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January 27, 2016

VIA ELECTRONIC MAIL AND
CERTIFIED MAIL, RETURN RECEIPT REQUESTED

US EPA Region 5
Office of the Regional Hearing Clerk
Attention: La Dawn Whitehead
77 W. Jackson Blvd.
Mailcode: E-19J
Chicago, IL 60604-3590

Re: ***Protective Filing***

Response to Order and Request for Hearing Under 40 C.F.R. Part 24
Relating to RCRA Permit No. OHD 005 0397 730
Dana Companies, LLC, Antwerp Ohio Facility

Dear Ms. Whitehead:

I represent Dana Companies, LLC (Dana), the permittee under the above-referenced RCRA permit. On January 25, 2016, I filed "Written Objections" on behalf of Dana regarding an "Explanation of Significant Differences" (ESD) Region V had issued on January 7, 2016. A copy of our Written Objections is attached.

Our Written Objections were filed pursuant to the Dispute Resolution provisions of a RCRA §3008(h) Administrative Order on Consent (AOC) dated May 1, 2003. As can be seen from our Written Objections, we are urging Region V to amend provisions of the ESD relating to lacustrine groundwater through the AOC Dispute Resolution process and are hopeful of obtaining a favorable result through that process.

As can also be seen from our Written Objections, however, we have reserved the right to pursue an administrative (as well as judicial) appeal if we do not obtain such a favorable result. We explain in the Written Objections why we believe the ESD is the functional equivalent of a unilateral RCRA §3008(h) Administrative Order.

Under 40 C.F.R. §24.05(a), the recipient of a such a unilateral order must file a response and request for hearing within thirty days after service of the order. We are accordingly filing – as a protective matter – this response to the order and request for a hearing. Pursuant to 40 C.F.R. §24.05(c), our attached Written Objections indicate which provisions of the ESD we dispute and state the grounds for our dispute.

I should stress that this filing is purely protective in light of the 30-day deadline specified in 40 C.F.R. §24.05(a). We request that any further proceedings under 40 C.F.R. part 24 be held in abeyance pending the outcome of the Dispute Resolution process under the AOC.

It is our hope, as explained above, that we will be satisfied with the outcome of the Dispute Resolution process and if so, we would accordingly withdraw this response and request. Should the outcome of the Dispute Resolution process not be satisfactory to us, however, we reserve the right to pursue the hearing process under 40 C.F.R. part 24 and would file appropriate notice at that time.

Very truly yours,

Richard G. Stoll

cc: Tom M. Williams, Assistant Regional Counsel
Gregory Rudloff, Land and Chemicals Division

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January 25, 2016

VIA ELECTRONIC MAIL AND
CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Mr. Gregory Rudloff
USEPA Region 5
77 West Jackson Boulevard
Mail Code: LU-9J
Chicago, IL 60604-3507

Re: Dana's Written Objections to Region V's
January 7, 2016 "Explanation of Significant Differences"

Dear Mr. Rudloff:

I represent Dana Companies, LLC (Dana), the permittee under RCRA EPA I.D. No. OHD 005 039 730. The facility subject to this permit is located in Antwerp, Ohio.

By way of brief background, Dana and the Region entered into a RCRA Administrative Order on Consent (AOC) on May 1, 2003. Pursuant to that AOC, the Region proposed certain remedial measures for public comment in its Statement of Basis issued on September 13, 2007. In response to comments filed by Dana, the Region issued final remedial measures on July 16, 2008 in a document entitled Final Decision and Response to Comments (FDRC). Among the requirements mandated by the FDRC was a trichloroethene (TCE) cleanup level in lacustrine clay groundwater of 17,100 µg/L, which was developed to be protective of a redevelopment worker.

Dana did not object to the 17,100 µg/L level at that time. As explained more fully below, however, after several years of implementing a number of treatment technologies and four years of subsequent groundwater monitoring, it had become apparent that the 17,100 µg/L level was practicably unattainable. Furthermore, Dana had concluded that any cleanup level for the on-site lacustrine groundwater was unnecessary to manage risks given the actual exposure scenarios at the site. Dana and the Region engaged in discussions in 2013 regarding how USEPA's Integrated Risk Assessment Information System (IRIS) revised TCE toxicity values would potentially change the cleanup goals at the site. Ultimately, the Region recommended that Dana submit a Focused Corrective Measures Study (Focused CMS) to propose revised TCE cleanup levels (among other things).

Dana submitted its Focused CMS to the Region on February 3, 2014. As explained more fully below, Dana proposed to eliminate the cleanup levels for TCE and other constituents in lacustrine groundwater because a protective restrictive covenant had been placed on the subject property after the 2008 FDRC had been issued.

On January 7, 2016, the Region issued a document entitled "Explanation of Significant Differences" (ESD). Attachment A. Through this ESD, the Region states that it is revising several corrective measures that are enforceable through the AOC. With respect to TCE in lacustrine groundwater, the Region rejected Dana's proposal to eliminate cleanup levels and instead imposed a far more stringent level of 161 µg/L.

While the Region had provided notice and opportunity to comment on the measures imposed through the 2008 FDRC, the Region provided no opportunity for Dana or the public to comment on the provisions of the January 2016 ESD. In explaining its rejection of Dana's proposal for groundwater TCE protection, the Region stated that the approach mandated by the ESD for lacustrine groundwater TCE "will provide the best protection of human health and the environment at the Dana facility." ESD at 13. The ESD concludes: "With the changes to the original remedy described in this ESD, EPA believes the overall remedy remains protective of human health and the environment and is cost-effective." ESD at 15. The ESD also concludes: "While Dana will incur additional costs achieving the revised clean up levels identified in this ESD, there are no significant capital expenditures associated with the specific changes provided for here." ESD at 15.

The ESD states that while the ESD imposes "significant changes to the remedy," since the changes "comply with RCRA and do not fundamentally alter the overall cleanup approach," an ESD issued without notice and opportunity for comment "is the appropriate instrument to document the changes." ESD at 1.

For the reasons explained more fully below, Dana strongly objects to the ESD's provisions for TCE protection in lacustrine groundwater on both substantive and procedural grounds. While reserving our rights to seek an administrative hearing and appeal as well as judicial review (see part 4 below), we are now initiating the "Dispute Resolution" process provided in AOC Section XVI (pages 63-66). Pursuant to AOC Section XVI(B), Dana's Project Coordinator (Graham Crockford of TRC) notified you (the Region's Project Coordinator) of this dispute by electronic mail sent at 10:25 a.m. on Friday, January 22. Pursuant to Section XVI(D), I am in the following pages submitting Dana's "written objections" to you as Project Coordinator, with a copy to the Regional Counsel.

1. EPA's authority to require corrective measures under RCRA §3008(h) is limited to measures that EPA determines, based on a properly supported finding, are "necessary to protect human health or the environment." The ESD contains no such finding with regard to TCE in lacustrine groundwater. Rather, the ESD merely states in conclusory fashion that these measures "provide the best protection of human of human health and the environment."

As a bedrock principle of administrative law, a federal agency cannot impose requirements that Congress has not authorized the agency to impose through statutory provisions. For a recent example of this principle resulting in the U.S. Supreme Court's rejection of an EPA requirement, see *UARG v. EPA*, 134 S. Ct. 2427, 2444 (2014) (rejecting provisions of EPA's prevention of significant deteriorations (PSD) rules as going beyond the authority conferred by the terms of the Clean Air Act (CAA)). Put another way, EPA has "only those authorities conferred upon it by Congress." *Michigan v. EPA*, 213 F.3d 663, 695 (D.C. Cir. 2000).

EPA's authority under RCRA §3008(h) is limited to imposing measures that it finds are "*necessary* to protect human health or the environment" (emphasis added). The statutory test is not that measures provide the "best protection of human health and the environment," as the Region stated in the ESD (at 13). There obviously can be a world of difference between measures found "necessary" to protect health and the environment and measures that "provide the best protection." Imposing a zero ppb concentration limit, or imposing a zero emission level limit, most assuredly provide the "best" protection – but that is a far cry from assuming that such limits are "necessary" in most situations.

EPA's Environmental Appeals Board (EAB) recently stressed – in an action remanding a Region V RCRA action – that the Region must render a "properly supported finding" to defend measures it believes are "necessary" to protect human health and the environment. *In re: ESSROC Cement Corporation,* RCRA Appeal No. 13-03, (2014). Attachment B. That case involved EPA's attempts to impose RCRA permit limits based on a risk assessment under RCRA §3005(c)(3)'s "omnibus" authority. That authority is limited – exactly with the same phrase as RCRA §3008(h) – to measures EPA finds "necessary" to protect human health or the environment.

Quoting from U.S. Supreme Court as well as its own precedent, the EAB stressed that Region V's findings under this test must be "adequately explained and justified," with "a properly supported finding." Attachment B at 32-33. The EAB ruled that the Region must "articulate with reasonable clarity the reasons for its conclusions and the significance of the crucial facts" that its measures are "necessary" to protect human health or the environment. *Id.*

The ESD simply fails to meet the statutory and case law standards. Whatever articulation the ESD offers for rejecting the Focused CMS proposal and imposing even more stringent cleanup levels is cursory at best. There is merely a single short paragraph on page 13 of the

ESD stating that the new cleanup levels will "serve as a benchmark" for determining whether the current restrictive covenant may be removed. This "benchmark" function has no bearing on whether rejection of the Focused CMS and imposition of more stringent cleanup levels is necessary to protect human health or the environment at the Dana facility. And the ESD contains no other discussion of facts or reasons as to why this result is necessary for the Dana facility. And as explained above, the conclusion that these measures "will provide the *best* protection" in this paragraph of the ESD is legally irrelevant.

2. In any event, the TCE groundwater cleanup goals mandated by the ESD are far more stringent than necessary to protect human health and the environment at the Dana facility. The measures proposed by Dana in its Focused CMS are fully protective of human health and the environment at the facility.

As explained in the Focused CMS, the groundwater cleanup levels for the site were derived assuming that the land use will remain commercial/industrial and onsite groundwater will not be used as a source of potable water by occupational workers or residential receptors. Although the lacustrine groundwater flow direction is somewhat variable, the horizontal hydraulic gradient is very low so that the flux of groundwater is minimal at any given point in time. Calculations show that it would take groundwater from the former plating area over 1,200 years to reach the property boundary approximately 540 feet away; therefore offsite migration is not a concern.

Furthermore, after the 2008 FDRC was finalized, an Environmental Covenant (EC) was placed on the property which establishes disturbance limitations as well as groundwater use restrictions on the property. In the EC, soil and groundwater are not to be disturbed in a manner that poses a risk to workers. Construction and excavation activities are prohibited without receiving USEPA written approval and complying with applicable notice requirements. Since risk to a redevelopment worker has been mitigated to an acceptable level through the EC, and this disturbance limitation will remain forever on the property, a remediation goal protective of a redevelopment worker exposure to onsite groundwater is no longer necessary or appropriate. The risk associated with this exposure pathway has accordingly been appropriately managed. This does not preclude future development from occurring; it just ensures that moving forward appropriate personal protective equipment (PPE) will be required for the tasks at hand.

3. The ESD's conclusions that the TCE groundwater measures are "cost-effective" and would require no additional capital expenditures are erroneous.

These conclusions have no basis in fact and are contradicted by the work performed on site to date. The nature of the lacustrine clay soil makes any treatment technology highly challenging and costly to implement, as evidenced by the several cleanup activities already initiated at the site. Vacuum Enhanced Pumping (VEP) – or Soil Vapor Extraction (SVE)-based technologies – have proven to be ineffective due to the low permeability of the clay soil and shallow groundwater

at the site. Injection-based technologies (*e.g.*, in situ chemical oxidation, enhanced reductive dechlorination, etc.) have a limited radius of influence (a few feet) within the site clay and are highly susceptible to short-circuiting, rendering such technologies ineffective for further VOC reduction in soil or groundwater. Soil blending with permanganate has significantly reduced VOC mass within each of the treatment areas outside of the building; however, concentrations of VOCs in groundwater in wells within 10-15 feet of the delineated treatment areas remain orders of magnitude above current cleanup levels. Even in some of the groundwater wells in the former plating area, where the *in situ* thermal treatment system operated for approximately 14 months, concentrations of TCE in groundwater currently significantly exceed 161 ug/L.

Based on currently available technologies, and the nature of the lacustrine clay, excavation and disposal would be the only option to achieve the lacustrine groundwater cleanup levels. The cost to excavate and dispose of affected site soil would be on the order of tens of millions of dollars. The cost, resources, and energy needed to implement a technology to attain the new cleanup levels is therefore extremely costly and burdensome whereas risk can be managed more efficiently and more sustainably through an appropriate property use restriction.

4. The Region's approach of mandating these RCRA §3008(h) measures through an ESD process without notice and comment is procedurally flawed and Dana was denied fundamental rights. The ESD is accordingly functionally equivalent to a unilateral RCRA §3008(h) order, and we are accordingly reserving certain appeal rights going beyond the AOC Dispute Resolution process.

The Region's approach of mandating RCRA §3008(h) measures through a CERCLA §117 process without notice and comment is not only highly extraordinary,[1] but also procedurally flawed. We start with the basic proposition, as demonstrated in parts 2 and 3 above, that the ESD imposes significantly more burdensome and costly requirements than proposed in the Focused CMS for lacustrine groundwater TCE and significantly more stringent levels than required by the 2008 FDRC. Yet the Region rejected the Focused CMS proposal for groundwater TCE unilaterally and imposed even more stringent levels than required by the FDRC without providing any opportunity for notice and comment.

The Region claims it can deny notice and comment rights here by arguing that the TCE groundwater measures mandated by the ESD "do not fundamentally alter the overall cleanup

[1] In our environmental practice, we have never heard of an "Explanation of Significant Differences" process being utilized in the RCRA context. This is a process explicitly authorized by CERCLA §117, and we have always assumed an ESD would be used in CERCLA cleanups only. While we have not researched this exhaustively at this early stage, every hit we obtained from a search for ESDs related to a CERCLA action. We have also informally polled several attorneys with years of RCRA and CERCLA experience, and none has ever heard of an ESD being issued in the RCRA context.

approach." ESD at 1. This assertion completely overlooks the fact that the unilateral ESD is fundamentally more stringent than the cleanup approach for lacustrine groundwater TCE as proposed in the Focused CMS. Under the clear terms of the AOC, the only manner in which the Region is authorized to require corrective measures is in response to a CMS, and the AOC mandates that notice and opportunity for comment must be provided on measures proposed in a CMS. VIII(D)(5).

We recognize that there is an AOC section entitled "Additional Work" which does not require notice and comment. VIII(F). The Region does not cite this Section as authority for foregoing notice and comment for the ESD, nor could it. This Section merely gives the Region the right to require a new "workplan" for additional work. Under the AOC, a "workplan" is a distinct step preceding a CMS. See VII(D)(1), specifying that a "CMS Workplan" will precede a CMS. It is only in the CMS that corrective measures are proposed and finally established, and only after notice and comment.

Thus, through use of the CERCLA §117 ESD device, the Region has denied Dana rights provided under the AOC. EPA unilaterally rejected measures proposed in Dana's new Focused CMS and imposed even more stringent cleanup levels. Because of this lack of notice and comment, and because Dana most certainly has never consented to the ESD, the ESD is functionally equivalent to a unilateral order issued under RCRA §3008(h).

The Region appears to be relying on Chapter 4 of the "RCRA Public Participation Manual" to justify use of the ESD. ESD at 1, n. 2. But nothing in that Manual suggests that ESDs should be used in the RCRA corrective action process, or that amendments to RCRA AOCs requiring more burdensome and costly measures should be issued without notice and comment.

And the RCRA Public Participation Manual that the Region cites stresses several times that *the same notice and comment process that must be followed in the RCRA permit process should be followed in the §3008(h) order process.* For the best example see yellow-highlighted material on page 4-14 of the attached Manual excerpt (page 15 of the PDF). Attachment C. In the Manual, certain provisions are labeled "Required" and some are voluntary. This provision falls under the "Required" rubric. Since RCRA permits can only be amended after notice and opportunity for comment, the same process must be provided for unilateral §3008(h) orders.

We note that EPA's regulations provide for administrative hearings before a unilateral §3008(h) order can take effect. 40 C.F.R. part 24. Under §24.05, Dana must request a hearing within 30 days of the issuance of the order. Because the ESD is in effect a unilateral §3008(h) order, we will as a protective matter be filing such a request for a hearing no later than February 11, 2016. We will make clear that our filing is for protective purposes, and that our request should be held in abeyance depending upon the result of this AOC Dispute Resolution process.

Finally, we reserve the right to pursue judicial review of any final outcome through this process. In this regard, see the "EPA Sackett Memo." Attachment D. The ESD is in effect a unilateral §3008(h) order, and EPA has now formally recognized that these orders are subject to judicial review. See yellow highlights on pages 2, 3, and 5 of the EPA memo. We recognize that the AOC has language providing for judicial review waiver in Section XVI(e)). But that waiver language was issued in 2003, while the *Sackett* decision was not issued by the Supreme Court until 2012. EPA now recognizes, through the memo attached above, that judicial review must be allowed for unilateral §3008(h) orders.

* * * * * * * * * *

For all the foregoing reasons, we urge the Region to modify the lacustrine groundwater requirements set forth in the ESD by adopting the proposed requirements set forth in Dana's Focused CMS.

cc: Leverett Nelson, Esquire
Regional Counsel

Very truly yours,

Richard G. Stoll

EXHIBIT A

Dana's Written Objections Dated January 25, 2016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JAN 0 7 2016

REPLY TO THE ATTENTION OF:

VIA CERTIFIED MAIL: 7011 1150 0000 2641 0735
RETURN RECEIPT REQUESTED

Mr. Graham Crockford
RMT, Inc.
3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771

RE: Explanation of Significant Difference
Dana Corporation
EPA I.D. No. OHD 005 039 730

Dear Mr. Crockford:

Enclosed is an Explanation of Significant Difference (ESD) for the Dana Corporation (Dana) facility located in Antwerp, Ohio. This ESD documents the decision of the U.S. Environmental Protection Agency, Region 5 to significantly change part of the remedy selected in the Final Decision and Response to Comments issued July 16, 2008 (2008 FDRC), for the Dana facility. The significant changes to the remedy involve revised cleanup levels and dates for achieving compliance. The changes do not fundamentally alter the overall cleanup approach, and comply with the statutory requirements of the Resource Conservation and Recovery Act (RCRA), as amended.

The Administrative Record supporting the ESD is available for review at the Antwerp Branch Library located at 205 N. Madison St. in Antwerp, Ohio and the EPA, Region 5 RCRA Records Center (7th Floor) located at 77 West Jackson Boulevard in Chicago, Illinois.

If you have any questions concerning the ESD, please contact Greg Rudloff of my staff at (312) 886-0455, or rudloff.gregory@epa.gov.

Sincerely,

Margaret M. Guerriero
Director
Land and Chemicals Division

Enclosure

EXPLANATION OF SIGNIFICANT DIFFERENCES

From the Selected Remedy for Environmental Contamination Described in The Final Decision and Response to Comments, Dated July 2008 Dana Companies, LLC, Antwerp, Ohio OHD 005 039 730

I. Purpose

This Explanation of Significant Differences (ESD) documents the U.S. Environmental Protection Agency (EPA), Region 5's decision to significantly change part of the remedy selected in the Final Decision and Response to Comments issued July 16, 2008 (FDRC), for the Dana Corporation (Dana) facility in Antwerp, Ohio (the Dana facility).[1] EPA is issuing this ESD as part of its public participation responsibility under the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6901 *et seq.* In this respect, while RCRA does not specifically require public notice of changes to corrective measures selection decisions, the EPA provides such notice consistent with its policy of ensuring consistency in public outreach between RCRA corrective measures decisions and remedy selection decisions under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9604 *et seq.*[2] Here, the significant changes to the remedy involve revisions to cleanup levels and dates for achieving compliance. They comply with RCRA and do not fundamentally alter the overall cleanup approach, and accordingly, an ESD is the appropriate instrument to document the changes.

The FDRC requires, among other things, that Dana address contamination related to volatile organic compounds, including, but not limited to, trichloroethene (TCE) in soil, groundwater and indoor air. The FDRC contains cleanup levels for TCE and other constituents of concern. The cleanup levels related to soil cleanup were calculated based on default values instead of site-specific soil parameters. Dana has since proposed re-calculating the soil cleanup levels to reflect actual site conditions. During a meeting with Dana on December 5, 2013, EPA recommended that Dana submit a Focused Corrective Measures Study (Focused CMS) to support any proposed modifications to the final remedy. EPA also explained to Dana that it had re-evaluated the remedies in the FDRC related to TCE in light of EPA's September, 2011 final health assessment for TCE, in which EPA now characterizes TCE as carcinogenic to humans through all routes of exposure and as a human noncancer health hazard based on the latest scientific data. EPA concluded that the TCE cleanup levels for indoor air and lacustrine clay groundwater identified in the FDRC could no longer be considered to be protective of human health. Dana, through its contractor, TRC Environmental Corp. (TRC), submitted the Focused CMS to EPA on February 3, 2014, and it has been included in the facility record.

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[1] In 2006, Dana Corporation filed a Chapter 11 bankruptcy petition. As a result of Chapter 11 reorganization, Dana Companies, LLC (Dana), as a wholly-owned subsidiary of Dana Holding Corporation, has responsibility for complying with EPA's and Dana Corporation's May 1, 2003 Administrative Order on Consent (AOC) that set forth the corrective action program for the facility, the 2008 FDRC and any changes to the remedy.

[2] See RCRA Public Participation Manual, Chapter 4, "Public Participation in RCRA Corrective Action Under Permits and § 3008(h) Orders," U.S. Environmental Protection Agency, Office of Solid Waste, Permits Branch (1996 ed.)

Based on the administrative record, including the Focused CMS, EPA is now modifying the remedy to revise TCE cleanup levels for indoor air and lacustrine clay groundwater and revise cleanup levels for soil. EPA is also extending the now-expired compliance dates set in the 2008 FDRC to account for Dana's good faith efforts to investigate and implement an effective remedy for bedrock groundwater and lacustrine clay.

This ESD and all supporting technical information and data are part of the record for the Dana facility. The record is available for viewing during normal business hours at the following information repositories:

- Antwerp Branch Library
  205 N. Madison Street
  Antwerp, Ohio

- U.S. EPA Region 5 Records Center
  77 West Jackson Boulevard, 7th Floor
  Chicago, Illinois

II. Facility Description, History, Investigation, and Selected Corrective Measures

Facility Description and History

The Dana facility is located at 5278 U.S. 24 in Antwerp, Ohio. It is bound on the west and east by industrial property, farmland to the south, and U.S. 24 to the north. The Maumee River is located less than 2,000 feet to the northwest. The facility fabricated metal hose ends and hydraulic fittings before operations ceased in April 2003. Big Dog Project, LLC purchased the facility on October 23, 2007 and uses the building located on the property for warehouse storage and small fabrication shops. About 12 people currently work in the building.

Dana conducted a RCRA Facility Investigation and a Corrective Measures Study (CMS) pursuant to the AOC, EPA Docket No, RCRA-05-2003-009, effective May 1, 2003. Corrective measures Dana initiated include:

- treatment of soils contaminated with volatile organic compounds (VOCs) using electro-thermal heating or in-situ thermal desorption (ISTD) under the building and in-situ chemical oxidation (ISCO) blending using potassium permanganate outside the building;
- excavation of soil contaminated with total petroleum hydrocarbons and off-site disposal;
- enhanced bioremediation of bedrock groundwater contaminated with VOCs;
- groundwater monitoring to determine the effectiveness of the soil treatment remedies and monitored natural attenuation (MNA);
- implementation of indoor air and storm water monitoring;
- recordation of an environmental covenant restricting certain uses of the facility; and
- provision of financial assurance to ensure completion of all corrective measure activities at the facility.

