UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
ORLANDO DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

Civil Action No. 6:24-cv-00722

General Dynamics Corporation; General Dynamics Land Systems, Inc.; Lexar Corporation; and United Technologies Communications Company,

Defendants.

CONSENT DECREE FOR REMEDIAL DESIGN/REMEDIAL ACTION AT THE GENERAL DYNAMICS LONGWOOD SUPERFUND SITE

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I. BACKGROUND

1. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter under sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA").

2. The United States in its complaint seeks, *inter alia*: (1) reimbursement of costs incurred by the EPA and the Department of Justice ("DOJ") for response actions at the General Dynamics Longwood Superfund Site located at 1333 North U.S. Highway 17/92 in Longwood, Seminole County, Florida ("Site"), together with accrued interest; and (2) performance by the defendants of a response action at the Site consistent with the National Contingency Plan, 40 C.F.R. part 300 ("NCP").

3. In accordance with the NCP and section 121(f)(1)(F) of CERCLA, the EPA notified the State of Florida ("State") on October 11, 2023, of negotiations with potentially responsible parties ("PRPs") regarding the implementation of the remedial design and remedial action ("RD/RA") for the Site, and the EPA has provided the State with an opportunity to participate in such negotiations and to be a party to this Consent Decree ("Decree").

4. In accordance with section 122(j)(1) of CERCLA, the EPA notified the U.S Fish and Wildlife Service on October 11, 2023, of negotiations with PRPs regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Decree.

5. The defendants that have entered into this Decree ("Settling Defendants") do not admit any liability to Plaintiff arising out of the transactions or occurrences alleged in the complaint, nor do they acknowledge that the release or threatened release of hazardous substance(s) at or from the Site constitutes an imminent and substantial endangerment to the public health or welfare or the environment.

6. In accordance with section 105 of CERCLA, the EPA listed the Site on the National Priorities List ("NPL"), set forth at 40 C.F.R. part 300, by publication in the Federal Register on September 29, 2010, 79 Fed. Reg. 59975.

7. In response to a release or a substantial threat of a release of hazardous substances at or from the Site, Settling Defendants completed a Remedial Investigation/Feasibility Study for the Site on February 28, 2022, in accordance with 40 C.F.R. § 300.430.

8. In accordance with section 117 of CERCLA and 40 C.F.R § 300.430(f), the EPA published notice of the completion of the Feasibility Study and of the proposed plan for remedial action on July 25, 2022, in a major local newspaper of general circulation. The EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting and comments received are available to the public as part of the administrative record upon which the Acting Director of the Superfund & Emergency Management Division, EPA Region 4, based on the selection of the response action.

9. The EPA selected a remedial action to be implemented at the Site, which is embodied in a final Record of Decision ("Record of Decision"), executed on September 23, 2022. The Record of Decision includes a summary of responses to the public comments. Notice of the final plan was published in accordance with section 117(b) of CERCLA.

10. Based on the information currently available, the EPA has determined that the Work will be properly and promptly conducted by Settling Defendants if conducted in accordance with this Decree.

11. The Parties recognize, and the Court by entering this Decree finds, that this Decree has been negotiated by the Parties in good faith, that implementation of this Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Decree is fair, reasonable, in the public interest, and consistent with CERCLA.

NOW, THEREFORE, it is hereby **ORDERED** and **DECREED** as follows:

II. JURISDICTION AND VENUE

12. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1345, and sections 106, 107 and 113(b) of CERCLA, and personal jurisdiction over the Parties. Venue lies in this District under section 113(b) of CERCLA and 28 U.S.C. §§ 1391(b), and 1395(a), because the Site is located in this judicial district. This Court retains jurisdiction over the subject matter of this action and over the Parties for the purpose of resolving disputes arising under this Decree, entering orders modifying this Decree, or effectuating or enforcing compliance with this Decree. Settling Defendants may not challenge the terms of this Decree or this Court's jurisdiction to enter and enforce this Decree.

III. PARTIES BOUND

13. This Decree is binding upon the United States and upon Settling Defendants and their successors. Unless the United States otherwise consents, (a) any change in ownership or corporate or other legal status of any Settling Defendant, including any transfer of assets, or (b) any Transfer of the Site or any portion thereof, does not alter any of Settling Defendants' obligations under this Decree. Settling Defendants' responsibilities under this Decree cannot be assigned except under a modification executed in accordance with ¶ 76.

14. In any action to enforce this Decree, Settling Defendants may not raise as a defense the failure of any of their officers, directors, employees, agents, contractors, subcontractors, or any person representing Settling Defendants to take any action necessary to comply with this Decree. Settling Defendants shall provide notice of this Decree to each person representing Settling Defendants with respect to the Site or the Work. Settling Defendants shall provide notice of this Decree to each contractor performing any Work and shall ensure that notice of the Decree is provided to each subcontractor performing any Work.

IV. DEFINITIONS

15. Subject to the next sentence, terms used in this Decree that are defined in CERCLA or the regulations promulgated under CERCLA have the meanings assigned to them in CERCLA and the regulations promulgated under CERCLA. Whenever the terms set forth below are used in this Decree, the following definitions apply:

"CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

"Consent Decree" or "Decree" means this consent decree, all appendixes attached hereto (listed in Section XIX), and all deliverables incorporated into the Decree under ¶ **7.6** of the SOW. If there is a conflict between a provision in Sections I through XXIV and a provision in any appendix or deliverable, the provision in Sections I through XXIV controls.

"Day" or "day" means a calendar day. In computing any period under this Decree, the day of the event that triggers the period is not counted and, where the last day is not a working day, the period runs until the close of business of the next working day. "Working day" means any day other than a Saturday, Sunday, or federal or State holiday.

"DOJ" means the United States Department of Justice.

"Effective Date" means the date upon which the Court's approval of this Decree is recorded on its docket.

"EPA" means the United States Environmental Protection Agency.

"Fund" means the Hazardous Substance Superfund established under section 9507 of the Internal Revenue Code, 26 I.R.C. § 9507.

"Future Response Costs" means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs) that the United States: (a) pays between January 1, 2023, and the Effective Date; and (b) pays after the Effective Date in implementing, overseeing, or enforcing this Decree, including: (i) in developing, reviewing and approving deliverables generated under this Decree; (ii) in overseeing Settling Defendants' performance of the Work; (iii) in assisting or taking action to obtain access or use restrictions under ¶ 23.e; (iv) in securing, implementing, monitoring, maintaining, or enforcing Institutional Controls, including any compensation paid; (v) in taking action under ¶ 31 (Access to Financial Assurance); (vi) in taking response action described in ¶ 60 because of Settling Defendants' failure to take emergency action under ¶ **5.4** of the SOW; (vii) in implementing a Work Takeover under ¶ 22; (viii) in implementing community involvement activities including the cost of any technical assistance grant provided under section 117(e) of CERCLA; (ix) in enforcing this Decree, including all costs paid under Section XII (Dispute Resolution) and all litigation costs; and (x) in conducting periodic reviews in accordance with section 121(c) of CERCLA. Future Response Costs also includes all Interest accrued after the Effective Date on the EPA's unreimbursed costs (including Past Response Costs) under section 107(a) of CERCLA.

"Including" or "including" means "including but not limited to."

"Institutional Controls" means Proprietary Controls (*i.e.*, easements or covenants running with the land that (i) limit land, water, or other resource use, provide access rights, or both and (ii) are created under common law or statutory law by an instrument that is recorded, or for which notice is recorded, in the appropriate land records office) and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (a) limit land, water, or other resource use to minimize the potential for human exposure to Waste Material at or in connection with the Site; (b) limit land, water, or other resource use to implement, ensure noninterference with, or ensure the protectiveness of the Remedial Action; (c) provide information intended to modify or guide human behavior at or in connection with the Site; or (d) any combination thereof.

"Interest" means interest at the rate specified for interest on investments of the Fund, as provided under section 107(a) of CERCLA, compounded annually on October 1 of each year. The applicable rate of interest will be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. As of the date of lodging of this Decree, rates are available online at https://www.epa.gov/superfund/superfund-interest-rates.

"National Contingency Plan" or "NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan promulgated under section 105 of CERCLA, codified at 40 C.F.R. part 300, and any amendments thereto.

"Paragraph" or "¶" means a portion of this Decree identified by an Arabic numeral or an upper- or lower-case letter.

"Parties" means the United States and Settling Defendants.

"Past Response Costs" means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs) that the United States paid in connection with the Site through December 31, 2022, plus all interest on such costs accrued under section 107(a) of CERCLA through such date.

"Performance Standards" means the cleanup levels and other measures of achievement of the remedial action objectives, as set forth in the Record of Decision.

"Plaintiff" means the United States.

"RCRA" means the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, (also known as the Resource Conservation and Recovery Act).

"Record of Decision" means the EPA decision document that memorializes the selection of the remedial action relating to the Site signed on September 23, 2022, by the Acting Director of the Superfund & Emergency Management Division, EPA Region 4, and all attachments thereto. The Record of Decision is attached as Appendix A.

"Remedial Action" means the remedial action selected in the Record of Decision.

"Remedial Design" means those activities to be undertaken by Settling Defendants to develop plans and specifications for implementing the Remedial Action as set forth in the SOW.

"Scope of the Remedy" means the scope of the remedy set forth in ¶ **1.3** of the SOW.

"Section" means a portion of this Decree identified by a Roman numeral.

"Settling Defendants" means General Dynamics Corporation; General Dynamics Land Systems, Inc.; Lexar Corporation; and United Technologies Communications Company. As used in this Decree, this definition means all settling defendants, collectively, and each settling defendant, individually.

"Site" means the General Dynamics Longwood Superfund Site, comprising approximately 8.2 acres of the 10-acre parcel located at 1333 North U.S. Highway 17/92 in Longwood, Seminole County, Florida, and depicted generally on the map attached as Appendix C. "Site" does not include the Sprague Electric Company Superfund Alternative Site.

"State" means the State of Florida.

"Statement of Work" or "SOW" means the document attached as Appendix B, which describes the activities Settling Defendants must perform to implement and maintain the effectiveness of the Remedial Action.

"Transfer" means to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

"United States" means the United States of America and each department, agency, and instrumentality of the United States, including the EPA.

"Waste Material" means (a) any "hazardous substance" under Section 101(14) of CERCLA; (b) any pollutant or contaminant under section 101(33) of CERCLA; (c) any "solid waste" under section 1004(27) of RCRA; and (d) any "hazardous waste" under Section 403.703(14), Florida Statutes.

"Work" means all obligations of Settling Defendants under Sections VI (Performance of the Work) through IX (Indemnification and Insurance).

"Work Takeover" means the EPA's assumption of the performance of any of the Work in accordance with ¶ 22.

V. OBJECTIVES

16. The objectives of the Parties in entering into this Decree are to protect public health, welfare, and the environment through the design, implementation, and maintenance of a response action at the Site by Settling Defendants, to pay response costs of Plaintiff, and to resolve and settle the claims of Plaintiff against Settling Defendants as provided in this Decree.

VI. PERFORMANCE OF THE WORK

17. Settling Defendants shall finance, develop, implement, operate, maintain, and monitor the effectiveness of the Remedial Action all in accordance with the SOW, any modified SOW and all EPA-approved, conditionally approved, or modified deliverables as required by the SOW or modified SOW.

18. Nothing in this Decree and no EPA approval of any deliverable required under this Decree constitutes a warranty or representation by the EPA that completion of the Work will achieve the Performance Standards.

19. Settling Defendants' obligations to finance and perform the Work and to pay amounts due under this Decree are joint and several. In the event of the insolvency of any Settling Defendant or the failure by any Settling Defendant to participate in the implementation of the Decree, the remaining Settling Defendants shall complete the Work and make the payments.

20. **Modifications to the Remedial Action and Further Response Actions**

a. Nothing in this Decree limits the EPA's authority to modify the Remedial Action or to select further response actions for the Site in accordance with the requirements of CERCLA and the NCP. Nothing in this Decree limits Settling Defendants' rights, under sections 113(k)(2) or 117 of CERCLA, to comment on any modified or further response actions proposed by the EPA.

b. If the EPA modifies the Remedial Action in order to achieve or maintain the Performance Standards, or both, or to carry out and maintain the effectiveness of the Remedial Action, and such modification is consistent with the Scope of the Remedy, then Settling Defendants shall implement the modification as provided in ¶ 20.d, subject to Settling Defendants' right to initiate dispute resolution under Section XII.

c. If the EPA selects a further response action for the Site because a reopener condition in ¶ 58 is satisfied, then, subject to ¶ 76, Settling Defendants shall implement the further response action as provided in ¶ 20.d, subject to Settling Defendants' right to initiate dispute resolution under Section XII.

d. Upon receipt of notice from the EPA that it has modified the Remedial Action as provided in ¶ 20.b or selected a further response action as provided in ¶ 20.c and requesting that Settling Defendants implement the modified Remedial Action or further response action, Settling Defendants shall implement the modification or further response action, subject to their right to initiate dispute resolution under Section XII within 30 days after receipt of the EPA's notice. Settling Defendants shall modify the SOW, or related work plans, or both in accordance with the Remedial Action modification or further response action or, if Settling Defendants invoke dispute resolution, in accordance with the final resolution of the dispute. The Remedial Action modification or further response action, the approved modified SOW, and any related work plans will be deemed to be incorporated into and enforceable under this Decree.

21. **Compliance with Applicable Law**. Nothing in this Decree affects Settling Defendants' obligations to comply with all applicable federal and state laws and regulations. Settling Defendants must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the Record of Decision and the SOW. The activities conducted in accordance with this Decree, if approved by the EPA, will be deemed to be consistent with the NCP as provided under section 300.700(c)(3)(ii).

22. **Work Takeover**

a. If the EPA determines that Settling Defendants (i) have ceased to perform any of the Work required under this Section; (ii) are seriously or repeatedly deficient or late in performing the Work required under this Section; or (iii) are performing the Work required under this Section in a manner that may cause an endangerment to human health or the environment, the EPA may issue a notice of Work Takeover to Settling Defendants, including a description of the grounds for the notice and a period of time ("Remedy Period") within which Settling Defendants must remedy the circumstances giving rise to the notice. The Remedy Period will be 20 days, unless the EPA determines in its unreviewable discretion that there may be an endangerment, in which case the Remedy Period will be 10 days.

b. If, by the end of the Remedy Period, Settling Defendants do not remedy to the EPA's satisfaction the circumstances giving rise to the notice of Work Takeover, the EPA may notify Settling Defendants and, as it deems necessary, commence a Work Takeover.

c. The EPA may conduct the Work Takeover during the pendency of any dispute under Section XII but shall terminate the Work Takeover if and when: (i) Settling Defendants remedy, to the EPA's satisfaction, the circumstances giving rise to the notice of Work Takeover; or (ii) upon the issuance of a final determination under Section XII (Dispute Resolution) that the EPA is required to terminate the Work Takeover.

VII. PROPERTY REQUIREMENTS

23. **Agreements Regarding Access and Noninterference**

a. As used in this Section, "Affected Property" means any real property, including the Site, where the EPA determines, at any time, that access; land, water, or other resource use restrictions; Institutional Controls; or any combination thereof, are needed to implement the Remedial Action.

b. Settling Defendants shall use best efforts to secure from the owner(s) of all Affected Property, an agreement, enforceable by Settling Defendants and by Plaintiff, requiring such owner to provide Settling Defendants, and their respective representatives, contractors, and subcontractors with access at all reasonable times to such owner's property to conduct any activity regarding the Decree, including the following:

(1) implementing the Work and overseeing compliance with the Decree;

(2) conducting investigations of contamination at or near the Site;

(3) assessing the need for, planning, or implementing additional response actions at or near the Site;

(4) determining whether the Site is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the Decree; and

(5) implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions and Institutional Controls.

c. Further, each agreement required under ¶ 23.b must commit the owner to refrain from using its property in any manner that the EPA determines will pose an unacceptable risk to human health or to the environment as a result of exposure to Waste Material, or will interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action, including the following:

(1) using contaminated groundwater;

(2) disabling or damaging monitoring or injection wells to be used to conduct the Remedial Action; and

(3) constructing new structures that may interfere with the Remedial Action.

d. As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Settling Defendants would use to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements.

e. Settling Defendants shall provide to the EPA a copy of each agreement required under ¶ 23.b. If Settling Defendants cannot accomplish what is required through best efforts in a timely manner, they shall notify the EPA, and include a description of the steps taken to achieve the requirements. If the United States deems it appropriate, it may assist Settling Defendants, or take independent action, to obtain such access or use restrictions.

24. If the EPA determines in a decision document prepared in accordance with the NCP that Institutional Controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are appropriate, Settling Defendants shall cooperate with the EPA's efforts to secure and ensure compliance with such Institutional Controls.

25. Notwithstanding any provision of the Decree, the EPA retains all of its access authorities and rights, as well as all of its rights to require land, water, or other resource use restrictions and Institutional Controls, including related enforcement authorities, under CERCLA, RCRA, and any other applicable statute or regulations.

VIII. FINANCIAL ASSURANCE

26. To ensure completion of the Work required under Section VI, Settling Defendants shall secure financial assurance, initially in the amount of $560,784.00 ("Estimated Cost of the Work"), for the benefit of the EPA. The financial assurance must: (i) be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from the EPA; and (ii) be satisfactory to the EPA. As of the date of lodging of this Decree, the sample documents can be found under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/. Settling Defendants may use multiple mechanisms if they are limited to surety bonds guaranteeing payment, letters of credit, trust funds, insurance policies, or some combination thereof. The following are acceptable mechanisms:

a. a surety bond guaranteeing payment, performance of the Work, or both, that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. an irrevocable letter of credit, payable to the EPA or at the direction of the EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. a trust fund established for the benefit of the EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;

d. a policy of insurance that provides the EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency;

e. a demonstration by one or more Settling Defendants that they meet the relevant test criteria of ¶ 27; or

f. a guarantee to fund or perform the Work executed in favor of the EPA by a company: (1) that is a direct or indirect parent company of a Settling Defendant or has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with a Settling Defendant; and (2) demonstrates to the EPA's satisfaction that it meets the financial test criteria of ¶ 27.

27. Settling Defendants seeking to provide financial assurance by means of a demonstration or guarantee under ¶ 26.e or 26.f must, within 30 days after the Effective Date:

a. demonstrate that:

(1) the affected Settling Defendant or guarantor has:

i. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus

depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

ii. net working capital and tangible net worth each at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

iii. tangible net worth of at least $10 million; and

iv. assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

(2) the affected Settling Defendant or guarantor has:

i. a current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and

ii. tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

iii. tangible net worth of at least $10 million; and

iv. assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

b. submit to the EPA for the affected Settling Defendant or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant substantially identical to the sample letter and reports available from the EPA. As of the date of lodging of this Decree, a sample letter and report is available under the "Financial Assurance - Settlements" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/.

28. Settling Defendants providing financial assurance by means of a demonstration or guarantee under ¶ 26.e or 26.f must also:

a. annually resubmit the documents described in ¶ 27.b within 90 days after the close of the affected Settling Defendant's or guarantor's fiscal year;

b. notify the EPA within 30 days after the affected Settling Defendant or guarantor determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and

c. provide to the EPA, within 30 days of the EPA's request, reports of the financial condition of the affected Settling Defendant or guarantor in addition to those specified in ¶ 27.b; the EPA may make such a request at any time based on a belief that the affected Settling Defendant or guarantor may no longer meet the financial test requirements of this Section.

29. Settling Defendants shall, within 60 days after the Effective Date, seek the EPA's approval of the form of Settling Defendants' financial assurance. Within 30 days after such approval, Settling Defendants shall secure all executed or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the Regional Financial Management Officer, to DOJ, and to the EPA.

30. Settling Defendants shall diligently monitor the adequacy of the financial assurance. If any Settling Defendant becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, such Settling Defendant shall notify the EPA of such information within seven days. If the EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, the EPA will notify the affected Settling Defendant of such determination. Settling Defendants shall, within 30 days after notifying the EPA or receiving notice from the EPA under this Paragraph, secure and submit to the EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. The EPA may extend this deadline for such time as is reasonably necessary for the affected Settling Defendant, in the exercise of due diligence, to secure and submit to the EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. Settling Defendants shall follow the procedures of ¶ 32 in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. Settling Defendants' inability to secure financial assurance in accordance with this Section does not excuse performance of any other requirement of this Decree.

31. **Access to Financial Assurance**

a. If the EPA issues a notice of a Work Takeover under ¶ 22.b, then, in accordance with any applicable financial assurance mechanism, the EPA may require that any funds guaranteed be paid in accordance with ¶ 31.d.

b. If the EPA is notified that the issuer of a financial assurance mechanism intends to cancel the mechanism, and the affected Settling Defendant fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior

to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with ¶ 31.d.

c. If, upon issuance of a notice of a Work Takeover under ¶ 22.b, either: (1) The EPA is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism, whether in cash or in kind, to continue and complete the Work; or (2) the financial assurance is a demonstration or guarantee under ¶ 26.e or 26.f, then the EPA is entitled to demand an amount, as determined by the EPA, sufficient to cover the cost of the remaining Work to be performed. Settling Defendants shall, within 30 days after such demand, pay the amount demanded as directed by the EPA.

d. Any amounts required to be paid under this ¶ 31 must be, as directed by the EPA: (i) paid to the EPA in order to facilitate the completion of the Work by the EPA or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the FDIC, in order to facilitate the completion of the Work by another person. If payment is made to the EPA, the EPA may deposit the payment into the Fund or into the Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by the EPA to the Fund.

32. **Modification of Amount, Form, or Terms of Financial Assurance**. Beginning after the first anniversary of the Effective Date, and no more than once per calendar year, Settling Defendants may submit a request to change the form, terms, or amount of the financial assurance mechanism. Any such request must be submitted to the EPA in accordance with ¶ 29, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. The EPA will notify Settling Defendants of its decision regarding the request. Settling Defendants may initiate dispute resolution under Section XII regarding the EPA's decision within 30 days after receipt of the decision. Settling Defendants may modify the form, terms, or amount of the financial assurance mechanism only: (a) in accordance with the EPA's approval; or (b) in accordance with any resolution of a dispute under Section XII. Settling Defendants shall submit to the EPA, within 30 days after receipt of the EPA's approval or consistent with the terms of the resolution of the dispute, documentation of the change to the form, terms, or amount of the financial assurance instrument.

33. **Release, Cancellation, or Discontinuation of Financial Assurance**. Settling Defendants may release, cancel, or discontinue any financial assurance provided under this Section only: (a) if the EPA issues a Certification of Work Completion under ¶ **5.9** of the SOW; (b) in accordance with the EPA's approval of such release, cancellation, or discontinuation; or (c) if there is a dispute regarding the release, cancellation or discontinuance of any financial assurance, in accordance with the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XII.

IX. INDEMNIFICATION AND INSURANCE

34. **Indemnification**

a. Plaintiff does not assume any liability by entering into this Decree or by virtue of any designation of Settling Defendants as the EPA's authorized representative under section 104(e)(1) of CERCLA. Settling Defendants shall indemnify and save and hold harmless Plaintiff and its officials, agents, employees, contractors, subcontractors, and representatives for or from any claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on Settling Defendants' behalf or under their control, in carrying out activities under this Decree, including any claims arising from any designation of Settling Defendants as the EPA's authorized representatives under section 104(e)(1) of CERCLA. Further, Settling Defendants agree to pay Plaintiff all costs it incurs including attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against Plaintiff based on negligent or other wrongful acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control in carrying out activities under with this Decree. Plaintiff may not be held out as a party to any contract entered into by or on behalf of Settling Defendants in carrying out activities under this Decree. The Settling Defendants and any such contractor may not be considered an agent of Plaintiff.

b. Plaintiff shall give Settling Defendants notice of any claim for which Plaintiff plans to seek indemnification in accordance with this ¶ 34, and shall consult with Settling Defendants prior to settling such claim.

35. Settling Defendants covenant not to sue and shall not assert any claim or cause of action against Plaintiff for damages or reimbursement or for set-off of any payments made or to be made to Plaintiff, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work or other activities on or relating to the Site, including claims on account of construction delays. In addition, Settling Defendants shall indemnify and save and hold Plaintiff harmless with respect to any claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of work at or relating to the Site, including claims on account of construction delays.

36. **Insurance**. Settling Defendants shall secure, by no later than 15 days before commencing any on-site Work, the following insurance: (a) commercial general liability insurance with limits of liability of $1 million per occurrence; (b) automobile liability insurance with limits of liability of $1 million per accident; and (c) umbrella liability insurance with limits of liability of $5 million in excess of the required commercial general liability and automobile liability limits. The insurance policy must name Plaintiff as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Settling Defendants under this Decree. Settling Defendants shall maintain this insurance until the first anniversary after issuance of the EPA's Certification of Remedial Action Completion under ¶ **5.7** of the SOW. In addition, for the duration of this Decree, Settling Defendants shall satisfy, or shall ensure that

their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendants in furtherance of this Decree. Prior to commencement of the Work, Settling Defendants shall provide to the EPA certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Defendants demonstrate by evidence satisfactory to the EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendants need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Settling Defendants shall ensure that all submittals to the EPA under this Paragraph identify the General Dynamics Longwood Superfund Site in Longwood, Florida, and the civil action number of this case.

X. PAYMENTS FOR RESPONSE COSTS

37. **Payment for Past Response Costs**. Within 30 days after the Effective Date, Settling Defendants shall pay the EPA, in reimbursement of Past Response Costs in connection with the Site, $10,840.65. The Financial Litigation Unit ("FLU") of the United States Attorney's Office for the Middle District of Florida, Orlando Division, shall provide to Settling Defendants instructions for making this payment, including a Consolidated Debt Collection System ("CDCS") reference number. Settling Defendants shall make such payment at https://www.pay.gov in accordance with the FLU's instructions, including references to the CDCS Number. Settling Defendants shall send notices of this payment to DOJ and the EPA. If the payment required under this Paragraph is late, Settling Defendants shall pay, in addition to any stipulated penalties owed under Section XIII, an additional amount for Interest accrued from the Effective Date until the date of payment.

38. **Payments by Settling Defendants for Future Response Costs**

a. **Periodic Bills**. On a periodic basis, the EPA will send Settling Defendants a bill for Future Response Costs, including a "Cost Recovery Package" or other standard cost summary listing direct and indirect costs paid by the EPA, its contractors, subcontractors, and DOJ. Settling Defendants may initiate a dispute under Section XII regarding a Future Response Cost billing, but only if the dispute relates to one or more of the following issues: (i) whether the EPA has made an arithmetical error; (ii) whether the EPA has included a cost item that is not within the definition of Future Response Costs; or (iii) whether the EPA has paid excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Settling Defendants must specify in the Notice of Dispute the contested costs and the basis for the objection.

b. **Payment of Bill**. Settling Defendants shall pay the bill, or if they initiate dispute resolution, the uncontested portion of the bill, if any, within 30 days after receipt of the bill. Settling Defendants shall pay the contested portion of the bill determined to be owed, if any, within 30 days after the determination regarding the dispute. Each payment for: (i) the uncontested bill or portion of bill, if late; and (ii) the contested portion of the bill determined to be owed, if any, must include an additional amount for Interest accrued from the date of

receipt of the bill through the date of payment. Settling Defendants shall make payment at https://www.pay.gov using the "EPA Miscellaneous Payments Cincinnati Finance Center" link and including references to the Site/Spill ID and DJ numbers listed in ¶ 74, along with the purpose of the payment. Settling Defendants shall send notices of this payment to DOJ and the EPA.

39. **Deposit of Payments**. The EPA will deposit the total amounts paid under ¶¶ 37, and 38.b, in the Fund.

XI. FORCE MAJEURE

40. "Force majeure," for purposes of this Decree, means any event arising from causes beyond the control of Settling Defendants, of any entity controlled by Settling Defendants, or of Settling Defendants' contractors that delays or prevents the performance of any obligation under this Decree despite Settling Defendants' best efforts to fulfill the obligation. Given the need to protect public health and welfare and the environment, the requirement that Settling Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. "Force majeure" does not include financial inability to complete the Work or a failure to achieve the Performance Standards.

41. If any event occurs for which Settling Defendants will or may claim a force majeure, Settling Defendants shall notify the EPA's Project Coordinator by email. The deadline for the initial notice is seven days after the date Settling Defendants first knew or should have known that the event would likely delay performance. Settling Defendants shall be deemed to know of any circumstance of which any contractor of, subcontractor of, or entity controlled by Settling Defendants knew or should have known. Within seven days thereafter, Settling Defendants shall send a further notice to the EPA that includes: (i) a description of the event and its effect on Settling Defendants' completion of the requirements of the Decree; (ii) a description of all actions taken or to be taken to prevent or minimize the adverse effects or delay; (iii) the proposed extension of time for Settling Defendants to complete the requirements of the Decree; (iv) a statement as to whether, in the opinion of Settling Defendants, such event may cause or contribute to an endangerment to public health or welfare, or the environment; and (v) all available proof supporting their claim of force majeure. Failure to comply with the notice requirements herein regarding an event precludes Settling Defendants from asserting any claim of force majeure regarding that event, provided, however, that if the EPA, despite late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under ¶ 40 and whether Settling Defendants have exercised their best efforts under ¶ 40, the EPA may, in its unreviewable discretion, excuse in writing Settling Defendants' failure to submit timely or complete notices under this Paragraph.

42. The EPA will notify Settling Defendants of its determination whether Settling Defendants are entitled to relief under ¶ 40, and, if so, the duration of the extension of time for performance of the obligations affected by the force majeure. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time

for performance of any other obligation. Settling Defendants may initiate dispute resolution under Section XII regarding the EPA's determination within 15 days after receipt of the determination. In any such proceeding, Settling Defendants have the burden of proving that they are entitled to relief under ¶ 40 and that their proposed extension was or will be warranted under the circumstances.

43. The failure by the EPA to timely complete any activity under the Decree or the SOW is not a violation of the Decree, provided, however, that if such failure prevents Settling Defendants from timely completing a requirement of the Decree, Settling Defendants may seek relief under this Section.

XII. DISPUTE RESOLUTION

44. Unless otherwise provided in this Decree, Settling Defendants must use the dispute resolution procedures of this Section to resolve any dispute arising under this Decree. Settling Defendants shall not initiate a dispute challenging the Record of Decision. The United States may enforce any requirement of the Decree that is not the subject of a pending dispute under this Section.

45. A dispute will be considered to have arisen when one or more parties sends a written notice of dispute ("Notice of Dispute"). Disputes arising under this Decree must in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations may not exceed 20 days after the dispute arises, unless the parties to the dispute otherwise agree. If the parties cannot resolve the dispute by informal negotiations, the position advanced by the EPA is binding unless Settling Defendants initiate formal dispute resolution under ¶ 46.

46. **Formal Dispute Resolution**

a. **Statements of Position**. Settling Defendants may initiate formal dispute resolution by serving on the Plaintiff, within 20 days after the conclusion of informal dispute resolution under ¶ 45, an initial Statement of Position regarding the matter in dispute. The Plaintiff's responsive Statement of Position is due within 20 days after receipt of the initial Statement of Position. All Statements of Position must include supporting factual data, analysis, opinion, and other documentation. A reply, if any, is due within 10 days after receipt of the response. If appropriate, the EPA may extend the deadlines for filing statements of position for up to 45 days and may allow the submission of supplemental statements of position.

b. **Formal Decision**. The Director of the Superfund & Emergency Management Division, EPA Region 4, will issue a formal decision resolving the dispute ("Formal Decision") based on the statements of position and any replies and supplemental statements of position. The Formal Decision is binding on Settling Defendants unless they timely seek judicial review under ¶ 47.

c. **Compilation of Administrative Record**. The EPA shall compile an administrative record regarding the dispute, which must include all statements of position, replies, supplemental statements of position, and the Formal Decision.

