SITE REMEDIATION NEWS

June 1999 Volume 11 Number 1

Updates To Electronic Data Submission Requirements

By: David Haymes
Division of Publicly Funded Site Remediation
Bureau of Planning and Systems

The Site Remediation Program has updated the Site Remediation Program Electronic Data Interchange (SRP-EDI) manual, and is in the process of updating the Electronic Data Submission Application (EDSA checker), and the Hazsite application.

Updates to the Site Remediation Program — Electronic Data Interchange (SRP-EDI) Manual

Updates to the Site Remediation Program Electronic Data Interchange (SRP-EDI) manual include providing expanded explanations of the various means of creating and submitting the dataset files to the SRP, as well as correcting typographical errors. A section has been added explaining the "hybrid" option, in which the responsible party/consultant creates the DTST and HZSAMPLE files, and then incorporates the HZRESULT file created by the laboratory. A section has also been added for saving the dataset files in the ASCII format. In addition, several of the definitions included in the "Discussion of Fields" section have been expanded. Lastly, the list of "valid values" for SAMPLE TYPE has been updated to be consistent with values allowed by the Hazsite and EDSA applications.

The updated SRP-EDI manual was released in mid-April, 1999. The SRP appreciates suggestions for improving the manual; recommendations should be forwarded to the author. Please refer to the end of this article for phone numbers/email addresses for contacting the author.

Submittal of Data in Text (ASCII) Format

The SRP is currently accepting electronic data submissions created in the Text (ASCII, "TXT") format, as well as "WK1" and "DBF" formats, and datasets created using the Hazsite application. Refer to the SRP-EDI Manual for directions for saving files in the text format. Responsible parties shall be aware that by the end of this year, the SRP intends to **only accept** dataset files submitted in the Text-Tab Delimited ("TXT") format, and will no longer accept dataset files submitted in the WK1 or DBF formats. The dataset files can still be created in either the WK1 or DBF format, and the format of the WK1 or DBF files can be checked using EDSA, but the files need to be translated into the TXT format prior to submittal to the SRP. If needed, the author can be contacted for assistance regarding this matter.

As noted below, the Hazsite application needs to be updated to save files in the Text-Tab Delimited ("TXT") format. Until these updates are completed, datasets created using the Hazsite application can be submitted in the DBF format.

EDSA Checker Application

The SRP has made available the EDSA data checker application, which verifies whether the files in the dataset are properly formatted, as detailed in the SRP-EDI manual. "Formatted properly" means that the table columns are in the correct order, the number of characters for a given column entry do not exceed the specified maximum length, that specific entries match between the tables, etc.

By default, datasets created using the Hazsite application are in the correct format. However, datasets created using spreadsheet or database applications may not be in the correct format, and therefore should be evaluated using the EDSA check program to ensure that they are formatted properly. Users should be aware that the version of the EDSA checker program currently available to the public is capable of evaluating datasets

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created in the WK1 and DBF formats, but cannot evaluate datasets created in the ASCII format.

The SRP is in the process of updating EDSA to be able to evaluate datasets created in the ASCII format. The updated version of the application will also allow users to view error reports on the screen (rather than automatically printing the reports). Also, users will be able to view the HZSAMPLE and HZRESULT files on screen, to assist in evaluating any errors that are reported. An "evaluation" version of the updated EDSA program was released in early May 1999; this version was released on a limited basis, for the purpose of testing the program and determining what programming bugs are present and removing them. A final release to the regulated community is anticipated to be June 1999.

New Mandatory Fields

The following fields are now considered mandatory, and must be completed in order for the dataset to be accepted by the data checker:

DESC (Description) field in the DTST file. The reason for this change is as follows: at this time, the fields SRPID, DIRECTORY, and SUBMITDATE are used to identify a given dataset. The SRP has determined that additional information is needed to further distinguish datasets. The DESC field is adequate for this purpose.

CONSULTANT (Consultant) field in the DTST file. The reason for this change is to assist in associating historical dataset files with recent datasets. If questions arise between recent and historical datasets, it is difficult for the SRP to know whom to contact if the CONSULTANT field is not completed.

DUPSAMP (Duplicate) field in the HZSAMPLE file. The reason for this change is to avoid situations in which duplicates are run, but the field is inadvertently omitted from the HZSAMPLE file. Without knowing that duplicate samples were analyzed, the SRP would assume that multiple samples were collected from a given sampling location.

LAT/LONG and State Plane Coordinates fields in the HZSAMPLE file. Inclusion of location information for each sample, either as Latitude and Longitude OR State Plane Coordinates, is already required. However, the SRP prefers that the location information be provided in State Plane Coordinates. In general, State Plane Coordinates are more accurate than Latitude and Longitude readings. If data have already been collected in Latitude and Longitude format, programs are available for converting Latitude and Longitude to State Plane Coordinates, several of which are available through the SRP website.

CAS number field in the HZRESULT file. The reason for this change is as follows: contaminants may have more than one name (i.e., trichloroethene, trichloroethylene), but will only have one CAS number. Therefore, the EDSA program evaluates the CAS number for a result entry, and then compares the CAS number to a list of acceptable contaminant names. The SRP intends to release the list of CAS numbers and acceptable contaminant names in the near future (the release will be as a downloadable file from the SRP Electronic Data Submission-Hazsite webpage).