Contaminants of Concern

The main contaminants identified at the facility are VOCs, including TCE and its degradation products, cis-1,2-dichloroethene (DCE) and vinyl chloride (VC). Both lacustrine clay soil and groundwater at the facility are contaminated with these compounds. Bedrock groundwater is contaminated with VC. Indoor air is contaminated with TCE.

Corrective Measures Study

Dana submitted a revised CMS Report on April 4, 2007. The remedy alternatives Dana proposed to address contamination at and from the Dana facility included:

1) for lacustrine clay soil and groundwater, further delineation of the extent of the areas exceeding remediation goals *(i.e.*, cleanup levels), performance of ISCO to remove VOCs, and MNA long-term groundwater monitoring to evaluate progress;
2) for bedrock groundwater, performance of in situ bioremediation using MNA or enhanced anaerobic bioremediation, and removal of monitoring wells that are likely acting as conduits for contaminant migration;
3) performance of operations, maintenance, and monitoring for site remedial activities;
4) implementation of contingent corrective actions (ISTD for lacustrine clay soil), as necessary, and evaluation and implementation of a contingent remedial option for lacustrine clay groundwater, if MNA is found to be ineffective; and
5) placement of deed restrictions on the property to limit its future use to industrial scenarios.

Statement of Basis

EPA issued a Statement of Basis (SB) for the Dana Corporation site on September 13, 2007. The SB evaluated and proposed a remedy for addressing contamination at and from the Dana facility. The SB was issued as part of EPA's public participation responsibilities under RCRA. The proposed remedy consisted of the following components:

1) implementation of ISCO to clean up VOC contamination in the surficial lacustrine clay (upper 15 feet of soil) at the Boiler Blowdown/Former Plating Area, Former TCE Degreaser #1, Former Clarifier Area, Former TCE Storage Area, Former Drum Storage Area, Oil Storage Tank Containment Area, and Empty Drum Storage Area;
2) if ISCO is found to be unsuccessful in effectively remediating the lacustrine clay, implementation of ISTD;
3) continued operation of the heating, ventilation, and air conditioning (HVAC) system in the on-site building as necessary to protect workers from the unacceptable risk posed by the migration of soil vapor contaminated with VOCs to indoor air;
4) monitored natural attenuation (MNA) of bedrock groundwater contaminated with VOCs;
5) if MNA is unsuccessful in remediating bedrock groundwater within a reasonable time frame, implementation of enhanced anaerobic bioremediation;
6) implementation of a long-term groundwater, storm water, and indoor air monitoring program to ensure the integrity of the proposed remedy and protect human health and the environment;

7) periodic technical reviews that evaluate current site conditions using available data from the long-term monitoring program to update the conceptual site model;
8) periodic assessment of whether alternative technologies are necessary and available to expedite groundwater cleanup in the bedrock aquifer; and
9) development and implementation of an environmental covenant to restrict on-site groundwater use, limit site use to industrial/commercial activities, and impose controls on excavation procedures for construction workers and redevelopment workers at on-site areas posing an unacceptable risk.

EPA requested comments from the public on the proposed remedy during the period from October 25 to November 26, 2007. EPA received 38 comments; all were from Dana.

Final Decision and Response to Comments

The FDRC concluded that a response action was necessary to protect human health and the environment. The FDRC selected the final remedy for the Dana facility and responded to Dana's comments. The final remedy required Dana to implement media-specific remedial measures at the facility, as summarized below.

A. Corrective Measures for Lacustrine Clay Soil and Lacustrine Clay Groundwater at All Areas Where VOCs Exceed Site-Specific Soil Saturation Limits

The FDRC required that Dana:

1) Within the Former Plating Area, Former Clarifier Area, Empty Drum Storage Area, and Area Of Concern A (source areas), delineate where ISCO treatment will be implemented;
2) For the Former Plating Area, implement ISCO to reduce VOCs in indoor air to cleanup levels established in the FDRC for worker protection, and conduct an indoor air monitoring program to ensure that indoor air contaminant concentrations do not exceed applicable cleanup levels in occupied portions of the on-site building. If, subsequent to implementation of ISCO treatment in the Former Plating Area, indoor air monitoring demonstrates an exceedance of the indoor air cleanup levels in the occupied portion of the on-site building, additional corrective measures will be implemented;
3) Perform a field pilot test for ISCO to determine ISCO's effectiveness, and properly design an ISCO remediation program for the lacustrine clay unit in all source areas;
4) If EPA determines that the field test demonstrates that ISCO is unreliable and/or ineffective to achieve lacustrine clay soil cleanup levels and address lacustrine clay groundwater, implement ISTD;
5) If EPA determines that the field test demonstrates that ISCO is reliable and effective, apply ISCO in accordance with the EPA-approved CMI Workplan and CMI Design. ISCO must: (a) achieve cleanup levels for lacustrine clay soil within two years of the FDRC; and (b) when followed by MNA, achieve lacustrine clay groundwater cleanup levels within five years of the FDRC. Cleanup levels in lacustrine clay soil and lacustrine clay groundwater are derived to protect workers via direct contact/inhalation of COCs and protect the bedrock aquifer;

6) Additionally, ISCO remediation of lacustrine clay soil must result in a post-treatment exposure point concentration (EPC) for TCE of 87 ppm or less in soil;
7) Subsequent to completion of ISCO treatment, implement an MNA program for the lacustrine clay groundwater at all source areas to achieve the cleanup levels within fifteen years of the FDRC. As part of this corrective measure, assessment reports must be provided to EPA at five and ten years after the FDRC, documenting the effectiveness of MNA as provided for in the CMI Workplan. At the five-year review period, enhanced bioremediation may be implemented, as EPA approves, to achieve the groundwater cleanup levels. At the ten-year review period, if EPA determines that MNA or enhanced bioremediation will not achieve the groundwater cleanup levels, ISCO or ISTD (or an alternative technology approved by EPA) must be implemented immediately to ensure compliance within fifteen years; and
8) Excavate small areas of lacustrine clay soil contaminated with TPH (diesel range) exceeding the cleanup level of 8,000 mg/kg, and dispose of this material off-site.

B. Corrective Measures for Lacustrine Clay Groundwater at and in the Vicinity of the TCE Storage Area

The FDRC required that Dana:

1) Apply ISCO to an EPA-approved depth to achieve the cleanup levels in the FDRC for lacustrine clay groundwater in the areas depicted in the FDRC. Cleanup levels in lacustrine clay groundwater are derived to protect workers via direct contact/inhalation of COCs. Achieving these cleanup levels is also expected to minimize the migration of contaminated groundwater from the lacustrine clay to the bedrock aquifer. ISCO treatment must be implemented in such a manner that, when followed by MNA, lacustrine clay groundwater cleanup levels will be achieved within fifteen years of the FDRC;
2) Install, develop, and initiate sampling of a lacustrine monitoring well 25 feet east of soil boring CA-SB-14 within thirty days of the FDRC, and perform monthly groundwater sampling and analysis for VOCs for a total of three monthly sample events. If VOC concentrations in groundwater exceed the cleanup levels in the FDRC and are comparable to concentrations detected in the quarterly groundwater monitoring at nearby monitoring wells MW-24A, MW-25A, MW-26A, and MW-37A, implement ISCO at the central roadway portion; and
3) After ISCO remediation, implement MNA at and in the vicinity of the TCE Storage Area. As part of this corrective measure, provide assessment reports to EPA, at five and ten years after the FDRC, documenting MNA's effectiveness as provided for in the CMI Workplan. At the five-year review period, enhanced bioremediation may be implemented in the TCE Storage Area, as EPA approves, to achieve the groundwater cleanup levels. At the ten-year review period, if EPA determines that MNA or enhanced bioremediation will not achieve the cleanup levels within the subsequent five years, ISCO or ISTD (or an alternative EPA-approved technology) must be implemented immediately to ensure that cleanup levels are achieved within fifteen years.

C. Corrective Measures for Bedrock Groundwater at and in the Vicinity of the Former East Production Well

The FDRC required that Dana:

1) Apply ISCO or enhanced bioremediation at and in the vicinity of the former East Production Well in accordance with the EPA-approved CMI Workplan and CMI Design to achieve cleanup levels, identified in FDRC, Attachment 1, Table 3, for bedrock groundwater. Cleanup levels in bedrock groundwater are derived to allow potable use of the aquifer and protect human health. Cleanup levels for bedrock groundwater on-site and off-site must be achieved within three years of the FDRC; and
2) Use best efforts to implement institutional controls that will prevent groundwater use until cleanup levels are achieved.

C. Other Certification, Monitoring, Reporting, Institutional Control, and Financial Assurance Requirements

In addition to the above, the FDRC also required that Dana:

1) Provide certification by a responsible corporate officer or duly authorized representative of all documents submitted pursuant to the FDRC, as required in the AOC;
2) Submit a groundwater performance monitoring program to EPA for review and approval as part of the operation and maintenance plan for the CMI Design, in accordance with the EPA-approved schedule in the CMI Workplan. The groundwater monitoring program must be capable of evaluating the effectiveness of ISCO, MNA, and enhanced bioremediation for achieving cleanup levels in lacustrine clay groundwater and bedrock groundwater within the time frames required in the FDRC;
3) Implement the approved groundwater performance monitoring program that incorporates EPA comments;
4) Submit a storm water and indoor air monitoring program to EPA for review and approval as part of the operation and maintenance plan for the CMI Design. The storm water and indoor air monitoring program must be capable of assessing whether unacceptable concentrations of COCs are released to the environment during ISCO remediation. Indoor air monitoring must be performed continuously during ISCO remediation at the Former Plating Area located beneath the building;
5) Implement the approved storm water and indoor air monitoring program that incorporates EPA comments;
6) Conduct title searches of (a) the Dana facility and (b) any off-site properties where groundwater is contaminated as a result of historical operations at the facility, and submit a report detailing the results of the title search to EPA within 60 days of the FDRC;
7) Implement institutional controls to ensure that: the facility is used for industrial purposes only; the soil and groundwater are not disturbed in a manner that poses a risk to workers or interferes with the implementation of the final remedy; the groundwater monitoring wells are maintained until cleanup levels are achieved and EPA approves them for abandonment; and the on-site

bedrock groundwater is not used for potable purposes until groundwater cleanup levels are achieved;

8) Implement an Ohio environmental covenant pursuant to Ohio Revised Code (ORC) §§ 5301.80 to 5301.92 to implement the institutional controls required above. A draft environmental covenant must be submitted to EPA for review and approval within 60 days of the FDRC. The EPA-approved environmental covenant must be recorded on all facility deeds in accordance with ORC § 317.08 within 120 days of the FDRC. Within 15 days of recording the environmental covenant, provide EPA with a certified copy of the original recorded environmental covenant, certified by the County Clerk/Register Office, showing the clerk's recording stamps;
9) Obtain financial assurance for completion of the final remedy, including operation and maintenance (O&M), within 90 days of the FDRC. The current estimated cost of the selected remedy is $4,071,159 over the expected lifetime of 30 years. Provide an updated detailed estimate of capital costs for implementing ISCO to treat lacustrine clay soil at the source areas and address lacustrine clay groundwater at and in the vicinity of the TCE Storage Area. Provide costs for implementation of ISCO and/or enhanced bioremediation to treat the bedrock groundwater. All costs must be submitted to EPA for review and approval within 45 days of the FDRC. Updated capital costs must consider that the ISCO treatment required by the FDRC must be implemented in such a manner that, when followed by MNA, lacustrine clay groundwater cleanup levels will be achieved within fifteen years of the FDRC. Provide financial assurance of $4,071,159 plus updated capital costs for implementing ISCO, and ISCO and/or enhanced bioremediation in bedrock groundwater, in one of the forms permitted under 40 C.F.R § 264.145 (modified to replace the terms "post-closure" and "closure" with "corrective action" and referencing the AOC, as approved by EPA);
10) Provide at each five-year period after the FDRC (coinciding with each MNA assessment report), an updated cost estimate to EPA for review and approval. Upon EPA approval of the updated cost estimate, Dana may modify the financial assurance if the updated cost estimate is less than the estimate provided within the FDRC. Dana must modify and obtain additional financial assurance within 30 days of EPA approval if the updated cost estimate is greater than the initial estimate; and
11) Submit CMI monthly progress reports to EPA during the design and construction phases detailing work performed to date, data collected, problems encountered, project schedule, and percent project completed. Progress reports are due by the 10th day of each month. Submit CMI progress reports semiannually for O&M activities upon approval of the Construction Completion Report.

Construction Completion Report

In September 2012, Dana submitted a Construction Completion Report (CCR) for EPA approval. In the CCR, Dana described the attainment of remediation goals or cleanup levels. However, the new TCE toxicity data noted above have effectively superseded those levels. In addition, the CCR included other cleanup levels and times frames that that EPA had not approved, contrary to the AOC's requirements. Accordingly, EPA explained to Dana that it could not approve the CCR and recommended that Dana submit a Focused CMS that provided support for any proposed changes to the remedy.

Focused CMS

Dana submitted a Focused CMS Report (January 2014) on February 3, 2014 that proposed a portion of the selected remedy and cleanup levels in the FDRC be modified. Dana's proposed modifications include:

1) *Lacustrine Soil.* An increase in the soil saturation limit (Csat) and exposure point concentration (EPC) cleanup levels for TCE based on new calculations using site-specific soil data and 2011 IRIS TCE toxicity values.
2) *Lacustrine Groundwater.* Deletion of the required cleanup levels in consideration of an Environmental Covenant placed on the property that restricts excavations and groundwater use.
3) *Indoor Air.* A decrease in the cleanup level for TCE using 2011 IRIS TCE toxicity data and use of a short-term response action level for TCE.
4) *Bedrock Groundwater.* A change in determining how the cleanup level is met.

III. Corrective Measures Implementation

The remedial components of the final remedy were initiated at the facility in 2008 and are ongoing. The status of the actions performed for the remedial components is provided below.

ISCO and ISTD Lacustrine Clay Soil Treatment

- A pilot test for ISCO was performed in the field in November and December, 2008. The report submitted on January 19, 2009 concluded that a high-pressure lance delivery system would not work. Dana proposed subsurface soil mixing with direct oxidant addition outside the building and ISTD treatment instead of ISCO beneath the building. EPA responded on February 17, 2009 and requested that Dana proceed with a design for ISCO and ISTD.

- ISCO subsurface soil mixing was conducted in September 2009. Soil verification sampling in November 2009 showed that the lacustrine clay soil Csat cleanup level was met. Another small area was treated in March 2011. Soil verification sampling of the treated area in August 2011 showed that the lacustrine clay soil Csat cleanup level was met. The FDRC required that Dana achieve the Csat cleanup level for lacustrine clay soil by July 2010, but Dana did not demonstrate compliance until August 2011.

- Dana began full operation of the ISTD treatment system under the building on January 6, 2010. According to soil verification samples collected in August 2010, Dana did not achieve compliance with the site-wide EPC cleanup level and Csat cleanup level for TCE. In October 2010, additional extraction wells were installed to assist in mass recovery and Dana continued to operate the system. Dana obtained verification samples on March 31, 2011 and confirmed in April 2011 that it met the site-wide EPC cleanup level for TCE. The FDRC required the cleanup level for TCE site-wide EPC to be achieved by July 2010, but it was not fully demonstrated to be met in the ISTD treated area until April 2011.

- The March 31, 2011 soil verification sampling results exceeded the Csat cleanup level at two locations under the building. Dana decommissioned the ISTD treatment system in May 2011 without meeting the Csat cleanup levels under the building.

- Dana excavated 148 cubic yards of TPH-contaminated soil in September 2009 which was disposed of off-site at a permitted landfill. Dana verified that TPH cleanup goals were met.

- EPA conducted a site inspection on January 7, 2010 and documented in a January 12, 2010 letter that the remedy construction (ISCO and ISTD) was complete and consistent with the final design.

Lacustrine Clay Groundwater

- Dana installed a lacustrine clay monitoring well on August 11, 2008 near CA-SB-14 and sampled it monthly for three months. Dana concluded in a January 30, 2009 report that VOC concentrations did not warrant ISCO treatment in this area. EPA concurred in a February 17, 2009 letter that ISCO treatment in this area was not necessary at that time.

- A five-year assessment report discussing MNA's effectiveness in lacustrine clay groundwater was submitted on August 9, 2013. In its report, Dana concluded that enhanced bioremediation was not necessary at that time. Dana will continue to assess attenuation rates and the progress of MNA over the next five years. If necessary, an alternative plan may be proposed prior to the ten-year assessment report.

- EPA requested on August 22, 2013, that Dana conduct trend analyses (concentration vs. time) of the lacustrine clay monitoring wells for the three contaminants (TCE, DCE, and VC) and provide the analyses in the progress reports. The purpose of the trend analyses is to assess the effectiveness of reductive dechlorination in the MNA remedy. The need for continued semiannual monitoring and trend analyses for TCE, DCE, and VC in twenty-two lacustrine groundwater monitoring wells is reiterated in this ESD (*i.e.*, CA-MW-69A, CA-MW-72A, CA-MW-73A, CA-MW-74A, CA-MW-75A, CA-MW-76A, CA-MW-77A, CA-MW-78A, CA-MW-79A, CA-MW-80A, CA-OW-02, CA-PMW-01, CA-MW-81A, CA-MW-82A, MW-17A, MW-18A, MW-27A, CA-MW-83A, CA-MW-84A, CA-MW-85A, CA-MW-86A, and CA-MW-87A).

Bedrock Groundwater

- The initial biochemical treatment was performed in August 2009 with additional treatments in January 2010 and October 2010. The cleanup level for VC was met at all wells except for one onsite bedrock monitoring well. However, the analytical results for sampling at these wells for the August and November 2013 events, and for the events in all four quarters of 2014, show that the VC cleanup level was being met with the exception of the one onsite bedrock monitoring well. Dana did not achieve the cleanup levels for bedrock groundwater by July 2011 as the FDRC required, and still has not fully demonstrated that the cleanup levels have been met (*i.e.*, four consecutive quarters of data below the cleanup levels) as the FDRC required.

Indoor Air

- Dana implemented an indoor air monitoring program in both the occupied and unoccupied (restricted) portions of the building to assess VOC concentrations during remediation. Indoor air is monitored quarterly at seven locations. The ISTD system removed approximately 5,600 pounds of VOCs beneath the building to help reduce vapor intrusion to indoor air. However, TCE concentrations in indoor air exceed the TCE cleanup level in the building's unoccupied portion. Further, EPA no longer believes that the TCE cleanup level of 20.5 $\mu g/m^3$ is protective of human health, based on the new IRIS TCE toxicity data. EPA has derived a revised cleanup level of 8.8 $\mu g/m^3$ that incorporates new toxicity data for chronic exposure to TCE.

Reports and Monitoring

- A final long-term monitoring program for lacustrine clay soil and groundwater, bedrock groundwater, storm water, and indoor air was submitted on June 25, 2009, and approved by EPA on July 14, 2009. Monitoring is ongoing.

- Dana submitted monthly progress reports to EPA until April 10, 2014, at which time it began submitting the reports on a quarterly basis.

Institutional Controls

- An Environmental Covenant was filed with the Paulding County Recorder on March 20, 2009, for the approximate 25-acre property by and between Big Dog Project, LLC, as the owner of the property, and Big Dog Project, LLC, Dana Companies, LLC, Dana Holding Corporation and the successors and assignees of Dana Companies, LLC and Dana Holding Corporations, as holders of the property. The property is subject to the following activity and use limitations: (1) industrial/commercial use only; (2) no groundwater use except for environmental monitoring, testing or remediation purposes until cleanup levels are achieved as determined by EPA; (3) no construction or excavation activity in the soils or the subsurface ground within or upon the restricted area of the property without receiving EPA written approval and complying with certain notice requirements, and (4) no use or occupation of the restricted area unless EPA determines in writing that a proposed use or occupation presents no unacceptable risk to human health, or engineering controls having EPA's written approval are installed and maintained in a manner that is protective of human health.

Financial Assurance

- Dana provided the required financial assurance of $4,071,159 in the form of a fully-funded trust agreement with the Fifth Third Bank on October 14, 2008. Since costs have been updated and reduced as the remedy has been implemented, Dana has terminated the fully-funded trust agreement and provides financial assurance in the form of a letter of credit and standby trust fund for $1,094,131, which guarantees performance of the remaining corrective action activities.

IV. Description of Significant Differences

This section of the ESD discusses in detail the modifications to components of the remedy involving cleanup levels and cleanup time frames, and also describes remedies to address indoor air and groundwater protection. EPA has revised Attachment 1 of the FDRC to include the modified cleanup levels, as described below. The revised Attachment 1 is attached to this ESD. The modification of cleanup levels and time frames will not fundamentally alter the scope or performance of the remedy selected in the FDRC.

Revised Time Frame and Cleanup Level for Achieving the Site-Wide EPC of TCE in Lacustrine Clay Soil

The FDRC required that Dana treat the lacustrine clay soils with ISCO and/or ISTD and meet the cleanup level for TCE of 87 mg/kg (site-wide EPC) by July 2010. Through soil data, Dana showed that it met the site-wide EPC of 87 mg/kg in April 2011, approximately nine months after the cleanup level should have been achieved. The additional time to meet the cleanup level was necessary because pilot studies indicated that the initial ISCO treatment would not be effective and, therefore, Dana needed to design an ISTD treatment system. Further, the ISTD treatment system operated twice as long as the calculated seven-month treatment period. EPA believes that the extra time to come into compliance was warranted based on the limitations of the treatment technologies.

Dana re-calculated the site-wide EPC cleanup level for lacustrine clay soil using the September 2011 revised TCE toxicity data and site-specific soil physical parameters. Dana's calculations resulted in a value of 314 mg/kg. Site-specific soil conditions allow for this higher value of TCE in the subsurface soil without posing an unacceptable risk to human health. Specifically, the silty clay soil encountered at the site has a high bulk density with mostly water-filled porosity. This impedes soil vapor migration. Also, the clay has a high fraction of organic carbon which increases the adsorption of TCE and decreases its migration into air and water. Based on the information related to the site-specific conditions, EPA revises the site-wide EPC cleanup level for lacustrine clay soil to 314 mg/kg.

Revised Time Frame and Cleanup Level for Achieving the Csat of TCE in Lacustrine Clay Soil

The FDRC required that Dana treat the lacustrine clay soils with ISCO and/or ISTD and meet the Csat cleanup level for TCE of 1,948 mg/kg by July 2010. While installing a monitoring well in the TCE Storage Area, Dana encountered additional TCE contamination that was not previously defined. Dana immediately treated the area with ISCO in March 2011 and performed sampling in August 2011. The sampling results verified that Dana met the Csat cleanup level for protection of groundwater in the TCE Storage Area. With this ESD, EPA is approving the additional time necessary to meet the Csat cleanup level, in view of the additional TCE contamination.

