

New York State Department of Environmental Conservation

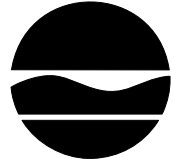
Division of Solid and Hazardous Materials

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Alexander B. Grannis
Commissioner

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 24, 2009

Mr. Brian McGinnis
FMC Corporation, Remediation Department
1735 Market Street
Philadelphia, Pennsylvania 19103

Dear Mr. McGinnis:

Re: FMC Corporation, Middleport, NY
EPA ID No. NYD002126845
AOC Docket No. II-RCRA-90-3008(h)-0209
Arsenic Air Deposition Area 1 and Culvert 105
FMC's Corrective Measures Study (CMS) Work Plan

The United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC), hereafter referred to as "the Agencies", in consultation with the New York State Department of Health (NYSDOH), have reviewed FMC's CMS Work Plan submitted by FMC letter dated May 15, 2009. Based on our review, the Agencies consider that this Work Plan generally conforms to FMC's March 23, 2009 CMS Work Plan outline and the agreements reached during the March 4-5, 2009 meeting, as well as addresses some of the Agencies' outline comments provided in our April 16, 2009 letter. However, the Agencies' have enclosed some specific comments requiring some modifications to this CMS Work Plan. In reviewing this Work Plan and developing these comments, the Agencies took into consideration the Agencies' Final Corrective Action Objectives (CAOs) and some comments received from the Middleport Community Input Group (MCIG) which were discussed at the June 9, 2009 MCIG meeting. In response to these comments, FMC must take at least one of the actions specified by Section XI Item 1 of the above referenced AOC.

If you have questions concerning this letter or its enclosure, you may contact either Mr. Matt Mortefolio (NYSDEC) at (518) 402-8594 or Mr. Michael Infurna (USEPA) at (212) 637-4177.

Sincerely,

Matt Mortefolio, P.E.
NYSDEC Project Coordinator
Bureau of Solid Waste & Corrective Action

Michael Infurna
USEPA Project Coordinator
Environmental Planning and Protection Division

Enclosure

cc: w/enc. - M. Hinton, NYSDEC Region 9 Buffalo
T. Girard, NYSDOH
D. Watts, New Jersey Institute
W. Arnold, MCIG
D. Seaman, Seaman, Jones, Hogan & Brooks

bcc: w/enc. - M. Mortefolio, NYSDEC Albany
M. Infurna, USEPA

ebcc: w/enc. - M. Mortefolio, NYSDEC Albany
M. Infurna, USEPA
G. Sutton, NYSDEC Region 9 Buffalo
J. Ridenour, NYSDOH
W. Mugdan, USEPA
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P. Phaneuf, NYSDEC Albany
D. Radtke, NYSDEC Albany
R Quail, NYSDEC Albany
D. David, NYSDEC Region 9 Buffalo
G. Litwin, NYSDOH
R. Fedigan, NYSDOH

ENCLOSURE
Agencies' Comments on
FMC's May 2009 CMS Work Plan

Specific Comments:

1. Page 1, Section 1.0 **INTRODUCTION**
This introduction should include a general discussion which explains why it is necessary and appropriate to consider a wide range of alternatives and cleanup criteria when performing a Corrective Measures Study (CMS). Specifically, this should include an explanation of why the “no action” alternative and the alternative which represents cleanup of all site-related contamination (i.e., cleanup to background) are both commonly included in CMSs, as well as how these alternatives are evaluated in terms of potential human health and environmental risks.

2. Page 2, Section 1.0 **INTRODUCTION**
The last sentence in this section should be modified as indicated below to make clear that this CMS will result in an FMC recommended corrective measure, or measures:

“...and will present FMC's recommended ed corrective measure or measures...”

3. Page 3, Section 1.2.1 **Community Considerations**
The second sentence in the second paragraph on this page should be modified as indicated below so as to be consistent with the phraseology in the Agencies' Final Corrective Action Objectives (CAOs):

“The current and reasonably anticipated future land uses within the CMS Study Areas...”

4. Page 4, Section 1.2.3 **Soil Arsenic Background Considerations**
The first 2 sentences in this section should be modified as indicated below, since the current sentences reflect subjective conclusions which are not supported by current regional data (current background arsenic data suggests past arsenical pesticide usage in some orchards, but not in non-orchard agricultural fields):

“...both geological background and ~~widespread~~ use of ~~a variety of~~ man-made products. In Western New York, there is evidence which suggests that arsenical pesticides were ~~commonly~~ used in some fruit orchards ~~and for other agricultural purposes~~.”

5. Page 6, Section 2.2 **Excluded Areas and Properties**
The first paragraph in this section should be modified so as to not automatically exclude buildings/structures that were constructed during or subsequent to the time period of suspected releases from the FMC Middleport facility. Such buildings/structures may have been constructed on impacted soils which remain underneath these structures. However, since the age of this community suggests that such situations may be rare in occurrence, it can be stated in the Work Plan that any such areas will be evaluated on a case-by-case basis.