47. **Judicial Review**

a. Settling Defendants may obtain judicial review of the Formal Decision by filing, within 30 days after receiving it, a motion with the Court and serving the motion on all Parties. The motion must describe the matter in dispute and the relief requested. The parties to the dispute shall brief the matter in accordance with local court rules.

b. **Review on the Administrative Record**. Judicial review of disputes regarding the following issues must be on the administrative record: (i) the adequacy or appropriateness of deliverables required under the Decree; (ii) the adequacy of the performance of the Remedial Action; (iii) whether a Work Takeover is warranted under ¶ 22; (iv) determinations about financial assurance under Section VIII; (v) whether a reopener condition under ¶ 58 is satisfied, including whether the Remedial Action is not protective of human health and the environment; (vi) the EPA's selection of modified or further response actions; (vii) any other items requiring the EPA approval under the Decree; and (viii) any other disputes that the Court determines should be reviewed on the administrative record. For all of these disputes, Settling Defendants bear the burden of demonstrating that the Formal Decision was arbitrary and capricious or otherwise not in accordance with law.

c. Judicial review of any dispute not governed by ¶ 47.b shall be governed by applicable principles of law.

48. **Escrow Account**. For disputes regarding a Future Response Cost billing, Settling Defendants shall: (a) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation ("FDIC"); (b) remit to that escrow account funds equal to the amount of the contested Future Response Costs; and (c) send to the EPA copies of the correspondence and of the payment documentation (e.g., the check) that established and funded the escrow account, including the name of the bank, the bank account number, and a bank statement showing the initial balance in the account. The EPA may, in its unreviewable discretion, waive the requirement to establish the escrow account. Settling Defendants shall cause the escrow agent to pay the amounts due to the EPA under ¶ 38, if any, by the deadline for such payment in ¶ 38. Settling Defendants are responsible for any balance due under ¶ 38 after the payment by the escrow agent.

49. The initiation of dispute resolution procedures under this Section does not extend, postpone, or affect in any way any requirement of this Decree, except as the EPA agrees, or as determined by the Court. Stipulated penalties with respect to the disputed matter will continue to accrue, but payment is stayed pending resolution of the dispute, as provided in ¶ 52.

XIII. STIPULATED PENALTIES

50. Unless the noncompliance is excused under Section XI (Force Majeure), Settling Defendants are liable to the United States for the following stipulated penalties:

a. for any failure: (i) to pay any amount due under Section X; (ii) to establish and maintain financial assurance in accordance with Section VIII; or (iii) to submit timely or adequate deliverables under Section **7** of the SOW:

Period of Noncompliance	Penalty Per Noncompliance Per Day
1st through 14th day	$1,500
15th through 30th day	$5,000
31st day and beyond	$10,000

b. for any failure to submit timely or adequate deliverables required by this Decree other than those specified in ¶ 50.a:

Period of Noncompliance	Penalty Per Noncompliance Per Day
1st through 14th day	$500
15th through 30th day	$3,000
31st day and beyond	$7,500

51. **Work Takeover Penalty**. If the EPA commences a Work Takeover, Settling Defendants are liable for a stipulated penalty in the amount of $125,000. This stipulated penalty is in addition to the remedy available to the EPA under ¶ 31 (Access to Financial Assurance) to fund the performance of the Work by the EPA.

52. **Accrual of Penalties**. Stipulated penalties accrue from the date performance is due, or the day a noncompliance occurs, whichever is applicable, until the date the requirement is completed or the final day of the correction of the noncompliance. Nothing in this Decree prevents the simultaneous accrual of separate penalties for separate noncompliances with this Decree. Stipulated penalties accrue regardless of whether Settling Defendants have been notified of their noncompliance, and regardless of whether Settling Defendants have initiated dispute resolution under Section XII, provided, however, that no penalties will accrue as follows:

a. with respect to a submission that the EPA subsequently determines is deficient under ¶ **7.6** of the SOW, during the period, if any, beginning on the 15th day after the EPA's receipt of such submission until the date that the EPA notifies Settling Defendants of any deficiency;

b. with respect to a matter that is the subject of dispute resolution under Section XII, during the period, if any, beginning on the 21st day after the later of the date that the EPA's Statement of Position is received or the date that Settling Defendants' reply thereto (if any) is received until the date of the Formal Decision under ¶ 46.b; or

c. with respect to a matter that is the subject of judicial review by the Court under ¶ 47, during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute.

53. **Demand and Payment of Stipulated Penalties**. The EPA may send Settling Defendants a demand for stipulated penalties. The demand will include a description of the noncompliance and will specify the amount of the stipulated penalties owed. Settling Defendants may initiate dispute resolution under Section XII within 30 days after receipt of the demand. Settling Defendants shall pay the amount demanded or, if they initiate dispute resolution, the uncontested portion of the amount demanded, within 30 days after receipt of the demand.

Settling Defendants shall pay the contested portion of the penalties determined to be owed, if any, within 30 days after the resolution of the dispute. Each payment for: (a) the uncontested penalty demand or uncontested portion, if late; and (b) the contested portion of the penalty demand determined to be owed, if any, must include an additional amount for Interest accrued from the date of receipt of the demand through the date of payment. Settling Defendants shall make payment at https://www.pay.gov using the link for "EPA Miscellaneous Payments Cincinnati Finance Center," including references to the Site/Spill ID and DJ numbers listed in ¶ 74, and the purpose of the payment. Settling Defendants shall send a notice of this payment to DOJ and the EPA. The payment of stipulated penalties and Interest, if any, does not alter any obligation by Settling Defendants under the Decree.

54. Nothing in this Decree limits the authority of the United States: (a) to seek any remedy otherwise provided by law for Settling Defendants' failure to pay stipulated penalties or interest; or (b) to seek any other remedies or sanctions available by virtue of Settling Defendants' noncompliances with this Decree or of the statutes and regulations upon which it is based, including penalties under section 122(*l*) of CERCLA, provided, however, that the United States may not seek civil penalties under section 122(*l*) of CERCLA for any noncompliance for which a stipulated penalty is provided for in this Decree, except in the case of a willful noncompliance with this Decree.

55. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued under this Decree.

XIV. COVENANTS BY PLAINTIFF

56. **Covenants for Settling Defendant**s. Subject to ¶¶ 58 and 59, the United States covenants not to sue or to take administrative action against Settling Defendants under sections 106 and 107(a) of CERCLA regarding the Site.

57. The covenants under ¶ 56: (a) take effect upon the Effective Date, except with respect to future liability, for which these covenants take effect upon Certification of Remedial Action Completion by the EPA under ¶ **5.7** of the SOW; (b) are conditioned on the satisfactory performance by Settling Defendants of the requirements of this Decree; (c) extend to the successors of each Settling Defendant but only to the extent that the alleged liability of the successor of the Settling Defendant is based solely on its status as a successor of the Settling Defendant; and (d) do not extend to any other person.

58. **United States' Pre- and Post-certification Reservations**

a. Notwithstanding any other provision of this Decree, the United States reserves, and this Decree is without prejudice to, the right to issue an administrative order or to institute proceedings in this action or in a new action seeking to compel Settling Defendants to perform further response actions relating to the Site, to pay the United States for additional costs of response, or any combination thereof. The United States may exercise this reservation only if, at any time, conditions at the Site previously unknown to the EPA are discovered, or information previously unknown to the EPA is received, and the EPA determines, based in whole or in part

on these previously unknown conditions or information, that the Remedial Action is not protective of human health or the environment.

b. Before certification of Remedial Action Completion, the information and the conditions known to the EPA include only that information and those conditions known to the EPA as of the date the Record of Decision was signed and set forth in the Record of Decision for the Site and the administrative record supporting the Record of Decision.

c. After certification of Remedial Action Completion, the information and the conditions known to the EPA include only that information and those conditions known to the EPA as of the date of Certification of Remedial Action Completion and set forth in the Record of Decision, the administrative record supporting the Record of Decision, the post-Record of Decision administrative record, or in any information received by the EPA in accordance with the requirements of this Decree prior to Certification of Remedial Action Completion.

59. **General Reservations**. Notwithstanding any other provision of this Decree, the United States reserves, and this Decree is without prejudice to, all rights against Settling Defendants regarding the following:

a. liability for failure by Settling Defendants to meet a requirement of this Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;

c. liability based on Settling Defendants' ownership of the Site when such ownership commences after Settling Defendants' signature of this Decree;

d. liability based on Settling Defendants' operation of the Site when such operation commences after Settling Defendants' signature of this Decree and does not arise solely from Settling Defendants' performance of the Work;

e. liability based on Settling Defendants' transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, after signature of this Decree by Settling Defendants, other than as provided in the Record of Decision, under this Decree, or ordered by the EPA;

f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments; and

g. liability, prior to achievement of Performance Standards, for additional response actions that the EPA determines are necessary to achieve and maintain Performance Standards or to carry out and maintain the effectiveness of the Remedial Action, but that are not covered by ¶ 20.b; and

h. criminal liability.

60. Subject to ¶ 56, nothing in this Decree limits any authority of Plaintiff to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or to request a Court to order such action.

XV. COVENANTS BY SETTLING DEFENDANTS

61. **Covenants by Settling Defendant**s

a. Subject to ¶ 62, Settling Defendants covenant not to sue and shall not assert any claim or cause of action against the United States under CERCLA, section 7002(a) of RCRA, the United States Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, the State Constitution, State law, or at common law regarding the Site.

b. Subject to ¶ 62, Settling Defendants covenant not to seek reimbursement from the Fund through CERCLA or any other law for costs regarding the Site.

62. **Settling Defendants' Reservation**. The covenants in ¶ 61 do not apply to any claim or cause of action brought, or order issued, after the Effective Date by the United States to the extent such claim, cause of action, or order is within the scope of a reservation under ¶ 58, and ¶¶ 59.a through 59.g.

XVI. EFFECT OF SETTLEMENT; CONTRIBUTION

63. The Parties agree and the Court finds that: (a) the complaint filed by the United States in this action is a civil action within the meaning of section 113(f)(1) of CERCLA; (b) this Decree constitutes a judicially approved settlement under which each Settling Defendant has, as of the Effective Date, resolved its liability to the United States within the meaning of sections 113(f)(2) and 113(f)(3)(B) of CERCLA; and (c) each Settling Defendant is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by section 113(f)(2) of CERCLA, or as may be otherwise provided by law, for the "matters addressed" in this Decree. The "matters addressed" in this Decree are all response actions taken or to be taken and all response costs incurred or to be incurred, at or in connection with the Site, by the United States or any other person, except for the State, provided, however, that if the United States exercises rights under the reservations in ¶ 58 and ¶¶ 59.a through 59.g, the "matters addressed" in this Decree will no longer include those response costs or response actions that are within the scope of the exercised reservation.

64. Each Settling Defendant shall, with respect to any suit or claim brought by it for matters related to this Decree, notify DOJ and the EPA no later than 60 days prior to the initiation of such suit or claim. Each Settling Defendant shall, with respect to any suit or claim brought against it for matters related to this Decree, notify DOJ and the EPA within 10 days after service of the complaint on such Settling Defendant. In addition, each Settling Defendant shall notify DOJ and the EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial.

65. **Res Judicata and Other Defenses**. In any subsequent administrative or judicial proceeding initiated against any Settling Defendant by Plaintiff for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, claim preclusion (res judicata), issue preclusion (collateral estoppel), claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case.

66. Nothing in this Decree diminishes the right of the United States under section 113(f)(2) and (3) of CERCLA to pursue any person not a party to this Decree to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to section 113(f)(2).

XVII. RECORDS

67. **Settling Defendant Certification**. Each Settling Defendant certifies individually that: (a) it has implemented a litigation hold on documents and electronically stored information relating to the Site, including information relating to its potential liability under CERCLA regarding the Site, since the earlier of notification of potential liability by the United States or the State or the filing of suit against it regarding the Site; and (b) it has fully complied with any and all EPA requests for information under sections 104(e) and 122(e) of CERCLA, and section 3007 of RCRA.

68. **Retention of Records and Information**

a. Settling Defendants shall retain, and instruct their contractors and agents to retain, the following documents and electronically stored data ("Records") until 10 years after the Certification Completion of the Work under SOW ¶ **5.9** (the "Record Retention Period"):

(1) All records regarding Settling Defendants' liability under CERCLA regarding the Site;

(2) All reports, plans, permits, and documents submitted to the EPA in accordance with this Decree, including all underlying research and data; and

(3) All data developed by, or on behalf of, Settling Defendants in the course of performing the Remedial Action.

b. Settling Defendants shall retain all Records regarding the liability of any person under CERCLA regarding the Site during the Record Retention Period.

c. At the end of the Record Retention Period, Settling Defendants shall notify the EPA that it has 90 days to request the Settling Defendants' Records subject to this Section. Settling Defendants shall retain and preserve their Records subject to this Section until 90 days after the EPA's receipt of the notice. These record retention requirements apply regardless of any corporate record retention policy.

69. Settling Defendants shall provide to the EPA, upon request, copies of all Records and information required to be retained under this Section. Settling Defendants shall also make available to the EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

70. **Privileged and Protected Claims**

a. Settling Defendants may assert that all or part of a record requested by Plaintiff is privileged or protected as provided under federal law, in lieu of providing the record, provided that Settling Defendants comply with ¶ 70.b, and except as provided in ¶ 70.c.

b. If Settling Defendants assert a claim of privilege or protection, they shall provide Plaintiff with the following information regarding such record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a record, Settling Defendants shall provide the record to Plaintiff in redacted form to mask the privileged or protected portion only. Settling Defendants shall retain all records that they claim to be privileged or protected until Plaintiff has had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Settling Defendants' favor.

c. Settling Defendants shall not make any claim of privilege or protection regarding: (1) any data regarding the Site, including all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological or engineering data, or the portion of any other record that evidences conditions at or around the Site; or (2) the portion of any record that Settling Defendants are required to create or generate in accordance with this Decree.

71. **Confidential Business Information ("CBI") Claims**. Settling Defendants may claim that all or part of a record provided to Plaintiff under this Section is CBI to the extent permitted by and in accordance with section 104(e)(7) of CERCLA and 40 C.F.R. § 2.203(b). Settling Defendants shall segregate and shall clearly identify all records or parts thereof submitted under this Decree for which they claim is CBI by labeling each page or each electronic file "claimed as confidential business information" or "claimed as CBI." Records that Settling Defendants claim to be CBI will be afforded the protection specified in 40 C.F.R. part 2, subpart B. If no CBI claim accompanies records when they are submitted to the EPA, or if the EPA notifies Settling Defendants that the records are not entitled to confidential treatment under the standards of section 104(e)(7) of CERCLA or 40 C.F.R. part 2, subpart B, the public may be given access to such records without further notice to Settling Defendants.

72. In any proceeding under this Decree, validated sampling or monitoring data generated in accordance with the SOW and reviewed and approved by the EPA, if relevant to the proceeding, is admissible as evidence, without objection.

73. Notwithstanding any provision of this Decree, Plaintiff retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XVIII. NOTICES AND SUBMISSIONS

74. All agreements, approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, waivers, and requests specified in this Decree must be in writing unless otherwise specified. Whenever a notice is required to be given or a report or other document is required to be sent by one Party to another under this Decree, it must be sent as specified below. All notices under this Section are effective upon receipt, unless otherwise specified. In the case of emailed notices, there is a rebuttable presumption that such notices are received on the same day that they are sent. Any Party may change the method, person, or address applicable to it by providing notice of such change to all Parties.

As to DOJ: *via email to*:
eescdcopy.enrd@usdoj.gov
Re: DJ # 90-11-3-12834

As to EPA: *via email to*:
Caroline Y. Freeman, Director
Superfund & Emergency Management Division,
Region 4
freeman.caroline@epa.gov

and

Ahmad Hassanein, EPA's Project Coordinator
hassanein.ahmad@epa.gov
Superfund & Emergency Management Division
U.S. EPA, Region 4
61 Forsyth Street SW
Atlanta, Georgia 30303

Re: Site/Spill ID # A4PJ

As to the Regional Financial Management Officer: *via email to*:
Paula Painter, Program Analyst
painter.paula@epa.gov
Re: Site/Spill ID # A4PJ

As to Settling Defendants:

via email to:
Reinhard Ruhmke, Managing Geologist
Brown and Caldwell
rruhmke@brwncald.com

with a copy to:
Steven Siros
Jenner & Block
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beth.lang@rtx.com

XIX. APPENDIXES

75. The following appendixes are attached to and incorporated into this Decree:

"Appendix A" is the Record of Decision.

"Appendix B" is the SOW.

"Appendix C" is the map of the Site.

XX. MODIFICATIONS TO DECREE

76. Except as provided in ¶ 20 of the Decree and ¶ **7.6** of the SOW (Approval of Deliverables), nonmaterial modifications to Sections I through XXIV and the Appendixes must be in writing and are effective when signed (including electronically signed) by the Parties. Material modifications to Sections I through XXIV and the Appendixes must be in writing, signed (which may include electronically signed) by the Parties, and are effective upon approval by the Court. As to changes to the remedy, a modification to the Decree, including the SOW, to implement an amendment to the Record of Decision that "fundamentally alters the basic features" of the Remedial Action within the meaning of 40 C.F.R. § 300.435(c)(2)(ii) will be considered a material modification.

XXI. SIGNATORIES

77. The undersigned representative of the United States and each undersigned representative of a Settling Defendant certifies that he or she is fully authorized to enter into the terms and conditions of this Decree and to execute and legally bind such Party to this document.

XXII. PRE-ENTRY PROVISIONS

78. If for any reason the Court should decline to approve this Decree in the form presented, this agreement, except for ¶ 79 and ¶ 80, is voidable at the sole discretion of any Party and its terms may not be used as evidence in any litigation between the Parties.

79. This Decree will be lodged with the Court for at least 30 days for public notice and comment in accordance with section 122(d)(2) of CERCLA and 28 C.F.R. § 50.7. The United States may withdraw or withhold its consent if the comments regarding the Decree disclose facts or considerations that indicate that the Decree is inappropriate, improper, or inadequate.

80. Settling Defendants agree not to oppose or appeal the entry of this Decree.

XXIII. INTEGRATION

81. This Decree constitutes the entire agreement among the Parties regarding the subject matter of the Decree and supersedes all prior representations, agreements, and understandings, whether oral or written, regarding the subject matter of the Decree.

XXIV. FINAL JUDGMENT

82. Upon entry of this Decree by the Court, this Decree constitutes a final judgment under Fed. R. Civ. P. 54 and 58 among the Parties.

SO **ORDERED** this ___ day of _____, 20_____.

_____
United States District Judge

Signature Page for Consent Decree in *U.S. v. General Dynamics Corporation et al.*

FOR THE UNITED STATES:

TODD S. KIM
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice

4/17/24
Dated

Patricia McKenna
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/s/ Caroline Y. Freeman
Director
Superfund & Emergency Management Division
U.S. Environmental Protection Agency, Region 4

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/s/ Yeliann Montanez
Associate Regional Counsel
Office of Regional Counsel
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Signature Page for Consent Decree in *U.S. v. General Dynamics Corporation et al.*

FOR GENERAL DYNAMICS CORPORATION:

Dated: February 14, 2024

Name: Gregory S. Gallopoulos
Title: Senior Vice President, General Counsel
Company: General Dynamics Corporation
Address: 11011 Sunset Hills Road
Reston, VA 20190
Phone: 703-876-3719
email: ggallopoulos@generaldynamics.com

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. **This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service.** This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

Name: Damien Bass
Title: Assistant General Counsel and Director
Company: General Dynamics Corporation
Address: 11011 Sunset Hills Road
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Signature Page for Consent Decree in *U.S. v. General Dynamics Corporation et al.*

FOR GENERAL DYNAMICS LAND SYSTEMS, INC:

Dated: February 14, 2024

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If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. **This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service.** This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

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Signature Page for Consent Decree in *U.S. v. General Dynamics Corporation et al.*

FOR LEXAR CORPORATION:

Dated: 2/15/24

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Title: President
Company: Lexar Corporation
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10 Farm Springs Road, Farmington CT 06032
Phone: (860) 463-6584
email: david.platt@rtx.com

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. **This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service.** This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

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FOR UNITED TECHNOLOGIES COMMUNICATIONS COMPANY:

Dated: 2/15/24

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If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. **This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service.** This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

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Appendix A

to Consent Decree in *U.S. v. General Dynamics Corporation et al*.

RECORD OF DECISION

GENERAL DYNAMICS LONGWOOD SUPERFUND SITE

LONGWOOD, SEMINOLE COUNTY, FLORIDA

EPA ID: FLR000091322

PREPARED BY:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
SUPERFUND & EMERGENCY MANAGEMENT DIVISION
ATLANTA, GEORGIA

RECORD OF DECISION

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ACRONYMS AND ABBREVIATIONS

ADD	Average Daily Dose
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chemical of Concern
COPC	Chemical of Potential Concern
CSM	Conceptual Site Model
CWA	Clean Water Act
DNAPL	Dense Non-Aqueous Phase Liquid
DPT	Direct Push Technology
EPA	U.S. Environmental Protection Agency
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FS	Feasibility Study
GCTL	Groundwater Cleanup Target Level
HAP	Hazardous Air Pollutant
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IUR	Inhalation Unit Risk
LADD	Lifetime Average Daily Dose
MCL	Maximum Contaminant Level
MIP	Membrane Interface Probe
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MNA	Monitored Natural Attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration
O&M	Operation and Maintenance
OU	Operable Unit
ppb	Parts per Billion
PRP	Potentially Responsible Party
PVC	Polyvinyl Chloride
RACM	Regulated Asbestos-Containing Material
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RfC	Reference Concentration
RfD	Reference Dose
RI	Remedial Investigation
ROD	Record of Decision

RPM	Remedial Project Manager
RSL	Regional Screening Level
SARA	Superfund Amendments and Reauthorization Act of 1986
SCTL	Soil Cleanup Target Level
SF	Slope Factor
SI	Site Inspection
Site	General Dynamics Longwood Site
TBC	To Be Considered
TBEL	Technology Based Effluent Limit
UCL	Upper Confidence Limit
VOC	Volatile Organic Compound
VOHAP	Volatile Organic Hazardous Air Pollutant
WQBEL	Water Quality Based Effluent Limit

PART 1: DECLARATION

1.0 Site Name and Location

General Dynamics Longwood Superfund Site
1333 North U.S. Highway 17/92, City of Longwood, Seminole County, Florida
Superfund Site Identification Number FLR000091322

2.0 Statement of Basis and Purpose

This Record of Decision (ROD) presents the Selected Remedy for the General Dynamics Longwood Superfund Site (Site) in Longwood, Florida (Figure 1). The Selected Remedy (Alternative 5: In-Situ Treatment with Reagent Injection and Institutional Controls) was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as set forth in 40 Code of Federal Regulations (CFR) Part 300.430(f)(2). This decision is based on the Administrative Record for the Site. The Site includes 8 acres of a 10-acre property formerly used for electronics manufacturing. The scope of the remedy is groundwater contamination requiring cleanup under CERCLA.

The U.S. Environmental Protection Agency (EPA) is the lead agency for site activities. The Florida Department of Environmental Protection (FDEP) is the support agency. In accordance with 40 CFR Part 300.430(f)(2), FDEP has provided input during the Remedial Investigation (RI) and Feasibility Study (FS) and remedy selection process, and the State of Florida concurs with the Selected Remedy (see Appendix A).

3.0 Assessment of the Site

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances to the environment; and pollutants or contaminants from the Site that may present an imminent and substantial endangerment to public health or welfare. Groundwater contaminated with volatile organic compounds (VOCs), including 1,4-dioxane at concentrations exceeding state and federal drinking water standards, poses an unacceptable risk to human health and the environment.

4.0 Description of the Selected Remedy

The Selected Remedy (Alternative 5: In-Situ Treatment with Reagent Injection and Institutional Controls) includes the following key remedy components:

- Injection of reagents into the aquifer to enhance the rate of reactions in groundwater at the Site that are designed to destroy the groundwater contamination.
- Groundwater monitoring to assess the effectiveness of the injection program and attainment of groundwater cleanup levels throughout the plume.
- Institutional controls to prevent drilling of groundwater supply wells and to restrict groundwater use to preclude human exposure to contaminated groundwater until remedial action objectives (RAOs) are met.

In-situ groundwater treatment may include using bioremediation techniques to stimulate the native or augmented microorganisms in the ground to treat contaminants or in-situ chemical oxidation. Reagents injected into the ground to stimulate the degradation may include primary substrates, cometabolites, nutrients, or other microorganisms. The specifics of in-situ treatment will be further refined in the remedial design. The injection program will consist of a grid of injection points inside and/or around Building 3. Groundwater monitoring will be conducted during and after the injection program to assess groundwater quality and whether additional injections (as part of continuing optimization of the treatment remedy) are needed in order to attain RAOs. Remediation of groundwater should also mitigate any possible unacceptable risk to human health from the vapor intrusion pathway.

There are no principal threat wastes known to be present on Site. The estimated timeframe for construction completion is less than one year. Long-term monitoring is expected to continue until groundwater cleanup levels are attained throughout the plume.

5.0 Statutory Determinations

The Selected Remedy meets the requirements for remedial actions set forth in Section 121 of CERCLA, 42 U.S.C. Section 9621, and the NCP at 40 CFR Part 300.430(f)(1)(ii) because it: 1) is protective of human health and the environment; 2) complies with applicable or relevant and appropriate requirements (ARARs); 3) is cost effective; and 4) uses permanent solutions and alternative treatments (or resource recovery) technologies to the maximum extent practicable. Because this remedy will result in hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure while the remedy is being implemented, a five-year review will be required for this remedial action until groundwater cleanup levels are attained. No five-year review will be necessary if the remedial action achieves cleanup levels within the first five years.

The Selected Remedy satisfies the statutory preference to use treatment to address principal threats as a principal element of the remedy. Although there are no principal threat wastes known to be present, the Selected Remedy includes injecting reagents directly into the groundwater to enhance the natural breakdown of contaminants, thus reducing the toxicity, mobility, and volume of contaminants.

6.0 Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. More information can be found in the Administrative Record file for the Site.

- Chemicals of concern (COCs) and their respective concentrations (Section 5).
- Baseline risk represented by the COCs (Section 7).
- Cleanup levels established for COCs and the basis for these levels (Section 8).
- How source materials constituting principal threats will be addressed (Section 11).
- Current and reasonably anticipated future land use assumptions (Section 6).
- Potential land use that will be available at the Site as a result of the Selected Remedy (Section 6).
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 10).

- Key factors that led to selecting the remedy (i.e., describe how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision) (Section 12).

7.0 Authorizing Signature

RANDALL CHAFFINS Digitally signed by RANDALL CHAFFINS Date: 2022.09.23 14:05:34 -04'00'

9/23/2022

Carol J. Monell, Director
Superfund & Emergency Management Division
U.S. Environmental Protection Agency, Region 4

Date

PART 2: THE DECISION SUMMARY

1.0 Site Name, Location, and Brief Description

The General Dynamics Longwood Superfund Site (Site) is located at 1333 North U.S. Highway 17/92 in Longwood, Seminole County, Florida, near the intersection of U.S Highway 17/92 and Shepard Road (EPA ID: FLR000091322) (Figure 1). The Site includes 8 acres of a 10-acre property formerly used for electronics manufacturing. Nearly 30 years of electronics manufacturing operations have contaminated the shallow groundwater aquifer with volatile organic compounds (VOCs), including 1,4-dioxane.

The U.S. Environmental Protection Agency (EPA) is the lead agency at the Site. The Florida Department of Environmental Protection (FDEP) is the support agency. The selected remedial action is expected to be funded through parties who are liable under CERCLA for the costs of the response actions.

The Site is in a commercial and light industrial area (Figure 1). The Site encompasses a significant portion, but not all, of the former Gould Publishing Inc. property (Property) (Figure 2). The Site includes about 8 acres of the 10-acre Property. The remaining 2 acres of the western part of the Property are part of operable unit 2 (OU-2) at the adjacent Sprague Electric Company Superfund Alternative Site (Sprague Site). OU-1 of the Sprague Site is defined by the parcel boundaries of property formerly owned by the Sprague Electric Company. The EPA selected an in-situ remedy for the groundwater at OU-1 of the Sprague Site in 2010, which is reducing contamination as expected and may soon reach cleanup goals. OU-2 of the Sprague Site encompasses any contamination in groundwater beyond the boundaries of OU-1. The EPA will address cleanup of OU-2 of the Sprague Site in a future EPA decision document.

An asphalt parking area is present on the east side of the Site. U.S. Highway 17/92 is just west of the Property. Spring Hammock State Park borders the Site to the north. Industrial properties border the Site to the east. A drainage ditch, running generally in an east-west direction, is located on the southern property boundary between the Site and OU-1 of the Sprague Site. The drainage ditch discharges into Soldier Creek about 0.4 miles northeast of the Site.

The Property contains several existing buildings (Buildings 1, 2, and 3), driveways, and parking lots (Figure 3). Several smaller buildings, including a former paint and plating building, are also located across the Property. The Property is zoned for commercial and industrial uses.

In August 2015, ownership of the Property transferred to Gould Property Expansion, LLC, which is managed by the Foundation for Seminole State College of Florida, Inc. The college used the Property for warehousing. On August 15, 2022, ownership of the Property transferred to an individual, William S. Nuckolls, who operates an auto auction business nearby.

2.0 Site History and Enforcement Activities

2.1 Site Activities Leading to Current Problems

General Dynamics Corporation and its predecessors manufactured printed circuit boards and conducted painting and plating operations on site from 1959 to 1984. From 1984 to 1986, Lexar

Corporation and United Technologies Communications Company manufactured and serviced electronic components and other telecommunications equipment at the Site. These companies all employed solvent washes in their manufacturing processes. Manufacturing operations primarily occurred in the southern part of Building 3 and in the paint and plating building (Figure 3). Printed circuit boards were cleaned in a vapor degreaser in Building 3. Chlorinated solvents were stored and used at the Site. Nearly 30 years of electronics manufacturing operations, that included releases of solvents, resulted in groundwater contamination at the Site.

2.2 History of Investigations and Cleanup Actions

Since 2000, several parties have performed environmental investigations and response actions at the Site:

- Sampling occurred on the Property as part of the remedial investigation (RI) for the adjacent Sprague Site. Results were presented in a February 2007 Draft RI Report and August 2009 RI Report for the Sprague Site. VOCs were identified in groundwater during the investigation. Surface water and sediment in the unnamed drainage ditch were not affected by contamination from the Site or the adjacent Sprague Site.
- A January 2008 National Priorities List (NPL) Site Inspection Report (SI Report), prepared by MACTEC on behalf of FDEP, documented investigation work conducted on the Property in 2007. The SI Report identified four areas of concern (AOCs) (Figures 3 and 4):
    - AOC-A: former vapor degreaser location.
    - AOC-B: former paint and plating building.
    - AOC-C: septic drain field on the east side of the Site.
    - AOC-D: septic drain field on the east side of the Site.
- The investigation identified chlorinated VOCs in groundwater above Florida groundwater cleanup target levels (GCTLs) in Florida Administrative Code (F.A.C.) 62-777, Table I and/or federal Safe Drinking Water Act (SDWA primary drinking water standards), maximum contaminant levels (MCLs). The former vapor degreaser (AOC-A) was identified as a potential source of the groundwater impacts. Chromium and lead were detected in one surface soil sample near the former paint and plating building (AOC-B) at concentrations above Florida soil cleanup target levels (SCTLs) in Table II of F.A.C. 62-777.
- General Dynamics conducted a limited investigation around the former vapor degreaser location (AOC-A) in April 2009. Chlorinated VOCs and 1,4-dioxane were detected in groundwater near AOC-A.