Dana treated the soils under the building at the Former Plating Area with ISTD until April 2011. However, Dana did not meet the Csat cleanup level for TCE of 1,948 mg/kg for this area. Dana re-calculated the Csat cleanup level for groundwater protection using site-specific soil physical parameters, to 3,227 mg/kg. According to Dana, this higher value of TCE in the soil is protective of groundwater due to site-specific soil conditions. Specifically, the clay has a higher fraction of organic carbon, which

increases the adsorption of TCE and increases the saturation levels before TCE can migrate into groundwater. Based on the information Dana provided, EPA concurs and is revising the groundwater protection cleanup level for TCE in lacustrine clay soil in this area to 3,227 mg/kg.

Revised Time Frame and Cleanup Levels for VOCs in Lacustrine Clay Groundwater to Protect Workers.

The FDRC requires Dana to treat the contaminated lacustrine clay soil in source areas with ISCO and/or ISTD, followed by MNA, to reduce VOCs (mainly TCE, DCE, and VC) in the lacustrine clay soil and groundwater and protect the bedrock aquifer. Dana is required to meet the cleanup levels for VOCs in lacustrine clay soil and groundwater by July 2023. EPA selected this remedy to protect future workers at the site from an unacceptable risk of exposure through direct contact with the soil or inhalation of VOCs based on Dana's evaluation of these treatments in its April 2007 CMS Report.

Dana implemented an ISCO Pilot Study at the Former Plating Area during November and December 2008, which showed that ISCO was effective in reducing VOC concentrations. However, the originally proposed high-pressure lance delivery system was found to be unlikely to achieve sufficient contact with the affected soils to achieve the sitewide Exposure Point Concentration (EPC)-based remediation goal in the 2-year timeframe. Based on these results, TRC recommended retaining the ISCO corrective measure EPA had selected, but with a modified delivery mechanism for ISCO to ensure contact with affected soils.

Consequently, Dana proposed to use subsurface soil blending with ISCO to achieve the remediation goals within the required timeframe at the TCE Storage Areas A and B, the Empty Drum Storage Area A and B, and the Former Clarifier Area. Constructability and implementation issues limited this remedial option to the treatment areas outside of the building, where the blending equipment could have ready access. Since soil blending coupled with ISCO was impractical to apply inside the building at the Former Plating Area due to overhead clearance limitations (with currently available in situ soil blending technology) and the need to remove concrete flooring within the plant, TRC recommended ISTD to treat lacustrine clay soil and lacustrine groundwater at the Former Plating Area. EPA concurred with this approach in a letter dated February 17, 2009.

Lacustrine soil and groundwater source area remediation began in September 2009. Additionally, VOCs in the lacustrine soil were successfully treated to below the remediation goals set forth in the FDRC. The following objectives were completed:

- ISCO in the TCE Storage Area (A, B, and C), the Empty Drum Storage Area, and the Former Clarifier Area reduced VOC concentrations below the remediation goals for soil.
- Excavation and disposal of soil in AOC A successfully removed TPH affected soil to levels below the remediation goals for soil.
- ISTD which was performed in the Former Plating Area reduced VOC concentrations in soil to below the remediation goals for soil.
- The site-wide EPC for lacustrine soil was achieved.
- Concentrations of VOCs in indoor air have been greatly reduced as a result of the ISTD in the

Former Plating Area. Based on current building use, concentrations of VOCs in indoor air do not pose an unacceptable risk to human health. The property use limitations imposed on a portion of the building (*i.e.*, the restricted area), as defined in the Environmental Covenant, will remain in place until data demonstrate that portion of the building can safely return to industrial use.

Subsequent to source area treatment, as described above, additional lacustrine groundwater monitoring wells were installed in accordance with the CMI Design in April 2010 following completion of ISCO, and in August 2011 following completion of ISTD. The groundwater monitoring well network was established to collect data near the most highly-affected areas located just outside of each treatment area in order to assess how rapidly the plume was shrinking through MNA. Groundwater monitoring was occurring on a semi-annual basis in accordance with the approved Operations, Maintenance and Monitoring Plan. Groundwater monitoring data would be reevaluated at ten years to determine whether MNA was likely to be effective in meeting the cleanup levels by the fifteen-year goal. If groundwater monitoring data indicated that the fifteen-year goal would not be met, Dana would evaluate and implement a contingent remedial option for lacustrine clay groundwater based on available remedial technologies applicable to site conditions.

In January 2014, Dana proposed in its Focused CMS to eliminate the cleanup levels for lacustrine clay groundwater because an environmental covenant had been placed on the property, subjecting it to certain use and activity limitations. The environmental covenant states, among other things, that there shall not be any construction and excavation activities without EPA approval, and that soil and groundwater at the property shall not to be disturbed in a manner that poses a risk to workers or interferes with the implementation of the final remedy. Dana believes that these use limitations mitigate the exposure pathway and, therefore, cleanup levels are no longer necessary.

Maintain Existing Cleanup Levels and Timeframes

EPA determines that the cleanup levels established in the FDRC are still necessary. Cleanup levels will serve as a benchmark for determining whether and when the current environmental covenant can be removed after MNA (or additional remediation) lowers contamination levels below the remediation goals. The previously implemented active remedy in source areas, followed by MNA coupled with an environmental covenant, will provide the best protection of human health and the environment at the Dana facility.

Accordingly, based on the Administrative Record, revised TCE cleanup levels and time frames for the lacustrine clay groundwater will remain in place to protect redevelopment and construction workers and to minimize VOC migration to bedrock groundwater. The other cleanup time frames and cleanup levels related to benzene, chloromethane, cis-1,2 -dichloroethene, trans-1,2-dichloroethene and vinyl chloride as identified in the FDRC remain in effect to protect human health and the environment. Furthermore, semiannual monitoring of all lacustrine clay groundwater monitoring wells shall be maintained and Dana shall provide trend analyses in its quarterly progress reports. At the ten-year review, as the FDRC requires, Dana shall evaluate the effectiveness of meeting the lacustrine clay groundwater cleanup levels within the fifteen-year goal. Based on its evaluation, if Dana appears unable to meet the lacustrine clay groundwater cleanup levels within fifteen years, it must evaluate new technologies applicable to site conditions and, if possible, implement a contingent remedy. If a contingent remedy is technically

impracticable, Dana may submit a written demonstration, subject to EPA review and approval, detailing why a contingent remedy is technically impracticable.

Revised Cleanup Level for TCE in Lacustrine Clay Groundwater

The FDRC established a cleanup level for TCE in lacustrine clay groundwater of 17,100 µg/l. In 2015, an EPA risk assessor re-calculated the unacceptable risk value TCE in lacustrine clay groundwater poses, using current information (*i.e.*, IRIS TCE toxicity criteria) for redevelopment worker exposure and RME assumptions-Future Exposure Scenario. As a result, EPA is now revising the cleanup level for TCE to protect workers to 161 µg/l.

Additional Trigger to Begin Implementation of Enhanced Bioremediation, ISCO, ISTD, or an Alternative Technology if Lacustrine Groundwater RGs are not met for TCE in Lacustrine Clay Groundwater

The FDRC currently states that if it becomes apparent that MNA will not achieve the RGs by July 2023, Dana will implement ISCO, ISTD or, with EPA's prior approval, an alternative technology, to ensure the lacustrine groundwater RGs are achieved. In addition, it requires Dana to implement ISCO, ISTD or, with EPA's prior approval, an alternative technology, to ensure the lacustrine groundwater RGs are achieved if VOC concentrations increase significantly in perimeter monitoring wells MW-35AA, MW-58A, CA-MW-62A, or CA-MW-63A. This additional trigger remains necessary due to the significant decrease in the TCE RG as described above, and in order to address any potential off-site migration of lacustrine clay groundwater, since the restrictive covenant does not provide protection beyond the facility boundary. EPA is retaining this requirement.

Procedure for Establishing Attainment of Cleanup Levels for VOCs in Bedrock Groundwater and Remediation Goal Modifications

The FDRC required Dana to remove monitoring wells that act as conduits for VOC migration to bedrock groundwater and, if necessary, implement enhanced bioremediation to achieve the cleanup levels. Dana was required to meet the cleanup levels by July 2011 and demonstrate continual compliance for four consecutive quarters. Dana abandoned and sealed the wells and performed enhanced bioremediation three times. Dana achieved cleanup levels at all bedrock wells in August 2013, two years after the cleanup level should have been achieved, and has demonstrated continued compliance for quarters three and four of 2013, and all of 2014, with the exception of vinyl chloride in CA-MW-25DR. Dana proposed in the 2014 Focused CMS that if groundwater sampling at CA-MW-25DR over four consecutive quarters shows no upward trend for VOCs, then the remediation goal will be considered to have been achieved. EPA now approves this alternate method of demonstrating compliance. Dana has continued to monitor well CA-MW-25DR and has demonstrated that there is no upward trend in any VOC for four quarters through the end of 2014. Therefore, as of January 2015, Dana has demonstrated achievement of the remediation goals. This ESD documents EPA's extension of the period for achieving this remediation goal to January 2015.

Revised Cleanup Level for TCE in Indoor Air and Remedy for the Building

The lacustrine clay soil and groundwater remedy in the FDRC required Dana to perform indoor air monitoring and, subsequent to ISTD treatment beneath the building, implement additional corrective measures if indoor air monitoring demonstrated an exceedance of the indoor air cleanup levels in an occupied portion of the building. The FDRC required a cleanup level of 20.5 $\mu g/m^3$ for TCE in indoor air. In consideration of new TCE toxicity data, Dana re-calculated the cleanup levels for TCE in indoor air to be 8.8 $\mu g/m^3$ for chronic exposure and 21 $\mu g/m^3$ for short-term exposure. EPA believes that the 8.8 ug/m^3 chronic level is justified because of the likelihood of individual workers' long-term (multi-year) occupancy of the site building. In addition, the 8.8 ug/m^3 level would provide protection for the human developmental health endpoint under the possibility of short-term building occupancy by pregnant women and/or women who learn of pregnancy during their tenure as building occupants. Based on site-specific conditions associated with geology and the sub-slab vapor source concentration and the proposed engineering control for the building, EPA is now adopting the proposed long-term (chronic) toxicity criterion as the cleanup level.

Under the FDRC, Dana is required to implement additional corrective measures if indoor air monitoring demonstrates an exceedance of the cleanup levels in the occupied portion of the building. Based on indoor air monitoring results that exceed the TCE cleanup level, Dana proposed in the Focused CMS to design, install, and operate a sub-slab venting system to mitigate VOCs in indoor air at an estimated cost of $370,000. Dana also proposed to conduct post-treatment quarterly indoor air monitoring for 3 years at a cost of $75,000. EPA agrees with the proposed remedy to address indoor air in the building. With this ESD, EPA is requiring that Dana (1) submit to EPA, within 60 days of this ESD, a CMI Design and OM&M Plan to address worker inhalation for TCE in indoor air, and (2) achieve, within 180 days of this ESD, the associated cleanup levels.

Costs

While Dana will incur additional costs achieving the revised clean up levels identified in this ESD, there are no significant capital expenditures associated with the specific changes provided for here.

V. Statutory Determinations

With the changes to the original remedy described in this ESD, EPA believes the overall remedy remains protective of human health and the environment and is cost-effective.

VI. Summary Tables of Changes

Cleanup Level	Before	After
EPC for TCE in Lacustrine Clay Soil	87 mg/kg	314 mg/kg
Groundwater Protection for TCE in Lacustrine Clay Soil	1,948 mg/kg	3,227 mg/kg
Direct Contact/ Inhalation for Worker Exposed to Lacustrine Clay Groundwater	TCE - 17,100 µg/l	TCE - 161 µg/l
Worker Inhalation for TCE in Indoor Air	20.5 $\mu g/m^3$	8.8 $\mu g/m^3$ - chronic[3]

Time Frames	Before	After
Time Frame to begin implementation of enhanced bioremediation, ISCO, ISTD, or an alternative technology if lacustrine groundwater RGs are not met	July, 2023	July, 2023; or if VOC concentrations increase significantly in MW-35AA, MW-58A, CA-MW-62A, or CA-MW-63A
Time Frame for Submitting CMI Design and OM&M Plan to Address Worker Inhalation for TCE in Indoor Air	-	Within 60 days of date of signature for ESD
Time Frame for Meeting Cleanup Level for Worker Inhalation for TCE in Indoor Air	-	Within 180 days from date of signature for ESD

[3] Based on EPC of 95% UCL for one year (4 quarters) data. Requires Dana to install and operate a sub-slab venting system for the building.

Time Frames	Before	After
Time Frame for Meeting Lacustrine Clay Soil Cleanup Levels for TCE	July 2010	April 2011 for EPC Date of ESD for Csat
Time Frame for Meeting Bedrock Groundwater Cleanup Levels	July 2011	January 2015[4]

[4] See section IV. above.

VII. Public Participation Compliance

This ESD and copies of other documents related to the Dana facility are available at:

- Antwerp Branch Library
  205 N. Madison Street
  Antwerp, Ohio

- U.S. EPA Region 5 Records Center
  77 West Jackson Boulevard, 7th Floor
  Chicago, Illinois

The significant changes described in this ESD involve components of the remedy related to cleanup levels and time frames that do not fundamentally alter the overall remedial approach. Therefore, EPA has determined that a formal public comment period is not necessary. If you have any questions or concerns, please contact the project manager directly:

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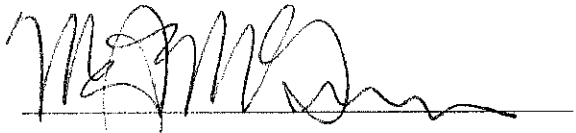

1/7/2014

Margaret M. Guerriero
Director
Land and Chemicals Division

Date

Explanation of Significant Difference
Dana Companies, LLC
Antwerp, Ohio
OHD 005 039 730

Attachment

ATTACHMENT I (Revised Attachment I to the FDRC)

Table 1: Cleanup Levels* for Lacustrine Clay Soil

Constituent of Concern	Direct Contact	EPC	Groundwater Protection
cis-1,2-Dichloroethene	--	--	1,573
trans-1,2-Dichlorotehene	--	--	3,993
Trichloroethene	--	314	3,227
Vinyl chloride	--	--	26.8
TPH (diesel range)	8,000	--	--

* Cleanup levels in mg/kg (ppm); -- = not applicable

Table 2: Cleanup Levels* for Lacustrine Clay Groundwater

Constituent of Concern	Direct Contact/Inhalation
Benzene	1,000
Chloromethane	1,500
cis-1,2-Dichloroethene	4,000
trans-1,2-Dichlorotehene	8,100
Trichloroethene	161
Vinyl chloride	529

* Cleanup levels in µg/l (ppb).

Table 3: Cleanup Levels* for Bedrock Groundwater

Constituent of Concern	Maximum Contaminant Level
Acetone	5,500
Benzene	5
1,1-Dichloroethene	7
cis-1,2-Dichloroethene	70
trans-1,2-Dichlorotehene	100
Methylene chloride	5
Trichloroethene	5
1,1,2-Trichloroethane	5
Vinyl chloride	2

* Cleanup levels in µg/l (ppb).

Table 4: Cleanup Levels* for Indoor Air

Constituent of Concern	Worker Inhalation
Benzene	5.3
Chloromethane	10.8
cis-1,2-Dichloroethene	51
trans-1,2-Dichlorotehene	100
Trichloroethene	8.8 (chronic)
Vinyl chloride	9.3

* **Cleanup levels in $\mu g/m^3$.**

EXHIBIT B

Dana's Written Objections Dated January 25, 2016

(Slip Opinion)

NOTICE: This opinion is subject to formal revision before publication in the Environmental Administrative Decisions (E.A.D.). Readers are requested to notify the Environmental Appeals Board, U.S. Environmental Protection Agency, Washington, D.C. 20460, of any typographical or other formal errors, in order that corrections may be made before publication.

BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
ESSROC Cement Corporation	)	RCRA Appeal No. 13-03
RCRA Permit No. IND 005 081 542	)	

[Decided July 30, 2014]

REMAND ORDER

Before Environmental Appeals Judges Leslye M. Fraser, Catherine R. McCabe, and Kathie A. Stein.

IN RE ESSROC CEMENT CORPORATION

RCRA Appeal No. 13-03

REMAND ORDER

Decided July 30, 2014

Syllabus

ESSROC Cement Corporation ("ESSROC") petitions the Environmental Appeals Board ("Board") to review the annual mercury feed rate limit in a Resource Conservation and Recovery Act ("RCRA") permit the U.S. Environmental Protection Agency ("EPA") Region 5 ("Region") issued. The permit governs cement kiln operations at ESSROC's Portland cement manufacturing facility in Logansport, Indiana ("Facility"), which burns hazardous waste as fuel. ESSROC also challenges the Region's 2012 site-specific risk assessment ("SSRA") that led to the permit limit, which was the second risk assessment conducted for the Facility. Because the Facility emits hazardous air pollutants, it is subject to both RCRA requirements and to the EPA's regulations implementing the Clean Air Act's maximum achievable control technology standards for hazardous waste combustors ("HWC-MACT Rule").

RCRA's omnibus provision requires permitting authorities to include any additional terms and controls in a permit that may be necessary to protect human health and the environment. *See* RCRA § 3005(c)(3), 42 U.S.C. § 6925(c)(3). In the 2012 SSRA, the Region determined that, in accordance with the RCRA omnibus provision, additional conditions in the permit more stringent than the HWC-MACT Rule's mercury limit were necessary to ensure protection of human health and the environment.

Held: The Board concludes that ESSROC did not demonstrate that the Region clearly erred or abused its discretion in requiring a second SSRA to determine whether additional controls were necessary to ensure protection of human health and the environment. The Region relied on four of the factors in 40 C.F.R. § 270.10(*l*)(1) to conclude that a second SSRA was warranted. ESSROC challenged only one factor, section 270.10(*l*)(1)(viii). Moreover, the regulatory language of section 270.10(*l*)(1)(viii) and its intent as expressed in the rule's preamble do not support ESSROC's interpretation that the phrase "subsequent changes in conditions likely to affect risk" is limited only to changes in site-specific conditions.

The Board also concludes that the Region did not exercise its considered judgment in conducting the 2012 SSRA. The Region's 2012 SSRA relied on the methodology set forth in EPA guidance, which states that every final risk assessment should include a formal uncertainty discussion and a robust conclusion. Without explanation, the 2012 SSRA lacks an uncertainty discussion and the conclusion section appears incomplete. Because the Region relied on the 2012 SSRA to include additional controls on mercury emissions in the permit to protect human health and the environment, the Board cannot conclude that the Region exercised its considered judgment in establishing the mercury limit. Accordingly, the Board remands the permit.

Before Environmental Appeals Judges Leslye M. Fraser, Catherine R. McCabe, and Kathie A. Stein.

Opinion of the Board by Judge Fraser:

I. *STATEMENT OF THE CASE*

U.S. Environmental Protection Agency ("EPA" or "Agency") Region 5 ("Region") issued a Resource Conservation and Recovery Act ("RCRA") permit ("Permit") to ESSROC Cement Corporation ("ESSROC") governing cement kiln operations at its Portland cement manufacturing facility ("Facility") in Logansport, Indiana. ESSROC petitions the Environmental Appeals Board ("Board") to review both the annual mercury feed rate limit in the Permit, and the site-specific risk assessment ("SSRA") that the Region conducted, which led to the permit limit. For the reasons discussed below, the Board concludes that the Region had authority to conduct a second SSRA for the Facility but did not exercise its considered judgment in conducting that assessment. Accordingly, the Board remands the Permit to the Region.

II. *ISSUES ON APPEAL*

ESSROC's challenge to the annual mercury feed rate limit raises the following issues on appeal:

(1) Has ESSROC demonstrated that the Region clearly erred or abused its discretion in requiring a second site-specific risk assessment to determine whether additional controls are necessary to ensure protection of human health and the environment?

(2) Has ESSROC demonstrated that the Region did not properly exercise its considered judgment when conducting the 2012 site-specific risk assessment it subsequently used to establish the permit's mercury feed rate limit?

III. *PRINCIPLES GUIDING BOARD REVIEW*

Section 124.19 of Title 40 of the Code of Federal Regulations governs Board review of a RCRA permit. In any appeal from a permit decision issued under part 124, the petitioner bears the burden of demonstrating that review is warranted, and the Board has discretion to grant or deny review of a permit decision. 40 C.F.R. § 124.19(a)(4); *In re Avenal Power Ctr., LLC*, PSD Appeal Nos. 11-02 through 11-05, slip op. at 14-15 (EAB Aug. 18, 2011), 15 E.A.D. ___ (citing Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980)), *appeal docketed sub nom. Sierra Club v. EPA*, No. 11-73342 (9th Cir. Nov. 3, 2011). Ordinarily, the Board will deny review of a permit decision and thus not remand it unless the permit decision either is based on a clearly erroneous finding of fact or conclusion of law, or involves a matter of policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a)(4)(i)(A)-(B); *accord, e.g.*, *In re Prairie State Generating Co.*, 13 E.A.D. 1, 10 (EAB 2006), *aff'd sub. nom Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007); *see also* Revisions to Procedural Rules Applicable in Permit Appeals, 78 Fed. Reg. 5,280, 5,281 (Jan. 25, 2013). In considering whether to grant or deny review of a permit decision, the Board is guided by the preamble to the regulations authorizing appeal under part 124, in which the Agency stated that the Board's power to grant review "should be only sparingly exercised," and that "most permit conditions should be finally determined at the [permit issuer's] level." 45 Fed. Reg. at 33,412; *see also* 78 Fed. Reg. at 5,281.

IV. *STATUTORY AND REGULATORY FRAMEWORK*

RCRA section 3005(a) provides for the permitting of new and existing facilities "for the treatment, storage, or disposal of hazardous waste," known as TSD facilities. RCRA also requires the permitting agency to include in each permit for a TSD facility any terms and

conditions necessary to protect human health and the environment. RCRA § 3005(c)(3), 42 U.S.C. § 6925(c)(3). EPA has interpreted and applied this statutory provision, known as the RCRA "omnibus authority," as authorizing permit conditions that are more stringent than those specified in other regulations that may apply to the TSD facility. *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 396 (EAB 1997). TSD facilities that burn hazardous waste as fuel, such as cement kilns, are further regulated under RCRA section 3004(q), 42 U.S.C. § 6924(q). Section 3004(q)(1) directs the Agency to promulgate such standards "as may be necessary to protect human health and the environment." RCRA § 3004(q)(1), 42 U.S.C. § 6924(q)(1).

TSD facilities that emit air pollutants also are subject to regulation under the Clean Air Act ("CAA"), 42 U.S.C. §§ 7401-7671q. Clean Air Act section 112, 42 U.S.C. § 7412, requires EPA to regulate hazardous air pollutants emitted from hazardous waste combustion ("HWC") units based on the maximum achievable control technology ("MACT") for sources in each category. Accordingly, where the source of hazardous air pollutants is, as here, a TSD facility, the cement kiln-specific standards of RCRA section 3004(q), the permitting requirements of RCRA section 3005(a), and the MACT standards in CAA section 112 all apply to the source.

In 2005, EPA promulgated the final rule integrating the RCRA permitting provisions of section 3005 and the national emissions standards for HWC units under CAA section 112. National Emission Standards for Hazardous Air Pollutants: Final Standards for Hazardous Air Pollutants for Hazardous Waste Combustors, 70 Fed. Reg. 59,402 (Oct. 12, 2005) (codified at 40 C.F.R. pt. 63, subpt. EEE) ("HWC-MACT Rule"). The HWC-MACT Rule authorizes the permitting authority to consider on a case-by-case basis during the initial RCRA permit application or renewal process whether to conduct an SSRA. *See* 40 C.F.R. § 270.10(*l*)(1) (setting forth factors for permitting authorities to consider when determining the need for an SSRA). A companion regulation provides, pursuant to the omnibus authority, that if the permitting authority determines as a result of an SSRA or other information that additional conditions are needed beyond those required under the HWC-MACT Rule to ensure protection of human health and the environment, the permitting authority shall

include those terms and conditions in the facility's permit. 40 C.F.R. § 270.32(b)(3).

