ORIGINAL

UNITED STATES
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James P. Gleason, Chairman
Dr. Jerry R. Kline
G. Paul Bollwerk, III

In the Matter of	
SEQUOYAH FUELS CORPORATION and GENERAL ATOMICS	Docket No. 40-8027-EA License No. SUB-1010
(Sequoyah Facility)	January 11, 1994

SEQUOYAH FUELS CORPORATION'S REPLY TO NATIVE AMERICANS FOR A CLEAN ENVIRONMENT'S SUPPLEMENTAL FACTUAL ALLEGATIONS, NEW ARGUMENTS, AND REQUEST FOR DISCRETIONARY INTERVENTION

Sequoyah Fuels Corporation ("SFC") respectfully submits this reply to the supplemental factual allegations, new arguments, and request for discretionary intervention contained in Native Americans for a Clean Environment's ("NACE") "Reply to Sequoyah Fuels Corporation's Answer In Opposition to NACE's Motion to Intervene" (hereafter "NACE Reply"), which was filed in this proceeding on December 30, 1993. In its Reply, NACE requests that the Atomic Safety and Licensing Board (the "Board") exercise its discretion to consider NACE's request for late-filed intervention and its newly submitted legal and factual arguments in support of such intervention. In addition, NACE submits new legal and factual arguments to support its claim of interest in this proceeding. NACE concludes by requesting that it be granted

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discretionary intervention if the Board finds that NACE does not have the right to intervene in this proceeding. SFC submits this Reply in response to the new arguments raised by NACE.

I. NACE HAS FAILED TO MEET ITS BURDEN OF PERSUASION REGARDING THE FIVE FACTORS TO BE CONSIDERED IN REVIEWING A LATE-FILED REQUEST FOR INTERVENTION

The proceeding before this Board resulted from an order issued by the NRC on October 15, 1993 (58 Fed. Reg. 55,087) (the "Order"), which provided that SFC, General Atomics ("GA"), or "any other person adversely affected by this Order" could request a hearing within 20 days, i.e., by November 4, 1993. NACE submitted a motion requesting intervention in this proceeding on November 18, 1993 (after the time for filing hearing requests had expired). NACE contended that its request for intervention was timely and asserted that it had a right to intervene in the proceeding initiated after SFC and GA had filed timely requests for hearing on the issue of whether or not the Order should be sustained.

In its Reply, NACE once again asserts that its intervention request was timely, but requests, in the alternative, that it be granted untimely intervention. NACE admits that it had no right to address the late-intervention criteria of 10 CFR § 2.714(a)(1) in its Reply, but requests that the Board exercise its discretion to permit NACE a second opportunity to address these lateness factors. NACE Reply at 5 n.2 (citing Boston Edison Co. (Pilgrim Nuclear Power Station), ALAB-816, 22 NRC 461, 468 (1985)).

Since NACE is represented by legal counsel who is well-versed in practice and procedure before the NRC, there is no good cause to permit NACE such an opportunity. However, even upon consideration of the new arguments raised by NACE, it is clear that NACE's request for intervention should be denied.

A. NACE Has Failed to Establish Good Cause For Its Failure To File On Time

The only cause proffered by NACE for its failure to file a timely request for intervention in this proceeding is NACE's conclusion that it "was not 'adversely affected' by the Order" and that the Order did not provide NACE with an opportunity to request a hearing, because NACE was in favor of the Order. NACE Reply at 3. With this admission, however, NACE establishes the inappropriateness of its intervention and its lack of standing in this proceeding. A person or organization that does not have the requisite interest to request a hearing in an enforcement proceeding cannot have the interest required to permit intervention in the very same proceeding. The answer to the one question must be the same as the other.

NACE challenges this proposition and attempts to distinguish the relevant authority relied upon by SFC, such as the opinion expressed by Administrative Judge G. Paul Bollwerk, III in correspondence filed in Lafayette Clinic (Order Modifying Byproduct Material License No. 21-864-02), EA 91-130 (Memorandum dated Feb. 18, 1992) (Enclosure 1 to "SFC's Answer in Opposition to NACE's Motion to Intervene"). Judge Bollwerk stated that only

interested persons can obtain party status in an enforcement proceeding, i.e., by requesting a hearing on an Order or by seeking late-intervention. However, NACE argues that this statement is inapplicable in this enforcement proceeding because "Judge Bollwerk's letter was written to counsel for a licensee, which clearly would have been eligible to request a hearing as an 'interested person.'" NACE Reply at 4. This distinction is meaningless, unless NACE is suggesting that only licensees are "interested persons" that can request a hearing. Obviously, this is incorrect, because enforcement orders contemplate the possibility that persons other than the licensee or subject of an order can request a hearing.[1/] Thus, it is clear that Judge Bollwerk's statement is relevant to any person, such as NACE, claiming to have an interest in a proceeding, not just licensees as suggested by NACE.

NACE relies heavily upon, but, as discussed in greater detail in II.B. below, misapplies, the controlling decision of the Court of Appeals for the D.C. Circuit in Bellotti v. NRC, 725 F.2d 1380 (1983). NACE argues that under Bellotti it did not have a right to request a hearing because it did not oppose the Order, and therefore, the Order "gave NACE no right to petition to intervene to which lateness could have attached." NACE Reply at 5. In support of its interpretation of Bellotti, NACE relies

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1/ For example, the October 15, 1993 Order provided that "SFC and GA must, and any other person adversely affected by this Order may, file an answer to this Order, and may request a hearing on this Order." 58 Fed. Reg. at 55092 (emphasis added).

upon Dairyland Power Cooperative (La Crosse Boiling Water Reactor), LBP-80-26, 12 NRC 367, 370-372 (1980), which was decided prior to the D.C. Circuit's decision in Bellotti. We discuss at length in Section II, infra, why such reliance by NACE is mistaken. However, even if La Crosse was good law, it would not provide any support for NACE's failure to file a timely request for intervention. The intervenors in La Crosse filed timely hearing requests in support of the enforcement action in question. Id. at 367. NACE did not follow this course of action, and in fact has admitted that such requests would not be permitted under the D.C. Circuit's decision in Bellotti. Therefore, NACE's own position calls into question the continuing validity of La Crosse. In any event, even under La Crosse, NACE should have filed a timely request for intervention.

B. Any Interest That NACE May Have Is Protected By The Availability Of Other Means To Protect That Interest

NACE asserts that its interests in the NRC's enforcement action taken against SFC and GA are not protected by its right to request enforcement action pursuant to 10 CFR § 2.206. NACE argues that it wants "to participate in and influence the outcome of the pending adjudication of conflicting claims between the NRC and GA and SFC," and a Section 2.206 petition would not provide a vehicle for NACE's being able to do so. NACE Reply at 7. NACE's objection, however, is of no moment. NACE does not have a right to "participate in and influence the outcome" of a proceeding concerning SFC's dispute

with the NRC's proposed enforcement Order. NACE's only interest is its desire that NRC take enforcement action against SFC, action which it can request under Section 2.206 but cannot compel. If NACE is dissatisfied with the outcome of this proceeding, NACE can request that the NRC take additional enforcement action. The fact that NACE cannot compel such action merely underscores its lack of the requisite standing in this proceeding. Thus, to the extent that NACE has any interest in this proceeding, Section 2.206 provides an adequate, available "other means" to assert that interest.

NACE also argues that its member, Mr. Henshaw, would suffer the requisite injury if the Order is not fully sustained. NACE Reply at 17-23. However, as discussed in Section II.B, infra, the alleged injuries are hypothetical, conjectural, and highly speculative, and are based on multiple assumptions, and are not sufficiently concrete to confer standing in this proceeding, or to show that NACE does not have other means to protect such alleged interest.

C. NACE Has Not Shown That Its Participation Could Be Expected To Assist In Developing A Sound Record

As the proponent of this Order, the NRC Staff is obviously well-equipped to assure development of a full and sound record. In contrast, NACE has failed to establish that it would contribute to the development of a complete record in this proceeding. NACE asserts only "that it would provide 'expert testimony' regarding the costs of decommissioning the SFC

facility," and offers Dr. Arjun Makhijani as an expert qualified to provide expert testimony with regard to this matter. NACE Reply at 7-8. However, assuming arguendo that Dr. Makhijani can qualify as an expert on decommissioning costs associated with the Sequoyah Facility,[2/] his testimony would not be within the scope of this proceeding because the cost of SFC's decommissioning is not at issue.

The Order raises questions as to the adequacy of SFC's funding and seeks to require that GA provide financial assurance in the amount of $86 million, the total amount of SFC estimated expenditures for the years 1993-2003 in SFC's Preliminary Plan for Completion of Decommission. Order, Section VII, 58 Fed. Reg. at 55092. Although the Order reserves a right for the Commission to later increase the amount of financial assurance, the Order does not take issue with SFC's cost estimates. Therefore, the cost of SFC's decommissioning is not within the scope of this proceeding. Admittedly, the adequacy of SFC's source of funds (including its contractual arrangements with ConverDyn) will be at issue. However, NACE has not proffered any expert with qualified knowledge of financial assurance mechanisms or with qualified knowledge relevant to evaluating SFC's arrangements with ConverDyn and the reasonableness of SFC's expectations from this source of revenues.

[2/] Dr. Makhijani's resume (included as Attachment A to the NACE Reply) does not make any reference to decommissioning. Thus, there are questions as to his expertise in this area.

NACE has failed to identify any relevant expert testimony or other resources that will assist in developing a sound record in this proceeding. This factor should therefore be weighed against NACE.

D. NACE's Limited Interest In This Proceeding Is Protected By The NRC Staff

NACE asserts the general proposition that the NRC Staff is not presumed to represent the interests of intervenors in a licensing proceeding, but nevertheless fails to meet its burden of persuasion to show that it has an interest in this enforcement proceeding that is not adequately represented by the NRC Staff. NACE Reply at 8. Unlike licensing proceedings, which involve licensee requests for NRC action that sometimes implicate broad safety issues and where the NRC Staff may take a position contrary to petitioners, this enforcement proceeding is limited to the issue of whether the Order should be sustained and the petitioner is supporting the position of the NRC Staff. The NRC Staff is the proponent of the Order and must be presumed to adequately represent the public interest in sustaining the Order.

NACE has failed to demonstrate that it has any interest in this proceeding other than the limited interest implicated by its desire to see that the Order is sustained. NACE has identified no specific interest beyond the public interest in sustaining the Order, which is adequately represented by the NRC Staff. In fact, NACE's interest is clearly insufficient to confer standing in this proceeding. The Commission has long held

that "assertions of broad public interest . . . do not establish the particularized interest necessary for participation by an individual or a group in agency adjudicatory processes." Metropolitan Edison Co. (Three Mile Island Nuclear Station, Unit 1), CLI-83-25, 18 NRC 327, 332 (1983). Commission practice has made clear that "a 'generalized grievance' shared in substantially equal measure by all or a large class of citizens will not result in a distinct and palpable harm sufficient to support standing." Id. at 333; see also Florida Power & Light Co. (Turkey Point Nuclear Generating Plant, Units 3 and 4), ALAB-952, 33 NRC 521, 529 (1991).

E. NACE's Presence In This Proceeding Will Broaden The Issues And/Or Delay The Proceeding

Contrary to NACE's assertions, NACE's participation in this proceeding is likely to broaden the issues. For example, NACE has suggested that it would like to provide testimony regarding SFC's decommissioning cost estimates. As discussed in Section I.C above, the adequacy of SFC's cost estimates is beyond the scope of this proceeding. Thus, NACE has already demonstrated a propensity for broadening the issues in this proceeding beyond issues relevant to the question of whether the Order should be sustained.

For the reasons stated above relevant to the five "lateness factors," and the reasons previously stated in SFC's Answer, NACE's request for intervention should be denied. NACE has failed to establish adequate interest to confer standing in

this proceeding in the first instance, and NACE has failed to meet its burden of persuasion regarding the five factors to be weighed in considering a late-filed petition.

II. NACE HAS FAILED TO ESTABLISH THAT ITS MEMBER HAS THE REQUISITE INJURY-IN-FACT TO INTERVENE IN THIS PROCEEDING

A. NACE Is Not Entitled To Participate Under Section 189a Of The Act Or 10 CFR § 2.714

As shown in SFC's Answer (at 13-15), NACE does not have any hearing rights under Section 189a of the Act since the Order was not issued as an Order Modifying a License and, in fact, does not amend or modify the SFC License. NACE's sole response is that compliance with the Order must entail some changes to the SFC License. NACE Reply at 11. However, NACE is mistaken. The provisions of SFC's current license (including provisions with respect to a reserve account) remain in effect, and SFC is obligated to remain in compliance with these license requirements. The Order seeks to impose additional requirements upon SFC and GA; it does not seek to change the license provisions cited by NACE. Any change in those provisions would be beyond the scope of this proceeding.

NACE also argues that, even if the proceeding does not involve a license amendment, it is entitled to intervene under 10 CFR § 2.714(a), citing La Crosse as a precedent. NACE Reply at 12-13. NACE's reliance upon La Crosse is again misplaced, because the intervenors in La Crosse filed a request for hearing pursuant to broad terms of the hearing opportunity provided in the order at issue in that case. See LBP-80-26, 12 NRC at 369.

The scope of the hearing proffered in this proceeding is limited, as was the case in Bellotti, to "whether the Order should be sustained."[3/] In contrast, the Order at issue in La Crosse provided for a potentially much broader proceeding, as follows:

> In the event a hearing is requested, the issues to be considered at such hearing shall be:
>
> (1) Whether the licensee should submit a detailed design proposal for a site dewatering system; and
> (2) Whether the licensee should make operational such a dewatering system as soon as possible after NRC approval of the system, but no later than February 25, 1981, or place the LACBWR in a safe co[]ld shutdown condition.

Dairyland Power Cooperative (La Crosse Boiling Water Reactor), "Order to Show Cause," 45 Fed. Reg. 13,850, 13,852 (March 3, 1980).[4/] Thus, if Bellotti did not implicitly reverse the licensing board's conclusions in La Crosse, La Crosse is inapposite to this case, because the scope of the Order at issue and interests which could have been affected by the La Crosse Order were substantially broader than the scope of the Order at issue in this proceeding.

[3/] In Bellotti the D.C. Circuit rejected efforts to litigate issues, other than the issue of whether the Order should be sustained, as "within the scope of the Order," because this "would result in a hearing virtually as lengthy and wide-ranging as if intervenors were allowed to specify the relevant issues themselves." 725 F.2d at 1382.

[4/] NACE also relies upon Consumers Power Co. (Midland Plant, Units 1 and 2), CLI-73-38, 4 AEC 1082, 1083 (1973), which also preceded Bellotti. Like the Order at issue in La Crosse, the Order at issue in Midland provided for a hearing that was broad in scope. See Order dated December 3, 1973. Thus, Midland is similarly distinguishable.

SFC agrees that affected persons other than licensees can request a hearing under the Order in this proceeding. However, SFC does not believe that 10 CFR § 2.714(a) grants an opportunity to participate that is more extensive than that provided by the explicit terms of the Order. Nevertheless, even if NACE were correct, it has not satisfied the requirement that it represent a person "whose interest may be affected by a proceeding."

B. NACE Has Not Demonstrated The Requisite Interest To Intervene

NACE's conscious decision to refrain from seeking timely intervention within the terms of the Order establishes both that there is no good cause for NACE's late-filing and that NACE does not have the requisite standing to intervene, in the first instance. NACE's failure to acknowledge the full impact and logical conclusion of Bellotti goes to the very crux of its intervention petition. Bellotti establishes that only those who oppose an enforcement Order which purports to make a facility safer have the requisite interest to request a hearing and/or to intervene in a proceeding, where the scope of such a proceeding is limited by the Commission to the question of whether or not the Order should be sustained. The Bellotti court explained:

> The upshot is that automatic participation at a hearing may be denied only when the Commission is seeking to make a facility's operation safer. Public participation is automatic with respect to all Commission actions that are potentially harmful to the public health and welfare.