Hazsite Application

Changes to the Hazsite program will include the addition of new fields to better describe the collection of ground water samples. In addition, copying and saving records will be made more user-friendly, files will be saved in the Text-Tab Delimited (*.TXT) format, and various programming bugs will also be corrected. Lastly, a data "import" function may also be added to the application. Release of this updated version of Hazsite is expected to be Fall 1999. Additional information regarding this update will be available in future SRP Newsletters, as well as through the SRP internet webpage.

Future Webpage Enhancements

SRP intends to improve the functionality of the SRP EDI Webpage. This will include allowing for improved interaction between the SRP and the regulated community, including formalization of the following processes: distribution of program upgrades and tools, user manuals and other literature, a user-friendly interface for information requests, and a "bulletin board system" accessible to everyone, on which the regulated community can post questions and SRP can post answers, and the regulated community can then search for similar questions/problems and solutions.

Resources

Additional information regarding electronic data submittal, as well as downloads for the Hazsite application and the EDSA checker application, can be obtained from the SRP webpage. In addition, notifications regarding future updates to the Hazsite application and the EDSA program will be made on the **Electronic Data Submission-Hazsite** page of the SRP website, as

Updates To Electronic Data Submission Requirements (continued)

well as through SRP Newsletter articles. The SRP intends to develop both a postal mailing list and an email mailing list specifically for notifying parties of updates to the Hazsite application and the EDSA checker application, as well as other aspects of electronic data submissions.

The author can be contacted either by phone (609-633-1380) or email (*dhaymes@dep.state.nj.us*). Please contact him if you have suggestions for improving the SRP-EDI manual, or if you wish to be added to any postal/electronic mailing lists pertaining to submitting electronic data to the SRP. If you have questions regarding use of the EDSA application, please contact the assigned case manager prior to contacting the author.

The internet address for the **Electronic Data Submission-Hazsite** webpage is:

http://www.state.nj.us/dep/srp/regs/hazsite/hazsite.htm.

ISEE Implements Fax on Demand

By: Michael Justiniano
Division of Responsible Party Remediation
Bureau of Environmental Evaluation Cleanup and Respone Assessment

The Industrial Site Evaluation Element is pleased to announce its Fax on Demand service. The service makes available many of the applications and forms frequently used as part of the Industrial Site Recovery Act (ISRA) regulatory process. These forms are all available through the Site Remediation Program's internet site at *www.state.nj.us/srp*. While downloading these documents from the internet is the preferred option, not everyone has internet access. This service is geared toward those who cannot download these forms from the internet, but have a fax machine.

The way the service works is the caller dials (609) 292-0464 and chooses a document he wishes to receive. A Master List of documents is available through the Fax on Demand and is presented later in this article. The caller then inputs the phone number to which the document is to be faxed using the telephone number pad. The document will then be sent via fax to the designated phone number. It is our hope that you will find this Fax On Demand system both useful and easy to use.

Instructions

1. Dial (609) 292-0464 to call the fax on demand.
2. You may dial 2 to bypass the initial menu and go directly to the document menu.
3. At the prompt, dial the document number noted in the table below which corresponds to the document you wish to receive. You can then hit the # key to confirm or dial 1 to request additional documents.
4. You will then be prompted to dial your fax number including area code. You need not worry about dialing 1 or parentheses or hyphens. When you have finished dialing your fax number press the # key. You will then hear a playback of your fax number. Press 1 to confirm or 2 to enter the different fax number.
5. Your fax will be on its way to you shortly.

If you have any difficulties using this system, please call (609) 777-0899 for assistance.

Doc. No.	Document Description	No. of Pages
11	ISRA Application For An Applicability Determination	4
12	Area Of Concern Waiver Application	5
13	General Information Notification	6
14	Deed Notice Model Document	7
15	Expedited Review Application	5
16	Initial Notice Fee Submittal Form	1
17	Limited Site Review Application	6
18	Minimal Environmental Concern Waiver	3
19	Negative Declaration Affidavit	2
20	Remedial Action Workplan Deferral	3
21	Remediation In Progress Waiver	5
22	Regulated Underground Storage Tank Waiver Application	4
23	Preliminary Assessment Report Form	7
24	Limited Conveyance Application	8
25	Application for a Deminimus Quantity Exemption	6
26	List of Standard Industrial Classifications (SICs) Regulated Pursuant to ISRA and Exceptions Within the Regulated SICs	4
27	Application for a Remediation Agreement	7

SRP Makes Available *Guidance For Sediment Quality Evaluations*

By: Nancy Hamill
Division of Publicly Funded Site Remediation
Bureau of Environmental Evaluation and Risk Assessment

The Bureau of Environmental Evaluation and Risk Assessment, Environmental Toxicology and Risk Assessment Unit (BEERA/ETRA), is pleased to announce the November 1998 publication of *Guidance for Sediment Quality Evaluations.* This document updates and expands previous SRP guidance, giving clearer and more detailed direction on the "triad" approach to evaluating sediment quality: chemical analyses, toxicity and bioavailability measurements, and assessment of resident benthic communities. Use of this guidance will facilitate performance of the Baseline Ecological Evaluation and Ecological Risk Assessments, required pursuant to N.J.A.C. 7:26E-3.11 and 4.7, respectively.