V. *FACTS AND PROCEDURAL HISTORY*

In September 2003, the Region issued a RCRA permit for the Facility to burn hazardous waste in two cement kilns. As part of the 2003 permitting process, ESSROC retained risk assessors to conduct an SSRA for the cement kiln operations at the Facility using EPA-agreed-upon parameters and protocol. Petition at 7; *see generally* Horizon Envtl. Corp., *Comprehensive Risk Assessment for the Cement Kiln Operations at the ESSROC Cement Corporation* (Mar. 2003) (A.R. 48d) ("2003 SSRA"). On May 9 and August 29, 2008, ESSROC submitted its permit renewal application and revised permit application, respectively, to the Region. These permit applications included updates to the 2003 SSRA.

In a letter dated January 22, 2009, the Region informed ESSROC that the 2003 SSRA and its updates did not adequately respond to changes in EPA guidance relating to the transport of mercury in the environment. Letter from Jae Lee, RCRA Branch, Region 5, U.S. EPA, to Corey Conn, ESSROC Cement Co., *Risk Assessment Update Request, ESSROC Cement Co. IND 005 081 542*, at 1 (Jan. 22, 2009) (A.R. 10a) ("2009 Lee Letter"); *see also* Region's Response Br. at 6 (describing mercury dry vapor deposition as "a significant pathway in the fate and transport of mercury, that had been detected in ESSROC's stack emissions"). The Region relied on four of the factors in 40 C.F.R. § 270.10(*l*) to support its determination that "a portion of the SSRA [should] be redone" for the 2008 permit renewal. 2009 Lee Letter at 1. According to the Region, "[a] number of changes were made to EPA's Human Health Risk Assessment Protocol for Hazardous Waste Combusters [sic] in 2005 (HHRAP) especially as they relate [to] the fate and transport of mercury in the environment."[1] *Id.* ESSROC

[1] The HHRAP is the Agency's peer-reviewed guidance for conducting site-specific risk assessments for RCRA hazardous waste combustion units. Although it is not accorded the same weight as a binding Agency regulation, the Board considers the HHRAP a statement of the Agency's thinking on site-specific risk assessments for hazardous waste combustors.

disagreed that a second site-specific risk assessment was warranted, Petition at 8, but "attempted to address some of these changes." 2009 Lee Letter at 1. However, the Region found that "the effort was not complete." *Id.*

Relying on the HHRAP, the Region undertook a screening-level human health risk assessment[2] of the Facility and issued a site-specific risk assessment on June 19, 2012. RCRA Programs Branch, Land & Chem. Div., Region 5, U.S. EPA, *Screening-Level Human Health Risk Assessment* 1 (June 19, 2012) (A.R. 38) ("2012 SSRA").[3] The Region concluded that the 2012 SSRA demonstrated a need for mercury limits more stringent than the nationwide limit provided in HWC-MACT Rule that the Agency promulgated on October 12, 2005. *Id.* at 10-11; Region's Response Br. at 7.

On July 22, 2012, the Region issued the draft permit for public comment, which included a proposed 87.91 pounds per year annual mercury feed rate limit for the Facility. The draft permit package included a memorandum stating that the Region had conducted a new risk assessment in 2012. According to ESSROC, this was the first notice it had of the 2012 SSRA. EAB Oral Arg. Tr. at 13-14. ESSROC, which submitted the only comments on the draft permit, commented that "the calculated HWC MACT feed rate limit for the two kiln operation is 1,793.4 * * * [pounds per year]." Letter from Jeremy Black, Plant Manager, ESSROC Cement Co., to Gary Victorine, Chief, RCRA Branch, Region 5, U.S. EPA 2 (Oct. 22, 2012) (A.R. 43) ("Comments").[4] ESSROC thus concluded from its calculations that the

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[2] The Region "refer[s] to the analysis as a risk screening because the focus is only on the pollutants that the EPA believes to have a likelihood of exceeding accepted levels of cancer risk or chronic toxicity at [the time of the analysis], based on EPA's experience with previous risk assessments for hazardous waste combustors." RCRA Programs Branch, Land & Chem. Div., Region 5, U.S. EPA, *Screening-Level Human Health Risk Assessment* 1 (June 19, 2012) (A.R. 38).

[3] Because the pages of the Region's 2012 SSRA are not numbered, the Board has numbered the pages in order, beginning with first page following the cover sheet.

[4] Because the pages of ESSROC's comments are not numbered, the Board has numbered the pages in order, beginning with the cover letter.

HWC-MACT Rule is "sufficient to protect human health and the environment and additional mercury input limits are not necessary." *Id.* attach. 2. Nonetheless, ESSROC proposed to accept a mercury feed rate limit of half its calculated MACT feed rate limit, or 896.7 pounds per year, "as an accommodation," *Id.* at 1-2; Petition at 2. On June 5, 2013, the Region issued the Permit and the response to comments document. Region 5, U.S. EPA, Hazardous Waste Management Facility Permit (July 5, 2013) (A.R. 46.) ("Permit"); Region 5, U.S. EPA, Response to Comments on the Draft Permit for ESSROC Cement Corporation Federal RCRA Permit Logansport, Indiana IND 005 081 542 (June 5, 2013) (A.R. 45) ("Response Summary"). The Region stated that it retained the 87.91 pounds per year annual mercury feed rate limit in the Permit "to protect human health and the environment," as required by RCRA § 3004(q). Permit § III.F.1, at 20.

ESSROC petitioned for review of the Region's permit decision, challenging both the annual mercury feed rate limit and the 2012 SSRA that led to that limit.[5] Cement Kiln Recycling Coalition, participating as amicus curiae on behalf of ESSROC, also filed a brief with the Board.

VI. *ANALYSIS*

A. *The Region Did Not Clearly Err or Abuse Its Discretion in Requiring a Second Site-Specific Risk Assessment to Determine Whether Additional Controls Are Necessary to Ensure Protection of Human Health and the Environment*

1. *40 C.F.R. § 270.10(l)(1) Provides Nine Factors for EPA to Use to Assess Whether Additional Information or Assessments Are Needed at HWC Facilities*

EPA's regulations for hazardous waste combustors, including cement kilns burning hazardous wastes, state that if the Region

[5] ESSROC erroneously states in its petition that the mercury feed rate limit that it is challenging is 89.17 pounds per year. *See, e.g.*, Petition at 8. However, the actual mercury feed rate limit in the permit is 87.91 pounds per year. Permit § III.F, at 20. The Board thus construes the petition as a challenge to the 87.91 pounds per year limit.

concludes, "based on *one or more of the factors* listed in [40 C.F.R. § 270.10(*l*)(1)] that compliance with [the HWC-MACT Rule] alone may not be protective of human health or the environment, the [Region] *shall* require the additional information or assessment(s) necessary to determine whether additional controls are necessary to ensure protection of human health and the environment." 40 C.F.R. § 270.10(*l*) (emphasis added). The regulation further states that the Region "shall base the evaluation of whether compliance with the [HWC-MACT] standards * * * alone is protective of human health or the environment on factors relevant to the potential risk from a hazardous waste combustion unit, including, as appropriate, *any* of" the nine factors provided in the regulation." *Id.* (emphasis added).

Only four of the factors in the regulation are relevant to the Board's resolution of this case, namely the four factors the Region cited in its 2009 Lee Letter to justify the need for an additional site-specific risk assessment. They are: factor (i) – proximity to receptors, such as parks; factor (ii) – identities and quantities of emissions of persistent, bioaccumulative or toxic pollutants, considering enforceable controls in place to limit those pollutants; factor (v) – proximity of a particularly sensitive ecological area; and factor (viii) – adequacy of any previously conducted risk assessment, given any subsequent changes in conditions likely to affect risk.[6] *Id.* § 270.10(*l*)(1)(i), (ii), (v), (viii). Specifically, the Region explained:

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[6] The relevant provisions in 40 C.F.R. § 270.10(*l*) state in full:

> If the Director concludes, based on one or more of the factors listed in paragraph (l)(1) of this section that compliance with the standards of 40 CFR part 63, subpart EEE alone may not be protective of human health or the environment, the Director shall require the additional information or assessment(s) necessary to determine whether additional controls are necessary to ensure protection of human health and the environment. This includes information necessary to evaluate the potential risk to human health and/or the environment resulting from both direct and indirect exposure

EPA believes a portion of the SSRA [should] be redone based on the

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pathways. The Director may also require a permittee or applicant to provide information necessary to determine whether such an assessment(s) should be required.

(1) The Director shall base the evaluation of whether compliance with the standards of 40 CFR part 63, subpart EEE alone is protective of human health or the environment on factors relevant to the potential risk from a hazardous waste combustion unit, including, as appropriate, any of the following factors:

(i) Particular site-specific considerations such as proximity to receptors (such as schools, hospitals, nursing homes, day care centers, parks, community activity centers, or other potentially sensitive receptors), unique dispersion patterns, etc.;

(ii) Identities and quantities of emissions of persistent, bioaccumulative or toxic pollutants considering enforceable controls in place to limit those pollutants;

* * * *

(v) Presence of significant ecological considerations, such as the proximity of a particularly sensitive ecological area; [and]

(viii) Adequacy of any previously conducted risk assessment, given any subsequent changes in conditions likely to affect risk[.]

40 C.F.R. § 270.10(l).

ESSROC also challenged the application of the ninth factor, 40 C.F.R. § 270.10(*l*)(1)(ix) ("Such other factors as may be appropriate."). *See* Petition at 10; Corrected Petitioner's Reply Br. at 2. The Region, however, did not rely on this factor to conduct the 2012 SSRA, and thus, the Board denies review on this issue.

following factors from 40 C.F.R. § 270.10(*l*):

(i) Particular site-specific considerations such as proximity to receptors (such as schools, hospitals, nursing homes, day care centers, parks, community activity centers, or other potentially sensitive receptors), unique dispersion patterns, etc.;

The ESSROC facility is 1.6 miles from a lake used and promoted for public fishing.

(ii) Identities and quantities of emissions of persistent, bioaccumulative or toxic pollutants * * * considering enforceable controls in place to limit those pollutants;

Mercury, a [bioaccumulative or toxic pollutants], has been detected in stack emissions at ESSROC.

(v) Presence of significant ecological considerations, such as the proximity of a particularly sensitive ecological area;

Nearby lakes used for public fishing present a potential for ecological bioaccumulation of mercury.

(viii) Adequacy of any previously conducted risk assessment, given any subsequent changes in conditions likely to affect risk;

> *Previous risk assessments did not include evaluation of mercury dry vapor deposition, a significant pathway in the fate and transport of mercury.*

Letter from Jae Lee, RCRA Branch, Region 5, U.S. EPA, to Corey Conn, ESSROC Cement Co., *Risk Assessment Update Request, ESSROC Cement Co. IND 005 081 542*, at 1-2 (Jan. 22, 2009) (emphases in original) (A.R. 10a) ("2009 Lee Letter").

Based on the plain language of the regulation, the Region's authority to require "additional information or assessment(s) necessary to determine whether additional controls are necessary to ensure protection of human health and the environment" may be based on *any* (i.e., a single) section 270.10(*l*)(1) factor. ESSROC does not challenge this. Petition at 9 ("EPA's authority to order SSRAs on a case-by-case basis is therefore limited to the occurrence of one or more factors listed in 40 C.F.R. § 270.10(*l*)(1)."). In its petition, ESSROC challenged only *one* of the four factors the Region cited in its 2009 letter as justification for requiring an additional SSRA – factor (viii). ESSROC does not dispute any of the other three factors set forth in section 270.10(*l*)(1)(i), (ii), or (v) that the Region cited to require a second SSRA. Accordingly, the Board concludes that ESSROC has not shown that it was clearly erroneous or an abuse of discretion for the Region to require the 2012 SSRA because at minimum, there remain three unchallenged bases to support the Region's determination.

2. *40 C.F.R. § 270.10(l)(1)(viii) Is Not Limited to Changes in Site-Specific Conditions*

ESSROC further argues that the Region erred in relying on section 270.10(*l*)(1)(viii) in requiring a second SSRA. The Board does not agree. As provided earlier, that factor states:

> The Director shall base the evaluation of whether compliance with the [HWC-MACT Rule] alone is protective of human health or the

> environment on factors relevant to the potential risk from a hazardous waste combustion unit, including * * * [a]dequacy of any previously conducted risk assessment, *given any subsequent changes in conditions likely to affect risk* * * *.

40 C.F.R. § 270.10(*l*)(1)(viii) (emphasis added).

ESSROC contends that because there were no operational changes or changes in surrounding circumstances at the Facility, the Region cannot justify a second SSRA based on factor (viii). Petition at 9. In support of its argument, ESSROC relies on the following statements in the preamble to the HWC-MACT Rule:

> [EPA] expect[s] that facilities that have previously conducted an SSRA will not need to conduct another in consideration of today's final standards. Only those facilities newly subject to the RCRA permitting requirements, or existing sources where changes in conditions could lead to increased risk, may need to conduct or modify an existing SSRA.

70 Fed. Reg. 59,402, 59,511 n.241 (Oct. 12, 2005).

ESSROC argues that "EPA sought a second SSRA due to perceived weaknesses in the [2003] SSRA and the erroneous determination that more recent guidance warranted a redo of the previous EPA-approved risk assessment[,]" not because of any changes in conditions at the Facility. Petition at 9. According to ESSROC, new information regarding a previously unknown or undetected health threat or risk from emissions from a permitted facility does not fall within the meaning of "any subsequent changes in conditions likely to affect risk" in section 270.10(*l*)(1)(viii). EAB Oral Arg. Tr. at 20, 22-23. Amicus curiae Cement Kiln Recycling Coalition ("CKRC") agrees with

ESSROC's interpretation. *See generally* CKRC's Br. at 8-13 (arguing against the Region's view that "changes in conditions" include "changes 'in the science that supported the original risk assessment'").

The Board declines to restrict the scope of section 270.10(*l*)(1)(viii) to the narrow interpretation that ESSROC and CKRC propose. Contrary to ESSROC's and CKRC's arguments, the regulations do not limit "changes in conditions" in section 270.10(*l*)(1)(viii) only to changes in site-specific conditions. Nothing in the language of the regulation nor its preamble call for such a constrained interpretation. First, nothing in the regulation indicates that "changes in conditions" cannot include, for example, changes in science, new information about site-specific conditions, or new analyses that reflect application of changed science to site conditions. Second, in the preamble to the HWC-MACT Rule, the Agency expressly stated that "the [section 270.10(*l*)(1)] factors were not intended to function as stand-alone criteria for requiring an SSRA." 70 Fed. Reg. at 59,509. Rather, the regulation "provides a non-exclusive list of guiding factors for permit authorities to use in determining whether the MACT will be sufficiently protective at an individual site, and consequently, whether an SSRA is warranted." *Id.*; *see also Cement Kiln Recycling Coal. v. EPA*, 493 F.3d 207, 221 (D.C. Cir. 2007) ("[M]ost information requests [under factor (viii)] will be targeted at determining whether there has been a change in circumstances since the previous permitting process.").[7]

Moreover, CKRC's and ESSROC's interpretation could result in EPA being unable to meet the express statutory requirement to issue permits to HWCs that "contain such terms and conditions as [the permitting authority] determines necessary to protect human health and the environment[,]" RCRA § 3005(c)(3), 42 U.S.C. § 6925(c)(3), even if the Agency had new studies showing previously unknown health effects due to exposure to a pollutant emitted by a covered facility.[8]

[7] The word, "circumstance," has several broad definitions, one of which is relevant here: "a condition, fact, or event accompanying, conditioning, or determining another." Webster's Third New International Dictionary 410 (1993).

[8] *See, e.g.*, EAB Oral Arg. Tr. at 20, 22-23 (in response to questions, counsel for ESSROC argued that even if EPA discovers a new threat from a previously unknown

Similarly, even if the Agency discovered an error in a previous risk assessment, under ESSROC's interpretation the Agency would be precluded from conducting an additional risk assessment to correct the error and determine the actual risk to human health and the environment.[9] Such a reading of the HWC-MACT Rule does not comport with its plain language or the statutes it implements.

Lastly, ESSROC's specific challenge in this appeal is to the *mercury* feed rate limit in its permit. Importantly, the Agency expressly stated in the preamble to the HWC-MACT Rule that in establishing the nationwide emission limits, the Agency "*did not quantitatively assess the proposed [MACT] standards with respect to mercury*" due to a lack of adequate information regarding the behavior of mercury in the environment. 70 Fed. Reg. at 59,511 (emphasis added).

> Since it was not possible to suitably evaluate the proposed standards for the potential risk posed by mercury * * *, in order to support [the Agency's RCRA § 1006(b)] determination, [the Agency] continued to recommend that SSRAs be conducted for some facilities as part of the permitting process until [EPA] could conduct a further assessment once final MACT standards were promulgated and implemented. *Specifically, [the Agency] recommended that for*

pollutant, an SSRA stands in perpetuity – even 30 or 40 years later – if there have been no changes in operations or conditions at the facility).

[9] This example applies to this case. At oral argument, the Region stated that it was not clear from the administrative record for the 2003 permit why the focus in the 2003 SSRA was on the Wabash River, given that the 2003 SSRA identified the France Park lakes and determined they were contaminated. For the 2012 SSRA, the Region "decided that it's not appropriate just because the wrong media was focused on in 2003 that we should perpetuate that and * * * continue to focus on that media when we are under the regulatory mandate to evaluate whether there's a risk presented by the hazardous waste in MACT." EAB Oral Arg. Tr. at 76.

> *hazardous waste combustors subject to the Phase 1 MACT standards — hazardous waste burning incinerators, cement kilns and light-weight aggregate kilns — permitting authorities should evaluate the need for an SSRA on a case-by-case basis.* [The Agency] further stated that while SSRAs are not anticipated to be necessary for every facility, they should be conducted where there is some reason to believe that operation in accordance with the MACT standards alone may not be protective of human health and the environment.
>
> * * * *
>
> *Thus * * * [the Agency] continue[s] to believe that SSRAs may be necessary for some facilities.*

Id. (emphases added).

The preamble to the HWC-MACT Rule further explains that additional SSRAs for cement kiln facilities are not as a matter of course precluded because of a prior risk assessment. *Id.* Accordingly, based on the plain language of the HWC-MACT Rule and its intent as the Agency expressed in the rule's preamble, the Board concludes that the Region had authority to conduct a second SSRA under 40 C.F.R. § 270(*l*)(1)(viii) for the ESSROC facility. The Board further concludes that factor (viii) is not limited to a change in site-specific conditions.

3. *The Region Rationally Determined That a New Site-Specific Risk Assessment Was Needed to Evaluate the Risk of Mercury Emissions from the Facility*

In this case, the Region partially, rather than wholly, redid the 2003 risk assessment to evaluate "those pollutants that EPA believes to

have a likelihood of exceeding accepted levels of cancer risk or chronic toxicity * * * based on the EPA's experience with previous risk assessments for hazardous waste combustors." RCRA Programs Branch, Land and Chemical Division, Region 5, U.S. EPA, *Screening-Level Human Health Risk Assessment* 1 (June 19, 2012) (A.R. 38) ("2012 SSRA"). The Region stated that

> [The 2012 SSRA] focused specifically on the health impacts of chemicals and circumstances that relate to emission limits established by the [HWC-MACT Rule]. The chemical emissions [the Region assessed in the 2012 SSRA] are polychlorinated dibenzodioxins and polychlorinated dibenzofurans ("Dioxins") and toxic or carcinogenic metals all regulated pursuant to [the HWC-MACT Rule].

2012 SSRA § I.B.

The 2012 SSRA also considered the impact of dry deposition of mercury, which the 2003 SSRA had not evaluated. Further, the 2012 SSRA included the Region's determination of whether compliance with the existing MACT standards alone for certain pollutants, including mercury, "would be protective of human health" or whether additional controls would "be necessary on an individual source basis to ensure that adequate protection is achieved in accordance with RCRA."[10] 2012 SSRA §§ I.C, II. Consistent with the HWC-MACT Rule and its preamble, the Region limited the scope of the 2012 SSRA – a fact ESSROC conceded at oral argument. *See* EAB Oral Arg. Tr. at 29. The Region evaluated only those pollutants that it

[10] The other pollutants the Region assessed in the 2012 SSRA were dioxins, lead, arsenic, beryllium, cadmium, and hexavalent chromium. In addition to establishing emission limits for these pollutants, the HWC-MACT Rule includes emission limits for carbon monoxide and hydrocarbons, hydrogen chloride and chlorine gas, and particulate matter. 70 Fed. Reg. at 59,571-74 (codified at 40 C.F.R. § 63.1220).

determined were likely to exceed accepted levels of cancer risk or chronic toxicity, and explained to ESSROC the basis for its determination that an additional SSRA was needed. *See* 2009 Lee Letter. In the "Findings of the Risk Assessment" section of the 2012 SSRA, the Region concluded that with the exception of mercury, no additional limits were needed beyond those established in the HWC-MACT Rule.[11] 2012 SSRA § II.

The 2003 SSRA, which a consultant conducted on ESSROC's behalf using EPA-agreed-upon parameters and protocol, differs from the 2012 SSRA conducted by the Region in several aspects. *E.g.*, Petition at 7; EAB Oral Arg. Tr. at 75. First, the 2003 SSRA focused primarily on the impact of the Facility's emissions on the Wabash River, and, upon the Region's recommendation, used bioaccumulation factors that were appropriate for rivers and moving streams.[12] Ultimately, the 2003 SSRA "did not consider the potential effects from mercury on fishers at the nearby France Park lakes [, nor did it] * * * consider the application of the HWC-MACT Rule emission standards." 2012 SSRA § I.D; *see also* EAB Oral Arg. Tr. at 75.

By comparison, for the 2012 SSRA, the Region concluded that the media at greatest risk were the France Park lakes, not the Wabash River. *E.g.*, EAB Oral Arg. Tr. at 76. The Region thus shifted its focus to these lakes given "the regulatory mandate to evaluate whether there's a risk presented by the hazardous waste in MACT." *Id.* at 78-79; *see also* Region 5, U.S. EPA, Response to Comments on the Draft Permit for ESSROC Cement Corporation Federal RCRA Permit Logansport,

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[11] Importantly, the Board is not suggesting that the Region was precluded from completely redoing the SSRA as a matter of law, only that such a situation is not presented in this case. As noted in the preamble to the HWC-MACT Rule, permitting authorities should evaluate the need for an additional SSRA on a case-by-case basis and justify their decisions on the record should they deem that additional SSRAs are warranted. *See* 70 Fed. Reg. at 59,511. Such a determination would be subject to Board review, if appropriately challenged.

[12] Bioaccumulation factors consider the contaminant uptake in fish tissue from both water and food and are the "ratio of the contaminant concentration[] in fish tissue versus that in the water." Office of Water, U.S. EPA, EPA-823-B-12-002, *Water Quality Standards Handbook: Second Edition* § 3.1.3 (Mar. 2012).