725 F.2d at 1383.

Without any authority other than an inconclusive citation to Judge Skelly Wright's dissenting opinion in Bellotti,[5/] NACE rejects SFC's position that the Bellotti court implicitly adopted the position argued by the Commission before that court, i.e., that an enforcement proceeding is limited to possible intervenors "who think the Order should not be sustained." Id. at 1382 n.2; NACE Reply at 14-15. Although the D.C. Circuit's opinion in Bellotti did not explicitly adopt the Commission's position, the D.C. Circuit's implicit approval is clear. Moreover, the Commission's stated position before the D.C. Circuit, as favorably referenced by Bellotti, is, of course, entitled to significant weight on its own. Thus, La Crosse, even if it were apposite, is in conflict with Bellotti and the Commission position stated in Bellotti.

[5/] To the extent that the characterization of a court's holding by a dissenting opinion is of any moment, SFC notes that Judge Adams of the Third Circuit, who found Bellotti unpersuasive, has explained that:

> Bellotti holds that the Commission has broad discretion in limiting the scope of a license amendment proceeding at its outset and that where it limits it to whether a safety plan, developed wholly outside the proceeding, should be adopted, only those parties opposing the adoption of the plan have a right to request and participate in a hearing.

In re: Three Mile Island Alert, Inc. ("TMI Alert"), 771 F.2d 720, 746 n.11 (3d Cir. 1985) (Judge Adams, dissenting) (emphasis added), cert. denied sub nom., Aamodt v. NRC, 475 U.S. 1082, reh'g denied, 476 U.S. 1179 (1986).

Moreover, the rule suggested in La Crosse, and by NACE, would result in bad public policy. NACE argues that "once a hearing is commenced, the Staff cedes its authority to modify the Order to the Licensing Board." NACE Reply at 16 n.16. NACE would have this Board conclude that the Commission, through its Staff, could no longer exercise enforcement discretion in this case once a hearing request has been granted. Under NACE's construction of NRC procedures, the Order's provision in Section VII, permitting the Director of the Office of Nuclear Material Safety and Safeguards ("NMSS") to relax or rescind any conditions in the Order upon demonstration of good cause, is rendered meaningless. 58 Fed. Reg. at 55092. NACE argues essentially that once a measure of enforcement action is proposed and a hearing is requested by an interested party, a third party (who could not request the hearing in the first instance) can intervene and insist that the Board impose the enforcement action as originally proposed. NACE Reply at 16 n.16. Under this view, the Commission's delegate who issued an Order expressly reserving the authority to subsequently utilize his discretion (see Section VII of the Order), would be powerless to implement his reserved authority even if he were convinced that additional information or changed circumstances justified lesser action, or no action at all. This view is not only legally unsupportable, but it is inconsistent with Commission practice.[6/]

[6/] For example, in a currently pending enforcement case, the NRC Staff relaxed its enforcement order both before and (continued...)

To the extent that NACE relies upon La Crosse for the alleged ceding of authority by the NRC Staff (NACE Reply at 16 n.16), NACE ignores that the order in La Crosse did not contain the explicit reservation of authority by the Director, NMSS, that is contained in Section VII of the Order in this proceeding.[7/] Moreover, when NACE suggests that, without such ceding of authority, there would be no purpose to appointing an independent adjudicatory body (id.), it also ignores that the purpose of a hearing on an enforcement order is to provide procedural protection to persons adversely affected by NRC's unilateral issuance of an order, i.e., the object of the order or any other person who can show an adverse effect.

The result advocated by NACE would have adverse impacts upon the Commission's regulatory regime. The Commission and its delegates might be discouraged from initiating formal enforcement actions if to do so could result in relinquishing their enforcement discretion to a lengthy adjudicatory process. As suggested in Bellotti, this could cause "the Commission to be more circumspect in its drafting of orders and seek to accomplish some reforms informally," and if the Commission were discouraged from taking formal actions, "the net effect would be regulation less visible to the public." 725 F.2d at 1382. Moreover, once a

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[6/] (...continued)
after the licensee had requested and been granted a hearing. See, e.g., Oncology Services Corporation (Suspension Order), CLI-93-17, 38 NRC 44, 47 (1993).

[7/] Nor did the Order in the Midland case also cited by NACE.

licensee requested a hearing and intervention was requested, the Commission and its delegates would have no flexibility to revise their enforcement actions as needs arose. This could result in unnecessary litigation and wasted resources even in cases where the Commission and its delegates, who utilized their discretion in issuing the order initially, become convinced that their enforcement objectives are better served through lesser action. Curiously, the rule proposed by NACE would permit a person who could not initiate a hearing in the first instance to unnecessarily prolong the hearing.

As stated by the Commission in Marble Hill:

> We believe that public health and safety is best served by concentrating inspection and enforcement resources on actual field inspections and related scientific and engineering work, as opposed to the conduct of legal proceedings. This consideration calls for a policy that encourages licensees to consent to, rather than contest, enforcement actions.

Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 441 (1980). Although that statement was made in the context of the Commission's denial of a petitioner's request for a hearing seeking more drastic remedies than specified in an order, the basic policy expressed is equally applicable when the agency official who utilized his discretion to issue an order later decides that the order should be relaxed or modified pursuant to authority retained in the order. The issuer of the order has been made responsible by the Commission for determining, in the

course of performing his overall duties, whether his resources should be devoted to actual field inspections and related scientific and engineering work or to the conduct of legal proceedings. A third party should not be able to insist on the continuation of legal proceedings when the agency official has determined that a modified order satisfies his enforcement objectives and enables him to apply his resources more effectively.

Moreover, NACE has failed to demonstrate the requisite "injury in fact." NACE refuses to acknowledge that injury in fact is "ordinarily 'substantially more difficult' to establish" in cases where the party "is not himself the object of the government action or inaction he challenges." Lujan v. Defenders of Wildlife, 112 S.Ct. 2130, 2137 (1992). Rather, NACE criticizes SFC's citation to the Supreme Court's position in Lujan and suggests that this authority emanating from the highest court is somehow inadequate because SFC has failed to cite any concurring NRC decision. NACE Reply at 16. Thus, NACE argues that this Board should instead follow the licensing board's opinion in La Crosse. Id. at 17. Since even La Crosse acknowledges that "the Commission applies judicial concepts of standing, in enforcement as in other licensing proceedings," (LBP-80-26, 12 NRC at 372), it is clear that the Supreme Court's subsequent decision in Lujan and the cases cited therein are controlling before this Board. Lujan establishes that there is a particularly heavy burden for a person to establish standing

where he or she is not the object of government action. Therefore, either NACE's interpretation of La Crosse is overbroad, or reliance upon La Crosse is altogether misplaced.

Finally, NACE attempts to demonstrate that Mr. Henshaw, the sole member represented by NACE, will suffer actual, imminent or concrete injury if the Order is not sustained. NACE Reply at 17-23. In response to the arguments in SFC's Answer (at 28-32) that Mr. Henshaw's alleged injuries are hypothetical, conjectural, and highly speculative, and are based on multiple assumptions, NACE relies upon the NRC's allegation that existing decommissioning funding is inadequate. NACE Reply at 18. However, NACE fails to show, assuming arguendo that the funding is inadequate, that this will necessarily result in a decommissioning of the Sequoyah site that will be so inadequate as to pose a hazard that could impact Mr. Henshaw's property.

Since its Motion to Intervene lacked any support for its allegation that groundwater or surface water from the SFC site could affect Mr. Henshaw's property, NACE now submits an affidavit by Mr. Timothy P. Brown, a hydrogeologist. NACE Reply, Attachment C (the "Brown Affidavit"). Mr. Brown's affidavit does not contain any concrete evidence or credible suggestion that groundwater from the SFC site would flow southeast to Mr. Henshaw's property.[8/] However, he disputes SFC's conclusion that

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[8/] Since Mr. Brown's affidavit does not contain any discussion of flow of surface water, it appears that NACE has conceded that surface water could not flow past numerous barriers from the SFC site to Mr. Henshaw's property.

there is no indication of a groundwater flow path that would allow flow of groundwater from beneath SFC's industrial site and associated pond areas to reach Mr. Henshaw's property (SFC Answer at 30-31), because he claims SFC has not performed sufficient areal or vertical groundwater studies. NACE Reply at 21; Brown Affidavit at ¶¶ 7-9.

Attached to this Reply is the Affidavit of Bert J. Smith, Director of Hydrogeology for Roberts/Schornick and Associates, Inc. ("RSA")[9/] (the "Smith Affidavit") (Enclosure 1). Mr. Smith has over 14 years of experience as a hydrogeologist, managed the groundwater characterization studies conducted as part of the Facility Environmental Investigation ("FEI") at the SFC site in 1991-92, and is currently managing RSA's efforts assisting SFC in the preparation of an NRC Site Characterization Plan and a RCRA Facility Investigation Work Plan. See Smith Affidavit at Attachment A-1 and ¶ 2. Not only does Mr. Smith reaffirm the conclusion previously reached by SFC, but he provides the basis for his conclusion and explains why the criticisms and disagreements expressed in the Brown Affidavit are

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9/ NACE complains that the Affidavit of John S. Dietrich (Enclosure 2 of SFC Reply) (the "Dietrich Affidavit") did not provide his resume or technical qualifications. NACE Reply at 21. John S. Dietrich, SFC's Vice President, Technical Services, summarized relevant portions of technical information that had been developed by hydrogeological experts and previously provided to the NRC, which demonstrated the lack of any merit to the totally unsupported claims contained in the original NACE Motion to Intervene. Now that NACE has provided an affidavit allegedly stating some relevant facts, SFC is providing a responsive affidavit from Mr. Bert J. Smith.

mistaken. Id. at ¶¶ 4-16. For example, Mr. Smith shows that extensive information developed during the FEI in 1991 and 1992 and in responding to NRC environmental questions in 1992 supports the conclusion that groundwater flow from SFC's industrial site and fertilizer pond areas will not impact Mr. Henshaw's property to the southeast. Id. at ¶¶ 7-8. He explains that over 200 groundwater monitoring wells were installed and hundreds of soil samples were taken in those two areas during the FEI, that extensive investigations based upon historical information regarding facility areas did not identify any other areas that needed to be investigated, and that there is no need to consider groundwater flow in other areas to evaluate potential impact on Mr. Henshaw's property. Id. at ¶ 9. Mr. Smith shows why Mr. Brown is mistaken in his allegations that the hydrogeology is too complex to make predictions or that a fault will provide a pathway to Mr. Henshaw's property. Id. at ¶¶ 10-12. Mr. Smith also discusses the extensive information developed during the FEI to evaluate the vertical extent of contaminants in the site area (both in soil and groundwater) and potential groundwater flow zones at deeper depths, shows why the information was sufficient to convince investigators that investigation to deeper zones was unnecessary, and explains why Mr. Brown's reliance on seven wells drilled to deeper depths is misplaced. Id. at ¶¶ 13-14. In addition, Mr. Smith rebuts Mr. Brown's allegation that none of SFC's reports provided any data for depths below 40-50 feet by discussing data provided in the FEI from surveys of 28 wells in

the area, including 19 at depths of 50 feet or below, conducted by SFC and the Oklahoma State Department of Health ("OSDH") in 1991, none of which showed contaminants above drinking water standards. Id. at ¶ 15. Based upon all of the discussed information, Mr. Smith concludes that groundwater flow from the processing areas and fertilizer pond areas will not impact Mr. Henshaw's property and that it is not necessary to expand the investigations to include any additional areas or to any greater depth. Id. at ¶ 16.

Mr. Brown also claims that Mr. Henshaw's property may "be susceptible to contamination from SFC's raffinate spreading fields which adjoin his property on several sides (see Attachment 1)."[10/] Brown Affidavit at ¶ 10. Issues relating to SFC's spreading of raffinate fertilizer for agricultural purposes have been raised by NACE many times in the past, most notably in a 10 CFR § 2.206 petition which was denied by the Director, NMSS, on April 14, 1993. See Sequoyah Fuels Corporation (Gore, Oklahoma Facility), DD-93-07, 37 NRC 303 (1993). Contrary to Mr. Brown's speculation, SFC's fertilizer spreading program has been

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10/ NACE alleges that "Mr. Henshaw's property is completely surrounded by the SFC site." NACE Reply at 19. The property owned by SFC lies entirely west of Highway 10 and north of Interstate 40, as shown by the cross-hatched area in Attachment 2 of the Dietrich Affidavit. Property east of Highway 10 and south of Interstate 40 is owned by Sequoyah Fuels International Corporation ("SFIC"), SFC's parent company, and SFC has applied, and is applying, raffinate fertilizer to portions of such property used for feeding cattle. However, such property is not part of the approximately 85-acre SFC industrial site and the associated pond areas to be decommissioned in accordance with NRC requirements. See Dietrich Affidavit, ¶ 4 and Attachment 1.

carefully scrutinized and includes an extensive monitoring program to watch for impacts on vegetation, surface water, and groundwater. Prior to approval, the NRC completed "a comprehensive environmental assessment. The assessment was prepared by Oak Ridge National Laboratory and was reviewed with no adverse comments by the Department of Agriculture, Food and Drug Administration, Environmental Protection Agency and Eastern Oklahoma Development District." DD-93-07, 37 NRC at 306. In addition, a "comprehensive series of experiments, test and monitoring studies were conducted over a 14-year period under the regulatory oversight of the U.S. Nuclear Regulatory Commission." SFC Fertilizer Program Report, 1973-1986, Dr. Billy B. Tucker et al., Publication No. A-88-5 Oklahoma State University at ii. Finally, test areas specified in SFC's license have been monitored prior to, during, and after each fertilizer season as part of the program which is "subject to NRC inspection to verify that the program is conducted in accordance with the license." See letter from Robert S. Bernero to Dianne Curran dated July 19, 1993, at 6.

As shown in the enclosed Affidavit of Kenneth H. Schlag, the hydrogeologist employed by SFC (the "Schlag Affidavit") (Enclosure 2), Mr. Brown improperly relies on alleged comparisons between information contained in SFC's Ammonium Nitrate Fertilizer Program, 1989 Completion Report, April 1990 (the "1989 Completion Report") and EPA's drinking water standards and proposed limits for radioactive substances. If Mr. Brown

meant to compare information in the 1989 Completion Report on the fertilizer solution itself, he is mistaken regarding the radioactive levels and his comparison regarding metal contents is irrelevant since the fertilizer solution is not drinking water nor meant for human consumption. Schlag Affidavit at ¶¶ 4-5. If he was referring to groundwater monitor results in the 1989 Completion Report, he is mistaken as to all of his comparisons, except for a single sample explained by Mr. Schlag. Id. at ¶ 6. In addition, these comparisons are also irrelevant, since the water in the areas used for the fertilizer program is not a useful drinking water supply. Id.

Although there are no fertilizer program monitor wells near Mr. Henshaw's property, and, as discussed by Mr. Smith, Mr. Henshaw denied SFC and the OSDH access to his well during the 1991 area-wide survey, SFC and OSDH were able to sample four wells located near Mr. Henshaw's property. These four wells range from about 42 to 98 feet deep respectively. No contamination by nitrates or uranium was present in these wells above drinking water standards. Smith Affidavit at ¶ 15.

Furthermore, Mr. Brown inaccurately describes "raffinate" as "a highly concentrated nitrate solution containing heavy metals . . . ." Brown Affidavit at ¶ 10. SFC's fertilizer, derived from the processing of a raffinate solution, is a low concentration ammonia nitrate fertilizer registered in the State of Oklahoma as a commercial fertilizer. DD-93-07, 37 NRC at 306. As noted by the NRC "[t]he fertilizer contains trace

amounts of heavy metals, but the concentrations are so low that they do not pose an undue public health hazard." Id. at 307. In fact "[m]any commercial fertilizers have chemical properties similar to SFC's fertilizer, and contain ammonium nitrate and trace amounts of heavy metals and radionuclides. There are no special restrictions on the sale or application of these commercial fertilizers." Id. at 308. In addition, as pointed out by the NRC, "Since the fertilizer contains a uranium concentration below the NRC limits for release to unrestricted areas and a radium concentration below that considered safe for drinking water, the radionuclides in the fertilizer do not pose an undue radiological hazard." Id. at 307. Not only are the fertilizer spreading areas not implicated in the decommissioning of the SFC Facility, but the fertilizer does not constitute the risk to groundwater quality implied by Mr. Brown.