Copies of the document are available for $5.00 from:

New Jersey Department of Environmental Protection
Maps and Publications
PO Box 438
Trenton, NJ 08625-0438
609-777-1038

Checks should be made payable to: Treasurer, State of New Jersey

It is available on the SRP home page at: *http://www.state.nj.us/dep/srp/regs/sediment*. Questions can be directed to Nancy Hamill of the ETRA staff at 609-633-1348.

General Information:

Please be sure to include the box number on all mail addressed to the Industrial Site Evaluation Element. Some mail has been received by the element many weeks past the date on the correspondence, due to the omission of the box number. The proper way to address mail to the element is:

Section Name or Case Manager's Name
Industrial Site Evaluation Element
PO Box 028
Trenton, New Jersey 08625-0028

Revisions to the Soil Cleanup Criteria

By: Barry Frasco, Hazardous Site Science Element

Soil Cleanup Criteria (SCC) were first published in the April 1993 issue of the *Site Remediation News* (Volume 5, Number 1). The SCC were revised in April 1994 (*Site Remediation News*, Volume 6, Number 1) and a revised lead criterion was added in 1995 (*Site Remediation News*, Volume 7, Number 1).

These criteria have been provided to the regulated community as an interim guide in assessing contaminated/potentially contaminated sites pending Department promulgation of soil remediation/cleanup standards. The Department's Site Remediation Program is currently in the process of developing soil remediation standards in accordance with the Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12. The Department anticipates that a Draft Rule Framework will be prepared for Interested Party Review and Comment by the fall of 1999. As such, the Department has determined not to make large-scale revisions to the SCC prior to the Interested Party Review.

However, the Department, based on the reasons noted below, is making four (4) revisions to the SCC, which are effective immediately. These revisions are:

1. **Addition of soil cleanup criteria for trivalent and hexavalent chromium** – Soil cleanup criteria for trivalent and hexavalent chromium were announced by the Department in September 1998. While these criteria have been in existence for over six months and are available on the Site Remediation Program Web Site (*www.state.nj.us/dep/srp/reg/guidance.htm*), they had not been incorporated into the main SCC document.

2. **Increase in the xylene soil Impact to Ground Water criterion** – The change in the Department's Drinking Water Standard for xylene from 44 *u*g/l to 1000 *u*g/l resulted in a change of the soil impact to ground water to 67 mg/kg. While the Site Remediation Program has routinely allowed the use of the 67 mg/kg value, it has been via the Alternate Cleanup Standard (ACS) process. The Department recognizes that the use of the ASC process to allow for the use of the new xylene impact to ground water criterion is an unnecessary administrative activity. As such, the new xylene impact to ground water criterion was been incorporated into the SCC

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Revisions to the Soil Cleanup Criteria (continued)

document. However, it should be noted that the Department's current policy to use a 10 mg/kg soil xylene concentration as a trigger for the collection of a ground water sample for BTEX compounds has not changed.

3. **Increase in the Residential Direct Contact SCC for cadmium** – Using the USEPA equation for ingestion of noncarcinogenic contaminants, USEPA default parameter inputs and USEPA IRIS toxicity data, a residential direct contact soil concentration for cadmium of 39 mg/kg is derived. The Department has routinely allowed this approach for the development of an ACS for cadmium. As such, the Department has determined that the use of the ACS process to develop the 39 mg/kg soil criterion is an unnecessary administrative activity. Therefore, the SCC document has been revised to include the new residential direct contact value for cadmium. However, it should be noted that the new residential direct contact soil criterion may not be protective of ground water and an evaluation of site specific chemical and physical parameters is required to determine if there is any potential/actual impact to ground water. Because of this potential impact to ground water and that there have been no ACS requests for the Non-Residential land use scenario, the Non-Residential Direct Contact Soil Criterion for cadmium will remain at 100 mg/kg.

4. **Increase in the residential and Non-Residential Direct Contact SCC for beryllium** – The Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12g(4), states "Remediation shall not be required beyond the regional natural background levels for any particular contaminant." The Site Remediation Program has reviewed numerous soil background determination submissions for beryllium where the natural background soil concentration was between 1mg/kg and 2mg/kg. Examination of background sample data from Fields, et al (1993) reveals that the 95th percentile value of the distribution of beryllium data is 2 mg/kg. The Department believes that this value is a reasonable determination of natural soil background for beryllium in New Jersey. This conclusion was also made in the Technical Basis and Background document (1992) that accompanied the 1992 proposed, but never adopted, soil cleanup standard regulations, N.J.A.C. 7:26D. In an effort to reduce the number of background soil determination submissions (which have been routinely approved), the SCC for beryllium has been changed to 2 mg/kg to reflect a general background level for the State of New Jersey.

As noted in the past, notwithstanding where the soil cleanup criteria are based on human health impacts, the Department shall still consider environmental impacts when establishing site specific cleanup criteria. This along with other site-specific factors including background conditions may result in site specific cleanup criteria which differ from the criteria listed in the SCC document. Therefore, the SCC list shall not be assumed to represent approval by the Department of any remedial action or to represent the Department'' opinion that a site requires remediation.

Included is the newly revised Soil Cleanup Criteria document. This revised document is also available for review and downloading on the Site Remediation Program Web Site, *www.state.nj.us/dep/srp/regs/scc*.

References

Fields, T., T. McNevin, R. Harkov and J. Hunter. 1993. A summary of selected soil constituents and contaminants at background locations in New Jersey. N.J. Department of Environmental Protection Publication.