Indiana IND 005 081 542 at 9 (June 5, 2013) ("We determined the specific waterbodies of concern for the ESSROC facility (Elzbeck [L]ake and Old Kenith Stone Quarry) are clearly lakes and not moving streams.") (A.R. 45) ("Response Summary"). As a result, in the 2012 SSRA the Region used a bioaccumulation factor that it derived from combining bioaccumulation factors from two types of lake fish to represent the fish in the France Park lakes. *Id.* In addition to considering a new pathway of mercury deposition and different bioaccumulation factors, the 2012 SSRA also considered the 2005 MACT mercury emission standards and an updated mass balance calculation pertaining to mercury methylation that were not considered in the 2003 SSRA. 2012 SSRA § 1.D.

Given the plain language of the HWC-MACT Rule, its preamble language clearly stating the Agency did not assess mercury when setting the MACT standards, and the Region's explanations in the 2009 Lee Letter, the 2012 SSRA, and the response to comments document, the Board finds that ESSROC failed to demonstrate that the Region erred or abused its discretion in requiring a second site-specific risk assessment at the Facility.

B. *The Region Did Not Properly Exercise Its Considered Judgment When Conducting the 2012 Site-Specific Risk Assessment*

1. *The Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities (HHRAP) Provides Guidance to Risk Assessors of Hazardous Waste Combustors*

The HHRAP sets forth a methodology for conducting "multi-pathway, site-specific human health risk assessments on [RCRA] hazardous waste combustors" when the "permitting authority determines such risk assessments are necessary." Office of Solid Waste & Emergency Response, U.S. EPA, EPA530-R-05-006, *Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities* 1-1 (Sept. 2005). Risk assessors may use the HHRAP as a screening tool by selecting conservative assumptions, and "[i]f estimates don't exceed the selected risk target, additional iterations of the assessment may not be necessary." *Id.* at 1-9. The HHRAP further advises the risk

assessor to "generally make every effort to reduce limitations and uncertainties in the risk assessment process * * *." *Id.* In particular, the HHRAP states "that identifying potentially unacceptable risks does not necessarily signify the end of the risk assessment. You can view risk assessments as an iterative process, with a number of available options once risk estimates are produced." *Id.* at 1-11.

With respect to estimating the risks of mercury, the HHRAP recommends using its equations and assumptions. *Id.* at 2-55. "If estimated risks exceed target levels, it may be appropriate to use more extensive site-specific data (if available) and subsequently a more rigorous modeling effort, to further evaluate points of potential exposure." *Id.*

The HHRAP recommends that the risk assessor's final step be conducting a risk characterization.[13] *Id.* at 7-1. The HHRAP explains the importance of including a discussion in the risk assessment that "fully explain[s] the areas of uncertainty * * * and to identify the key assumptions used in conducting the assessments." *Id.* at 8-7. The HHRAP recommends a formal uncertainty discussion that, for example, may "list the key assumptions in [a particular section of the risk

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[13] To develop a risk characterization, the risk assessor:

> [Combines] the exposure quantities generated [during the risk assessment], and the toxicity benchmarks available in the HHRAP companion database, to calculate the excess lifetime cancer risks (risk) and noncancer hazards (hazard) for each of the pathways and receptors identified [earlier in the risk assessment process]. Risks (and hazards) are then summed for each receptor, across all applicable exposure pathways, to obtain an estimate of total individual risk and hazard. Risk characterization also involves documenting the uncertainties and limitations associated with the rick [sic] assessment * * *.

HHRAP at 7-1.

analysis], the rationale for those assumptions, their effect on estimates of risk * * *, and the magnitude of the effect * * *." *Id.*

2. *The Region Used the HHRAP as Guidance for Conducting Its 2012 SSRA*

In conducting the 2012 SSRA, the Region relied on the HHRAP guidance. 2012 SSRA § I.F(1) (citing HHRAP). The Region made "several simplifying conservative (protective) assumptions in the process of conducting the [2012 SSRA]." *Id.* § I.B. The risk assessment summarized the site-specific factors relevant to the potential risk from the Facility and described the components of the site-specific risk assessment process and the methodology for the assessment. *Id.* §§ I.D, I.E. The Region also identified the model used for each emission point and the computer application used for the modeling. *Id.* § I.F(1). The Region appended "listings summarizing the non-default assumptions the EPA set in the * * * model" for the screening. *Id.*

One of the critical calculations in the 2012 SSRA that drives, in part, the determination of the mercury feed rate is the hazard quotient for the emission of mercury at the Facility. This calculation includes the methylmercury bioaccumulation factor and the fish consumption rate, along with other variables.[14] *Id.* § II.B(2). The Region calculated that the HWC-MACT mercury emissions standard yielded a 2.55 hazard quotient for mercury emissions from the Facility. This exceeds the Agency's benchmark acceptable hazard quotient risk value of 0.25.[15]

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[14] For a discussion of the methylmercury bioaccumulation factor, see Section VI.A.3, above. The fish consumption rate is "the amount of fish and shellfish in kilograms consumed by a person each day." Office of Water, U.S. EPA, *Human Health Ambient Water Quality Criteria and Fish Consumption Rates: Frequently Asked Questions* (Jan. 18, 2013).

[15] A hazard quotient for a direct exposure assessment is a ratio of the maximum environmental concentration (milligrams per kilograms) to an ecological benchmark (for example, EPA water quality criteria). A hazard quotient for an indirect exposure assessment is the estimated chemical intake (milligrams per kilogram-day) to an ecotoxicity screening value (for example, a no-observed-adverse-effect level). A hazard index is the sum of the hazard quotients for individual pollutants. *E.g.*, HHRAP at 7-7; 2012 SSRA § I.F(1)(i). According to the Cancer Risk and Hazard Quotient Results table in the 2012 SSRA, the cancer risk value is not applicable to mercury.

E.g., *id.* § III; Memorandum from Jae Lee, Land & Chemicals Div., Region 5, U.S. EPA, to File, *Annual Mercury Feed Rate Limit for ESSROC Cement Corp. Logansport, Indiana, RCRA Permit* 2-3 (June 28, 2012) (A.R. 39) ("2012 Lee Memo") (citing Office of Solid Waste & Emergency Response, U.S. EPA, EPA-R-94-021, *Exposure Assessment Guidance for RCRA Hazardous Waste Combustion Facilities, Draft* (Apr. 1994)).

In the 2012 SSRA, the Region stated:

> From the standpoint of risk assessment, mercury deposition and runoff to water bodies is a concern primarily because of the conversion of mercury to methylmercury within the water column. Methylmercury has a high potential for bioaccumulation and bioconcentration into aquatic species and fish.
>
> The EPA follows the risk management guidelines specified in the EPA's *Implementation of Exposure Assessment Guidance for RCRA Hazardous Waste Combustion Facilities*, which states that any one facility should contribute no more than [a hazard index] = 0.25 under a reasonable maximum exposure scenario. Accordingly, the EPA would recommend that the annual total stack emission of mercury be restricted to

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2012 SSRA § II.B(2). Therefore, the hazard index for mercury is equivalent to its hazard quotient.

> result in a total [hazard index] equal to or less than 0.25.

2012 SSRA § II.B(2).

Based on the considerations described above and relying on the RCRA omnibus authority that requires permit issuers to include any additional permit terms necessary to protect human health and the environment, the Region concluded that additional controls for mercury at the Facility were required. *See* 2012 Lee Memo at 3 (explaining 2012 SSRA); *see also* 2012 SSRA § III. Accordingly, the Region calculated and set a mercury feed rate limit of 87.91 pounds per year[16] "to ensure that the hazard quotient that results from the emission of mercury from the ESSROC Facility will be equal to or below the benchmark [hazard quotient] value of 0.25." 2012 Lee Memo at 3. In contrast, ESSROC argues that the mercury feed rate at the HWC-MACT emissions level should be 1,793.4 pounds per year.[17] Comments at 2.

ESSROC argues that the Region clearly erred in setting the mercury feed rate limit in the Permit at 87.91 pounds per year (5 percent of ESSROC's calculated limit) because the Region chose inappropriate values for both the methylmercury bioaccumulation factor and the fish consumption rate for the France Park lakes. *See* Petition at 15-17.

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[16] It does not appear from the administrative record that the Region calculated a mercury feed rate for the Facility using the MACT mercury emissions limit. *See* 2012 Lee Memo at 2. The record further does not directly compare the mercury feed rates using the mercury MACT emissions standard as calculated by the Region, and the Region's risk-based standard for the Facility. The Region stated that the formula it used to derive the annual feed rate ensures that the hazard quotient that results from the emission of mercury from the Facility will be equal to or below the 0.25 acceptable hazard quotient risk value. *Id.*

[17] It is not clear to the Board how this figure was derived because the Region does not refer to it, and ESSROC's citations to the figure refer only to its own documents. *See* Petition at 7-8 (citing Response Summary at 9 (citing Comments attach. 2 & n.6 ("Based on [hazardous waste combustion] MACT mercury emission limits, facility stack characteristics, and a 69.84% [system removal efficiency for mercury], the input limit is 1793.4 pounds of mercury per year."))). Nonetheless, the Board notes that the Region did not contest ESSROC's calculated mercury feed rate in its response to comments document nor its pleadings to the Board.

ESSROC asserts that the Region's failure to consider site-specific fish consumption rate information that ESSROC provided is inconsistent with Board case law and "the overall layout of [the] HHRAP." *Id.* at 15. ESSROC further contends that the Region did not complete all of the steps outlined in the HHRAP for conducting an SSRA. *See, e.g.*, EAB Oral Arg. Tr. at 33-34 (ESSROC counsel arguing that once the Region found unacceptable risk based on the use of default values, it should have evaluated the variables and uncertainties, evaluated the impact of those uncertainties, and developed additional information, including possibly site-specific information, prior to issuing the risk assessment report). According to ESSROC, had the Region conducted a more comprehensive risk analysis, it would have selected more representative bioaccumulation factors and fish consumption values, which would have resulted in a higher mercury feed rate limit. ESSROC argues that this higher mercury feed rate would be protective of human health and the environment, thereby meeting the RCRA § 3004(q) standard without the need for further controls. Comments attach. 2; Petition at 7-8.

In addition, ESSROC identifies two documents that it believes the Region erroneously omitted from the administrative record that ESSROC contends support its arguments: an e-mail dated September 9, 2011, sent to EPA employee Christopher Lambesis with the subject "Risk Analysis Assumptions for Mercury," and a June 27, 2003 EPA Region 5 intra-agency memorandum authored by an EPA toxicologist, Dr. Mario Mangino ("Mangino Memorandum"). ESSROC claims that these documents constitute "supporting information" that should be in the record, and "the proper remedy is to remand the decision back to the agency to ensure that any permitting decision is based upon a complete record." Petition at 12.

These challenges require the Board to determine whether the Region clearly erred or abused its discretion in determining the methylmercury bioaccumulation factor and fish consumption rate, and in conducting the 2012 SSRA. Because the two documents that ESSROC asserts should be in the administrative record are potentially relevant to the Region's analysis of the appropriate bioaccumulation factor and fish consumption rate, the Board addresses this preliminary procedural issue first.

3. *The Region Did Not Clearly Err or Abuse Its Discretion When It Excluded the Two Documents in Question from the Administrative Record*

General principles of administrative law dictate that the complete or official administrative record for an agency decision must include all documents, materials, and information that the agency relied on directly or indirectly in making its decision. *E.g.*, *In re Russell City Energy Ctr., LLC*, PSD Appeal Nos. 10-01 through 10-05, slip op. at 48-49 (EAB Nov. 18, 2010), 15 E.A.D. ___, *petition denied sub nom. Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 F. App'x 219 (9th Cir. 2012). Consistent with these principles, the part 124 regulations require that the final permitting decision be based on the administrative record, and further specify what must be included in the administrative record for EPA-issued permits. *E.g.*, 40 C.F.R. §§ 124.9, .17(b), .18(b). As stated therein, the administrative record for a final permit must include the administrative record for the draft permit;[18] all comments received *during the public comment period*; the tape or transcript of any public hearings held under section 124.12; any written materials submitted at such public hearing; the response to comments document required to be prepared pursuant to section 124.17 and any documents cited in the response to comments; other documents contained in the supporting file for the permit; and the final permit. *Id.* § 124.18(b); *see also id.* § 124.17(b). The administrative record need not include comments that are received prior to the comment period "unless a commenter makes it clear *during* the public comment period that these pre-comment period statements should be considered as part of the permit proceeding * * *." *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 523 n.50 (EAB 2006) (emphasis added) (citing *In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 706 (EAB 2002); *In re City of Phoenix*, 9 E.A.D. 515, 529 & n.21 (EAB 2000)). Finally,

[18] The administrative record for a draft RCRA permit must include the following: (1) the permit application and any supporting data furnished by the applicant; (2) the draft permit; (3) the statement of basis or fact sheet; (4) all documents cited in the statement of basis or the fact sheet; and (5) other documents contained in the supporting file for the draft permit. 40 C.F.R. § 124.9.

the administrative record "shall be complete on the date the final permit is issued." 40 C.F.R. § 124.18(c); *accord Dominion*, 12 E.A.D. at 516.

a. *ESSROC Failed to Demonstrate that the Region Clearly Erred in Omitting the September 9, 2011 E-mail from the Administrative Record for the 2013 Permit*

ESSROC contends that the Region improperly omitted from the administrative record a September 9, 2011 e-mail sent from ESSROC's consultant to the Region regarding site-specific fish consumption rates. Petition at 12-13; *see* E-mail from Dan Carney, P.E., Senior Engineer, Schreiber, Yonley & Assocs., to Christopher Lambesis, U.S. EPA, *Risk Analysis Assumptions for Mercury* (Sept. 9, 2011) (Pet. Ex. 2) ("September 9, 2011 E-mail"). The Board does not agree that the Region was required to include the e-mail in the administrative record for the 2012 permit. The contested e-mail states that the sender and the recipient previously discussed "consumption habits of fishers for the lake in France Park as part of the study area of the human health risk assessment modeling for the [Facility]," and "provid[es] information on one specific factor that [the parties] had not previously spoken about * * *." September 9, 2011 E-mail at 1. Included in the e-mail is narrative information regarding subsistence fishing obtained from a conversation with an Indiana Department of Fisheries biologist. *Id.* at 2-3. The sole source of the information appears to be the biologist, and no studies or other research are referenced.

Significantly, the September 9, 2011 e-mail preceded the July 22, 2012 through September 7, 2012 comment period for the draft permit. The Region did not include the e-mail in the draft administrative record made available during the public comment period. Administrative Record Index (Draft RCRA Permit), ESSROC Cement Corporation, Logansport, Indiana, IND 005 081 542 (A.R. 41); U.S. EPA Region 5, *EPA Announces Public Comment Period on a Permit for ESSROC Cement Corp.* (July 22, 2012) (A.R. 41). The biologist identified in the September 9, 2011 e-mail also is identified in ESSROC's comments to the draft permit; however, ESSROC also did not cite or include the e-mail in its comments. ESSROC's comments mention "research and discussions with a fisheries biologist in Indiana," identified the biologist by name in a footnote, and stated that based on

those discussions, "it is unclear if [the France Park lakes] could support subsistence fishing * * *. The subsistence fishing scenario is typically considered for much larger water bodies * * *." Comments at attach. 1 & n.2.

The Region's response to comments does not mention either the fisheries biologist or the e-mail. However, the Region did address the substance of ESSROC's comments, which it summarized as follows: "ESSROC states that the lakes studied in the 2012 [SSRA] do not have the ability to support subsistence fishing scenarios." Response Summary at 10. In response, the Region stated that it used a *recreational*, rather than a *subsistence*, fisher scenario, *id.*; that neither potential seasonal availability of fish nor fish advisory guidelines warranted a reduction of the fish consumption rate, *id.* at 11-12; and that the default fish consumption rate used in the risk analysis already matches the percentage of fish consumed from locally caught fish, *id.* at 13. On appeal, neither party's arguments regarding the fish consumption rate specifically references either the e-mail or the fisheries biologist, other than ESSROC's argument that the e-mail was erroneously excluded from the administrative record.

ESSROC has not shown that the e-mail's contents clearly fall into any of the categories of materials that must be included in the administrative record or draft administrative record. 40 C.F.R. §§ 124.9, .18(b)(1)-(7). Nor does ESSROC demonstrate that the e-mail contains information that the Region "relied on" in its final permitting decision, or that the Region sought to clarify issues raised during the comment period. *See Russell City*, slip op. at 49-50, 15 E.A.D. at ___ (directing permit issuer to add to the administrative record e-mail sent from permit issuer to applicant seeking follow-up information after receiving applicant's comments, where e-mail provided context to comments and administrative record contained other similar e-mails). Rather, ESSROC's argument that the Region should have included the e-mail in the administrative record is merely due to the fact that ESSROC sent the communication to the Region. Without more, ESSROC falls short of its burden to demonstrate that the Region clearly

erred in its omission of the September 9, 2011 e-mail from the final administrative record.[19]

b. *ESSROC Fails to Show the Relevance of the June 27, 2003 Internal Memorandum to the 2013 Permit Decision*

ESSROC also contends that the Region erroneously omitted from the administrative record an internal June 27, 2003 Agency memorandum authored by Dr. Mangino. Petition at 12; *see* Memorandum from Mario M. Mangino, Toxicologist, Waste Management Branch, Region 5, U.S. EPA, to Jae Lee, Waste Management Branch, Region 5, U.S. EPA, *Further Evaluation of Tier 1A Metals Emissions at the ESSROC Materials Cement Corp. (Logansport, IN) – Exposure to Mercury via the Fish Ingestion Pathway* (June 27, 2003) ("Mangino Memorandum") (Pet. Ex. 3). ESSROC does not explain, however, why the memorandum should be included. The Board finds no error in the Region's decision to exclude the Mangino Memorandum from the administrative record for the 2012 permit.

As with the September 9, 2011 e-mail discussed above, the internal memorandum precedes the public comment period on the draft decision and was not included or cited in ESSROC's comments on the draft permit, the Region's response to comments, or ESSROC's petition, other than to challenge its absence from the administrative record. Dr. Mangino wrote the memorandum to his branch chief in connection with the 2003 permit decision (regarding a potential pollutant for which there ultimately was not a permit limit), not the 2013 permit that is the subject of this case. Region's Response Br. at 36; *see also* EAB Oral Arg. Tr. at 68-69. The memorandum, which the Region characterizes as part of its 2003 deliberative process, summarizes Dr. Mangino's views concerning a letter an ESSROC consultant had submitted describing "certain aspects of the fate and transport modeling that were used to estimate the hazard index for

[19] As noted above, the Region addressed the substantive comments raised in the e-mail and responded that it did not use a subsistence fisher scenario in its calculations as ESSROC asserts, but a recreational fisher scenario. *See* Region's Resp. at 32.

mercury from the consumption of locally caught fish" from the Wabash River. Mangino Memorandum at 1. As part of his review, Dr. Mangino considered the consultant's estimated impact of fishing from the Wabash River and default bioaccumulation factors from a riverine environment. *Id.*; *see also* Region's Response Br. at 36. The Region did not cite or rely on this memorandum in its decisionmaking for the 2013 Permit, which, as noted above, involved potential impacts to the France Park lakes, not the Wabash River.

When determining whether it is clear error not to include predecisional and deliberative internal Agency materials in the final administrative record, the Board considers the importance of the materials' relevance to the permit issuer's final decision. *Dominion*, 12 E.A.D. at 525 ("Cluttering the record with the internal discussions between all the regional staff members working on a permit decision would only serve to provide misleading, confusing, and potentially internally inconsistent information about the permit decision."). The Mangino Memorandum addressed a risk assessment that was not relied upon in the permit decision at issue and addressed risks for a different water body than the ones the Region concluded were the water bodies posing the greatest risk to human health and the environment. ESSROC has not shown that the memorandum is relevant to this permit decision; therefore, the Board concludes that the Region did not clearly err in excluding the memorandum from the administrative record.

To the extent that ESSROC is arguing that the Region should have continued to consider the Wabash River and not the France Park lakes as the media of concern, the Board declines to review the Region's determination. This decision is fundamentally technical and/or scientific in nature. The Board typically defers to the permit issuer's technical expertise in such matters, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record. *E.g.*, *Russell City*, slip op. at 37-41, 88, 15 E.A.D. at ___; *Dominion*, 12 E.A.D. at 510. The Board finds that the Region has done so here with respect to its decision not to include the Mangino Memorandum in the final administrative record for the Permit, given that the focus of the 2012 SSRA was on the France Park lakes, not the Wabash River.

4. *The Region Duly Considered the Issues Raised in the Comments Regarding the Bioaccumulation Factor and the Fish Consumption Rate*

During the comment period, ESSROC challenged the Region's use of default bioaccumulation factors and the fish consumption rate in the 2012 SSRA to set the annual mercury feed rate limit. Where, as here, a petitioner raises technical issues in a permit appeal, the record must demonstrate that "the Region duly considered the issues raised in the comments." *In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *accord Russell City*, slip op. at 79, 15 E.A.D. at ___. The approach the Region ultimately adopts must be "rational in light of all the information in the record." *City of Moscow*, 10 E.A.D. at 142 (citing *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998)). The Board will defer to the Region's position if the Region has given due consideration to the comments received and "adopted an approach in the final permit decision that is rational and supportable." *Id.*

a. *The Region Adequately Responded to ESSROC's Comments Concerning the Bioaccumulation Factor*

ESSROC challenged the Region's decision to use bioaccumulation factors recommended in the HHRAP, arguing that "more recent guidance [than the HHRAP] on appropriate bioaccumulation factor values is available from the U.S. EPA," referring to the *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion* ("*Implementing Guidance*").[20] Comments attach. 1 & n.1 (citing Office of Science & Technology,

[20] The *Implementing Guidance* "provides advice on how to implement the water quality criterion recommendation for methylmercury that the U.S. Environmental Protection Agency * * * published in January 2001," in the *Water Quality Criterion for the Protection of Human Health: Methylmercury* document ("Water Quality Criterion"). *Implementing Guidance* at i. Appended to the Water Quality Criterion is the "Draft National Methylmercury Bioaccumulation Factors," which ESSROC presumably is referencing for its challenge to the bioaccumulation factor. *See* Office of Science & Technology, Office of Water, U.S. EPA, EPA-823-R-01-001, *Water Quality Criterion for the Protection of Human Health: Methylmercury* app. A (Jan. 2001); *see also* Region's Response Br. at 15-16 & n.5 (discussing Agency methylmercury bioaccumulation factor guidance).

U.S. EPA, EPA-823/R-10-001, *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion* (Apr. 2010)). According to ESSROC, the more recent bioaccumulation factor values are more representative of the conditions at the local lakes, and applying ESSROC's preferred bioaccumulation factor to the mercury feed rate calculation would result in a higher annual mercury feed rate limit. Comments attach. 1. The Board concludes that the Region adequately addressed ESSROC's concerns in its response to comments.

The Region explained that the bioaccumulation factors in the HHRAP are based on "directly-measured [bioaccumulation factors] for freely-dissolved methyl mercury in several lakes throughout North America" that were published in the 1997 *Mercury Study Report to Congress*. Response Summary at 9 (referring to Office of Air Quality Planning & Standards & Office of Research & Development, U.S. EPA, EPA-452/R-97-003, *Mercury Study Report to Congress* (Dec. 1997)); *see also* Region's Response Br. at 18-19. According to the Region, ESSROC's preferred bioaccumulation factors, which are taken from the *Implementing Guidance*, consist of "a combination of observed and converted [bioaccumulation factors] from both lentic and lotic environments"[21] because the Agency could not distinguish bioaccumulation factors from the two environments at the time it published this document. Response Summary at 10. Because the water bodies considered in the 2012 SSRA are lentic, or lake, environments, the Region believed that the lake-only bioaccumulation factors in the HHRAP were more representative of the actual conditions at the Facility than the combination lake-river bioaccumulation factors that ESSROC prefers. *Id.*; *see also* Region's Response Br. at 16-17.