In addition to its principal factual allegations relating to groundwater impact, NACE raises some miscellaneous arguments relating to alleged injury to Mr. Henshaw. NACE seems to concede that the potential social and economic impact of an inadequate decommissioning of the Sequoyah Facility has little, if any, weight in evaluating Mr. Henshaw's standing (NACE Reply at 19-20 n.21), and provides no information supporting any such alleged impact, even if it were cognizable under these circumstances. Instead, NACE now presents two new speculative assumptions that were not mentioned either in the Motion to Intervene or Mr. Henshaw's affidavit. First, NACE postulates

that an inadequate decommissioning might result in contamination of Mr. Henshaw's property by wind-blown soil from the SFC site. Id. at 22. NACE relies upon a single paragraph in the Brown Affidavit. Not only was a concern regarding airborne contamination not raised in Mr. Henshaw's affidavit, but Mr. Brown, a hydrogeologist, makes only broad unsubstantiated allegations and presents no facts to support his general theory. In response to this sheer speculation, enclosed is the Affidavit of Thomas E. Potter, an expert consultant in radiation protection for over 20 years (the "Potter Affidavit") (Enclosure 3). Mr. Potter demonstrates that, even utilizing highly conservative bounding calculations, the amount of wind-blown material from the SFC site that could theoretically be deposited on Mr. Henshaw's property would add a negligibly small increment to the radiation dose from naturally occurring sources. Potter Affidavit at ¶¶ 4-10. He concludes that "it is obvious that the SFC site poses virtually no potential for significant wind-blown contamination of Mr. Henshaw's property." Id. at ¶ 11. Finally, NACE speculates that an unauthorized individual might remove contamination from the SFC site in sufficient quantities to pose a health hazard and that such a person would bring this contamination to Mr. Henshaw's property. Id. at 22-23. NACE offers no basis for engaging in this kind of speculation, and the Board is not obliged to entertain speculative notions of injury. See, e.g., Philadelphia Electric Company, (Limerick Generating Station, Units 1 and 2) LBP-82-43A, 15 NRC 1423, 1449 (1982)

(licensing board "will not take it upon itself to manufacture through sheer speculation a mechanism by which the petitioner might conceivably receive the injury he fears"). Such speculative injuries are not sufficiently concrete to confer standing in this proceeding.

III. NACE HAS FAILED TO MEET THE STANDARDS FOR DISCRETIONARY INTERVENTION

NACE asserts that "the Licensing Board effectively has a mandate from the Commission to allow NACE to participate in this proceeding." NACE Reply at 25. In support of this claim, NACE cites a statement made by NRC Chairman Ivan Selin on November 8, 1993, during a briefing on the status of Site Decommissioning Management Plan sites. However, NACE has submitted this statement in violation of 10 CFR § 9.103, which provides:

> Statements of views or expressions of opinion made by the Commissions or NRC employees at open meetings are not intended to represent final determinations or beliefs. Such statements may not be pleaded, cited, or relied upon before the Commission or in any proceeding under part 2 of these regulations . . . .

Moreover, in providing selected transcript pages to the Board, NACE has conveniently omitted the Disclaimer which accompanied the transcript of the November 8, 1993 briefing.[11/] NACE's

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[11/] SFC is providing a copy of the Disclaimer as Enclosure 4. The Disclaimer provides that "[n]o pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize."

reliance on the Site Decommissioning Management Plan briefing is clearly improper. SFC requests that the Board strike Attachment E to NACE's Reply from the record in this proceeding and that the Board disregard the related arguments contained on pages 24-25 of NACE's Reply.

In its Reply, NACE requests for the first time that it be granted discretionary intervention and claims that the factors to be considered in reviewing a request for discretionary intervention weigh in favor of admitting NACE as an intervenor in this proceeding. NACE Reply at 24, (citing Portland General Electric Co. (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616 (1976)). A review of the six factors set forth by the Commission in Pebble Springs demonstrates that it would be inappropriate to grant NACE discretionary intervention. Five of the six factors are the same as those to be considered for late-filed petitions. These factors are discussed thoroughly in Section I, supra, and need not be repeated here. SFC has demonstrated that these factors weigh against permitting late-filed intervention, and they therefore weigh against discretionary intervention as well. The sixth factor spelled out in Pebble Springs, is "[t]he possible effect of any order which may be entered in the proceeding on the petitioner's interest." CLI-76-27, 4 NRC at 616. As discussed in SFC's Answer (at 26-27), there is no possible effect of this proceeding which adversely affects NACE. If the proceeding results in no order being issued to SFC and GA, the result would

be a return to the status quo ante. If the proceeding results in an order that imposes fewer requirements upon SFC and GA than those proposed, but more than the status quo ante, NACE's interests will likewise remain unaffected.

NACE also argues that it would be "appropriate" to allow NACE to intervene because the pendency of this proceeding was allegedly a factor in the recent decision to grant SFC's motion to withdraw its license renewal application. NACE Reply at 25-26. This consideration is wholly irrelevant to NACE's request to intervene in the instant proceeding. If NACE believes that the Presiding Officer ruled improperly in the license renewal proceeding it can seek to appeal to the Commission, and in fact did so on January 4, 1994. But the fact that a condition regarding financial assurance was properly rejected in terminating that proceeding does not in any way enhance NACE's arguments regarding intervention here either as a matter of right or as a matter of discretion.

Finally, discretionary intervention by third parties who wish to support sustaining an order in an enforcement proceeding is inappropriate as a general proposition. In licensing proceedings, where the scope of the proceeding might involve broad safety issues, an intervenor might be in a position to assist in developing the record for a licensing decision. However, the purpose of the hearing rights afforded in enforcement proceedings is to protect the interests of those who are adversely affected by the issuance of an order. Therefore,

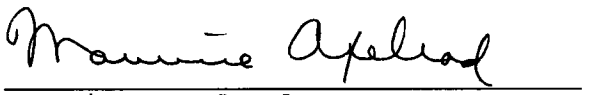
the Commission limits the scope of the hearing opportunity in enforcement orders to the issue of whether the order should be sustained. The NRC Staff, as the proponent of the order, has the burden to establish that the order should be sustained and is adequately equipped to protect the public's interest in sustaining the order. In such cases, it would be inappropriate to permit petitioners, who were unable to establish the requisite interest in an enforcement proceeding, to intervene on a discretionary basis and assume a duplicative prosecutorial role as a proponent of an order.

As noted in Pebble Springs, discretionary intervention should "prove more readily available where petitioners show significant ability to contribute on substantial issues of law or fact which will not otherwise be properly raised or presented." CLI-76-27, 4 NRC at 617 (emphasis added). The NRC Staff, which had the discretion to frame and issue the Order in the first place and which has the burden of proof in sustaining the Order that it issued, can presumptively be relied upon to properly raise and present the issues of law or fact upon which the issuance of the Order was based. Clearly, enforcement hearings are quintessential examples of proceedings where discretionary intervention is neither warranted nor appropriate.

CONCLUSION

FOR THE FOREGOING REASONS, AND THOSE PREVIOUSLY STATED IN SFC'S ANSWER IN OPPOSITION TO NACE'S MOTION TO INTERVENE, SFC respectfully requests that NACE's motion for leave to intervene in this proceeding be denied.

Respectfully Submitted,



Maurice Axelrad
John E. Matthews

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1615 L Street, N.W., Suite 1000
Washington, DC 20036
(202) 955-6600

ATTORNEYS FOR
SEQUOYAH FUELS CORPORATION

January 11, 1994

ORIGINAL

Enclosure 1

January 7, 1994

AFFIDAVIT OF BERT J. SMITH

I, Bert Smith being duly sworn hereby state as follows:

1. I am Director of Hydrogeology for Roberts/Schornick & Associates, Inc. (RSA), 3700 W. Robinson Street, Norman, Oklahoma 73072. A statement of my professional background is contained in Attachment A-1.

2. I have managed the groundwater characterization studies conducted as part of the Facility Environmental Investigation (FEI) at the Sequoyah Fuels Facility (SFC Facility). The groundwater investigation results are summarized in the "Facility Environmental Investigation Finding Report", July 1991; and in the Addendum Facility Environmental Investigation Findings Report, 1992. I am currently managing RSA's efforts assisting in the preparation of a RCRA Facility Investigation (RFI) Work Plan and a Site Characterization Plan to be submitted by January 31, 1994 to the EPA and NRC, respectively. In the course of managing these efforts, I have reviewed and become familiar with numerous groundwater monitoring records maintained by SFC; and with the history of operations conducted at the SFC Facility since its inception.

3. I have also reviewed the Affidavit of John S. Dietrich, dated December 3, 1993 (the "Dietrich Affidavit") and the Affidavit of Timothy P. Brown, dated December 27, 1993 (the "Brown Affidavit").

4. The purpose of this affidavit is to state my agreement with the conclusion reached in paragraph 9 of the Dietrich Affidavit, (i.e., "There is no indication of any groundwater flow path which would allow flow of groundwater from beneath SFC's industrial site and associated pond areas to reach Mr. Henshaw's property"), to provide the basis for my agreement with that conclusion, and to explain why the criticisms and disagreements expressed in the Brown Affidavit are mistaken.

5. Paragraph 7 of the Brown Affidavit states that "Mr. Dietrich's conclusion is based on measurements at the groundwater's upper surface in the immediate vicinity of the waste ponds, as described in paragraph 8 of his affidavit". Mr. Brown's statement is incomplete, since Mr. Dietrich's conclusion is also based upon the extensive studies that were summarized in the documents referred to in paragraph 7 of the Dietrich Affidavit.

6. Mr. Brown then alleges that the measurements relied on by Mr. Dietrich are inadequate to support his conclusion because they represent too small a portion of the areal groundwater potentiometric surface.

7. Paragraph 8 of the Dietrich Affidavit dealt with groundwater flow at the fertilizer pond area because that is the area of industrial activity at SFC's site which is closest to Mr. Henshaw's property, and because any groundwater flow to the south from the processing areas north of the fertilizer pond area would become part of, and follow the same pathway as, the groundwater flow under the pond areas. Attachments 3 and 4 of the Dietrich Affidavit show that the groundwater flow beneath the fertilizer pond area is generally westward and away from Mr. Henshaw's property.

8. Moreover, extensive information is also available regarding groundwater flow in the processing area north of the fertilizer ponds. Attachment A-2 to this Affidavit contains the first six (6) pages (pages HYD 5-1 to 5-6) of SFC's response to question HYD 5 (SFC's Environmental Responses to the NRC dated September 4, 1992 and October 30, 1992). As stated on page HYD 5-2 and shown on Figure HYD 5-2, the groundwater in the layered horizontal flow system radiates westward, northwestward, and southwestward from the topographically high area occupied by the main process building. This conclusion is based upon information found in the FEI Report and its Addendum. There is no indication of groundwater flow from the main SFC industrial site towards the southeast, where Mr. Henshaw's home is located.

9. Mr. Brown argues that the two (2) areas (i.e., the fertilizer pond areas and the processing areas) represent a small portion of the larger flow field at the SFC site and are insufficient to characterize the groundwater flow which could affect Mr. Henshaw's property (Brown Affidavit, paragraph 7(a)). Mr. Brown is mistaken. The processing areas and fertilizer pond areas are the areas where contamination has been found in soils and groundwater that need to be addressed in site characterization and potential remediation. The extensive investigations performed during the FEI, based upon historical information regarding facility activities, did not identify any other areas that needed to be investigated. In these two (2) areas, SFC has installed over 200 groundwater monitoring wells and taken hundreds of soil samples. The groundwater flow system characterized at the site is a large portion of the groundwater flow regime in the site area and is representative of flow which could be expected in adjacent areas. Thus, groundwater flow in other areas could not bring contamination to Mr. Henshaw's property and there is no need to consider groundwater flow in these other areas to evaluate potential impact on Mr. Henshaw's property.

10. Mr. Brown claims that geological cross-sections of the area, Figures 48 through 54 of the FEI, reveal a complex and unpredictable pattern of hydrologic unit relationships (Brown Affidavit paragraph 7(a)). Mr. Brown is mistaken in his claim. The geology in the site area has been defined in detail based upon lithological data from over 200 borings. Detailed cross-sections are provided in the FEI. The cross-sections shown on Figures 48 through 54 of the FEI present geological unit relationships that are neither unpredictable nor overly complex in the site area. The hydrogeology in the site area is understood and described in detail in the FEI and its Addendum. The rates and direction of groundwater flow, and geological units through which contaminates are transported (via groundwater) have also been defined beneath the site area.

11. Continuing monitoring of groundwater flow and additional investigation of groundwater and soils during site characterization for purposes of decommissioning planning are not being conducted because of concerns regarding groundwater flow or contaminant migration towards the southeast. Rather, these activities are intended to determine more accurately the rates and content of groundwater flow towards the west, northwest, and southwest, as well as to identify residual contamination in groundwater and soil at the site in order to evaluate their potential upon any subsequent use of or intrusion at the site after decommissioning.

12. Mr. Brown refers to a fault zone he claims "likely plays a significant role in the area hydrodynamics" (Brown Affidavit, paragraph 7 (b)). As shown in Mr. Brown's Attachment 9, that fault lies east to southeast of the processing area (about 0.6 miles) and the fertilizer pond area (about 0.75 miles). As discussed above, information developed in the FEI shows that groundwater in these areas will not flow in the direction of that fault, and therefore will not be affected by that fault.

13. Mr. Brown also argues that there have been inadequate measurements of vertical groundwater flow (Brown Affidavit, paragraph 8(d)). Information developed during the FEI evaluated the vertical extent of contaminants in the site area (both in soil and groundwater) and potential groundwater flow zones at deeper depths. The vertical distribution of contaminants in soil was evaluated during the FEI and it was shown that most of the contamination occurred in the upper 5 feet of soil. Below a depth of about 15 feet in the site area, contamination was very localized at the site and at low levels (Attachments A-3 through A-5). The FEI and Addendum investigations also evaluated the vertical extent of contaminants in the site groundwater. This evaluation fully defined the lateral extent of the groundwater contamination in the site area (Attachments A-6 and A-7), and showed impacts to be limited to

the SFC Facility process and fertilizer pond areas. The FEI and Addendum investigations showed that most of the contamination at the site was in the upper groundwater horizon (shallow shale/terrace) and generally lower levels of contamination occurred in the deeper sandstone/shale groundwater horizon (Attachments A-6 and A-7). This information was sufficient to convince the investigators that the possibility of significant contamination in even lower zones was unlikely and investigation to deeper zones was unnecessary.

14. Mr. Brown disagrees with that judgment based upon allegations that seven (7) wells were drilled below 100 feet at the "SFC site" and could have been a conduit for contaminants (Brown Affidavit, paragraph 7(d)). However, when Mr. Brown's Attachment 1 is reviewed, it shows that six (6) of the wells are located across Route 10 about 1 mile southeast of the SFC industrial site. Thus, these wells could not possibly have been a conduit for contaminants from SFC's industrial operations. The seventh well was in fact located in the center of the processing area, and was drilled to a depth of about 400 feet in connection with an early proposed injection well disposal system. This well was known to investigators during the FEI and its history reviewed. This well appeared to be properly drilled, completed, and plugged, and it was concluded that it could not have been a conduit for contaminants to migrate into deeper zones.

