. Because the status of EPA dump sites changes from time to time, DOE should contact EPA when it plans to apply for a permit to dump at a particular site. Some EPA sites have not been used recently, while others are in the process of redesignation to accept additional kinds of waste.

MPRSA Section 103 authorizes the Corps to issue permits for the ocean disposal of dredged material (i.e., material excavated from navigable U.S. waters). Section 103(e) gives the Secretary of the Army the option of issuing regulations instead of permits for material dredged from federal projects, although the criteria for the disposal decision would be much the same.

Section 103 is of interest to DOE because of the department's involvement in conversion of utility power plants to burn coal under the Fuel Use Act (FUA). These actions frequently entail dredging nearby rivers and channels to enable coal barges to readily access power plants. Thus, DOE must plan for proper disposal of the dredged material. DOE handles the permitting for power plants that switch to coal fuel and, thus, must assure that the plants comply with MPRSA provisions for dredge disposal, if disposal will occur in ocean waters outside the U.S. territorial limit.

Section 104 describes the contents of permits issued under Title I of MPRSA and provides for periodic permit review and revision or revocation. Either the EPA Administrator or the Secretary of the Army may revoke a permit if dumping of waste materials does not consistently follow the original permit evaluation factors involving, for example, the extent of marine environmental impact.

States may not independently adopt regulations relating to activities covered by Title I of MPRSA (Section 106). However, states may propose ocean dumping criteria in addition to those of EPA. If the EPA Administrator does not find the new criteria to be inconsistent with the act, the Administrator may then adopt those criteria and issue regulations to implement them. Only in this way can state-level criteria be brought to bear upon federal agency actions affected by Title I of MPRSA.

Title III of MPRSA authorizes the Secretary of Commerce to designate certain areas as National Marine Sanctuaries after consulting with the heads of interested federal agencies and state and local governments, as appropriate. Sanctuaries may be designated anywhere in the marine environment, which Title III defines as:

> . . .those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands over which the United States exercises jurisdiction, consistent with international law. . . .

Certain national security activities may continue in or near designated marine sanctuaries, an aspect of the act that may be relevant to DOE. In the past existing U.S. Department of Defense (DOD) activity at some sanctuary sites has been allowed to continue, with provisions for consultation between NOAA and DOD before additional activities begin.

Regulations implementing the MPRSA statute may be found in Titles 15, 33, and 40 of the CFR.

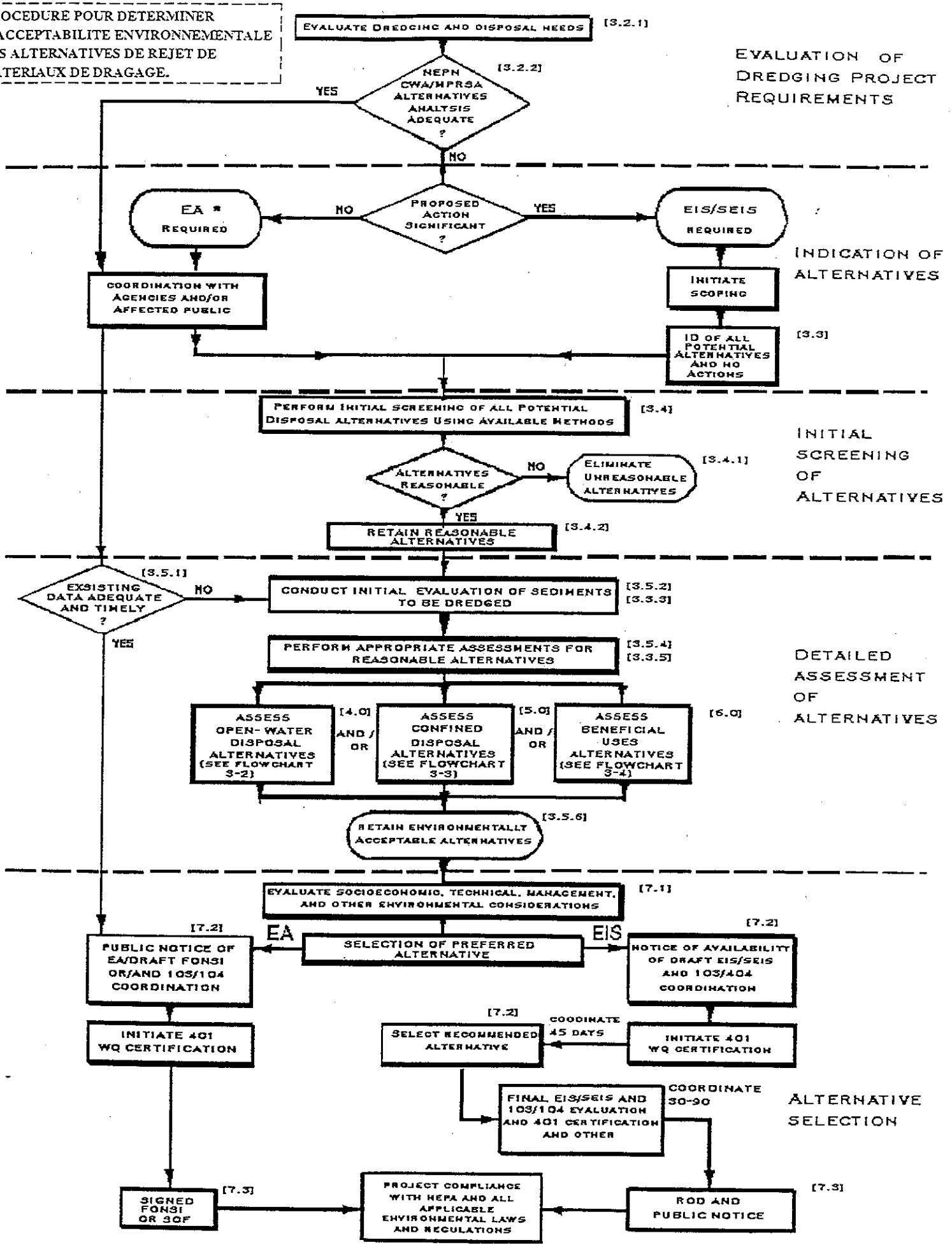
Posted January 25, 1996.
DOE Office of Environmental Policy and Assistance

ANNEXE 3

ORGANIGRAMMES [2]

[2] Extraits de USEPA, USACE, 1992 (révisé en 1997), Page WEB : http://www.epa.gov/owowwtr1/oceans/framework/index.html

PROCEDURE POUR DETERMINER L'ACCEPTABILITE ENVIRONNEMENTALE DES ALTERNATIVES DE REJET DE MATERIAUX DE DRAGAGE.



* IF AT any TIME IN THE EA PROCESS FEDERAL ACTION IS REASSESSED AS BEING SIGNIFICANT, EIS SCOPING IS INITIATED

EA = ENVIRONMENTAL ASSESSMENT
EIS/SEIS = ENVIRONMENTAL IMPACT STATEMENT /SUPPLEMENT
FONSI = FINDING OF NO SIGNIFICANT IMPACT

ROD = RECORD OF DECISION
SOF = STATEMENT OF FINDINGS

PROCEDURE POUR L'EVALUATION DES REJETS DE MATERIAUX DE DRAGAGE EN EAUX LIBRES.