"The Board traditionally assigns a heavy burden to persons seeking review of issues that are quintessentially technical." *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 403 (EAB 1997). Absent compelling circumstances, the Board will defer to a Region's determination of issues that depend heavily upon the Region's technical expertise and

[21] A lentic environment is one that is "of [or] relating to * * * still waters (as lakes, ponds, swamps)." Webster's Third New International Dictionary 1294 (1993). In contrast, a lotic environment is "of [or] relating to * * * actively moving water (as stream currents or waves)." *Id.* at 1338.

experience. *In re Envotech, L.P.*, 6 E.A.D. 260, 284 (EAB 1996). No compelling circumstances exist with respect to this issue. The Region adequately responded to ESSROC's comment, and thus, the Board defers to the Region's technical judgment on this issue.

b. *The Region Also Adequately Responded to ESSROC's Comments Regarding the Fish Consumption Rate*

ESSROC questioned whether the France Park lakes could support subsistence fishing and proposed that either a recreational fisher scenario or a subsistence fishing scenario with a smaller percentage of contaminated fish consumed would be more appropriate for the risk analysis than the subsistence fisher scenario used by the Region. Comments attach. 1. In response, the Region explained that it did not base the fish consumption rate on subsistence fisher scenarios. Response Summary at 10. Rather, the Region stated that its use of "consumer only intake of home caught fish scenarios" is a default consumption rate that is appended to the HHRAP and derived from the *1987-1988 USDA National Food Consumption Survey*. Response Summary at 10-11 (citing HHRAP tbl.C-1-4, app. C-14 to -16); *see also* Region's Response Br. at 21 ("[The] HHRAP specifically states that its fisher exposure scenarios are not 'subsistence' scenarios and are more comparable to reasonable (versus subsistence) amounts.") (citing HHRAP at 4-12). The Region stated, "The default consumption rates are derived from data that represents [sic] the average amount of home-caught fish eaten per day by people who fish in a local waterbody and eat at least some of the fish they catch." Response Summary at 11. Further, the Region explained that it used the HHRAP default consumption rate values because of a lack of "reliable site-specific information * * * about the fish consumed from France Park lakes." *Id.*

As a permitting authority, the Region "must be free to exercise expert judgment and rely on the data [it] conclude[s] are more accurate or comprehensive." *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 147 (EAB 1994) (concluding that the permit issuer did not clearly err by rejecting state data and "relying instead on the more comprehensive 'tri-state' data" for cost-effectiveness analysis in prevention of significant deterioration permitting decision); *see also In re Masonite Corp.*, 5 E.A.D. 551, 584 (EAB 1994) ("The Region of necessity can rely on the information supplied to it by the permittee * * * [as] long as the

Region does not see any reason to question a particular piece of information."). The Board concludes that the Region adequately responded to ESSROC's specific comments concerning the fish consumption rate, and accordingly defers to the Region's technical judgment on this issue.

5. *The Region Did Not Exercise Its Considered Judgment When Conducting Its 2012 Site-Specific Risk Assessment*

The Region's conclusion that the mercury standard in the HWC-MACT Rule did not adequately protect human health and the environment was based on the Region's 2012 site-specific risk assessment. ESSROC argues that the Region erred in setting the mercury feed rate limit in its permit in part because the Region did not complete the 2012 SSRA as recommended by the HHRAP. *See, e.g.*, EAB Oral Tr. at 33-34, 125-30. The Board concludes that the administrative record does not demonstrate that the Region exercised its considered judgment in conducting the 2012 SSRA. The Region did not include all the sections recommended by the HHRAP in the 2012 SSRA. Most importantly, the Region failed to provide the robust analysis of the degree of uncertainty that the HHRAP recommends be included in every risk assessment. Nor did the Region explain why it did not need to provide this analysis. Accordingly, the Board remands the permit.

In this case, the Region determined based on the results of the 2012 SSRA that a more stringent mercury feed rate limit of 87.91 pounds per year was required to meet the terms of RCRA's omnibus provision.[22] A permit issuer's decision to rely on RCRA's omnibus authority involves an exercise of discretion, and acts of discretion must be adequately explained and justified. *Ash Grove*, 7 E.A.D. at 397; *see also In re Chem. Waste Mgmt. of Ind., Inc.*, 6 E.A.D. 144, 162 (EAB 1995) (holding that although the substantive standards for exercise of omnibus authority may be met, the

[22] As noted earlier, the RCRA omnibus provision requires permit issuers to include in cement kiln permits any additional terms and conditions beyond those established in the HWC-MACT Rule deemed necessary to protect public health and the environment. RCRA § 3005(c)(3), 42 U.S.C. § 6925(c)(3).

administrative record must contain "a properly supported finding" to that effect); *In re Sandoz Pharm. Corp.*, 4 E.A.D. 75, 80 (EAB 1992) (the omnibus authority may not be invoked "unless the record contains a properly supported finding that an exercise of that authority is necessary to protect human health or the environment"); accord *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 48 (1983) ("We have frequently reiterated that an agency must cogently explain why it has exercised its discretion in a given manner."). Specifically, the Region "must articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions." *In re Carolina Power & Light Co.*, 1 E.A.D. 448, 451 (Act'g Adm'r 1978) (citation omitted).

In conducting the 2012 SSRA, the Region stated that it "conducted the risk assessment in accordance with the EPA [HHRAP]." 2012 SSRA § I.A. The Region explained that it chose to follow the HHRAP for the risk screening "because it is peer-reviewed and incorporates an opportunity to use site-specific data * * * [and] *outlines a comprehensive procedure for calculating estimated environmental media (e.g., air, soil, vegetables, fish, meat) concentrations, * * * and health risks* due to [chemical emissions] from combustion stacks." *Id.* § I.F(1) (emphasis added). The Region further stated that it "considered a number of site-specific factors in evaluating whether compliance with the [HWC-MACT Rule] alone at the ESSROC facility would be protective of human health." *Id.* § I.D. These site-specific factors included ESSROC's proximity to parks, identities and quantities of emissions of bioaccumulative and toxic pollutants, such as mercury, and the volume and types of wastes containing highly toxic constituents. *Id.* The 2012 SSRA also includes an appendix, which summarizes "the non-default assumptions the [Region] set in [its] model for this revised risk screening[,]" and identifies where readers can find "[d]efault assumptions incorporated in the model." *Id.* § I.F(1).

However, without any explanation in the 2012 SSRA, the fact sheet for the draft permit, or response to comments document, the Region did not include an uncertainty discussion. The HHRAP – a peer-reviewed document issued by the Agency to guide risk assessors of hazardous waste combustors – expressly states that it is important for every risk assessment to include an uncertainty discussion. HHRAP at 8-7. The 2012 SSRA also fails to include a robust conclusions

section, which the HHRAP also recommends be in each risk assessment. HHRAP at 9-1. The uncertainty discussion and conclusions section should describe "the degree of conservatism" in a risk estimate and interpret the risk analysis results. *Id.* at 8-2, 9-1.

a. *The HHRAP's Uncertainty Discussion*

The HHRAP states that every risk assessment is limited by the quantity and quality of site-specific environmental data, emission rate information, and other assumptions made during the risk estimation process. *Id.* at 1-9. Thus, the HHRAP recommends that the risk assessment "make every effort to reduce limitations and uncertainties in the risk assessment process, since they can affect the confidence in the risk assessment results." *Id.* The HHRAP further states that a risk assessment report should:

- Indicate the scope of the risk assessment (match the level of effort to the scope)[.]
- Summarize the major risk conclusions.
- Identify key issues (a key issue is critical to properly evaluate the conclusions). For example, was [sic] surrogate or measured emissions data used.
- Describe clearly the methods used to determine risk (provide qualitative narration of the quantitative results).
- *Summarize the overall strengths and major uncertainties.*

Id. at 7-3 (emphasis added).

The HHRAP further recommends that every SSRA include an "Uncertainty Discussion" section, noting that:

Uncertainty is inherent in the process even when using the most accurate data and the most sophisticated models. The method we recommend in the HHRAP relies on a combination of point values — some protective and some typical — yielding a point estimate of exposure and risk that falls at an unknown percentile of the full distributions of exposure and risk. For this reason, the degree of conservatism in risk estimates cannot be known. *Therefore, you need a formal uncertainty analysis to determine the degree of conservatism.*

* * * *

A second area of decision-rule uncertainty includes the use of standard Agency default values in the analysis. * * * Using a single point estimate for these variables instead of a joint probability distribution ignores a variability *that may influence the results by a factor of up to two or three.*

* * * *

The science of risk assessment is evolving. Where the science-base is incomplete and uncertainties exist, science policy assumptions must be made. *It is important for risk assessments to fully explain the areas of uncertainty in the assessments and to identify the key assumptions used in conducting the assessments.* Toward that end, one option is to add a table at

> the end of each section (e.g., stack emissions, air modeling, exposure assessment, toxicity evaluation, risk characterization) that lists the key assumptions in that section, the rationale for those assumptions, *their effect on estimates of risk (overestimation, underestimation, neutral)*, and the magnitude of the effect (high, medium, low). * * * *These tables could be used to evaluate the extent to which you used public health-protective assumptions in the risk assessment.* They could also help determine the nature of the uncertainty analysis to be performed. The assumptions listed in the risk characterization section, which synthesizes the data outputs from the exposure and toxicity analyses, might include the most significant assumptions from each of the previous sections.

Id. at 8-2, -4, -7 (emphases added).

In addition, the HHRAP describes the following uncertainties introduced by the assumptions made to calculate the fish consumption values:

> These intake rates do not represent long behavior patterns, which is the focus of the exposure assessments used to support chronic health effects. This introduces uncertainty into the estimates of medians and other percentiles. *This assumption can*

> *overestimate or underestimate [the fish consumption rate].*
>
> The intake rates represent total intake rates of home-caught fish. Where use of site-specific information would reveal the amount of fish consumed from waters within the study area, this information should be used. This assumption can overestimate or underestimate [the fish consumption rate].

Id. at C-15 (emphasis added).

The Region's 2012 SSRA fails to include "a formal uncertainty analysis to determine the degree of conservatism" as recommended by the HHRAP, and only in two places does the 2012 SSRA discuss the impact of the Region's estimates. First, the Region acknowledged that the 2012 SSRA is a risk screening "in the sense that we make several simplifying conservative (protective) assumptions in the process of conducting the assessment." 2012 SSRA § I.B. Secondly, under the section entitled "Major site-specific exposure model assumptions", the Region noted for the receptor locations that "[t]he Receptor Areas for all receptor scenarios is the 10-by-10 kilometer air-dispersion grid surrounding the facility. This procedure adds conservatism to the risk screening." *Id.* § I.F(2). The appendix to the 2012 SSRA includes numerous pages "summarizing the non-default assumptions the EPA set in the * * * model [used] for this revised screening[,]" *id.* § I.F(1), but the Board does not see anything in the fact sheet, the 2012 SSRA, or the response to comments document that provide the recommended formal uncertainty analysis recommended by the HHRAP or an explanation by the Region why such an analysis was unnecessary in this case.[23]

[23] There may be an uncertainty analysis somewhere in the administrative record; however, it is not the Board's duty as the reviewing official to search for it. *In re Phelps Dodge Co.*, 10 E.A.D. 460, 507 n.39 (EAB 2002); *see also Doddy v. Oxy USA, Inc.*, 101 F.3d 448, 463-64 (5th Cir. 1996) (the court is not required to search the record for some piece of evidence that might make the party's case for it). If the Region did in fact complete the uncertainty discussion and have a more robust conclusion

"Identification and explanation of uncertainties is an expected and essential component of valid risk assessment reports." *Ash Grove*, 7 E.A.D. at 405 n.18.

b. *HHRAP Conclusions Section*

The HHRAP also recommends that each risk assessment include a conclusions section:

> This section is included primarily to interpret the results of the risk and hazard characterization in light of the uncertainty analysis. We recommend that, at a minimum, it present and interpret all risk and hazard results exceeding target levels. *Finally, the Conclusions section is a place for [the risk assessor] to present and defend [its] position on whether actual or potential releases from the facility [it] studied pose significant risks and hazards to human populations.*

HHRAP at 9-1 to -2 (emphasis added). The Board finds that while the 2012 SSRA did include a conclusions section, it merely mirrored previous statements in the document. The 2012 SSRA's conclusions section states in its entirety:

> The EPA conducted a screening human health risk assessment for the ESSROC facility in Logansport, IN. The risk assessment calculated potential risks based on contaminant emissions at the existing regulatory limits for stack emissions of dioxin and toxic/carcinogenic metals, which

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elsewhere in the record, at minimum, the Region should have referenced this information in the 2012 SSRA and/or fact sheet.

> have also become compliance limits for the ESSROC facility. In comparison to the frequently recommended risk management benchmarks of [hazard index] = 0.25 and cancer risk = 1.0 E-6 for each pollutant, the following recommendations are made with respect to further emission limits beyond the HWC-MACT concentration limits:
>
> Dioxins: No additional limits necessary.
>
> Mercury: Restrict total annual stack emissions such that total [hazard index] is equal to or less than 0.25.
>
> Cadmium: No additional limits necessary.
>
> Lead: No additional limits necessary.
>
> Chromium: No additional limits necessary.
>
> Beryllium: No additional limits necessary.
>
> Arsenic: No additional limits necessary.

2012 SSRA § III.

The above conclusions section does not include any assumptions the Region made in the 2012 SSRA, the rationale for those assumptions, their effect on estimates of risk (overestimation, underestimation, neutral), and the magnitude of the effect (high,

medium, low), as recommended by the HHRAP. As with the Uncertainties Discussion section, the Board similarly does not find that this is sufficient evidence of the Region's considered judgment, as it neither addresses the full scope of areas the HHRAP recommends be included in a conclusions section, nor provides an explanation for why the recommended information is unnecessary.

"We are respectful of the Region's choice of tools to guide its permitting decisions under the omnibus provision, but the Region's ultimate decisions must then follow logically from its chosen method." *Ash Grove*, 7 E.A.D. at 417-18. While the HHRAP is a guidance document and thus is not a required protocol, the Region chose to follow it in conducting its 2012 SSRA because it "outlines a comprehensive procedure for calculating estimated environmental media (e.g., air, soil, vegetables, fish, meat) concentrations, * * * and health risks due to [chemical emissions] from combustion stacks." 2012 SSRA § I.F(1). Given the Region's acknowledgment of the HHRAP's comprehensive procedure, the Board does not understand the Region's failure to include these two sections as the HHRAP recommends. Further, the Region's failure to explain why it deemed these two important sections unnecessary gives the Board no basis for concluding that the Region exercised its considered judgment in conducting the 2012 SSRA. As a result, the Board is unable to conclude based on the record before us that the Region's decisionmaker had all the information she should have had before her prior to making the final permit decision that a mercury feed rate limit of 87.91 pounds per year was required to protect human health and the environment.[24]

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[24] By comparison, the Board notes that the 2003 SSRA that ESSROC prepared using EPA-agreed-upon protocols included such an uncertainty discussion, along with the impact the risk assessor believed resulted from the use of various assumptions. *See, e.g.*, Mercury Comparative Analysis at 17 (stating that the 15% methylation rate adopted in the HHRAP guidance is overly conservative, and a 6% methylation rate would be sufficient as a conservative estimate and would adjust the hazard quotient downward by a factor of 2.5). The Board is expressing no opinion as to the accuracy of any of these statements. We only include them as examples of the type of information that could have been before the Regional Administrator when she was determining whether the existing limits in the HWC-MACT Rule were adequately protective of human health and the environment or whether additional controls were required pursuant to RCRA's omnibus authority. This information also may have impacted the mercury feed rate

The unexplained impacts of the Region's conservative assumptions were a concern for both the Region and ESSROC during the Permit decisionmaking process. The Region acknowledged that it "ma[d]e several simplifying conservative (protective) assumptions" in the 2012 SSRA. *Id.* § I.B. ESSROC commented that the Region's selected bioaccumulation factor and use of the default fish consumption rate resulted in the Region setting an annual mercury feed rate limit of 87.91 pounds per year, which is significantly lower than the limit ESSROC argues is the correct calculated feed rate based on the HWC-MACT standard (1,793.4 pounds per year). Comments at 2. The Region's limit also is substantially lower than the 896.7 pounds per year that ESSROC proposed as an accommodation. *Id.*; Petition at 2. The Region asserts that the lower feed rate limit is necessary to satisfy RCRA's omnibus provision to protect human health and the environment, but based on the record before the Board, the Region has not adequately justified that determination.

If the Region had prepared a formal uncertainty analysis and a robust conclusions discussion as part of its 2012 SSRA, the Region's decision maker may have decided to exercise her fully-informed discretion in any number of ways. For example, she could have determined that the Region needed additional site-specific information for the analysis, as recommended by the HHRAP.[25] The HHRAP states:

> You [(the risk assessor)] would need considerable time, effort, and funding to investigate the representativeness of all the values (or ranges of values) available in the HHRAP. As a result, you might choose to use only readily available site-specific information in

limit the Region selected (i.e., the uncertainty discussion and conclusion may have indicated whether the final permit's mercury feed rate limit was appropriate or conversely was more stringent than needed to satisfy RCRA).

[25] *See, e.g.*, *Ash Grove*, 7 E.A.D. at 406 (noting that in setting permit limits, the Region consulted with the Kansas Department of Wildlife and Game and the local Chamber of Commerce, and used actual data on mercury levels in local fish when evaluating the risk assessment results).

> an initial assessment. You could then use the results of that assessment to determine where (or if) more site-specific risk information should be collected * * *. This allows you to use resources most efficiently and effectively, by focusing resources on areas that are considered "risk drivers[,"] rather than areas that do not appreciably affect the risk outcome. For example, if the assessment shows that the primary pollutant and exposure pathway is mercury in fish, then you could target site-specific data gathering efforts on values related to mercury emissions, surface water concentrations and/or fish consumption. You would not have to spend resources collecting site-specific information that may not affect the final results of the assessment * * *.

HHRAP at 1-8 to -9. The Region's decisionmaker also may have decided based on an uncertainty discussion that the Region should use a more rigorous modeling effort to evaluate further points of potential exposure. *See id.* at 2-55. Or, as another example, she could have determined that the Region could use other assumptions and still derive a limit that adequately protected human health and the environment.

Alternatively, more complete uncertainty and conclusion sections (or explanation of why they were not needed) could justify in more detail why the mercury feed rate limit the Region included in ESSROC's permit was necessary to protect human health and the environment. There may be other options as well that are within the Region's technical expertise from which the Board could conclude that the Region properly exercised its considered judgment. Given the lack of an uncertainty discussion and a full conclusions section in the 2012 SSRA, especially in light of the substantial difference between the mercury feed rate limit that the Region calculated and the HWC-MACT

limit that ESSROC and CKRC argue otherwise would apply, the Board cannot conclude that the Region exercised its considered judgment in conducting the 2012 SSRA. And because the Region determined that it needed to require a more stringent mercury feed rate limit in the Facility's permit based on the 2012 SSRA, the Board cannot conclude that the Region exercised its considered judgment in setting this permit limit. In sum, the Board finds that the Region has failed to "articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions." *Ash Grove*, 7 E.A.D. at 417 (quoting *Carolina Power & Light*, 1 E.A.D. at 451) (internal quotations omitted).[26]

The Board remands the Permit to the Region to complete the risk assessment or to explain why it does not need to include robust uncertainty and conclusion sections, in the detail recommended by the HHRAP. Because the Region is relying on the 2012 SSRA as justification for invoking the RCRA omnibus authority, the Region must reopen the record and allow for public comment on either its completed risk assessment, or its explanation for why the Region does not need to provide the detailed uncertainty discussion and conclusions section the HHRAP recommends. Given the pivotal role the 2012 SSRA plays in determining whether the Region properly invoked the RCRA omnibus authority, the Board concludes that the Region should in the first instance make the determination on how to proceed upon remand – i.e., whether to complete the sections the HHRAP recommends or justify its decision not to do so. The Region then must

[26] The importance of the uncertainty discussion and conclusions section is further underscored by the fact that the Region is relying on its 2012 screening-level site-specific risk assessment (which is summarized in 12 pages, not including appendices) the Region conducted in lieu of the very lengthy and detailed 2003 SSRA ESSROC conducted. The record also shows that ESSROC prepared a comparative mercury risk assessment in 2009 after it received the Region's 2009 letter indicating another risk assessment was needed. Carrie Yonley, Schrieber, Yonley & Assocs., *Mercury Sensitivity Analysis* (May 2009) (A.R. 15). While the decision to rely on the 2012 SSRA clearly is within the Region's technical expertise, given the difference in scope of the two risk assessments as presented in the record, and the substantial disparity between the mercury limit that ESSROC asserts (without objection from the Region) would apply under the HWC-MACT Rule and the limit the Region established in ESSROC's permit, it is imperative that the Region's decision be fully explained and justified in the administrative record.

provide that decision to the public for comment, and finalize the Permit's mercury feed rate limit after considering the public comments it receives. This is consistent with the expectation that "'most permit conditions should be finally determined at the [permit authority] level.'" *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 127 (EAB 1999) (quoting 45 Fed. Reg. 33,290, 33,412 (May 19, 1980)); *see also, e.g., In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 633 (EAB 2010). Accordingly, the Board is requiring the Region to seek public comment to ensure that the Region's decisionmaker will have ample opportunity to consider carefully the important technical and policy issues raised in this case, based on a full and robust record explaining the results of the Region's risk assessment for the Facility.

VII. *CONCLUSION AND ORDER*

For the reasons stated above, the Board remands the Permit. The Region did not clearly err or abuse its discretion in requiring a second site-specific risk assessment to determine whether additional controls are necessary to ensure protection of human health and the environment as required by RCRA § 3005(c)(3), 42 U.S.C. § 6925(c)(3). Nor did the Region clearly err by excluding the September 9, 2011 e-mail and the June 27, 2003 internal memorandum from the administrative record. However, the administrative record does not reflect that the Region exercised its considered judgment in conducting the 2012 SSRA. Because the Region relied on the 2012 SSRA to include additional controls on mercury emissions in the Permit to protect human health and the environment, the Board cannot conclude that the Region exercised its considered judgment in establishing the mercury limit. Accordingly, the Board remands the Permit.

On remand, the Region must either supplement the 2012 SSRA by preparing a complete uncertainty discussion and conclusions section (or provide analogous information elsewhere in the administrative record), or explain why the inclusion of those sections is not needed to support its final mercury feed rate limit. The Region must reopen the public comment period to provide the public with an opportunity to review and comment on the additional risk assessment sections (or explanation of why they are not needed), and the Region's

determination of the mercury feed rate limit, including the assumptions underlying its determination.

After the Region either completes its risk assessment or supplements the administrative record with an explanation of why an uncertainty discussion and conclusions section are not necessary and issues the final permit, anyone who participates in the remand process and is dissatisfied with the Region's decision on remand must file a petition with the Board seeking review in order to exhaust administrative remedies pursuant to 40 C.F.R. § 124.19(*l*)(2)(iii). Any such appeal shall be limited to issues within the scope of the remand.[27]

So ordered.