15. Mr. Brown's Affidavit (paragraph 7(d)) states that "none of SFC's reports provide any data for depths below 40-50 feet". Mr. Brown is incorrect. In fact, SFC and the OSDH conducted an area-wide groundwater quality survey in May, 1991 of water wells within about a 2-mile radius of the process site. Approximately thirty seven (37) wells were identified in this area, and the OSDH and SFC attempted to sample all wells which were identified. The OSDH and SFC obtained samples from about twenty-eight (28) of these wells. At least nineteen (19) of the water wells are within 2 miles of the site and extend to depths of 50 feet or below (some to depths greater than 200 feet). All nineteen (19) wells extending to depths 50 or below were sampled, including four (4) wells in the vicinity of Mr. Henshaw's property. This data is provided in the FEI and provides groundwater quality data for areas near the Henshaw property. The nearest wells greater than 50 feet deep to Mr. Henshaw's property were SFC-4 and SFC-5, which were completed to depths of 98.8 and 91.5 feet, respectively. Wells SFC-2 and SFC-3 are located closer to Mr. Henshaw's property, and are completed to depths of 47.8 and 42.1 feet, respectively. These wells and other area-wide water wells are shown on

Attachment A-8. Among other things, the wells were sampled for nitrate (NO_3-N) and uranium. No contaminants above drinking water standard were found in any well. The OSDH and SFC attempted to sample Mr. Henshaw's well, but were denied access to his well for sampling.

16. For the reasons I have stated above, Mr. Brown's complaints that the data are inadequate because SFC has not performed any surveys below 50 feet beneath the process buildings (Brown Affidavit, paragraph 7(d) and 8) and insufficient data are available (Brown Affidavit, paragraph 9) lack merit. The groundwater investigation performed previously during the FEI provided detailed and sufficient information to conclude that groundwater flow from the processing areas and fertilizer pond areas will not impact Mr. Henshaw's property located to the southeast. Also, as noted previously, the areal extent of impact to groundwater in the site area has been defined, and is confined to these immediate areas. Because of these facts, it is not necessary to expand the investigations to include any additional areas or to any greater depth.

AFFIDAVIT

State of Oklahoma

County of Cleveland

I, Bert J. Smith, being duly sworn do state that I am the person described in the Affidavit, and that the statements and representations contain therein are true in every respect to the best of my knowledge.

Bert J Smith
(Signature of Applicant)

Subscribed and sworn to before me this 7 day of January, 1994.

Jolene Craddock
Notary Public

My commission expires March 1, 1996.

Attachment A-1

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

Mr. Smith has 14 years experience as a professional hydrogeologist. His experience includes the designing and installing groundwater monitoring wells and well fields; designing, operating and maintaining hydrocarbon recovery systems; and evaluating facility hazardous/solid waste, and UST sites. Mr. Smith also has expertise with aquifer characterization assessments, geophysical studies, groundwater sampling QA/QC plans and implementation, and groundwater modeling and contaminate transport evaluation. In addition, Mr. Smith also performs expert witness testimony and is active in regulatory agency negotiations. His specific project experience includes the following:

ENVIRONMENTAL SITE ASSESSMENTS/AUDITS (ESA/EA)

- Environmental Site Assessment, Industrial Lot, Total Petroleum, Inc., Yukon, OK (Technical Support)
- Environmental Site Assessment, Steel Mill, Sheffield Steel, Oklahoma City, OK (Technical Support)
- Environmental Site Assessment, Office Building, Liberty Bank and Trust Company, Oklahoma City, OK (Technical Support)
- Environmental Site Assessment, Commercial Land, Liberty Bank and Trust Company, Oklahoma City, OK (Technical Support)
- Environmental Site Assessment, 25 Parcels of Land, Liberty Bank and Trust Company, Oklahoma City, OK (Technical Support)
- Environmental Site Assessment, Paint and Coatings Manufacturing Facility, Confidential Client, Confidential Location (Technical Support)
- Phase I Environmental Assessments, Site Inspection, File Review, NORM Survey, Privately Owned Oil Company, Oilfield Lease, Texas and New Mexico Sites (Technical Support)
- Environmental Site Assessment, Oilfield Inspection and Agency File Review, Amarillo, TX, Oakland Oil Company, Oklahoma City, OK (Quality Assurance)
- Comprehensive Environmental Investigation, Petroleum Refinery, Confidential Client, Confidential Location (Quality Assurance)
- Comprehensive Environmental Investigation, Nuclear Fuels Processing Facility, Confidential Client, Confidential Location (Quality Assurance)
- Environmental Site Inspection of Two Oilfield Sites, Gas Processing Plant and Pipeline, Confidential Client, Confidential Location (Quality Assurance)

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

GROUNDWATER/HYDROGEOLOGICAL/GEOLOGICAL/GEOPHYSICAL INVESTIGATIONS

- Groundwater Investigations, Petroleum Refinery, Total Petroleum, Inc., Ardmore, OK and Arkansas City, KS (Quality Assurance)
- Groundwater Investigations, Tire Manufacturing Facility, Dayton Tire Company, Oklahoma City, OK (Project Manager)
- Groundwater Quality Assessment Plan, Tire Manufacturing Facility, Dayton Tire Company, Akron, OH (Project Manager)
- Environmental Consultation Services Pertaining to Litigations Alleging Environmental Impacts to Groundwater, Oilfield Site, Confidential Client, Confidential Location (Technical Support)
- Hydrogeological Investigation, Nuclear Fuels Processing Facility, Confidential Client, Confidential Location (Technical Support)
- Hydrogeological Investigation, Steel Fabricating Facility, Confidential Client, Confidential Location (Technical Coordinator)
- Hydrogeological Investigation, Battery Recycling Manufacturing Facility, Madewell and Madewell, Inc., Jones, OK (Project Manager)
- Hydrogeological Investigation, Chemical, Resin and Solvent Manufacturing Facility, CHEMCENTRAL, Tulsa, OK (Project Manager)
- Hydrogeological Investigation, Energy Company, Confidential Client, Confidential Location (Project Manager)
- Hydrogeological Investigation, Hazardous Waste Management Facility, Residual Technologies, Inc., Tulsa, OK (Project Manager)
- Hydrogeological Investigation, Steel Mill, Confidential Client, Confidential Location (Project Manager)
- Hydrogeological Investigation Plan, Oil and Gas Company, Scipio Gas Plant, Mosherville, MI (Project Manager)
- Hydrogeological Investigation, Natural Gas Plant, Oil and Gas Company, Confidential Client, Confidential Location (Project Manager)
- Hydrogeological Investigation, Oil Company, Confidential Client, Confidential Location (Quality Assurance)
- Surface Soil Investigation, Oil Company, Confidential Client, Confidential Location (Quality Assurance)
- Hydrogeological Investigation, Oilfield Site, Confidential Client, Confidential Location (Quality Assurance)
- Surface Soil Investigation, Oil and Gas Exploration and Production Facility, Confidential Client, Confidential Location (Quality Assurance)
- Groundwater Sampling, Oilfield Services Facility, The Western Company of North America, LA and OK (Quality Assurance)

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

- Groundwater and Soil Sampling, Nuclear Fuels Processing Facility, Confidential Client, Confidential Location (Technical Support, Quality Assurance)
- Soil Sampling, Petroleum Refinery, Total Petroleum, Inc., Ardmore, OK and Arkansas City, KS (Quality Assurance)
- Monitoring Well Design and Installation, Oilfield Services Facility, The Western Company of North America, OK, TX, CO, LA, KS (Project Manager)
- Monitoring Well Design and Installation, Oilfield Services Facility, Halliburton Corporation, OK (Project Manager)
- In-Situ Aquifer Characterizations, Oilfield Services Facility, The Western Company of North America, OK, CO, TX, LA (Project Manager)
- In-Situ Aquifer Characterizations, Nuclear Fuels Processing Facility, Confidential Client, Confidential Location (Quality Assurance)
- Subsurface Geological Mapping, Oilfield Services Facility, The Western Company of North America, OK, LA, TX
- Surface Geophysical Investigations, Oilfield, Oil Corporation, Confidential Client, Confidential Location (Project Manager)
- Surface Geophysical Investigations, Oilfield, Major Oil Company, Confidential Client (Project Manager)
- Surface Geophysical Investigations, Oilfield, Energy Company, Confidential Client, Confidential Location (Project Manager)
- Hydrogeological Assessment and Waste Characterization, Public Utility, Confidential Client, Confidential Location (Quality Assurance)
- Hydrogeological Investigation and Closure Plan, Weatherford Petco, Ratliff, OK (Quality Assurance/Technical Administrator)
- Groundwater Investigation, Monitoring Well Installation, City of Kenton, Oklahoma Corporation Commission, Fuel Division, Oklahoma City, OK (Project Manager)
- Groundwater Investigation, Measure Product Levels in Monitoring Wells, Natural Gas Compressor Station, Pipeline Company, Confidential Client, Confidential Location (Project Manager)
- Groundwater Assessment, Groundwater Sampling and Analysis, Energy Company, Confidential Client, Confidential Location (Project Manager)
- Drill Three (3) Boreholes and Install One (1) Monitoring Well, Sample Analysis, and Report Preparation, Samedan Air Plane Hanger, Samedan Oil Corporation, Ardmore, OK (Technical Administrator)
- Evaluate Existing Monitoring Wells, Plug and Install New Monitoring Wells, American Disposal Services, Alderson, OK (Technical Administrator)
- Groundwater Investigation, Monitoring Well Installation, and Sampling Active Car Wash and Refueling Area, Car Care Facility, Red Carpet Car Wash, Oklahoma City, OK (Technical Administrator)

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

- Groundwater Investigation and Installation of Monitoring Well and Sampling, Municipal Solid Waste Landfill, Canadian County Landfill, El Reno, OK (Quality Assurance)
- Drilling of Soil Borings and Installation of Groundwater Monitoring Wells, Oklahoma Department of Transportation, Kingfisher, OK (Project Manager/Quality Assurance)

- Soil Sampling and Analysis, Substations, Public Utility, Confidential Client, Confidential Location(Quality Assurance)
- Electromagnetic Surveys, Petroleum Refinery, Total Petroleum, Inc., Ardmore, OK and Arkansas City, KS (Quality Assurance)

GROUNDWATER/SOIL REMEDIATION SYSTEM DESIGN

- Soil and Groundwater Remediation, Tire Manufacturing Facility, Dayton Tire Company, Oklahoma City, OK (Project Manager)
- Groundwater Remediation, Chemical and Films Manufacturing Facility, Confidential Client, Confidential Location (Project Manager)
- Vacuum Extraction System, City of Kingfisher, OK (Quality Control)
- Design and Installation of Groundwater Corrective Action System, Toner Manufacturing Facility, Xerox Corporation, Oklahoma City, OK (Project Manager)

HAZARDOUS/SOLID WASTE MANAGEMENT

- Surface Impoundment Closure Plans, Wood Processing Facility, Huffman Wood Preservers, Broken Bow, OK (Quality Assurance)
- Surface Impoundment Closure Plans, Wood Processing Facility, Mixon Brothers Wood Preserving, Inc., Idabel, OK (Quality Assurance)
- Waste Characterization, Carpet Fiber and Dye Manufacturing Facility, Hollytex Carpet Mills, Anadarko, OK (Quality Control)
- Sample Stock Piles of Soils and Construction Debris at Electrical Power Substation, 25 Sites, Public Utility, Confidential Client, Confidential Location (Quality Control)
- Groundwater Sampling and Analysis, Sanitary Landfill, American Disposal Services Inc., Alderson, OK (Quality Control)

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

REGULATORY COMPLIANCE

- General Environmental Regulatory Compliance at all Oklahoma Facilities, Oilfield Services Facility, The Western Company of North America, Houston, TX (Quality Assurance)
- Regulatory Compliance Investigation, Oilfield Services Facility, The Western Company of North America, OK, CO, TX and LA (Project Manager)
- Regulatory Compliance Investigation, Petroleum Refinery, Total Petroleum, Inc., Ardmore, OK and Arkansas City, KS (Technical Administrator)
- Development of Regulatory Compliance Strategies and Responses to Administrative Compliance Orders, Metal Foundry, Confidential Client, Confidential Location (Quality Control)
- Development of Regulatory Compliance Strategies and Responses to Administrative Compliance Orders, Tire Manufacturing Facility, Dayton Tire Company, Oklahoma City, OK (Quality Control)
- Development of Regulatory Compliance Strategies and Responses to Administrative Compliance Orders, Petroleum Refinery, Total Petroleum, Inc., Ardmore, OK (Quality Control)
- Development of Regulatory Compliance Strategies and Responses to Administrative Compliance Orders, Petroleum Refinery, Total Petroleum, Inc., Arkansas City, KS (Quality Control)
- Development of Regulatory Compliance Strategies and Responses to Administrative Compliance Orders, Oilfield Services Facility, The Western Company of North America, OK, TX, and LA (Quality Control)

UNDERGROUND STORAGE TANK (UST) MANAGEMENT/STUDIES

- UST Investigation, Tire Manufacturing Facility, Dayton Tire Company, Oklahoma City, OK (Project Manager)
- UST Investigation, Petroleum Refinery, Confidential Client, Confidential Location (Project Manager)
- Tank Farm Area Remediation, Oilfield Services Facility, The Western Company of North America, Yukon, OK (Project Manager)
- UST Investigation at Numerous Sites in Oklahoma, Texas, and Louisiana for an Oil Field Service Company, Oilfield Services Facility, The Western Company of North America (Project Manager)
- Underground Storage Tank Investigation, Wood Processing Facility, Halliburton Logging Services, Oklahoma City, OK (Project Manager)
- UST Investigation and Site Characterization, Building Supply Manufacturing Facility, Confidential Client, Confidential Location (Project Manager)

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

LITIGATION

- Litigation Support, Review Site Investigation, Environmental Engineering Assessment, Investigation, Valve Manufacturing Facility, Confidential Client, Confidential Location (Project Manager)
- Litigation, EM-31 Survey at Inactive Oilfield Pipe and Supply Yard, Homco International Inc., Oklahoma City, OK (Project Manager)
- Litigation Support, Subsurface Geological Mapping, Oilfield Service Facility, The Western Company of North America, OK, LA, TX (Project Manager)
- Litigation Support, Surface Geophysical Investigation, Major Oil Company, Confidential Client, Confidential Location (Project Manager)
- Litigation Support, Surface Geophysical Investigation, Oilfield Site, Confidential Client, Confidential Location (Project Manager)
- Litigation Support, Surface Geophysical Investigation, Energy Company, Confidential Client, Confidential Location (Project Manager)
- Litigation Support, Borehole Geophysical Investigations, Public Utility, Confidential Client, Confidential Location (Project Manager)
- Litigation Support, Borehole Geophysical Investigations, Freight Trucking and Fueling Facility, Consolidated Freightways, Oklahoma City, OK (Project Manager)
- Provide Litigation Support, Fairfield Oil & Gas Company, Pottawatomie County, OK (Project Manager)

INDUSTRIAL WASTEWATER MANAGEMENT

- Wastewater System Evaluation, Wastewater Characterization, Meat Processing Facility, Hormel, Oklahoma City, OK (Quality Assurance)

MISCELLANEOUS

- Review EPA Investigative Reports of Superfund Documents, and Prepare Critique, Refinery, Confidential Client, Confidential Location (Quality Assurance)
- Computer Modeling of Impact Plume, Well Locations and Construction, Guardian Well Network Plan, Confidential Client, Confidential Location (Quality Assurance)

EMPLOYMENT

1987-Present Roberts/Schornick & Associates, Inc.
1979-1987 Kerr-McGee Corporation
Graduate Teaching Assistant - Civil and Environmental Engineering, Washington State University
Research Assistant - Civil and Environmental Engineering, Washington State University

BERT SMITH
Director, Hydrogeology
Roberts/Schornick & Associates, Inc.

