3.4.5

Site: Nyanza
Break: 3.4
Other:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

September 24, 1982

Mr. Robert Gayner
MCL Development Corp.
P.O. Box 791
Framingham, MA 01701

Dear Mr. Gayner:

Enclosed is Camp, Dresser and McKee's response to the "Evaluation of the Draft Remedial Action Plan, Nyanza Chemical Waste Site, Ashland, Massachusetts" which you gave me at our meeting in Woburn on August 6, 1982. If you have any questions or desire further clarification, please contact me.

Sincerely,

Dennis P. Gagne

Dennis P. Gagne
Project Manager
Waste Response & Compliance Branch

Enclosure: As noted

CDM
environmental engineers, scientists, planners, & management consultants

CAMP DRESSER & McKEE INC.
One Center Plaza
Boston, Massachusetts 02108
617 742-5151

September 20, 1982

Mr. Dennis P. Gagne
United States Environmental Protection Agency
Region I
J.F.K. Federal Building
Boston, Massachusetts 02203

Dear Mr. Gagne:

Attached to this letter are CDM's responses to the document entitled "Evaluation of the Draft Remedial Action Plan, Nyanza Chemical Waste Site, Ashland, Massachusetts" dated August 5, 1982, and signed by Messrs. Jerome B. Carr and George Connors.

In reviewing the comments by Messrs. Carr and Connors, it is apparent that the authors have totally misconstrued the purpose of the RAMP report. As defined by law, the RAMP provides a work plan to thoroughly evaluate the conditions surrounding present or future contaminant migration from the Nyanza Chemical waste site. The RAMP entails an investigation to identify all historical on and off-site disposal practices which may result in public exposure to hazardous substances. Since the Nyanza site has been designated a "superfund" site, the RAMP considers the entire area in the vicinity of the disposal areas; therefore, the RAMP is not concerned exclusively with the property owned by MCL Development Corporation. Furthermore, the RAMP adopts the basic philosophy that contamination must be proven not to exist before it is ruled out from further consideration.

In the preparation of the RAMP, CDM thoroughly evaluated all of the work performed to date which seeks to characterize the contamination of the Nyanza site. In this evaluation, the reports by Carr Research Laboratory, Inc. and Connorstone, Inc. were examined for the quality and validity of data presented. In no way, did CDM criticize the speed of progress made on the owner's site investigation plan. In fact, the site investigation plan presented by Carr Research Laboratory, Inc. and Connorstone, Inc. is basically sound. CDM is not recommending, therefore, that the site investigation be totally reinitiated; rather, we are identifying the portions of the plan which were not conducted according to accepted or required procedures and consequently do not provide valid information about the site.

CDM emphatically disagrees with the contentions made by Messrs. Carr and Connors that (1) the report contains significant technical errors; (2) the RAMP is written in a biased fashion; and (3) the RAMP is a total waste of time and money. This document was prepared with the utmost attention to detail. The report was reviewed several times by our in-house experts. Furthermore, the report is written objectively, with the primary goal of evaluating a most difficult problem. It has never been the intention of CDM to supplant the current investigation program, or to "place certain firms in a bad light". Finally, the RAMP outlines the minimum program necessary for a full characterization of the site. All recommended sampling must adhere to strict EPA protocol. It is the sampling performed to date, which has not complied with a Quality Control/Quality Assurance Program, that has been wasteful.

CDM's responses are listed in the same order the comments appear in Carr and Connors' document. To facilitate the interpretation of the replies, we have numbered them sequentially. If you have any questions concerning these comments, please call.

Very truly yours,

CAMP DRESSER & MCKEE, INC.

Brendan M. Harley
Vice President

BMH/dla

enclosures

The following comments are in response to Messrs. Jerome Carr and George Connors' statements made on August 5, 1982, concerning the RAMP document.

