NEBRASKA DEPARTMENT OF ENVIRONMENT AND ENERGY
RESOURCE CONSERVATION AND RECOVERY ACT
HAZARDOUS WASTE MANAGEMENT FACILITY PERMIT

PERMITTEE: OFFUTT AIR FORCE BASE
Offutt AFB, Nebraska

RCRA IDENTIFICATION NUMBER: NE8571924648

Pursuant to the Nebraska Environmental Protection Act (Neb. Rev. Stat. §§81-1501 through 81-1533 (hereafter referred to as NEPA) and regulations promulgated thereunder by the Nebraska Department of Environment and Energy (hereafter referred to as NDEE), this Permit is renewed, with changes, to the Department of the Air Force as Owner and Offutt Air Force Base (AFB) as Operator (hereafter referred to as the Permittee), to perform activities required by HSWA at their facility located at Offutt Air Force Base, Nebraska, and having the coordinates 41° 06' 40" north latitude, and 95° 54' 50" west longitude (hereafter referred to as the Facility).

The Permittee must comply with all terms and conditions of this Permit including those terms and conditions specified pursuant to the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, as further amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 USC §6901 et seq, and regulations promulgated thereunder by the United States Environmental Protection Agency (EPA), codified in Title 40 of the Code of Federal Regulations (CFR), where authority has been delegated to the State of Nebraska by the EPA.

This Permit consists of provisions (conditions) contained herein, including those in any references and attachments, and the applicable regulations contained in the Nebraska Administrative Code, Title 128 – Nebraska Hazardous Waste Regulations, (hereafter referred to as Title 128). Applicable NDEE regulations are those which are in effect on the date of the issuance of this Permit, in accordance with Title 128, Chapter 14, 002.01. All regulations cited in this Permit refer to regulations in effect on the date of this Permit issuance. With the exception of regulations in existence at the time of permit issuance and referenced in this Permit, the only other RCRA regulations applicable to this facility during the life of this Permit shall be self-implementing regulations promulgated under HSWA 3006(g) authority, 40 U.S.C. 6926(g). The Permittee shall comply with all provisions and conditions of this Permit and the applications as defined.

Section 3004(u) of RCRA, 42 U.S.C. 6924(u); and 40 CFR §264.101 as incorporated by reference in Title 128, Chapter 21, Section 006; and Neb. Rev. Stat. §81-1505(13)(a) require that all permits issued after November 8, 1984 address corrective action for releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU), regardless of when waste was placed in the unit or whether the unit is closed. The RCRA sections further require that permits issued under Section 3005 of RCRA contain a schedule of compliance for corrective action where corrective action cannot be completed prior to Permit issuance. Neb. Rev. Stat. §81-1504(25) provides general authority to require schedules of compliance. Section 3004(v) authorizes the EPA to require that corrective action be taken by the facility owner or operator beyond the facility boundary when necessary to protect human health and the environment, unless the owner or operator demonstrates that permission to undertake

such action, despite the owner/operator's best efforts, was denied. Neb. Rev. Stat. §81-1507(1) authorizes the NDEE Director to require that corrective action be taken by the facility owner or operator beyond the facility boundary when necessary to protect human health and the environment. Neb. Rev. Stat. §81-1505(13)(a) provides regulatory authority to require that corrective action be taken by past facility owner or operators with actual knowledge of the presence of hazardous waste at the facility. Section 3005(c)(3) of RCRA requires that each permit issued under Section 3005 of RCRA shall contain terms and conditions as the EPA determines necessary to protect human health and the environment. As of January 17, 2017, the NDEE is authorized to perform corrective action requirements in Nebraska and therefore, all these tasks shall be performed by the NDEE in lieu of the EPA.

The following description of regulated activities is based upon the Part B Permit Application:

Offutt AFB is located in eastern Nebraska south of the cities of Omaha and Bellevue and covers approximately 2,750 acres. From 1894 to 1948, the Base was a military installation known as Fort Crook Army Post. An airfield was first built at the post in 1921. In 1941, Fort Crook was selected as the site for a new bomber plant. Construction for the new plant included two-mile-long concrete runways, six large hangars, and a 1.2 million square foot aircraft assembly building (B301). In 1946, the Army Air Force redesignated Fort Crook as Offutt Field. Offutt Field was transferred to the new Department of the Air Force as Offutt AFB in 1948 and Headquarters Strategic Air Command was established at Offutt during the same year. Operations at Offutt AFB have included the basing of alert bombers and tankers in the 1950s and 1960s, assembly of guided missiles and supporting intercontinental ballistic missile sites in Nebraska and Iowa in the 1960s, and conducting worldwide strategic reconnaissance from the mid-1960s to the present. As a result of the long history and scale of military operations at Offutt AFB and past improper (by current standards) waste management practices, several areas of significant environmental contamination have been found at the facility.

This Permit is based on the assumption that the information submitted in the approved Permit Application, as modified by amendments subsequent to the issuance of this Permit (hereafter, in total, referred to as the Application), is accurate and that the facility has been and shall be operated as specified in the Application and this Permit. Permit modifications shall be affected pursuant to the applicable regulations of Title 128. The Permit Application is incorporated by reference into this Permit and the Permittee is bound to comply with all incorporated applications, approved modifications, and items herein.

Any inaccuracies found in the submitted information may be grounds for the termination, revocation and reissuance, or modification of this Permit in accordance with Title 128, Chapter 15, 012 and 015. The Permittee must inform the Director of NDEE (hereafter referred to as Director) of any deviation from or changes in the information in the Application, which would affect the Permittee's ability to comply with the applicable regulations or permit conditions. If there are discrepancies or inconsistencies between conditions of this Permit and submitted information, the conditions of this Permit shall prevail. During the duration of the permit term, the Permittee must disclose any and all new, undiscovered, or previously undisclosed facts relevant to the provisions and conditions of the Permit. The Permittee must not misrepresent any relevant facts at any time.

Within **sixty (60) days** of the effective date of this Permit, the Permittee's designated signatory who shall be responsible executive officer shall read this Permit and/or any permit modification in its entirety and shall submit to the Director a certification, in accordance with the signatory requirements of Permit Condition B.6 of this Permit, that he/she has read this Permit and/or any permit modification and understands all Permit conditions included therein. In the event the designated signatory changes, the new signatory shall provide a new certification, in accordance with Permit Condition B.6, within **sixty (60) days** of becoming the new signatory.

The EPA Regional Administrator has delegated authority to perform all actions necessary to issue, deny, modify, or revoke and reissue permits for owners and operators of hazardous waste treatment, storage, and disposal facilities pursuant to Section 3005 of RCRA to the State of Nebraska. The Director or the Director's designated representative of the NDEE shall be implementing the delegated authority.

This Permit is issued as of the date below. Pursuant to Title 128, Chapter 15, 008, this Permit shall become effective on _____, 2020 and shall remain in-effect for ten (10) years from the date of its issuance unless revoked and reissued, terminated, or continued in accordance with Title 128, Chapter 15, 012 through 015. Modifications to this Permit are effective immediately upon their issuance unless appealed in accordance with NEPA §81-1509 and Title 115 – Rules of Practice and Procedure.

Done at Lincoln, Nebraska, this _____ day of _____, 20__.

DRAFT

_____

Kara L. Valentine, Deputy Director
Nebraska Department of Environment and Energy

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A. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in Nebraska Statutes and Title 128, unless this Permit specifically provides otherwise; where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

"Annually" means one time per calendar year such that at least eleven (11) months and no more than thirteen (13) months have elapsed since the last annual event.

"Area of Concern" or "AOC" shall mean any area of the Facility under the control or ownership of the owner or operator where a release to the environment of hazardous waste(s) or hazardous constituents has occurred, is suspected to have occurred, or may occur, regardless of the frequency or duration of the release.

"Corrective Measures Study" or "CMS" shall mean the investigation and evaluation of potential remedies which shall protect human health and/or the environment from the release or potential release of hazardous wastes, or hazardous constituents, into the environment from the Facility.

"Current Conditions Report" or "CCR" shall mean a report containing brief descriptions of the current conditions at the Facility, preliminary assessment of the nature and extent of contamination and a review of any interim measures that are underway at the Facility.

"Data Quality Objectives (DQOs)" shall mean performance and acceptance criteria that clarify study objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that shall be used as the basis for establishing the quality and quantity of data needed to support decisions. The DQOs shall be prepared consistent with EPA Guidance documents; "Guidance on Systematic Planning Using the Data Quality Objectives Process" EPA QA/G-4, EPA/240/B-06/001, February 2006; "Guidance for Developing Quality Systems for Environmental Programs" EPA QA/G-1, EPA/240/R-008, November 2002; and any subsequent revisions or editions.

"Day" or "Days" means calendar day(s) unless otherwise specified.

"Director" means the Director of the NDEE, his or her designee, or an authorized representative.

"Engineering Controls" means any mechanism used to contain or stabilize contamination that ensures the effectiveness of a remedial action and acts as a physical barrier between the contamination and contact with humans or the environment.

"EPA" means the United States Environmental Protection Agency.

"Facility" means Offutt Air Force Base facility located at Bellevue, Nebraska and all contiguous property at this location under the control of the Permittee.

"Hazardous Constituent" means any constituent identified in Appendix VIII of 40 CFR Part 261 or any constituent identified in Appendix IX to 40 CFR Part 264.

"Hazardous Waste" means any solid waste as defined at 42 U.S.C. §6903 (27) and 40 CFR §261.2 which also meets any of the criteria of a hazardous waste as listed in 42 U.S.C. §6903 (5) and 40 CFR §261.3. The term hazardous waste includes hazardous constituent as defined above.

"Institutional Controls" means administrative and/or legal mechanisms that help limit exposure to humans from contamination and/or protect the integrity of the remedy.

"Interim Measure" means those actions taken to immediately control or abate threats or potential threats to human health or the environment from releases or potential releases of hazardous waste or hazardous constituents, which can be initiated before implementation of the final corrective measures for a facility.

"Monthly" means 12 times per year (once per calendar month) such that at least 15 days and no more than 45 days have elapsed since the last monthly event.

"NDEE" means Nebraska Department of Environment and Energy.

"NEPA" means Nebraska Environmental Protection Act, Neb. Rev. Stat. §§81-1501 through 81-1533.

"Permit Application" means the Permit Application dated February 14, 2020, as modified by subsequent amendments dated June 4, 2020, including the Part A Permit Application dated June 26, 2020, and any subsequent revisions or modifications.

"Quality Assurance Project Plan" means a plan of the same name prepared consistent with the EPA's document titled "EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5)" and any subsequent revisions or editions.

"Quarterly" means four times per calendar year such that at least 2 months and no more than 4 months have elapsed since the last quarterly event.

"RCRA Corrective Action Plan" means the document of the same name dated May 1994 and given the OSWER Directive Number 9902.3-2A and EPA Document Number 520-R-94-004 and any subsequent revisions or editions.

"RCRA Facility Investigation" or "RFI" shall mean the investigation and characterization of the source(s) of contamination and the nature, extent, direction, rate, movement, and concentration of the source(s) of contamination and releases of hazardous waste, including hazardous constituents that have been or are likely to be released into the environment from the Facility.

"RCRA Facility Investigation Guidance" means the document of the same name dated May 1989 and given the OSWER Directive Number 9502.00-6D and the EPA Document Number 530/SW-89-031.

“Regional Administrator” means the Regional Administrator of EPA, Region VII, or his or her designee.

“Regulated Unit” means any unit that received hazardous waste after July 26, 1982. See 40 C.F.R. § 264.90(a)(2).

“Release” means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes and/or hazardous constituents.

“Semi-Annually” means two times per calendar year such that at least 5 months and no more than 7 months have elapsed since the last semi-annual event.

“Solid Waste Management Unit” or “SWMU” means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

“Stabilization” means actions to control or abate threats to human health and/or the environment from releases at RCRA facilities, and/or to prevent or minimize the further spread of contamination while long-term remedies are pursued.

“Title 115” means Nebraska Administrative Code, Title 115 – Rules of Practice and Procedure.

“Title 128” means Nebraska Administrative Code, Title 128 – Nebraska Hazardous Waste Regulations.
"Weekly" means fifty-two (52) times per calendar year such that no fewer than five (5) days and no more than ten (10) days have elapsed since the last weekly event.

"Weekly" means 52 times per calendar year such that no fewer than 5 days and no more than 10 days have elapsed since the last weekly event.

B. GENERAL CONDITIONS

B.1. FACILITY INFORMATION

B.1.a. Owner

The facility owner is the Department of the Air Force hereinafter referred to as the Permittee.

B.1.b. Operator

The facility operator is Offutt Air Force Base, hereinafter referred to as the Permittee.

B.1.c. Location

The Offutt Air Force Base facility is located in Sarpy County at 106 Peacekeeper Drive (latitude 41° 06' 40" North, and longitude 95° 54' 50" West). A facility location map and figures showing the layout of the facility are provided in Figure 1.

B.1.d. Description

Military operations at Offutt Air Force Base have resulted in releases of hazardous wastes and/or constituents that have produced local environmental impacts at the facility. The major areas of impact include the Building 301 area, Hardfill 2 composite area, Fire Protection Training Area 3, Landfill 4, Landfill 4 Trench Area, Landfill 5, Old Jet Engine Test Stand area, Skeet and Trap Range, and the Golf Course Drum Site. The major contaminants of concern in each of these areas are chlorinated solvents (primarily trichloroethylene [TCE]) or their degradation products, which include 1,1-dichloroethene (DCE), 1,2-DCE, and vinyl chloride (VC). These contaminants occur as both soil and groundwater contamination in these areas. Fuel-related contaminants such as benzene, toluene, ethylbenzene and xylene (BTEX) have also been detected in significant concentrations in some of these areas.