In 2010, the Site was placed on the NPL based on soil and groundwater contamination. General Dynamics and United Technologies Corporation (now Raytheon Technologies) as potentially responsible parties (PRPs) conducted the Site's Remedial Investigation and Feasibility Study (RI/FS) from 2014 to 2021. The RI focused investigation on the four AOCs and included a sewer line investigation, surface and subsurface soil and groundwater sampling, and evaluation of potential dense non-aqueous phase liquid (DNAPL). Results of the RI are addressed in the Nature and Extent of Contamination section of this ROD.

The EPA expects to return useable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site. [40 CFR 300.430(a)(1)(iii)(F)] The groundwater is designated by FDEP as Class G-II under F.A.C. 62-520.410 *Classification of Ground Water, Usage, Reclassification* and is potential drinking water

source. The EPA presented its conclusions and comments on the RI/FS Report in the Memorandum from William N. O'Steen, Physical Scientist, Scientific Support Section, Superfund and Emergency Management Division, to Rusty Kestle, Remedial Project Manager, Superfund Restoration and Sustainability Section, Superfund and Emergency Management Division. Subject: *General Dynamics Longwood, Seminole County, Florida*, dated November 3, 2021 (2021 EPA Memorandum). As summarized in the 2021 EPA Memorandum, the EPA's scientific review concluded that monitored natural attenuation (MNA) is not an acceptable remedial alternative for the Site because there is not a clear and meaningful trend of decreasing concentrations across the entire site. The EPA also determined that restoration to attain cleanup levels using MNA is not practicable in a reasonable timeframe.

During the RI, concentrations of total chromium, hexavalent chromium, and lead in surface soil samples near the former paint and plating building (AOC-B) were detected above the Florida SCTLs for industrial properties. Based on these exceedances, PRPs performed a soil excavation in November 2015. An area of about 200 square feet was excavated to about 1 to 2 feet below ground surface. About 20 tons of soil was removed and taken off site for disposal at a permitted disposal facility. PRPs collected two post-excavation confirmation samples and analyzed them for total lead, total chromium, and hexavalent chromium. The results of the confirmation samples were below Florida SCTLs for industrial properties.

2.3 History of CERCLA Enforcement Activities

The EPA completed a PRP search for the Site and issued Special Notice Letters for RI/FS in 2013. The EPA and the PRPs (collectively, General Dynamics and United Technologies Corporation [now Raytheon Technologies]) entered into an Administrative Settlement Agreement and Order on Consent (Consent Order) on May 27, 2014. The Consent Order and accompanying Statement of Work required the PRPs to complete an RI/FS.

3.0 Community Participation

The Proposed Plan for the Site was released for public comment on July 29, 2022. The Proposed Plan, RI/FS Report, and other site-related documents were made available to the public in the Administrative Record file maintained at the following locations:

- EPA's Site profile page: www.epa.gov/superfund/general-dynamics-longwood

- West Branch Public Library (Reference Section)
  245 North Hunt Club Boulevard
  Longwood, Florida 32279
  407-665-1670
  Visit the library's website for hours: www.seminolecountyfl.gov/locations/West-Branch-Library.stml

- U.S. EPA Records Center, Region 4
  61 Forsyth Street, S.W.
  Atlanta, Georgia 30303
  404-562-8946
  Hours: Monday to Friday, 8:30 a.m. to 4:30 p.m.

The notice of availability of these documents was published in the Orlando Sentinel on July 25, 2022. A public comment period was held from July 29, 2022, to August 28, 2022.

Due to public health concerns related to the COVID-19 virus, the EPA did not hold an in-person public meeting about the Proposed Plan. The EPA and its Superfund site teams have cancelled or postponed in-person public meeting events, door-to-door visits, and other site-related face-to-face interactions to reflect current COVID-19 guidance from federal, tribal, state, and local officials. Protecting the health and safety of the EPA and FDEP staff, site contractors, and the communities the EPA serves is the EPA's top priority.

The EPA held a virtual public meeting on August 16, 2022, where the EPA's remedial project manager (RPM) for the Site presented the Proposed Plan and answered questions from the community. The public meeting presentation was recorded and has been posted on the Site profile page. Through these alternative means, the EPA sought to provide a full opportunity for public participation and comment without risking public health. Comments received by the EPA during the public comment period are summarized and addressed in the Responsiveness Summary (see Part 3 and Appendix B).

4.0 Scope and Role of the Response Action

The EPA is managing cleanup of the Site as one, sitewide Operable Unit (OU). Groundwater is the primary medium of concern. No further action for soil is needed following the 2015 soil excavation at the former paint and plating building (AOC-B). Principal threat waste was not identified during the RI or previous investigations at the Site.

The overall cleanup strategy for the Site is to restore groundwater to its beneficial use within a reasonable timeframe. FDEP classifies both the shallow aquifer and the Floridan aquifer at the Site as Class G-II under F.A.C. Chapter 62-520.410 for potable water use. Ingestion of untreated water from the aquifers poses a potential future unacceptable risk to human health because risk exceeds the EPA's generally acceptable risk range of 10-4 to 10-6 for carcinogens. Contaminant concentrations are greater than federal drinking water standards (namely MCLs) and more stringent FDEP GCTLs. It is anticipated that a groundwater use restriction will be placed on the Site property until cleanup levels are reached to prevent installation of wells for potable use. Potable water at the Site is provided by the City of Winter Springs .

The Selected Remedy is necessary to protect public health, welfare, or the environment from actual or threatened releases of hazardous substances into the environment.

5.0 Site Characteristics

5.1 Conceptual Site Model (CSM)

A CSM incorporates information on the potential chemical sources, affected media, release mechanisms, routes of migration, and known or potential human and ecological receptors.

The SI Report identified the location of the former vapor degreaser (AOC-A) as a possible source area for chlorinated VOCs beneath Building 3. The operations in the former paint and

plating building (AOC-B) used metals that may have been released to surface soil adjacent to the building. Subsurface sewage pipes connected sinks and restrooms near AOC-A to several septic drain fields (AOC-C and AOC-D) in the eastern part of the Site. Chlorinated VOCs at and around the Site have been reported in groundwater in the shallow groundwater aquifer and, to a limited extent, in the Floridan aquifer. Figure 5 presents the human health CSM.

5.2 Site Overview

The Site is located at 1333 North U.S. Highway 17/92 in Longwood, Seminole County, Florida, near the intersection of U.S Highway 17/92 and Shepard Road (Figure 1). The Site includes 8 acres of a 10-acre property formerly used for electronics manufacturing.

5.2.1 Geologic, Hydrogeologic, and Topographic Information

Regional Geology
Seminole County is underlain by a thick sequence of sediment and sedimentary rocks, including surficial soil, undifferentiated deposits, the Hawthorn Group, Ocala Limestone, Avon Park Formation, Oldsmar Formation, and Cedar Keys Formation. The 2022 RI/FS Report provides more information on the soil and rock types in the region.

Numerous circular depressions are observed at ground surface and at the top of the upper Floridan aquifer, some of which could be erosional features formed before the Hawthorn Group was deposited. However, most of these depressions were formed by collapsed sinkholes caused by the gradual dissolution of the underlying carbonate material.

Regional Hydrogeology
The three hydrostratigraphic units in Seminole County are the surficial or shallow aquifer, the intermediate aquifer/confining unit, and the Floridan aquifer. The shallow aquifer is an unconfined aquifer that typically ranges between 10 feet and 75 feet in thickness in Seminole County. The shallow aquifer is underlain by the intermediate aquifer/confining unit, which consists of clays, shell beds, and interbedded sandy limestone. The low-permeability clay beds within the intermediate aquifer/confining unit separate the shallow aquifer and Floridan aquifer, confining groundwater within the underlying Floridan aquifer. The intermediate aquifer/confining unit is present throughout most of Seminole County at thicknesses between 50 feet and 100 feet.

The karstic Floridan aquifer underlies the intermediate aquifer/confining unit. The Floridan aquifer is the major source of potable groundwater in Florida. The depth to the Floridan aquifer in Seminole County ranges from 50 feet to 200 feet below ground surface. Regional groundwater flow in the upper Floridan aquifer is to the north-northeast in western Seminole County.

The 2022 RI/FS Report provides more information on regional hydrogeology.

Site Geology
Based on field observations during the RI and previous investigations, the following units were observed to be present beneath the Site:

- A-Sand: The A-Sand, consisting of fine sand, silty sand, and/or clayey sand, is the area from the ground surface to a depth ranging from about 13 feet to 25 feet below ground surface.
- A/B Clay: The A/B Clay layer separates the A-Sand from the underlying B-Sand and is described as a stiff blue-green clay unit. The thickness of the A/B Clay is variable (0 feet to 8 feet) across the Site. The A/B Clay is not present in the northern and eastern portions of the Site where the A and B-Sands merge into a single unit.
- B-Sand: The B-Sand, also consisting of fine sand, silty sand, and/or clayey sand, is defined as the area from the bottom of the A/B Clay to about 30 to 35 feet below ground surface. The base of the B-Sand is often marked by the presence of a discontinuous sandy clay unit (B-Clay) which ranges in thickness from 0 feet to 5 feet.
- Hawthorn Group: The uppermost unit of the Hawthorn Group as observed on site is a fine- to medium-grained, light grayish green to white, silty sand. The bottom of the Hawthorn group consists of a limey/silty/sandy, mottled, dark brown to white clay. This unit was observed consistently at the top of the Floridan Limestone and ranged in thickness from 30 to 39 feet, with localized areas of potentially higher and lower thicknesses possible. This basal Hawthorn clay unit was observed at eight of the nine borings on site advanced to the top of the Floridan Limestone.
- Upper Floridan Limestone: The Upper Floridan Limestone or the Ocala Limestone is described as very silty/weathered limestone that is yellowish gray. This limestone unit is directly below the Hawthorn Group and is the start of the Floridan aquifer system, which is highly transmissive. The top of the limestone ranges from about 75 feet below ground surface at monitoring well FL-1C to about 130 feet below ground surface at monitoring well FL-2C.

Site Hydrogeology

Stormwater from the Site discharges to the drainage ditch located between the Site and the adjacent Sprague Site to the south. This unnamed ditch eventually discharges to Soldier Creek north of the Site. Site investigations determined that this unnamed ditch is not a groundwater discharge point.

The groundwater bearing units at the Site generally include the shallow aquifer, silty sand associated with the Hawthorn Group, and the underlying Floridan aquifer. The shallow aquifer consists of the shallow unconfined A-Sand and the underlying B-Sand. Where present, the A/B Clay behaves as a confining zone between the A-Sand and B-Sand. Where the A/B Clay is not present, these units will generally behave as a single hydrostratigraphic unit. Groundwater flow within the shallow aquifer and Floridan aquifer was generally in a northerly direction, toward the anticipated groundwater discharge point at Soldier Creek north of the Site.

The 2022 RI/FS Report provides more information on site-specific hydrogeology.

5.3 Sampling Strategy

The sampling strategy was based on a review of previous investigations. The RI included an investigation of groundwater, soil and potential for DNAPL at AOC-A, investigation of soil and groundwater at AOC-B, and a sewer line investigation to determine if there was a connection between the vapor degreaser location (AOC-A) and the septic drain fields (AOC-C and AOC-D). Sitewide groundwater sampling events were also conducted between 2015 and 2021. These

investigations are described further below. Surface water and sediment samples were not collected during the RI because previous investigations determined these media were not affected by site contamination.

- AOC-A Investigation: The focus of the RI AOC-A investigation was to collect sufficient information to determine if the former vapor degreaser area was a source of chlorinated VOC contamination at the Site and to further refine the extent of affected groundwater. The investigation included installation of 11 membrane interface probe (MIP) borings, subsequent collection of soil and groundwater samples, and testing for DNAPL using a field screening test kit at three borings.

  Direct-push interval grab groundwater samples were collected at multiple depth intervals in borings near and downgradient of AOC-A. Samples were analyzed for chlorinated VOCs and 1,4-dioxane. Vertical profiling was also performed in one boring (AOC-A-SB4) by collecting soil and groundwater samples at 2-foot intervals between 7 feet and 35 feet below ground surface. This boring was immediately downgradient of the former vapor degreaser location and the elevated chlorinated VOCs reported in historical borings DPT-100 and DPT-301 (Figure 6).

  In addition, shallow vadose zone and A-Sand soil samples were analyzed for geotechnical parameters. Shallow vadose zone samples also were analyzed for chlorinated VOCs.

  Based on the results of the grab groundwater samples, two groundwater monitoring wells were installed downgradient of AOC-A, one each in the A-Sand and B-Sand.

- AOC-B Investigation and Soil Excavation: Previous investigations at AOC-B identified one historical surface soil sample of 14 samples that contained total lead and chromium concentrations above Florida residential SCTLs but below Florida industrial SCTLs. The goal for the RI investigation at AOC-B was to further assess the presence of lead and chromium in surficial soil, determine the lateral extent of lead and chromium exceeding Florida SCTLs, and determine whether shallow (A-Sand) groundwater is impacted above Florida GCTLs for these constituents. During the RI, 10 surface soil samples were collected and analyzed for total chromium, hexavalent chromium, and lead along the northern side of the former painting and plating building (AOC-B). Groundwater samples were also collected near AOC-B to evaluate the potential impacts associated with the metals plating operation. Samples were analyzed for chlorinated VOCs and select metals. In addition, a discrete groundwater sample was collected using a direct push technology (DPT) rig.

  During the RI, concentrations of total chromium, hexavalent chromium, and lead in surface soil samples near the former paint and plating building (AOC-B) were detected above the Florida SCTLs for industrial properties. Based on these exceedances, PRPs performed a soil excavation in November 2015. An area of about 200 square feet was excavated to about 1 foot to 2 feet below ground surface. About 20 tons of soil was excavated and taken off site for disposal at a permitted disposal facility. PRPs collected two post-excavation confirmation samples and analyzed them for total lead, total

chromium and hexavalent chromium. The results of the confirmation samples were below Florida SCTLs for industrial properties. No maximum concentrations reported in Table 9 of the Human Health Risk Assessment (HHRA)[1] exceed the Florida SCTLs for either residential or industrial properties.

- Sewer Investigation and Groundwater Investigation Around the AOC-C and AOC-D Drain Fields: Sewer system as-builts were requested from the property owner and the City of Longwood; however, as-builts were not available. A video inspection of the sewer pipes was subsequently conducted. Groundwater samples were collected from wells near AOC-C and AOC-D and analyzed for chlorinated VOCs.

- Sitewide Groundwater Investigation: Two rounds (April and September 2015) of Site-wide groundwater monitoring and sampling of existing groundwater monitoring wells were conducted during the RI. Twenty-three groundwater monitoring wells located across the Site and the adjacent Sprague Site were sampled to determine overall groundwater quality upgradient, beneath, and downgradient of the Site. A subset of wells was sampled during five additional monitoring events between November 2017 and July 2021. Samples were analyzed for field parameters, chlorinated VOCs, and 1,4-dioxane. Some sampling events included evaluation of MNA parameters.

5.4 Known or Suspected Sources of Contamination

Based on the results of the RI, AOC-A (former vapor degreaser area) is a historical source, but not a current source, of chlorinated VOCs beneath the Site, along with contaminants that are migrating beneath the Site from the adjacent Sprague Site. The RI did not identify AOC-B, AOC-C, and AOC-D as sources for chlorinated VOCs in groundwater beneath the Site. A limited area of surficial soil containing concentrations of lead and chromium above Florida SCTLs was identified at AOC-B. The soil containing the elevated concentrations of lead and chromium was excavated and taken to a facility permitted to accept the soil for disposal. Accordingly, with the completion of the soil excavation at AOC-B, no soil contamination requiring remediation remains at the Site.

5.5 Nature and Extent of Contamination

The 2022 RI/FS Report describes the nature and extent of contamination at the Site, based on data collected during the RI and previous investigations. Groundwater is the medium of primary concern at the Site. The RI identified chlorinated VOCs and 1,4-dioxane in groundwater above Florida GCTLs and/or federal MCLs. Further information on the nature and extent of contamination by AOC is below:

- AOC-A: Based on data collected during the RI, several chlorinated VOCs were detected in the shallow aquifer. 1,1-Dichloroethene, vinyl chloride, and trichloroethylene were

1 "Table 9. Occurrence, Distribution and Selection of Chemicals of Potential Concern in Soil (Surface Soil, 0-2 feet bgs)"

detected above their respective federal MCLs and Florida GCTLs at several sample locations.1,4-Dioxane was detected above its Florida GCTL at several sample locations.

Dissolved-phase groundwater contamination from the Site is limited to a relatively small area in the upper surficial aquifer (A-Sand) and the lower surficial aquifer (underlying B-Sand). Figure 7 shows the 2021 concentrations of primary VOCs and 1,4-dioxane in the upper surficial aquifer at the Site. Figure 8 shows the 2021 concentrations of primary VOCs and 1,4-dioxane in the lower surficial aquifer at the Site.

The shallow aquifer and the contamination it contains are underlain by 30 feet of relatively impermeable material. This impermeable material separates site groundwater contamination from the deeper groundwater that is used for drinking water in the area (the Floridan aquifer). No groundwater samples collected from the Floridan aquifer wells on and around the Site during the RI have shown concentrations of any COCs above federal drinking water standards. The only detection above the Florida GCTL was for vinyl chloride at a maximum concentration of 1.6 micrograms per liter (µg/L). This vinyl chloride concentration is below the federal MCL of 2 µg/L.

Principal threat waste (i.e., DNAPL) was not identified during the RI. There is no evidence of source material at the former vapor degreaser (AOC-A). Chlorinated VOCs were not detected in subsurface soil.

- AOC-B: A small area of surficial soil containing concentrations of total lead and total chromium above SCTLs was identified at AOC-B. The elevated concentrations were removed via soil excavation in 2015. The excavated soil was disposed of at a facility permitted to accept the soil. Accordingly, with the completion of the soil excavation at AOC-B, there is no remaining source material at AOC-B.

- AOC-C and AOC-D: Based on the sewer investigation, there is no evidence of any source material at the two septic drain fields (AOC-C and AOC-D). The video survey of the sewer lines found that the drain line from the AOC-B building is polyvinyl chloride (PVC). The drain line outside of Building 3 is PVC but is cast iron under the building. The pipe was determined to be in good condition, and no breaches of the pipe were observed. Groundwater sampling at AOC-C yielded minimal detections with only 1,4-dioxane and vinyl chloride detected at concentrations slightly above Florida GCTLs. These detections do not indicate the presence of source material in soil or groundwater in the areas surrounding the sewer lines.

In addition, there is an active groundwater cleanup that has been ongoing under EPA supervision for OU-1 at the adjacent Sprague Site. Some of the groundwater contamination from sources within the Sprague Site OU-1 source area appears to have contributed to the extended dissolved-phase groundwater contamination plume that is comingled with groundwater contamination from the Site.

5.5.1 Quantity/Volume of Waste that Needs to Be Addressed

The RI determined that there is no evidence of any source material remaining at the former vapor degreaser (AOC-A), the former paint and plating building (AOC-B), or the two former septic drain fields (AOC-C and AOC-D).

Figure 7 and Figure 8 show the 2021 extent of dissolved-phase contamination in the upper surficial aquifer (A-Sand) and the lower surficial aquifer (B-Sand), respectively.

5.5.2 Concentrations of COCs in each Medium

Groundwater is the medium of concern at the Site. Table 1 presents the historical concentrations detected at the Site.

5.5.3 Resource Conservation and Recovery Act (RCRA) Hazardous Wastes and Affected Media

Spent solvents containing VOCs are considered RCRA F-listed hazardous waste (e.g., F001, F002) under 40 CFR 261.31. Groundwater is contaminated from the past disposal and releases of spent solvents and is considered to contain F001 and F002 consistent with the EPA's "Contained-In Policy."

6.0 Current and Potential Future Land and Resource Uses

Current land use near the Site is mixed. Spring Hammock Preserve borders the Site to the north. Highway 17/92 is located west of the Site. Forested land is located west of the highway. Commercial and industrial properties are located south of the Site. A day care center and an elementary school are located less than 1,000 feet east of the Site. A residential area is located within 1,000 feet south and southeast of the Site. Land use near the Site is not expected to change.

The current and reasonably anticipated future land uses for the Site are commercial, industrial, and recreational uses. The EPA also considered potential residential exposure scenarios, which can be used to conservatively estimate risks to non-residential child receptors, such as children in a school or day care setting. The Site was purchased on August 15, 2022, by a local businessman who plans to use it in support of his auto auction company, primarily to park cars. Historically, it was used for industrial purposes. The Site has several buildings, driveways, and parking lots. The land is zoned M-1 under the Seminole County, Florida Land Development Code, which allows a range of commercial and light industrial uses.

FDEP classifies both the shallow aquifer and the Floridan aquifer at the Site as Class G-II under F.A.C. Chapter 62-520.410 for potable water use. There were previously four water wells on site that were screened in the Floridan aquifer. These wells were abandoned in 2020. The Site is connected to the City of Winter Springs' public water supply.

7.0 Summary of Site Risks

Risk assessments were conducted to determine the current and future effects of contaminants on human health and the environment. Risk assessment estimates were presented in the following documents:

- Memorandum from Brett Thomas, Ph.D., Life Scientist Scientific Support Section, Superfund & Emergency Management Division, Superfund Resource and Scientific Integrity Branch to Rusty Kestle, Remedial Project Manager, Superfund & Emergency Management Division. Subject: *Evaluation of the Potential for Ecological Risk for the General Dynamics Site in Longwood, Florida*, dated July 23, 2019. (2019 EPA Memorandum)
- Memorandum from Sydney Chan, Life Scientist, Scientific Support Section, to Rusty Kestle, RPM, Restoration and Sustainability Section. Subject: *General Dynamics Longwood Superfund Site*, dated January 4, 2022. (2022 EPA Memorandum)
- Baseline Human Health Risk Assessment: General Dynamics Longwood Superfund Site, dated January 10, 2022, and included as Appendix L in the 2022 RI/FS Report.

The results of the risk assessments provide the basis for taking action and identifying contaminants and exposure pathways that need to be addressed by the remedial action. This section summarizes the results of the human health and ecological risk assessments.

7.1 Human Health Risk Assessment (HHRA)

A four-step process is used for assessing site-related human health risks for a reasonable maximum exposure scenario:

- Hazard Identification uses the analytical data collected to identify the chemicals of potential concern (COPC) at the Site for each medium, with consideration of several factors explained below.
- Exposure Assessment estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways by which humans are potentially exposed.
- Toxicity Assessment determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response).
- Risk Characterization summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. The risk characterization also identifies contamination with concentrations which exceed acceptable levels, defined by the NCP as an excess lifetime cancer risk greater than 1×10^{-6} to 1×10^{-4}, or a hazard index (HI) greater than 1.0; contaminants at these concentrations are considered COCs and are typically those that will require remediation at the Site. A discussion of the uncertainties associated with these risks is also included in this section.

7.1.1 Hazard Identification

Each chemical positively identified in groundwater, surface soil or subsurface soil was evaluated for inclusion as a COPC in the HHRA. The HHRA considered groundwater data collected in 2015 and 2017 through 2021 and soil data collected in 2008 and 2015. Chemicals were screened against EPA regional screening levels (RSLs) for inclusion as COPCs. The RSLs used for screening groundwater and soil included tapwater RSLs for groundwater and industrial soil RSLs for surface and subsurface soil.

The screening process identified 15 COPCs in groundwater and one COPC in soil. The risk assessment evaluated the potential for excess lifetime cancer risks and noncancer hazards to current and future receptors with assumed exposure to the COPCs, as described further below.

Since the Site is small, and concentrations vary temporally and geospatially, the maximum detected concentration was selected as the exposure point concentration for groundwater COPCs. The 95% upper confidence limit (UCL) was selected as the exposure point concentration for the soil COPC.

7.1.2 Exposure Assessment

The HHRA evaluated non-residential current and reasonably foreseeable exposure scenarios. Groundwater is not used at the Site for water supply. However, potable use of groundwater was included in the evaluation as a hypothetical exposure scenario because FDEP classifies both the shallow aquifer and the Floridan aquifer at the Site as Class G-II under FAC Chapter 62-520.410 for potable water use. Although there are no residences currently on site, residential exposure to groundwater and vapor intrusion were also evaluated, and soil concentrations were compared to residential screening levels to determine whether future residential use of the Site should be restricted.

The HHRA evaluated the following current and future receptors and routes of exposure:

- **Current/future adolescent trespasser** – ingestion of and dermal contact with surface soil; inhalation of particulate matter from surface soil.
- **Future indoor site worker** – inhalation of indoor air due to soil vapor intrusion from shallow aquifer groundwater; hypothetical ingestion of shallow or Florida aquifer groundwater as a potable supply.
- **Future outdoor site worker** – ingestion of and dermal contact with surface soil; inhalation of particulate matter from surface soil.
- **Construction worker** – ingestion of and dermal contact with subsurface soil; inhalation of particulates from subsurface soil; inhalation of VOCs from shallow aquifer groundwater while working in a trench; dermal contact with shallow aquifer groundwater while working in a trench.
- **Future hypothetical resident** – Ingestion and dermal contact with shallow and Floridan aquifer groundwater; inhalation of VOCs transferred from water to indoor air and from soil vapor to indoor air.

Exposure parameters for the receptors were obtained from the November 2021 EPA RSL table, Risk Assessment Information System (Oak Ridge National Laboratories 2015), and professional judgment.

7.1.3 Toxicity Assessment

The toxicity assessment summarizes the health effects that may be associated with exposure to the COPCs selected for the risk assessment and identifies doses that may be associated with those effects. It involves evaluating the potential for a constituent to cause an increase in the incidence of adverse effects in exposed individuals and quantitatively characterizing the chemical dose and the incidence of adverse health effects in the exposed receptor. The potential

toxicological effects induced by a given dose of a chemical are classified as either non-cancer effects or cancer effects. Toxicity values typically employed to calculate baseline non-carcinogenic hazards include reference doses (RfDs) for oral and dermal exposures and reference concentrations (RfCs) for inhalation exposures; oral and dermal cancer slope factors (SFs) and inhalation unit risks (IURs) are typically used to estimate carcinogenic risks. Constituent-specific toxicity values were used to calculate potential effects for these two types of effects.

Toxicity factors for the COPCs were obtained from the November 2021 EPA RSL table. Dermal toxicity factors were calculated from oral toxicity factors and gastrointestinal absorption factors.

Groundwater data were not speciated for chromium. However, because hexavalent chromium was detected in some soil samples, the toxicity data for hexavalent chromium were used to evaluate chromium in groundwater to avoid risk underestimation.

7.1.4 Risk Characterization

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer SF for oral and dermal exposures and the IUR factor for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where:
Risk = a unitless probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (milligrams per kilogram [mg/kg]-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people that are exposed under the conditions identified in the assessment. Again, as stated in the NCP, the acceptable risk range for site-related exposure is 1×10^{-4} to 1×10^{-6}, which corresponds to a 1 in 10,000 to a 1 in 1 million excess cancer risk.

Noncancer hazards were assessed using a HI approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). RfDs and RfCs are estimates of daily exposure levels for humans (including sensitive individuals), which are thought to be safe over a lifetime of exposure. The estimated intake of chemicals identified in environmental media (e.g., the amount of a chemical ingested from contaminated soil) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the HQs for all compounds in a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = ADD/RfD

Where:
HQ = hazard quotient
ADD = average daily dose for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (i.e., chronic, subchronic, or acute).

An HI greater than 1 indicates that the potential exists for noncancer health effects to occur as a result of site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1, separate HI values are then calculated for those chemicals that are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1 to evaluate the potential for noncancer health effects on a specific target organ. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

Table 2 summarizes the results of the HHRA.

Estimated cancer risk exceeds the EPA's acceptable risk range (1×10^{-6} to 1×10^{-4}) for an indoor site worker (9×10^{-4}) and hypothetical resident (2×10^{-2}) using shallow aquifer groundwater and exposed via soil vapor intrusion. The noncancer HI for an indoor site worker is 3; the noncancer HI for a hypothetical resident is 30. The noncancer HI for both scenarios exceeds 1. Estimated cancer risk to a hypothetical resident using Floridan aquifer groundwater and exposure via soil vapor intrusion was also at the upper limit of 1×10^{-4}. 1,1-Dichloroethylene, vinyl chloride, and trichloroethylene were detected above their respective federal MCLs in several shallow aquifer wells. Further, 1,4-dioxane was detected above the Florida GCTL in several shallow aquifer wells.

The risk assessment did not quantitatively estimate risk to future residents from soil exposure. The risk assessment compared UCLs for detected constituents in vadose zone soil to residential screening levels. Arsenic and hexavalent chromium UCLs exceeded respective residential screening levels. While residential screening levels are exceeded, the maximum concentrations reported in Table 9 of the HHRA[2] do not exceed the Florida SCTLs for either residential or industrial properties. As a result, the EPA concludes that there is a low likelihood of unacceptable risk to any future residents due to residual soil contamination, but that future landowners should consider additional sampling if residential land use is contemplated in the future.

In the EPA's 2022 Memorandum, the EPA further evaluated potential risks associated with potable use of groundwater, using groundwater data from 2020 and 2021. Five contaminants were each detected above their respective screening levels in the most recent sampling events in 2020 and 2021: iron (4530 µg/L); 1,1-dichloroethylene (18.5 µg/L); 1,4-dioxane (9.1 µg/L);

2 "Table 9. Occurrence, Distribution and Selection of Chemicals of Potential Concern in Soil (Surface Soil, 0-2 feet bgs)"

vinyl chloride (41.1 µg/L); and trichloroethylene (12.9 µg/L). The EPA calculated an excess cancer risk of 2 x 10^{-3}, which is above EPA's acceptable cancer risk range, and a noncarcinogenic HI of 6, which is above EPA's acceptable HI of 1. Trichloroethylene and vinyl chloride are the primary drivers of noncancer and carcinogenic risks. The recent concentrations of three contaminants of concern exceed their respective federal MCLs: 1,1-dichloroethylene (18.5 µg/L) exceeds the MCL of 7 µg/L; trichloroethylene (12.9 µg/L) exceeds the MCL of 5 µg/L; and vinyl chloride (41.1 µg/L) exceeds the MCL of 2 µg/L and more stringent FDEP GCTLs.

7.2 Ecological Risk Assessment

In the EPA's 2019 Memorandum, based on review of information in the RI/FS Report, the EPA determined that unacceptable ecological risk is unlikely on Site or in areas potentially affected by the Site, including the drainage ditch and Soldier Creek. Though residual/post-removal lead and chromium were detected in surface soil at the former paint and plating building (AOC-B), the area affected is small, is highly disturbed, and contains no native substrate. The area affected is fully contained on Site, in an area with reportedly no ecological attractiveness. The Site is zoned for commercial and industrial uses. It is not anticipated that the residual metals in soil would pose an appreciable ecological risk. The EPA also determined that there is not a concern regarding adverse effects to aquatic receptors due to the potential exposure to groundwater if it were to discharge to the surface. More information is in available in the EPA Memorandum, *Evaluation of Potential for Ecological Risk for the General Dynamics Site* in Longwood, Florida, dated July 23, 2019.

7.3 Basis for Action

Based on the results of the 2022 human health risk assessments and the 2019 evaluation of potential for ecological risk, the response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Groundwater at the Site is a potential source of drinking water. Several contaminants in groundwater historically and currently exceed federal MCLs (listed in Table 1). OSWER Directive 9355.0-30, "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions" (April 22, 1991), states that exceedance of MCLs may be used to determine that remedial action under Section 104 or 106 is warranted.[3] Further, groundwater is contaminated with VOCs and 1,4-dioxane above levels that present an unacceptable risk to a future site worker or hypothetical resident using groundwater as a source of drinking water with additional risks due to exposure via the soil vapor intrusion pathway.[4]

8.0 Remedial Action Objectives (RAOs)

Before developing cleanup alternatives for a Superfund site, the EPA establishes RAOs to protect human health and the environment. RAOs are specific goals to protect human health and

3 https://www.epa.gov/sites/default/files/2015-11/documents/baseline.pdf
4 As summarized in Table 16 and Table 17 of the HHRA, the vapor intrusion exposure pathway does not pose an unacceptable risk on its own, but it does contribute to the unacceptable risk posed by exposure to groundwater use.

the environment. These objectives address contaminated media, exposure pathways and are based on available information and standards, such as ARARs, to-be-considered (TBC) guidance, and site-specific, risk-based levels.