[27] The Board is expressing no opinion at this time as to the appropriateness of the mercury feed rate limit contained in the Permit given the incomplete administrative record, as stated above. Upon remand, the Region may decide to retain the current annual mercury feed rate limit or, alternatively, may determine in its technical judgment that the additional information and/or comments it receives during the public comment period warrant a different limit.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Remand Order in the matter of *ESSROC Cement Corporation*, RCRA Appeal No. 13-03, were sent to the following persons in the manner indicated:

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Annette Duncan
Secretary

EXHIBIT C

Dana's Written Objections Dated January 25, 2016

RCRA Public Participation Manual

1996 Edition

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Office of Solid Waste, Permits Branch
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Chapter 4
Public Participation in RCRA Corrective Action Under Permits and §3008(h) Orders

Introduction

RCRA requires owners and operators of hazardous waste management facilities to clean up contamination resulting from current and past practices. These cleanups, known as corrective actions, reduce risks to human health and the environment.

As with the rest of the RCRA program, state environmental agencies can receive authorization from EPA to implement the corrective action program. The corrective action requirements in authorized states must be at least as stringent as the federal requirements and may be more stringent. Where states implement the program, EPA plays an oversight role; the Agency implements the program in non-authorized states.

This chapter lays out a framework for corrective action public participation that follows the typical approach to facility cleanup (e.g., site investigation, analysis of alternatives, remedy selection). However, alternative approaches may be used provided they achieve the goals of full, fair, and equitable public participation. More than 5,000 facilities are subject to RCRA corrective action. The degree of cleanup necessary to protect human health and the environment varies significantly across these facilities. Few cleanups will follow exactly the same course; therefore, program implementors and facility owners/operators must be allowed significant latitude to structure the corrective action process, develop cleanup objectives, and select remedies appropriate to facility-specific circumstances. Similar latitude must be allowed in determining the best approach to public participation, in order to provide opportunities appropriate for the level of interest and responsive to community concerns.

Corrective action may take place under a permit or an enforcement order.

At the federal level, corrective actions may take place under a RCRA permit or as an enforcement order under §3008 of RCRA. In authorized states, corrective action may take place under a state-issued RCRA permit, a state cleanup order, a state voluntary cleanup program, or another state cleanup authority. Since authorized states may use a variety or combination of state authorities to compel or oversee corrective actions, EPA encourages interested individuals to check with their state agency to gather information on the available public participation opportunities.

The RCRA corrective action program is the counterpart of EPA's other hazardous waste clean-up program, "Superfund," which is formally known as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Unlike most Superfund clean-ups, RCRA corrective actions generally take place at facilities that continue to operate, and the current facility owner or operator is involved in the cleanup. Because cleanups under RCRA and Superfund often involve similar issues, EPA encourages equivalent public participation procedures in the two programs. Thus, parts of this chapter will refer you to the *Community Relations in Superfund* handbook (EPA/540/R-92/009, January 1992), which is available by calling the RCRA/Superfund Hotline at 1-800-424-9346.

Current Status of the Corrective Action Program

The ANPR emphasizes areas of flexibility in corrective action and describes how the program is improving.

On May 1, 1996, EPA published an Advance Notice of Proposed Rulemaking (ANPR) in the Federal Register (61 FR 19432). The Notice: (1) presents EPA's strategy for writing final corrective action regulations; (2) describes the current corrective action program and requests information to help EPA identify and implement improvements to the program; and (3) emphasizes areas of flexibility in the current program and describes program improvements already underway.

Public participation during corrective action derives from a combination of regulations and EPA guidance. The regulations set out requirements that facilities and agencies must meet when a permit is issued or modified, under 40 CFR parts 124 and 270, to incorporate corrective action provisions. EPA guidance, on the other hand, suggests additional provisions that the permitting agency may include in the permit. One example of such guidance for corrective action activities is the Proposed Subpart S rule (55 FR 30798, July 27, 1990). The Subpart S regulations are not final, but much of the 1990 proposal is routinely used as guidance by permit writers.[1]

Although Subpart S regulations are not final, much of the 1990 proposal is routinely used as guidance by permit writers.

Since there are no regulations requiring public participation under §3008(h) orders, any such activities are based on guidance. EPA policy states that the opportunities for public participation should be generally the same as those

[1] Two provisions of the 1990 proposal were promulgated in 1993: the final corrective action management unit (CAMU) and temporary unit regulations on February 16, 1993 (58FR 8658). Under this final rule, CAMUs and temporary units may be designated by the regulatory agency in the permit prior to or during remedy selection according to the procedures in 40 CFR 270.41; these units may also be implemented through the use of Section 3008(h) orders or order modifications. Conversely, the facility may request a permit modification to implement a CAMU following the Class 3 permit modification process defined in 40 CFR 270.42. If approval of a temporary unit or time extension for a temporary unit is not requested under a Class 3 permit modification or obtained under a regulatory agency-initiated modification, the facility owner or operator may request approval for a temporary unit according to the procedures for a Class 2 permit modification. Chapter 3 (RCRA Permitting) discusses the public participation activities associated with each level of permit modification.

opportunities that accompany corrective action under a permit (see the section called "Special Considerations for Public Participation Activities Under §3008(h) Orders" below).

In the 1996 ANPR, the Agency reaffirmed using portions of the 1990 proposal as guidance.

The May 1, 1996 ANPR reaffirms the Agency's use of portions of the 1990 proposal as guidance, including many of the portions addressing public participation in corrective action. While much of the 1990 proposal will still be used as guidance, the ANPR emphasizes the need for flexibility in developing site-specific corrective action schedules and requirements, including public participation requirements tailored to meet the needs of the local community.

As described in the ANPR, EPA is actively looking for opportunities to identify and implement improvements to make the corrective action program faster, more efficient, more protective, and more focused on results. In the ANPR, the Agency emphasizes that revisions to the corrective action program should also enhance opportunities for timely and meaningful public participation.

This chapter outlines the public participation activities associated with the corrective action process under both permits and §3008(h) orders. It describes public participation activities currently required under federal regulations and policies, as well as additional activities that EPA recommends. If additional guidance is appropriate upon promulgation and re-proposal of corrective action regulations, EPA will update this chapter and make it available to the public.

The three paragraphs below provide a few guidelines for public participation, in the form of overarching principles, which should be considered throughout the corrective action process.

Early Participation

Public participation should come early in the corrective action process.

As we emphasized in Chapter 2, public participation should begin early in the permitting process. It should also begin early in the corrective action process. Many of the important decisions in a corrective action are made during the site investigation and characterization. Overseeing agencies and facilities should make all reasonable efforts to provide for early public participation during these phases.

Consistency with Superfund

A significant portion of the RCRA corrective action process is analogous to the Superfund process. Due to this similarity, EPA encourages permitting agencies and facilities to make public participation activities under the RCRA system consistent with those activities required under Superfund. For example, RCRA interim actions should provide opportunities for participation that are similar to, or go beyond, Superfund public

participation for removal actions, and similar opportunities for participation should be available under both corrective measures implementation and a Superfund remedial action.

Shared Responsibility for Public Participation Activities

The corrective action process may involve cleanup steps that are initiated by an overseeing agency or a facility owner/operator. Public participation activities will often be more useful for the public if the party who performed the latest cleanup step then conducts the public participation activity. For instance, if the facility owner/operator does a facility investigation, then it would usually be more appropriate for the facility owner/operator to run the public meeting or whatever activity follows the investigation. In addition, EPA recognizes that important forms of public participation take place outside of the formal corrective action process. The Agency encourages public interest, environmental, civic, and other organizations to provide such activities. The Agency also encourages citizens to discuss cleanup and permitting issues with knowledgeable stakeholders in the community.

Special Considerations for Public Participation Activities Under §3008(h) Orders

As we mentioned above, corrective action activities are conducted under an order issued under RCRA Section 3008(h). RCRA 3008(h) orders may be used to get corrective action started in advance of facility permitting or when a facility is closing under interim status. RCRA 3008(h) orders may be issued either on consent or unilaterally. A consent order is issued when the facility and the regulatory agency have come to an agreement about the corrective action; a unilateral order is issued when the regulatory agency and the facility have been unable to agree about the need for, or the scope of, corrective action.

As a matter of EPA policy, the substantive corrective action requirements and public participation requirements imposed under an order are generally the same as those that would occur if corrective action were taking place under a permit (61 FR 19432, May 1, 1996); however, because orders have significant administrative differences from permits there are some special considerations. For example: under a §3008(h) order, there may be limitations on the permitting agency's ability to release or discuss certain information; no public participation activities are statutorily *required* under §3008(h), though EPA policy is that public participation under corrective action orders be generally the same as under permits; and, while facility owner/operators may agree to conduct public participation activities under a consent order, under a unilateral order public participation responsibilities will likely fall to the permitting agency.

Under EPA policy, public participation requirements during corrective action are generally the same under orders and permits.

In addition to ensuring that appropriate public participation activities occur during implementation of a corrective action order, in some cases, it may

be useful to begin public participation prior to the issuance of the order by assessing the community's concerns and identifying the most appropriate means of addressing those concerns. (Assessing a community's concerns and planning for public participation is discussed in greater detail in Chapter 2.) When corrective action will take place under a consent order, care should be taken to explain to the community that corrective action orders on consent are not traditional enforcement actions in that they are simply means to expedite initiation of corrective action activities; they are not typically issued in response to a violation at the facility.

Limitations on Releasing Information: When the agency is negotiating an order with the facility, confidentiality of certain information must be maintained. The aim of these negotiations is to encourage frank discussion of all issues and to resolve differences, thereby allowing the agency to issue an order on consent rather than unilaterally. Agency staff should take notice: public disclosure of some information may be in violation of state and federal statutes, and could jeopardize the success of the negotiations, so be sure to coordinate any public notices with enforcement staff before releasing information.

Not being able to fully disclose information to the public can pose problems, particularly in a community where interest is high and citizens are requesting information. If interest in the facility is high, the project manager, project staff, and the Public Involvement Coordinator should discuss how to address citizens' concerns without breaching confidentiality. At the very least, the public deserves to know why these limitations are necessary and when and if they will be lifted.

Further constraints may be placed upon public participation if discussions with the facility break down, and the case is referred to the Department of Justice (DOJ) to initiate litigation. In this situation, public participation planning should be coordinated with the lead DOJ attorney as well.

Strongly Suggested Versus Required Activities: As discussed earlier in this Chapter, EPA's policy is that the substantive corrective action requirements and public participation requirements imposed under an order should be generally the same as those that would occur if corrective action were taking place under a permit. U.S. EPA's Office of Solid Waste and Emergency Response has issued two directives addressing public participation in §3008(h) orders: Directive 9901.3, *Guidance for Public Involvement in RCRA Section 3008(h) Actions* (May 5, 1987) and Directive 9902.6, *RCRA Corrective Action Decision Documents: The Statement of Basis and Response to Comments* (April 29, 1991). These directives suggest public participation activities in orders, even though such activities are not required by statute. The directives suggest the following activities **after** a proposed remedy has been selected:

C Writing a **statement of basis** discussing the proposed remedy;

- C Providing **public notice** that a proposed remedy has been selected and the statement of basis is available;
- C Providing a **public comment period** (30-45 days) on the proposed remedy;
- C Holding a **public hearing** if requested; and
- C Writing a **final decision** and **response to comments**.

The remainder of this Chapter reflects EPA's support for having equivalent public participation steps under both permits and orders. While there are no requirements for public participation under orders, EPA strongly suggests the activities reviewed in this Chapter. In our review of the corrective action elements (initial site assessment, site characterization, etc.) in the following pages, we discuss public participation activities that are required or additional. Because EPA strongly suggests public participation activities under orders, we present them under the "Required Activities" headings for each corrective action element.

Consent Versus Unilateral Orders: If the agency is issuing a consent order, the agency should consider negotiating with the facility to have it write a **public participation plan** (if community interest in the facility is high), or at least conduct some activities as terms of the order. If the agency is issuing a unilateral order, however, circumstances may be such that it is necessary and/or appropriate for the agency to assume all or most public participation responsibilities. Care must be used regarding the disclosure of information prior to the issuance of a unilateral order. Premature disclosure may place additional strain on the facility-agency relationship.

Public Participation In Corrective Action

Because corrective action activities involve investigation of releases and potential releases of hazardous waste, the community is likely to take an active interest. Corrective action investigations and remedial activities may be very visible to the public. Experts visit the facility to conduct investigations, trucks and equipment travel back and forth to the facility, and government agencies oversee activities. Delays in the cleanup or long "down times" between permitting activities are not uncommon. All of these factors can heighten the anxiety and concern of the community. Accordingly, the community may require more information on issues related to current or potential contamination, including levels of contamination, the extent of health and environmental risks, and the potential for future risks. The public may also seek additional opportunities to give input to the overseeing agency or the facility.

The regulatory requirements provide a baseline for adequate public participation while leaving a great deal of flexibility in the program. Some situations will call for public participation opportunities that go beyond the regulatory baseline. Where regulations do not specify public participation during corrective action, overseeing agencies and facility owners/operators

should develop site-specific public participation strategies that are consistent with existing requirements and provide for full, fair, and equitable public participation.

The scope and complexity of corrective actions will vary significantly across facilities. For this reason, EPA has created a flexible program that allows regulatory agencies to tailor corrective action requirements to facility-specific conditions and circumstances. While EPA's public participation regulations establish a baseline of requirements, some situations will call for public participation opportunities that go beyond the regulatory baseline. This is particularly true in the corrective action program because many of the specific corrective action regulations, including regulations for public participation, are not yet final and because corrective action activities often occur outside the permitting process (e.g., under a federal or state order). In this chapter, we will discuss times during the process when additional public participation can be critical. We encourage stakeholders to follow the guidance in this chapter and Chapter 2 when planning for public participation in the corrective action process.

Corrective actions, like most site cleanup activities, usually involve several key elements. These elements are:

- Initial Site Assessment (RCRA Facility Assessment (RFA));
- Site Characterization (RCRA Facility Investigation (RFI);
- Interim Actions;
- Evaluation of Remedial Alternatives (Corrective Measures Study (CMS);
- Remedy Selection;
- Remedy Implementation (Corrective Measures Implementation (CMI)); and
- Completion of the Remedy.

A successful corrective action program must be procedurally flexible; no one approach will be appropriate for all facilities.

The corrective action process is not linear. The elements above should not be viewed as prescribed steps on a path, but as evaluations that are necessary to support good cleanup decisions. Because these elements may not occur in the same order (or at all) at every facility, we encourage planners to use them as general guidelines, while leaving flexibility for changes. A successful corrective action program must be procedurally flexible; no one approach to implementing these cleanup elements will be appropriate for all facilities. The seven elements, and the public participation activities associated with them, are described in the sections below.

Refer to Chapter 3 for additional information on permitting, including permit modifications, and Chapter 5 for specific details on public participation activities described in this chapter.

The corrective action process usually begins with an initial site assessment,

Initial Site Assessment (RFA)

called a RCRA Facility Assessment or RFA. The RFA is conducted either by the overseeing agency or by the facility with subsequent agency approval. The purpose of an RFA is to gather data about a site, including releases and potential releases of hazardous waste and hazardous constituents, to determine whether a cleanup may be necessary. RFAs usually include (1) a file review of available information on the facility; (2) a visual site inspection to confirm available information on solid waste management units (SWMUs) at the facility and to note any visual evidence of releases; and (3) in some cases, a sampling visit to confirm or disprove suspected releases.

The results of an RFA are recorded in an RFA report. The RFA report will describe the facility and the waste management units present at the facility and note any releases or potential releases. It will also describe releases and potential releases from other, non-waste-management-associated sources (e.g., a spill from a product storage tank). Interested individuals may request copies of RFA reports from the appropriate EPA regional office or state agency.

In addition to the information recorded in RFA reports, if corrective action is taking place in the context of a RCRA permit, the permit application will also describe the physical condition of the facility including its subsurface geology, the waste management units present at the facility, and any releases and potential releases.

The RFA report usually serves as the basis for future corrective actions at a facility. If, after completion of the RFA, it appears likely that a release exists, then the overseeing agency will typically develop facility-specific corrective action requirements in a schedule of compliance, which will be included in the facility's permit or in a RCRA Section 3008(h) corrective action order.

In the case of corrective action implemented through a permit, the public may comment on the schedule of compliance for corrective action during permit issuance and subsequent permit modification (see Chapter 3 for more information on the permitting process and permit modifications).

When corrective action is implemented though a 3008(h) order, the public should be given an opportunity to comment on the schedule of compliance when the order is issued; however, it may take many months of discussions between the facility owner/operator and the overseeing agency before an order is issued. In the meantime, the facility owner/operator may develop a **mailing list**, modeled after the mailing list developed under the permitting process, and a **public participation plan**.

On the day the order is issued, the administrative record, containing all information considered by the agency in developing the order, is made available for inspection by the public. The agency may also want to place a copy of the administrative record at a local library close to the facility.

The overseeing agency or facility owner/operator should consider writing a **fact sheet** that gives details of the order and the corrective action process. If there is a high level of interest in the facility, an **open house** or **workshop** should be considered.

Site Characterization (RFI)

A RCRA Facility Investigation or RFI is necessary when a release or potential release is identified and additional information is necessary to determine the nature and scope of corrective action, if any, that is needed. The purpose of an RFI is to characterize the nature and extent of contamination at the facility and to support selection and implementation of a remedy or remedies or, if necessary, interim measures.

Required Activities

If corrective action is being conducted in the context of a RCRA permit, the public has the opportunity to review and comment on the scope of the RFI and RFI schedules and conditions during permit issuance. The RFI is usually conducted by following an agency-approved RFI plan. If the RFI plan is incorporated into a permit by a permit modification, then the public will have an opportunity to comment on the scope and schedule of the RFI during the modification process. See Chapter 3 for more information on public participation during permit modifications.

If corrective action is being conducted under a 3008(h) order, the public should be given the opportunity to review and comment on the scope of the RFI and RFI conditions when the order is issued and/or when the RFI workplan is approved.

RFIs can often involve numerous rounds of field investigation and can take months or even years to complete. During the RFI process, it may be necessary to change the RFI requirements or modify the RFI schedule to react to new information. When corrective action is being conducted in the context of a RCRA permit, the public has an opportunity to comment on changes to RFI conditions and schedules during the permit modification process. Significant changes to the scope of RFI requirements are typically Class 3 permit modifications, changes to RFI schedules or investigatory details (e.g., a change in the number of samples to be collected in a given sampling area) are typically considered either Class 1 or Class 2 modifications, depending on their significance. When corrective action is being conducted under an order, the public's opportunities to review changes to RFI conditions and schedules should be consistent with the opportunities that are available under a permit. The **facility mailing list,** developed during the initial stages of the permitting process, or a mailing list developed during preparation of the corrective action order, should be used and updated throughout the corrective action process in order to keep members of the community informed. (See Chapters 3 and 5 for more information on facility mailing lists.)

In some cases (e.g., where there is a high level of public interest in corrective action activities), the overseeing agency will determine that an **information repository** is needed to ensure adequate public involvement. When corrective action is being conducted under a RCRA permit the agency can require the facility to establish a repository under § 270.30(m). A repository at the RFI stage will provide access to information from an early stage in the process, though the agency has the discretion to use this provision at any stage in the permitting process or at any stage during the corrective action. If the agency decides to require a repository, it will direct the facility to notify the public of the existence of the repository, including the name and phone number of a **contact person**. See Chapter 5 for more detail on information repositories.

Additional Activities

The start of the RFI usually marks the beginning of highly visible, on-going corrective action activities at a facility. Because RFI activities are highly visible and because many of the important decisions regarding the scope of potential corrective actions may be made during the RFI, it will generally be appropriate to reevaluate community concerns and the level of public participation and to revise the **public participation plan** accordingly (see Chapter 5) when RFIs begin. Such efforts early in the process, before community concerns and issues become overwhelming, will be beneficial in the long run.

Developing and distributing **fact sheets** throughout the RFI process is an excellent way to keep in touch with the community. It is a good idea to issue a fact sheet before the RFI begins to explain the investigation's purpose and scope. Another fact sheet should be issued after the RFI is completed to report the investigation results.

EPA encourages all facilities to make the results of the RFI readily available to interested stakeholders. One means of providing access to the information is to send a **summary of the RFI report** to the **facility mailing list**, as proposed in the 1990 Subpart S proposal. The facility may choose other means of distributing the information, such as through a **fact sheet or project newsletter**. The full report should be made available for review in an **information repository**, if one exists, or through some other method that is convenient for the interested public.

The facility owner/operator should provide notice to all adjacent landowners and other persons who may have been affected by releases of contamination, via air or ground water, from the facility. EPA recommends that the owner/operator follow the provisions in the 1990 proposal (proposed § 264.560(a) and (b)) for **notifications for discoveries of contamination** (see 55 FR 30882).

Informal meetings or **workshops** held by the facility, the permitting agency, or public interest groups can provide valuable forums for discussing community concerns.

Interim Actions

Interim actions are activities used to control or abate ongoing risks to human health or the environment in advance of final remedy selection. For example, interim actions may be required in situations where contamination poses an immediate threat to human health or the environment. They also may be required to prevent further environmental degradation or contaminant migration prior to implementing the final remedy. Interim actions may occur at any point in the corrective action process; however, they are often implemented during the RFI or CMS.

Required Activities

When corrective action is proceeding under a RCRA permit, the permit may identify specific interim measures and/or stabilization measures (if they are known at the time of permit issuance) or may have general conditions that govern when interim measures might be required during the course of the corrective action. In either case, the public can comment on the interim measures strategy in the draft permit as part of the permitting process.

When corrective action is proceeding under a 3008(h) order, the public should have the opportunity to comment on specific interim measures or general interim measure conditions when the order is issued, or otherwise in a manner that is consistent with the opportunities available when corrective action takes place under a permit.

Additional Activities

In recent years EPA has increasingly emphasized the importance of interim measures and site stabilization in the corrective action program. In the ANPR, EPA notes that an overriding goal in our management of the corrective action program is to help reduce risks by emphasizing early use of interim actions (while staying consistent with the environmental objectives at the facility). If a facility owner/operator or the permitting agency anticipates that an early interim action will be the only cleanup step taken over a significant period of time, then the facility or the agency should inform the public of such a plan and receive feedback, unless the immediacy of the situation will not allow for feedback. The facility and the agency should both announce a **contact person** to provide information and respond to inquiries about the action. Agencies and facilities may find Superfund guidance on removal actions useful in the RCRA context (see *Community Relations in Superfund: A Handbook*, Chapter 5).

It is a good idea to keep the public informed of such activities by issuing **fact sheets** or holding **informal meetings**. Because interim measures can be conducted at any stage in the corrective action process, you should incorporate activities related to interim measures into the rest of your public involvement program.

Evaluation of Remedial Alternatives (CMS)

When the need for corrective measures is verified, the facility may be required to perform a Corrective Measures Study (CMS) to identify and evaluate potential remedial alternatives. In cases where EPA or a state is using performance standards or a similar approach and in cases where the preferred remedial alternative is obvious (e.g., where EPA has issued a presumptive remedy that is appropriate to site-specific conditions), submission of a formal CMS may not be necessary.

Required Activities

When corrective action is proceeding under a permit, the permit schedule of compliance may already include conditions that specify when a CMS is warranted; the public can comment on these draft permit conditions at the time of permit issuance. However, because the RFI and CMS phases may last several years, depending on the complexity of the facility, the community may be frustrated by the length of time involved and the lack of information on results or findings. Significant changes to the scope of CMS requirements, as specified in the permit, may be considered Class 3 permit modifications requiring significant public involvement. Changes to the CMS schedule, or CMS details are typically considered class 1 or 2 permit modifications, as appropriate.