NJDEP. 1992. Technical Basis and Background for Cleanup Standards for Contaminated Sites, N.J.A.C. 7:26D.

USEPA 1996. Soil Screening Guidance: User's Guide. EPA/540/R-96/018.

USEPA 1998. The Integrated Risk Information System (IRIS).

SITE REMEDIATION NEWS

State of New Jersey
Department of Environmental Protection
Division of Publicly Funded Site Remediation
PO Box 413
Trenton, New Jersey 08625-0413

Senior Editor ..... Donna Marie Zalis

Editorial Review Board .. Ron Corcory, Barry Frasco, Linda Grayson, Wayne Howitz, George King, George Klein, Kevin Kratina, Ed Putnam, Dave Sweeney, and Bob Van Fossen.

Graphics Support ..... Kathy Pietras

Contributing Writers ..... David Haymes, Michael Justiniano, Nancy Hamill, Barry Frasco, Rob Schrader, and Kenneth Smith.

Soil Cleanup Criteria (mg/kg)
(Last Revised 5/12/99)

This listing represents the combination of Tables 3-2 and 7-1 from the Department of Environmental Protection and Energy's February 3, 1992 proposed rule entitled Cleanup Standards for Contaminated Sites, N.J.A.C. 7:26D, as corrected based upon errors identified by the Department during or subsequent to the comment period as well as new toxicological or other information obtained since the rule proposal. Please refer to the respective footnotes for more detail. Notwithstanding, where the following criteria are based on human health impacts, the Department shall still consider environmental impacts when establishing site specific cleanup criteria. This along with other site-specific factors including background conditions may result in site specific cleanup criteria which differ from the criteria listed below. Therefore, this list shall not be assumed to represent approval by the Department of any remedial action or to represent the Department's opinion that a site requires remediation.

Note: Material bracketed **[thus]** is deleted and material underlined **thus** is added.

Contaminant	CASRN	Residential Direct Contact Soil Cleanup Criteria (a) (b) (RDCSCC)	Non-Residential Direct Contact Soil Cleanup Criteria (a) (b) (NRDCSCC)	Impact to Ground Water Soil Cleanup Criteria (b) (IGWSCC)
Acenaphthene	83-32-9	3400	10000(c)	100
Acetone (2-propanone)	67-64-1	1000(d)	1000(d)	100
Acrylonitrile	107-13-1	1	5	1
Aldrin	309-00-2	0.040	0.17	50
Anthracene	120-12-7	10000(c)	10000(c)	100
Antimony	7440-36-0	14	340	(h)
Arsenic	7440-38-2	20 (e)	20 (e)	(h)
Barium	7440-39-3	700	47000(n)	(h)
Benzene	71-43-2	3	13	1
Benzo(b)fluoranthene (3,4-Benzofluoranthene)	205-99-2	0.9	4	50
Benzo(a)anthracene (1,2-Benzanthracene)	56-55-3	0.9	4	500
Benzo(a)pyrene (BaP)	50-32-8	0.66(f)	0.66(f)	100
Benzo(k)fluoranthene	207-08-9	0.9	4	500
Benzyl Alcohol	100-51-6	10000(c)	10000(c)	50
Beryllium	7440-41-7	**[1(f)] 2 (e)**	**[1(f)] 2 (e)**	(h)
Bis(2-chloroethyl) ether	111-44-4	0.66(f)	3	10
Bis(2-chloroisopropyl)ether	108-60-1	2300	10000(c)	10
Bis(2-ethylhexyl) phthalate	117-81-7	49	210	100
Bromodichloromethane (Dichlorobromomethane)	75-27-4	11	46	1
Bromoform	75-25-2	86	370	1
Bromomethane (Methyl bromide)	74-83-9	79	1000 (d)	1
2-Butanone (Methyl ethyl ketone) (MEK)	78-93-3	1000 (d)	1000 (d)	50
Butylbenzyl phthalate	85-68-7	1100	10000 (c)	100
Cadmium	7440-43-9	**[1] 39**	100	(h)
Carbon tetrachloride	56-23-5	2 (k)	4 (k)	1
4-Chloroaniline (*p*-Chloroaniline)	106-47-8	230	4200	(r)
Chlorobenzene	108-90-7	37	680	1
Chloroform	67-66-3	19 (k)	28 (k)	1
4-Chloro-3-methyl phenol (*p*-Chloro-*m*-cresol)	59-50-7	10000 (c)	10000 (c)	100
Chloromethane (Methyl chloride)	74-87-3	520	1000 (d)	10
2-Chlorophenol (*o*-Chlorophenol)	95-57-8	280	5200	10
Chromium – hexavalent (VI)	18540-29-9	**240; 270 (g); (i)**	**6100; 20 (g); (i)**	**(h)**
Chromium – trivalent (III)	16065-83-1	**120,000**	**(j)**	**(l)**
Chrysene	218-01-9	9	40	500
Copper	7440-50-8	600 (m)	600 (m)	(h)