Comment #1 (p. 1-6, par. 3)

The 1974 report prepared by CDM sets forth a plan to abate groundwater pollution resulting from the Nyanza Chemical Waste Dump. The plan calls for the placement of sludges into two lagoons (existing in 1974) located at the top of the hill. The plan clearly specifies that the lagoons were to be fully lined with Volclay bentonite material to mitigate water entry in the form of recharge. An auxilliary surface drainage collection was designed to route this waste away from the lagoons.

It is CDM's belief that the 1974 plan was an acceptable solution to the problem as it was understood eight years ago. The plan utilized state-of-the-art engineering practices. Furthermore, it was reviewed and accepted by the state for implementation.

In recent years a great deal of information has been gathered concerning the waste characterization of the site. The wastes present at Nyanza not only affect groundwater quality, but also air and surface water quality. The 1974 plan was developed to address only a portion of the total problem as it is understood today. Although the concept of sludge disposal in the lagoons remains a viable engineering solution, the 1974 plan does not compare in comprehensiveness to the RAMP report. The RAMP is designed to examine all facets of the problem and set forth a work plan to reduce contamination along every possible pathway.

CDM would like to point out that the first draft was not "totally rejected" by EPA. The current draft is indeed a modified version of the first document which was thought to be too voluminous and in general, too similar in style to the generic RAMP. The current RAMP represents a completely unbiased and comprehensive approach to solving a most serious problem. Any inference that the RAMP "tells EPA only what it wants to hear" is unfounded.

Finally, in the preparation of the RAMP, CDM employed a single study team to examine the Nyanza problem. The team was composed of engineers who maintained communication with each other on all aspects of the study. The implication that CDM engineers "put on blinders" in the preparation of the document is ludicrous.

Comment #2 (page 1-10, last. par.)

The description of the geology will be rewritten to be more clear. In addition, the discussion on "flowtill" has been removed for the moment since the extent of its presence is not known with certainty. Initiation of the subsurface investigation recommended by the RAMP will help in the identification of the underlying strata. These data will be incorporated into the final conceptual model of the site. At that time the local variations in the surficial geology will become important.

In the preparation of the RAMP, it was not CDM's intention to be critical of the speed of progress made on the site investigation by Carr Research Laboratories, Inc. and Connorstone, Inc. The fact that hydraulic conductivity tests have not been completed to date only implies that it is a data limitation.

Comment #3 (p. 1-11, par. 1)

CDM cannot comment on the alleged delay of approval for the construction of deep wells. EPA and DEQE should respond to this issue.

CDM can, however, justify the need for ten deep wells. This is the minimum number of wells required to gain a more complete understanding of the subsurface geologic conditions and vertical extent of contamination. The recommended program constitutes a cost effective approach to exploring the problem on a first pass basis; should additional wells be necessary to further define the extent of contamination, they will be recommended by the consultant retained for this purpose. The deep wells are situated along the two transects of the proposed seismic survey. Their designation was made based on the initial site assessment shown in Figure 4. The wells will attempt to survey conditions in each of the geologic media present. The wells located between the two transects will supply additional information about the interior of the suspected plume and the nature of the groundwater flow regime. Given the areal extent of the problem, ten wells will be required to obtain an initial assessment of the geologic structure.

Comment #4 (p. 1-12, par. 1)

CDM maintains its position that the data supplied to date do not confirm that the region (area 10 wetland) is fed by groundwater as a result of upward gradients. The methods employed to install test pit monitor 12 were inappropriate for the measurement of such localized phenomena. Specially, the placement of backfill material which has been disturbed results in a medium surrounding the monitor which is higher in permeability relative to its surroundings. This media is therefore likely to act as a reservoir for recharge. As there is no barrier to prevent recharge from entering this loosened material (no seal was installed near the PVC pipe), the test pit monitor may, in fact, always record water levels higher than the wetland. Furthermore, it is CDM's opinion that this piezometer even if it were properly constructed, would be too shallow to detect with confidence a vertical gradient.