EXPERIENCE
RSA Since 1987 Prior Experience: 8 Years

EDUCATION
B.S., 1975, Geology, Washington State University, Pullman
M.S., 1979, Engineering (Geohydrology Option), Washington State University

SOCIETIES/REGISTRATIONS/CERTIFICATIONS
Certified Professional Geological Scientist (CPGS) No. 7329
Certified Groundwater Professional (CGP) No. 218
OWRB Certified Operators License OP-0597
Activities Include Drilling Groundwater Wells and Groundwater Test Holes, Monitoring Wells, Observation Wells, Heat Exchange Wells, and Geotechnical Borings, and Installing Water Well Pumps

Attachment A-2

Hydrology: Question 5

Provide a concise projection and interpretation of concentrations and extent of nitrate, arsenic, and uranium plumes in the groundwater for 3-, 5-, and -10 year intervals. The bases of the calculations and projections should also be provided. If the concentration level of any component in the groundwater at the river bank exceeds appropriate regulatory limits for the river, provide a local scale analysis to predict contaminant levels in the river.

Response

A response to this question requires a brief review of the current understanding of subsurface conditions at the SFC Facility. The groundwater hydrology at the Facility has been investigated extensively by SFC and its consultants. The results of these investigations are described in the Facility Environmental Investigation Findings Report (SFC 1991) and its Addendum (SFC 1992).

Conceptual Model of Groundwater System

The conceptual model describes previous findings and principal assumptions regarding the groundwater flow system that are important for evaluating a specific issue. In terms of constituent movement away from the SFC Facility, the conceptual model includes the following key points:

- The subsurface profile at the SFC Facility includes a thin layer of terrace deposits that are 0 to 16 feet thick, with an average thickness of 7 feet. The terrace deposits are composed of silt, clay, sand and gravel, but are generally fine-grained. They are underlain by a thick sequence (nearly 400 feet) of the Atoka Formation, a sequence of irregularly bedded, discontinuous layers of sandstone, siltstone, and shale, with thin limestone layers in the lower part. Individual layers of sandstone and shale in the upper part of the Atoka Formation at the Facility appear to be nearly flat-lying and variable in thickness, each ranging from 0 to 20 feet in thickness. Fill material has been placed at various locations at the SFC Facility, although fill generally lies above the water table.

- The SFC Facility is located near the edge of a slope east of the Illinois River Branch of the Robert S. Kerr Reservoir. The terrace deposits and the upper portion of the Atoka Formation have been eroded over time by historical river systems. In this area, the land surface on the steep slopes of the Illinois River valley are covered with a thin layer of unconsolidated sediments. Depending on elevation, the various sandstone/shale layers of the Atoka Formation subcrop beneath the sediments on the steep slope leading down to the Robert S. Kerr Reservoir. This situation is depicted in Figure HYD 5-1.

- Both the terrace deposits and the various sandstone and shale layers may be saturated in specific intervals. The depth to groundwater measured in monitoring wells is generally 5 to 15 feet at the Facility.

- The groundwater system at the Facility consists of several layered horizontal flow systems with limited natural vertical interconnection. Where saturated, the terrace deposits and uppermost shale unit at the site comprise the shallow shale/terrace unconfined groundwater flow system. This is underlain by the deep sandstone/shale confined groundwater flow system. It is expected that even deeper confined flow systems occur below those investigated at the Facility, but their great depth below the active portions of the site and limited interconnection with shallower groundwater flow systems indicate a low potential for groundwater movement between shallow flow systems and deeper flow systems.

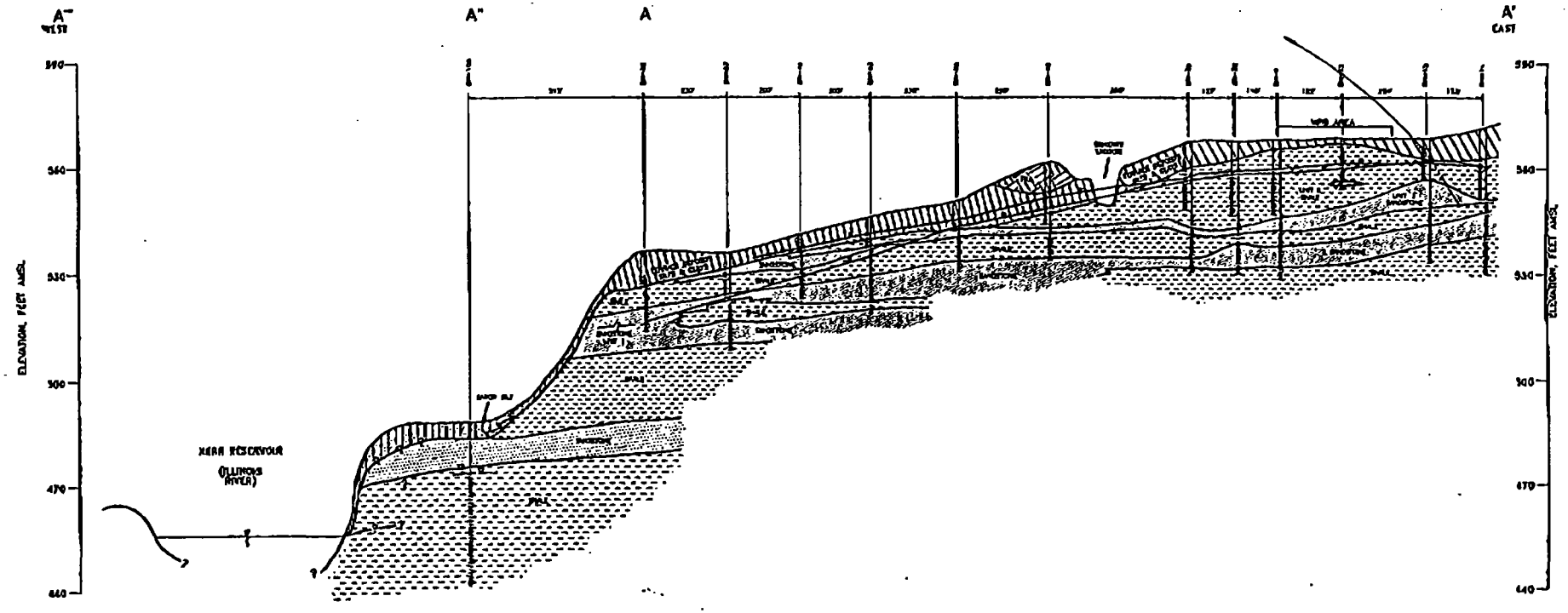
- In general, the shale layers are slightly more permeable than sandstone layers because the shale layers exhibit platy fracturing along bedding planes, while the sandstone layers are fine grained and highly cemented with silica. Within a particular flow system, the sandstone tends to form a confining layer and the shale generally transmits groundwater. The geometric mean of hydraulic conductivity for the two uppermost subsurface flow systems estimated from slug tests at the facility are:

    - 2×10^{-5} centimeters per second (cm/sec) for the shallow shale/terrace deposits

    - 7×10^{-5} cm/sec for the deep sandstone/shale

- Groundwater movement in the layered horizontal flow systems generally radiates westward, northwestward, and southwestward from the topographically high area occupied by the Main Process Building. The shallow shale/terrace and deep sandstone/shale groundwater flow systems discharge into the root zone of the soil on the steep slopes above the Illinois River Branch of the Robert S. Kerr Reservoir.

- Because of low hydraulic conductivities, the groundwater discharge through the flow systems at the SFC Facility is low. The rate of groundwater discharge along the steep slopes above the Robert S. Kerr Reservoir is too low to form visible springs or seeps on the ground surface. Discharged groundwater appears to either evaporate or be transpired by the heavy vegetative growth on the slopes.



NOTES:
1. GEOLOGIC CROSS SECTION A'''-A''-A-A' ADAPTED FROM SEQUOYAH FUELS CORPORATION ADDENDUM TO THE FACILITY ENVIRONMENTAL FINDINGS REPORT (SFC 8892)

LEGEND

- GROUNDWATER POTENTIOMETRIC SURFACE, DEEP SANDSTONE/SHALE, OCTOBER 21-22, 1991
- GROUNDWATER POTENTIOMETRIC SURFACE, SHALLOW SHALE/TERRACE, OCTOBER 21-22, 1991
- ILLINOIS RIVER STAGE, GORE, OK, QUADRANGLE (USGS 1974)
- MONITOR WELL SCREEN INTERVAL
- SANDSTONE
- TERRACE SILT AND CLAY
- SHALE
- SANDY SILT

SCALE: VERTICAL 1" = 30'
HORIZONTAL 1" = 300'
VERTICAL EXAGGERATION x10

Figure HYD 5-1
WEST TO EAST
GEOLOGIC CROSS SECTION A'''-A''-A-A'
SEQUOYAH FUELS CORPORATION

On the basis of this conceptual model, no direct groundwater flow path is believed to exist from either the shallow shale/terrace or deep sandstone/shale groundwater flow systems to the Illinois River Branch of the Robert S. Kerr Reservoir. The groundwater quality data from monitoring wells completed in deeper water bearing zones, such as MW-95A, -97A, and -98A, suggest that the groundwater quality effects of site operations are restricted to the uppermost groundwater flow systems at the Facility.

Groundwater Flow Path and Plume Evaluation

Because of the absence of a confirmed groundwater flow path between the shallow groundwater flow systems and the Illinois River Branch, SFC has evaluated the groundwater quality along specific flow paths from the identified constituent source areas to the discharge points on the steep slopes above the Illinois River Branch. Figure HYD 5-2 is a map showing the identified groundwater flow paths. The heads of the arrows on Figure HYD 5-2 correspond generally with the locations of the discharge point for the flow path, and the tails of the arrows generally correspond to the assumed location of the source areas. The paths are numbered and listed in Table HYD 5-1, along with a description of the path.

Table HYD 5-1
Groundwater Flow Paths Evaluated for Plume Movement

Path	Zone	Constituents Evaluated
1	Deep Sandstone/Shale	Uranium
2	Deep Sandstone/Shale	Uranium
3	Deep Sandstone/Shale	Arsenic
4	Deep Sandstone/Shale	Arsenic
5	Deep Sandstone/Shale	Arsenic and nitrate
6	Deep Sandstone/Shale	Nitrate
7	Deep Sandstone/Shale	Nitrate
8	Shallow Shale/Terrace	Uranium
9	Shallow Shale/Terrace	Arsenic and nitrate

Note: Flow paths are depicted on Figure HYD 5-2.

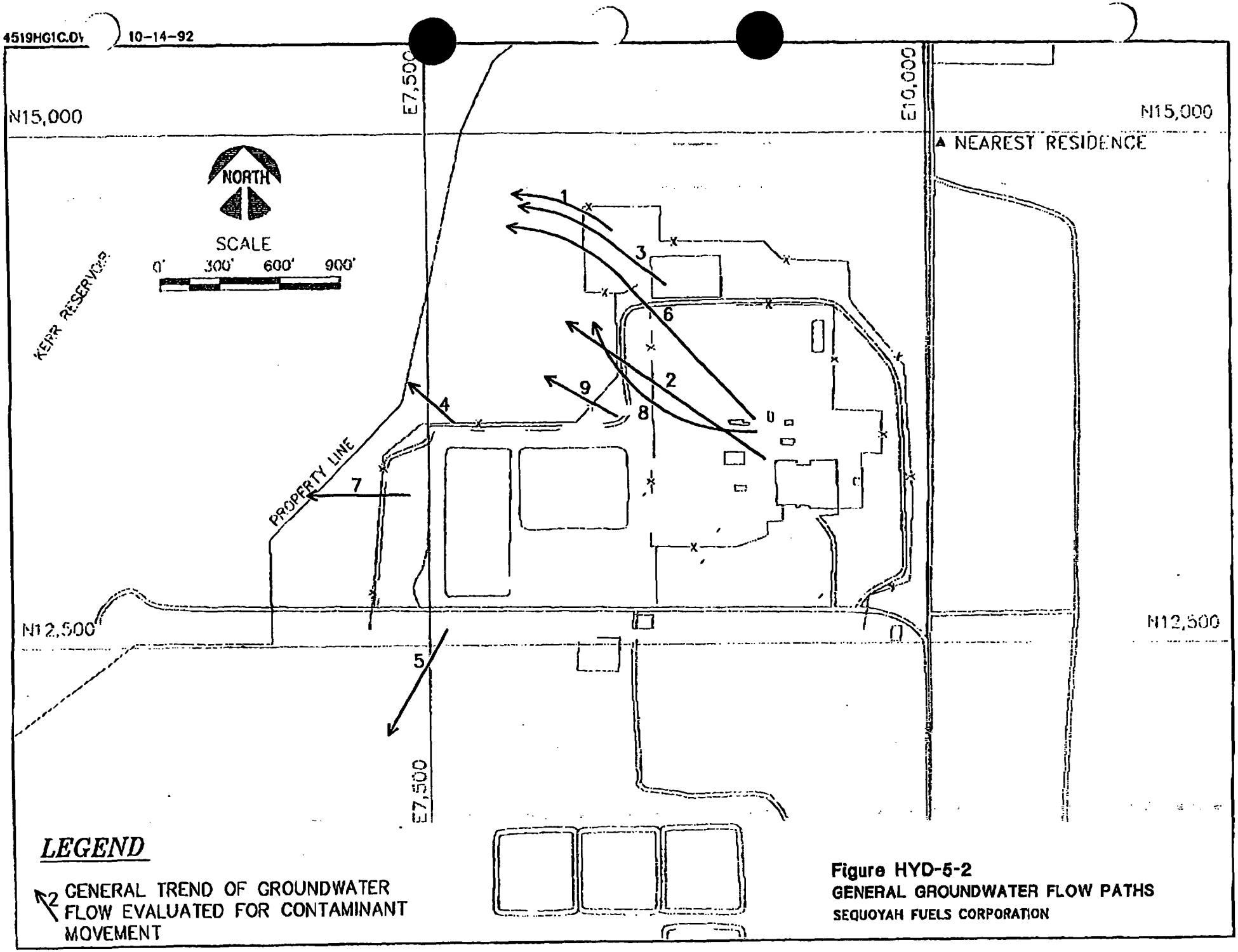


Figure HYD-5-2
GENERAL GROUNDWATER FLOW PATHS
SEQUOYAH FUELS CORPORATION

Flow paths were delineated by reviewing constituent isopleth maps for the site (SFC 1991 and SFC 1992), identifying areas of elevated constituent concentrations at the SFC Facility, and using recent potentiometric surface maps for the Facility to determine potential groundwater flow directions downgradient of the source areas and the Facility. Emphasis was placed on those flow paths that were directed generally westward in the direction of the Illinois River branch, because in most cases this represents the shortest flow path between onsite zones of impact and offsite discharge points.

The fertilizer ponds area was not included as a source area in this analysis and no paths were identified in this area because of the lack of potentiometric surface data at the time these questions were received. Evaluation of this area is continuing and will be submitted upon completion.