The EPA has identified the following site RAOs:

- Prohibit direct contact, the use of, and the ingestion of groundwater with COC concentrations above levels that present an unacceptable risk to human health.
- Restore groundwater throughout the plume to meet federal primary drinking water standards or more stringent FDEP GCTLs based on the classification of the aquifer as a potential source of drinking water (Class G-II).
- Prevent exposure of future workers and residents to COCs that could result in an unacceptable risk to human health from the use of groundwater and from vapor intrusion, which contributes to the cumulative unacceptable risk posed by potential exposure to groundwater.

The Selected Remedy will clean up the entire impacted shallow aquifer to attain the more stringent of EPA or FDEP primary drinking water standards – MCLs or FDEP GCTLs at FAC Chapter 62-777, Table I. These concentrations are considered "relevant and appropriate" chemical-specific requirements consistent with CERCLA Section 121(d)(2) and are the basis for groundwater cleanup levels. The table below and presented as Table 3 identifies site COCs and the cleanup levels to meet the RAOs. When the groundwater cleanup levels are attained, all RAOs will be achieved.

COC	Regulatory Basis for Cleanup Level	Groundwater Cleanup Level (ppb)[a]
Trichloroethylene	State of Florida GCTLs FAC Chapter 66-777	3
1,1,1-Trichloroethane	State of Florida GCTLs FAC Chapter 66-777	200
cis-1,2-Dichloroethene	State of Florida GCTLs FAC Chapter 66-777	70
trans-1,2-Dichloroethene	State of Florida GCTLs FAC Chapter 66-777	100
1,1-Dichloroethene	State of Florida GCTLs FAC Chapter 66-777	7
Vinyl chloride	State of Florida GCTLs FAC Chapter 66-777	1
1,1-Dichloroethane	State of Florida GCTLs FAC Chapter 66-777	70
Tetrachloroethylene	State of Florida GCTLs FAC Chapter 66-777	3
Chloroethane	State of Florida GCTLs FAC Chapter 66-777	12
Chloroform	State of Florida GCTLs FAC Chapter 66-777	70

COC	Regulatory Basis for Cleanup Level	Groundwater Cleanup Level (ppb)[a]
1,4-Dioxane	State of Florida GCTLs FAC Chapter 66-777	3.2

a. Once the groundwater cleanup level is attained, the cleanup will also be protective for vapor intrusion.

9.0 Description of Alternatives

The 2022 RI/FS Report evaluated five remedial action alternatives:

- Alternative 1 (no action): No action provides an assessment of the "as is" condition as a baseline for evaluating active remedial alternatives.
- Alternative 2 (institutional controls): This alternative includes administrative-based components to prohibit use of groundwater for drinking water supply, irrigation, or other purpose, and to prohibit installation of wells.
- Alternative 3 (MNA with institutional controls): This alternative includes monitoring the natural processes that are already actively reducing COC concentrations in groundwater at the Site and institutional controls to prohibit use of groundwater and installation of wells.
- Alternative 4 (hydraulic containment by extraction wells, ex-situ treatment, and institutional controls): This alternative includes the design, installation, operation, maintenance, and monitoring of an engineered system to extract and treat contaminated groundwater. It also includes institutional controls to prohibit use of groundwater and installation of wells.
- Alternative 5 (in-situ treatment with reagent injection and institutional controls): This alternative involves the injection of reagents into the aquifer to enhance the rate of reactions in groundwater at the Site that are designed to destroy the groundwater contamination. It also includes institutional controls to prohibit use of groundwater and installation of wells.

Terminology used to describe and differentiate the alternatives are described further below:

- Capital costs are those expenditures that are required to construct a remedial alternative.
- O&M costs are those post-construction costs necessary to ensure or verify the continued effectiveness of a remedial alternative. They are estimated on an annual basis.
- Present value represents the amount of money which, if invested in the current year, would be sufficient to cover all the costs over time associated with a project, calculated using a discount rate of 7% and a 30-year time interval.
- Construction timeframe is the time required to construct and implement the alternative. It does not include the time required to design the remedy, negotiate performance of the remedy with the PRPs, or procure contracts for design and construction.

9.1 Alternative 1: No Action

Capital Cost: $11,000
Annual O&M Cost: $0
Total Present Worth: $11,000
Estimated Construction Timeframe: none
Estimated Time to Achieve RAOs: >100 years
ARARs Met: none

The NCP regulations governing the Superfund program require consideration of a "no-action" alternative as a baseline to compare other alternatives. The no-action alternative can include an optional sampling and analysis task to characterize site conditions for a site's five-year review. However, the "no action" alternative means that no remedial action would be undertaken, and

that no institutional controls, containment, removal, or other mitigating actions would be implemented to control exposure to COCs.

9.2 Alternative 2: Institutional Controls

Capital Cost: $11,000
Annual O&M Cost: $0
Total Present Worth: $11,000
Estimated Construction Timeframe: <1 year
Estimated Time to Achieve RAOs: >100 years
ARARS Met: none

Institutional controls are an administrative-based remedy designed to minimize the potential for human exposure to contaminants. Institutional controls may be implemented using a legal document that places legal restrictions on the use of the property. Institutional controls are designed to prevent harm to workers, residents, and other users. The institutional controls for the Site would prohibit use of groundwater for a drinking water supply, irrigation, or other purpose. Installation of wells would be prohibited.

This alternative does not include groundwater monitoring but assumes that natural attenuation processes reducing COC concentrations in groundwater will continue.

The following remedy components were not included in the RI/FS or cost estimate:

- Drafting, recording, and monitoring restrictive covenants.
- Five-Year Reviews.

9.3 Alternative 3: MNA with Institutional Controls

Capital Cost: $11,000
Annual O&M Cost: $28,000
Total Present Worth: $345,086
Estimated Construction Timeframe: <1 year
Estimated Time to Achieve RAOs: >100 years
ARARs Met: The EPA determined that MNA would not attain cleanup levels or meet ARARs in a reasonable timeframe (2021 EPA Memorandum).

As summarized in the 2021 EPA Memorandum, the EPA's scientific review concluded that MNA is not an acceptable remedial alternative for the Site because there is not a clear and meaningful trend of decreasing concentrations across the entire site. The EPA also determined that restoration to attain cleanup levels using MNA is not practicable in a reasonable timeframe.

Alternative 3 includes monitoring the natural processes that are already actively reducing COC concentrations in groundwater at the Site. These natural processes may include biodegradation, chemical degradation, sorption, dispersion, and other processes. In addition, institutional controls to prohibit use of groundwater for a drinking water supply, irrigation, or other purpose, would be included in this alternative to prevent human exposure to affected groundwater until RAOs are attained.

For the purposes of cost estimation, the FS assumed that MNA would include sampling groundwater to verify COC attenuation over 10 years. The monitoring well network, frequency of sampling, and laboratory analytes may be refined and finalized during the remedial design and subject to EPA approval. In addition, the remedial design would include development of pre-defined decision criteria for modifying the monitoring program over time as COC concentrations decrease, and contingency measures that could be implemented if COC concentrations do not decrease as anticipated or do not stabilize.

The following remedy components were not included in the RI/FS or cost estimate:

- Drafting, recording, and monitoring restrictive covenants.
- Five-Year Reviews.

9.4 Alternative 4: Hydraulic Containment by Extraction Wells, Ex-Situ Treatment, and Institutional Controls

Capital Cost: $136,000
Annual O&M Cost: $35,000
Total Present Worth: $678,267
Estimated Construction Timeframe: <1 year
Estimated Time to Achieve RAOs: >10 years
ARARs Met: this alternative meets chemical-specific, action-specific, and location-specific ARARs

Alternative 4 would include the design, installation, operation, maintenance, and monitoring of an engineered system to extract and treat contaminated groundwater. The number of extraction wells and monitoring wells and the locations of these wells would be finalized prior to implementation based on a pre-design engineering evaluation that would include an aquifer pump test and other hydraulic evaluations. The engineering evaluation results and the hydraulic test data would be used to size the extraction well(s), determine appropriate pumping rates, evaluate contaminant loads, size the groundwater treatment system equipment, and reaffirm preliminary capture-zone estimates.

Alternative 4 would include construction of an on-site groundwater treatment system building next to Building 3. The treatment process may include an advanced oxidation process or catalytic reduction process to treat VOCs and 1,4-dioxane. The alternative assumes treated groundwater can be discharged to the drainage ditch, but other options to manage effluent would be considered during remedial design. Monthly discharge monitoring reports would be submitted to the appropriate agencies to demonstrate compliance with effluent limitations based on the EPA's Clean Water Act and FDEP Division of Water Resource Management regulations identified as ARARs. Groundwater quality monitoring would be performed using existing monitoring wells and possibly an additional well to gauge aquifer response to pumping and COC attenuation over time and to confirm containment of COCs.

This alternative would also include institutional controls to prevent installation of groundwater supply wells and to restrict groundwater use.

The following remedy components were not included in the RI/FS or cost estimate:

- Drafting, recording, and monitoring restrictive covenants.
- Five-Year Reviews.

9.5 Alternative 5: In-Situ Treatment with Reagent Injection and Institutional Controls

Capital Cost: $95,000
Annual O&M Cost: $91,000
Total Present Worth: $560,784
Estimated Construction Timeframe: <1 year
Estimated Time to Achieve RAOs: <5 years
ARARs Met: this alternative meets chemical-specific, action-specific, and location-specific ARARs

Alternative 5 involves the injection of reagents into the aquifer through underground injection wells to enhance the rate of reactions in groundwater at the Site that are designed to destroy the groundwater contamination. In addition, institutional controls to prevent drilling of groundwater supply wells and to restrict groundwater use would be implemented to preclude human exposure to contaminated groundwater until RAOs are attained. The implementation of institutional controls would begin prior to finalizing the remedial design.

In-situ groundwater treatment includes bioremediation and in-situ chemical oxidation. Bioremediation would stimulate the native or augmented microorganisms in the groundwater to treat the COCs. Reagents to stimulate the degradation may include primary substrates, cometabolites, nutrients, or other microorganisms. In-situ chemical oxidation may also be considered. The specifications of in-situ treatment would be further refined in the remedial design. The injection program would likely consist of a grid of injection points inside and/or around Building 3. Groundwater monitoring would be conducted during and after the injection program to assess groundwater quality and whether additional injections (as part of continuing optimization of the treatment remedy) are needed in order to attain RAOs.

The following remedy components were not included in the RI/FS or cost estimate:

- Drafting, recording, and monitoring restrictive covenants.
- Five-Year Reviews.

10.0 Comparative Analysis of Alternatives

In selecting a remedy, the EPA considered the factors set out in Section 121 of CERCLA, 42 U.S.C. § 9621, by conducting a detailed analysis of the viable remedial response measures pursuant to the NCP, 40 CFR § 300.430(e)(9), and Office of Solid Waste and Emergency Response Directive 9355.3-01. The detailed analysis consisted of an assessment of each of the individual response measures per remedy component against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each response measure against the criteria. This section of the ROD describes the relative performance of each alternative against seven of the nine criteria, noting how each compare to the other options under consideration. The 2022 RI/FS Report includes a detailed analysis of the alternatives and information about the evaluation process.

During the review of the draft RI/FS Report, the EPA evaluated the appropriateness of MNA as a remedial alternative for the Site. The EPA concluded that MNA is not an acceptable remedial alternative for the Site because there is not a clear and meaningful trend of decreasing concentrations across the entire Site. The EPA also determined that restoration to attain cleanup

levels using MNA is not practicable in a reasonable timeframe. The evaluation is presented in "Memorandum from William N. O'Steen, Physical Scientist, Scientific Support Section, Superfund & Emergency Management Division, to Rusty Kestle, Remedial Project Manager, Superfund Restoration & Sustainability Section, Superfund & Emergency Management Division. Subject: General Dynamics Longwood, Seminole County, Florida" (EPA Region 4. 2021).

THRESHOLD CRITERIA – The first two criteria are known as "threshold criteria" because they are the minimum requirements that each response measure must meet in order to be eligible for selection as a remedy.

Alternative 1 (no action), Alternative 2 (institutional controls), and Alternative 3 (MNA with institutional controls) are not viable alternatives for remedy selection because they do not meet the threshold criteria.

- Alternative 1 is a "no action" alternative, developed as a baseline for comparative analysis purposes. Alternative 1 would not eliminate the hazard posed to receptors by on-Site contamination. Alternative 1 would not require any well abandonment, groundwater monitoring, Site fencing, or institutional controls. Groundwater contamination would remain.
- Alternative 2 (institutional controls) was rejected because it cannot meet site RAOs and would not restore groundwater to meet cleanup levels.
- Alternative 3 (MNA with institutional controls) was rejected. The EPA concluded that MNA is not an acceptable remedial alternative for the Site because there is not a clear and meaningful trend of decreasing concentrations across the entire site. The EPA determined that restoration to attain cleanup levels using MNA was unlikely to occur in a reasonable timeframe and is not practicable.

Because Alternatives 1, 2, and 3, do not meet the threshold criteria, the remainder of the comparative analysis includes only Alternative 4 (hydraulic containment by extraction wells, ex-situ treatment, and institutional controls) and Alternative 5 (in-situ treatment with reagent injection and institutional controls).

10.1 Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through exposure pathway are eliminated, reduced or controlled, through treatment, engineering controls, and/or institutional controls.

Alternative 4 and Alternative 5 would both protect human health and the environment by removing all groundwater contamination, although over markedly different timeframes. Both alternatives would also limit exposure to contaminated groundwater by placing restrictions on groundwater use at the Site until groundwater cleanup goals are attained. Alternative 4 is expected to achieve RAOs in more than 10 years and Alternative 5 is expected to achieve RAOs in less than 5 years. Alternative 5 offers better overall protection of human health and the environment.

10.2 Compliance with ARARs

Section 121(d) of CERCLA and NCP § 300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites attain legally applicable or relevant and appropriate federal and more stringent state requirements, standards, criteria, and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d)(4). ARARs do not include occupational safety or worker protection requirements. Compliance with Occupational Safety and Health Administration (OSHA) standards is separately required by 40 CFR § 300.150.

Under CERCLA Section 121(e)(1), federal, state, or local permits are not required for the portion of any removal or remedial action conducted entirely "on-site" as defined in 40 CFR § 300.5. See also 40 CFR § 300.400(e)(1) & (2). Also, CERCLA response actions must only comply with the "substantive requirements," not the administrative requirements of a regulation or law. Administrative requirements include permit applications, reporting, record keeping, inspections, and consultation with administrative bodies. Although consultation with state and federal agencies responsible for issuing permits is not required, it is often recommended for determining compliance with certain requirements such as those typically identified as location-specific ARARs.

Applicable requirements, as defined in 40 CFR § 300.5, means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a CERCLA site. Only those state standards that are identified by the state in a timely manner and that are more stringent than federal requirements may be applicable.

Relevant and appropriate requirements, as defined in 40 CFR § 300.5, means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at a CERCLA site that their use is well suited to the particular site. Only those state standards that are identified by the state in a timely manner and that are more stringent than federal requirements may be relevant and appropriate.

Per 40 CFR § 300.400(g)(5), only those state standards are promulgated, are identified in a timely manner, and that are more stringent than federal requirements may be applicable or relevant and appropriate. For purposes of identification and notification of promulgated state standards, the term promulgated means that the standards are of general applicability and are legally enforceable. State ARARs are considered more stringent where there is no corresponding federal ARAR, where the state ARAR provides a more stringent concentration of a contaminant, or where a state ARAR is broader in scope than a federal requirement.

In addition to ARARs, the lead and support agencies may, as appropriate, identify other advisories, criteria, or guidance to be considered for a particular release. The TBC category consists of advisories, criteria, or guidance that were developed by the EPA, other federal

agencies, or states that may be useful in developing CERCLA remedies. See 40 CFR § 300.400(g)(3).

For purposes of ease of identification, the EPA has created three categories of ARARs: chemical-, location-, and action-specific. Under 40 CFR § 300.400(g)(5), the lead and support agencies shall identify their specific ARARs for a particular site and notify each other in a timely manner as described in 40 CFR § 300.515(d). Chemical- and location-specific ARARs should be identified as early as scoping phase of the RI, while action-specific ARARs are identified as part of the FS for each remedial alternative. See 40 CFR § 300.430(b)(9) and § 300.430(d)(3).

- **Chemical-specific** – Requirements that establish health- or risk-based numerical concentration limits or assessment methodologies for chemical contaminants in environmental media.
- **Location-specific** – Requirements that can restrict, or limit response action based on specific locations (e.g., wetlands, floodplains, historic places, sensitive habitats).
- **Action-specific** – Requirements that set controls or restrictions on the design, implementation, and performance levels of activities related to the management of hazardous substances, pollutants, or contaminants.

Table 5 presents chemical-specific and action-specific ARARs. Chemical-specific ARARs include the FDEP GCTLs in F.A.C. 62-777, Table I. No location-specific ARARs have been identified for the remedial action.

Both Alternatives 4 and 5 would comply with chemical-specific and action-specific ARARs. The two alternatives are similar in their success at achieving chemical-specific ARARs at the Site over the long term. Alternative 4 would also comply with chemical-specific and action-specific ARARs in the short term associated with operation of an active remedial system and discharge of treated effluent to the drainage ditch. Alternative 5 would comply with chemical-specific and action-specific ARARs in the short term associated with underground injection control. On balance, Alternative 5 performs better in this criterion because it will more quickly achieve RAOs and cleanup levels and thus more quickly comply with ARARs.

BALANCING CRITERIA – The next five criteria, criteria three through seven, are known as "primary balancing criteria." These criteria are factors by which tradeoffs between response measures are assessed so that the best options will be chosen, given site-specific data and conditions.

10.3 Long-Term Effectiveness and Permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. This criterion includes the consideration of residual risk that will remain on site after remediation and the adequacy and reliability of controls.

Alternative 4 and Alternative 5 would provide long-term protectiveness and permanence through eliminating the groundwater contamination at the Site. Alternative 4 would achieve long-term effectiveness and permanence by pumping contaminated groundwater to the surface and treating it. Alternative 5 would achieve long-term effectiveness and permanence at the Site by treating

contaminated groundwater in situ. Both alternatives would reduce COC concentrations to below groundwater cleanup levels. Alternative 5 will achieve RAOs more quickly than Alternative 4 and is superior in terms of long-term effectiveness and permanence.

10.4 Reduction of Toxicity, Mobility, and Volume

Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy. This criterion addresses the preference under CERCLA for remedial alternatives that permanently and significantly reduce the mobility, toxicity, or volume of hazardous substances through treatment. This preference is satisfied when treatment is used to reduce the principal threats at a site through destruction of toxic contaminants, reduction of the total mass of toxic contaminants, irreversible reduction in contaminant mobility, or reduction of total volume of contaminated media.

There are no principal threat wastes at the Site. However, Alternative 4 would reduce the mobility and volume of contaminants by pumping contaminated groundwater to the surface. The toxicity of the COCs in groundwater would be eliminated upon treatment, by reducing the COC concentrations to applicable criteria. Alternative 5 would include injecting reagents directly into the groundwater to enhance the natural breakdown of contaminants, and uses treatment to reduce the toxicity, mobility, and volume of contaminants. Both Alternative 4 and Alternative 5, if successfully implemented, would provide similar reduction in mobility, toxicity, and volume of contaminants, although Alternative 5 achieves treatment more quickly and is superior in this criterion.

10.5 Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community, and the environment during construction and operation of the remedy until cleanup levels are achieved.

Alternatives 4 and 5 involve a temporary increase in risk to Site workers, the community, and the environment during initial construction activities at the Site (i.e., installation of a groundwater extraction and treatment system [Alternative 4] or reagent injections into the ground [Alternative 5]). Initial construction work is expected to be completed within one year for both alternatives. The risks would be managed by establishing appropriate engineering controls, security measures, and defined working areas, including an exclusion zone. Both alternatives are comparable in terms of short-term effectiveness, although, because Alternative 5 will require a shorter overall implementation period and it involves far less transportation and disposal of wastes, it poses fewer short-term adverse impacts than Alternative 4.

10.6 Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Alternatives 4 and 5 are readily implementable. Both technologies are proven and widely used to clean up contaminated groundwater. Specialized equipment may be needed for the groundwater treatment system in Alternative 4, but the required equipment is expected to be readily available.

Operators would need to be trained to operate and maintain the system over time, but this is considered standard practice for pump-and-treat systems. Alternative 4 may also require complying with additional requirements associated with the discharge of treated effluent. Alternatives 4 and 5 would both involve management of reagent materials. If injections are needed inside Building 3, this may be more difficult to implement than injections outside of the building. Overall, Alternatives 4 and 5 are comparable in terms of implementability.

10.7 Cost

Cost estimates, including capital costs and long-term operating costs, were prepared for each remedial alternative. At this stage, cost estimates have an expected accuracy of +50% to -30%. Table 4 provides a summary of the cost estimates. Alternative 5 will likely take less time to achieve RAOs and at less cost than Alternative 4, which would incur more long-term O&M costs.

MODIFYING CRITERIA – The final two evaluation criteria, criteria 8 and 9, are called "modifying criteria" because new information or comments from the state or the community on the Proposed Plan may modify the preferred response measure or cause another response measure to be considered.

10.8 State Acceptance

This criterion indicates whether, based on its review of the RI/FS Report and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected response measure.

The State of Florida has reviewed the site remedy selection documents, as well as public comments received on the Proposed Plan, and concurs with the Selected Remedy (Appendix A).

10.9 Community Acceptance

This criterion summarizes the public's general response to the response measures described in the Proposed Plan and the RI/FS Report. This assessment includes determining which of the response measures the community supports, opposes, and/or has reservations about.
The only public comments received during the comment period were from one of the PRPs, who would have preferred the EPA to have selected a different remedial option.

11.0 Principal Threat Waste

The NCP establishes an expectation that the EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or air, or acts as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The NCP specified that principal threat wastes are to be treated wherever practicable. There are no principal threat wastes such as DNAPL known to be present on Site.

12.0 Selected Remedy

Based on the above assumptions and the information contained in the Administrative Record file, The EPA's Selected Remedy for the Site is Alternative 5 (In-Situ Treatment with Reagent Injection and Institutional Controls). The estimated cost for the Selected Remedy is $560,784.

Alternative 5 will achieve Site RAOs by restoring contaminated groundwater to cleanup levels and preventing exposure to contaminated groundwater until cleanup levels are attained. Alternative 5 will reduce the excess cancer risks and noncancer hazard associated with exposure to contaminated groundwater, achieve MCLs, and attain ARARs. Remediation of groundwater will also mitigate any potential unacceptable risk to human health from the vapor intrusion pathway. The State of Florida supports the Selected Remedy.

The Selected Remedy was selected over the other alternatives because of its overall potential effectiveness and efficiency in addressing Site contamination. Alternative 5 will take less time to achieve RAOs and cleanup levels than Alternative 4. Alternative 5 is superior in three of the balancing criteria. Based on the information currently available, the EPA believes Alternative 5 meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing criteria. The EPA expects the selected remedy to satisfy the following statutory requirements of CERCLA Section 121(b), 42 U.S.C. § 9621(b): 1) be protective of human health and the environment; 2) comply with ARARs unless a waiver is justified; 3) be cost effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element.

12.1 Detailed Description of the Selected Remedy

The major components of the Selected Remedy include:

- Injection of reagents into the aquifer through underground injection wells to enhance the rate of reactions in groundwater at the Site that are designed to destroy the groundwater contamination.
- Groundwater monitoring to assess the effectiveness of the injection program and attainment of cleanup levels throughout the plume.
- Implementing institutional controls to prevent drilling of groundwater supply wells and to restrict groundwater use to preclude human exposure to contaminated groundwater until RAOs are met.

In-situ groundwater treatment may include using bioremediation techniques to stimulate the native or augmented microorganisms in the ground to treat contaminants. Reagents injected into the ground to stimulate the degradation may include primary substrates, cometabolites, nutrients, or microorganisms. In-situ chemical oxidation may also be considered. The specifications of in-situ treatment will be further refined in the remedial design. The injection program will consist of a grid of injection points inside and/or around Building 3. Groundwater monitoring will be conducted during and after the injection program to assess groundwater quality and whether additional injections (as part of continuing optimization of the treatment remedy) are needed in order to attain RAOs. Remediation of groundwater should also mitigate any possible unacceptable risk to human health from the vapor intrusion pathway. This Selected Remedy

may require preliminary engineering tests and pilot studies to adapt the technology to Site-specific conditions.

There are no principal threat wastes known to be present on Site. The estimated timeframe for construction completion is less than one year. Long-term monitoring is expected to continue until groundwater attains cleanup levels throughout the plume.

12.2 Summary of the Rationale for the Selected Remedy

Based upon consideration of the results of the Site investigations, the requirements of CERCLA, the detailed analysis of the response measures, and public comments, the EPA has determined that Alternative 5 (In-Situ Treatment with Reagent Injection and Institutional Controls) is the appropriate remedy for the contamination found in the Site groundwater, because it best satisfies the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR § 300.430(e)(9). Of those alternatives that are protective of human health and the environment and comply with ARARs, the EPA has determined that the Selected Remedy provides the best balance of tradeoffs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element, bias against off-site treatment and disposal, and considering state and community acceptance.

The EPA and FDEP concur that the selected remedy will satisfy the following statutory requirements of CERCLA Section 121(b), 42 U.S.C. § 9621(b): 1) be protective of human health and the environment; 2) comply with ARARs unless a waiver is invoked; and 3) be cost effective. As described earlier, in-situ groundwater treatment will achieve the RAOs and thereby permanently prevent any unacceptable risk to human health.

12.3 Cost Estimate for the Selected Remedy

The information in the cost estimate summary for the Selected Remedy (Alternative 5) shown in Table 5 is based on the best available information regarding the anticipated scope of the remedy. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedy. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Differences, or a ROD Amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50% to -30% of the actual project cost.

12.4 Estimated Outcomes of the Selected Remedy

The Selected Remedy will protect human health and the environment by returning groundwater to beneficial use and eliminating, reducing, or controlling risks at the Site through in-situ treatment of contaminated groundwater. Future land uses on Site are anticipated to be commercial/industrial and/or recreational. Implementation of the Selected Remedy and achievement of the final cleanup levels will accomplish the RAOs for the Site. The remedial action will return groundwater to beneficial use by attaining the more stringent of EPA primary drinking water standards, MCLs, or FDEP GCTLs at F.A.C. Chapter 62-777, Table I.

13.0 Statutory Determinations

As previously noted, Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, be cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1) also establishes a preference for remedial actions that employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state environmental laws, unless a waiver can be justified pursuant to Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4).

13.1 Protection of Human Health and the Environment

Protection of human health and the environment will be achieved using in-situ treatment of groundwater exceeding the cleanup levels based on primary drinking water standards, MCLs, and more stringent FDEP GCTLs . Institutional controls will restrict the use of groundwater in order to prevent unacceptable exposure until cleanup levels are achieved. This action will reduce exposure to levels within the EPA's generally acceptable risk range of 1×10^{-4} to 1×10^{-6} for carcinogens and below an HI of 1.0 for noncarcinogens. Implementation of the Selected Remedy will not pose any unacceptable short-term risks to human health and the environment.

13.2 Compliance with ARARs

Section 121(d) of CERCLA, as amended, specifies, in part, that remedial actions for cleanup of hazardous substances must comply with requirements and standards under federal or more stringent state environmental laws and regulations that are applicable or relevant and appropriate (i.e., ARARs) to the hazardous substances or particular circumstances at a site or justify invoking a waiver under Section 121(d)(4). See also 40 CFR §§ 300.430(f)(1)(ii)(B) and (C), and 40 CFR §§ 300.430(f)(5)(ii)(B) and (C). ARARs include only federal and state environmental or facility siting laws/regulations and do not include occupational safety or worker protection requirements. Compliance with OSHA standards is required by 40 CFR § 300.150 and therefore the CERCLA requirement for compliance with or wavier of ARARs does not apply to OSHA standards.

Under CERCLA Section 121(e)(1), federal, state, or local permits are not required for the portion of any removal or remedial action conducted entirely on site as defined in 40 CFR § 300.5. See also 40 CFR §§ 300.400(e)(1) & (2). In accordance with 40 CFR § 300.430(f)(5)(ii)(B) this ROD includes ARARs that the remedy is expected to attain that were identified by the EPA and the State of Florida. Table 4 lists respectively the chemical-specific and action-specific ARARs/TBCs for the selected remedial action. No location-specific ARARs were identified for the remedial action.

Groundwater contamination at the Site containing the listed waste from past disposal and releases is subject to certain RCRA ARARs, depending on the waste management activity, unless the EPA makes a "no longer contains" determination for the media (soil and groundwater) consistent with its policy/guidance.

Any remediation wastes that are generated and subsequently transferred off site or transported in commerce along public rights of way must meet any applicable requirements such as those for packaging, labeling, marking, manifesting, and placarding requirements for hazardous materials.

CERCLA Section 121(d)(3) provides that the off-site transfer of any hazardous substance, pollutant, or contaminant generated during CERCLA response actions be sent to a treatment, storage, or disposal facility that is in compliance with applicable federal and state laws and has been approved by the EPA for acceptance of CERCLA waste. See also 40 CFR § 300.440 (so called "Off-Site Rule").

13.3 Cost Effectiveness

The EPA has determined that the Selected Remedy is cost-effective and that the overall protectiveness of the remedy is proportional to the overall cost. As specified in 40 CFR § 300.430(f)(1)(ii)(D), the cost-effectiveness of the Selected Remedy was assessed by comparing the protectiveness of human health and the environment in relation to three balancing criteria (i.e., long-term effectiveness and permanence; reduction in toxicity, mobility, or volume; and short-term effectiveness) with the other alternatives considered.

While more than one remedial alternative can be considered cost-effective, CERCLA does not mandate that the most cost-effective or least expensive remedy be selected.

13.4 Use of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions can be utilized in a practicable manner at the Site. As described earlier, in-situ treatment of groundwater will permanently reduce COCs in groundwater and eventually achieve the RAOs and thereby permanently prevent any unacceptable risk to human health.

The Selected Remedy does not present short-term risks different from the other alternatives. There are no special implementability issues that set the Selected Remedy apart from any of the other alternatives evaluated.

13.5 Preference for Treatment as a Principal Element

The Selected Remedy satisfies the statutory preference to use treatment as a principal element of the remedy. The Selected Remedy includes injecting reagents directly into the groundwater to treat contaminants, thus reducing the toxicity, mobility, and volume of contaminants.

13.6 Five-Year Review Requirements

Because COCs will remain at the Site above levels that allow for unlimited use and unrestricted exposure while the remedy is being implemented, the EPA will review the final remedial action no less than every five years after initiation of the remedial action, in accordance with CERCLA Section 121(c) and the NCP at 40 CFR 300.430(f)(4)(ii), until the levels of COCs allow for unlimited use and unrestricted exposure. If the results of the five-year review show that remedy integrity is compromised and protection of human health is insufficient, the EPA and FDEP will evaluate additional remedial actions. No five-year review will be necessary if the remedial action achieves cleanup goals within the first five years.