It is also CDM's opinion that conductivity is of limited usefulness in detecting vertical gradients. In addition, the depth of this piezometer (8 feet) is much too shallow to even penetrate a region of vertical flow. Finally, there is no reason to suspect that discharge continues in this region for a full year. It may be subject to seasonal variation which make the wetland alternate between a recharge-discharge area.

Comment #5 (p. 1-12, last par.)

The discussion in Comment #4 concerning the installation of test pit monitoring well #12 applies to all 80 shallow pipes. Namely, the placement of disturbed backfill around the monitors without a proper means to prevent recharge from entering that medium, lends itself to questions concerning the validity of water level readings. It has been stated in the RAMP that the location of the groundwater divide directly under the topographic divide. This can only be confirmed using well installation procedures which are acceptable.

Comment #6 (p.1-13, last paragraph)

CDM maintains that the potential for mercury to be attached to airborne dust particles leaving the Nyanza site is high. Dust may easily become a problem during the remedial work activities even if it is not a noticeable occurrence under quiescent conditions. The suspected quantities transported in the insect modeare of little interest in understanding the air quality issue.

CDM's recommended air monitoring program relies on sound engineering judgement. The placement of six stations was based on a strategy to collect air quality information from several sources directly or indirectly associated with the historical disposal practices at the site. The two stations on the hill serve to measure background and waste-related air quality from the sludge areas. The two stations in the northwest corner of the site reflect the need to gather ambient and waste-related measurements in the area where direct disposal or contaminant migration has occurred. Finally, the stations near the active industrial areas are designed to pick up ambient concentrations generated by these sources and historical dumping in or near Chemical and Trolley Brooks. Until it can be ascertained that the air quality surrounding the industrial complex is not attributable to current or past conditions at the site, the potential for site-owner liability exists.

Comment #7 (page 1-14, par. 1)

The RAMP clearly states that Kelleher's estimate of between 6,000 and 8,000 barrels has not been confirmed by the Carr and Connorstone investigation to date and that this estimate may be indicative of a total volume of waste disposal of over a period of years. While it is indeed unlikely that this number of barrels is stored on-site, there is nothing to rule out the possibilities of a smaller numbers (in hundreds) buried in an orderly or scattered fashion. The Carr and Connorstone investigation has encountered remnants of drums during the installation of test pits. In order to reduce the risks to on-site workers (especially during deep boring construction), CDM is recommending that an inexpensive magnetometer survey or metal detector be conducted over the entire site. This simple survey should clear up any remaining controversy concerning the estimate.

Comment #8 (p. 1-14, last par.)

The RAMP process requires that uncontrolled hazaroud waste sites be evaluated for the presence of PCBs, radioactive wastes, and pesticides. It is CDM's experience that such contaminants are common on industrial sites such as Nyanza. In fact, the presence of trichlorobenzene, which was measured at 1,100 ppm in soil (see 4-28-81 "Initial Test Results and Discussion Document" by Carr Research Laboratories, Inc.), is often an indicator of PCBs. As the site has been in existence since 1917, it would behoove the investigation team and the current owner to explore the possibilities of their presence. Knowledge of assumed historical practices is simply not justification for ruling out the possibilities that they exist on-site.

Comment #9 (page 1-18, ref. to Table 4.)

Insolubility in water is not a valid reason for eliminating chemicals from the testing program. All soil and sludge materials must be fully evaluated and characterized before source control alternatives are proposed.

Comment #10 (p. 1-22, par. 2)

CDM concurs that electrical resistivity is dependent on conductance. The RAMP document recommended that resistivity techniques be evaluated for applicability on this site subsequent to other field tests; it did not recommend that these techniques be applied.

Comment #11 (p. 1-23, par. 1)

CDM reiterates its position that the methods employed in the installation of the test pit monitors were inappropriate. A visible inspection of the soil retrieved during excavation is simply insufficient for ascertaining its degree of cleanness. Without importing a fill material of known quality (such as Ottawa sand), it is impossible to guard against the introduction of surface contaminants to the saturated zone. While the data generated to date clearly permit a cursory evaluation of the areal extent and types of contamination, they do not adequately define the exact magnitude of the pollution problem.