B.2. EFFECT OF PERMIT

Any storage, treatment and/or disposal of hazardous waste not authorized in this Permit is/are prohibited. This Permit consists of the conditions contained herein, including those in any attachments hereto; the application; and the applicable regulations contained in 40 CFR Parts 124, 260 through 264, 268, and 270, as incorporated by reference in Title 128. Applicable regulations are those which are in effect on the date of issuance of this Permit and those identified in B.2.a below. Applicable regulations are those which are in effect on the date of issuance of this Permit; however, certain regulations which become effective after the date this Permit is issued may be applicable to the Permittee if their promulgation waives this "permit as a shield provision." The Permittee remains subject to any regulations governing activities not

covered by this Permit, for example, those regulations to which hazardous waste generators are subject.

B.2.a. Subject to 40 CFR §270.4, as incorporated by reference in Title 128, Chapter 12, 002, compliance with this Permit during its term constitutes compliance, for purposes of enforcement, with those portions of Subtitle C of RCRA as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) included in this Permit, except for those requirements not included in the Permit which:

B.2.a.1. Become effective by statute;

B.2.a.2. Are promulgated under 40 CFR Part 268, as incorporated by reference in Title 128, Chapter 20, restricting the placement of hazardous wastes in or on the land;

B.2.a.3. Are promulgated under 40 CFR Part 265, Subparts AA, BB, or CC limiting air emissions, as incorporated by reference in Title 128, Chapter 21.

B.2.b. The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.

B.2.c. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B.2.d. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under: NEPA; Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; 42 U.S.C. §§6928(a), 6928(h), 6934, and 6973, Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq, commonly known as CERCLA); or any other law providing for protection of public health or the environment.

B.3. PERMIT ACTIONS

B.3.a. Permit Modification, Revocation and Reissuance, and Termination by NDEE

If at any time the NDEE determines that modification, revocation and reissuance or termination of the Permit is necessary, the NDEE may initiate a modification to the Permit, revocation and reissuance of the Permit or termination of the Permit in accordance with Title 128, Chapter 15, 012.01 and 015. The initiation of a modification to the Permit, revocation or reissuance of the Permit, or termination of the Permit does not stay the applicability or enforceability of any Permit Condition.

B.3.b. Modification of the Permit by the Permittee

As set forth in Title 128, Chapter 15, 012.02, the Permittee may request a modification of the Permit at any time. The filing of a request for a permit modification or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not

stay the applicability or enforceability of any Permit Condition. Modifications to the Permit do not constitute a reissuance of the Permit.

B.3.c. Permit Modification Correspondence File

The Permittee shall maintain a file that contains all correspondence relating to modifications made pursuant to Permit Conditions B.3.a and B.3.b. This correspondence file shall be available for review by NDEE or its designated representative(s) and the public. Note that the file shall be made available during normal business hours.

B.3.c.1. The Permittee shall reference the availability of this file in all notices made regarding permit modifications and include a contact person in order to view the file.

B.3.c.2. The Permittee shall include in the correspondence file all modification requests, copies of all permit modification notices sent out, the current permit modification mailing list, and all correspondence from NDEE regarding modification requests.

B.3.d. Permit Expiration

B.3.d.1. Permit Duration

As set forth in Title 128, Chapter 15, 014.01B, this Permit shall be effective for a fixed term not to exceed ten (10) years. Except as provided in Permit Condition B.3.d.2 below, the term of a permit shall not be extended by modification beyond the maximum term of ten (10) years. The Director may issue a permit for durations of less than ten (10) years or may grant a permit modification to allow earlier permit termination. This Permit may be renewed as specified in Title 128, Chapter 15, 013 and Permit Condition B.5.b.

B.3.d.2. Continuation of Expiring Permits

This Permit, and all conditions herein, shall remain in effect and continue in force until the effective date of a new Permit, in accordance with Title 128, Chapter 15, 014.04, if:

a) The Permittee has submitted a timely, complete application under the applicable sections of Title 128, Chapters 13 and 14; and

b) The Director, through no fault of the Permittee, does not issue a new Permit with an effective date on or before the expiration date of the previous Permit.

c) Permits continued under this permit condition remain fully effective and enforceable.

B.3.d.3. Enforcement

If the Permittee is not in compliance with the conditions of the expiring or expired permit, the Director may choose to do any or all of the following:

a) Initiate enforcement action based upon the permit which has been continued;

b) Issue a notice of intent to deny the new permit under 40 CFR §124.6 as incorporated by reference in Title 128, Chapter 15, 002. If the new Permit is denied, the Permittee shall cease the activities authorized by the continued permit or be subject to enforcement action for operating without a Permit;

c) Issue a new permit under Title 128 with appropriate conditions; or

d) Take other actions authorized by Title 128 or the Nebraska Statutes.

B.3.e. Permit Renewal

This Permit may be renewed as specified in Title 128, Chapter 14, 002.02 and Permit Condition B.5.b. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

B.3.f. Appeal of a Permit

A denial, revocation, or modification of this Permit may be contested pursuant to the provisions of Neb. Rev. Stat. §81-1507(3) and Title 115, Chapter 1 requirements.

B.4. SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. If a conflict exists between the application and the listed Permit conditions, the Permit conditions shall govern.

B.5. DUTIES AND REQUIREMENTS

B.5.a. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit, as described in Title 128, Chapter 12, 001.04B. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of NEPA and is grounds for

enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal.

B.5.b. Duty to Reapply

The Permittee shall submit a complete Permit Application for a new Permit at least **one-hundred eighty (180) days** prior to the expiration of this Permit, as specified in Title 128, Chapter 14, 002.02. This Permit Application shall include information required to continue the post-closure care, groundwater monitoring, corrective action, investigation, interim measures, and/or corrective measures specified in this Permit, and as required in Title 128, Chapter 13, 012. If the Permittee has not completed any required activities under the existing permit and fails to timely submit a Permit Application pursuant to this Permit Condition, Permittee shall be deemed to be in violation of this Permit. If the Permittee has not completed all activities regulated by this Permit after the expiration date of this Permit, the Permittee shall include such activity in the Permit Application.

B.5.c. Permit Expiration

As set forth in Title 128, Chapter 15, 014.01B, unless revoked or terminated, this Permit shall be effective for a fixed term not to exceed ten (10) years, except that, as long as NDEE is the permit-issuing authority, this Permit and all conditions herein shall remain in effect beyond the Permit's expiration date and until the effective date of the new permit, if the Permittee has submitted a timely, complete application and, through no fault of the Permittee, the NDEE has not issued a new permit.

B.5.d. Need to Halt or Reduce Activity Not a Defense

As set forth in Title 128, Chapter 14, 002.03, it shall not be a defense for the Permittee, in an enforcement action, that it would have been necessary to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.

B.5.e. Duty to Mitigate

As set forth in Title 128, Chapter 14, 002.04, in the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures, as are reasonable, to prevent significant adverse impacts on human health or the environment.

B.5.f. Proper Operation and Maintenance

As set forth in Title 128, Chapter 14, 002.05, the Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate

laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit.

B.5.g. Duty to Provide Information

As set forth in Title 128, Chapter 14, 002.08, the Permittee shall furnish to the Director, within **thirty (30) days**, any relevant information which the Director may request to determine whether cause exist for modifying, revoking and reissuing, or terminating this Permit or to determine compliance with this Permit. The Permittee shall also furnish to the Director, within 30 days of request, copies of records required to be kept by this Permit.

B.5.h. Inspection and Entry

B.5.h.1. As set forth in Title 128, Chapter 14, 002.09, the Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to:

a) Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

c) Inspect, photograph, and/or record (audio and/or visual), at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by NEPA, any substances or parameters at any location.

B.5.h.2. In the application of this section, "reasonable times" shall include the time necessary for the Permittee, exercising due diligence, to request and issue necessary security clearances or to make accommodations or physical arrangements with respect to national security matters.

B.5.h.3. Notwithstanding any provision of this Permit, NDEE retains the inspection and access authority which it has under RCRA and other applicable laws.

B.5.i. Monitoring and Records

B.5.i.1. As set forth in Title 128, Chapter 14, 002.10A, samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the media to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261, as incorporated by reference in Title 128, Chapter 3, 006.01, or an equivalent method approved in writing by the Director. Laboratory methods shall be in accordance with Waste Management System; Testing and Monitoring Activities; Final Rule: Methods Innovation Rule and SW-846 Final Update IIIB. [70 FR 34538, June 14, 2005 and any subsequent revisions], or equivalent methods approved in writing by the Director.

B.5.i.2. As set forth in 40 CFR §264.74(b) as incorporated by reference in Title 128, Chapter 21, 005, and as set forth in Title 128, Chapter 14, 002.10B, the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this Permit through the term of the Permit or for a period of at least three (3) years from the date of the sample, measurement, report, record, certification, or application; whichever is longer. These periods may be extended by notification of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall maintain records from all ground water monitoring wells and associated ground water surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

B.5.i.3. As set forth in Title 128, Chapter 14, 002.10C, records of monitoring information shall include:

a) The dates, exact place, and times of sampling or measurements;

b) The individual(s) who performed the sampling or measurements;

c) The date(s) analyses were performed;

d) The individual(s) who performed the analyses;

e) The analytical techniques or methods used; and

f) The results of such analyses.

B.5.i.4. The Permittee shall ensure its analytical data meets the Data Quality Objectives (DQOs) in the Quality Assurance Project Plan (QAPP).

B.5.j. Reporting Planned Changes

As set forth in Title 128, Chapter 14, 002.12A, the Permittee shall give **thirty (30) days** advance notice to the Director of any planned physical alterations or additions which may affect any Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), contaminated media or debris, or existing institutional controls (ICs) or engineering controls (ECs).

B.5.k. Reporting Anticipated Noncompliance

B.5.k.1. As set forth in Title 128, Chapter 14, 002.12B, the Permittee shall give at least **thirty (30) days** advance notice to the Director prior to any planned changes in the permitted facility or other activity which may result in noncompliance with Permit requirements. Examples of such changes or activities include, but are not limited to, shutdown, construction or modification of new or existing units for the treatment, storage, or disposal of hazardous waste.

B.5.k.2. For a new unit, the Permittee may not treat, store, or dispose of hazardous waste; and for a unit being modified, the Permittee may not treat, store, or dispose of hazardous waste in the modified portion of the unit except as provided in 40 CFR §270.42 as incorporated by reference in Title 128, Chapter 15, 012.02, until the Permittee has submitted to the Director, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the Permit; and

a) The Director has inspected the modified or newly constructed unit and finds it is in compliance with the conditions of the Permit; or

b) The Director has either waived the inspection or has not notified the Permittee within **fifteen (15) days** of NDEE's intent to inspect.

B.5.l. Monitoring Reports

As set forth in Title 128, Chapter 14, 002.12D, if required, monitoring results shall be reported at the intervals specified elsewhere in this Permit.

B.5.m. Reports of Compliance Schedules

As set forth in Title 128, Chapter 14, 002.12E, reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any

compliance schedule of this Permit shall be submitted no later than **fourteen (14) days** following each scheduled completion date.

B.5.n. Transfer of Permits

B.5.n.1. This Permit is not transferable to any person except after notice in writing to the Director and approval by the Director. To transfer the Permit, the Director may modify or revoke and reissue this Permit, in accordance with: Title 128, Chapter 14, 002.12C; Title 128, Chapter 15, 011.02; or Title 128, Chapter 15, 012.01C2, to change the name of the Permittee and incorporate such other requirements as may be necessary.

B.5.n.2. Before transferring ownership or operation, the Permittee shall notify the new owner or operator in writing of the requirements of Title 128, this Permit, and 40 CFR Parts §264.12(c), as incorporated by reference in Title 128, Chapter 21, 002. The Permittee's failure to notify the new owner or operator of the requirements of this Permit in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.

B.5.n.3. At least **ninety (90) days** prior to the anticipated date of transfer, the new owner and/or operator shall submit to the Director a certification, in accordance with Permit Condition B.6, that the new owner or operator has read this Permit, understand its requirements and shall comply with the terms and conditions herein. If the property transfer involves subdividing the property to more than one owner or operator, a map and legal description shall be provided to the Director that identifies the properties to be occupied by each new owner.

B.5.n.4. The Permittee may request changes in ownership or operational control of a facility. The request may be made as a permit modification with prior written approval of the Director in accordance with Title 128, Chapter 15, 012.02. The new Owner and/or Operator shall submit a revised Permit Application no later than **ninety (90) days** prior to the scheduled change in ownership and/or operational control. A written agreement containing a specific date for transfer of permit responsibility between the Permittee and new Permittee(s) must also be submitted no later than **ninety (90) days** prior to the scheduled change in ownership and/or operational control as set forth in Title 128, Chapter 15, 011.02.

B.5.n.5. If the Permittee intends to transfer this Permit to a new Permittee (if other than another agency or component of the state or federal government), the new Permittee shall establish financial assurance for on-going corrective action activities prior to the transfer of this Permit.

B.5.o. Twenty-Four Hour Reporting

As set forth in Title 128, Chapter 14, 002.12F, the Permittee shall report orally any information concerning the release of any hazardous waste or instances of noncompliance which may endanger health or the environment within **twenty-four (24) hours** from the time the Permittee knows or should have known the circumstances. Examples of such occurrences include, but are not limited to: fires, explosions, natural disasters, accidents; imminent or existing hazard from a release of hazardous waste or hazardous constituents; cracks or other breaches in the structure of any hazardous waste units, SWMUs, AOCs; any fire or explosion at or near a permitted unit or other hazardous waste management area, SWMU, AOC, or any other occurrence which may cause the release or threatened release of hazardous waste or hazardous waste constituents from any area within the Permitted facility. The report shall include the following:

B.5.o.1. Information concerning the release of any hazardous waste or hazardous constituents that may endanger public drinking water supplies; and

B.5.o.2. Information concerning the release or discharge of any hazardous waste, or hazardous constituents, or a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

B.5.o.3. The description of the occurrence and its cause shall include:

a) Name, address, and telephone number of the owner or operator, and of the facility;

b) Type of incident, name and quantity of the material(s) involved, the duration of the occurrence including exact dates and times; and extent of injuries (if any);

c) An assessment of actual or potential hazards to the environment and human health both inside the facility, and outside the facility (where applicable);

d) If the noncompliance has not been corrected, an estimate of the time it is expected to continue; and steps taken or planned to reduce, eliminate; and prevent reoccurrence of the noncompliance; and

e) The estimated quantity and disposition of recovered material that resulted from the incident.