13.7 Documentation of Significant Changes

Pursuant to CERCLA Section 117(b) and NCP § 300.430(f)(3)(ii), the ROD must document any significant changes made to the Preferred Alternative discussed in the Proposed Plan.
The EPA reviewed all written and verbal comments submitted during the public comment period. Based on a review comment from the state, the EPA modified the groundwater cleanup level for chloroform to be consistent with the FDEP GCTL for this constituent (70 parts per billion [ppb]). There are no other significant changes to the remedy, as originally identified in the Proposed Plan.

14.0 References

Brown and Caldwell. 2022. General Dynamics Longwood Superfund Site Remedial Investigation and Feasibility Study Report. January 11, 2022. Prepared for General Dynamics Corporation, Longwood, Florida.

EPA Region 4. 2022. Memorandum from Sydney Chan, Life Scientist, Scientific Support Section, to Rusty Kestle, RPM, Restoration & Sustainability Section. Subject: *General Dynamics Longwood Superfund Site, Remedial Investigation and Risk Assessment, Longwood, Seminole County, Florida*. January 4, 2022.

EPA Region 4. 2021. Memorandum from William N. O'Steen, Physical Scientist, Scientific Support Section, Superfund & Emergency Management Division, to Rusty Kestle, Remedial Project Manager, Superfund Restoration & Sustainability Section, Superfund & Emergency Management Division. Subject: *General Dynamics Longwood, Seminole County, Florida*. November 3, 2021.

EPA Region 4. 2019. Memorandum from Brett Thomas, Ph.D., Life Scientist Scientific Support Section, Superfund & Emergency Management Division, Superfund Resource & Scientific Integrity Branch to Rusty Kestle, Remedial Project Manager, Superfund & Emergency Management Division. Subject: *Evaluation of the Potential for Ecological Risk for the General Dynamics Site in Longwood, Florida*. July 23, 2019.

EPA. 2014. Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study. Effective Date May 27, 2014.

EPA. 1991. Office of Solid Waste and Emergency Response (OSWER) Directive 9355.0-30. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions. April 22, 1991.

MACTEC. 2008. NPL Site Inspection Report, Gould Property NPL Site.

URS. 2004. Gould Property Supplemental NPL Site Investigation. February 4, 2004.

PART 3: RESPONSIVENESS SUMMARY

1.0 Public Review Process

1.1 Introduction

This Responsiveness Summary provides a summary of comments and concerns received during the public comment period related to the Proposed Plan for the Site and provides the EPA's responses to those comments and concerns.

A Responsiveness Summary serves two functions. First, it provides decision-makers with information about the views of the public, government agencies, and PRPs regarding the proposed remedial action and other alternatives. Second, it documents the way in which public comments have been considered during the decision-making process and provides answers to significant comments.

Public involvement in the review of Proposed Plans is stipulated in Section 117(a) of CERCLA, as amended, and Sections 300.430(f)(3)(i)(F) and 300.430(f)(5)(iii)(B) of the NCP. These regulations provide for active solicitation of public comments.

All public comments received are addressed in this Responsiveness Summary. It was prepared following guidance provided by the EPA in the 1992 Community Relations in Superfund: A Handbook and the 1988 Community Relations during Enforcement Activities and Development of the Administrative Record. The comments presented in this document have been considered in the EPA's decision in the selection of a remedy to address contaminated groundwater at the Site.

The text of this Responsiveness Summary explains the public review process and how the EPA responded to public comments. Appendix B provides the Comment and Response Index, which contains summaries of every comment received during the public comment period and the EPA's responses.

1.2 Public Review Process

The EPA relies on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the EPA made the Proposed Plan for the Site available to the community on July 29, 2022.

The complete Administrative Record file, which contains the RI/FS Report and risk assessments upon which the Selected Remedy is based, is available at the locations listed below.

- EPA's Site profile page: www.epa.gov/superfund/general-dynamics-longwood

- West Branch Public Library (Reference Section)
  245 North Hunt Club Boulevard
  Longwood, Florida 32279
  407-665-1670

Visit the library's website for hours: www.seminolecountyfl.gov/locations/West-Branch-Library.stml

- U.S. EPA Records Center, Region 4
  61 Forsyth Street, S.W.
  Atlanta, Georgia 30303
  404-562-8946
  Hours: Monday to Friday, 8:30 a.m. to 4:30 p.m.

1.3 Public Comment Period, Public Meeting, and Availability Sessions

The public comment period is intended to gather information about the views of the public regarding both the remedial alternatives and general concerns about the Site. A notice of the start of the public comment period, the public meeting date, the Preferred Remedy, contact information, and the availability of above-referenced documents was provided in a fact sheet distributed to the public on July 21, 2022, and was published in the Orlando Sentinel on July 25, 2022.

The public comment period for the Site's Proposed Plan commenced on July 29, 2022, and continued until August 28, 2022.

1.4 Receipt and Identification of Public Comments

Public comments on the Proposed Plan were received as written comments submitted to the EPA via mail and e-mail.

1.5 Locating Responses to Public Comments in the Comment and Response Index

The Comment and Response Index (Appendix B) contains a complete listing of all public comments and responses from the EPA. The index allows readers to find answers to specific questions they have raised.

2.0 References

There were no additional references for the Responsiveness Summary.

TABLES

Table 1: Highest Historical COC Concentrations at the Site

COC	Highest Historical Concentration Detected at the Site[a] (ppb)	Federal MCL (ppb)	Florida GCTL FAC Chapter 66-777 (ppb)
Trichloroethylene	25,100	5	3
1,1,1-Trichloroethane	561	200	200
cis-1,2-Dichloroethene	6,200	70	70
trans-1,2-Dichloroethene	8.8	100	100
1,1-Dichloroethene	1,470	7	7
Vinyl chloride	251	2	1
1,1-Dichloroethane	99.7	--	70
Tetrachloroethylene	44	5	3
Chloroethane	1.9	--	12
Chloroform	18.7	80[c]	70
1,4-Dioxane	9.6[b]	--	3.2

Notes:
a) Some dissolved groundwater contamination at the Site was comingled with contamination from the upgradient and adjacent Sprague Site. The levels of groundwater contamination attribution between the Site and adjacent Sprague Site have been difficult to determine in historical data when contaminant concentration levels at both sites were much higher. The highest historical concentrations reported in this table are more reflective of contamination attributable to actual historical releases of COCs at the Site.
b) Maximum concentration reported in Table 3 of the 2022 baseline HHRA.
c) MCL for total trihalomethanes.
-- MCL not established

Table 2: HHRA Summary

Receptor	Total Cancer Risk	Total Noncancer HI
Current/future adolescent trespasser	3×10^{-7}	0.002
Future indoor site worker	9×10^{-4} (shallow aquifer)[a] 8×10^{-6} (Floridan aquifer)[b]	3 (shallow aquifer)[a] 0.3 Floridan aquifer)[b]
Future outdoor site worker	3×10^{-6}	0.005
Construction worker	1×10^{-6}	0.2
Future hypothetical resident	2×10^{-2} (shallow aquifer)[a] 1×10^{-4} (Floridan aquifer)[b]	30 (shallow aquifer)[a] 1 (Floridan aquifer)[b]

Notes:
a) For indoor site workers and residents, total risk/HI was based on using shallow aquifer system groundwater plus indoor air due to soil vapor intrusion.
b) For indoor site workers and residents, total risk/HI was based on using Floridan aquifer system groundwater plus indoor air due to soil vapor intrusion.
Bold result indicates excess cancer risk and/or noncancer hazard exceeding the EPA's acceptable risk range.
Source: Tables 16 and 17 of the January 2022 baseline HHRA.

Table 3: Site Groundwater Cleanup Levels

COC	Regulatory Basis for Cleanup Level	Groundwater Cleanup Level (ppb)[a]
Trichloroethylene	State of Florida GCTLs FAC Chapter 66-777	3
1,1,1-Trichloroethane	State of Florida GCTLs FAC Chapter 66-777	200
cis-1,2-Dichloroethene	State of Florida GCTLs FAC Chapter 66-777	70
trans-1,2-Dichloroethene	State of Florida GCTLs FAC Chapter 66-777	100
1,1-Dichloroethene	State of Florida GCTLs FAC Chapter 66-777	7
Vinyl chloride	State of Florida GCTLs FAC Chapter 66-777	1
1,1-Dichloroethane	State of Florida GCTLs FAC Chapter 66-777	70
Tetrachloroethylene	State of Florida GCTLs FAC Chapter 66-777	3
Chloroethane	State of Florida GCTLs FAC Chapter 66-777	12
Chloroform	State of Florida GCTLs FAC Chapter 66-777	70
1,4-Dioxane	State of Florida GCTLs FAC Chapter 66-777	3.2

a. Once the groundwater cleanup level is attained, the cleanup will be also protective for vapor intrusion.

Table 4: Summary of Estimated Costs for Each Alternative

Cost Category	Alternative 4 Hydraulic Containment by Extraction Wells, Ex-Situ Treatment, and Institutional Controls	Alternative 5 In-Situ Treatment with Reagent Injection and Institutional Controls
Direct Capital Costs	$136,000	$95,000
Annual O&M Costs	$35,000	$91,000
Totals (net present value)	$678,267	$560,784

Table 5: Site ARARs and TBCs

CHEMICAL-SPECIFIC ARARs			
Action/Media	**Requirement**	**Prerequisite**	**Citation**
Classification of groundwater	All groundwater of the state is classified according to the designated uses and includes the following: Class G-I – Potable water use, groundwater in single-source aquifer that has total dissolved solids content of less than 3,000 milligrams per liter (mg/L). Class G-II – Potable water use, groundwater in aquifers that has total dissolved solids content of less than 10,000 mg/L, unless otherwise classified by the Florida Environmental Regulation Commission.	Groundwater within the state of Florida – **Applicable**	FAC 62-520.410
Restoration of groundwater as a potential drinking water source	All groundwater (except for Class G-IV) shall meet the minimum criteria for groundwater specified in FAC 62-520.400(1)(a)-(f).	Groundwater within the state of Florida with designated beneficial use(s) of Class G-I or Class G-II – **Relevant and Appropriate**	FAC 62-520.400 Minimum Criteria for Groundwater
	Class I and Class II groundwater shall meet the primary drinking water standards listed in FAC 62-550.310 for public water systems, except as otherwise specified.		FAC 62-520.420(1) Standards for Class I and Class II Groundwater
	Shall not exceed the MCL listed in Table 4 (Volatile Organic Contaminants). (These standards may also apply as groundwater quality standards as referenced in Chapter 62-520, FAC) • Trichloroethylene – 0.003 mg/L • Vinyl chloride – 0.001 mg/L	Supply of water to public water system, as defined in FAC 62-550.200 (17) – **Relevant and Appropriate**	FAC 62-550.310 Primary Drinking Water Standards
Restoration of groundwater as a potential drinking water source	Specifies GCTLs for site rehabilitation. FAC 62-777.170 Table I lists the default groundwater criteria. • 1,1-Dichloroethene – 7 micrograms per liter (µg/L) • 1,4-Dioxane – 3.2 µg/L • Trichloroethylene – 3 µg/L • Vinyl chloride – 1 µg/L • Tetrachloroethene – 3 µg/L • 1,1,1-Trichloroethane – 200 µg/L • cis-1,2-Dichloroethene – 70 µg/L	Rehabilitation (i.e., remediation) of site contaminated groundwater – **Relevant and Appropriate**	FAC 62-780.150(5) FAC 62-777.170(1)(a)

CHEMICAL-SPECIFIC ARARs			
Action/Media	**Requirement**	**Prerequisite**	**Citation**
	• trans-1,2-Dichloroethene – 100 µg/L • 1,1-Dichloroethane – 70 µg/L • Chloroethane – 12 µg/L • Chloroform – 70 µg/L		
	Requires that a lifetime excess cancer risk level of 1.0E-6 and an HI of 1 or less shall be used in establishing alternative contaminant cleanup target levels for groundwater or soil.	Establishment of alternative cleanup target levels for contaminants of concern at the Site – **Relevant and Appropriate**	FAC 62-780.650(1)(d)

ACTION-SPECIFIC ARARs			
Action	**Requirement**	**Prerequisite**	**Citation**
General Construction Standards – All Land-disturbing Activities (e.g., excavation, clearing, grading)			
Control of stormwater runoff from soil disturbing activities	Must comply with the substantive provisions in the "Generic Permit for Stormwater Discharge from Large and Small Construction Activities," document number 62-621.300(4)(a), issued by FDEP and effective as of February 17, 2009. Requires development of stormwater pollution prevention plans and implementation of best management practices and erosion and sedimentation controls for stormwater runoff to ensure the protection of the surface waters of the state. *Note*: Plan would be part of CERCLA documents such as a Remedial Action Work Plan.	Stormwater discharges from large and small construction activities to surface waters of the state, as defined in Section 403.031, Florida Statutes – **Applicable**	FAC 62-621.300(4)(a) Generic Permit for Stormwater Discharge from Large and Small Construction Activities
Control of stormwater runoff from soil disturbing activities	No discharge from a stormwater discharge facility shall cause or contribute to a violation of water quality standards in waters of the state.	Construction activity (e.g., alteration of land contours or land clearing) that results in creation or alteration of a stormwater management system – **Applicable**	FAC 62-330.405(11) General Conditions for All General Permits
	Performance-based erosion and sediment control best management practices shall be implemented and maintained immediately prior to, during, and after construction, as needed, to stabilize all disturbed areas, including other measures specified in the permit to prevent adverse impacts to the water resources and adjacent lands. Erosion and sediment control measures shall be installed and maintained in accordance with the Florida Erosion and Sediment Control Designer and Reviewer Manual (FDEP and Florida Department of Transportation, June 2007), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (FDEP, Nonpoint Source Management Section, July 2008).		FAC 62-330.405(11)
Control of fugitive dust	No person shall cause, let, permit, suffer, or allow the emissions of unconfined particulate matter from any activity, including vehicular movement, transportation of materials, construction, alteration, demolition, or wrecking, or industrially related activities such as loading, unloading, storing, or handling, without taking reasonable precautions to prevent such emissions.	Land disturbing activity that has potential for unconfined emissions of particulate matter – **Applicable**	FAC 62-296.320(4)(c) General Pollutant Emission Limiting Standards

Groundwater Monitoring and Injection Wells – Installation, Operation, and Abandonment			
Groundwater monitoring well installation	Provides detailed guidance to assist in monitoring well design and material specifications for construction of groundwater monitoring well.	Installation of groundwater monitoring well to detect migration of contaminants – **To Be Considered**	FDEP, Monitoring Well Design and Construction Guidance Manual (2008)
	Before construction of new groundwater monitoring wells, a soil boring shall be made at each new monitoring well location to properly determine monitoring well specifications such as well depth, screen interval, screen slot, and filter pack.	Installation of groundwater monitoring well to detect migration of contaminants – **Relevant and Appropriate**	FAC 62-520.600(6)(g)
Construction and repair of groundwater wells	Construction of water well shall be in accordance with the substantive requirements specified in FAC 62-532.500(1)(a) through (i), as appropriate.	Installation of water well as defined in FAC 62-532.200 – **Relevant and Appropriate**	FAC 62-532.500(1) Well Casing, Liner Pipe, Coupling, and Well Screen Requirements
	Wells shall be constructed to meet the following construction criteria specified in FAC 62-532.500(3)(a), (b), (e), (f), (g), (h), and (i), as appropriate.		FAC 62-532.500(3) Well Construction Criteria
Well covers and upper terminus	Wells shall be covered with a tamper-resistant cover when there is an interruption in work and meet the criteria specified in FAC 62-532.500(4)(a) and (b), as appropriate.		FAC 62-532.500(4) Top of the Well
Plugging and abandonment of groundwater wells	All abandoned wells shall be plugged by filling them from bottom to top with neat cement grout or bentonite and capped with a minimum of 1 foot of neat cement grout. An alternate method providing equivalent protection shall be approved by FDEP and the EPA.	Abandonment of water well, as defined in FAC 62-532.200 – **Relevant and Appropriate**	FAC 62-532.500(5)
	In the abandonment of a water well, caution shall be taken to minimize the potential entrance of contaminants into the bore hole and groundwater resource.		FAC 62-532.500(3)(f)
	Only water from a potable water source shall be used in the abandonment of a water well.		FAC 62-532.500(3)(g)
Injection of remediation amendments into groundwater	An injection activity cannot allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of the primary drinking water standards under 40 CFR part 141 or other health-based standards, or may otherwise adversely affect the health of persons.	Class V wells [as defined in 40 CFR § 144.6(e)] – **Relevant and Appropriate**	40 CFR § 144.82(a)(1)

	This prohibition applies to well construction, operation, maintenance, conversion, plugging, closure, or any other injection activity.		
	Wells must be closed in a manner that complies with the above prohibition of fluid movement. Also, any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well must be disposed or otherwise managed in accordance with substantive applicable federal, state, and local regulations and requirements.		40 CFR § 144.82(b)
General criteria for Class V wells used for underground injection	A well shall be designed and constructed for its intended use, in accordance with good engineering practices.	Operation of Class V well Group 4 (wells associated with aquifer remediation projects) – **Relevant and Appropriate**	FAC 62-528.605(1)
	May not cause or allow fluids to migrate into underground source of drinking water which may cause a violation of a primary or secondary drinking water standard contained in FAC Chapter 62-550 or minimum criteria contained in FAC Rule 62-520.400, or may cause fluids of significantly differing water quality to migrate between underground sources of drinking water.		FAC 62-528.605(2)
Construction of Class V wells used for underground injection	Shall be constructed so that their intended use does not violate the water quality standards of FAC Chapter 62-520, at the point of discharge, except where specifically allowed in FAC subsection 65-522.300(2).	Operation of Class V well Group 4 (wells associated with aquifer remediation projects) – **Relevant and Appropriate**	FAC 62-528.605(3)
	All drilled wells shall, at a minimum, meet the casing and cementing requirements for water well construction set forth in FAC Chapter 62-532.		FAC 62-528.605(7)
Operation of Class V wells used for underground injection	Shall be used or operated in a manner that it does not present a hazard to an underground source of water.	Operation of Class V well Group 4 (wells associated with aquifer remediation projects) – **Relevant and Appropriate**	FAC 62-528.610(1)
	Pretreatment for fluids injected through existing wells shall be performed if necessary to ensure the injected fluid does not violate applicable water quality standards in FAC Chapter 52-520.		FAC 62-528.610(3)
Plugging and abandonment of Class V wells used for underground injection	Prior to abandoning Class V wells, the well shall be plugged with cement in a manner that will not allow movement of fluids between underground sources of water. Placement of the cement shall be accomplished by any recognized and approved method.	Operation of Class V well Group 4 (wells associated with aquifer remediation projects) – **Relevant and Appropriate**	FAC 62-528.625(3)

Monitoring of Class V wells used for underground injection	The need for monitoring shall be determined by the type of well, nature of injected fluid, and the water quality of the receiving and overlying aquifers. *Note*: The monitoring parameters and frequency will be specified in a CERCLA document such as a Remedial Work Plan or a Removal Action Work Plan.	Operation of Class V well Group 4 (wells associated with aquifer remediation projects) – **Relevant and Appropriate**	FAC 62-528.615(1) and (2)
Post-active remediation monitoring for groundwater treatment systems	Unless otherwise provided in a CERCLA Remedial Work Plan or Removal Action Work Plan, the following shall be performed as follows: • A minimum of two monitoring wells is required, with at least one located at the downgradient edge of the plume and at least one located in the area(s) of highest groundwater contamination or directly adjacent. • Designated monitoring wells shall be sampled quarterly for contaminants that were present. • Water-level measurements in all designated wells and piezometers shall be made within 24 hours of initiating each sampling event. *Note*: Monitoring parameters, frequency, sampling, and analysis methods will be specified in a CERCLA Remedial Action Work Plan.	Operation of an active remediation system – **Relevant and Appropriate**	FAC 62-780.750(4)(a) through (c)
Florida active remediation regulation for groundwater bioremediation systems	Specifies that operational parameters for bioremediation systems should include measurements of dissolved oxygen at representative monitoring locations, rates of biological, chemical, or nutrient enhancement additions, and any other indicators of biological activity. Conducted weekly for the first month, monthly for the next two months, and quarterly thereafter or at an approved alternative frequency. *Note*: Monitoring parameters, frequency, sampling, and analysis methods will be specified in a CERCLA Remedial Action Work Plan.	Operation of an active remediation system – **Relevant and Appropriate**	FAC 62-780.700(11)(h)
Florida active remediation regulation for in-situ groundwater systems	Specifies that operations parameters for in-situ systems should include measurements of biological, chemical, or physical indicators that will verify the radius of influence at representative monitoring locations. Conducted weekly for the first month, monthly for the next two months, and quarterly for the first two years and semi-annually thereafter. *Note*: Monitoring parameters, frequency, sampling, and analysis methods will be specified in a CERCLA Remedial Action Work Plan.	Operation of an active remediation system – **Relevant and Appropriate**	FAC 62-780.700(11)(g)
Wastewater Treatment and Disposal — Contaminated Groundwater From Well Monitoring and Soil Dewatering			
Discharge of treated groundwater to a	An industrial user shall not introduce into a wastewater facility any pollutant which causes pass through or interference.	Discharge pollutants into a "Wastewater Facility" as	FAC 62-625.400(1)(a) General Prohibitions

wastewater facility		defined in FAC 62-625.200(29) by an industrial user (i.e., source of discharge) – **Applicable**	
Discharge of treated groundwater to a wastewater facility	The following pollutants shall not be introduced into a wastewater facility: • Pollutants that create a fire or explosion hazard in the facility. • Pollutants that will cause corrosive structural damage to the facility, but in no case discharges with pH lower than 5.0, unless the facility is specifically designed to accommodate such discharges. • Solid or viscous pollutants in amounts that will cause obstruction to the flow in the facility, resulting in interference. • Any pollutant, including oxygen demanding pollutants, released in a discharge at a flow rate or pollutant concentration that will cause interference with the facility. • Heat in amounts that will inhibit biological activity in the facility, resulting in interference, but in no case heat in such quantities that result in the discharge from the treatment plant having a temperature that exceeds 40º C (104º F) unless FDEP, upon request of the control authority, approves alternate temperature limits in accordance with FAC Rule 62-302.520. • Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through. • Pollutants that result in the presence of toxic gases, vapors, or fumes within the facility in a quantity that will cause acute worker health and safety problems. • Any trucked or hauled pollutants, except at discharge points designated by the control authority.	Discharge pollutants into a "Wastewater Facility" as defined in FAC 62-625.200(29) by an industrial user (i.e., source of discharge) – **Applicable**	FAC 62-625.400(2)(a)-(h) Specific Prohibitions
	Local limits: Where specific prohibitions or limits on pollutants or pollutant parameters are developed by a public utility in accordance with FAC 62-625.400(3), such limits shall be deemed to be pretreetment standards.	Discharge pollutants into a "Wastewater Facility" as defined in FAC 62-625.200(29) by an industrial user (i.e., source of discharge) – **Applicable**	FAC 62-625.400(4)
Disposal of RCRA characteristic wastewaters	Are not prohibited, if the wastes are treated for purposes of the pre-treatment requirements of section 307 of the Clean Water Act (CWA) unless the wastes	Land disposal of hazardous wastewaters that are hazardous only because they exhibit a hazardous	40 CFR § 268.1(c)(4)(ii) FAC 62-730.183

in a publicly owned treatment works	are subject to a specified method of treatment other than DEACT in 40 CFR § 268.40 or are D003 reactive cyanide.	characteristic and are not otherwise prohibited under 40 CFR Part 268 – **Applicable**	
Waste Characterization – Primary Waste (e.g., excavated contaminated soil from well cuttings) and Secondary Wastes (e.g., contaminated equipment , purged groundwater from wells)			
Characterization of solid waste (all primary and secondary wastes) and Listed hazardous waste determination	• Must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. A hazardous waste determination is made using the following steps: • The hazardous waste determination for each solid waste must be made at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change. • Must determine whether the waste is excluded from regulation under 40 CFR 261.4; and • Must use the knowledge of the waste to determine whether waste meets any of the listing descriptions under subpart D of 40 CFR Part 261. Acceptable knowledge that may be used in making an accurate determination as to whether the waste is listed may include waste origin, composition, the process producing the waste, feedstock, and other reliable and relevant information.	Generation of solid waste as defined in 40 CFR 261.2 – **Applicable**	40 CFR 262.11(a),(b) and (c) FAC 62-730.160
Determination of characteristic hazardous waste	The person then must also determine whether the waste exhibits one or more hazardous characteristics as identified in subpart C of 40 CFR part 261 by following the procedures in paragraph (d)(1) or (2) of this section, or a combination of both.	Generation of solid waste that is not excluded under 40 CFR 261.4(a) – **Applicable**	40 CFR 262.11(d) FAC 62-730.160
Determination of characteristic hazardous waste through knowledge	The person must apply knowledge of the hazard characteristic of the waste in light of the materials or the processes used to generate the waste. Acceptable knowledge may include process knowledge (e.g., information about chemical feedstocks and other inputs to the production process); knowledge of products, by-products, and intermediates produced by the manufacturing process; chemical or physical characterization of wastes; information on the chemical		40 CFR 262.11(d)(1) F.A.C. 62-730.160

	and physical properties of the chemicals used or produced by the process or otherwise contained in the waste; testing that illustrates the properties of the waste; or other reliable and relevant information about the properties of the waste or its constituents. A test other than a test method set forth in subpart C of 40 CFR part 261, or an equivalent test method approved by the Administrator under 40 CFR 260.21, may be used as part of a person's knowledge to determine whether a solid waste exhibits a characteristic of hazardous waste. However, such tests do not, by themselves, provide definitive results. Persons testing their waste must obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10.		
Determination of characteristic hazardous waste through testing	When available knowledge is inadequate to make an accurate determination, the person must test the waste according to the applicable methods set forth in subpart C of 40 CFR part 261 or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or and in accordance with the following: (i) Persons testing their waste must obtain a representative sample of the waste for the testing, as defined at 40 CFR 260.10. (ii) Where a test method is specified in subpart C of 40 CFR part 261, the results of the regulatory test, when properly performed, are definitive for determining the regulatory status of the waste.	Generation of solid waste which is not excluded under 40 CFR 261.4(a) – **Applicable**	40 CFR 262.11(d)(2) F.A.C. 62-730.160
	Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste.	Generation of solid waste that is determined to be hazardous waste – **Applicable**	40 CFR 262.11(e) FAC 62-730.160
Identifying hazardous waste numbers for small and large quantity generators	Must identify all applicable EPA hazardous waste numbers (EPA hazardous waste codes) in subparts C and D of part 261 of this chapter. Prior to shipping the waste off site, the generator also must mark its containers with all applicable EPA hazardous waste numbers (EPA hazardous waste codes) according to § 262.32.		40 CFR 262.11(g) F.A.C. 62-730.160
General Waste Analysis	Must obtain a detailed chemical and physical analysis on a representative sample of the waste(s), which at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with pertinent sections of 40 CFR 264 and 268.	Generation of RCRA hazardous waste or nonhazardous wastes if applicable under Section 264.113(d) for storage, treatment, or disposal – **Applicable**	40 CFR 264.13(a)(1) FAC 62-730.180(1)

Determinations for management of hazardous waste	Must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part. This determination may be made concurrently with the hazardous waste determination required in § 262.11 of this chapter. For purposes of part 268, the waste will carry the waste code for any applicable listed waste (40 CFR part 261, subpart D). In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes (40 CFR part 261, subpart C), except when the treatment standard for the listed waste operates in lieu of the treatment standard for the characteristic waste, as specified in paragraph (b) of this section.	Generation of hazardous waste for storage, treatment, or disposal – **Applicable**	40 CFR 268.9(a) FAC 62-730.183
	Must determine the underlying hazardous constituents (as defined in 40 CFR 268.2(i)) in the characteristic waste.	Generation of RCRA characteristic hazardous waste (and is not D001 non – wastewaters treated by CMBST, RORGS, or POLYM of Section 268.42 Table 1) for storage, treatment, or disposal – **Applicable**	40 CFR 268.9(a) FAC 62-730.183
Determinations for management of hazardous waste	Must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in §268.40, 268.45, or §268.49. This determination can be made concurrently with the hazardous waste determination required in §262.11 of this chapter, in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in ‘‘Test Methods of Evaluating Solid Waste, Physical/Chemical Methods,’’ EPA Publication SW–846, (incorporated by reference, see §260.11 of this chapter), depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste’s extract. (Alternatively, the generator must send the waste to a RCRA-permitted hazardous waste treatment facility, where the waste treatment facility must comply with the requirements of §264.13 of this chapter and paragraph (b) of this section.)	Generation of hazardous waste for storage, treatment, or disposal – **Applicable**	40 CFR 268.7(a) FAC 62-730.183
	Must comply with the special requirements of 40 CFR 268.9 in addition to any applicable requirements in CFR 268.7.	Generation of waste or soil that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or	40 CFR 268.7(a) FAC 62-730.183

		toxicity for storage, treatment, or disposal – **Applicable**	
Waste Storage – Primary Waste (e.g., excavated contaminated soil from well cuttings) and Secondary Wastes (e.g., contaminated equipment, well purge water)			
Temporary on–site accumulation of hazardous waste in containers	A small quantity generator may accumulate hazardous waste on site without a permit or interim status, and without complying with the requirements of parts 124, 264 through 267, and 270 of this chapter, or the notification requirements of section 3010 of RCRA, provided that all the substantive conditions for exemption listed in this section are met.	Accumulation of RCRA hazardous waste on site as defined in 40 CFR 260.10 – **Applicable**	40 CFR 262.16(a) F.A.C. 62-730.160
Condition of containers	If a container holding hazardous waste is not in good condition, or if it begins to leak, the small quantity generator must immediately transfer the hazardous waste from this container to a container that is in good condition, or immediately manage the waste in some other way that complies with the conditions for exemption of this section.		40 CFR 262.16(b)(2)(i) F.A.C. 62-730.160
Compatibility of waste with container	Must use a container made of or lined with materials that will not react with, and are otherwise compatible with, the hazardous waste to be accumulated, so that the ability of the container to contain the waste is not impaired.		40 CFR 262.16(b)(2)(ii) F.A.C. 62-730.160
Management of containers	(A) A container holding hazardous waste must always be closed during accumulation, except when it is necessary to add or remove waste. (B) A container holding hazardous waste must not be opened, handled, or accumulated in a manner that may rupture the container or cause it to leak.		40 CFR 262.16(b)(2)(iii) F.A.C. 62-730.160
Special conditions for accumulation of incompatible wastes	(A) Incompatible wastes, or incompatible wastes and materials, (see appendix V of part 265 for examples) must not be placed in the same container, unless § 265.17(b) of this chapter is complied with. (B) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material (see appendix V of part 265 for examples), unless § 265.17(b) of this chapter is complied with. (C) A container accumulating hazardous waste that is incompatible with any waste or other materials accumulated or stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.	Accumulation of incompatible wastes, or incompatible wastes and materials on site – **Applicable**	40 CFR 262.16(b)(2)(v) F.A.C. 62-730.160
Labeling and marking of containers	A small quantity generator must mark or label its containers with the following: (A) The words “Hazardous Waste”;	Accumulation of RCRA hazardous waste on site as defined in 40 CFR 260.10 – **Applicable**	40 CFR 262.16(b)(6)(i) F.A.C. 62-730.160