Refer also to our response to Comment #4.

Comment #12 (p. 1-23, par. 2)

CDM agrees that the use of composite samples is useful at times, but maintains that it is inappropriate at this site. Proper documentation of the sampling procedures utilized during compositing is needed to estimate the limits of its usefulness. Such complete documentation is lacking to date.

In general compositing is only used to assess localized average quality conditions as they vary in time. Interpretation of composite samples for large-scale areas is not advisable.

Comment #13 (p. 1-25, par. 1)

EPA protocol on sampling procedures must be followed. EPA and DEQE should respond to the matter of communication on the subject.

Comment #14 (p. 1-25, last par.)

The intentions of the RAMP are to evaluate all of the data collected to date and to identify those areas where data are incomplete, insufficient or simply inadequate to permit the development of sound engineering solutions to the problem. Despite the volumes of data collected to date, questions have arisen as to their validity. A lack of suitable documentation concerning sampling procedures and an absence of proper methodologies employed in the installation of the test pits clearly imply that much of the work performed to date is unacceptable. As stated earlier, the RAMP is not meant to be critical of the speed of progress made in the owner's site investigation plan; it is, however, concerned with the quality of data generated to date.

Comment #15 (p. 1-26, par. 1)

Please refer to our comment #14. EPA and DEQE will respond to the contention of delays.

Comment #16 (p. 1-26, par. 2)

CDM clearly agrees that the designation of the Nyanza site as a superfund site requires detailed documentation which guarantees that EPA protocol procedures be followed. Such documentation has not been provided to date. EPA and DEQE should respond to the contention on the matter of written requests for this documentation.

CDM also concurs with the definition of base-flow conditions. This paragraph will, therefore, be reworded to reflect this definition. However, CDM maintains its position that surface wet weather sampling is essential to the RAMP program. It is necessary to address the components of washoff as they may be influential in the spread of contamination.

Comment #17 (p. 1-26, last par.)

The RAMP is intended to evaluate all portions of the site which may be subject to degraded air quality. The site is not confined to the hill area, or "key area", as implied by the statements in Messrs. Carr and Connors comment. Air quality problems arising from the industries located in the vicinity of the original waste disposal areas will be segregated from the site related problems. In addition, it has been suggested that the quality of conditions in or around the school bus parking lot be fully evaluated.

Comment #18 (p. 1-27, par. 1)

The RAMP is to be modified to reflect the fact that the consultants used an adequate data base in developing the site climatology.

Comment #19 (p. 1-27, par. 2)

Please refer to our Comment #7 concerning the need for a magnetometer survey.

Comment #20 (p. 1-27, last par.)

The issue of density differences playing a major role in determining flow paths is one that always generates divided opinions among experts in the field. In this particular case, the subject was raised by an in-house review. Subsequent review has determined that it is not a major controlling factor at Nyanza. The report will be re-written to reflect this change.

Comment #21 (p. 1-28, last par.)

CDM maintains that knowledge of the activity at the industrial complex is pertinent to understanding the conditions to which workers or nearby receptors are exposed. The RAMP is designed to address both the historical and present practices affecting the area. Should certain activities be found to be irrelevant to the superfund site situation, they will be eliminated from further consideration at the appropriate time. Ignoring the current operations at the industrial site prior to examining their significance is irresponsible. In addition, CDM was tasked under the RAMP process to examine the entire area surrouding the site.

Comment #22 (p. 1-29, par. 1)

The RAMP is required to address the problem of health as it relates to the public or affected receptors. Clearly past disposal practices may have an influence on the health of the surrounding public.

Comment #23 (p. 1-29, par. 2)

Due to the many changes in ownership during the last few years, determining the exact location of property boundaries has been confusing. Furthermore, the labeling of property lines on the various planes to date has not been clear.