B.5.o.4. A written submission shall also be provided within **five (5) days** of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of

noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. If requested, the Director may waive the five (5) day written notice requirement in favor of a written report within **fifteen (15) days**.

B.5.p. Other Noncompliance

B.5.p.1. As set forth in Title 128, Chapter 14, 002.16, the Permittee shall report to the Director in writing all other instances of RCRA noncompliance not otherwise required to be reported in Permit Conditions B.5.j - B.5.o, at the time monitoring reports are submitted, or at least quarterly. The reports, as appropriate, shall contain the information listed in Permit Condition B.5.o.

B.5.p.2. Examples of such instances include, but are not limited to, any noncompliance, no matter how minor, with waste handling and disposal requirements or requirements related to facility safety, including noncompliance with contingency plan or recordkeeping requirements. All noncompliance with recordkeeping requirements must be noted in the operating record. Noncompliance with recordkeeping requirements occurring more than one time must be reported, although one-time instances of noncompliance need not be reported.

B.5.q. Other Information

As set forth in Title 128, Chapter 14, 002.17, whenever the Permittee becomes aware that new facts relevant to the Permit Application, that there was a failure to submit any relevant facts in the Permit Application, or that incorrect information was submitted in the Permit Application or in any report to the Director, the Permittee shall submit such facts or information within **fifteen (15) days** of discovery.

B.5.r. Information Repository

As set forth in Title 128, Chapter 14, 002.18, the Director may require the Permittee to establish and maintain an information repository at any time, based on the factors set forth in Title 128, Chapter 13, 018.01. The information repository shall be governed by the provisions in Title 128, Chapter 13, 018.02 through 018.05.

B.5.s. Incorporations to the Permit

B.5.s.1. All plans and schedules required by the conditions of this Permit are, upon approval of the Director, incorporated into and enforceable under this Permit. Any noncompliance with such approved plans and schedules shall constitute noncompliance with this Permit.

B.5.s.2. Any portion of the Permit Application referenced by this Permit is incorporated into and enforceable under this Permit. Any noncompliance with such portions of the Permit Application shall constitute noncompliance with this Permit.

B.5.s.3. Any changes necessary to items incorporated into the Permit shall be made in accordance with the review and approval procedures in Permit Condition C.17, except that any changes to the Permit Application referenced in Permit Condition A shall be made in accordance with the Permit modification procedures in Permit Condition B.3.

B.5.t. Supplemental Data

All raw data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to this Permit shall be maintained at the Permitted facility or other such location as approved by the Director during the term of this Permit, including the term of any reissued or continued Permits. Such information shall be made available to the Director upon request.

B.6. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Director shall be signed and certified in accordance with Title 128, Chapter 13, 011 and Chapter 14, 002.11.

B.7. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE NDEE/EPA

B.7.a. Failure to submit the information required by this Permit, failure to correct or update the information required by this Permit, or falsification of any submitted information, is subject to enforcement and/or termination of this Permit.

B.7.b. The Permittee shall ensure that all applications, reports, and other information requested by the Director, or required by this Permit to be submitted to the Director, are signed and certified in accordance with the signatory requirement of Permit Condition B.6.

B.7.c. Any modified and/or revised pages to the Part B Permit Application, submitted to the Director for approval, must include a revision date on each page.

B.7.d. Extensions of the due dates specified in this Permit may be granted by the Director in accordance with the Permit modification procedures set forth in Title 128, Chapter 15, 012.

B.7.e. Unless otherwise specified, one (1) paper copy and one (1) electronic copy of all reports, notifications, or other submissions, which are required by this Permit to be submitted to the Director, shall be sent by certified mail, package-tracked delivery service or hand delivered to:

Nebraska Department of Environment and Energy
Land Management Division
ATTN: Stacey Stricker
P.O. Box 98922
Lincoln, NE 68509-8922

In addition, with one (1) electronic downloadable copy, one (1) CD-ROM copy, and one (1) paper copy to:

U.S. Environmental Protection Agency, Region 7
Land, Chemicals, and Redevelopment Division
ATTN: Brad Roberts
11201 Renner Blvd
Lenexa, KS 66219

B.7.f. The Director may designate a new recipient for NDEE or EPA in writing to the Permittee without a Permit modification.

B.8. CONFIDENTIAL INFORMATION

B.8.a. The Permittee may claim confidentiality for trade secrets required to be submitted by this Permit in accordance with Neb. Rev. Stats. §81-1527(1); Title 128, Chapter 1, 002.02; and Title 115, Chapter 2.

B.8.b. The Permittee shall evaluate for declassification, either in whole or in part, any information determined to be classified by the Department of Defense and subject to submittal pursuant to the conditions of this Permit.

B.9. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, the following documents and all attachments, amendments, revisions, and modifications to these documents:

B.9.a. A signed copy of this Permit;

B.9.b. Approved Permit Application, Part A and Part B;

B.9.c. Inspection schedules, as required by this Permit;

B.9.d. Personnel training documents and records, as required by this Permit;

B.9.e. Permit modifications file, as required by this Permit;

B.9.f. A copy of all corrective action documents (RFI, CMS, etc.), reports, notifications, work plans, or other submissions, as required by this Permit.

C. CORRECTIVE ACTION

Note: This permit uses the same RCRA terminology as the underlying statute, the implementing regulations, and applicable national guidance documents. Offutt's environmental investigations have followed the CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) procedures and terminology. Region VII EPA and Offutt AFB have agreed to use RCRA and CERCLA terminology interchangeably. Figure 16 of this permit provides a cross reference of RCRA and CERCLA terms.

C.1. AUTHORITY

Section 3004(u) of RCRA, 42 U.S.C. §6924, and 40 CFR §264.101, as incorporated by reference in Title 128, Chapter 21, 006, require that all permits issued after November 8, 1984, address corrective action for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU) at a treatment, storage, or disposal facility seeking the permit, regardless of when the waste was placed in the unit or whether the unit is closed. Those sections further require that permits issued under Section 3005 of RCRA, 42 U.S.C. §6925, contain schedules of compliance for corrective action (where corrective action cannot be completed prior to permit issuance) and assurances of financial responsibility for completing such corrective action. Section 3004(v) of RCRA, 42 U.S.C. §6924(v), authorizes the Administrator to require that corrective action be taken by the facility owner or operator beyond the facility boundary when necessary to protect human health and the environment, unless the owner or operator demonstrates to the Administrator's satisfaction that permission to undertake such action, despite the owner/operator's best efforts, was denied. Section 3005(c)(3) of RCRA, 42 U.S.C. §6925(c)(3), requires that each permit issued under that section shall contain terms and conditions as the Administrator determines necessary to protect human health and the environment. The EPA Regional Administrator has delegated authority to perform all actions necessary to enforce this Permit to the Director of NDEE, (hereafter referred to as "Director") or the Director's designated representative as of January 17, 2017.

C.2. IDENTIFICATION OF SWMUS, AOCS AND RELEASES

C.2.a. The EPA accepted the Permittee's "Installation Restoration Program (IRP), Phase I Records Search (1985)" (Phase I Records Search) report in lieu of performing a separate RCRA Facility Assessment (RFA) to identify releases or potential releases from any SWMU at the facility. The Phase I Records Search report and the original corrective action permit identified eleven (11) SWMUs for which further action was required. They were:

1. Defense Reutilization and Marketing Office (DRMO) (formerly the Defense Property Disposal Office) (SS007)
2. Landfill No. 1 (LF009)
3. Landfill No. 2 (LF010)
4. Landfill No. 3 (LF011)
5. Landfill No. 4 (LF012)

6. Landfill No. 5 (LF013)
7. Hardfill No. 4 (LF014)/Fire Protection Training Area No. 1 (FT001)
8. Hardfill No. 5 (LF015)
9. Hardfill No. 6 (LF016)
10. Fire Protection Training Area No. 2 (FT002)
11. Fire Protection Training Area No. 3 (FT003)

Subsequent to the issuance of the original permit, the following areas were identified as newly discovered SWMUs or as consolidated SWMUs requiring further investigation:

1. Petroleum, Oil, and Lubricants (POL) Area (SS005)
2. Hardfill No. 2 (LF021)
3. East Gate Drain (SD022)
4. Old Jet Engine Test Stand (SD041)
5. Landfill No. 4 Trench Area (LF042)
6. Hardfill No. 2 Composite Area (incorporating Hardfill No. 4/Fire Protection Training Area No. 1, the POL Area, Hardfill No. 2, the DRMO area, and a number of solvent release areas) (SS040)
7. Building 301 (OT018)
8. Building 30 (ST020)
9. BX Service Station Spill (SS004)
10. Capehart Service Station (SS006)
11. Low Point Drain Boxes (ST019)
12. Low Level Radiation Site (RW008)
13. Skeet and Trap Range (ZZ294)
14. Golf Course Drum Site (DP044)
15. Aircraft Test Firing Range (FI290)
16. Machine Gun Range (SR293)

C.2.b. Based on the findings of investigations conducted under the original corrective action permit, the following SWMUs have been determined to require no further action, have had corrective measures completed and attained remedial objectives or have been consolidated into other ongoing SWMU investigations:

1. DRMO Yard (SS007)
2. Hardfill No. 2 (LF021)
3. Hardfill No. 4 (LF014)
4. Hardfill No. 5 (LF015)
5. Hardfill No. 6 (LF016)
6. Fire Protection Training Area No. 1 (FT001)
7. Fire Protection Training Area No. 2 (FT002)
8. POL Area (SS005)
9. Building 30 (ST020)
10. BX Service Station Spill (SS040)
11. Capehart Service Station (SS006)

12. Low Point Drain Boxes (ST019)
13. Low Level Radiation Site (RW008)
14. Landfill No. 1 (LF009)
15. Landfill No. 2 (LF010)
16. Landfill No. 3 (LF011)
17. East Gate Drain (SD022)
18. Aircraft Test Firing Range (FI290)
19. Machine Gun Range (SR293)

C.2.c. The following sites require further action under this Permit. Corrective measures have been formally selected for each of these sites, as described in Section C.11.b:

1. Landfill 5 (LF013)
2. Fire Training Area 3 (FT003)
3. Landfill 4 Trench (LF042)
4. Hardfill 2 Composite (SS040)
5. Building 301 (OT018)
6. Old Jet Engine Test Stand (SD041)
7. Landfill 4 (LF012)
8. Skeet and Trap Range (ZZ294)
9. Golf Course Drum Site (DP044)

C.2.d. This permit requires the Permittee to continue existing investigations, studies, stabilization measures, and corrective measures, and, if needed, to conduct further investigations and take corrective action as deemed appropriate by the Director on other releases or potential releases at the facility.

C.3. NOTIFICATION REQUIREMENTS FOR AND ASSESSMENT OF NEWLY-IDENTIFIED SWMUS, AOCS AND RELEASES

C.3.a. The Permittee shall notify the NDEE in writing of any newly-identified SWMU(s), AOCs and releases discovered during the course of groundwater monitoring, field investigations, environmental audits, or other activities or by any other means, no later than **fifteen (15) days** after discovery. As used in this part of the Permit, the terms "discover", "discovery", or "discovered" refer to the date on which the Permittee or an NDEE representative either, (1) visually observed evidence of a new SWMU, AOC, or release (2) visually observed evidence of a previously unidentified release of hazardous constituents to the environment, or (3) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment. The notification shall include, at a minimum, a unique sequential identification number, the location of the SWMU, AOC, or release and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.).

C.3.b. After such notification, the Director may request, in writing, that the Permittee prepare a SWMU, AOC or Release Assessment Work Plan, a proposed schedule of implementation and completion of the Work Plan, and a SWMU, AOC or Release Assessment Report. Alternatively, the Director may require a new or supplemental RFI or CMS for the newly-identified SWMU(s), AOC(s) or release(s) in accordance with this Permit.

C.3.c. Within **sixty (60) days** after receipt of notice that the Director requires an Assessment Work Plan, the Permittee shall submit a SWMU, AOC or Release Assessment Work Plan. The Assessment Work Plan shall describe all the activities to be completed in order to characterize the newly-identified SWMUs, AOCs or releases so that the Director can determine if a RCRA Facility Investigation and/or Corrective Measures Study is necessary. The Assessment Work Plan for the investigation shall include any of the following as specified in the Director's notice:

C.3.c.1. A discussion of past waste management practices at the unit or area;

C.3.c.2. A sampling and analysis program for groundwater, land surface and subsurface strata, surface water or air, as necessary to determine whether a release of hazardous waste and/or hazardous constituents from the SWMU or AOC or otherwise has occurred, or is occurring and/or to determine whether the release is harmful to human health or the environment;

C.3.c.3. A discussion of Data Quality Objectives;

C.3.c.4. A Quality Assurance Project Plan for the collection and analysis of samples that has been reviewed and approved by NDEE; and

C.3.c.5. A proposed schedule for implementation and completion of the Assessment Work Plan.

C.3.c.6. The sampling and analysis program, if required, shall be capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and/or hazardous constituents from the newly-identified releases to the environment. The Assessment Work Plan shall specify any data to be collected to provide for a complete Assessment Report, as defined below.