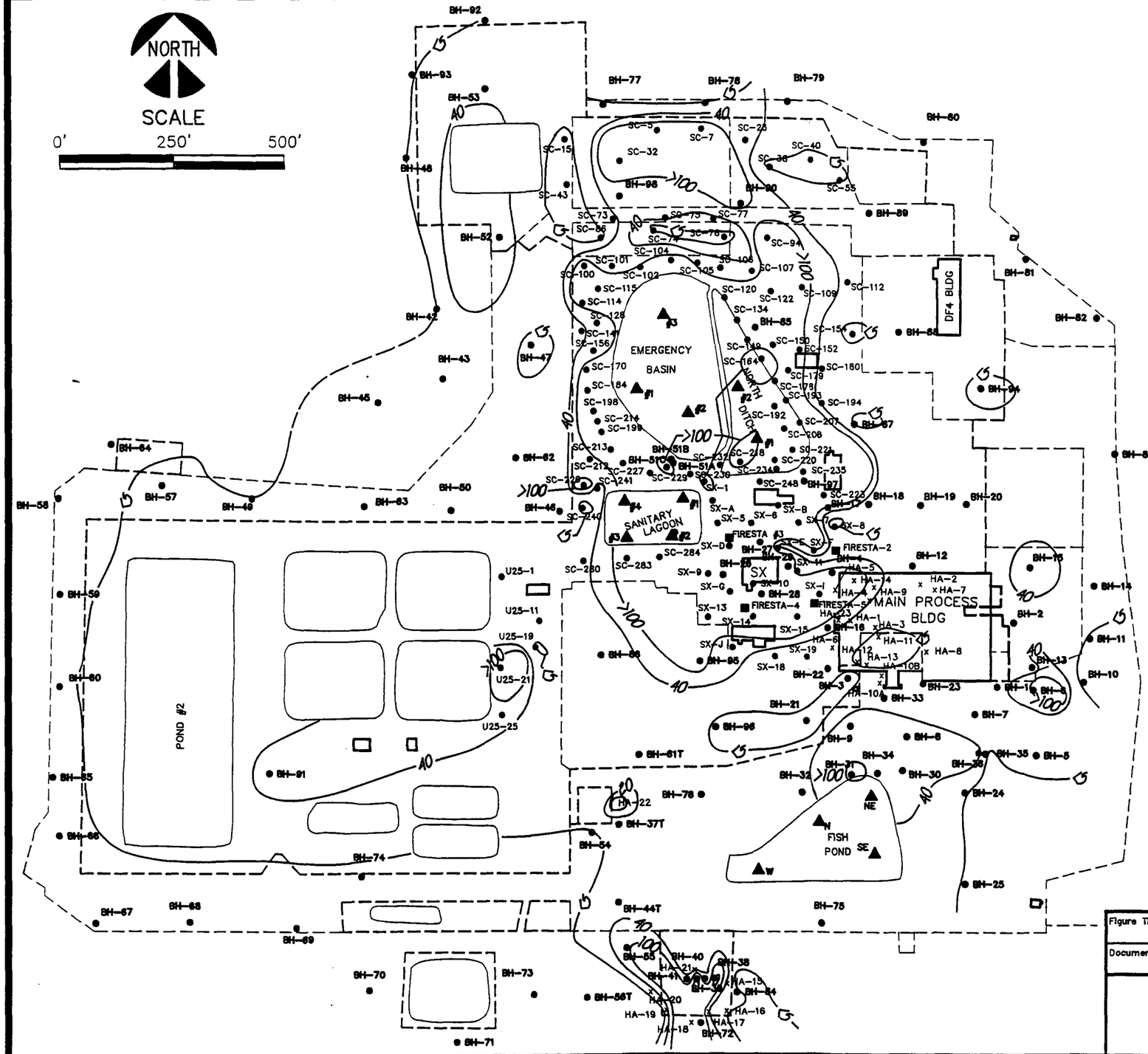
Predictions of Future Constituent Concentrations

Method Discussion and Input Data

Version 2.0 of the MYGRT code (EPRI 1989) was used to predict future concentrations along the identified flow paths. MYGRT is a quasi-analytical model based on the advection-dispersion retardation-decay equation. It can account for these processes in either one or two dimensions. The derivation for the solution to the partial differential equation for these four processes was derived by Cleary and Ungs (1978) and Javendel, et al. (1984).

The major assumptions of MYGRT version 2.0 are:

- The groundwater velocity is constant over the distance being simulated
- Longitudinal and transverse dispersion is represented by Ficks Law, and is a function of the scale of the problem (i.e., the length being simulated)
- Sorption/desorption is fast relative to the rate of groundwater flow and is represented as a linear, equilibrium partitioning between aqueous and solid phases.
- Sorption, represented by a retardation factor (the ratio of groundwater velocity to constituent velocity), is assumed to be constant over the distance being simulated
- Interference and competition for sorption sites is considered to be negligible
- The constituent in the source area is evenly distributed throughout the thickness of the aquifer



LEGEND

BH-82 ● LOCATION OF LITHOLOGICAL AND CHEMICAL CHARACTERIZATION BORING

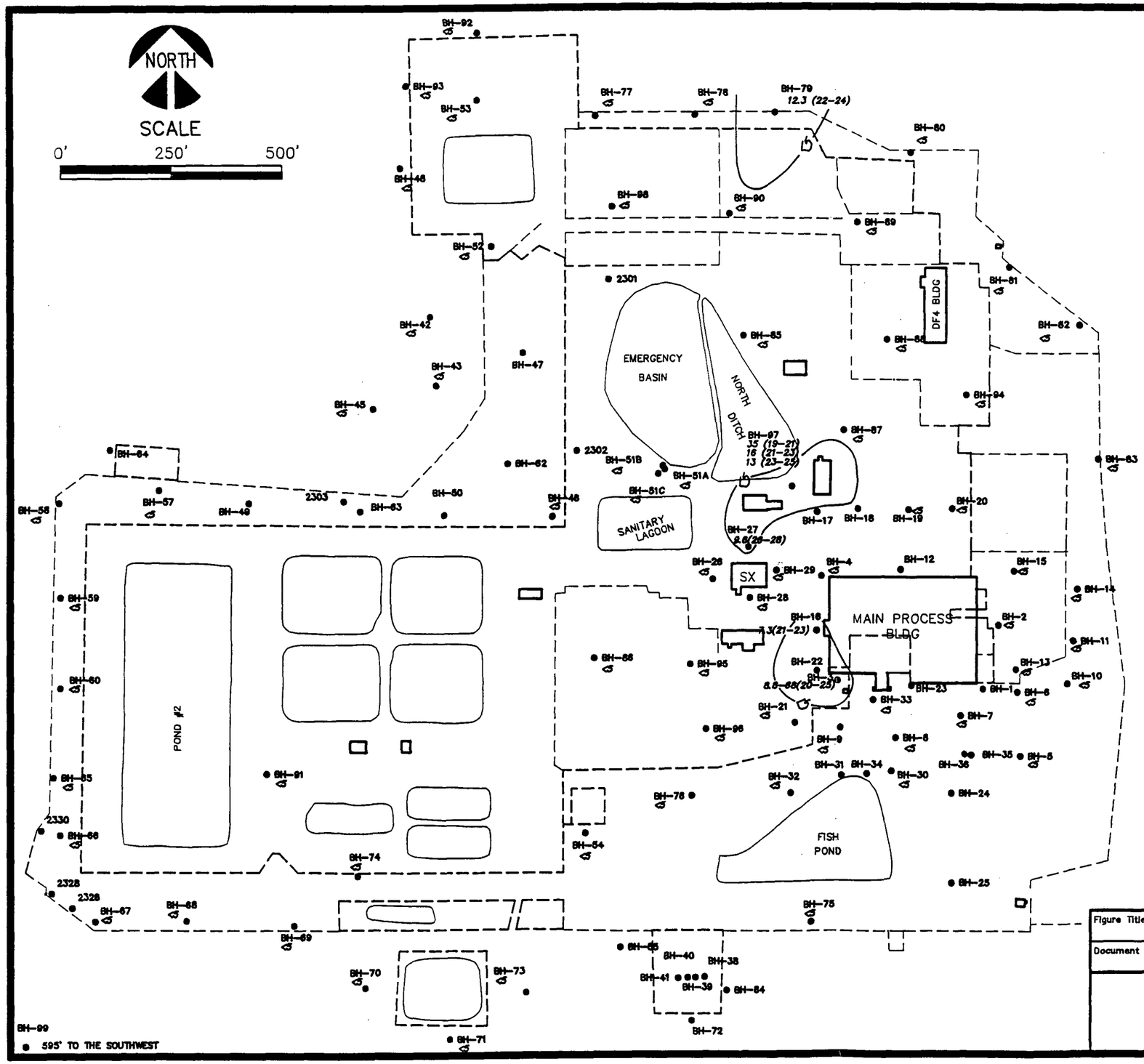
40 ISOPLETH OF TOTAL URANIUM LEVELS IN SOIL, UG/G, 0-1 FOOT DEPTH, SEPTEMBER, 1990 TO APRIL, 1991

NOTES:

1. ACTUAL URANIUM LEVELS IN SOIL ARE NOT SHOWN ON THIS MAP. REFER TO TABLES 43 AND 44 FOR EXACT LEVELS FOR EACH BOREHOLE.
2. ISOPLETH LINES ARE PRESENTED SOLELY FOR THE INTERPRETATION OF SURFACE SOIL CONDITIONS AND, THEREFORE, ARE TERMINATED AT BOUNDARY CONDITIONS DEFINED BY BASIN OR IMPOUNDMENTS.

CONTOUR INTERVAL: < 5, 40 AND >100

Figure Title:	ISOPLETH OF TOTAL URANIUM LEVELS IN SOIL, 0-1 FOOT DEPTH	Client:	SEQUOYAH FUELS CORPORATION
Document Title:	FEI FINDINGS REPORT	Location:	GORE, OKLAHOMA
ROBERTS/SCHORNICK & ASSOCIATES, INC. Environmental Consultants 3700 West Robinson, Suite 200 Norman, Oklahoma 73072 (405) 321-3595		DATE: JULY, 1991	PREPARED BY: RL
		SCALE: 1"=250'	CHECKED BY: B.J.S.
			DRAFTED BY: RML
		PROJECT NO: 90067 L18	FIGURE NO.: 104



LEGEND

BH-82 ● <5.0 — LOCATION OF LITHOLOGICAL AND CHEMICAL CHARACTERIZATION BORING, AND TOTAL URANIUM IN SOIL, UG/G

12.3 (22-24) — FIRST NUMBER, 12.3, IS TOTAL URANIUM IN UG/G. SECOND NUMBER (22-24), IS SAMPLE DEPTH INTERVAL, FEET

40 — ISOPLETH OF TOTAL URANIUM LEVELS IN SOIL, UG/G, SEPTEMBER, 1990 TO APRIL, 1991

NOTE: IF <5 IS SHOWN, THEN URANIUM IS LESS THAN 5 UG/G IN SOIL OVER THE 20-25 FOOT DEPTH INTERVAL

CONTOUR INTERVAL: <5, 40 AND >100

Figure Title:	ISOPLETH OF TOTAL URANIUM LEVELS IN SOIL, 20-25 FEET DEPTH	Client:	SEQUOYAH FUELS CORPORATION
Document Title:	FEI FINAL FINDINGS REPORT	Location:	GORE, OKLAHOMA

ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants
3700 West Robinson, Suite 200
Norman, Oklahoma 73072
(405) 321-3895

DATE: JULY, 1991	PREPARED BY: RL	SCALE: 1"=250'	CHECKED BY: B.J.S.
PROJECT NO: 90067 L12	DRAFTED BY: RML	FIGURE NO.: 109	

NORTH

SCALE

0' 250' 500'

EMERGENCY BASIN

NORTH DITCH

SANITARY LAGOON

SX

MAIN PROCESS BLDG

DF4 BLDG

POND #2

FISH POND

BH-97 17 (25-27) 18 (27-29) 6.7 (29-31)

BH-95 10 (26-28)

BH-29 38(29-31)

BH-28 9.6(26-28)

BH-16 9.3(25-28)

BH-3 6.8-20(25-30)

BH-96 62 (29-31)

2301 2302 2303 2328 2330

40

595' TO THE SOUTHWEST

LEGEND

BH-82 ● / 5.0 — LOCATION OF LITHOLOGICAL AND CHEMICAL CHARACTERIZATION BORING, AND TOTAL URANIUM IN SOIL, UG/G

17 (25-27) — FIRST NUMBER, 17, IS TOTAL URANIUM IN UG/G. SECOND NUMBER (25-27), IS SAMPLE DEPTH INTERVAL, FEET

40 — ISOPLETH OF TOTAL URANIUM LEVELS IN SOIL, UG/G, SEPTEMBER, 1990 TO APRIL, 1991

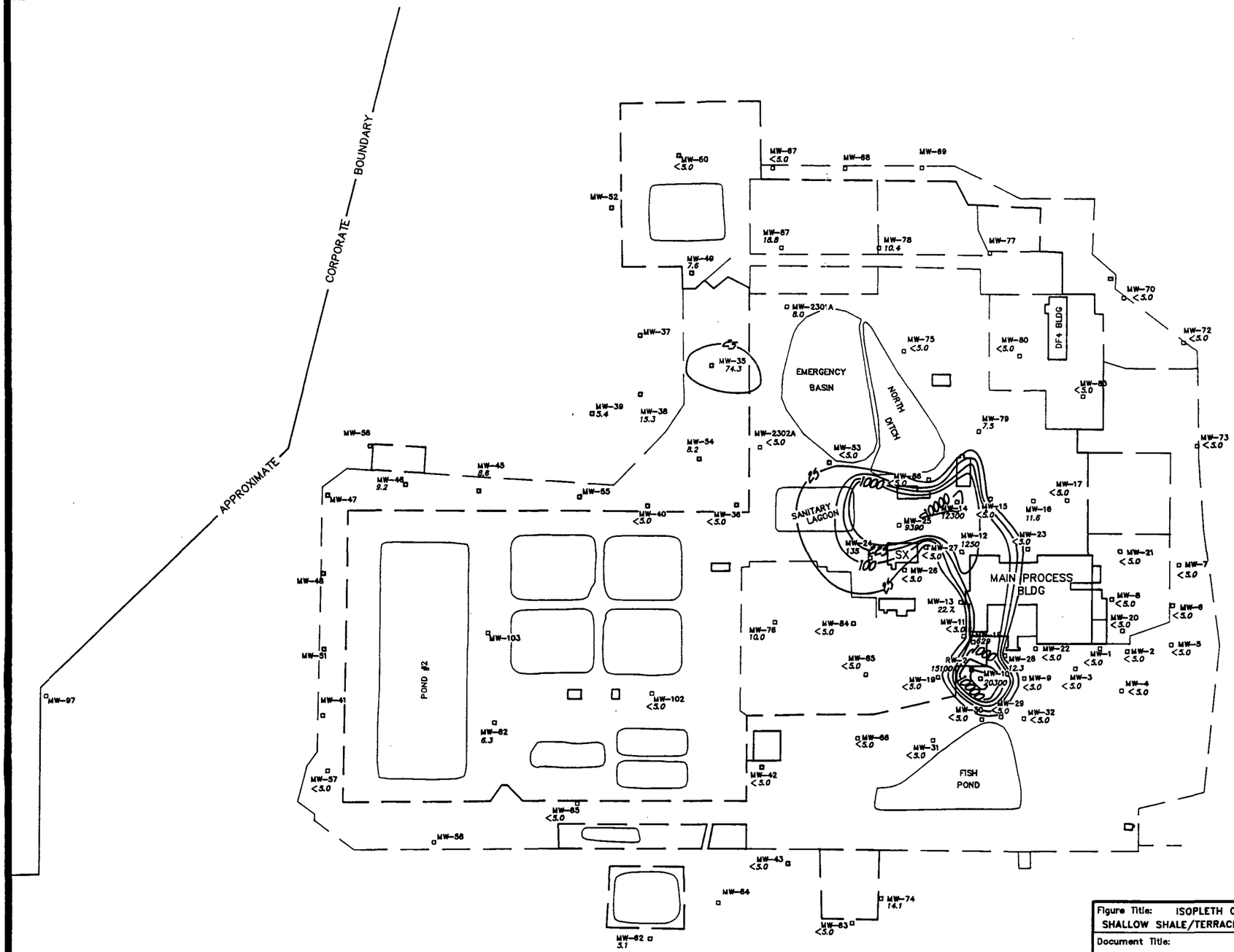
NOTE: IF <5 IS SHOWN, THEN URANIUM IS LESS THAN 5 UG/G IN SOIL OVER THE 25-30 FOOT DEPTH INTERVAL.