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)
Cyanide	57-12-5	1100	21000 (o)	(h)
4,4'-DDD (p,p'-TDE)	72-54-8	3	12	50
4,4'-DDE (p,p'-DDX)	72-55-9	2	9	50
4,4'-DDT	50-29-3	2	9	500
Dibenz(a,h)anthracene	53-70-3	0.66 (f)	0.66 (f)	100
Dibromochloromethane (Chlorodibromomethane)	124-48-1	110	1000 (d)	1
Di-n-butyl phthalate	84-74-2	5700	10000 (c)	100
Di-n-octyl phthalate	117-84-0	1100	10000 (c)	100
1,2-Dichlorobenzene (*o*-Dichlorobenzene)	95-50-1	5100	10000 (c)	50
1,3-Dichlorobenzene (*m*-Dichlorobenzene)	541-73-1	5100	10000 (c)	100
1,4-Dichlorobenzene (*p*-Dichlorobenzene)	106-46-7	570	10000 (c)	100
3,3'-Dichlorobenzidine	91-94-1	2	6	100
1,1-Dichloroethane	75-34-3	570	1000 (d)	10
1,2-Dichloroethane	107-06-2	6	24	1
1,1-Dichloroethene	75-35-4	8	150	10
1,2-Dichloroethene (trans)	156-60-5	1000 (d)	1000 (d)	50
1,2-Dichloroethene (cis)	156-59-2	79	1000 (d)	1
2,4-Dichlorophenol	120-83-2	170	3100	10
1,2-Dichloropropane	78-87-5	10	43	(r)
1,3-Dichloropropene(cis and trans)	542-75-6	4	5 (k)	1
Dieldrin	60-57-1	0.042	0.18	50
Diethyl phthalate	84-66-2	10000 (c)	10000 (c)	50
2,4-Dimethyl phenol	105-67-9	1100	10000 (c)	10
Dimethyl phthalate	131-11-3	10000 (c)	10000 (c)	50
2,4-Dinitrophenol	51-28-5	110	2100	10
Dinitrotoluene(2,4-/2,6-mixture)	25321-14-6	1 (l)	4 (l)	10 (l)
Endosulfan	115-29-7	340	6200	50
Endrin	72-20-8	17	310	50
Ethylbenzene	100-41-4	1000 (d)	1000 (d)	100
Fluoranthene	206-44-0	2300	10000 (c)	100
Fluorene	86-73-7	2300	10000 (c)	100
Heptachlor	76-44-8	0.15	0.65	50
Hexachlorobenzene	118-74-1	0.66 (f)	2	100
Hexachlorobutadiene	87-68-3	1	21	100
Hexachlorocyclopentadiene	77-47-4	400	7300	100
Hexachloroethane	67-72-1	6	100	100
Indeno(1,2,3-cd)pyrene	193-39-5	0.9	4	500
Isophorone	78-59-1	1100	10000 (c)	50
Lead	7439-92-1	400 (p)	600 (q)	(h)
Lindane (gamma BHC) (gamma HCH)	58-89-9	0.52	2.2	50
2-Methylphenol (*o*-creosol)	95-48-7	2800	10000 (c)	(r)
4-Methylphenol (*p*-creosol)	106-44-5	2800	10000 (c)	(r)
Methoxychlor	72-43-5	280	5200	50
Mercury	7439-97-6	14	270	(h)
4-Methyl-2-pentanone (MIBK)	108-10-1	1000 (d)	1000 (d)	50
Methylene chloride (Dichloromethane)	75-09-2	49	210	1
Naphthalene	91-20-3	230	4200	100
Nickel	7440-02-0	250	2400 (k) (n)	(h)
Nitrobenzene	98-95-3	28	520	10
N-Nitrosodiphenylamine	86-30-6	140	600	100
N-Nitrosodi-n-propylamine	621-64-7	0.66 (f)	0.66 (f)	10
PCBs (Polychlorinated biphenyls)	1336-36-3	0.49	2	50
Pentachlorophenol	87-86-5	6	24	100

Contaminant	CASRN	(RDCSCC)	(NRDCSCC)	(IGWSCC)
Phenol	108-95-2	10000 (c)	10000 (c)	50
Pyrene	129-00-0	1700	10000 (c)	100
Selenium	7782-49-2	63	3100 (n)	(h)
Silver	7440-22-4	110	4100 (n)	(h)
Styrene	100-42-5	23	97	100
1,1,1,2-Tetrachloroethane	630-20-6	170	310	1
1,1,2,2-Tetrachloroethane	79-34-5	34	70 (k)	1
Tetrachloroethene (Tetrachloroethylene) (PCE)	127-18-4	4 (k)	6 (k)	1
Thallium	7440-28-0	2 (f)	2 (f)	(h)
Toluene	108-88-3	1000 (d)	1000 (d)	500
Toxaphene	8001-35-2	0.10 (k)	0.2 (k)	50
1,2,4-Trichlorobenzene	120-82-1	68	1200	100
1,1,1-Trichloroethane	71-55-6	210	1000 (d)	50
1,1,2-Trichloroethane	79-00-5	22	420	1
Trichloroethene (Trichloroethylene) (TCE)	79-01-6	23	54 (k)	1
2,4,5-Trichlorophenol	95-95-4	5600	10000 (c)	50
2,4,6-Trichlorophenol	88-06-2	62	270	10
Vanadium	7440-62-2	370	7100 (n)	(h)
Vinyl chloride	75-01-4	2	7	10
Xylenes (Total)	1330-20-7	410	1000 (d)	**[10] 67 (s)**
Zinc	7440-66-6	1500 (m)	1500 (m)	(h)

Footnotes:

(a) Criteria are health based using an incidental ingestion exposure pathway except where noted below.