	(B) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (*i.e.,* ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704); and (C) The date upon which each period of accumulation begins clearly visible for inspection on each container.		
Condition of container	If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this part.	Storage of RCRA hazardous waste in containers – **Applicable**	40 CFR 265.171 F.A.C. 62-730.180(2)
Compatibility of waste with container	Must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.		40 CFR 265.172 F.A.C. 62-730.180(2)
Management of containers	Containers must be closed during storage, except when necessary to add/remove waste. Container must not be opened, handled and stored in a manner that may rupture the container or cause it to leak.		40 CFR 265.173(a) and (b) F.A.C. 62-730.180(2)
Closure performance standard for RCRA container storage unit	Must close the facility (e.g., container storage unit) in a manner that: • Minimizes the need for further maintenance. • Controls, minimizes, or eliminates to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or the atmosphere. • Complies with the closure requirements of subpart, but not limited to, the requirements of 40 CFR § 264.178 for containers.	Storage of RCRA hazardous waste in containers – **Applicable**	40 CFR 264.111
Closure of RCRA container storage unit	At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soils containing or contaminated with hazardous waste and hazardous waste residues must be decontaminated or removed. *Note:* At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with 40 CFR 261.3(d) of this chapter that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must	Storage of RCRA hazardous waste in containers in a unit with a containment system – **Applicable**	40 CFR 264.178 FAC 62-730.180(1)

	manage it in accordance with all applicable requirements of parts 262 through 266 of this chapter.		
Storage and processing of non-hazardous waste	No person shall store, process, or dispose of solid waste except as authorized at a permitted solid waste management facility or a facility exempt from permitting under this chapter. No person shall store, process, or dispose of solid waste in a manner or location that causes air quality standards to be violated or water quality standards or criteria of receiving waters to be violated.	Management and storage of solid waste – **Applicable**	FAC 62-701.300(1)(a) and (b)
Waste Treatment and Disposal – Primary Waste (e.g., excavated contaminated soil) and Secondary Wastes (e.g., contaminated equipment, well purge water)			
Disposal of RCRA hazardous waste in a land-based unit	May be land disposed if it meets the requirements in the table "Treatment Standards for Hazardous Waste" at 40 CFR 268.40 before land disposal.	Land disposal, as defined in 40 CFR 268.2, of restricted RCRA waste – **Applicable**	40 CFR 268.40(a) FAC 62-730.183
	All underlying hazardous constituents [as defined in 40 CFR 268.2(i)] must meet the universal treatment standards (UTS), found in 40 CFR 268.48 Table UTS prior to land disposal.	Land disposal of restricted RCRA characteristic wastes (D001 –D043) that are not managed in a wastewater treatment system that is regulated under the CWA, that is CWA equivalent, or that is injected into a Class I nonhazardous injection well – **Applicable**	40 CFR 268.40(e) FAC 62-730.183
Disposal of RCRA hazardous waste soil in a land–based unit	Must be treated according to the alternative treatment standards of 40 CFR 268.49(c) or according to the UTSs specified in 40 CFR 268.48 applicable to the listed and/or characteristic waste contaminating the soil prior to land disposal	Land disposal, as defined in 40 CFR 268.2, of restricted hazardous soils – **Applicable**	40 CFR 268.49(b) FAC 62-730.183
Disposal of RCRA hazardous waste in a land-based unit	To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards of 40 CFR 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentration in the waste extract or waste, or the generator may use knowledge of the waste.	Land disposal of RCRA toxicity characteristic wastes (D004 –D011) that are newly identified (i.e., wastes, soil, or debris identified by the toxicity characteristic leaching procedure but not	40 CFR 268.34(f) FAC 62-730.183

	If the waste contains constituents (including UHCs in the characteristic wastes) in excess of the applicable UTS levels in 40 CFR 268.48, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.	the extraction procedure) – **Applicable**	
Disposal of RCRA hazardous waste debris in a land–based unit (i.e., landfill)	Must be treated prior to land disposal as provided in 40 CFR 268.45(a)(1)-(5) unless the EPA determines under 40 CFR 261.3(f)(2) that the debris no longer contaminated with hazardous waste, or the debris is treated to the waste-specific treatment standard provided in 40 CFR 268.40 for the waste contaminating the debris.	Land disposal, as defined in 40 CFR 268.2, of restricted RCRA hazardous debris – **Applicable**	40 CFR 268.45(a) FAC 62-730.183
Disposal of RCRA characteristic wastewaters at a publicly owned treatment works	Are not prohibited, if wastes are treated for purposes of the pretreatment requirements of Section 307 of the CWA, unless the wastes are subject to a specified method of treatment other than DEACT in 40 CFR 268.40, or are D003 reactive cyanide.	Land disposal of hazardous wastewaters that are hazardous only because they exhibit a characteristic and are not otherwise prohibited under 40 CFR 268 – **Applicable**	40 CFR 268.1(c)(4)(ii) FAC 62-730.183
Waste Transportation – Primary and Secondary Wastes			
Transportation of hazardous waste on site	The generator manifesting requirements of 40 CFR 262.20–262.32(b) do not apply. Generator or transporter must comply with the requirements set forth in 40 CFR 263.30 and 263.31 in the event of a discharge of hazardous waste on a private or public right of way.	Transportation of hazardous wastes on a public or private right of way in or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right of way – **Applicable**	40 CFR 262.20(f) FAC 62-730.160
Transportation of hazardous waste off site	Must comply with the generator standards of Part 262, including 40 CFR 262.20–23 for manifesting, Section 262.30 for packaging, Section 262.31 for labeling, Section 262.32 for marking, and Section 262.33 for placarding.	Preparation and initiation of shipment of hazardous waste off site – **Applicable**	40 CFR 262.10(h) FAC 62-730.160
Transportation of hazardous materials	Shall be subject to and must comply with all applicable provisions of the Hazardous Materials Transportation Act and Hazards Materials Regulations at 49 CFR 171–180 related to marking, labeling, placarding, packaging, and emergency response.	Any person who, under contract with a department or agency of the federal government, transports "in commerce," or causes to be	49 CFR 171.1(c)

		transported or shipped, a hazardous material – **Applicable**	
Transportation of samples (i.e., contaminated wastewaters)	Are not subject to any requirements of 40 CFR Parts 261 through 268 or 270 when: • The sample is being transported to a laboratory for the purpose of testing. • The sample is being transported back to the sample collector after testing. • The sample is being stored by sample collector before transport to a lab for testing.	Samples of solid waste or a sample of water, soil for purpose of conducting testing to determine its characteristics or composition – **Applicable**	40 CFR 261.4(d)(1)(i)–(iii) FAC 62-730.030
	In order to qualify for the exemption in 40 CFR 261.4 (d)(1)(i) and (ii), a sample collector shipping samples to a laboratory must: • Comply with U.S. Department of Transportation, U.S. Postal Service, or any other applicable shipping requirements. • Assure that the information provided in (1) thru (5) of this section accompanies the sample. • Package the sample so that it does not leak, spill, or vaporize from its packaging.		40 CFR 261.4(d)(2) 40 CFR 261.4(d)(2) (ii)(A) and (B) FAC 62-730.030

FIGURES

Figure 1: Site Location

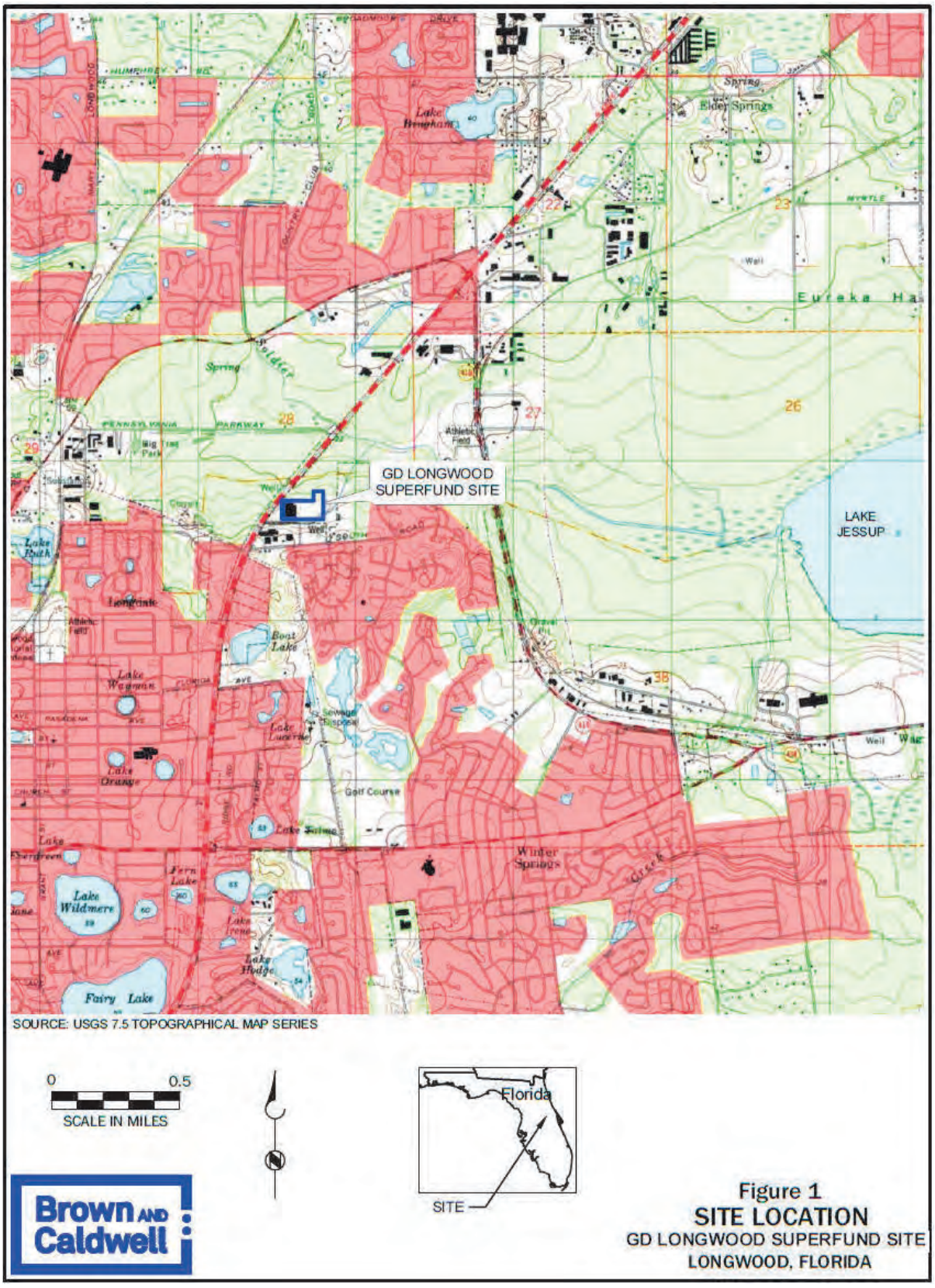


Figure 2: Site Vicinity

Figure 3: Site Plan

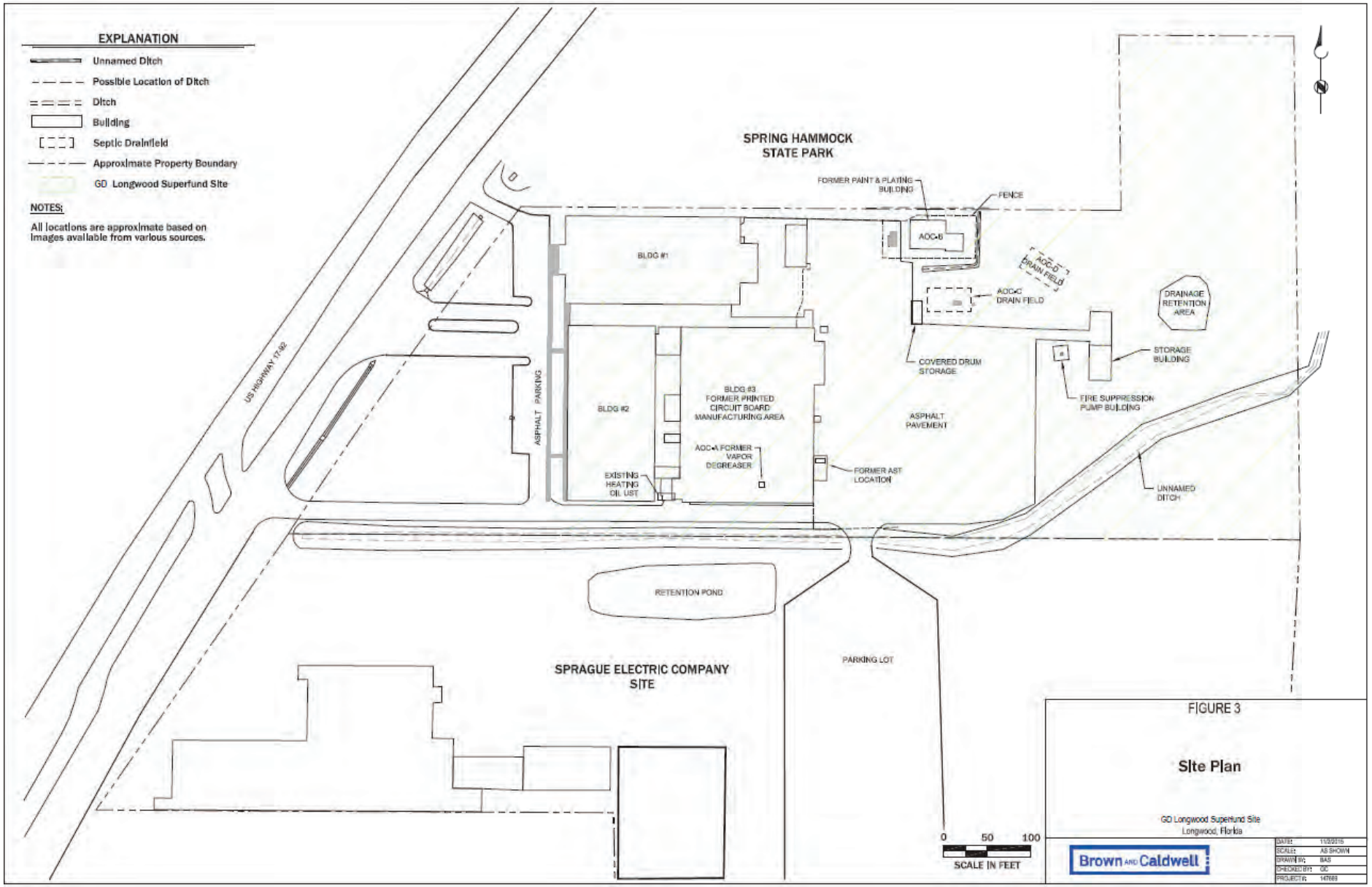


Figure 4: Detail of Site Plan Showing AOCs

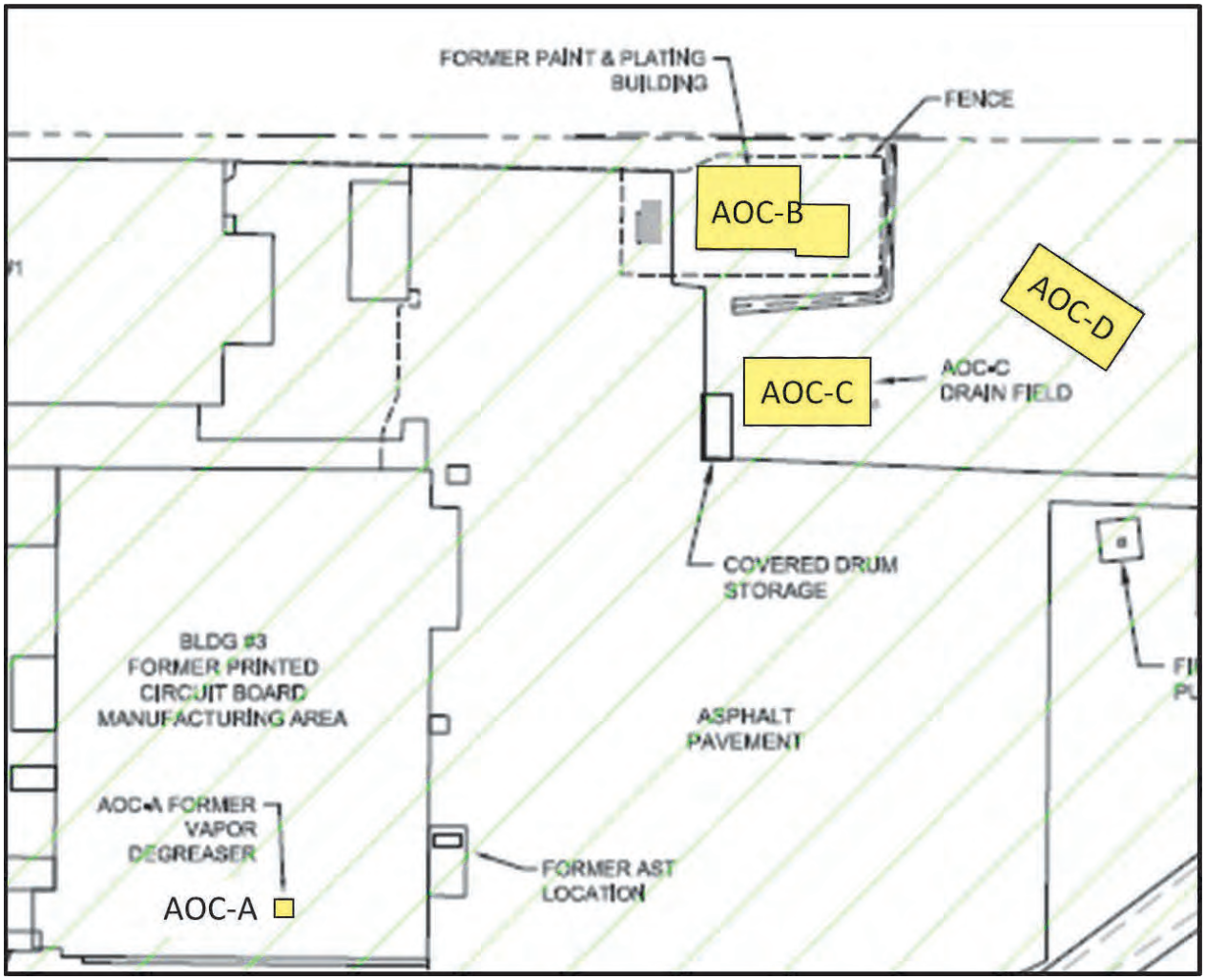
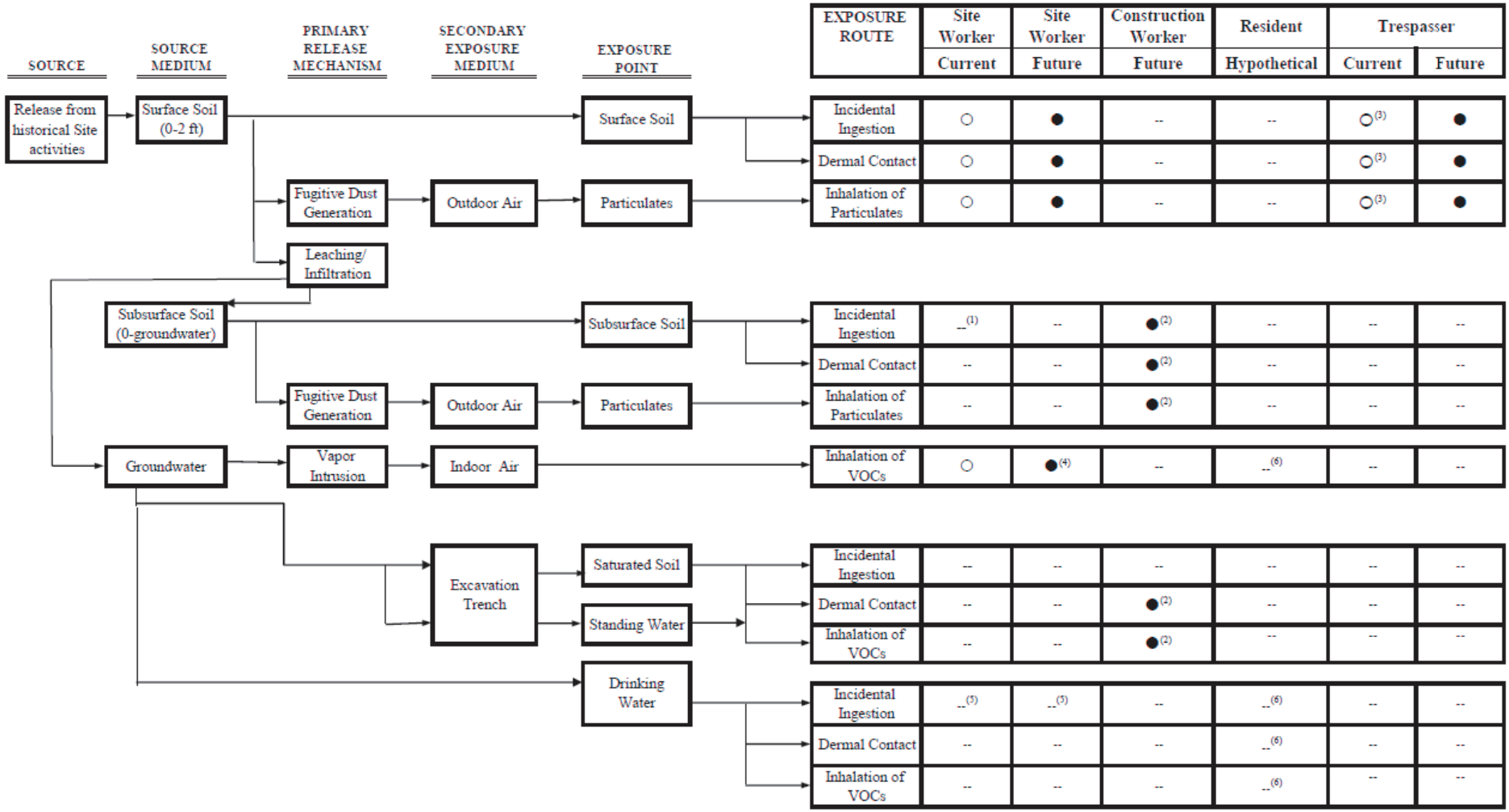


Figure 5: Human Health CSM



EXPOSURE ROUTE	Site Worker Current	Site Worker Future	Construction Worker Future	Resident Hypothetical	Trespasser Current	Trespasser Future
Incidental Ingestion	○	●	--	--	○(3)	●
Dermal Contact	○	●	--	--	○(3)	●
Inhalation of Particulates	○	●	--	--	○(3)	●
Incidental Ingestion	--(1)	--	●(2)	--	--	--
Dermal Contact	--	--	●(2)	--	--	--
Inhalation of Particulates	--	--	●(2)	--	--	--
Inhalation of VOCs	○	●(4)	--	--(6)	--	--
Incidental Ingestion	--	--	--	--	--	--
Dermal Contact	--	--	●(2)	--	--	--
Inhalation of VOCs	--	--	●(2)	--	--	--
Incidental Ingestion	--(5)	--(5)	--	--(6)	--	--
Dermal Contact	--	--	--	--(6)	--	--
Inhalation of VOCs	--	--	--	--(6)	--	--

● = Potentially complete exposure pathway
○ = Pathway theoretically complete under current Site conditions but de minimis based on limited Site use
-- = Incomplete exposure pathway

(1) Contact pathways with subsurface soils are incomplete except for intrusive (construction workers). No vertical mixing of soils is assumed.
(2) It is assumed that these exposures will be controlled via proper health and safety and soil management plans; however, they are quantitatively evaluated to provide a complete assessment of potential Site exposures.
(3) Trespassing at the Site has not been observed; however exposure pathways are quantitatively evaluated to provide a complete assessment of potential Site exposures.
(4) The indoor Site Worker exposed to indoor air via vapor intrusion and ingestion of groundwater is assumed to be a different individual from the outdoor Site Worker exposed to soil.
(5) There is no groundwater use at the Site; these pathways were evaluated at USEPA request.
(6) The site is zoned for commercial/industrial use; this pathway was included at USEPA request.

Figure 6: Historical Chlorinated VOC Concentrations in Groundwater Near AOC-A

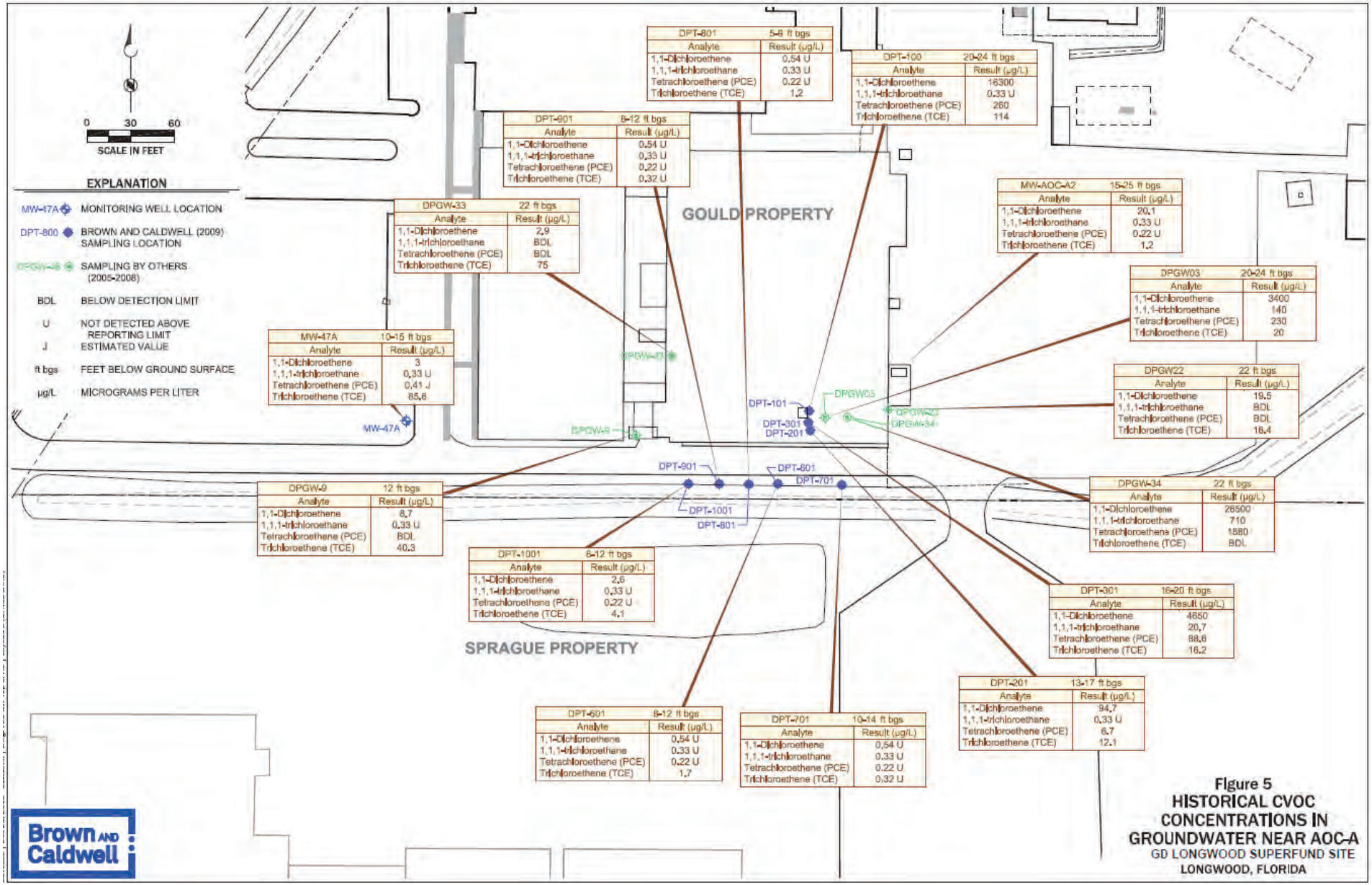


Figure 7: Concentrations of Primary VOCs and 1,4-Dioxane in Upper Surficial Aquifer (July 2021)

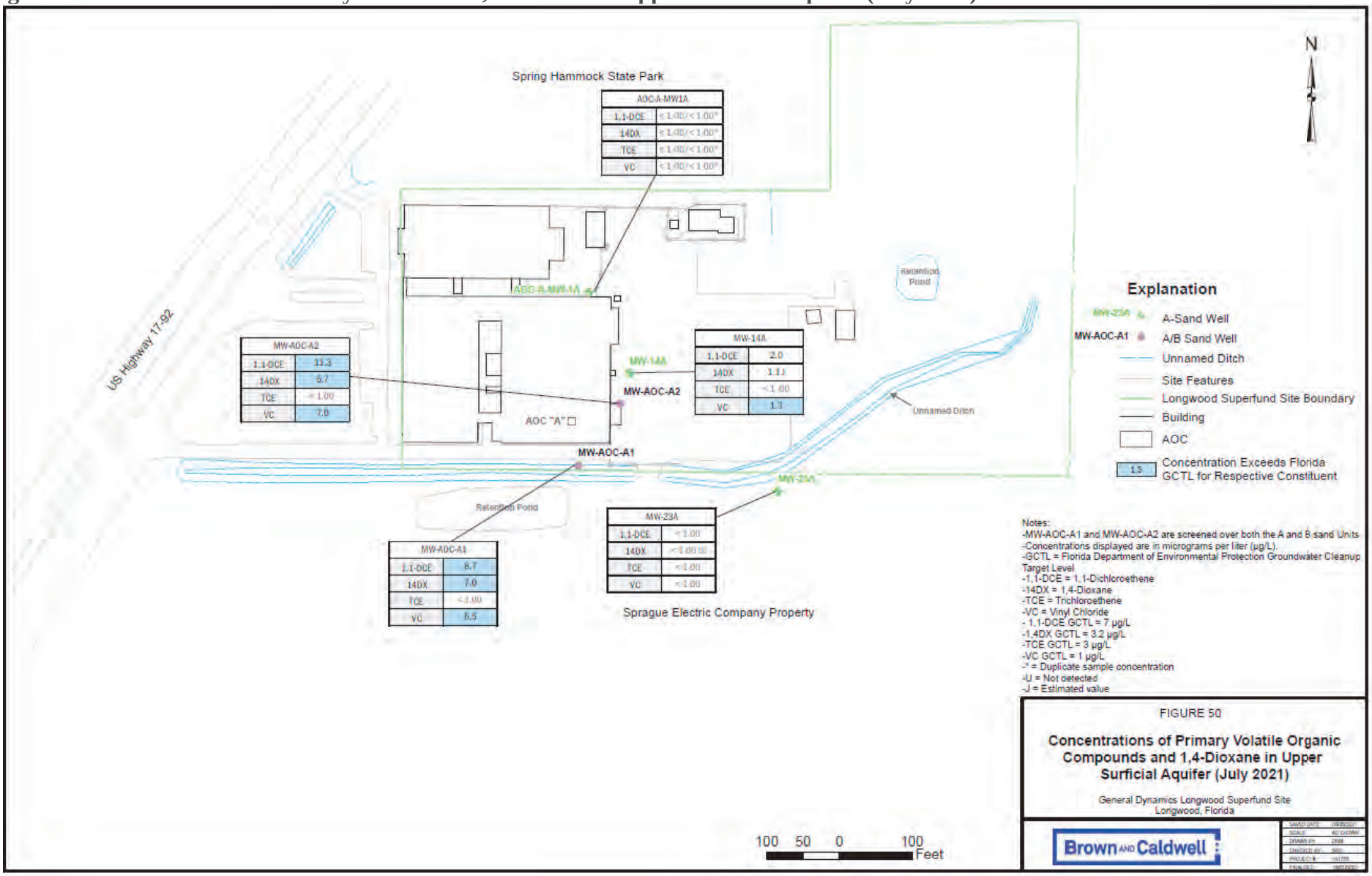
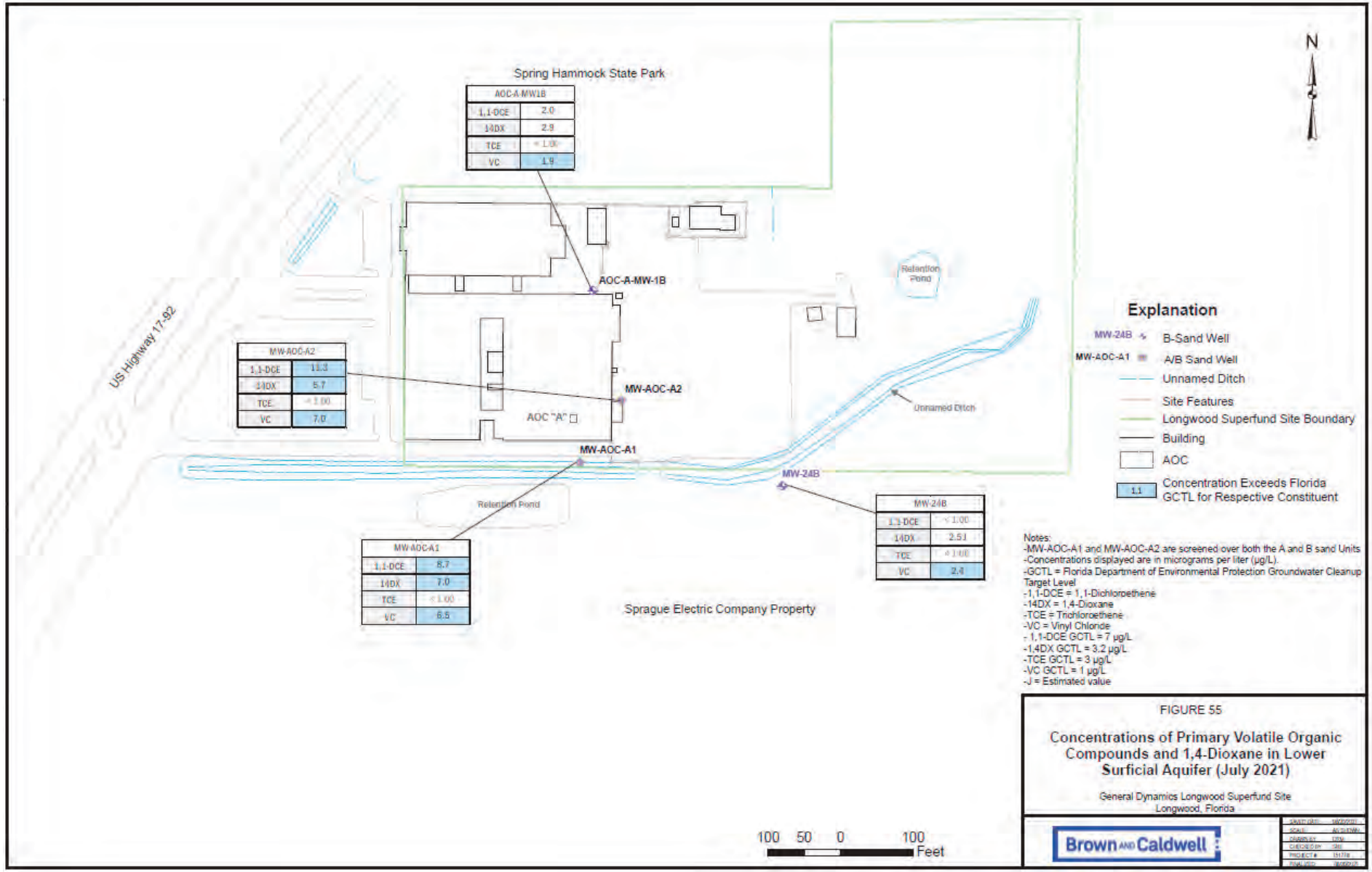


Figure 8: Concentrations of Primary VOCs and 1,4-Dioxane in Lower Surficial Aquifer (July 2021)



APPENDIX A. STATE OF FLORIDA CONCURRENCE

FLORIDA DEPARTMENT OF Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
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Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

September 9, 2022

Mr. Rusty Kestle
Remedial Project Manager
U.S. Environmental Protection Agency, Region 4
Superfund Restoration and Sustainability Branch

via email to Kestle.Rusty@epa.gov

Subject: Review Memo – Draft Record of Decision
General Dynamics Superfund Site
EPA Site ID: FLR000091322

Thank you for the opportunity to review the Draft Record of Decision (ROD) for the General Dynamics Superfund Site (the 'Site') received on July 6, 2022. The Florida Department of Environmental Protection (DEP) agrees with the Region IV U.S. Environmental Protection Agency's selected remedy for the General Dynamics Longwood Superfund Site (the "site").