C.3.c.7. The Assessment Work Plan shall be reviewed in accordance with the procedures set forth in Permit Condition C.17. Upon NDEE's approval of the Assessment Work Plan, the Permittee shall implement said Assessment Work Plan in accordance with the schedules contained therein.

C.3.d. The Permittee shall submit an Assessment Report to the NDEE according to the schedule specified in the approved Assessment Work Plan. The Assessment Report shall present and discuss the information obtained from implementation of the approved Assessment Work Plan. At a minimum, the Assessment Report shall provide the following information for each SWMU, AOC, and/or newly-identified release:

C.3.d.1. The location of the newly-identified SWMU, AOC, and/or release, including its location in relation to other SWMUs, AOCs, other areas where a release has occurred, and regulated units;

C.3.d.2. The type and function of the SWMU, AOC, unit or other release area;

C.3.d.3. The general dimensions, capacities, and structural description of the SWMU, AOC, unit or other release area;

C.3.d.4. The period during which the SWMU, AOC, unit or other release area was operated;

C.3.d.5. The physical and chemical properties of all wastes, and hazardous materials that have been or are being managed at the SWMU, AOC, unit or other release area, to the extent such information is available;

C.3.d.6. The results of all sampling and analysis conducted;

C.3.d.7. Past and present operating practices;

C.3.d.8. Previous uses of the area in which the release occurred;

C.3.d.9. Amounts of waste and hazardous materials handled; and

C.3.d.10. Drainage areas and/or drainage patterns near the release.

C.3.e. The Assessment Report shall be reviewed in accordance with the procedures set forth in Permit Condition C.17. Based on the findings of the Assessment Report, and any other available information, the Director shall determine the need for further investigation, interim measures, stabilization, a RCRA Facility Investigation, or a Corrective Measures Study.

C.4. INTERIM MEASURES AND STABILIZATION

C.4.a. Interim measures shall be used whenever necessary to achieve the goal of stabilization, which is to control or abate immediate threats to human health and the environment, and to prevent or minimize the spread of contaminants while long-term corrective remedies are being evaluated. The Permittee shall evaluate available data and assess the need for interim measures in addition to any specifically required by this Permit.

C.4.b. The Permittee shall notify the Director within **twenty-four (24) hours** of becoming aware of a situation that requires interim measures, stabilization, or both.

C.4.c. If the Director determines that a release or potential release of hazardous waste and/or hazardous constituents poses a threat to human health or the environment, the Director may require interim measures, stabilization, or both to control or abate such threat, or to minimize or prevent the further spread of contamination until final corrective measures can be initiated. The Director shall determine the specific action(s) that must be taken to implement interim measures, stabilization or both, including the schedule for implementing the interim measures and/or stabilization requirements, and shall inform the Permittee of the action(s) in writing.

C.4.d. The Permittee shall submit an Interim Measures and/or Stabilization Work Plan describing the proposed interim measures and/or stabilization, and an implementation schedule within **thirty (30) days** of notification by the Director of the interim measures and/or stabilization requirement. The Interim Measures and/or Stabilization Work Plan shall be reviewed and approved in accordance with Permit Condition C.17. Upon receipt of written approval by the Director, the Permittee shall implement the Interim Measure and/or Stabilization Work Plan according to the schedules therein. The completion of the interim measures and/or stabilization, in accordance with the Work Plan, shall be documented by the Permittee in accordance with the approved schedule for the interim measures and/or stabilization work.

C.4.e. If at any time, the Permittee determines that the interim measures and/or stabilization activities are not controlling or abating the threat or effectively minimizing or preventing the further spread of contamination, the Permittee must notify the Director in writing no later than **ten (10) days** after such a determination is made. The Director may then require that the interim measures and/or stabilization activities be revised to make them more effective; or that final corrective measures be implemented to remediate the contaminated media.

C.5. RCRA FACILITY INVESTIGATION WORK PLAN

C.5.a. The objectives of the RCRA Facility Investigation (RFI) include, but are not limited to, all actions necessary to characterize the nature, direction, three-dimensional extent, rate, movement, and concentration of releases of hazardous waste and/or hazardous constituents from specific SWMUs, AOCs or releases, and their actual or potential receptors. The RFI shall be designed to obtain sufficient information to support further corrective action decisions at the facility.

C.5.b. Within **ninety (90) days** of receipt of a written request from the Director, the Permittee shall prepare and submit to the Director for review and approval in accordance with Permit Condition C.17, a RFI Work Plan for conducting a RFI for those SWMUs, AOCs or releases identified under Permit Conditions C.2 and C.3. The RFI Work Plan(s) shall be consistent with the requirements of the Scope of Work for a RCRA Facility Investigation in the "RCRA Corrective Action Plan", dated May 1994, OSWER Directive Number 9902.3-2A, EPA Document Number 520-R-94-004 and any subsequent revisions or editions. The RFI Work Plan(s) shall also be consistent with the "RCRA Facility Investigation Guidance", dated May 1989, OSWER Directive Number 9502.00-6D, EPA Document Number 530/SW-89-031 and any subsequent revisions or editions. The RFI Work Plan(s) shall describe in detail all proposed activities and procedures to be conducted at the facility and the overall technical and analytical approach to completing all actions necessary to achieve the objectives of the RFI. In order to support corrective action decisions, the RFI Work Plan(s) shall include, but is not limited to:

C.5.b.1. A description of the current conditions at the facility;

C.5.b.2. The full characterization of the environmental setting;

C.5.b.3. The full characterization of the sources and nature of hazardous wastes and constituents;

C.5.b.4. The procedures required to achieve full characterization of the three-dimensional extent and rate of on-site and/or off-site migration of releases of hazardous waste and/or hazardous constituents from SWMUs, AOCs and/or releases at the facility and their actual or potential receptors;

C.5.b.5. The work to identify and completely characterize all contaminant plumes;

C.5.b.6. Identification of any additional SWMUs, AOCs and/or releases not previously identified consistent with Permit Condition C.3;

C.5.b.7. Collection of sufficient data to conduct a Risk Assessment consistent with EPA risk assessment guidance and policy, including but not limited to "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual, Parts A - F (1989 - 2009)", and any subsequent revisions or editions;

and "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments Interim Final (1997), and any subsequent revisions or editions;" and

C.5.b.8. The collection of any other pertinent data which are necessary to support a Corrective Measures Study (CMS) and/or any further corrective action decisions;

C.5.b.9. The schedule for implementing and completing such investigations and submitting reports, including the RFI Report;

C.5.b.10. A requirement to provide **thirty (30) days** written advance notice to the Director of the date upon which field work shall begin;

C.5.b.11. The qualifications of personnel performing or directing the investigations, including contractor personnel; and

C.5.b.12. The overall management of the RFI or project organization.

C.5.c. The RFI Work Plan shall include the submittal of a Sampling and Analysis Plan (SAP) prepared in accordance with the "RCRA Corrective Action Plan," dated May 1994, OSWER Directive Number 9902.3-2A; EPA Document Number 520-R-94-004; and any subsequent revisions or editions and the "RCRA Facility Investigation Guidance", dated May 1989, OSWER Directive Number 9502.00-6D, EPA Document Number 530/SW-89-031, and any subsequent revisions or editions. The SAP shall include, but not limited to, the following:

C.5.c.1. Description of all sampling procedures including sample collection by media, field measurement and/or analysis, analytical methods, containerization, preservation, packaging, and shipment (including chain-of-custody) procedures;

C.5.c.2. Plans for the handling and disposal of all investigation-derived wastes, such as drilling spoils, water produced during well development, water produced during purging prior to groundwater sample collection, and fluids generated during decontamination of drilling and sampling equipment; and

C.5.c.3. A map with all SWMUs, AOCs, and/or release areas shown and maps of each SWMU, AOC or release area showing all sampling points, depth intervals, and constituents to be sampled and analyzed for.

C.5.d. The RFI Work Plan shall include the submittal of a Quality Assurance Project Plan (QAPP) prepared in accordance with "EPA Requirements for Quality Assurance Project Plans" EPA QA/R-5, March 2001, and "Guidance for Quality Assurance Project Plans" EPA QA/G-5, December 2002, and any subsequent revisions or editions. The QAPP shall present the policies, organization, objectives, functional activities, and specific quality assurance and quality control activities designed to achieve the data quality goals

of the RFI. The QAPP shall identify procedures that shall be performed during the investigation to characterize the nature and extent of contamination in order to ensure that all information and data resulting from the investigation are technically defensible, representative, and accurate in support of corrective action and risk management decisions. These documents must be reviewed and approved by the Director of the NDEE. The QAPP shall include, but is not limited to, the following:

C.5.d.1. The RFI objectives, analytical and laboratory methods, field and laboratory quality assurance and quality control samples, chain-of-custody procedures, and data review and management, validation and reporting procedures, sample collection, field measurement and/or analysis, containerization, preservation, packaging, shipment.

C.5.d.2. A laboratory QAPP or equivalent which is provided by the laboratory selected to perform sample analysis.

C.5.d.3. Laboratory methods shall be in accordance with Waste Management System; Testing and Monitoring Activities; Final Rule: Methods Innovation Rule and SW-846 Final Update IIIB. [70 FR 34538, June 14, 2005].

C.5.e. The Permittee shall prepare and maintain a health and safety plan during the project that assures the RFI activities are conducted in a manner that is protective of human health and the environment.

C.5.f. The Director shall review and approve the RFI Work Plan in accordance with the procedures set forth in Permit Condition C.17

C.6. RCRA FACILITY INVESTIGATION IMPLEMENTATION

Upon receipt of written approval from the Director for the RFI Work Plan, the Permittee shall implement the approved RFI Work Plan according to the schedules therein and the following:

C.6.a. The Permittee shall notify the Director at least **thirty (30) days** prior to any sampling, testing, or monitoring activity required by the RFI Work Plan to give NDEE personnel the opportunity to observe investigation procedures and/or obtain split samples.

C.6.b. Any proposed deviations from the approved RFI Work Plan must be approved in advance in writing or via electronic mail by the Director and/or his designee and fully documented and described in the progress reports and in the RFI Final Report.

C.6.c. Any additional work necessary to accomplish the RFI shall be subject to the requirements of Permit Condition C.14.

C.7. RCRA FACILITY INVESTIGATION REPORT

C.7.a. The Permittee shall submit an RFI Report according to the schedule contained in the approved RFI Work Plan and/or any RFI Work Plan Addenda. The RFI Report shall be consistent with the requirements of the "RCRA Corrective Action Plan," dated May 1994, OSWER Directive Number 9902.3-2A; EPA Document Number 520-R-94-004; and any subsequent revisions or editions. The RFI Report shall also be consistent with the "RCRA Facility Investigation Guidance," dated May 1989, OSWER Directive Number 9502.00-6D, EPA Document Number 530/SW-89-031, and any subsequent revisions or editions. The RFI Report shall present all information gathered under the approved RFI Work Plan and/or any RFI Work Plan Addenda along with a facility description and map showing the property boundary and all SWMUs, AOCs, and other areas where a release occurred. The RFI Report must contain sufficient information to support further corrective action decisions at the facility. The RFI Report shall describe the procedures, methods, and results of all investigations of newly-identified SWMUs and AOCs and associated releases, including but not limited to the following:

C.7.a.1. Characterization of the extent, nature, direction, rate, movement and concentration of releases from the facility.

C.7.a.2. Characterizations of the environmental setting at the facility, including:

a) Hydrogeological conditions;

b) Climatological conditions;

c) Soil characteristics;

d) Surface water and sediment quality; and

e) Air quality and meteorological conditions.

C.7.a.3. Characterization of SWMUs, AOCs, or other areas from which releases have been or may be occurring, including unit and waste or hazardous constituent characteristics.

C.7.a.4. Descriptions of human populations and environmental systems which are, may have been, or, based on site-specific circumstances, may be exposed to release(s).

C.7.a.5. Any other information that shall assist the Director in assessing risks to human health and the environment from releases from SWMUs, AOCs, or other unit/area.

C.7.a.6. Conclusions regarding future contaminant movement.

C.7.a.7. Laboratory, bench-scale or pilot-scale tests or studies conducted to determine the feasibility or effectiveness of treatment technologies or other technologies that may be appropriate in implementing remedies at the facility.

C.7.a.8. Statistical analyses to aid in the interpretation of data.

C.7.a.9. Results of any interim measures.

C.7.a.10. Any deviations from the approved RFI Work Plan.

C.7.b. After the Permittee submits the RFI Report, the Director shall review and approve the RFI Report in accordance with the procedures set forth in Permit Condition C.17.

C.7.c. If the Director determines that additional investigation or study of SWMUs or AOCs is necessary, the Permittee shall conduct those activities in accordance with Permit Condition C.14.

C.7.d. If the Director determines that an interim measure or corrective measure is required, the Director shall notify the Permittee in writing to request either interim measures as specified in Permit Condition C.4 or a corrective measures study as specified in Permit Conditions C.8 and C.9.

C.8. CORRECTIVE MEASURES STUDY WORK PLAN

C.8.a. If the Director determines that there has been a release of hazardous waste and/or hazardous constituents that may present a threat to human health or the environment, the Director may require a Corrective Measures Study (CMS) and shall notify the Permittee in writing of the requirement to submit a CMS Work Plan.

C.8.b. The Permittee shall submit copies of a CMS Work Plan as required by Permit Condition B.7.e to the Director within **sixty (60) days** of notification of the requirement to conduct a CMS. The CMS Work Plan shall describe all the investigations, studies and other work necessary to select a corrective measure or measures to protect human health and the environment from releases of hazardous wastes and hazardous constituents. Corrective measures described in the CMS Work Plan may include measures that incorporate engineering or institutional controls subject to NDEE's approval. The CMS Work Plan shall be consistent with the most recent version of the EPA guidance document entitled, RCRA Corrective Action Plan (EPA/520-R-94-004).