(b) Criteria are subject to change based on site specific factors (e.g., aquifer classification, soil type, natural background, environmental impacts, etc.).

(c) Health based criterion exceeds the 10,000 mg/kg maximum for total organic contaminants.

(d) Health based criterion exceeds the 1000 mg/kg maximum for total volatile organic contaminants.

(e) Cleanup standard proposal was based on natural background.

(f) Health based criterion is lower than analytical limits; cleanup criterion based on practical quantitation level.

(g) Criterion based on the inhalation exposure pathway.

(h) The impact to ground water values for inorganic constituents will be developed based upon site specific chemical and physical parameters.

(i) Site specific determination required for SCC for the allergic contact dermatitis exposure pathway.

(j) Contaminant not regulated for this exposure pathway.

(k) Criteria based on inhalation exposure pathway, which yielded a more stringent criterion than the incidental ingestion exposure pathway.

(l) No criterion derived for this contaminant.

(m) Criterion based on ecological (phytotoxicity) effects.

(n) Level of the human health based criterion is such that evaluation for potential environmental impacts on a site by site basis is recommended.

(o) Level of the criterion is such that evaluation for potential acute exposure hazard is recommended.

(p) Criterion based on the USEPA Integrated Exposure Uptake Biokinetic (IEUBK) model utilizing the default parameters. The concentration is considered to protect 95% of target population (children) at a blood lead level of 10 *u*g/dl.

(q) Criteria were derived from a model developed by the Society for Environmental Geochemistry and Health (SEGH) and were designed to be protective for adults in the workplace.

(r) Insufficient information available to calculate impact to ground water criteria.

(s) Criterion based on new drinking water standard.

Protection Through Restoration

By: Rob Schrader
Bureau of Emergency Response
Division of Responsible Party Site Remediation

The Delaware Bay & River

The Delaware Bay and River receives 70% of all the crude oil entering the ports on the eastern seaboard of the United States.[1] Approximately 1.25 billion barrels of oil is imported on approximately 1,000 vessels that stop at the Ports of Philadelphia and Wilmington.

The Delaware Bay and River is an important wetlands and wildlife habitat. This sensitive area provides a safe harbor for the nesting waterfowl, migrating waterfowl, non-game species such as the Osprey (*Pandion haliaetus*) and American Bald Eagle *(Haliaeetus leucocephalus*), and wintering waterfowl. In addition to the waterfowl, the bay supports a million or more shorebirds in late spring as over 20 species migrate between Southern Hemisphere wintering grounds and arctic breeding grounds. The abundant food resources of the Delaware Bay, principally the eggs of the horseshoe crab, allow shorebirds to store sufficient energy to complete their migration. Because most of the world population of certain species is concentrated along the shores of the Delaware Bay at one time, oil spills have the potential to cause catastrophic damage. Even spills that affect only the food sources could result in a subsequent death of the shorebirds requiring years for the populations to recover. Along with the threat to shorebirds, other sensitive resources are affected in and around this estuary, including shellfish, sport, and commercial fisheries, diving waterfowl, and resident birds. In addition, this area also provides a prime location for recreation and eco-tourism for the public.

Protection Strategies

In the summer of 1990, the New Jersey Department of Environmental Protection, Bureau of Emergency Response (BER) along with the Delaware Bay River Cooperative (DBRC) surveyed approximately 75 miles of the New Jersey Shoreline from Cape May to the Delaware Memorial Bridge. This survey was to plan strategic protection strategies at each Gut, Creek, washout and tributary that feeds the River. The final strategies were based on the following hierarchy of controls: 1) physical processes in the creek, gut or tributary; 2) protection priorities; and 3) probable effectiveness of response.

Because the basic assumption was that the strategy be designed to deal with spilled oil to the creeks from the open bay, the protection strategies that were proposed emphasized flood-tidal conditions. These proposed strategies were based on the information at hand on wave action, tidal currents and based on normal weather patterns for the area. The majority of the areas have no vehicular access. The shoreline is a high-energy shoreline that consists of root substrate, mud and the indigenous grasses of the area. Of the 71 estuaries, 67 of them will need permanent anchor points because setting traditional anchors would cause more environmental damage and would in most cases not be strong enough to hold the proposed boom. In addition, the permanent anchor points would greatly reduce boom deployment time, thus averting catastrophic damage to the wetlands making the pilings the preferred method for the many areas. However, funding for such pilings would have to be found. All these strategies are now Annexed to the USCG Port of Philadelphia Area Contingency Plan.[2]

The Spill

In October of 1996, while enroute to New York from Texas, the barge Bouchard B155 carrying 150,000 barrels of #6 fuel oil entered the Delaware Bay to weather out a Nor'easter that was affecting the regional area. The B155 anchored in the Bombay Hook anchorage 8.5 nautical miles from Nantuxent Cove. The crew of the barge had been aware of oil in the anchor compartment before anchoring.

On October 24, 1996, the NJDEP Bureau of Emergency Response was notified that oil had been discovered on the shoreline at the small coastal village of Point Bay, Cumberland County.[3] The responsible party (RP) had accepted responsibility and hired a clean up crew.

Figure 1

(continued on page 10)

Protection Through Restoration (continued)

The oil had formed "tar balls" and fouled the entire length of the village. These tar balls were mixed in with the rack line and consisted of vegetative debris. The rack line was 4-5 meters wide and the coverage of oil was patchy 20-30% to sporadic 5-10%.[4] Studying the trajectory of the oil movement, it was probable that oil had also affected an area just north of Point Bay.