6. Page 7, Section 2.3 **UNSAMPLED PROPERTIES**
The last sentence in this section should be modified as indicated below to leave open the option that

the final corrective measure or measures will include a requirement for FMC to annually offer sampling and, if necessary, remediation of these currently unsampled properties:

“FMC will continue to offer soil sampling and analysis on the unsampled properties, and the performance of final corrective measures, if determined necessary based on the analytical results until the start of construction design activities associated with the selected corrective measures alternative.”

7. Page 8, Section 3.0 **TASK 1: COMMUNITY PARTICIPATION**

The Agencies’ CAOs state that “Reasonably anticipated future land uses will be identified in consultation with the community.” Therefore, FMC’s CMS Work Plan should describe the specific measures FMC will take to consult with community stakeholders to obtain their input on anticipated future land uses. This consultation should be an important first step in the CMS process since it effects which Corrective Measures Alternatives (CMAs) will be available for specific future land uses (e.g., properties where the reasonably anticipated future land use is determined to be residential would only allow for consideration of CMAs that will result in unrestricted usage, according to the CAOs) which is of significant concern to community stakeholders.

8. Page 9, Section 3.2 **PROJECT SPECIFIC STAKHOLDERS**

For the Village of Middleport, the Owners of affected Properties and the Royalton-Hartland Central School District, the bullet item indicated below should be added for each of these stakeholder groups, since it should be anticipated that potential impacts on the ability to alter land usage in the future would be of significant concern to these stakeholders:

“• Impact on reasonably anticipated future land uses”

9. Page 11, Section 3.3 **PROJECT-SPECIFIC DOCUMENT REPOSITORIES & CONTACT LIST**

The NYSDOH contact should be changed from “Tamara Girard” to Nathan Freeman” due to recent project staff changes.

10. Page 13, Section 4.0 **TASK 2: RISK ASSESSMENTS**

Use of local soil arsenic background as a risk assessment tool suggests that the local soil arsenic background of 20 ppm is a risk-based number. Local soil background was used as a tool to help determine where arsenic is likely present due to historic FMC releases rather than due to natural background or other sources. It should not be implied that an arsenic concentration of 20 ppm is some baseline value, below which potential risk to human health is inferred as acceptable, since this value is not reflective of risk.

The work plan states that potential risk/risk assessment is the primary criterion that will be used to evaluate corrective measure alternatives. As has been previously stated, risk assessment is considered as one of several tools that are used to evaluate potential human health risks associated with FMC-related contamination in the delineated areas. The CMS work plan relies heavily of the use of risk assessment as the method to develop remedial alternatives and to screen these alternatives to determine which will be further evaluated against other criteria. The proposed approach does not adequately consider other criteria, such as applicable standards, criteria, guidance; local soil arsenic background; and current/future land use, but rather considers them as secondary evaluation criteria. Risk assessment should be considered as one decision tool, not the sole determinant.

11. Page 14, Section 4.3 **HUMAN HEALTH RISK ASSESSMENT APPROACH**

In the last paragraph on this page, the second and third sentences should be deleted and the sixth sentence should be modified as indicated below. These sentences, as currently written, only point the advantages of a probabilistic risk assessment over a deterministic risk assessment and do not point out any of the opposite disadvantages when comparing these two forms of risk assessment. The Agencies consider that this presents a somewhat distorted characterization which seems to unfairly pre-judge the value of one over the other before conducting these assessments. If the work plan intends to compare and contrast deterministic and probabilistic risk assessment approaches, balanced and objective information should be presented.

“The probabilistic risk assessment results are presented as probability distributions ~~that enable a more transparent characterization~~ of the range of ~~community~~ risks and uncertainties associated with these estimates.”

12. Page 15, Section 4.3 **HUMAN HEALTH RISK ASSESSMENT APPROACH**

The words “~~According to USEPA (1997a, 2001)~~” should be deleted from the first sentence on this page or appropriate exact quotes from these documents provided in lieu of the text that follows these words. This modification is necessary to clarify whether these are actual statements made in these documents or FMC’s interpretation of the documents’ content.

The words “In FMC’s opinion” should be added at the beginning of the last sentence in the first paragraph on this page, since this sentence presents FMC’s conclusion regarding the value of solely using deterministic risk assessment. Also, this section should present a discussion of the complexity and time consuming nature involved in performing a probabilistic risk assessment to provide a more balanced comparison between a deterministic verses probabilistic approach

The Agencies are not necessarily convinced that in this case, the use of probabilistic risk assessment will provide sufficient benefit in terms of risk characterization, in consideration of the time consuming nature and level of effort required to adequately perform this type of assessment. As stated in Chapter 1, Section 1.2 of USEPA’s 2001 Risk Assessment Guidance for Superfund; Volume II – Part A, “The decision to perform PRA [Probabilistic Risk Assessment] is appropriate only after the risk assessor and the remedial project manager (RPM) at the site determine whether a PRA will enhance the decision making process at the site.” The Agencies consider it appropriate to first review FMC’s proposed Technical Memorandum “FMC Middleport Risk Management Approach for the CMS” before deciding on how we will consider usage of these risk management tools. Additionally, since the Agencies consider risk assessment as one, and not the sole decision tool, it is unlikely that the probabilistic risk assessment approach will provide information that significantly enhances remedial decision making.