C.8.c. If the CMS Work Plan shall consider corrective measures that leave contamination onsite at a level that does not allow for unrestricted use and unlimited exposure (UU/UE), the Permittee shall include as a component of such corrective measures a plan to implement institutional and/or engineering controls to prevent unacceptable exposures to human health and the environment in perpetuity. Such a plan shall be consistent with EPA guidance including but not limited to "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA

Corrective Action Cleanups," EPA 540-F-00-005, OSWER 9355.0-74FS-P, September 2000 and the draft "Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facility, UST and RCRA Corrective Action Cleanups," February 2003.

C.8.d. At a minimum, the CMS Work Plan shall provide the following information:

C.8.d.1. A description of the general approach to investigating and evaluating potential corrective measures;

C.8.d.2. A site-specific description of the overall purpose of the corrective measures study;

C.8.d.3. A description of the corrective measures objectives, including proposed target media cleanup standards and points of compliance or a description of how a risk assessment shall be performed;

C.8.d.4. A definition of the specific objectives of the Corrective Measure Study;

C.8.d.5. A description of the specific corrective measure technologies and/or corrective measure alternatives which shall be studied;

C.8.d.6. A detailed description of any proposed pilot, laboratory and/or bench-scale studies;

C.8.d.7. A description of overall project management including overall approach, levels of authority, lines of communication, project schedules, budget and personnel. Include a description of qualifications for personnel directing or performing the work;

C.8.d.8. A description of the method to be used to evaluate corrective measures. The CMS Work Plan shall specify that the CMS Report shall include an evaluation of each corrective measure studied using, at a minimum, four "threshold criteria" and five "balancing criteria."

<u>Threshold criteria</u>:

a) Protection of human health and the environment;

b) Attainment of media cleanup standards set by, or risk-based standards approved by, NDEE;

c) Controlling the sources of releases to reduce or eliminate further releases that may pose a threat to human health and the environment, and

d) Compliance with applicable standards for management of wastes.

Balancing criteria:

a) Long-term reliability and effectiveness;

b) Reduction of toxicity, mobility or volume of wastes;

c) Short-term effectiveness;

d) Implementability; and

e) Cost.

C.8.d.9. The schedules for conducting the CMS and submitting a CMS Report;

C.8.d.10. A requirement to provide **thirty (30) days** written advance notice to the Director of the date upon which field work shall begin; and

C.8.d.11. The proposed format for the presentation of information in the CMS Report. The format for the CMS Report shall include at a minimum:

a) Introduction/Purpose;

b) Description of Current Conditions;

c) Media Cleanup Standards;

d) Identification, Screening, and Development of Corrective Measures Alternatives;

e) Evaluation of a Final Corrective Measures Alternative;

f) Recommendation by Permittee for a Final Corrective Measure Alternative; and

g) Public Involvement Plan.

C.8.e. The Director may require the Permittee to evaluate as part of the CMS one or more specific potential remedies. These remedies may include a specific technology or combination of technologies that, in the NDEE's judgment, achieves protection of human health and the environment.

C.8.f. The Director shall review the CMS Work Plan in accordance with the procedures set forth in the Permit Condition C.17. Upon approval thereof, the Permittee shall implement the Work Plan in accordance with the schedule contained therein.

C.9. CORRECTIVE MEASURES STUDY WORK PLAN IMPLEMENTATION

C.9.a. Upon receipt of written approval from the Director for the CMS Work Plan, the Permittee shall implement the approved CMS Work Plan according to the schedules therein and the following:

C.9.a.1. The Permittee shall notify the Director at least **thirty (30) days** prior to any sampling, testing, or monitoring activity required by the CMS Work Plan to give NDEE personnel the opportunity to observe investigation procedures and/or obtain split samples.

C.9.a.2. Any proposed deviations from the approved CMS Work Plan must be approved in advance by the Director or his/her designee and fully documented and described in the progress reports and in the CMS Report.

C.9.a.3. Any additional work necessary to accomplish the CMS shall be subject to the requirements of Permit Condition C.14.

C.10. CORRECTIVE MEASURES STUDY REPORT

C.10.a. The Permittee shall submit copies of a CMS Report as required by Permit Condition B.7.e according to the schedule contained in the approved CMS Work Plan. The CMS Report shall present all information gathered under the approved CMS Work Plan and shall be consistent with the most recent version of the EPA guidance document entitled, RCRA Corrective Action Plan (EPA/520-R-94-004).

C.10.b. If the CMS Report proposes corrective measures that leave contamination onsite at a level that does not allow for UU/UE, the Permittee shall include as a component of such corrective measures a plan to implement institutional and/or engineering controls to prevent unacceptable exposures to human health and the environment in perpetuity. Such a plan shall be consistent with EPA guidance including but not limited to "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups," EPA 540-F-00-005, OSWER 9355.0-74FS-P, September 2000 and the draft "Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facility, UST and RCRA Corrective Action Cleanups," February 2003.

C.10.c. The CMS Report shall include:

C.10.c.1. A brief summary discussion of any new information that would significantly affect the evaluation and selection of the corrective measures alternative;

C.10.c.2. A summary of the risks to human health and the environment which require implementation of a corrective measure(s);

C.10.c.3. Proposed media cleanup standards for the protection of human health and the environment;

C.10.c.4. The results of the investigations for each remedy studied and of any bench-scale or pilot tests or modeling (if applicable) conducted;

C.10.c.5. An estimate of the costs for implementing each corrective measure;

C.10.c.6. A detailed evaluation of each corrective measure using the four threshold criteria and the five balancing criteria listed in Permit ConditionC.8.d.8; and

C.10.c.7. The Permittee's recommendation, with justification, of the appropriate corrective measure or measures, based upon the above criteria and the information in Permit ConditionC.8.d.8.

C.10.d. The Director may require the Permittee to evaluate as part of the CMS one or more specific potential corrective measures. These corrective measures may include a specific technology or combination of technologies that, in the NDEE's judgment, achieves protection of human health and the environment.

C.10.e. The CMS Report must contain adequate information for the Director to select the corrective measure(s) necessary to protect human health and the environment from releases of hazardous wastes and hazardous constituents at or from the Facility.

C.10.f. The CMS Report shall be reviewed in accordance with the procedures set forth in Permit Condition C.17.

C.11. CORRECTIVE MEASURES SELECTION

C.11.a. Corrective Measures Selection

The Director shall select corrective measure(s) that shall:

(1) protect human health and the environment;

(2) attain media cleanup standards set by the Director;

(3) control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases that may pose a threat to human health and the environment; and

(4) comply with any applicable standards for management of wastes.

Before selecting corrective measures, the Director shall prepare a Statement of Basis (SoB) that identifies the preferred corrective measure or measures and provides the reasons for the selection. The Director shall make a final corrective measures decision after public notice and public review of the SoB and review of all public comments. If necessary, NDEE shall initiate a permit modification pursuant to Title 128, Chapter 15, 012.01A to require implementation of the preferred corrective measure or measures. Alternatively, this Permit may be modified by the Permittee pursuant to Title 128, Chapter 15, 012.02K for the implementation of the selected corrective measure or measures.

C.11.b. Corrective Measures Selected to Date

The following section summarizes corrective measures which have been selected to date for the identified SWMUs and AOCs**.** If new SWMUs or AOCs are identified, or new releases occur or are newly identified for the SWMUs and AOCs referenced below, the Director may require the Permittee to address such a release by implementing any or all of the requirements of this Permit Condition C.3.

Due to the size of the permittee's facility and the presence of several spatially distinct SWMUs, several separate SWMU-specific remedies shall be required to address all of the contamination present at the facility. Remedies which are designed to address contaminant releases at individual SWMUs are described in this section along with Land Use Control (LUC) requirements specific to those remedies. General LUC requirements applicable to all remedies with institutional controls are described in Section C.11.c.

C.11.b.1. **Fire Protection Training Area 3 (FTA3)**

a) The remedy selected for implementation at the FTA3 site required excavation and single-lift land application of contaminated soils. Soils were excavated to the horizontal limits indicated on Figure 3 and vertically to the groundwater table or until the cohesive soils had been removed, whichever was deeper. The excavated soils were placed in a six-inch lift within the large grassy area north and west of the FTA3 site. The open excavation was backfilled with clean, imported soil. The soil within the land treatment unit was incorporated (via tilling) into the top 6 inches of the native soil. The area was tilled on a weekly basis until concentrations were below 1 mg/kg for benzene, toluene, ethylbenzene, and xylene (BTEX) and below 1 mg/kg for chlorinated aliphatic hydrocarbons (CAHs.)

b) Monitored natural attenuation (MNA) was implemented for the dissolved groundwater contamination that remained after the soil excavation was complete. Monitoring is being done from existing and new monitoring wells, as detailed in the annual Environmental Restoration Program (ERP) Work Plan.

c) LUCs were implemented to cover both the area of existing contamination (Figure 2) and the area that was used for land farming (Figure 3). The LUCs implemented at FTA3 are intended to prevent exposure to TCE, 1,2-DCE, VC and benzene in the soil and groundwater and only apply to the areas designated on Figures 2 and 3. The primary LUCs for FTA3 include:

    (i) A prohibition on digging or excavation below 4 inches within the LUC area without approval by Offutt AFB ERP.

    (ii) A prohibition on the installation of domestic-type water wells intended to provide ground water for human needs as it relates to health, fire control, and sanitation or for domestic livestock.

d) FTA3-specific administrative controls/ construction clearance requirements for work done within the site boundaries:

    (i) A Base Civil Engineering (CE) Work Clearance Request (AF Form 103 or "digging permit") approval is required for any land disturbance greater than 4 inches below ground at the FTA3 site. The digging permit includes review and approval by several CE organizations, including ERP, along with other Base organizations. Issuance of a digging permit can be denied by the ERP. Any excavations shall be conducted in accordance with worker protection and soil disposal requirements as may be required by applicable laws and site-specific exposure safety requirements. Offutt AFB's digging permit process shall also prevent installation of domestic-type water wells.

    (ii) An airfield obstruction waiver is required for any construction greater than 4 inches in height within a clearance zone that extends 1000 feet from the centerline of the runway. A major portion of the FTA3 site is within this 1000-foot clearance zone and would require the waiver. The application waivers are issued by Offutt's Base Operations and the process can take several weeks to complete.

e) FTA3 site controls and mechanisms

    (i) Access to the site is from Harlan Lewis Road and is currently restricted to limited personnel. The area is separated from the rest of the Base by an existing fence with a combination lock on the gate.

(ii) Permanent signs identifying the area of restricted use were installed around the perimeter of the FTA3 site boundary (Figure 2.) The signs are maintained on a consistent basis.

(iii) Groundwater monitoring is completed at FTA3 to monitor contaminant concentrations in groundwater. The sample frequency, quantity and analyte list is determined in the annual ERP Work Plan.

f) Termination of FTA3 LUCs - LUCs shall be maintained in the FTA3 area until the concentration of hazardous constituents in the soil and groundwater are at such levels to allow for UU/UE. With regard to groundwater, LUC termination may be requested when maximum contaminant levels (MCLs) for TCE, 1,2-DCE, VC, and benzene have been achieved throughout the plume.

g) The Permittee shall submit a final Corrective Measures Completion (CMC) Report to NDEE within **ninety (90) days** of corrective measure completion or permit modification, whichever is later. This report shall, at a minimum, contain the following elements.

(i) Purpose;

(ii) Synopsis of the corrective measure and certification that the corrective measure was constructed in accordance with the Corrective Measures Implementation (CMI) Work Plan;

(iii) Description of any deviations from the CMI Work Plan and an explanation of why these were necessary for the project;

(iv) Demonstration that cleanup standards have been attained along with supporting data;

(v) Summary of work accomplishments (e.g., total volumes excavated and treated, performance levels achieved through treatment, etc.); and

(vi) Summary of significant activities that occurred during operations, including a discussion of problems encountered and how they were addressed.

h) The Corrective Measures Completion Report shall be reviewed by the NDEE in accordance with the procedures set forth in Permit Condition C.17.

C.11.b.2. **Landfill 4 Trench (LF4T)**

a) The remedy selected for implementation at the LF4T site required injection of Veg-Oil into contaminant hotspots within the north and south plumes emanating from the SWMU to enhance reductive dechlorination within the areas exceeding MCLs (Figure 4). The target injection interval in the north plume was from 25 to 40 feet below ground (bgs) and, in the south plume, from 13 to 20 feet bgs. Remedy performance was partly evaluated through the collection of performance samples at L4T-MW-8SI and L4T-MW-10S on a quarterly basis through 2008. Since 2008, monitoring for natural attenuation (MNA) has continued at area wells in accordance with requirements outlined in the annual ERP Work Plan. Performance objectives are the attainment of MCLs for cis-1,2-DCE, VC, 1,1-DCE, and (TCE) throughout the two plumes.

b) Monitoring shall continue at wells in the vicinity of the zero-valent iron (ZVI) permeable reactive barrier (PRB) in accordance with requirements outlined in the annual ERP Work Plan to verify the ZVI PRB continues to intercept and prevent contaminants in the south plume from flowing off-site at levels above MCLs.

c) LUCs were implemented to cover both the fenced landfill and the non-fenced portion of the northern plume shown on Figure 4. The LUCs implemented at LF4T are intended to prevent exposure to cis-1,2-DCE, VC, TCE, and 1,1-DCE in the soil and groundwater and only apply to the areas designated on Figure 4. The primary LUCs for LF4T include:

    (i) A prohibition on digging or excavating within the fenced landfill and digging below 6 inches within the non-fenced portion of the LUC area without approval by Offutt AFB ERP.