The DEP supports the selected remedial action that will include a combination of in situ treatment with reagent injections, groundwater monitoring to assess the effectiveness of the injections and attainment of cleanup target levels, and the establishment of institutional controls to ensure appropriate onsite land use and prevent exposure to contaminated groundwater until remedial action objectives (RAOs) are met. The DEP agrees that the selected remedy is protective of human health and the environment, and consistent with state applicable or relevant and appropriate requirements (ARARs).

We appreciate the opportunity to work together on this site. If you have any questions in regard to the review of this ESD, please contact me at 850-245-8899 or Ginger.K.Shirah@FloridaDEP.gov.

Sincerely,

Ginger Shirah
Project Manager
FDEP, Waste Site Cleanup Section

APPENDIX B. COMMENT AND RESPONSE INDEX

A. Summary of Stakeholder Issues and Lead Agency Responses

The EPA received several comments from one of the PRPs during the public comment period for the Site's Proposed Plan. FDEP also provided feedback on the Proposed Plan. FDEP was primarily interested in identifying the proper COCs for each contaminated environmental media and in verifying the appropriate cleanup levels for each COC. The PRP's comments advocated that the current land use and interpretation of historical data could support selection of a different remedy, MNA. Each of these comments is addressed in the next section on technical and legal issues.

The EPA commits to providing nearby residents with clear and timely information about any risks that the cleanup may pose to human health and the environment. The EPA will also comply with all applicable, relevant, and appropriate practices to mitigate or prevent exposure to contaminants during the cleanup activities.

B. Technical and Legal Issues

The following comments were received on the Proposed Plan, all of which are either technical or legal in nature:

Comment #1: The acronym TCE is not defined in Table 1.

EPA Response to Comment #1: TCE is the acronym for trichloroethylene. The full chemical name is used in all tables in the ROD.

Comment #2: The cleanup target level in Table 1 for chloroform is listed as the Chapter 62-777, Florida Administrative Code (F.A.C.) with a value of 5.7 parts per billion. The groundwater cleanup target level for chloroform in Chapter 62-777, F.A.C. is 70 ppb (micrograms per liter).

EPA Response to Comment #2: EPA revised the cleanup target level for chloroform to 70 ppb to be consistent with FAC Chapter 62-777.

Comment #3: In addition to Table 1, the Remedial Investigation/Feasibility Study Report (RI/FS), dated September 17, 2021, identified 1,4-dioxane and metals (chromium and lead) as chemicals of potential concern (COPCs).

EPA Response to Comment #3: 1,4-Dioxane was identified as a COC in groundwater, based on the results of the human health risk assessment and detection of the chemical above Florida GCTLs.

Regarding chromium and lead, the RI/FS identified these metals as COPCs in soil but they are not considered COCs in groundwater.

Comment #4: The preferred remedial alternative, Alternative 5, and the RAOs described in the document are consistent with September 2021 RI/FS.

EPA Response to Comment #4: Comment noted.

Comment #5: EPA's Reliance on Risks to Future Residential Users Is Inconsistent with the Existing Commercial/Industrial Nature of the Property and Adjacent Properties: The EPA's Proposed Plan selects Alternative 5: In-Situ Treatment with Reagent Injection and Institutional Controls as its preferred remedy in response to what the EPA claims are unacceptable risks posed by impacted groundwater to future Site workers and hypothetical residents. The EPA correctly states that the Site is currently used for commercial purposes and that the future and reasonably anticipated future land uses are "commercial, industrial and recreational uses." Since residential uses are not contemplated at the Site and the Site is located next to the Sprague Electric Company Superfund Alternative Site ("Sprague Site"), the EPA's reliance on residential risks in selecting its preferred alternative remedy is inconsistent with the current and likely future uses of the Site. Instead, the use of institutional controls to restrict the Site to industrial/commercial and/or recreational uses and a prohibition of groundwater use is appropriate based on the location of the Site and its proximity to the Sprague Site. The commercial/industrial use of the Site supports the EPA's selection of Alternative 3: Monitored Natural Attenuation (MNA) with Institutional Controls.

EPA Response to Comment #5: Risks to future residents, although unacceptable, were not the only basis for the EPA's selection of Alternative 5: In Situ Treatment with Reagent Injection and Institutional Controls. Exceedance of MCLs may be used to determine that remedial action under Section 104 is warranted. See OSWER Directive 9355.0-30, "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions" (April 22, 1991).

Whether land use is industrial, commercial or residential may be relevant to determining the appropriate extent of remediation for other contaminated environmental media, but the extent to which groundwater will be remediated is determined by factors other than land use. See EPA guidance "Land Use in the Remedy Selection Process," OSWER Directive No. 9355.7-04 (May 25, 1995). Remediation of groundwater is specifically addressed in CERCLA and in the NCP. Section 121(d) of CERCLA requires that any remedial action selected under Section 104 of CERCLA shall require a level or standard of control that, at least, attains Maximum Contaminant Level Goals established under the Safe Drinking Water Act (42 U.S.C. § 300(f), et seq.). The NCP further addresses the expectations for remediation of groundwater in 40 CFR 300.430(a)(1)(iii)(F), which states that the EPA expects to return useable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site. Groundwater at the Site is designated by FDEP as Class G-II under F.A.C. 62-520.410 *Classification of Ground Water, Usage, Reclassification* and is potential drinking water source. Thus, the EPA has selected a remedy that will restore groundwater at the Site to support it use as a potential source of drinking water.

Similarly, whether the land is used for industrial, commercial or residential use is irrelevant to the rejection of Alternative 3: Monitored Natural Attenuation (MNA) with Institutional Controls. The EPA evaluates the feasibility of MNA according to OSWER Directive 9200.4-17P, "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and

Underground Storage Tank Sites" (April 21, 1999). The EPA's statistical evaluation of the monitoring data from wells in AOC-A does not indicate a clear and meaningful trend of decreasing concentrations of all COCs in all locations, which would be the basis for concluding that MNA would be an acceptable remedial alternative. Furthermore, there is no indication that MNA would restore groundwater to drinking water standards within a reasonable timeframe.

Comment #6: EPA's Table 2 Contains Incorrect Site Data and Fails to Identify Current Site Conditions: Table 2 in the EPA's preferred plan appears to have incorrect information regarding the historical environmental conditions at the Site. In order to provide an accurate overview of both historical and the most recent sampling data, General Dynamics provides the following table that identifies what we understand to be the highest historical concentrations detected and the most recent highest groundwater concentrations at the Site. As shown in the table below, the contaminant concentrations at the Site have declined significantly and supports the EPA's selection of Alternative 3: Monitored Natural Attenuation (MNA) with Institutional Controls.

Site Groundwater Cleanup Levels

COC	Highest Historical Concentration Detected at Site (ppb)	Most Recent Concentration Detected at Site (ppb)	Regulatory Basis for Cleanup Level	Cleanup Level (ppb)
Trichloroethylene ("TCE")	114[b]	ND <1.0[h]	State of Florida GCTLs FAC Chapter 666-777	3
1,1,1-Trichloroethane	710[c]	ND <1.0[h]	State of Florida GCTLs FAC Chapter 666-777	200
cis-1,2-Dichloroethene	15[c]	3.9[i]	State of Florida GCTLs FAC Chapter 666-777	70
trans-1,2-Dichloroethene	14.4[d]	1.8[j]	State of Florida GCTLs FAC Chapter 666-777	100
1,1-Dichloroethene	26,500[c]	11.3[i]	State of Florida GCTLs FAC Chapter 666-777	7
Vinyl Chloride	310[e]	7.0[i]	State of Florida GCTLs FAC Chapter 666-777	1
1,1-Dichloroethane	18[f]	2.5[k]	State of Florida GCTLs FAC Chapter 666-777	70
Tetrachloroethylene ("PCE")	1,880[c]	ND <1.0[h]	State of Florida GCTLs FAC Chapter 666-777	3
Chloroethane	1.9[g]	ND <2.0[h]	State of Florida GCTLs FAC Chapter 666-777	12
Chloroform	Not Detected	ND <1.0[h]	State of Florida GCTLs FAC Chapter 666-777	5.7
1,4-Dioxane	9.6[a]	7.0[k]	State of Florida GCTLs FAC Chapter 666-777	3.2

Table Notes:

a) Maximum concentration reported in Table 3 of the 2022 baseline HHRA
b) AOC-A Boring DPT-100 [20-24 feet below ground surface (bgs)] sampled by Brown and Caldwell in 2009
c) AOC-A Boring DPGW-34 (22 feet bgs) sampled by URS in 2005
d) AOC-A area well MW-AOC-A1 sampled by Brown and Caldwell in 2015
e) AOC-A Boring AOC-A-SB4 (27-29 feet bgs) sampled by Brown and Caldwell in 2015
f) AOC-A Boring DPGW-03 (20-24 feet bgs) sampled by Mactec in 2007
g) Not detected ("ND") at indicted laboratory reporting limit and previously presented in Table 5 of the 2022 RI/FS
h) MWAOC-A2 result from July 14, 2021 sampling event and previously presented in Table 5 of the 2022 RI/FS
i) AOC-A-MW-1B result from July 14, 2021 sampling event and previously presented in Table 5 of the 2022 RI/FS
j) MWAOC-A1 result from July 14, 2021 sampling event and previously presented in Table 5 of the 2022 RI/FS

EPA Response to Comment #6: The information regarding the historical environmental conditions at the Site is subject to interpretation of attribution due to the unknown quantity of contaminants historically released due to operations at the General Dynamics Longwood Superfund Site and the unknown quantity of contaminants historically released due to concurrent operations at the adjacent Sprague Electric Superfund Alternative Site. These two sites have groundwater contaminant plumes that have comingled extensively since the time of the release, and these releases occurred during the approximately same time frame at both sites over an unknown period of time several decades ago. Therefore, precise contamination concentration attribution is not possible, so the highest historical contaminant concentrations are estimates based on what has been detected in past groundwater sampling at the site which has occurred over a period of approximately fifteen years of groundwater investigations.

Even given the uncertainty in the range of concentrations over time, the EPA's statistical evaluation of the monitoring data does not indicate a clear and meaningful trend of decreasing concentrations of all COCs in all locations, which would be the basis for concluding that MNA would be an acceptable remedial alternative according to OSWER Directive 9200.4-17P, "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites" (April 21, 1999). Furthermore, there is no indication that MNA would restore groundwater to drinking water standards within a reasonable timeframe as is required by the NCP (40 CFR 300.430(a)(1)(iii)(F)).

Comment #7: EPA Must Ensure that Contamination from the Adjacent Sprague Site Does Not Migrate onto the Site: The EPA's proposed remedy would require injection of reagents into the aquifer to accelerate the rate of ongoing contaminant attenuation at the Site. Due to the proximity of the Sprague Site and the EPA's acknowledgment that groundwater contamination from the Sprague Site "appears to have contributed to the extended dissolved-phase groundwater contamination plume that is comingled with groundwater contamination from the Site," impacted groundwater from the Sprague Site may re-contaminate the Site after the positive effects of reagent injection have been realized. The EPA's proposed remedy must focus on contamination that originated on the Site. The EPA must take measures to ensure that the ongoing remedial measures on the Sprague Site prevent contaminant migration onto the Site. In the event that contamination from the Sprague Site results in recontamination of the Site, U.S. EPA must look to the Sprague Site PRPs to address that recontamination.

EPA Response to Comment #7: The EPA has required the PRP for the Sprague Site to implement a groundwater remedy which has been very effective in addressing the historical contaminant sources at the Sprague Site; this groundwater remedial action is ongoing, and the EPA is continuing to require the Sprague PRP to take measures to ensure that the ongoing remedial measures on the Sprague Site are performing properly and are preventing any contaminant migration onto the General Dynamics Longwood Site.

General Dynamics Longwood Superfund Site Proposed Plan
Public Meeting

U.S. Environmental Protection Agency
General Dynamics Longwood Superfund Site
Longwood, Seminole County, Florida
Virtual Proposed Plan
Public Meeting
Tuesday, August 16, 2022
6:00 p.m.

L'Tonya Spencer-Harvey, EPA Community Involvement Coordinator
Stacey Haire, Site Attorney
Rusty Kestle, EPA Remedial Project Manager
Felicia Jackson, Enforcement Project Manager

ALSO IN ATTENDANCE:
Scott Miller
Jim Claffey
Ginger Shirah
Steven Siros

Tiffany L. Jones, CCR, CVR
Huseby Global Litigation Services
800.333.2082

P R O C E E D I N G S

MS. SPENCER: My name is Latonya Spencer. I'm the community involvement coordinator for the General Dynamics Longwood Superfund Site in Longwood, Florida. And tonight, we will do a presentation for the proposed plan public meeting. As we were stating, today is actually August the 16, 2022. We'll make sure that's changed before it's uploaded on the site profile page.

Tonight's presenter is going to be Rusty Kestle, with EPA. Rusty, you want to show your face right quick?

MR. KESTLE: I think I did -- yeah.

MS. SPENCER: Okay.

MR. KESTLE: So, this is me live. I'm in Chattanooga, Tennessee at another site, so I couldn't make it down to Florida. But you'll see my presentations and I will be available to answer questions immediately after this recorded presentation.

MS. SPENCER: And also, we have our site attorney, Stacey Haire.

MS. HAIRE: Hi, I'm Stacey Hair, also available to answer questions after the presentation.

MS. SPENCER: And we also have our enforcement

person, Felicia Jackson.

MS. JACKSON: Hi, I'm Felicia Jackson. I'm the enforcement project manager for the site.

MS. SPENCER: And tonight, we're going to be presenting the proposed plan for the General Dynamics Longwood Superfund Site. If you have any questions during the presentation, please feel free to put them in the chat. And when we get to the question and answers, we'll acknowledge those questions. And also, just so you are aware, we do have a transcriptionist. And as participating in this, please note that we will be recording this virtual meeting. So, as a participant, just know that you're acknowledging your participation to be recorded.

If nothing else, I will start the recording for the presentation and we will move forward. Also, at the end of the presentation, if you have a question and you did not put it in the chat, please state your name, as we have a transcriptionist on here as well who will be transcribing the meeting. Please state your name before you state your question or your comment so that we can have it on record.

MR. KESTLE: Hello, my name is Rusty Kessel and I am the EPA project manager for the General Dynamics Longwood Superfund Site located at 1333 U.S. Highway

1792 in Longwood, Seminole County.

The General Dynamics site was used for electronics manufacturing operations from 1959 to 1988. A vapor degreaser was located at this site during these operations and chlorinate solvents for electronics degreasing operations were stored and used at the site. These electronic manufacturing operations use chlorinate solvents, over a period of 30 years, resulted in groundwater contamination at the site.

Here is a map showing the location of the General Dynamics Longwood Superfund Site outlined in purple, and a different Superfund Site is Sprague Electric Superfund Alternative Site outlined in orange. The Sprague Electric Superfund Alternative Site is also managed by the EPA and also had groundwater contamination for operations at that site around the same time period. The Sprague site is currently undergoing another potentially responsible party over oversight by the EPA. The adjacent Sprague Electric Company Superfund Alternative site also has chlorinated solvent groundwater contamination and these contaminate plumes have become comingled.

The General Dynamics Site property was transferred in October, 2015 to Seminole College

Foundation and is currently used for warehousing purposes by Seminole State College.

Chlorinated solvents at the General Dynamics Longwood Superfund Site will release the groundwater through their storage in an onsite above-ground storage tank and their use in the onsite vapor degreaser.

Here is a map showing the location of the former vapor degreaser, the former storage tank for the chemicals used in the vapor degreaser, and location of the groundwater monitoring wells and soil sampling locations at the General Dynamics Longwood Superfund Site. Groundwater monitoring wells are just what they sound like; wells to be sampled periodically to monitor levels and movement of any contamination in the ground.

Here is a map showing the groundwater flow direction at the site. Groundwater flows from the adjacent former Sprague Electric Superfund Alternative Site onto the General Dynamics Longwood Superfund Site. Historically, groundwater contamination from both sites has been mixed together and become comingled over time due to the groundwater flow. However, much of the contamination coming from the Sprague Superfund Alternative Site has been cleaned up

over the last 12 years under the supervision of the Environmental Protection Agency.

The proposed plan that we are discussing today is for the cleanup of the groundwater contamination that originated at the General Dynamics Longwood Superfund Site.

The human health risk assessment is focused on the potential for future exposure of onsite workers' commercial industrial construction utility to contaminates of concern detected in groundwater and insolvable gas. The contaminates of concern at this site are volatile organic compounds that vaporize in air, which is why gas from contaminated soil is a potential exposure pathway. Surface soil exposure pathways were not evaluated quantitatively in the human health risk assessment because detected concentrations were below screening values. So, exposure to surface soil does not pose any acceptable risk and does not need to be cleaned up.

For onsite construction and utility workers, the risk of exposure due to soil vapor pathway was less than the USEPA and the Florida Department of Environmental Protection target risk levels. The primary exposure pathway associated with potential risks and hazards at the site are ingestion of

groundwater. The noncancer and carcinogenic risks are driven primarily by the presence of trichloroethylene in the contaminated groundwater.

If you were to hook up to the city or county water supply where drinking water is safe, no public drinking water supply wells have been impacted by contamination from the site. The EPA doesn't know of anyone in the vicinity using well water for drinking water. Even still, the goal of this remedy is to restore the groundwater at the site to drinking water quality.

The remedial action objectives at the site are:

To prohibit use of direct contact with and ingestion of groundwater with COC concentration above cleanup levels that present an unacceptable risk to human health. That means keeping anyone from using, touching or drinking contaminated groundwater. Also, to prevent exposure to COCs through the vapor intrusion pathway that could result in unacceptable risk to human health. That means keeping anyone from breathing the vaporized form of the contamination. And finally, to restore groundwater to drinking water quality throughout the plume to meet federal primary drinking water standards or more stringent Florida Department Environmental Protections groundwater

target cleanup levels based on classification of the aquifer as a potential source of drinking water Class G2. That means that the plan is to clean up the groundwater so that it can be used as a source of drinking water in the future.

Five remedial cleanup alternatives were considered. Alternative one was no action. What would happen if no one did anything to clean up the site. Alternative two was institutional controls on groundwater use only. That means just prohibiting anyone from using the groundwater with no plans for cleanup of the groundwater. Alternative three was monitored naturally attenuation of the groundwater. That means watching and waiting to see if nature would clean up the groundwater contamination on its own. Alternative four was containment in above-ground ex situ treatment of groundwater by extraction wells, which means pumping the contaminated groundwater out of the ground, treating it and then discharging the cleaned-up groundwater to the surface water onsite. And alternative five was below-ground in situ groundwater treatment by reagent injection. This means injection material into the ground to treat the contamination where it is in place below ground.

This slide shows the estimated cost of the five

remedial alternatives that were considered in this proposed plan. EPA prefers alternative five, which involves injection of a treatment technology into the groundwater. Alternative five would eliminate the risk to human health through the treatment of the contamination along with institutional controls to limit the use of groundwater until it can be cleaned up. The preferred remedy is expected to reach cleanup goals within five years. If the cleanup goals for groundwater are not met within five years, the EPA will conduct an evaluation of the remedy known as a five-year review.

This virtual meeting is being recorded and transcribed to ensure that all comments and questions are acknowledged in the Responsiveness Summary. Please state your name before providing comments or asking questions. Please ensure that your computer phone remain on mute when not speaking. You may also place your questions or comments in the chat for acknowledgement during the virtual meeting.

MS. SPENCER: Okay. That is the end of the presentation. I don't see any questions in the chat box. Are there any questions about the presentation or about the site, or about the proposed plan, or next steps? In the meantime, I'm assuming people are

thinking of something to say or thinking of something to ask. Just know that we're going to upload the presentation onto the site profile page, as well as the original proposed plan and the fact sheet. So, all the information that's been presented will be on the site profile page, as well as the administrative record with all of the documents that were used to come to this proposed alternative. So, at this point, did anybody think of any questions or any comments that they may have at this time?

(NO RESPONSE)

Nada? Going once, going twice. Okay. Rusty, do you have any closing remarks that you want to make, or Stacey, before we close the meeting, since no one has any questions or comments?

MS. HAIRE: If someone decides later to make a comment, how should they do that?

MS. SPENCER: Comments can be emailed to Rusty. You didn't put your email on the slide, Rusty. You want to give them your email information if they want to email comments or questions to you?

MR. KESTLE: I think everybody on the call has it, but that's "kestle," K-E-S-T-L-E, ".rusty@epa.gov." It's like we don't really have any guests, as far as people from the public, but they

might be reading this and they can have my email address through that transcript.

MS. SPENCER: Okay.

MS. HAIRE: And the deadline for submitting comments is August 28th.

MS. SPENCER: Yes, August the 28th is the correct date for comments to be -- and if you mail them in to 61 Forsyth Street, Atlanta, Georgia 30303, just make sure that it's postdated August 28th and have "Rusty Kestle, USEPA." And that address again is 61 Forsyth, F-O-R-S-Y-T-H, Street SW, Atlanta, Georgia 30303.

So, if there are no other comments or questions, thank you all for joining us this evening for this short presentation and information and hope it provided to you what we needed. And again, if you have comments or questions that you want to submit later, please send them to Rusty Kestle via email or mail, as we just said. And thank you again for joining us this evening. Great proposed plan meeting, greatest ever.

MR. KESTLE: Thank you.

MS. SPENCER: Thank you all.

MR. KESTLE: Thank you. Thank you, everybody.

(PUBLIC MEETING CONCLUDED AT APPROXIMATELY 6:20 P.M.)

C E R T I F I C A T E

STATE OF GEORGIA

COBB COUNTY

I hereby certify that the foregoing transcript of the public meeting was taken down as stated in the caption, and the information thereto was reduced to written form; that the foregoing 11 pages represent a true and correct transcript of said public meeting. I further certify that I am not of kin or counsel to the parties in the case, am not in the regular employ for any of said parties, nor am I in any way interested in the result of said case.

Dated: September 6, 2022.

Tiffany L. Jones, CCR, CVR
Certified Court Reporter #2863
Certified Verbatim Reporter #4027

D I S C L O S U R E

STATE OF GEORGIA

COUNTY OF COBB

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Appendix B
to Consent Decree in *U.S. v. General Dynamics Corporation et al*.

STATEMENT OF WORK
FOR REMEDIAL DESIGN/REMEDIAL ACTION
AT THE GENERAL DYNAMICS LONGWOOD SUPERFUND SITE

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1. INTRODUCTION

1.1 **Purpose of SOW**. This SOW sets forth the procedures and requirements for implementing the Work.

1.2 **Structure of the SOW**

- Section 2 (Community Involvement) sets forth the EPA's and Settling Defendants' responsibilities for community involvement.
- Section 3 (Coordination and Supervision) contains the provisions for selecting the Supervising Contractor and Project Coordinators regarding the Work.
- Section 4 (Remedial Design) sets forth the process for developing the Remedial Design, which includes the submission of specified primary deliverables.
- Section 5 (Remedial Action) sets forth requirements regarding the completion of the Remedial Action, including primary deliverables related to completion of the Remedial Action.
- Section 6 (Reporting) sets forth Settling Defendants' reporting obligations.
- Section 7 (Deliverables) describes the contents of the supporting deliverables and the general requirements regarding Settling Defendants' submission of, and the EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 8 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the Remedial Action.
- Section 9 (State Participation) addresses State participation.
- Section 10 (References) provides a list of references, including URLs.

1.3 The Scope of the Remedy includes the actions described in Section 12.1 of the Record of Decision, including:

- Injection of reagents into the aquifer (present to a depth of approximately 35 feet below ground surface) to stimulate contaminant degradation. The injection program will consist of a grid of injection points at AOC-A, which is located at the Site primarily inside and/or around Building 3, to depths of approximately 35 feet below ground surface. The injected reagents may include primary substrates, cometabolites, nutrients, or microorganisms. In-situ groundwater treatment may include using bioremediation techniques to stimulate the native or augmented microorganisms in the ground to treat contaminants. In-situ chemical oxidation may also be considered.

- Groundwater monitoring at the Site will be conducted during and after the injection program to assess groundwater quality. The groundwater monitoring is expected to continue until groundwater cleanup levels are achieved at the Site.

- Institutional controls to prevent drilling of groundwater supply wells and to restrict groundwater use to preclude human exposure to contaminated groundwater until remedial action objectives are met.

1.4 The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Consent Decree ("Decree"), have the meanings assigned to them in CERCLA, in such regulations, or in the Decree, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated.

2. COMMUNITY INVOLVEMENT

2.1 As requested by the EPA, Settling Defendants shall conduct community involvement activities under the EPA's oversight as provided for in, and in accordance with this Section. Such activities must include designation of a Community Involvement Coordinator ("CI Coordinator").

2.2 Community Involvement Responsibilities

(a) The EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously, during the Remedial Investigation and Feasibility Study ("RI/FS") phase, the EPA developed a Community Involvement Plan ("CIP") for the Site. In accordance with 40 C.F.R. § 300.435(c), the EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Work that are not already addressed or provided for in the existing CIP.

(b) **Settling Defendants' CI Coordinator**. As requested by the EPA, Settling Defendants shall, within 15 days, designate and notify the EPA of Settling Defendants' CI Coordinator (Settling Defendants' CI Coordinator). Settling Defendants may hire a contractor for this purpose. Settling Defendants' notice must include the name, title, and qualifications of the Settling Defendants' CI Coordinator. Settling Defendants' CI Coordinator shall coordinate his/her activities with the EPA's CI Coordinator, provide support regarding the EPA's community involvement activities, and, as requested by the EPA's CI Coordinator, provide draft responses to the public's inquiries including requests for information or data about the Site. The Settling Defendants' CI Coordinator has the responsibility to ensure that when they communicate with the public, the Settling Defendants protect any "Personally Identifiable Information" ("PII") (*e.g.* sample results from residential properties) in accordance with "EPA Policy 2151.0: Privacy Policy."

(c) As requested by the EPA, Settling Defendants shall participate in community involvement activities, including participation in: (1) public meetings that may be held or sponsored by the EPA to explain activities at or relating to the Site (with interpreters present for community members with limited English proficiency); and (2) any other activities the EPA decides are necessary to protect and address the concerns of EJ and disadvantaged communities. Settling Defendants' support of the EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to: (1) any Community Advisory Groups; (2) any Technical Assistance Grant ("TAG") recipients and their advisors; and (3) other entities to provide them with a reasonable opportunity for review and comment. The EPA may describe in its CIP Settling Defendants' responsibilities for community involvement activities. All community involvement activities conducted by Settling Defendants at the EPA's request are subject to EPA's oversight. Upon the EPA's request, Settling Defendants shall

establish, as early as is feasible, a community information repository at or near the Site, as provided in the CIP, to house one copy of the administrative record.

(d) **Information for the Community**. As requested by the EPA, Settling Defendants shall develop and provide to the EPA information about the design and implementation of the remedy including: (1) any validated data from monitoring of impacts to communities as provided in the Community Impacts Mitigation Plan under ¶ 7.7(e); (2) results from unvalidated sampling as provided under ¶ 7.7(d)(7); (3) a copy of the Community Impacts Mitigation Plan required under ¶ 7.7(e); (4) schedules prepared under Section 8; (5) dates that Settling Defendants completed each task listed in the schedules; and (6) digital photographs of the Work being performed, together with descriptions of the Work depicted in each photograph, the purpose of the Work, the equipment being used, and the location of the Work. The EPA Project Coordinator may use this information for communication to the public via the EPA's website, social media, or local and mass media. The information provided to the EPA should be suitable for sharing with the public and the education levels of the community as indicated in EJ Screen. Translations should be in the dominant language(s) of community members with limited English proficiency.