The work plan states that certain exposure scenarios may be limited to deterministic risk assessment methods due to limited data. This appears to be a hybrid approach which warrants discussion of its validity.

13. Page 16, section 4.4 **SITE-SPECIFIC HUMAN HEALTH RISK ASSESSMENT METHODOLOGY**

The first sentence on this page should be modified as indicated below to insure that modifications of listed EPA documents or publication of relevant new EPA documents, which may occur during the CMS process, are considered in the human health risk evaluation process:

“...performed in accordance the most recent versions of relevant USEPA guidance...”

Also, the NYSDEC Soil Cleanup Objectives and the NYSDOH September 2006 Technical Support Document should be referenced in this section as playing a role in the human health risk evaluation process, since the Agencies consider them to be Applicable Relevant and Appropriate Regulations (ARARs) for this site.

The Agencies have not accepted the results of FMC’s 2007 sponsored oral bioavailability study of arsenic. While FMC may proceed to use these results in the CMS risk assessments, this section should be modified to state that FMC will also provide risk assessments using 100% oral bioavailability for comparison purposes.

Based on the findings of FMC's dermal absorption study, FMC has proposed to exclude evaluation of the dermal absorption exposure route in the risk assessment approach. The Agencies have not accepted the results of FMC’s 2007 dermal absorption study of arsenic, and do not therefore agree with FMC’s proposal to neglect this exposure route in the risk assessments. Other dermal absorption studies, such as the one used in the USEPA’s 1998 risk assessment of the Royalton-Hartland School Fields, indicate higher rates of dermal absorption which result more than negligible effects in risk assessments. This section should be modified to indicate that the dermal exposure route will be evaluated in the CMS risk assessments with proposed input parameters presented in FMC’s proposed Technical Memorandum.

14. Page 23, Section 5.3.2 **Soil Tilling / Blending Pilot Study (Optional)**

Add the following question to the list on this page:

“8. Does soil tilling or blending constitute unacceptable dilution.”

15. Page 23, Section 5.4 **IDENTIFICATION & EVALUATION OF TREE PRESERVATION MEASURES**

The first 2 sentences in this section should be deleted since they unfairly pre-judge the outcome of evaluating tree preservation methods and give the false impression that any excavation in a root of any tree regardless of the methods used or the condition of the tree, will result in tree’s death.

16. Page 24, Section 5.4 **IDENTIFICATION & EVALUATION OF TREE PRESERVATION MEASURES**

Add the following considerations to the list on this page:

“8. The time of year during which soil removal in the root zone will have the least effect on the tree.

9. The percentage of the root zone that can undergo soil removal each year that is not expected to damage an otherwise healthy tree.

10. The soil replacement type and any additives that may serve to enhance tree preservation.

11. How far in from the edge of a tree’s drip line can excavation be performed without expected

damage an otherwise healthy tree.

12. How deep can soil be removed within the root without expected damage an otherwise healthy tree.”

17. Page 25, Section 5.6.1.1 **Residential Surface Soils**

The example maximum single point concentration value of 40 ppm in the parenthesis in the third sentence of the third bullet in this section should be deleted. The Agencies do not consider it appropriate to infer any value to this maximum arsenic concentration prior to performance of the CMS.

18. Page 26, Section 5.6.1.2 **Nonresidential Soils**

The first sentence in this section should be modified as indicated below, since, as written, it could be interpreted as allowing institutional/engineering controls to be used on current residential properties that are reasonably anticipated to have a future non-residential use, which is not consistent with the CAOs:

“...based on current non-residential properties that ~~and are~~ reasonably anticipated ~~future~~ to remain non-residential in the future ~~use of property~~, a combination...”

19. Page 28, Section 5.6.2.2 **Culvert 105 Subsurface Soils General CMAs**

This section should also include a CMA for remediation of arsenic to specified cleanup numbers on a point by point basis, in the same manner as appears in Section 5.6.1.1 for surface soils. This CMA appears on the Culvert 105 Subsurface Soil Decision Framework (Figure 4), and may have been inadvertently omitted from this text section.

20. Page 30, Section 6.1 **EVALUATION CRITERIA**

The second paragraph under the “Human Health” heading on this page should be modified as indicated below, since the Agencies consider , the NYSDEC Soil Cleanup Objectives to be ARARs for arsenic as well as the non-arsenic constituents:

“...the human health evaluation will present a comparison of estimated post-remediation concentrations of arsenic and non-arsenic constituents to applicable regulatory criteria (e.g., NYSDEC Soil Cleanup Objectives...”