    (ii) A prohibition on the installation of domestic-type water wells intended to provide ground water for human needs as it relates to consumption, fire control, and sanitation or for domestic livestock within the LUC boundaries shown on Figure 4.

d) LF4T-specific administrative controls/ construction clearance requirements for work done within the site boundaries:

    (i) Offutt's Base CE Work Clearance Request (AF Form 103 or "digging permit") process is used to prevent digging within the fenced landfill area.

    (ii) A Base CE Work Clearance Request approval is required for any land disturbance greater than 6 inches below ground for

the LUC area designated on Figure 4 lying outside of the fenced landfill. Any excavations shall be conducted in accordance with worker protection and soil disposal requirements as may be required by applicable laws and site-specific exposure safety requirements. Offutt AFB's digging permit process is also used to prevent installation of domestic-type water wells.

e) LF4T site controls and mechanisms

(i) Access to the landfill portion of the SWMU is restricted through installation and maintenance of a 7-foot high chain-link fence with combination padlocks on the gates.

(ii) Permanent signs prohibiting digging without authorization have been installed and shall be maintained around the perimeter of the landfill.

(iii) In 2008, EPA approved Offutt AFB use of the landfill surface area for Air Staff Expeditionary Combat Skill Training. To prevent exposure of training participants, Offutt AFB, in addition to the LUCs, signs were installed and are maintained along the alignment of the previously existing north and east fence lines for the SWMU indicating that digging/excavation is prohibited.

(iv) Groundwater monitoring is performed at LF4T to monitor contaminant concentrations in groundwater. The sample frequency, quantity and analyte list is determined in the annual ERP Work Plan.

f) Termination of LF4T Land Use Controls - Land Use Controls shall be maintained in the designated areas outside of the fenced landfill until the concentration of hazardous constituents in the soil and groundwater are at such levels to allow for UU/UE. With regard to groundwater, termination of LUCs outside of the boundaries of the fenced landfill may be requested when MCLs for TCE, cis-1,2-DCE, 1,1-DCE, and VC have been achieved throughout the plume. LUCs within the fenced landfill shall be maintained indefinitely.

g) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

C.11.b.3. **Hardfill 2 Composite (HF2C)**

a) The remedy selected for implementation at the HF2C site required installation and/or operation of the following remedial components:

(i) Plume Containment. Hydraulic containment of the Southern Plume is achieved using extraction wells HF2C-PW1 and HF2C-PW2. The pumped contaminated groundwater is discharged to the publically operated treatment works (POTW) via the sanitary sewer (beginning in 1996) or the constructed treatment wetland (CTW) (beginning in 2003). Groundwater extraction shall continue until it can be demonstrated that groundwater extraction is not required to control plume migration and attain remedial action objectives;

(A) A trial shutdown period to assess plume stability without hydraulic control began in December 2011 for HF2C-PW1 and in April 2010 for HF2C-PW2.

(B) During the Spring 2019 catastrophic flood event both extraction wells were inundated with flood waters.

(C) Future use of these extraction wells is being evaluated.

(ii) Source area containment through use and performance monitoring of a ZVI PRB located downgradient of Southern Plume source area 8;

(iii) Installation of *in situ* reductive treatment (IRT) zones within the Northern Plume source area and the cores of both plumes at the locations illustrated on Figure 5;

(iv) Dual-phase extraction (DPE) within Southern Plume source area 8 using wells H2C-MW10S and H2C-MW16S until removal rates became asymptotic;

(v) The portable DPE system trailer was installed in October 2006.

(vi) The DPE system was shut down in August 25, 2007 to access concentration stability.

(vii) The post-shutdown results indicated concentrations were stable to decreasing.

(viii) The extraction well and piping infrastructure were left in place in the event subsequent contaminant rebound requires additional action;

(ix) Operation and performance monitoring of a sub-slab depressurization system at B407. Performance monitoring consists of monthly inspections to verify a negative pressure is being maintained; and

(x) MNA of residual groundwater contamination in both plumes until MCLs are attained outside of the Technical Impracticability Zone.

b) Groundwater monitoring of the various remedial components was implemented and shall continue within HF2C until performance criteria are met for a given remedial component and overall site RAOs are achieved. Performance objectives for the various remedial components are listed in Table 1.

c) LUCs were implemented to prevent unacceptable construction worker exposure to the high concentrations of chemicals of concern that persist in the shallow groundwater source areas and to prohibit installation of on-Base drinking water wells (Figure 6). The primary LUCs for HF2C include:

(i) A prohibition on digging or excavating of any kind within source areas 4, 8, 9, 10 and 11 (Figure 6) without approval by Offutt AFB ERP.

(ii) Within the rest of the LUC area not referenced above, a prohibition on digging or excavating below 6 inches without approval by the Offutt AFB ERP.

(iii) A prohibition on the installation of domestic-type water wells intended to provide ground water for human needs as it relates to consumption, fire control, and sanitation or for domestic livestock within the LUC boundaries shown on Figure 6.

d) HF2C-specific administrative controls/ construction clearance requirements for work done within the site boundaries are as follows:

(i) On Base within the LUC: Offutt's Base CE Work Clearance Request (AF Form 103 or "digging permit") process is used to prevent or restrict digging within the LUC area designated on Figure 6.

(ii) On Base within the LUC: Permittee shall conduct annual visual inspections and review of records relating to the SWMU to verify that no domestic wells have been installed.

(iii) On Base within source areas: A Base CE Work Clearance Request approval is required for any land disturbance in source areas 4, 8, 9, 10 and 11 and for land disturbance greater than 6 inches below ground for the remainder of the LUC area designated on Figure 6. Any excavations within the source areas shall be conducted in accordance with worker protection and soil disposal requirements as may be required by applicable laws and site-specific exposure safety requirements. Offutt AFB's digging permit process is also used to prevent installation of domestic-type water wells.

(iv) Affected Off Base Properties: Permittee shall conduct annual visual inspections of the areas to verify that no domestic wells have been installed. Pertinent records shall be reviewed to minimize the potential for human exposure to contamination. Results of the annual inspections, records review, contaminant plume map (s) and COC toxicity information shall be sent to Affected Off Base landowners.

e) HF2C site controls and mechanisms

(i) Permanent signs were installed and are maintained around the perimeter of the treatment wetland prohibiting access to the wetland and exposure to the groundwater influent (Figure 6).

(ii) Monitoring of contaminant concentrations in groundwater continues in both the Northern and Southern Plumes at HF2C. Sampling frequency, sample quantity and the analyte list shall be determined in the annual ERP Work Plan.

f) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

g) A technical impracticability waiver from attainment of MCLs was granted for Southern Plume source area 8 (Figure 7).

Table 1 - Summary of Selected Corrective Measures for HF2C

Media	Remedial Component	COCs	Performance Objective	Performance Monitoring Points/Wells
Northern Plume Groundwater	IRT Zone at Source Area 1	TCE cis-1,2-DCE VC	20 µg/l MCL (70 µg/l) MCL (2 µg/l)	H2C-MW21SI H2C-MW60I H2C-MW62I
	IRT Zone at Source Area 3	TCE cis-1,2-DCE VC	200 µg/l 100 µg/l MCL (2 µg/l)	H2C-MW9S H2C-MW63S H2C-MW64S
	IRT Zones within Plume Core	TCE cis-1,2-DCE VC	MCL (5 µg/l MCL (70 µg/l) 5 µg/l	H2C-MW18I H2C-MW18D H2C-MW69I H2C-MW69D
	MNA	TCE cis-1,2-DCE trans-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) MCL (100 µg/l) MCL (2 µg/l)	H2C-MW18I H2C-MW18D H2C-MW69D HF4-MW9D H2C-MW14SI H2C-MW14I H2C-MW14D H2C-MW21SI H2C-MW9S H2C-MW62I
Southern Plume Groundwater	Zero Valent Iron Permeable Reactive Barrier	TCE cis-1,2-DCE trans-1,2-DCE VC 1,1-DCE PCE 1,1,2-TCA	MCL (5 µg/l) MCL (70 µg/l) MCL (100 µg/l) MCL (2 µg/l) MCL (7 µg/l) MCL (5 µg/l) MCL (5 µg/l)	H2C-MW44S H2C-MW44D H2C-MW45S H2C-MW45D H2C-MW46S H2C-MW46D
	Dual-Phase Extraction	TCE	Mass removal until removal rates become asymptotic	H2C-MW10S H2C-MW16S
	IRT Zones within Plume Core	TCE cis-1,2-DCE VC	100 µg/l 100 µg/l 5 µg/l	H2C-MW66D H2C-MW67D H2C-MW23I H2C-MW20I
		TCE cis-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) 5 µg/l	H2C-MW23D
		TCE cis-1,2-DCE VC	200 µg/l 100 µg/l 5 µg/l	H2C-MW20SI

	Hydraulic Containment System	TCE cis-1,2-DCE trans-1,2-DCE VC 1,1-DCE	Containment sufficient to prevent off-site migration	H2C-MW22I H2C-MW22D H2C-MW30I H2C-MW30D
	IRT Zones within Distal Plume	TCE cis-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) MCL (2 µg/l)	DRM-MW4D H2C-MW68D H2C-MW22I H2C-MW22D H2C-MW30I H2C-MW30D
	MNA	TCE cis-1,2-DCE trans-1,2-DCE VC 1,1-DCE PCE 1,1,2-TCA	MCL (5 µg/l) MCL (70 µg/l) MCL (100 µg/l) MCL (2 µg/l) MCL (7 µg/l) MCL (5 µg/l) MCL (5 µg/l)	H2C-MW3D H2C-MW23I H2C-MW23D H2C-MW20SI H2C-MW20I DRM-MW4D H2C-MW68D H2C-MW22I H2C-MW22D H2C-MW30I H2C-MW30D H2C-MW66D H2C-MW67D
Southern Plume Source Area 8 Soils and Groundwater	Bldg. 407 Sub-slab Depressurization System	TCE	Maintain continuous negative pressure on sub-slab	Manometers (3) in Bldg. 407
Both Northern and Southern Plumes	Land Use and Construction Safety Controls	TCE VC Benzene Toluene	Prevent installation of domestic-type wells and unacceptable construction worker exposure to COCs	Base CE Work Clearance Request

C.11.b.4. **Landfill 5 (LF5)**

a) The remedy selected for LF5 consists of the following elements:

(i) The existing landfill surface was regraded, a soil cover with a minimum slope of 2 percent was constructed, and vegetation established. The constructed soil cover provides a minimum of 24 inches of cover, including 6 inches of topsoil, above the interpreted top-of-waste surface.

(ii) A surface water drainage system consisting of open, grass-lined channels was constructed to control surface water run-on and runoff. Collector channels, constructed around the perimeter of the soil cover, discharge into a main drainage channel which conveys runoff from the landfill to a culvert which conveys the drainage into the Bellevue Drain. Erosion control material was installed along landfill side slopes (permanent erosion control revegetation mat) and drainage channels (degradable erosion control netting) to help establish vegetation following construction and to protect against long-term erosion effects.

(iii) LUCs were implemented to restrict access to the landfill to prevent dermal contact with landfill contents and restrict its use for any purpose, except open space, during the post-closure care period.

(iv) LF5-specific administrative controls/construction clearance requirements for work done within the site boundaries include the following.

(A) Offutt's Base CE Work Clearance Request (AF Form 103 or "digging permit") process is used to prevent digging within the fenced landfill area.

(B) Due to the proximity of the landfill to the main runway, airfield clearance is needed from Base Operations before any repair activity involving large construction equipment occurs.

(v) LF5 site controls and mechanisms

(A) Access to the landfill is restricted through maintenance of a 7-foot high chain-link fence with combination padlocks on the gates along the eastern and southern edges of the landfill.

(B) Permanent signs prohibiting digging without authorization were installed and are maintained around the perimeter of the landfill.

b) Post-closure Inspection

The Permittee shall implement the post-closure plan approved in conjunction with the selected remedy. The following items constitute elements of the post-closure plan and shall be inspected semi-annually, except in the case of severe weather, such as a tornado or major rainstorm with precipitation of 1 inch or more, in which case the site shall be inspected within one week of the event. A Field Inspection Report shall be completed at the time of each inspection event which describes the condition of the following remedy elements:

(i) The soil cover, including side slopes, shall be inspected for visually observable settlement, cracking, sloughing, erosion, loss of vegetation, growth of trees or brush, rodent holes, or other deleterious conditions.

(ii) The perimeter channels and main drainage channels shall be inspected for signs of erosion, excessive sediment or debris deposition, and any other conditions which may prohibit or impede the flow of runoff, or otherwise affect operational efficiency.

(iii) The site fence, including gates and signs, shall be inspected for any visually observable damage and foundation undercutting. Gates and locks shall be checked for proper operation. Signs shall be checked for proper placement and legibility.

(iv) Monitoring well risers, protective covers, and locks shall be inspected for damage or tampering. The integrity of the concrete pad and visible components of the surface seal shall be inspected for damage or excessive wear. The area around the well shall be inspected for subsidence or erosional losses of soil. The total depth of the monitoring well shall be measured and checked against the as-built monitoring well construction logs.

c) Maintenance and Repair

Most of the maintenance for the remedy elements shall be on an “as-needed” basis. All items found to be damaged shall be noted on a site drawing

attached to the filed inspection report, and repaired according to the specifications for original construction and in accordance with the post-closure plan. Maintenance and repair activities may include, but are not necessarily limited to the soil cover, drainage channels, fence, and monitoring wells.

d) Reporting

(i) Following each field inspection, a written inspection report shall be prepared by Offutt AFB and/or its contractor(s) within **thirty (30) days** of completion of the inspection and submitted to the EPA and NDEE with the next required Quarterly Report. Each report shall summarize the inspection results and provide a schedule for repair of any deficiencies observed.