A survey of the 3.5 nautical mile area from Nantuxent Creek to Ben Davis Point revealed that the oil had sporadically affected the entire length of shoreline from waters edge to approximately 30 meters into the marsh. Oil coverage was patchy, with approximately 10% of the marsh area affected. Within these patches, oil covered the upper half of the marsh vegetation. A visible sheen was observed emitting from the oil globules on the substrate and running into the water (see Figure 1).

A decision not to clean the wetlands and not cut the grass was based in part due to findings of a NOAA study on a spill on the upper Delaware River, July 1992. In that finding, NOAA scientist Edward Livine found that vegetation that is light to moderately fouled with or with out cutting resulted in no long-term negative impact. Flowering and seed production by most of the vegetation in the affected areas had also indicated that plants were not stressed by the oil or by cutting any of the methods.[5]

Natural Resource Damage Assessment

According to 43 CFR 11.14, in most spills, a State trustee shall act on behalf of the public as trustee for natural resources, including their supporting ecosystems, within the boundary of a state or belonging to, managed by, controlled by, or appertaining to such state.[6]

In the event of an oil spill, in the State of New Jersey, the state trustee, in conjunction with the federal government trustees, work with the parties responsible for the spill to restore any resulting injury to the public's resources. In most cases, before restoration* can occur, the governments must first assess the type and extent of the natural resources injury. Depending upon the specifics of the spill, (oil type, weather, affected resources, etc.) and the level of cooperation from the responsible party, the assessment process and succeeding natural resources restoration may take a considerable amount of time and money.

In order to speed the restoration of the public's natural resources and keep assessment cost at a minimum, New Jersey's Office of Natural Resource Damage (ONRD) has adopted a policy of forgoing the assessment phase of natural resource restoration in the event of very small spills with limited or ephemeral natural resource injury. The decision to immediately pursue restoration without assessment is made only after the responsible party has agreed to a specific restoration project and the cost of assessing injury will likely be greater that the cost of the injury itself (or restoration thereof).[7]

The oil from the October 1996 barge spill that came ashore in the Nantuxent Cove area of New Jersey was of relatively low toxicity and limited extent, and deposited on vegetation that had already begun its seasonal senescence. Therefore, ONRD, NOAA, and the responsible party agreed that the spill resulted in minor injury to the salt marsh and that a small restoration project in the area of the spill would be an appropriate measure to compensate the public for the injury.

Several restoration options were considered, but based on a suggestion by the author, ONRD and NOAA determined that construction of permanent boom anchors at the mouth of the three creeks emptying into Nantuxent Cove was the best option. The presence of the boom anchors would allow for rapid deployment of protective booms in the event of future oil spills, a level of protection that does not currently exist in these ecologically sensitive areas.

Representatives from NJDEP's Office of Natural Resource Damage, and Bureau of Emergency Response along with the DBRC visited the area. Six poles were to be set. Two poles at each of the creeks, one on the north side, one on the south. The creeks were Back Creek, Cedar Creek, and Nantuxent Creek (see Figure 2).

The project was to be enhanced by the placement of osprey (a threatened species) nest platforms in five of the six boom anchor pilings. These pilings would have to be placed at the mean high water mark and would have to be a single pole structure with a platform on the top 14-16' high. The nesting box would include a perch equal or greater in height to the nest on either side.

The Project

Because this was a new concept in protecting the wetlands, the NJDEP's ONRD drafted a Memorandum of Understanding (MOU) where ONRD oversees the settlement and makes monies available to BER for projects such as the installation of the booming anchor poles.

(continued on page 11)

Protection Through Restoration (continued)

Figure 2

The project needed both state and Army Corps of Engineers permits for the installation. The permitting process was both tedious and frustrating. Three of the six poles were to be located on State Property; three were to be located on private property. Permission was needed from the property owners as well as from the three municipalities Planning Boards and the Cumberland County Freeholders. All were highly enthusiastic for the project.

The US Army Corps of Engineers was asked to participate. They had a shallow draft construction barge with a 130' crane, which was perfect for the Project. The US Army Corps of Engineers entered a MOU with the NJDEP to install the pilings. Public Service Electric & Gas, a utility in the State and operators of the Salem Nuclear Power Plant, were asked if they would donate six 35' poles for the project. Public Service Electric & Gas, Environmental Director had no hesitations, six poles were slated for the project and were delivered to the Fort Mifflin Army Corps of Engineers yard in Philadelphia. The nests were built by Citizens United, a non-profit organization that routinely builds, installs and tends osprey nests on the Maurice River. The Cumberland County Road Department under the direction of the Office of Emergency Management delivered these nests.

Installation

The week of September 22, 1998 was selected for installation. This week was selected because tides were favorable; having a high tide in mid afternoon. The Barge Titan began the installation process. With small river tugs, the barge and crane were pushed to the pre-designated position on the north side of the Nantuxent Creek. There they dropped the barge stabilizers and set the pilings. Once the pole was driven to a depth of approximately 20 feet, the nesting box was installed on the top. Approximately 1.5 metes from the bottom, a 12-inch eyebolt was through bolted for the boom anchor. That afternoon the southern pole was set and the nest was placed. The project was completed in four days, one day over budget due to small logistical problems. In all the installation of the Osprey nests/ anchor points went very well.