CDM maintains that property lines are insignificant in the whole discussion of a superfund site. The RAMP was designed to deal with the entire region in the vicinity of the MCL property.

Comment #24 (p. 1-30)

CDM believes that the potential exists for worker exposure to on-site material, especially during the soil and sludge sampling and during excavation. Furthermore, there is a clear distinction in severity between simple walkover visits and actual waste handling actions. Protection is therefore required.

Comment #25 (p. 1-31)

The use of a hard hat hardly constitutes the meaning of level C protection. The health of workers is a topic of primary concern and the RAMP is required to highlight protective requirements. In addition, it has always been CDM's and EPA's philosophy to adopt a serious position in regard to worker safety even at the possible expense of being over protective.

Comment #26 (p. 1-3, par.3)

The initial geologic assessment of the site is indeed a preliminary review of the surficial geologic structure of the site. This conceptualization aids in the placement of the ten deep wells,which when installed, will supply information to complete the assessment. The simplified approach is valid for these purposes and often overlooks localized irregularities or nonconformities.

Comment #27 (p. 1-36, par. 1&2)

Please refer to our comments #4 and #5 which discusses the location of the groundwater divide.

Comment #28 (p. 1-37, par. 1)

CDM stresses the need for priority pollutant scans to accurately characterize the contamination on site. The validity of previous measurements has been questioned by the regulatory agencies because of failure to document sampling procedure. Without the assurance that these data were collected and analyzed according to EPA protocol, the need for full priority pollutant scans still exists.

Comment #29 (p. 1-37, par. 4)

Please refer to Comment #18 which concerns the issue of climatological data.

Comment #30 (p. 2-1, last par.)

The procedures followed to date have been repeatedly questioned by EPA and DEQE as to their acceptibility in evaluating a superfund site. EPA protocol must be adhered to. It is not the intention of the RAMP to interrupt the study in progress; the RAMP's purpose is to fully evaluate the quality of data which describes the site.

Comment #31 (p. 2-2, par. 2)

CDM disagrees with the importance attached to mercury in insects and maintains that the potential for mercuric compounds to travel with dust should be fully explored. The air monitoring program outlined in the RAMP emphasizes the need for non-passive impinger type devices to collect dust.

Please refer to our Comment #6 for our discussion on the air monitoring program.

Comment #32 (page 2-3, par. 2)

To CDM's knowledge, there is but a single sign in the vicinity of the original dump site; there may have been others. Nonetheless, a few signs are hardly adequate to warn persons, especially children, of the hazardous nature of the area. The location of this sign will be duly noted in the final RAMP, however, the acknowledgement of this sign does not change our recommendation.

Comment #33 (p. 2-3, par. 3)

Implementation of the recommendations contained in the RAMP will permit the determination of the hazards associated with the site. Until such time as the data convincingly prove that no health hazards exist. Certain measures must be taken to lessen the chance of public exposure. One such measure is a chain link fence to be installed along the perimeter, the cost of which cannot be compared to the benefits it would generate. It is the owner's responsibility to properly guard against vandalism or theft.

Comment #34 (p. 2-4, par. 1)

CDM maintains its position concerning the lack of comprehensiveness of the previous air quality monitoring program. It has not been shown that dust does not contribute to the overall pathway for mercury. Regardless of the dust situation, however, the threat of immediate contact of workers with the sludge is great. This threat must be minimized before workers are exposed to it. As stated in the RAMP, the cover is a temporary solution. It should not, therefore, be confused with the long-term plan.

Comment #35 (p. 2-4, last par.)

The authors of the RAMP are simply saying that the data collected to date do not adequately permit the proposal of long-term engineering solutions. For instance, it has not even been determined whether the metal-bearing sludges must be chemically fixed prior to their final disposal. All solutions proposed without this knowledge are premature.

Comment #36 (p. 2-5 to 2-7)

CDM was unaware of the change in the proposed solution to that of a trench. All references to a perforated pipe will be corrected. In addition CDM has not seen any documentation relative to the discussion of the impervious backing.