Public participation during corrective action under a 3008(h) order should be consistent with public participation under a permit. The public should have the opportunity to review and comment on the scope of the CMS and CMS conditions when the order is issued and/or when the CMS workplan is approved.

Additional Activities

In the 1996 ANPR, EPA emphasizes that it expects facility owners/operators to recommend a preferred remedy as part of the CMS. While there is no formal requirement for public participation at this time, EPA strongly encourages the facility to present its preferred remedy to the community before formally submitting it to the agency. The facility should seek community input through an **informal meeting**, **availability session**, or another method that encourages dialogue. This early input is likely to improve many preferred remedies and make them more agreeable to communities. Moreover, it will make the facility and the overseeing agency aware of community concerns and ways to address them.

Holding **workshops** and **informal public meetings** about the CMS process, the remedies being considered, and the activities being conducted at the facility will keep the community involved and informed. **Fact sheets** distributed at significant milestones during the CMS can keep the community abreast of the progress that has been made.

The agency and the facility should provide the name and number of a **contact person**. A contact person will accept comments and answer questions from the community, disseminate information, demonstrate the agency's and facility's willingness to talk with the community, and give the facility or the agency an opportunity to respond to public concerns. The agency or the facility may even consider establishing a **hotline** if a large number of people call with questions. The mailing list and local newspapers are good ways to advertise availability of the hotline.

Remedy Selection

Following receipt of a recommendation of a preferred remedy from the facility owner/operator, the overseeing agency will review the preferred remedy and other remedial alternatives and decide to tentatively approve the preferred remedy, tentatively select a different remedy or require additional analysis of remedial alternatives. The tentatively selected remedy will then undergo public review and comment, usually in the form of a proposed modification to the facility's permit or corrective action order. Following public review, the agency will respond to public comments and then modify the facility permit or corrective action order to incorporate the remedy.

Required Activities

When corrective action is proceeding under a permit, public review and comment on the tentatively selected remedy is generally conducted using the procedures of 40 CFR 270.41 for agency-initiated permit modifications. For such a modification, 40 CFR 270.41 requires the same level of public participation as is required for a draft permit. The agency must release the proposed modification for public review and issue a **public notice** announcing that the proposed modification is available for review. The agency must publish this notice in a major local newspaper, broadcast it over local radio stations, and send it to all persons on the mailing list.

In addition, agency staff must prepare a **fact sheet** or **statement of basis** to explain the proposed modification and the significant factual and legal reasons for proposing the remedy. The statement of basis describes the proposed remedy, but does not select the final remedy for a facility. This approach allows for consideration of additional information during the **public comment period**. Following the comment period, public comment and/or additional data may result in changes to the remedy or in another choice of remedy. After the agency has considered all comments from the public, the final decision -- selecting the remedy or determining the need to

develop another option -- is documented in the response to comments. (For more information on statements of basis, refer to OSWER Directive 9902.6, *RCRA Corrective Action Decision Documents: The Statement of Basis and Response to Comments* (April 29, 1991)).

A **45-day public comment period** on the draft permit modification follows publication of the public notice. The comment period provides the public with an opportunity to comment, in writing, on conditions contained in the draft permit modification. If information submitted during the initial comment period appears to raise substantial new questions concerning the draft permit modification, the agency must re-open or extend the comment period.

The members of the public may request a **public hearing** on the draft permit modification. If a hearing is requested, the agency must give a **30-day advance notice** to the community that states the time and place of the hearing. The agency Director has the discretion to schedule a public meeting or hearing even if the community does not request one. In some cases, scheduling a public hearing before the public requests one may save valuable time in the modification process and demonstrate a willingness to meet with the community to hear its questions and concerns.

After the public comment period closes, the agency must review and evaluate all written and oral comments and issue a final decision on the permit modification. Then the agency must send a **notice of decision** to the facility owner or operator and any persons who submitted public comments or requested notice of the final decision and prepare a written **response to comments**. This document must include a summary of all significant comments received during the public comment period and an explanation of how they were addressed in the final permit modification or why they were rejected. The response to comments must be made available through the Administrative Record and the **information repository**, if one was established, and must be sent to the facility and all persons who submitted comments or requested a copy of your response.

When corrective action is proceeding under a 3008(h) order, the Agency's longstanding policy is that the public's opportunity to review and comment on tentatively-selected remedies should be commensurate with the opportunity that would be available if the corrective action were conducted under a permit. At a minimum, this opportunity should include: publishing a notice and a brief analysis of the tentatively-selected remedy (this is typically referred to as a statement of basis) and making supporting information available; providing a reasonable opportunity for submission of written comments; holding a public hearing or public meeting, if requested by the public or determined necessary by the overseeing agency; preparing and publishing responses to comments; and, publishing the final remedy decision and making supporting information available. Additional guidance is available in OSWER Directives 9901.3, *Guidance for Public*

Involvement in RCRA Section 3008(h) Actions (May 5, 1987) and 9902.6 *RCRA Corrective Action Decision Documents: The Statement of Basis and response to Comments* (April 29, 1991).

Additional Activities

The agency, public interest groups, or the facility should consider holding **workshops** or **informal meetings** during the public comment period to inform the public about the proposed remedy. These discussion sessions can be especially useful when information about corrective measures in a draft permit modification is quite technical or the level of community concern is high.

Remedy Implementation (CMI)

Once the overseeing agency modifies the permit or corrective action order to include the selected remedy, the facility must begin to implement the remedy. Remedy implementation typically involves detailed remedy design, remedy construction, and remedy operation and maintenance; it is called Corrective Measures Implementation or CMI. Corrective measures implementation is generally conducted in accordance with a CMI plan, approved by the overseeing agency.

Required Activities

When corrective action is proceeding under a permit, the public will have an opportunity to comment on CMI conditions and schedules during the permit modification for remedy selection or when the permit is modified to incorporate the CMI plan. Significant changes to the scope of CMI may be considered Class 3 permit modifications. Changes to the CMI schedule are typically considered either Class 1 or Class 2 permit modifications, as appropriate.

When corrective action is proceeding under a 3008(h) order, the public's opportunity to comment on CMI conditions and schedules should be consistent with the opportunities that would be available if corrective action were taking place under a permit.

Additional Activities

Remedy implementation will often involve highly visible activities, such as construction of new on-site treatment and containment systems, and staging and transportation of large volumes of materials. These activities may result in increased levels of public interest, which may already be high due to the public's participation in remedy selection.

EPA recommends that the facility notify all individuals on the facility **mailing list** when the construction plans and specifications are available for public review. If the facility has established an **information repository**,

then the plans should go in the repository; otherwise, the facility should place the plans in a convenient location with public access.

As mentioned earlier, the corrective action process can take years to complete. Additional public participation activities may be appropriate during corrective measures implementation to inform the community of the progress of the remedial action, especially if the public shows concern over the pace and scope of the cleanup operations. In particular, it may be useful to release periodic **fact sheets** to the community that report on progress of the cleanup operations. It may also be helpful to hold an **availability session/open house** near or on the site of the facility to demonstrate or explain the activities involved in the remedy.

Completion of Remedy

Once corrective measures are complete the overseeing agency will either terminate the corrective action order or modify the permit to remove the corrective action schedule of compliance. Decisions regarding completion of corrective measures can be made for an entire facility, for a portion of a facility, or for a specified unit or release. EPA policy is for the public to be given an opportunity to review and comment on all proposals to complete corrective action.

Required Activities

When corrective action is proceeding under a permit, proposals to complete corrective measures should follow the procedures for Class 3 permit modifications. See the section on Class 3 modifications in Chapter 3 for details.

When corrective action is proceeding under a 3008(h) order and a proposal to complete corrective measures is issued, the public should have notice and comment opportunities that are consistent with the opportunities available under the Class 3 permit modification procedures.

Additional Activities

In some cases, hazardous wastes or hazardous constituents will remain in or on the land after completion of corrective measures. When this occurs, the overseeing agency may require the facility to record a notation in the deed to the facility property regarding the types, concentrations, and locations of such waste or constituents.

Chapter Summary

At the federal level, corrective actions may take place under a RCRA permit or as an enforcement order under §3008 of RCRA.

In authorized states, corrective action may take place under a state-issued RCRA permit, a state cleanup order, a state voluntary cleanup program, or another state cleanup authority. Authorized states may use a variety or combination of state authorities to compel or oversee corrective actions.

EPA's recent Advance Notice of Proposed Rulemaking (ANPR) (61 FR 19432, May 1, 1996) for the corrective action program does three things: (1) it presents EPA's strategy for writing final corrective action regulations; (2) it includes a description of the current corrective action program and requests information to help EPA identify and implement improvements to the program; and (3) it emphasizes areas of flexibility in the current program and describes program improvements already underway.

The ANPR also affirmed EPA's use of the 1990 proposal as guidance and emphasized the Agency's commitment to enhanced public participation.

As a matter of EPA policy, the type and timing of public participation activities for §3008(h) orders are generally the same as those for corrective action in permitting.

There are three important distinctions between conducting public participation in corrective action under a §3008(h) order and through permitting:

1. Under a §3008(h) order, there may be limitations on the release or discussion of certain information;

2. No public participation activities are required under §3008(h) but they are strongly encouraged in guidance. In addition, the agency may require the facility to conduct additional activities as a term in the order; and

3. Facilities may agree to conduct public participation activities under a consent order, however, under a unilateral order, the responsibility will likely fall to the agency.

While being flexible, the corrective actions should provide for early public participation, seek consistency with Superfund community involvement standards, and allow facility owner/operators to perform public participation activities where appropriate.

The corrective action process is composed of seven basic elements which are not prescribed steps, but evaluations that are necessary to make good cleanup decisions. Because these elements may not occur in the same order (or at all) in every situation, we encourage planners to use them as general guidelines, while leaving flexibility for changes. A successful corrective action program must be procedurally flexible

The basic elements (with corresponding public participation activities that are currently required or suggested):

1. Initial Site Assessment (RCRA Facility Assessment)

   - Schedule of compliance will go into permit, where public can comment
   - For enforcement orders, the agency will release administrative record and make it available for public review. The agency may provide a fact sheet and hold an open house or workshop.

2. Site Characterization (RCRA Facility Investigation)

   - Update mailing list, if necessary
   - Establish information repository, if required
   - Revise public participation plan
   - Modify permit, if necessary, to reflect changes to schedule of compliance
   - Under an order, provide notice and comment on the planned RFI
   - Develop fact sheets on the investigations
   - Mail summary of RFI Report to facility mailing list and make available to the public
   - Hold informal meetings or workshops
   - Issue notifications for discovery of contamination

3. Interim Actions -- May occur at any time during the process

   - Provide for public input and feedback , as appropriate given time constraints, and announce a contact person
   - Use fact sheets and informal meetings, if appropriate

4. Evaluation of Remedial Alternatives (Corrective Measures Study)

   - Hold informal meetings or workshops when facility presents preferred remedy
   - Identify a contact person
   - Develop fact sheets on the study
   - Establish a hotline

5. Remedy Selection

   - Agency-initiated permit modifications follow 40 CFR 124 procedures, including public notice, public comment period, and a hearing (if requested)
   - For corrective action under an order, the agency should: publish a notice and a statement of basis; take public comment; holding a public hearing or public meeting, if requested by the public or determined necessary by the overseeing agency; prepare and publish responses to comments; and, publish the final remedy decision while making supporting information available.
   - Hold workshop on proposed remedy
   - Once final remedy is selected, send out notice of decision
   - Issue response to comments
   - Hold informal meetings or workshops on the final remedy

6. Corrective Measures Implementation

   - Notify public when plans and specifications are available for review
   - Develop fact sheets on remedy implementation
   - Coordinate availability session/open house

7. Completion of Remedy

   - Agency may remove schedule of compliance from the permit or terminate the order by following the Class 3 modifications procedures for a permit or a similar process for an order.

EXHIBIT D

Dana's Written Objections Dated January 25, 2016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

MAR 21 2013

MEMORANDUM

SUBJECT: Language Regarding Judicial Review of Certain Administrative Enforcement Orders Following the Supreme Court Decision in *Sackett v. EPA*

FROM: Susan Shinkman, Director
Office of Civil Enforcement

Elliott J. Gilberg, Director
Office of Site Remediation Enforcement

TO: Regional Counsel, Regions 1-10
Regional Enforcement Division Directors
Regional Enforcement Coordinators

On March 21, 2012, the Supreme Court held that a unilateral administrative compliance order issued under Section 309(a) of the Clean Water Act (CWA) was final agency action subject to pre-enforcement judicial review under the Administrative Procedure Act (APA). *Sackett v. EPA*, 132 S.Ct. 1367 (2012). Following the decision, the EPA began adding language to unilateral CWA §309(a) compliance orders to ensure that recipients of such orders are fully aware of their opportunity to seek pre-enforcement judicial review of these orders. In the same spirit of informing recipients of EPA unilateral administrative enforcement orders when they may seek review of final agency action, the EPA now has identified certain administrative enforcement orders[1] under other statutes for which similar language should generally be included, as explained below. The reasoning in *Sackett* does not lead us to believe that similar language is appropriate for unilateral administrative enforcement orders issued under statutory authorities other than those discussed herein.

The EPA issues administrative enforcement orders to address a variety of public health, welfare and environmental concerns, including violations of environmental laws, imminent and substantial endangerments, substantial hazards, and substantial threats. Each EPA administrative

[1] The term "administrative enforcement order" as used in this memorandum refers to administrative compliance, corrective action, emergency, imminent and substantial endangerment, substantial hazard and similar types of enforcement orders, but it does not refer to penalty orders.

enforcement order is issued after careful review and analysis of the applicable statutory and regulatory requirements, relevant case law and facts of the case. Part of that analysis now includes an examination of the Supreme Court's decision in *Sackett*. When the analysis indicates that the order may be found to be a final agency action subject to pre-enforcement judicial review if challenged, language informing the recipient of the ability to seek such review should be included in the order.[2]

Unilateral Orders under Other Statutes: Although administrative enforcement orders are based on the specific facts of each case, the EPA has analyzed the potential effect of the *Sackett* decision on administrative enforcement orders issued under statutory provisions other than Section 309(a) of the CWA. In particular, the EPA analyzed the Supreme Court's decision, along with other relevant case law, statutory language, existing guidance documents, and the EPA's prior and existing positions regarding the finality and opportunity for pre-enforcement judicial review of administrative orders. As a result of this review, the EPA has determined that it generally would be appropriate to include language regarding a respondent's ability to seek judicial review in certain categories of unilateral administrative enforcement orders issued under other statutes. The following types of unilateral administrative enforcement orders generally appear suitable for this additional language:

(i) Stop Sale, Use, or Removal Orders (SSUROs) under section 13 of the Federal Insecticide and Fungicide Act (FIFRA);
(ii) Stop Work Orders under sections 113(a)(5) or 167 of the Clean Air Act (CAA);
(iii) Administrative Compliance Orders under section 113(a) of the CAA;
(iv) Administrative Compliance Orders under section 1414 of the Safe Drinking Water Act (SDWA);
(v) Emergency Orders under section 1431 of SDWA;
(vi) Administrative Compliance Orders under section 325(a) of the Emergency Planning and Community Right-To-Know Act (EPCRA);
(vii) Administrative Compliance Orders under section 3008(a) of the Resource Conservation and Recovery Act (RCRA)[3];
(viii) Interim Status Corrective Action Orders under section 3008(h) of RCRA;
(ix) Corrective Action Orders under section 9003(h) of RCRA; and
(x) Administrative Compliance Orders under section 9006(a) of RCRA.[4]

Thus, enforcement staff should immediately begin adding the following language to a typical *unilateral* administrative enforcement order issued under the FIFRA, CAA, SDWA and EPCRA statutory sections cited in (i) through (vi) above:

> *Respondent may seek federal judicial review of the Order pursuant to [insert applicable statutory provision providing for judicial review of final agency action].*

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[2] This guidance does not apply to orders issued to federal agencies. When taking an action involving a federal agency, the Regions should consult with the Federal Facilities Enforcement Office.

[3] These orders are often incorporated into documents commonly entitled "Complaint, Compliance Order and Notice of Opportunity for Hearing."

[4] These orders are often incorporated into documents commonly entitled "Complaint, Compliance Order and Notice of Opportunity for Hearing."

For the RCRA orders cited in (vii) through (x) above, the following language should be included in a typical *unilateral* administrative enforcement order:

> *Upon receipt of a [insert compliance order or corrective action order, as applicable] issued under RCRA section [insert 3008 or 9006, as applicable], respondent may seek administrative review in accordance with 40 C.F.R. Part [insert 22 or 24, as applicable]. The respondent may seek judicial review of the [insert compliance order or corrective action order, as applicable] order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706, once it is final and reviewable pursuant to RCRA section [insert 3008(b) or 9006(b), as applicable] and 40 C.F.R. Part [insert 22 or 24, as applicable].*

The specific language for each type of unilateral order listed above, with the applicable judicial review statutory provision, is provided in the Attachment.[5] As previously mentioned, the reasoning in *Sackett* does not lead us to believe that similar language is appropriate for unilateral administrative enforcement orders issued under statutory authorities other than those set out above.[6]

Consent Orders: A typical order *on consent* should instead include language by which the respondent waives the ability to seek review of the order in federal court. A key benefit that the EPA and a respondent gain from settling cases and entering into orders on consent is that the agency and the respondent achieve certainty in the outcome, which in turn saves both parties resources and expedites compliance. These benefits would be lost if an order on consent does not contain language by which the respondent waives the ability to seek judicial review of the consent order. Because orders on consent are often negotiated individually, there is no specific language required for all cases. An order on consent, however, should not be signed absent *some* language clearly waiving the respondent's ability to seek judicial review of the order. The following language is based on language currently being included in CWA §309(a) compliance orders on consent, and provides a template for orders on consent issued under any of the above statutory provisions:[7]

> *Respondent waives any and all remedies, claims for relief and otherwise available rights to judicial or administrative review that Respondent may have with respect to any issue of fact or law set forth in this Order on Consent, including any right of judicial review under [insert applicable statutory provision (e.g., APA or otherwise) providing for judicial review of final agency action].*

Special Circumstances: Importantly, the language discussed herein for both unilateral orders and orders on consent applies to *typical* orders issued under typical circumstances. While there

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[5] Note also, that the language presently included in CWA §309(a) unilateral orders is being modified slightly for consistency (*see* Attachment).

[6] Note that the SDWA already provides specific procedures applicable to administrative orders issued under the underground injection control (UIC) program, including the right of judicial review under certain circumstances. *See* SDWA §1423(c)(6). The *Sackett* decision does not lead us to believe that a change to the current practice of generally informing recipients of UIC orders of their rights under the SDWA is appropriate or necessary.

[7] *See* the Attachment for the appropriate statutory provisions to reference for different types of orders.

may be a presumption that the specific language above regarding the recipient's ability to seek review is appropriate for the above-noted administrative enforcement orders, this is only a presumption and legal enforcement staff should analyze each administrative enforcement order individually. When a Region is considering deviating from this language or is issuing an administrative enforcement order under atypical circumstances, it should discuss that order with Headquarters early in the process and address whether the unique circumstances of the case impact the appropriateness of including the above language. In addition, if a Region plans to issue an order under multiple authorities, the Region should discuss with Headquarters whether and/or how to include the relevant language in the order. Regions should continue to secure review by enforcement counsel and consult with Headquarters before issuing any order that raises a nationally significant or precedential issue, or is likely to be the subject of litigation. These practices will help ensure that the EPA's unilateral administrative enforcement orders appropriately inform a recipient of any ability to challenge an order in federal court.[8]

If you have questions, please contact the appropriate division that handles such matters. Thank you in advance for your assistance in improving our administrative practice.

cc:
OCE Division Directors and Associates
OSRE Division Directors and Deputies
Brenda Mallory, OGC
Ben Fisherow, DOJ/EES
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Karen Wardzinski, DOJ/LPS

[8] This memorandum and any internal procedures adopted for its implementation are intended solely as guidance for employees of the EPA. Such memorandum and procedures do not constitute rulemaking by the agency and may not be relied on to create a right or benefit, substantive or procedural, enforceable at law or in equity, by any person. The agency may take action at variance with this document and its internal implementing procedures.

Attachment
Language Regarding Judicial Review for Certain
***Unilateral* Administrative Enforcement Orders**

(i) SSUROs under section 13 of FIFRA
Respondent may seek federal judicial review of the Order pursuant to section 16 of FIFRA, 7 U.S.C. § 136n.

(ii) Stop Work Orders under sections 113(a)(5) or 167 of the CAA
Respondent may seek federal judicial review of the Order pursuant to section 307(b)(1) of the Clean Air Act, 42 U.S.C. § 7607(b)(1).

(iii) Administrative compliance orders under section 113(a) of the CAA
Respondent may seek federal judicial review of the Order pursuant to section 307(b)(1) of the Clean Air Act, 42 U.S.C. § 7607(b)(1).

(iv) Administrative compliance orders under section 1414 of SDWA
Respondent may seek federal judicial review of the Order pursuant to section 1448(a) of the Safe Drinking Water Act, 42 U.S.C. § 300j-7(a).

(v) Emergency orders under section 1431 of SDWA
Respondent may seek federal judicial review of the Order pursuant to section 1448(a) of the Safe Drinking Water Act, 42 U.S.C. § 300j-7(a).

(vi) Administrative compliance orders under section 325(a) of EPCRA
Respondent may seek federal judicial review of the Order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706.

(vii) Administrative compliance orders under section 3008(a) of RCRA
Upon receipt of a compliance order issued under RCRA section 3008(a), respondent may seek administrative review in accordance with 40 C.F.R. Part 22. The respondent may seek judicial review of the compliance order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706, once it is final and reviewable pursuant to RCRA section 3008(b) and 40 C.F.R. Part 22.

(viii) Interim status corrective action orders under section 3008(h) of RCRA
Upon receipt of a corrective action order issued under RCRA section 3008(h), respondent may seek administrative review in accordance with 40 C.F.R. *[insert Part 22 or Part 24, as applicable; see 40 C.F.R. § 24.01]*. The respondent may seek judicial review of the corrective action order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706, once it is final and reviewable pursuant to RCRA section 3008(b) and 40 C.F.R. *[insert Part 22 or Part 24, as applicable; see 40 C.F.R. § 24.01]*.

(ix) Corrective action orders under section 9003(h) of RCRA
Upon receipt of a corrective action order issued under RCRA section 9003(h), respondent may seek administrative review in accordance with 40 C.F.R. *[insert Part 22 or Part 24, as applicable; see 40 C.F.R. § 24.01]*. The respondent may seek judicial review of the corrective

action order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706, once it is final and reviewable pursuant to RCRA 9006(b) and 40 C.F.R. *[insert Part 22 or Part 24, as applicable; see 40 C.F.R. § 24.01]*.

(x) Administrative compliance orders under section 9006 of RCRA
Upon receipt of a compliance order issued under RCRA section 9006, respondent may seek administrative review in accordance with 40 C.F.R. Part 22. The respondent may seek judicial review of the compliance order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706, once it is final and reviewable pursuant to RCRA section 9006(b) and 40 C.F.R. Part 22.

(xi) Administrative compliance orders under section 309(a) of the CWA (revised)
Respondent may seek federal judicial review of the Order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706.