CONTOUR INTERVAL: <5, 40, AND >100

Figure Title:	ISOPLETH OF TOTAL URANIUM LEVELS IN SOIL, 25-30 FOOT DEPTH	Client:	SEQUOYAH FUELS CORPORATION
Document Title:	FEI FINAL FINDINGS REPORT	Location:	GORE, OKLAHOMA

ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants
3700 West Robinson, Suite 200
Norman, Oklahoma 73072
(405) 321-3696

DATE: JULY, 1991	PREPARED BY: RL	SCALE: 1"=250'	CHECKED BY: B.J.S.
DRAFTED BY: RML	PROJECT NO: 90067 L14	FIGURE NO.: 110	



LEGEND

MW-72 <5.0 — LOCATION OF SHALLOW SHALE/TERRACE DEPOSITS MONITOR WELL AND TOTAL URANIUM CONCENTRATION IN GROUNDWATER, UG/L, 10/21-27/91

—100— ISOPLETH OF TOTAL URANIUM CONCENTRATION IN SHALLOW SHALE/TERRACE GROUNDWATER, UG/L, 10/21-27/91

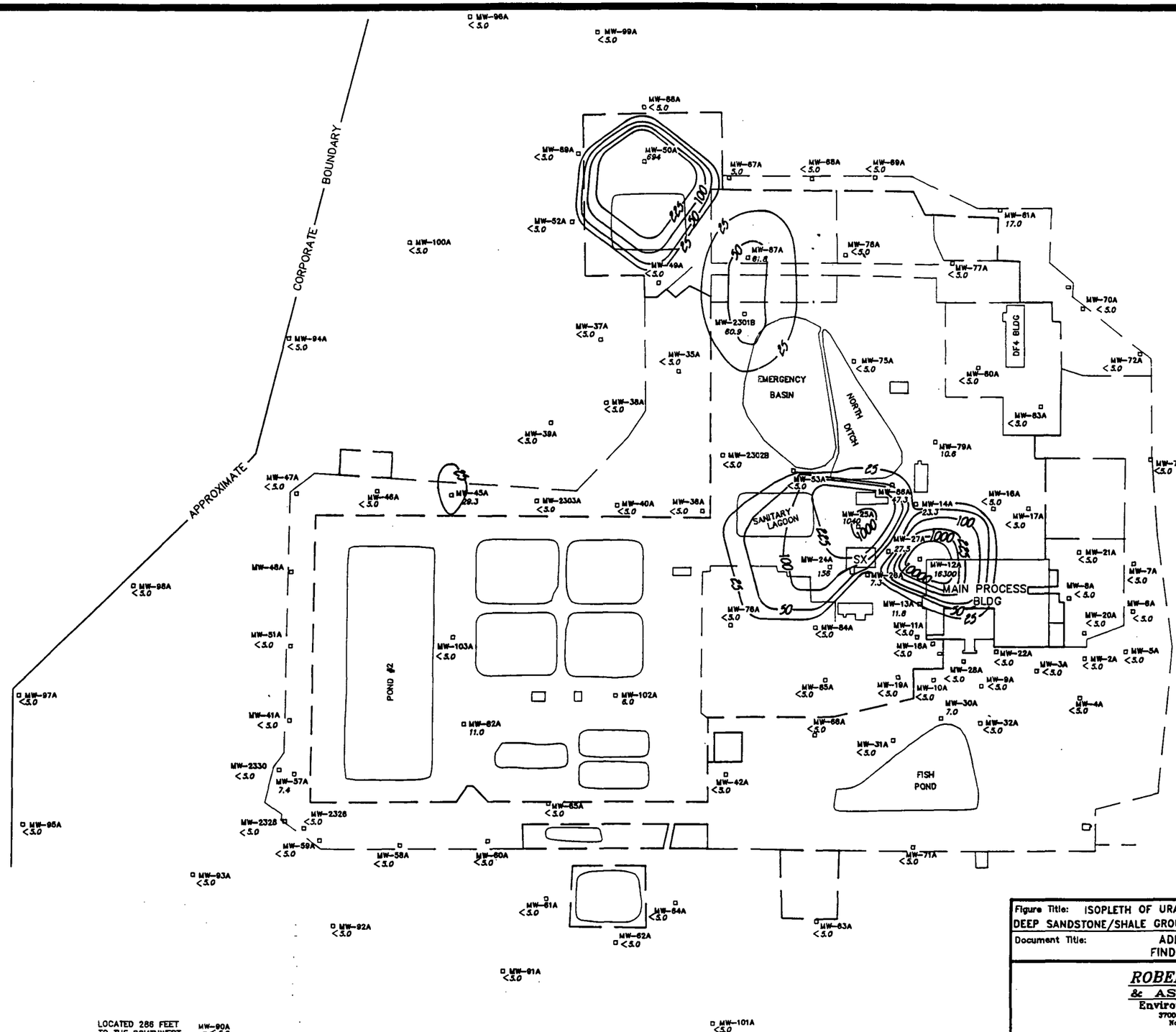
FACILITY LICENSE ENVIRONMENTAL ACTION LEVEL IS 225 UG/L FOR URANIUM

CONTOURS SHOWN: 25, 100, 225, 1000, 10000 AND 20000 UG/L

Figure Title: ISOPLETH OF URANIUM CONCENTRATION, SHALLOW SHALE/TERRACE GROUNDWATER, 10/21-27/91	Client: SEQUOYAH FUELS CORPORATION
Document Title: ADDENDUM FEI FINDINGS REPORT	Location: GORE, OKLAHOMA

ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants
3700 West Robinson, Suite 200
Norman, Oklahoma 73072
(405) 321-3595

DATE: 1/23/92	PREPARED BY: J.M.B.
SCALE: 1"=300'	CHECKED BY: B.J.S.
	DRAFTED BY: RML
PROJECT NO: 90067.02 K05	FIGURE NO.:



LEGEND

MW-72A <5.0 — LOCATION OF DEEP SANDSTONE/SHALE MONITOR WELL AND TOTAL URANIUM CONCENTRATION IN DEEP SANDSTONE/SHALE GROUNDWATER, UG/L, 10/21-27/91

100 — ISOPLETH OF TOTAL URANIUM CONCENTRATION IN DEEP SANDSTONE/SHALE GROUNDWATER, UG/L, 10/21-27/91

FACILITY LICENSE ENVIRONMENTAL ACTION LEVEL IS 225 UG/L FOR URANIUM

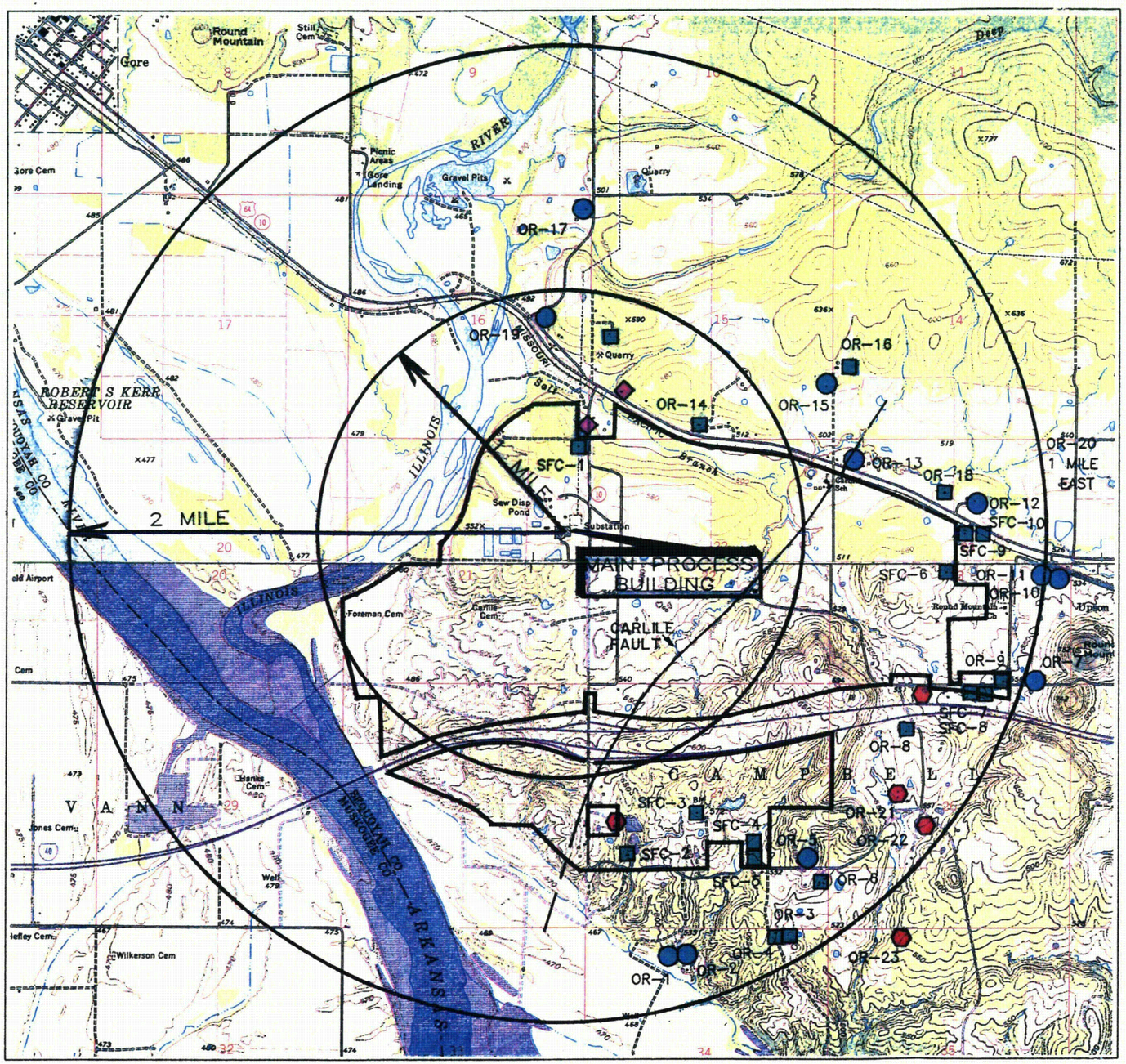
CONTOURS SHOWN: 25, 50, 100, 225, 1000, AND 10000 UG/L

Figure Title: ISOPLETH OF URANIUM CONCENTRATIONS DEEP SANDSTONE/SHALE GROUNDWATER, 10/21-27/91	Client: SEQUOYAH FUELS CORPORATION
Document Title: ADDENDUM FEI FINDINGS REPORT	Location: GORE, OKLAHOMA

ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants
3700 West Robinson, Suite 200
Norman, Oklahoma 73072
(405) 321-3895

DATE: 1/23/92	PREPARED BY: J.M.B.
SCALE: 1"=300'	CHECKED BY: B.J.S.
	DRAFTED BY: RML
PROJECT NO: 90067.02 K08	FIGURE NO.: 33

R 21 E



AFTER U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE GORE, OKLAHOMA, REVISED 1974

T
12
N

LEGEND:

- WATER WELL IN USE
- WATER WELL NOT IN USE
- REFUSED SFC SAMPLE REQUEST ON MAY 9–10, 1991
- UNABLE TO OBTAIN SAMPLE

OR: OFFSITE RESIDENT DOMESTIC WELL

SFC: OLD WATER WELL ON SEQUOYAH FUELS CORPORATION PROPERTY

—N—

SCALE

0 1/2 1 MILE

Figure Title:	MAP SHOWING LOCATIONS OF AREA WIDE WATER WELLS	Client:	SEQUOYAH FUELS CORPORATION
Document Title:	FEI FINDINGS REPORT	Location:	GORE, OKLAHOMA

ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants
3709 West Robinson, Suite 200
Norman, Oklahoma 73072
(405) 321-3896

DATE: 6/27/91	PREPARED BY: J.M.B.
SCALE: AS SHOWN	CHECKED BY: B.J.S.
PROJECT NO: 90067 F0	DRAFTED BY: S.A.R.
	FIGURE NO.: 42

ORIGINAL

Enclosure 2

January 10, 1994

AFFIDAVIT OF KENNETH H. SCHLAG

I, Kenneth H. Schlag, being duly sworn, hereby state as follows:

1) My name is Kenneth H. Schlag. I am a Hydrogeologist at Sequoyah Fuels Corporation (SFC). A statement of my professional background is contained in Attachment A to this Affidavit.

2) My professional responsibilities for SFC include administration and review of the groundwater monitoring program at SFC. I am also responsible for evaluating results of groundwater, soil, and vegetation sampling associated with SFC's fertilizer program.

3) The purpose of this affidavit is to respond to the portion of paragraph 10 of the "Affidavit of Timothy P. Brown" dated December 27, 1993 (the "Brown Affidavit"), which states:

> SFC's Fertilizer Completion Reports have indicated that levels of nitrate and cadmium have at times been above the Environmental Protection Agency's drinking water limits, and that levels of gross alpha emission and uranium have been above the currently proposed EPA limits for radioactive substances (see: Sequoyah Fuels Corporation , Ammonium Nitrate Fertilizer Program, 1989 Completion Report, April 1990). [The "1989 Completion Report."]

4) It is not entirely clear to what Mr. Brown is referring when he references EPA's drinking water standards (MCL) and compares them to SFC's fertilizer (SFC-N) constituent levels in the 1989 Completion Report. If Mr. Brown is comparing SFC's fertilizer's metals content to drinking water standards, he is correct in asserting SFC-N exceeds the MCLs for Cadmiun, and Nitriate. However, this comparison is irrelevant since the material is a fertilizer, not drinking water; is not meant for human consumption; and did not exceed any limit applicable to it.

5) With respect to EPA's proposed levels of gross alpha emission and uranium, Mr. Brown is wrong. EPA's proposed MCL for gross alpha and uranium are 15 pCi/l and 20 ppb respectively. SFC-N meets both of these limits.

6) If Mr. Brown was referring to ground water monitor well results, Mr. Brown is also mistaken. The MCL for cadmium is 0.01 mg/l (ppm) and the MCL for nitrates is 10 mg/l. The monitor well samples reported in the 1989 Completion Report showed cadmium and nitrate levels equal to or less than these values. Also, the EPA's limit on gross alpha excludes uranium. Therefore, to compare the reported levels of alpha to the MCL, one must convert U-238 mg/l (ppm) to pCi/l, and subtract this from the gross alpha level. In that case, 49 of 50 samples are less than the MCL for alpha, and one sample is 15.29 versus an MCL of 15. The well associated with this last sample was 3.8

pCi/l when re-sampled the following month and the average of the five gross alpha samples taken on the well that season was less than 7.3 pCi/l. Finally, the highest level of uranium contamination contained in the 1989 Completion Report is 13 ppb; less that the EPA's proposed standard of 20 ppb. In any event, the comparison with MCL is irrelevant since the water in this area is not a useful drinking water supply. "The areas used for the fertilizer program are not in the alluvial soils and water quality is poor and yield are very low averaging only about 0.5 gpm". SFC Fertilizer Program Report, 1973-1986, Dr. Bill B. Tucker et al, Publication No A-88-4, Oklahoma State University, at 96.

7) The statements of fact in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Date: Jan 10, 1994

Kenneth H. Schlag

STATE OF OKLAHOMA,)
) ss
COUNTY OF SEQUOYAH,)

Subscribed and sworn to before me this 10th day of Jan., 1994.

Notary Public

My commission expires: Sept 28, 1995

Attachment A

RESUME OF

KENNETH H. SCHLAG

EDUCATION

B.S. in Geology, University of Arkansas, Fayetteville, 1984.

Westark Community College, Fort Smith, Arkansas 1977-1978.

CERTIFICATION

Arkansas Professional Geologist, Registration No. 1130

Hazardous Waste Worker Training, OSHA STD.29 CFR 1910.120

Troxler Nuclear Density Instrumentation Training

PROFESSIONAL EXPERIENCE

October 90 - Present, Hydrogeologist, Sequoyah Fuels Corporation, Gore, Oklahoma.