(ii) Along with each inspection report described above, a written maintenance and repair report shall be prepared and sent to the EPA and NDEE by Offutt AFB and/or its contractor(s). The maintenance and repair report shall describe in detail any maintenance and/or repairs made since the last maintenance and repair report. The report shall describe any on-going maintenance during the next reporting period, describe in detail any necessary or proposed repairs, and present a schedule for these repairs.

e) Groundwater Monitoring

Discontinuation of groundwater monitoring was approved on June 28, 2010; however, specific wells have been identified for possible future use. The duration, frequency, chemical or physical parameters, and other details of the groundwater monitoring scheme for LF5 may be further modified in conjunction with the annual ERP Work Plan.

C.11.b.5. **Landfill 4 (LF4)**

a) The remedy selected for LF4 focuses on treating contaminant mass to facilitate natural attenuation of the groundwater plume. The remedy consists of the following components:

(i) Source Treatment by Potassium Permanganate ($KMnO_4$) Injection. The saturated source soil areas [CAHs > 10,000 µg/L] were treated with $KMnO_4$ (Figure 8) to destroy contaminant mass. Groundwater monitoring shall be conducted periodically to verify that the cleanup objectives for this remedy component are being met.

(ii) Groundwater Treatment with IRT Zones (hotspot areas and Base boundary). IRT zones were installed to treat COCs within the groundwater plume [CAHs > 100 µg/L] (Figure 8). Groundwater monitoring shall be done periodically to verify that the cleanup objectives for this remedy component are being met.

(iii) Plume Containment. Hydraulic containment of the plume is achieved, beginning in 1996, using HCS extraction wells LF4-PW3 and LF4-PW4. The pumped contaminated groundwater is being discharged to the POTW via the sanitary sewer (beginning 1996) or the CTW (beginning 2003). The HCS is limiting off-site migration and shall be operated and maintained until available data indicates that the plume has stabilized and off-site migration above MCLs shall not occur. This remedy component includes inspections, effluent sampling, detection monitoring, and water level measurements.

(A) The extraction wells (LF4-PW3 and LF4-PW4) were shut down on a trial basis beginning in 2009 to assess plume stability without hydraulic control.

(B) In December 2010, EPA requested that LF4-PW3 be restarted due to increased VC concentrations and the continued presence of elevated levels of COC's off base. LF4-PW4 could remain off pending review of the success of LF4-PW3 at reducing off-site contaminant concentrations to below MCL.

(C) LF4-PW3 was retuned to service on December 21, 2010 and operated through August 23, 2001, when it was shut down to prepare for the 2011 IRT Zone completion.

(D) The HCS Rebound Study completed in 2016 found elevated containment levels off-Base and recommended restarting on a periodic basis. EPA agreed with the recommendations.

(E) LF4-PW3 and LF4-PW4 were operated from August 17 to October 27, 2016 and March 21, 2018 to March 2019. All pumped contaminated groundwater was discharged to the POTW via sanitary sewer in accordance with an agreement with the POTW.

(F) The Permittee needs to notify the NDEE when these pumping wells are returned to operation and specify how the pumped groundwater will be managed.

(iv) MNA of residual groundwater contamination shall continue until MCLs are attained throughout the plume.

b) Groundwater Monitoring (Remedy Performance and MNA). The performance of all the remedy components is regularly monitored at the performance monitoring points listed in Table 2. Monitoring shall continue until performance criterion are met for a given remedy component and overall site RAOs are achieved. Monitoring well locations are shown on Figure 8.

c) LUCs shall be implemented at LF4 to prevent exposure to cis-1,2-DCE, VC, TCE, and 1,1-DCE in the soil and groundwater and only apply to the areas designated on Figure 9. The primary LUCs for LF4 include:

(i) A prohibition on digging or excavating below 6 inches within the LUC area (includes on-Base plume area only) without approval by Offutt AFB ERP.

(ii) A prohibition on the installation of domestic-type water wells intended to provide ground water for human needs as it relates to consumption, fire control, and sanitation or for domestic livestock within the LUC boundaries shown on Figure 9.

(iii) Permittee shall gain access and conduct annual visual inspections of affected off-Base property impacted by the plume to verify that no domestic wells have been installed within the off-Base plume footprint. An annual review shall also be conducted of Sarpy County planning board records to determine if any proposed development or construction may increase the potential for human exposure to contamination and/or the integrity of the remedy.

d) LF4-specific administrative controls/ construction clearance requirements for work done within the site boundaries are as follows:

(i) On Base: Offutt's Base CE Work Clearance Request process shall prevent digging within the source areas and entire LUC area. A CE Work Clearance Request (AF Form 103 or "digging permit") approval is required for any land disturbance greater than 6 inches below ground at the LF4 SWMU. Any excavations shall be conducted in accordance

with worker protection and soil disposal requirements as may be required by applicable laws and site-specific exposure safety requirements. The Clearance Request process shall also be used to preclude residential use construction within the LF4 SWMU.

(ii) On Base: Offutt AFB's digging permit process shall also prevent installation of domestic-type water wells (those intended to provide groundwater for human needs as it relates to health, fire control, and sanitation or for domestic livestock) within the LUC boundaries shown on Figure 9.

(iii) Affected Off Base Properties: Results of the annual inspections, records review, contaminant plume map (s) and COC toxicity information shall be sent to Affected Off Base landowners.

e) LF4 site controls and mechanisms

(i) Access to the site is partially controlled by Offutt's perimeter fencing and monitoring of this perimeter by Offutt's Security Forces.

(ii) Groundwater monitoring shall continue at LF4 to monitor contaminant concentrations in groundwater. The sample frequency, quantity and analyte list shall be determined in the annual ERP Work Plan.

f) Termination of LF4 LUCs - LUCs shall be maintained in the designated areas until the concentration of hazardous constituents in the soil and groundwater are at such levels to allow for UU/UE. With regard to groundwater, termination of LUCs may be requested when MCLs for TCE, cis-1,2-DCE, 1,1-DCE, and VC have been achieved throughout the plume.

g) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

Table 2 - Summary of Selected Corrective Measures for Landfill 4

Media	Remedial Component	COCs	Performance Objective	Performance Monitoring Point/Wells
Subsurface Saturated Soil	$KMnO_4$ Injection	TCE cis-1,2-DCE VC	Reduce contaminant mass in source areas	LF4-MW2S LF4-MW25SI
Groundwater	Source Area Biostimulant IRT	TCE cis-1,2-DCE VC	MCL (5 µg/l) 300 µg/l 300 µg/l	LF4-MW2S LF4-MW13SI LF4-MW18I
	Base Boundary Biostimulant IRT	TCE cis-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) MCL (2 µg/l)	LF4-MW26SI LF4-MW24SI
	Hydraulic Containment System	TCE cis-1,2-DCE VC	Prevent off-Base migration of contaminant plume	LF4-PW3 LF4-PW4 LF4-MW24SI LF4-MW26SI
	MNA	Arsenic TCE cis-1,2-DCE VC	MCL MCL (5 µg/l) MCL (70 µg/l) MCL (2 µg/l)	LF4-MW25SI LF4-MW13S,I LF4-MW2S LF4-MW18I LF4-MW26SI LF4-MW24S,SI
	LUCs - On-Base	Arsenic TCE cis-1,2-DCE VC	Prevent use of contaminated groundwater as potable source	Offutt Review and Approval of Intrusive Work Proposals
	LUCs - Off-Base	Arsenic cis-1,2-DCE VC	Prevent use of contaminated groundwater as potable source	Annual inspections and record review

C.11.b.6. **Old Jet Engine Test Stand (OJETS)**

a) The remedy selected for the OJETS area focuses on treating contaminant mass to facilitate natural attenuation of the groundwater plume. The remedy shall consist of the following elements:

(i) Biostimulant injections to form IRT zones to treat the groundwater plume on- and off-Base.

(ii) MNA of the groundwater plume to treat remaining contamination until MCLs are attained.

b) Groundwater Monitoring (Remedy Performance and MNA). The performance of IRT zones and MNA shall be regularly monitored at the performance monitoring points listed in Table 3. Monitoring shall continue until performance criteria are met for a given remedy component and overall site RAOs are achieved. Monitoring well locations are shown on Figure 10.

c) Land Use Controls (LUCs) shall be implemented in the OJETS area to prevent exposure to the TCE, cis-1,2-DCE, and VC in groundwater and only apply to the areas designated on Figure 11. The primary LUCs for the OJETS area include:

(i) On-base: Use of the Base CE digging permit process to prohibit installation of domestic-type water wells.

(ii) Off-base:

(A) Current off-site easements associated with the runway clear zone control construction within that area and prevent installation of domestic-type wells.

(B) Outside of the runway clear zone, current occupants have been connected to city water and disconnected from private wells. Permittee shall work with affected property owners to abandon existing wells where possible. Bellevue City Code prevents installation of new wells where access to city water exists and groundwater is polluted.

d) OJETS-specific administrative controls/construction clearance requirements for work done within the site boundaries are as follows:

(i) On Base: Offutt's CE Work Clearance Request (AF Form 103 or "digging permit") approval is required for any land disturbance greater than 6 inches below ground on Base and this process shall prevent installation of domestic-type water wells (those that provide groundwater for human needs as it relates to health, fire control, and sanitation or for domestic livestock) within the LUC boundaries shown on Figure 11. Annual visual inspections shall be conducted and pertinent records relating to the site reviewed to track and verify physical use.

(ii) Off-base within the runway easement boundary: access shall be gained and annual inspections shall be conducted to visually inspect the area and pertinent records relating to the

easements shall be reviewed to verify that no domestic wells have been installed within the off-Base plume footprint.

(iii) Affected Off Base Properties (outside the current runway easement boundaries): Permittee shall gain access and conduct annual visual inspections of the area and verify that no domestic wells have been installed within the off-Base footprint of the plume. An annual review shall also be conducted of Sarpy County planning board records to determine if any proposed development or construction may increase the potential for human exposure to contamination and/or the integrity of the remedy.

(iv) Affected Off-Base landowners: An annual notice shall be sent that includes a contaminant plume map, COC toxicity information, and the results of the annual inspection.

e) OJETS-site physical controls and mechanisms are provided by the Base's perimeter fencing and monitoring of this perimeter by Offutt's Security Forces.

f) Termination of OJETS LUCs – LUCs shall be maintained in the designated areas until the concentration of hazardous constituents in groundwater are at such levels to allow for UU/UE. Termination of LUCs may be requested when MCLs for TCE, cis-1,2-DCE, and VC have been achieved throughout the plume.

g) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

Table 3 - Summary of Selected Corrective Measures for OJETS

Media	Remedial Component	COCs	Performance Objective	Performance Monitoring Points/Wells
Groundwater	South Plume Source Area Biostimulant IRT Grid	TCE cis-1,2-DCE VC	50 µg/l 120 µg/l 5 µg/l	OJET-MW2S
	South Plume On-Base Biostimulant IRT (SP1)	VC	10 µg/l	OJET-MW10D
	South Plume Base Boundary	VC	MCL (2 µg/l)	OJET-MW4D

	Biostimulant IRT (SP2)			
	North Plume On-Base Biostimulant IRT (NP1)	VC	10 µg/l	OJET-MW11D
	North Plume Base Boundary Biostimulant IRT (NP2)	VC	5 µg/l	OJET-MW12I OJET-MW12D
	North Plume Off-Base Biostimulant IRTs (NP3 & NP4)	VC	MCL (2 µg/l)	NP3: OJET-MW13I OJET-GS191 NP4: OJET-MW14D OJET-GS170
	North Plume Off-Base Biostimulant IRT (NP5)	VC	MCL (2 µg/l)	OJET-MW6D
	MNA	TCE cis-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) MCL (2 µg/l)	OJET-MW1D OJET-MW2I OJET-MW2D OJET-MW3I OJET-MW4I OJET-MW5D OJET-MW7D OJET-MW8D OJET-MW9D HF5-MW1I OJET-HP28 OJET-HP32 OJET-GS192
	LUCs – On-Base	TCE cis-1,2-DCE VC	Prevent aquifer use as drinking water source	Offutt Review and Approval of Intrusive Work Proposals
	LUCs – Off-Base	VC	Prevent landowner exposure to contaminated groundwater	Annual Inspections and Record Review

C.11.b.7. **Building 301 (B301)**

a) The remedy selected for the B301 area focuses on treating contaminant mass to control and eliminate risk factors and facilitate natural attenuation of the groundwater plume. The remedy shall consist of the following elements:

(i) Biomulch PRB to control off-site migration and facilitate restoration of downgradient water quality to MCLs.

(ii) ZVI PRB to control contamination coming from the source area and facilitate restoration of downgradient water quality to MCLs.

(iii) Biostimulant injections to form IRT zones to treat the groundwater plume on- and off-Base.

(iv) DPE in the source area to remove contaminant mass, reduce soil vapor concentrations, and facilitate aquifer restoration.

(A) The portable PDE system trailer was installed in August 2007.

(B) The DPE system was shut down on October 8, 2008 to access concentration stability.

(C) The post-shutdown results indicted concentrations were stable to decreasing.

(D) The extraction well and piping infrastructure were left in place in the event subsequent contaminant rebound requires additional action.

(v) MNA of the groundwater plume to treat remaining contamination until MCLs are attained;

(vi) Storm Sewer replacement/repair (completed in July 2003) to reduce infiltration of contaminated groundwater into the storm sewer and discharge to surface water;

(vii) Seep Drain installation (completed in August 2003) to eliminate groundwater discharge to surface water at the base boundary; and

(viii) Vapor Mitigation through the sealing of utility chase openings (completed in 2009) to eliminate the vapor intrusion pathway.

b) Groundwater Monitoring (Remedy Performance and MNA). The performance of all remedy components shall be regularly monitored at the performance monitoring points listed in Table 4. Monitoring shall continue until performance criteria are met for a given remedy component and overall site RAOs are achieved. Monitoring well locations are shown on Figure 12.

c) LUCs shall be implemented in the B301 area to prevent exposure to the TCE, cis-1,2-DCE, and VC in groundwater and only apply to the areas designated on Figure 13. The primary LUCs for the B301 area include:

    (i) On-base: Use of the digging permit process to prohibit installation of domestic-type water wells.