3. COORDINATION AND SUPERVISION

3.1 Project Coordinators

(a) Settling Defendants' Project Coordinator must have sufficient technical expertise to coordinate the Work. Settling Defendants' Project Coordinator may not be an attorney representing any Settling Defendant in this matter. Settling Defendants' Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Work.

(b) The EPA shall designate and notify the Settling Defendants of the EPA's Project Coordinator and Alternate Project Coordinator. The EPA may designate other representatives, which may include its employees, contractors, and/or consultants, to oversee the Work. The EPA's Project Coordinator/Alternate Project Coordinator will have the same authority as a remedial project manager and/or an on-scene coordinator, as described in the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"). This includes the authority to halt the Work and/or to conduct or direct any necessary response action when it is determined that conditions at the Site constitute an emergency or may present an immediate threat to public health or welfare or the environment due to a release or threatened release of Waste Material.

(c) The State shall designate and notify the EPA and the Settling Defendants of its Project Coordinator and Alternate Project Coordinator. The State may designate other representatives, including its employees, contractors and/or consultants to oversee the Work. For any meetings and inspections in which the EPA's Project Coordinator participates, the State's Project Coordinator also may participate. Settling Defendants shall notify the State reasonably in advance of any such meetings or inspections.

(d) Settling Defendants' Project Coordinators shall communicate with the EPA's and the State's Project Coordinators at least monthly.

3.2 **Supervising Contractor**. Settling Defendants' proposed Supervising Contractor must have sufficient technical expertise to supervise the Work and a quality assurance system that complies with the most recent version of *Quality Systems for Environmental Data and Technology Programs -- Requirements with Guidance for Use* (American National Standard), ANSI/ASQC E4 (Feb. 2014).

3.3 **Procedures for Disapproval/Notice to Proceed**

(a) Settling Defendants shall designate, and notify the EPA, within 15 days after the Effective Date, of the names, titles, contact information, and qualifications of the Settling Defendants' proposed Project Coordinator and Supervising Contractor, whose qualifications shall be subject to the EPA's review for verification based on objective assessment criteria (*e.g.*, experience, capacity, technical expertise) and do not have a conflict of interest with respect to the project.

(b) The EPA shall issue notices of disapproval and/or authorizations to proceed regarding any proposed Project Coordinator and Supervising Contractor, as applicable. If the EPA issues a notice of disapproval, Settling Defendants shall, within 30 days, submit to the EPA a list of supplemental proposed Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. Settling Defendants may select any coordinator/contractor covered by an authorization to proceed and shall, within 21 days, notify the EPA of Settling Defendants' selection.

(c) The EPA may disapprove the proposed Project Coordinator, the Supervising Contractor, or both, based on objective assessment criteria (*e.g.*, experience, capacity, technical expertise), if they have a conflict of interest regarding the project, or any combination of these factors.

(d) Settling Defendants may change their Project Coordinator and/or Supervising Contractor, or both, by following the procedures of ¶¶ 3.3(a) and 3.3(b).

(e) Notwithstanding the procedures of ¶¶ 3.3(a) through 3.3(d), Settling Defendants have proposed, and the EPA has authorized Settling Defendants to proceed, regarding the following Project Coordinator and Supervising Contractor:

Reinhard Ruhmke
Managing Geologist
Brown and Caldwell
5430 Wade Park Boulevard
Suite 200
Raleigh, NC 27607
rruhmke@brwncald.com

4. REMEDIAL DESIGN

4.1 **Remedial Design Work Plan ("RDWP")**. Settling Defendants shall submit a RDWP for EPA approval. The RDWP must include:

(a) Plans for implementing all Remedial Design activities identified in this SOW, in the RDWP, or required by the EPA to be conducted to develop the Remedial Design;

(b) A description of the overall management strategy for performing the Remedial Design, including a proposal for phasing of design and construction, if applicable;

(c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action as necessary to implement the Work;

(d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the Remedial Design;

(e) Descriptions of any areas requiring clarification and/or anticipated problems (*e.g.*, data gaps);

(f) Descriptions of any applicable permitting requirements and other regulatory requirements;

(g) Description of plans for obtaining access in connection with the Work, such as property access agreements; and

(h) The following supporting deliverables described in ¶ 7.7 (Supporting Deliverables): Health and Safety Plan and Emergency Response Plan.

4.2 **Institutional Controls Implementation and Assurance Plan ("ICIAP")**. Settling Defendants shall submit a proposed ICIAP for EPA approval. The ICIAP should describe plans to implement, maintain, monitor, and enforce the Institutional Controls ("ICs") at the Site. The ICIAP shall include plans to commence implementing ICs as early as is feasible, including before EPA approval of the 100% design under ¶ 4.6. The ICIAP also should include procedures for effective and comprehensive review of implemented ICs, procedures for the solicitation of input from affected communities regarding the implementation of ICs, procedures to periodically review and determine if the ICs are having their intended effect, and if not, procedures for the development, approval and implementation of alternative, more effective ICs. Settling Defendants shall develop the ICIAP in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012). Settling Defendants also shall consider including in the ICIAP the establishment of effective Long-Term Stewardship procedures including those described in the EPA Memorandum: *Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship* (July 20, 2018). The ICIAP must include the following additional requirements:

(a) Locations of recorded real property interests (*e.g.*, easements, liens) and resource interests in the property that may affect ICs (*e.g.*, surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and

(b) Legal descriptions and survey maps that are prepared according to current American Land Title Association ("ALTA") survey guidelines and certified by a licensed surveyor.

4.3 Settling Defendants shall communicate regularly with the EPA to discuss design issues as necessary, as directed or determined by the EPA.

4.4 **Preliminary (30%) Remedial Design**. Settling Defendants shall submit a Preliminary (30%) Remedial Design for EPA's comment. The Preliminary Remedial Design must include:

(a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);

(b) Preliminary drawings and specifications;

(c) Descriptions of permit requirements, if applicable;

(d) Preliminary Operation and Maintenance ("O&M") Plan and O&M Manual;

(e) A description of how the Remedial Action will be implemented in a manner that minimizes environmental impacts in accordance with the EPA's *Principles for Greener Cleanups* (Aug. 2009);

(f) A description of monitoring and control measures to protect human health and the environment, such as air monitoring, and measures to reduce and manage traffic, noise, odors, and dust, during the Remedial Action in accordance with the Community Involvement Handbook pp. 53-66 (text box on p. 55) to minimize community impacts;

(g) Any proposed revisions to the Remedial Action Schedule that is set forth in ¶ 8.3 (Remedial Action Schedule); and

(h) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 7.7 (Supporting Deliverables): Field Sampling Plan; Quality Assurance Project Plan; Site-Wide Monitoring Plan; Community Impacts Mitigation Plan, Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; O&M Plan; and O&M Manual.

4.5 **Pre-final (95%) Remedial Design**. Settling Defendants shall submit the Pre-final (95%) Remedial Design for EPA's comment. The Pre-final Remedial Design must be a continuation and expansion of the previous design submittal and must address the EPA's comments regarding the Preliminary Remedial Design. The Pre-final Remedial Design will serve as the approved Final (100%) Remedial Design if the EPA approves the Pre-final Remedial Design without comments. The Pre-final Remedial Design must include:

(a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's MasterFormat 2020 or more recent edition;

(b) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions;

(c) Pre-final versions of the same elements and deliverables as are required for the Preliminary Remedial Design;

(d) A specification for photographic documentation of the Remedial Action; and

(e) Updates of all supporting deliverables required to accompany the Preliminary (30%) Remedial Design.

4.6 Final (100%) Remedial Design. Settling Defendants shall submit the Final (100%) Remedial Design for EPA approval. The Final Remedial Design must address the EPA's comments on the Pre-final Remedial Design and must include final versions of all Pre-final Remedial Design deliverables.

5. REMEDIAL ACTION

5.1 Remedial Action Work Plan ("RAWP"). Settling Defendants shall submit a RAWP for EPA approval that includes:

(a) A proposed Remedial Action Construction Schedule in the form of a Gantt chart;

(b) An updated health and safety plan that covers activities during the Remedial Action; and

(c) Plans for satisfying any permitting requirements, including obtaining permits for off-site activity and for satisfying substantive requirements of permits for on-site activity.

5.2 Meetings and Inspections

(a) **Preconstruction Conference**. Settling Defendants shall hold a preconstruction conference with the EPA and others as directed or approved by the EPA and as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995). Settling Defendants shall prepare minutes of the conference and shall distribute the minutes to all Parties.

(b) **Periodic Communications**. During the construction portion of the Remedial Action (Remedial Action Construction), Settling Defendants shall communicate regularly, at least monthly, with the EPA, and others as directed or determined by the EPA, to discuss construction issues. Settling Defendants shall distribute an agenda and list of attendees to all Parties prior to each meeting or telephone call. Settling Defendants shall prepare minutes of the meetings or calls and shall distribute the minutes to all Parties.

(c) **Inspections**

(1) The EPA or its representative shall conduct periodic inspections of and may have an on-site presence during the Work. At the EPA's request, the Supervising Contractor or other designee shall accompany the EPA or its representative during inspections.

(2) Upon notification by the EPA of any deficiencies in the Remedial Action Construction, Settling Defendants shall take all necessary steps to correct the deficiencies and/or bring the Remedial Action Construction into compliance with

the approved Final Remedial Design, any approved design changes, and/or the approved RAWP. If applicable, Settling Defendants shall comply with any schedule provided by the EPA in its notice of deficiency.

5.3 Permits

(a) As provided in CERCLA § 121(e), and Section 300.400(e) of the NCP, no permit is required for any portion of the Work conducted entirely on-site *(i.e.*, within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

(b) Settling Defendants may seek relief under the provisions of Section **XI** (Force Majeure) of the Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval referenced in ¶ 5.3(a) and required for the Work, provided that they have submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.

(c) Nothing in the Decree or this SOW constitutes a permit issued under any federal or state statute or regulation.

5.4 Emergency Response and Reporting

(a) **Emergency Action**. If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Settling Defendants shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 5.4(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.

(b) **Release Reporting**. Upon the occurrence of any event during performance of the Work that Settling Defendants are required to report under CERCLA § 103 or Section 304 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), Settling Defendants shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officer" for purposes of immediate oral notifications and consultations under ¶ 5.4(a) and ¶ 5.4(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Region 4 spill reporting hotline, available 24 hours per day, at (404) 562-8700 (if neither EPA Project Coordinator is available).

(d) For any event covered by ¶ 5.4(a) and ¶ 5.4(b), Settling Defendants shall: (1) within 14 days after the onset of such event, submit a report to the EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and

(2) within 30 days after the conclusion of such event, submit a report to the EPA describing all actions taken in response to such event.

(e) The reporting requirements under ¶ 5.4 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

5.5 Off-Site Shipments

(a) Settling Defendants may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with CERCLA § 121(d)(3), and 40 C.F.R. § 300.440. Settling Defendants will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Settling Defendants obtain a prior determination from the EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

(b) Settling Defendants may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Settling Defendants also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Settling Defendants shall provide the notice after the award of the contract for Remedial Action construction and before the Waste Material is shipped.

(c) Settling Defendants may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with CERCLA § 121(d)(3), 40 C.F.R. § 300.440, *EPA's Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the Record of Decision. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

5.6 Remedial Action Construction Completion

(a) For purposes of this ¶ 5.6, "Remedial Action Construction" comprises, for any Remedial Action that involves the construction and operation of a system to achieve Performance Standards (for example, groundwater or surface water restoration remedies), the construction of such system and the performance of all activities necessary for the system to function properly and as designed.

(b) **Inspection of Constructed Remedy**. Settling Defendants shall schedule an inspection to review the construction and operation of the system and to review whether the system is functioning properly and as designed. The inspection must be attended by Settling

Defendants and the EPA and/or their representatives. A reinspection must be conducted if requested by the EPA.

(c) **Shakedown Period**. There shall be a shakedown period of up to one year for the EPA to review whether the remedy is functioning properly and performing as designed. Settling Defendants shall provide such information as the EPA requests for such review.

(d) **Remedial Action Report**. Following the shakedown period, Settling Defendants shall submit an "Remedial Action Report" requesting the EPA's determination that Remedial Action Construction has been completed. The Remedial Action Report must: (1) include statements by a registered professional engineer and by Settling Defendants' Project Coordinator that the construction of the system is complete and that the system is functioning properly and as designed; (2) include a demonstration, and supporting documentation, that construction of the system is complete and that the system is functioning properly and as designed; (3) include as-built drawings signed and stamped by a registered professional engineer; (4) be prepared in accordance with Chapter 2 (Remedial Action Completion) of the EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (5) be certified in accordance with ¶ 7.5 (Certification).

(e) If the EPA determines that Remedial Action Construction is not complete, the EPA shall so notify Settling Defendants. The EPA's notice must include a description of, and schedule for, the activities that Settling Defendants must perform to complete Remedial Action Construction. The EPA's notice may include a schedule for completion of such activities or may require Settling Defendants to submit a proposed schedule for EPA approval. Settling Defendants shall perform all activities described in the EPA notice in accordance with the schedule.

(f) If the EPA determines, based on the initial or any subsequent Remedial Action Report, that Remedial Action Construction is complete, the EPA shall so notify Settling Defendants.

5.7 Certification of Remedial Action Completion

(a) **Monitoring Report**. Settling Defendants shall submit a Monitoring Report to the EPA requesting the EPA's Certification of Remedial Action Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendants' Project Coordinator that the Remedial Action is complete; (2) be prepared in accordance with Chapter 2 (Remedial Action Completion) of the EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); (3) contain monitoring data to demonstrate that Performance Standards have been achieved; and (4) be certified in accordance with ¶ 7.5 (Certification).

(b) If the EPA concludes that the Remedial Action is not Complete, the EPA shall so notify Settling Defendants. The EPA's notice must include a description of any deficiencies. The EPA's notice may include a schedule for addressing such deficiencies or may require

Settling Defendants to submit a schedule for EPA approval. Settling Defendants shall perform all activities described in the notice in accordance with the schedule.

(c) If the EPA concludes, based on the initial or any subsequent Monitoring Report requesting Certification of Remedial Action Completion, that the Remedial Action is complete, the EPA shall so certify to Settling Defendants. This certification will constitute the Certification of Remedial Action Completion for purposes of the Decree, including Section **XIV** of the Decree (Covenants by Plaintiffs). Certification of Remedial Action Completion will not affect Settling Defendants' remaining obligations under the Decree.

5.8 Periodic Review Support Plan ("PRSP"). Settling Defendants shall submit the PRSP for EPA approval. The PRSP addresses the studies and investigations that Settling Defendants shall conduct to support the EPA's reviews of whether the Remedial Action is protective of human health and the environment in accordance with CERCLA § 121(c) (also known as "Five-Year Reviews"). Settling Defendants shall develop the plan in accordance with *Comprehensive Five-year Review Guidance*, OSWER 9355.7-03B-P (June 2001), and any other relevant five-year review guidances.

5.9 Certification of Work Completion

(a) **Work Completion Inspection**. Settling Defendants shall schedule an inspection for the purpose of obtaining the EPA's Certification of Work Completion. The inspection must be attended by Settling Defendants and the EPA and/or their representatives.

(b) **Work Completion Report**. Following the inspection, Settling Defendants shall submit a report to the EPA requesting EPA's Certification of Work Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendants' Project Coordinator that the Work, including all O&M activities, is complete; and (2) be certified in accordance with ¶ 7.5 (Certification). If the Monitoring Report submitted under ¶ 5.7(a) includes all elements required under this ¶ 5.9(b), then the Monitoring Report suffices to satisfy all requirements under this ¶ 5.9(b).

(c) If the EPA concludes that the Work is not complete, the EPA shall so notify Settling Defendants. The EPA's notice must include a description of the activities that Settling Defendants must perform to complete the Work. The EPA's notice must include specifications and a schedule for such activities or must require Settling Defendants to submit specifications and a schedule for EPA approval. Settling Defendants shall perform all activities described in the notice or in the EPA-approved specifications and schedule.

(d) If the EPA concludes, based on the initial or any subsequent report requesting Certification of Work Completion, that the Work is complete, the EPA shall so certify in writing to Settling Defendants. Issuance of the Certification of Work Completion does not affect the following continuing obligations: (1) activities under the Periodic Review Support Plan; (2) obligations under Sections **VII** (Property Requirements), and **XVII** (Records) of the Decree; (3) Institutional Controls obligations as provided in the ICIAP; and (4) reimbursement of the EPA's Future Response Costs under Section **X** (Payments for Response Costs) of the Decree.

6. REPORTING

6.1 **Progress Reports**. Commencing with the month following lodging of the Decree and until the EPA approves the Remedial Action Construction Completion, Settling Defendants shall submit progress reports to the EPA on a monthly basis or as otherwise requested by the EPA. The reports must cover all activities that took place during the prior reporting period, including:

(a) The actions that have been taken toward achieving compliance with the Decree;

(b) A summary of all results of sampling, tests, and all other data received or generated by Settling Defendants;

(c) A description of all deliverables that Settling Defendants submitted to the EPA;

(d) A description of all activities relating to Remedial Action Construction that are scheduled for the next six weeks;

(e) An updated Remedial Action Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) A description of any modifications to the work plans or other schedules that Settling Defendants have proposed or that have been approved by the EPA; and

(g) A description of all activities undertaken in support of the Community Involvement Plan ("CIP") during the reporting period and those to be undertaken in the next six weeks.

6.2 **Notice of Progress Report Schedule Changes**. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 6.1(d), changes, Settling Defendants shall notify the EPA of such change at least seven days before performance of the activity.

7. DELIVERABLES

7.1 **Applicability**. Settling Defendants shall submit deliverables for EPA approval or for EPA comment as specified in the SOW. If neither is specified, the deliverable does not require the EPA's approval or comment. Paragraphs 7.2 (In Writing) through 7.4 (Technical Specifications) apply to all deliverables. Paragraph 7.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 7.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

7.2 **In Writing**. As provided in **¶ 74** of the Decree, all deliverables under this SOW must be in writing unless otherwise specified.

7.3 **General Requirements for Deliverables.** All deliverables must be submitted by the deadlines in the Remedial Design Schedule or Remedial Action Schedule, as applicable. Settling Defendants shall submit all deliverables to the EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 7.4. All other deliverables shall be submitted to the EPA in the electronic form specified by the EPA Project Coordinator. If any

deliverable includes maps, drawings, or other exhibits that are larger than 11" by 17", Settling Defendants shall also provide the EPA with paper copies of such exhibits.

7.4 Technical Specifications

(a) Sampling and monitoring data should be submitted in accordance with the EPA Region 4 Superfund Environmental Data Submission Procedure (July 2019). The standard Region 4 EDD format is available at: https://www.epa.gov/superfund/region-4-superfund-electronic-data-submission. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(b) Spatial data, including spatially referenced data and geospatial data, should be submitted: (1) in accordance with the EPA "R4 Superfund Environmental Data Submission Procedure" (July 2019) and spatial format available at: https://www.epa.gov/superfund/region-4-superfund-electronic-data-submission; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at https://edg.epa.gov/EME/.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult https://www.epa.gov/geospatial/geospatial-policies-and-standards for any further available guidance on attribute identification and naming.

(d) Spatial data submitted by Settling Defendants does not, and is not intended to, define the boundaries of the Site.

7.5 Certification. All deliverables that require compliance with this paragraph must be signed by the Settling Defendants' Project Coordinator, or other responsible official of Settling Defendants, and must contain the following statement:

> I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.6 Approval of Deliverables

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the Decree or the SOW, the EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) The EPA also may modify the initial submission to cure deficiencies in the submission if: (i) the EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions**. Upon receipt of a notice of disapproval under ¶ 7.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 7.6(a), Settling Defendants shall, within 21 days or such longer time as specified by the EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, the EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Settling Defendants to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation**. Upon approval, approval upon conditions, or modification by the EPA under ¶ 7.6(a) (Initial Submissions) or ¶ 7.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Decree; and (2) Settling Defendants shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶ 7.6(a) or ¶ 7.6(b) does not relieve Settling Defendants of any liability for stipulated penalties under Section **XIII** (Stipulated Penalties) of the Decree.

(d) If: (1) an initially submitted deliverable contains a material defect and the conditions are met for modifying the deliverable under ¶ 7.6(a)(2); or (2) a resubmitted deliverable contains a material defect; then the material defect constitutes a lack of compliance for purposes of this Paragraph.

7.7 **Supporting Deliverables**. Settling Defendants shall submit each of the following supporting deliverables for EPA approval, except as specifically provided. Settling Defendants shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 10 (References)). Settling Defendants shall update each of these supporting deliverables as necessary or appropriate during the course of the Work, and/or as requested by the EPA.

(a) **Health and Safety Plan ("HASP")**. The HASP describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Work. Settling Defendants shall develop the HASP in accordance with the EPA's *Emergency Responder Health and Safety Manual* and Occupational

Safety and Health Administration ("OSHA") requirements under 29 C.F.R. §§ 1910 and 1926. The HASP should cover Remedial Design activities and should be, as appropriate, updated to cover activities during the Remedial Action and updated to cover activities after Remedial Action completion. The EPA does not approve the HASP but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.

(b) **Field Sampling Plan ("FSP")**. The FSP addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. Settling Defendants shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988).

(c) **Quality Assurance Project Plan ("QAPP")**. The QAPP must include a detailed explanation of Settling Defendants' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Settling Defendants shall develop the QAPP in accordance with EPA Directive CIO 2105.1 (Environmental Information Quality Policy, 2021), the most recent version of *Quality Management Systems for Environmental Information and Technology Programs – Requirements with Guidance for Use*, ASQ/ANSI E-4 (Feb. 2014, and *Guidance for Quality Assurance Project Plans*, EPA QA/G-5, EPA Office of Environmental Information (Dec. 2002). Settling Defendants shall collect, produce, and evaluate all environmental information at the Site in accordance with the approved QAPP.

(d) **Site-Wide Monitoring Plan ("SWMP")**. The purpose of the SWMP is to obtain baseline information regarding groundwater contamination concentrations in the surficial aquifer at the Site; to obtain information, through short- and long- term monitoring, about the movement of and changes in groundwater contamination throughout the Site, before and during implementation of the Remedial Action; to obtain information regarding contamination levels to determine whether Performance Standards are achieved; and to obtain information to determine whether to perform additional actions, including further groundwater monitoring at the Site. The SWMP must include:

(1) Description of the environmental media to be monitored;

(2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;

(3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Site-related requirements;

(4) Description of verification sampling procedures;

(5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to the EPA and State agencies;

(6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement);

(7) A plan to immediately provide to the EPA any unvalidated sampling data from Community Areas as defined in ¶ 7.7(e) affected by the remedy that exceed removal management levels or three times remedial cleanup levels, whichever is lower; and

(8) A plan to expedite sampling and analysis in Community Areas as defined in ¶ 7.7(e) affected by the remedy (particularly in situations where the EPA determines that unvalidated sampling data indicates substantial exceedances of cleanup standards), including procedures for expedited analysis, validation, and communication of sampling results to affected communities.

(e) **Community Impacts Mitigation Plan ("CIMP")**. The CIMP describes all activities to be performed: (1) to reduce and manage the impacts from remedy implementation (*e.g.*, air emissions, traffic, noise, odor, temporary or permanent relocation) to residential areas, schools, playgrounds, healthcare facilities, or recreational or impacted public areas ("Community Areas") from and during remedy implementation, (2) to conduct monitoring in Community Areas of impacts from remedy implementation, (3) to expeditiously communicate validated remedy implementation monitoring data, (4) to make adjustments during remedy implementation in order to further reduce and manage impacts from remedy implementation to affected Community Areas, (5) to expeditiously restore community resources damaged during remediation such as roads and culverts, and (6) to mitigate the economic effects that the Remedial Action will have on the community by structuring remediation contracts to allow more local business participation. The CIMP should contain information about impacts to Community Areas that is sufficient to assist the EPA's Project Coordinator in performing the evaluations recommended under the *Superfund Community Involvement Handbook*, OLEM 9230.0-51 (March 2020), pp. 53-56.

(f) **Construction Quality Assurance Plan (CQAP) and Construction Quality Control Plan (CQCP)**. The purpose of the CQAP is to describe planned and systemic activities that provide confidence that the Remedial Action construction will satisfy all plans, specifications, and related requirements, including quality objectives. The purpose of the CQCP is to describe the activities to verify that Remedial Action construction has satisfied all plans, specifications, and related requirements, including quality objectives. The CQAP/CQCP ("CQA/CP") must:

(1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/CP;

(2) Describe the Performance Standards required to be met to achieve Completion of the Remedial Action;

(3) Describe the activities to be performed: (i) to provide confidence that Performance Standards will be met; and (ii) to determine whether Performance Standards have been met;

(4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/CP;

(5) Describe industry standards and technical specifications used in implementing the CQA/CP;

(6) Describe procedures for tracking construction deficiencies from identification through corrective action;

(7) Describe procedures for documenting all CQA/CP activities; and

(8) Describe procedures for retention of documents and for final storage of documents.

(g) **O&M Plan**. The O&M Plan describes the requirements for inspecting, operating, and maintaining the Remedial Action. Settling Defendants shall develop the O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:

(1) Description of Performance Standards required to be met to implement the Record of Decision;

(2) Description of activities to be performed: (i) to provide confidence that Performance Standards will be met; and (ii) to determine whether Performance Standards have been met;

(3) **O&M Reporting**. Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to the EPA and State agencies;

(4) Description of corrective action in case of systems failure, including: (i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve Performance Standards; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and

(5) Description of corrective action to be implemented in the event that Performance Standards are not achieved; and a schedule for implementing these corrective actions.

(h) **O&M Manual**. The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Settling Defendants shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).

8. SCHEDULES

8.1 Applicability and Revisions. All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the Remedial Design and Remedial Action Schedules set forth below. Settling Defendants may submit proposed revised Remedial Design Schedules or Remedial Action Schedules for EPA approval. Upon the EPA's approval, the revised Remedial Design and/or Remedial Action Schedules supersede the Remedial Design and Remedial Action Schedules set forth below, and any previously approved Remedial Design and/or Remedial Action Schedules.

8.2 Remedial Design Schedule

	Description of Deliverable, Task	**¶ Ref.**	**Deadline**
1	RDWP	4.1	60 days after the EPA's Authorization to Proceed regarding Supervising Contractor (¶ 3.3).
2	ICIAP	4.2	90 days after the EPA Authorization to Proceed regarding Supervising Contractor (¶ 3.3).
3	Preliminary (30%) Remedial Design	4.4	120 days after EPA approval of Final RDWP Report
4	Pre-final (95%) Remedial Design	4.5	45 days after the EPA comments on Preliminary Remedial Design Report
5	Final (100%) Remedial Design	4.6	45 days after the EPA comments on Pre-final Remedial Design Report

8.3 Remedial Action Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	Commence to Implement ICIAP	4.2	14 days after the EPA Notice of Authorization to Proceed with ICIAP
2	Award Remedial Action contract		60 days after the EPA Notice of Authorization to Proceed with Remedial Action
3	RAWP	5.1	60 days after the EPA Notice of Authorization to Proceed with Remedial Action
4	Pre-Construction Conference	5.2(a)	60 days after Approval of RAWP
5	Start of Construction		60 days after Approval of RAWP
6	Pre-final Inspection	5.6(b)	30 days after completion of construction
7	Pre-final Inspection Report	5.6(d)	30 days after completion of Pre-final Inspection
8	Final Inspection		30 days after Completion of Work identified in Pre-final Inspection Report
9	Remedial Action Report	5.6(d)	90 days after Final Inspection
10	Monitoring Report	5.7(a)	90 days after achieving Performance Standards
11	Work Completion Report	5.9(b)	90 days after the Work Completion Inspection
12	Periodic Review Support Plan	5.8	Five years after Start of Remedial Action Construction

9. STATE PARTICIPATION

9.1 **Copies**. Settling Defendants shall, at any time they send a deliverable to the EPA, send a copy of such deliverable to the State. The EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Settling Defendants, send a copy of such document to the State.

9.2 **Review and Comment**. The State will have a reasonable opportunity for review and comment prior to EPA's issuance of:

(a) Any EPA notice to proceed under ¶ 3.3 (Procedures for Disapproval/Notice to Proceed);

(b) Any EPA approval or disapproval under ¶ 7.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and

(c) Any approval or disapproval of the Construction Phase under ¶ 5.6 (Remedial Action Construction Completion), any disapproval of, or Certification of Remedial Action Completion under ¶ 5.7 (Certification of Remedial Action Completion), and any disapproval of, or Certification of Work Completion under ¶ 5.9 (Certification of Work Completion).

10. REFERENCES

10.1 The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the three EPA web pages listed in ¶ 10.2:

(a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).

(b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

(c) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).

(d) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).

(e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G90/001 (Apr.1990).

(f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).

(g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).

(h) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).

(i) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. part 300 (Oct. 1994).

(j) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).

(k) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).

(l) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

(m) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, EPA/540-R-01-007 (June 2001).

(n) Guidance for Quality Assurance Project Plans, EPA QA/G-5, EPA Office of Environmental Information (Dec. 2002) https://www.epa.gov/quality/guidance-quality-assurance-project-plans-epa-qag-5.

(o) Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls, OECA (Apr. 2004).

(p) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

(q) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).

(r) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2005), https://www.epa.gov/geospatial/epa-national-geospatial-data-policy.

(s) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).

(t) Principles for Greener Cleanups (Aug. 2009), https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups.

(u) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).

(v) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).

(w) Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance," OSWER 9355.7-18 (Sep. 2011).

(x) Plan EJ 2014: Legal Tools, EPA Office of General Counsel (Dec. 2011), https://www.epa.gov/environmentaljustice/plan-ej-2014-legal-tools.

(y) Construction Specifications Institute's MasterFormat 2020 or more recent edition, available from the Construction Specifications Institute, http://www.csinet.org/masterformat.

(z) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)

(aa) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), https://semspub.epa.gov/work/HQ/175446.pdf.

(bb) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012), https://semspub.epa.gov/work/HQ/175449.pdf.

(cc) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), https://www.epaosc.org/_HealthSafetyManual/manual-index.htm.

(dd) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).

(ee) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).

(ff) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

(gg) Quality Management Systems for Environmental Information and Technology Programs -- Requirements with Guidance for Use, ASQ/ANSI E-4 (February 2014), available at https://webstore.ansi.org/.

(hh) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), https://www.epa.gov/superfund/superfund-post-construction-completion.

(ii) Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship (July 20, 2018), https://www.epa.gov/enforcement/use-advanced-monitoring-technologies-and-approaches-support-long-term-stewardship.

(jj) Superfund Community Involvement Handbook, OLEM 9230.0-51 (March 2020). More information on Superfund community involvement is available on the Agency's Superfund Community Involvement Tools and Resources web page at https://www.epa.gov/superfund/superfund-community-involvement-tools-and-resources.

(kk) EPA directive CIO 2105.1 (Environmental Information Quality Policy, 2021), https://www.epa.gov/sites/production/files/2021-04/documents/environmental_information_quality_policy.pdf.

10.2 A more complete list may be found on the following EPA web pages:

(a) Laws, Policy, and Guidance at https://www.epa.gov/superfund/superfund-policy-guidance-and-laws;

(b) Search Superfund Documents at https://www.epa.gov/superfund/search-superfund-documents; and

(c) Test Methods Collections at: https://www.epa.gov/measurements/collection-methods.

10.3 For any regulation or guidance referenced in the Decree or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Settling Defendants receive notification from the EPA of the modification, amendment, or replacement.

Appendix C

to Consent Decree in *U.S. v. General Dynamics Corporation et al*.