Routine responsibilities include direct interfacing with federal, state and county regulatory agencies. Review, interpret, trend and maintain data related to groundwater, soil, surface water, sediment and vegetation. Develop, implement and supervise projects for the Environmental Department. Provide technical support and regulatory guidance to other departments. Advise management on specific matters involving RCRA, CERCLA, Clean Water Act, State Water Quality Standards and NRC License conditions. Assist in specification and selection of equipment and supplies for various projects. Ensure routine monitoring and special projects are completed in a satisfactory manner. Develop procedures to assure compliance with regulatory requirements. A partial list and brief project description is presented below:

- Storm Water Reservoir, completed May 1991. A $1 million storm water management project. Supervised the construction of a 16 acre earthen dam impoundment where storm water is diverted for natural bio-denitrification processes.

- Facility Environmental Investigation (FEI), completed July 1991. A $3 million environmental characterization of the 85 acre facility site. Instrumental in coordinating and locating over 175 monitoring wells, 200 soil borings, and tracking of over 10,000 soil and water samples. Reviewed work plans and status reports of the comprehensive 9 month plan to further characterize contamination and evaluate future remedial options. The Consultant's direct contact for invoicing and material control.

Directed the performance of the RCRA RFI type investigation and assisted in the technical review of the NRC Order Modifying License (OML) response.

- The Facility Action Plan (AP), completed January 1992. A direct result of the findings from the FEI. Coauthored and developed the masterplan for evaluating future remedial options.

- The Facility Groundwater Monitoring Plan, completed March 1992. Formulated and developed the groundwater monitoring program needs. Was one of the principle authors of the plan which provides guidance and rationale for both EPA and NRC License requirements.

- License Renewal Department Coordinator, completed September 1992. Was the Environmental Department contact for licensing activities associated with the NRC license renewal application. Was one of the principle authors of the Environmental Program Plan supplement to the renewal application. The Program Plan is a comprehensive document providing rationale for the frequency, monitoring parameters and locations for groundwater, soil, sediment, surface water, vegetation, and air monitoring.

April - October 90, Engineering Geologist, Grubbs, Garner & Hoskyn, Inc., Fort Smith, Arkansas.

Responsible for geotechnical construction QA/QC and materials testing lab QA/QC. Supervised and performed both field and laboratory tests on soil, rock, and concrete using ASTM and AASHTO methods. Assisted in planning field work and evaluating data for Geotechnical Reports. Instrumental in solving construction related hydrogeological problems.

Jan. - April 90, Interim Manager - Engineering Geologist, Professional Service Industries, Inc.,(formerly Shepherd Engineering, Inc.), Van Buren, Arkansas.

Responsible for office management during ownership transition. Duties also included supervision, planning, and written proposals for geotechnical drilling operations. Planning of construction materials testing and evaluating data from field and laboratory testing for foundation design.

Dec. 84 - Jan. 90, Engineering Geologist - Drilling Supervisor, Shepherd Engineering, Inc. (formerly Arkansas Laboratories, Inc.), Fort Smith, Arkansas.

Responsible for the geotechnical drilling operations. This responsibility included planning field drilling operations, supervision of the field crews, logging test borings, evaluation of the data and adaptation of exploration programs for approximately 100 projects per year. Duties also included writing proposals and assisting in the geological and hydrogeological aspects of

geotechnical investigation reports for buildings, pavements, bridges, and earth retaining structures, as well as performing both field and laboratory tests on rock, soil, asphalt, and concrete using ASTM and AASHTO methods.

Jan. - July 82, Engineers' Assistant, 19th Seed Company-Alpine Construction Company, Chickasha, Oklahoma.

Prospected for specific types of borrow pits for use along U.S. Hwy. 69 from Kansas to Texas. Logged test borings for borrow pits and for coal exploration in the eastern half of Oklahoma. Obtained landowners' permission for such drilling and provided hole layouts for the drillers. Acquired leases for coal related activities, collected and maintained coal analyses and recorded locations on topographic maps and aerial photos. Had some experience estimating coal reserves.

PROFESSIONAL AFFILIATIONS

National Water Well Association, AGWSE Div.
American Association of Petroleum Geologists
AAPG Energy Minerals Division
Oklahoma Society of Environmental Professionals
Fort Smith Geological Society
Environmental Federation of Oklahoma
Air & Waste Management Association, Okla. Chapter

ORIGINAL

Enclosure 3

January 11, 1994

AFFIDAVIT OF THOMAS E. POTTER

I, Thomas E. Potter, being duly sworn, hereby state as follows:

1) My name is Thomas E. Potter. My business address is 4231 Jenifer Street, N.W., Washington, D.C. I have been a consultant in radiation protection for over twenty years. A statement of my professional background is contained in Attachment A to the Affidavit.

2) In the course of my professional career I have frequently employed computer codes to perform environmental radiation assessments. In preparing this Affidavit I used the U.S. EPA CAP88-PC package (Clean Air Act Assessment Package, 1988). Although I had not previously used CAP88-PC, I have extensive experience in the use of AIRDOS-EPA and DARTAB, the assessment modules in the CAP88-PC package.

3) Some of my consulting work over the past two years has included assisting SFC in evaluating aspects of its radiation protection program and in developing the Site Characterization Plan to be submitted to the Nuclear Regulatory Commission. As a result of this work, I am familiar with conditions at the site that bear on the analysis reported here.

4) The purpose of this Affidavit is to respond to Paragraph 12 of the Affidavit of Timothy P. Brown dated September 27, 1993. In his Affidavit, Mr. Brown states that wind blown contaminants from the SFC site are a potential source of contamination of Mr. Henshaw's property. Mr. Brown makes only vague and unsubstantiated general allegations that improperly contained soil "may be blown by the wind . . ., traveling the short distance to Henshaw's property." Mr. Brown presents no facts to support his allegations.

5) To evaluate Mr. Brown's allegations, I conducted a bounding calculation of the maximum concentration of wind blown uranium contaminant that could be deposited on soil on Mr. Henshaw's property. The starting point of this analysis was the grossly conservative and highly unrealistic assumption that the entire estimated inventory of contaminated soils on the SFC site is somehow made available for wind blown transport offsite. This material was then assumed to be dispersed during transport and deposited at downwind locations in accordance with well understood atmospheric transport phenomena. The total quantity deposited per unit area was then calculated for the location of interest. The location selected for calculation is 1,000 meters south-southeast from the SFC facility, and is a conservative representation of the location of Mr. Henshaw's property. To calculate contaminant concentration in soil, it was

further conservatively assumed that deposited contaminant remained confined within the top one inch of soil. The soil density assumed was 1.6 grams per cubic centimeters, typical for surface soils. The calculated concentration of deposited uranium in soil at the location of interest was then compared to typical concentrations of naturally occurring uranium in soil.

6) Various estimates of the inventory of uranium contamination on the SFC site exist. NACE's public claim that the inventory is approximately 140,000 pounds is, by far, the largest. Other estimates range as low as 21,000 pounds. For purposes of this analysis, an inventory of 80,000 pounds was assumed as likely to be conservatively high and within a factor of 2 of the NACE estimate.

7) The purpose of using the CAP88-PC package was to calculate the relative deposition rate (1/square meter), a quantity calculated primarily using meteorological data. This quantity is the ratio of the deposition rate to the release rate. The actual deposition rate is the product of the release rate and the relative deposition rate. However, we are interested not in deposition rate, but total deposition. Total deposition is the product of the relative deposition rate and the total release quantity, and is independent of release rate.

8) The relative deposition rate is calculated as the product of the relative air concentration, X/Q (seconds per cubic meter), and the deposition velocity (meters/second), an empirical parameter. The deposition velocity used in this analysis was 0.0018 meters/second, a default input value that is considered reasonable. The value of X/Q was computed by the CAP88-PC code package using a five-year record of meteorological data from Fort Smith, Arkansas, which is representative of the site. The X/Q value calculated at the location of interest was 5.4×10^{-7} seconds per cubic meter.

9) For purposes of analysis, it was assumed that the contaminant source was uniformly distributed over a 20-acre area and available for release at ground level. The results are not sensitive to the assumption of an area source. Sensitivity analysis indicated that assumption of a point source resulted in nearly the same calculated deposition.

10) The results of this highly conservative bounding analysis show that at 1,000 meters south-southeast from the SFC facility the calculated total uranium deposition is 2.4×10^{4} picocuries per square meter, which is equivalent to a uranium concentration of about 0.6 picocurie per gram in the

top one inch of soil. This increment is about one-half the concentration of naturally occurring uranium in soils in the area, typically about 1 to 1.5 picocuries per gram. Moreover, it is at least an order of magnitude lower than the uranium concentration (30 picocuries per gram) that the Nuclear Regulatory Commission has considered acceptable for an area to be released for unrestricted use since the adoption of Option 1 of the Branch Technical Position, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations," referred to in the "Action Plan to Ensure Timely Cleanup of Site Decommissioning Management Plan Sites" (57FR13389, April 16, 1992). Because the radiation dose from naturally occurring uranium in soil is a small fraction of the total radiation dose from all natural sources, the radiation dose from the deposited material conservatively calculated above can be considered a negligibly small increment to the radiation dose from naturally occurring sources.

11) Thus, it is obvious that the SFC site poses virtually no potential for significant contamination of Mr. Henshaw's property.

12) The statements of fact in this Affidavit are true and correct to the best of my knowledge, information, and belief.

Date: 1/11/94 Thomas E. Potter

DISTRICT OF COLUMBIA, ss:

Subscribed and sworn to before me this 11th day of January, 1994

Teresa Grasty
Notary Public

TERESA GRASTY
Notary Public, District of Columbia
My Commission Expires May 14, 1995

My commission expires:

THOMAS E. POTTER

EDUCATION

MS, Environmental Science, 1972
The University of Michigan
Emphasis in Radiological Science

BS, Chemistry, 1963
The University of Pittsburgh

CURRENT POSITION

Since 1991, Mr. Potter has been an independent consultant on matters related to radiation protection. During this period, Mr. Potter has participated in a detailed radiation protection management review at a fuel cycle facility, has conducted independent audits of licensee radiation protection programs, has participated in an assessment of the radiological impacts on the public from past operation of a DOE weapons facility, and has managed an environmental radiological assessment for a nuclear fuel facility decommissioning.

PREVIOUS PROFESSIONAL EXPERIENCE

From 1984 through 1990, Mr. Potter was a partner and consultant in Morton and Potter, where he consulted on radiation protection matters, specializing in health and safety aspects of nuclear power. Mr. Potter performed detailed management reviews of power reactor radiation protection programs at two nuclear utilities. He managed an environmental analysis to support federal and state licensing of a low-level radioactive waste compaction and incineration facility and provided supporting testimony in the NRC hearing. He managed a severe accident consequence assessment performed as part of a study of the use of PRA methodology in evaluating changes to emergency response plans. In late 1986, he lectured and conducted computer workshops in Cairo as part of a course on environmental radiation dose assessment sponsored by the International Atomic Energy Agency for the Egyptian government. During this period, Mr. Potter also participated in a variety of other radiological assessments, including assessments supporting a materials licensee pond decommissioning, the application of sewage sludge contaminated with low levels of radioactive material as agricultural fertilizer, and the state permitting of a phosphate ore processing plant. Mr. Potter participated in activities supporting the Fuel Cycle Facilities Forum, including the preparation of formal comments on the initial draft of NUREG/CR-5512, "Residual Radioactive Contamination from Decommissioning," ultimately intended to serve as an NRC technical methodology for the derivation of permissible residual contamination levels for decommissioning.

From 1973 to 1984, Mr. Potter was a consultant and senior consultant on health and safety aspects of nuclear power at Pickard, Lowe, and Garrick, Inc. He performed probabilistic analyses of off-site consequences of power reactor accidents as part of full-scope probabilistic risk assessments for nuclear power plants. He performed environmental radiation dose assessments for nuclear power plant safety analyses, environmental reports, and operating

reports. He assisted clients in design and implementation of occupational and environmental radiation monitoring programs and interpretation of results. He provided independent review of in-plant radiological programs and effluent analysis programs. He participated in the design and development of the CRACIT code, a computer program for probabilistic assessment of power reactor accident consequences. He also participated in a comprehensive assessment of off-site radiation from the Three Mile Island accident.

In the period 1972 to 1973, Mr. Potter was a consultant to Dr. G. Hoyt Whipple of the University of Michigan in his private consulting practice. In that capacity, he prepared radiological health sections of safety analysis reports, designed environmental monitoring programs, and evaluated data from those programs. He developed a mathematical model to predict radiation doses from effluents from normal operation of nuclear power plants.

From 1963 to 1970, Mr. Potter was employed by the Nuclear Materials and Equipment Corporation (NUMEC), first as a process chemist, then, in 1966, as a plutonium fuel facility health and safety supervisor, and finally, in 1969, as a license administrator. In his capacities related to radiation safety, he provided radiological safety review of major facility modifications. He used those analyses and nuclear criticality analyses performed by others to prepare AEC special nuclear materials and byproduct license applications. As the license administrator, he served as corporate contact with AEC in matters related to licensing. As a health and safety supervisor, he organized and supervised a radiological protection program for a plutonium fuels fabrication facility and hot cell facility. He instituted personnel monitoring programs using thermoluminescent dosimetry and breathing-zone aerosol sampling in 1967. He served as secretary of a plant safety committee that inspected all operations and reviewed detailed written procedures for operators. He served as a member of a corporate safety committee which determined corporate policy regarding health and safety matters.

MEMBERSHIPS

American Nuclear Society
American Chemical Society

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REPORTS AND PUBLICATIONS

Woodard, K., and T.E. Potter, "Consideration of Source Term in Relation to Emergency Planning Requirements," presented to Workshop on Technical Factors Relating Impacts from Reactor Releases to Emergency Planning, Bethesda, Maryland, January 12-13, 1982.

Garrick, B.J., S. Kaplan, G. Apostolakis, D.C. Iden, K. Woodard, and T.E. Potter, "Seminar: Probabilistic Risk Assessment of Nuclear Power Plants," PLG-0141, July, 1980.

Garrick, B.J., S. Kaplan, G. Apostolakis, D.C. Bley and T.E. Potter, "Seminar: Probabilistic Risk Assessment as Applied to Nuclear Power Plants," PLG-0124, March, 1980.

Woodard, K., and T.E. Potter, "Modification of the Reactor Safety Study Consequences Computer Program (CRAC) to Include Plume Trajectories." presented to the 1979 ANS 25th Winter Meeting, San Francisco, California, November 11-15, 1979.

Woodard, K., and T.E. Potter, "Assessment of Noble Gas Releases from the Three Mile Island Unit 2 Accident," presented to the 1979 ANS 25th Winter Meeting, San Francisco, California, November 11-15, 1979.

Woodard, K., and T.E. Potter, "Probabilisitic Prediction of X/Q for Routine Intermittent Gaseous Releases," Transactions of the American Nuclear Society, Vol. 26, June, 1977.

Garrick, B.J., S. Kaplan, P.P. Bieniarz, K. Woodard, D.C. Iden, H.F. Perla, W. Dickter, C.L. Cate, T.E. Potter, R.J. Duphily, T.R. Robbins, D.C. Bley and S. Ahmed, "OPSA, Oyster Creek Probabilistic Safety Analysis," (Executive Summary, Main Report, Appendices), PLG-0100 DRAFT, August, 1979.

ORIGINAL

Enclosure 4

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on November 8, 1993 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
SEQUOYAH FUELS CORPORATION and GENERAL ATOMICS	)	Docket No. 40-8027-EA
(Sequoyah Facility)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of Sequoyah Fuels Corporation's Reply to Native Americans for a Clean Environment's Supplemental Factual Allegations, New Arguments, and Request for Discretionary Intervention were served upon the following persons by deposit in the United States mail, first class postage prepaid and properly addressed on the date shown below or by messenger (as shown by an asterisk):

*Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Attention: Docketing & Service Branch
(Original and two copies)

*Office of Commission Appellate Adjudication
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Administrative Judge James P. Gleason, Chairman
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Administrative Judge G. Paul Bollwerk, III
Atomic Safety and Licensing Board
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Dated this 11th day of January 1994.

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