The Test

Since the original survey in 1990, DBRC has been testing and proving all of the strategies for the Delaware River. In only two incidents, was DBRC activated to boom off any NJ creeks in the lower Delaware Bay.

In response to the NJDEP installing the anchoring points, DBRC pledged that they would test the pilings in

Figure 3

(continued on page 12)

Protection Through Restoration (continued)

Back Creek, the northern most creeks in Nantuxent Cove.

On October 19, 1998, DBRC arrived at Cedar Creek at 8 am with a small barge loaded with 3,000 feet of boom, 3 small boats and 10 men. Tides that day were favorable, low tide being at 0810 and high tide at 1315. Currents were averaging 1.2 knots.

The boats were launched and working with the flood tide, they had placed the 3,000 feet of boom with 20 anchors across the mouth of Back Creek within 3 hours. According to the contractor S&D Environmental Services Field supervisor, the placement of the boom was made easier by the poles. The poles not only gave them a landmark, but they were able to connect the boom immediately without destroying the marsh substrate by digging in anchors (see Figure 3).

Conclusion

This unique pilot project will drastically shorten the response time to place protective booms in remote locations. In most cases, an oil spill in the Delaware Bay does not go unnoticed. Lead-time and trajectories for where the oil will impact are made by NOAA to the Coast Guard. The RP will direct DBRC or a contractor to boom the area. Although, boom placement has been pre-designated in the Area Contingency Plan, the contractor if not familiar with the area can only guess where the boom is to be placed to be effective. In most cases, the response time to the area would be 2-3 hours and then possibly 5 hours to boom any one of the creeks.

With the nesting poles/booming anchors in place, the 6-8 hour response time to these remote areas will be cut in half. With the pre-designated anchor points, there is no question where the boom will be placed and with the rapid response, damage to the wetlands is reduced; thus, damage assessment and clean up costs are reduced. The booming anchor/osprey habitat concept is good for both the environment and for the shipping industry.

The Bureau of Emergency Response has been a working partner with DFG&W/ONRD on numerous spills since the October 1996 incident on the Delaware River. This partnership has provided the State of New Jersey numerous projects on many of our creeks and rivers. At this time, settlements from spills in the Pennsauken Creek and the Woodbridge Creek have provided monies for the protection of these valuable estuaries as projects pending. The New Jersey Department of Environmental Protection has taken a step in the protection of the Delaware Estuary and to the wetlands along our shoreline.

The concept of *Protection through Restoration* is new. The success of this pilot program and the overall acceptance by industry, ONRD, NOAA, DFG&W, and The U.S. Department of Interior, has enabled this concept to blossom to national notoriety and will continue to provide protection to our riverine and coastal environment for years to come setting nesting poles/ booming anchors where needed.

[1] R.Glenn Ford, Ecological Consulting, Inc November 1992

[2] USCG Port of Philadelphia Area Contingency Plan, Sensitive Area Annex

[3] NJDEP UCN 96-10-24-1806, Tank barge B155, Bouchard Transportation, R. Schrader, OSC

[4] Shoreline Oiling Assessment Field Book, No.X-255

[5] "Follow Up Study on Oiled Vegetation Cutting Along The Delaware River, Edward Levin, SSC NOAA, 1995

[6] 43 CFR 11.14(I) Damages set forth under section 107(a) CERCLA

[7] Text provided by John Sacco, NJDEP, Division of Fish Game & Wildlife, Office of Natural Resource Damage, 1998

* ***Restoration or rehabilitation***- *means actions undertaken to return an injured resource to its baseline condition, as measured in terms of the injured resource's physical, chemical, or biological properties or the services it previously provided, when such actions are in addition to response actions completed or anticipated, and when such actions exceed the level of response actions determined appropriate to the site pursuant to the National Contingency Plan .*

General Information:

The *Site Remediation News* is published by the Program Support Element. If you want to receive the *Site Remediation News*, it is available on the web page at *http://www.state.nj.us/dep/srp*. If you want a paper copy, please send a request containing your name and address to:

George H. Klein
Program Support Element
PO Box 413
Trenton, New Jersey 08625-0413

SITE REMEDIATION NEWS Alphabetical Index

By: Kenneth F. Smith, Industrial Site Evaluation Element

Included with this edition of the *SITE REMEDIATION NEWS (SRN)* is the annual update of the alphabetical index of articles found in the *SRN* (called *ECRA Update* from Oct '89-Oct '91). The index is arranged using a key word or words from the title of the article. In some cases, an article title appears more than once. For example, an article dealing with soil cleanup was included under cleanup and soil. The index is updated once a year and included as an attachment to the edition published after the new year. If you have any suggestions for changes, please send them to Kenneth F. Smith, Industrial Site Evaluation Element, PO Box 028, Trenton, NJ 08625-0028. If you would like to receive one or more back issues of the *SRN* or *ECRA Update*, an order form has been included after the index. Although the most current issue of the *SRN* is distributed gratis, a charge of $5.00 per back issue is being instituted for this special service. Please send your order form, with a check made payable to "Treasurer, State of New Jersey," to George H. Klein, Assistant Director, Program Support Element, Attn: *Site Remediation News*, PO Box 413, Trenton, NJ 08625-0413.

We regret that we cannot make copies of individual articles.

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