Notwithstanding, it is CDM's belief that the design has certain fallacies which make it unsuitable. First, rerouting pollution to the Sudbury River is not a valid approach - regardless of whether the pollution is "new" or "old". Second, it would never be feasible or permissible to dump waste into the wetland areas. Third, the presumed loss of VO due to volatilization is premature without full knowledge of what the waste contains. Fourth, there is no information to substantiate the volumes of waste predicted. Fifth, no evidence exists to suggest that the trench will not be constructed in an unpolluted area.

Comment #37 (p. 2-7, par. 2)

CDM agrees with the reasoning that density differences probably do not play a major role in deviating contaminants from the groundwater flow paths. What we are saying is that these data or data deficiences cannot be overlooked in the calibration of computer models. The paragraph will be reworded to make our point clear.

Comment #38 (p. 2-7, last par.)

CDM reiterates that the purpose of the RAMP is neither to criticize the progress of work made to date nor to interrupt current work schedules. The RAMP is intended to test all of the data deficiencies which must be addressed in the evaluation of the site conditions or proposed remedial actions.

Comment #39 (p. 2-8, last par.)

CDM concurs with the fact that containment will probably never be 100% effective. However, CDM strongly maintains that all pathways, including air, muzt be thorougly evaluated. Mercury, in the suspected quantities on this site, is an unusual problem to deal with. Source control alternative designs therefore must ensure that it is contained to the best possible degree and that the possibility of receptor exposure is minimized.

Comment #40 (p. 3-3, par. 2)

Please refer to our Comment #6 which discusses the reasons for an extensive air quality survey.

Comment #41 (p. 3-3, last par.)

The words "hot spots" will be removed from this description. This does not change CDM's position regarding the need for a walk-over survey, or extensive air quality monitoring program.

Comment #42 (p. 3-4, par. 1)

Testing for mercaptans will be removed from the list of air quality constituents to be examined. Our site visits and a further review of available data confirm that they are not applicable to the site.

Comment #43 (p. 3-6, par. 1)

CDM concurs with the need for seismic refraction to aid in the exact placement od deep wells. Our position with regard to the minimum number of wells remains the same.

Please refer to our discussion in Comments #4 and #5.

Comment #44 (p. 3-7)

As indicated in our Comment #3, ten deep wells are the minimum number required. Should additional wells be needed subsequent to the initial ten, they will be recommended by the consultant. Furthermore, the placement of 10 wells assumes that the seismic survey will precede it.

Comment #45 (p. 3-8, par. 1)

It is CDM's opinion that testing should be conducted for all priority pollutants. Previous measurements and data have not been documented showing that EPA protocol was followed.

In addition, it is imperative to fully characterize contamination at depth. This entails looking for a broad spectrum of constituents.

CDM concurs that AA is an acceptable procedure. The recommendation for ICAP is based on an estimated cost savings over AA where EPA certified procedures are used. The paragraph will be written to include AA as an alternative

Comment #46 (p. 3-12, par. 1)

The RAMP emphasizes the process needed to fully evaluate and correct the problem. This process entails a full characterization of the waste using accepted sampling and analysis procedures. Included in the characterization is an evaluation of the need to chemically fix the waste prior to moving it.

Moving the sludge may only be part of the solution; in any case, it is premature to assume that this is an appropriate action.

Comment #47 (p. 3-14, item 3)

CDM reiterates its position concerning the validity of data obtainable from the 80 test pit pipes. The construction methods employed were improper; the data generated were unacceptable.

Comment #48 (p. 3-14, item 4)

The mass balance is a goal of the RAMP process. The RAMP is not critical of the speed of progress made to date on the owner's site investigation program.

Comment #49 (p. 3-22, schedule)

The schedule will be clarified to mean a fast back approach for the study. In any case, the entire study as proposed by the RAMP should not take longer than a year to complete.