    (ii) Off-base: Current off-site easements associated with the runway clear zone control construction within that area and prevent installation of domestic-type wells.

d) B301-specific administrative controls/construction clearance requirements for work done within the site boundaries are as follows:

    (i) On-Base: Offutt's CE Work Clearance Request (AF Form 103 or "digging permit") approval is required for any land disturbance greater than 6 inches below ground on Base and this process shall prevent installation of domestic-type water wells (those that provide groundwater for human needs as it relates to health, fire control, and sanitation or for domestic livestock) within the LUC boundaries shown on Figure 13. Annual visual inspections shall be conducted and pertinent records relating to the site reviewed to track and verify physical use.

    (ii) Off-base within the runway easement boundary: access shall be gained and annual inspections shall be conducted to visually inspect the area and pertinent records relating to the easements shall be reviewed to verify that no domestic wells have been installed within the off-Base plume footprint.

    (iii) Affected Off-Base landowners: An annual notice shall be sent that includes a contaminant plume map, COC toxicity information, and the results of the annual inspection.

e) B301-site physical controls and mechanisms are provided by the Base's perimeter fencing and monitoring of this perimeter by Offutt's Security Forces.

f) Termination of B301 LUCs – LUCs shall be maintained in the designated areas until the concentration of hazardous constituents in groundwater are at such levels to allow for UU/UE. Termination of LUCs may be requested when MCLs for TCE, cis-1,2-DCE, and VC have been achieved throughout the plume.

g) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

Table 4 - Summary of Selected Corrective Measures for Building 301

Media	Remedial Component	COCs	Performance Objective	Performance Monitoring Point/Wells
Surface Water	Storm Sewer Repair	TCE	Reduce infiltration of contaminated groundwater into storm sewer	B301-SW2
	Seep Drain	TCE	Eliminate groundwater discharge to surface water at base boundary	NPDES Outfall 003
Indoor Air	Vapor Mitigation (Seal Utility Chases)	TCE	6.1 µg/m^3	B301-02-AIR B301-06-AIR
Soil Vapor/ Groundwater	Source Area Dual-Phase Extraction (DPE)	TCE	Operate DPE until removal rates become asymptotic	B301-EW1 B301-EW2 B301-EW3
Groundwater	Zero-Valent Iron (ZVI) Permeable Reactive Barrier (PRB)	TCE cis-1,2-DCE VC	149 µg/L 252 µg/L 19 µg/L	B301-MW43I B301-MW58SI B301-MW58I B301-MW60SI B301-MW60I B301-MW62I
	Biomulch PRB and Base Boundary IRTs (IRT2 & IRT3)	TCE cis-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) MCL (2 µg/l)	B301-MW9I B301-MW22S B301-MW34S B301-MW29S B301-MW69S
	Plume Core IRT5, IRT6, and Grid 2	TCE cis-1,2-DCE VC	500 µg/L 252 µg/L 19 µg/L	B301-MW18I B301-MW71I
	IRT4 (South of PRB) & IRT7 (North of PRB)	TCE cis-1,2-DCE VC	149 µg/L 252 µg/L 19 µg/L	IRT4: B301-MW70SI IRT5: B301-MW41I

				B301-MW73I
	Off-Base IRT1 & Grid 1	TCE cis-1,2-DCE VC	10 µg/L 70 µg/L 2 µg/L	B301-TW1 B301-GS128 B301-GS144
	MNA	TCE cis-1,2-DCE VC	MCL (5 µg/l) MCL (70 µg/l) MCL (2 µg/l)	B301-MW7I B301-MW9S B301-MW19I B301-MW45S B301-MW72I B301-MW10S B301-MW11S B301-MW12S B301-MW21S B301-GS149 B301-GS160 B301-GS171 B301-GS177 B301-GS181 B301-SW2 B301-SW3 B301-SW6 B301-FD1 B301-FD2
	LUCs - On-Base	TCE cis-1,2-DCE	Prevent use of contaminated groundwater as potable source	Offutt Review and Approval of Intrusive Work Proposals
	LUCs - Off-Base	cis-1,2-DCE VC	Prevent use of contaminated groundwater as potable source	Annual inspections and record review

C.11.b.8. **Golf Course Drum Site (GCDS)**

a) The original sources of the release in the GCDS area (drum, drum contents, and contaminated soil) have been removed (to industrial use standards) from the site and the selected remedy for the GCDS area focuses on residual groundwater impacts. The remedy shall consist of the following elements:

(i) LUCs to prevent residential usage, drinking water well installation and incidental exposure to contaminated groundwater.

(ii) Groundwater monitoring to verify that contaminant concentrations are attenuating and not expanding beyond their current extent.

b) Groundwater Monitoring. Contaminant levels in groundwater shall be regularly monitored at NDEE approved monitoring wells or direct push points downgradient of the release. Monitoring shall continue until MCLs are achieved. Approximate locations of monitoring locations are shown on Figure 14.

c) LUCs shall be implemented in the GCDS area to prevent residential use and exposure to the polycyclic aromatic hydrocarbons (PAHs) in groundwater and only apply to the areas designated on Figure 14. The primary LUCs for the GCDS area shall be use of Offutt's CE Work Clearance Request (AF Form 103 or "digging permit") to prevent intrusive activities. Digging permit approval is required for any land disturbance greater than 6 inches below ground on Base and this process shall prevent installation of domestic-type water wells (those that provide groundwater for human needs as it relates to health, fire control, and sanitation or for domestic livestock) within the LUC boundaries shown on Figure 14. Annual visual inspections shall be conducted and pertinent records relating to the site reviewed to track and verify physical use.

d) Termination of GCDS LUCs – LUCs shall be maintained in the designated areas until the concentration of hazardous constituents in groundwater are at such levels to allow for UU/UE. Termination of LUCs may be requested when MCLs for the PAHs detected at the site (or Regional Screening Levels for PAHs lacking MCLs) have been achieved throughout the plume.

e) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

C.11.b.9. **Skeet and Trap Range**

a) The remedy selected for implementation at the Skeet and Trap Range consists of the following elements:

(i) Excavation and consolidation using standard construction equipment of lead-contaminated soil exceeding the residential lead cleanup value of 400 mg/kg and PAH-contaminated soil exceeding industrial cleanup values;

(ii) Recovery of lead shot through physical sieving, which shall then be containerized and recycled;

(iii) *In situ* stabilization of consolidated lead-contaminated soil exceeding the 5.0 mg/L TCLP stabilization standard by mixing a treatment amendment into the soil pile;

(iv) Disposal of excavated and stabilized lead-contaminated soil at the Douglas County Landfill and PAH-contaminated soil at the Butler County Landfill;

(v) Disposal of any lead-contaminated soil not meeting the 5.0 mg/L TCLP standard after stabilization at a Subtitle C hazardous waste landfill;

(vi) Grading and revegetation of the excavation area once cleanup standards have been attained; and

(vii) Establishment of land use controls over the PAH-contaminated area cleaned to industrial standards.

b) LUCs, as described in Permit Condition C.11.c, shall prevent use of the PAH-contaminated area for any purpose that would be incompatible with the clean-up standard achieved. Since a portion of this area was only be cleaned to industrial-use standards, non-industrial uses shall be prohibited. The area of restricted usage is shown on Figure 15.

c) Termination of Skeet and Trap Range LUCs – LUCs shall be maintained in the designated areas indefinitely unless the concentration of hazardous constituents in soils are removed to levels that shall allow for UU/UE.

d) The Permittee shall submit a final CMC Report to NDEE within **ninety (90) days** of corrective measures completion or permit modification, whichever is later. This report shall contain the same elements required by Permit Condition C.11.b.1.g) for FTA3.

C.11.c. LUCs/ RCRA Permit General Requirements

C.11.c.1. LUCs are non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. LUCs are used when residual contamination remains at a level that does not allow for UU/UE after the final remedy has been implemented.

C.11.c.2. To ensure that unacceptable threats to human health and the environment are prevented, institutional controls shall be implemented as a component of remedies selected pursuant to Section C.11.b of this permit where residual contamination remains onsite at a level that does not allow for UU/UE. Offutt

AFB shall not modify or terminate any LUCs or implementation actions nor modify land use without approval by NDEE. Additional general elements of these LUCs are included below.

C.11.c.3. Administrative Controls

a) Details of LUC location and restrictions shall be incorporated into the Base General Plan.

b) Unless otherwise noted, annual inspections shall be conducted at sites subject to LUCs to verify that all site-specific LUCs have been implemented and are being properly maintained. The annual inspection shall include visual inspection, including upkeep of posted signs, maintenance of grounds, and physical use of the site and review of pertinent records relating to each site.

c) Development of GeoBase, which includes a CIP database, or Common Installation Picture. The CIP shall include the informational data for on Base LUCs, which shall be a "shape file" in ArcView. The Offutt AFB ERP shall have the responsibility for providing updated information on LUCs to the database manager. It is expected that all Offutt AFB operational personnel, especially those involved in land use and construction decisions, shall have read only access to the database. Standard operational communications shall be used to publicize the availability and purpose of the database.

C.11.c.4. Reporting

a) Offutt AFB shall notify NDEE of any deficiencies or violations of a LUC that may disrupt its effectiveness within **thirty (30) days** of becoming aware of the breach and shall describe the corrective actions taken or to be taken along with anticipated schedules for initiation and completion.

b) Offutt AFB shall convey LUC-related information in the ERP annual report to NDEE and EPA. The report shall serve to notify agencies of the following:

(i) Changes in land uses including those that are not considered "major" as defined below. NDEE shall be notified in accordance with Section C.11.c.4.d) below of any planned activity involving significant excavation or water well installation.

(ii) The status of the LUCs and how any LUC deficiencies or inconsistent uses have been addressed.

(iii) Any maintenance of any physical markers or site upkeep.

(iv) Results of the annual field inspection.

(v) Results of any groundwater sampling conducted during the reporting period.

c) Offutt AFB shall provide written notification to NDEE whenever it anticipates any "major change in land use". A "major change in land use" would include:

(i) A change in land use that is inconsistent with the exposure assumptions in the risk assessment that was the basis for the LUCs (either human health or ecological risk assessment).

(ii) Any change from industrial or commercial land use to residential or recreational land use.

(iii) Any action that may disrupt the effectiveness of a corrective action (e.g., excavation at a landfill, dewatering that disrupts a pump and treat system).

(iv) Any other action that might alter or negate the need for the LUC (e.g., any plan to actively remediate a site subject to LUCs in order to allow for unrestricted use).

d) Notification of a "major change in land use" shall occur at least a minimum of **ninety (90) days** prior to the anticipated change to allow for NDEE review, concurrence, possible public comment, and for modification of Offutt AFB's RCRA permit. A notification would include:

(i) An evaluation of whether or not the anticipated land use change shall pose unacceptable risks to human health and the environment or negatively impact the effectiveness of the remedy outlined in this Permit.

(ii) An evaluation of the need for any additional remedial action resulting from the anticipated land use changes.

(iii) A proposal for any changes to the selected remedial action and identification of requirements.

e) A site evaluation report shall be done every 5 years to assess the effectiveness and continued appropriateness of the LUCs. The report shall document the following:

(i) All information presented in the previous years' ERP Annual Reports concerning LUCs.

(ii) Effectiveness of LUCs in protection of the affected parties as planned in this Permit.

(iii) Any changed circumstances that render the LUCs ineffective.

(iv) A review of the parties affected or potentially affected by the LUCs and site contamination.

(v) Possible LUC modifications to provide necessary protection, or new IC requirements.

f) Procedures for LUC modification or termination

(i) Modification: Any modifications to LUCs necessary due to land use or remedial action changes shall be proposed by Offutt AFB. The proposed LUC changes shall be submitted to NDEE for review and approval prior to the implementation of any change in land use. Following approval, changes shall be circulated to all stakeholders and appropriate Base departments for implementation.

(ii) Applicability: LUCs shall take effect only after this Permit is issued.

(iii) Termination: LUCs shall be maintained until the concentration of hazardous constituents in the soil and groundwater are at such levels to allow for UU/UE. When those levels have been achieved, a request for LUC termination shall be submitted to the NDEE for approval. The request for LUC termination shall then be put out for public comment. Following approval of LUC termination by NDEE, the permit shall be modified to remove references to the LUC. At that point, physical features at the site related to LUCs may be removed and the site shall be removed from Offutt AFB's CIP database. All relevant Offutt AFB departments and concerned parties shall be informed of the termination. All activities related to termination of the LUC(s) shall be documented in the ERP's quarterly report.

(iv) Future Property Conveyance: Offutt AFB has no current intention of conveying any part of the base, either in title or some lesser form of property interest, to any other agency,

private person, or entity. However, should all or part of an area subject to LUC restrictions be conveyed out of federal control, such conveyance shall be in accordance with CERCLA 120, 42 U.S.C. 9620; 40 CFR §270 Subpart D, and Section B.3 of this Permit. In this event, Offutt AFB shall notify the NDEE at least **ninety (90) days** prior to any conveyance or transfer, regardless of whether such conveyance is to a federal or non-federal party, and LUC restrictions shall be reviewed and incorporated into the property transfer to ensure that the LUCs shall remain in place after the property is conveyed. Any notice shall include the following:

(A) Type of property conveyance

(B) The anticipated date of conveyance

(C) The future property owner

(D) The sites affected by the conveyance

(E) The mechanism(s) (such as negative easements and restrictive covenants) that shall be used for maintaining LUCs after the property conveyance or that, prior to finalization of property conveyance, the area subject to the LUC shall be cleaned to any use standards that remove the need for a LUC. Implementing LUCs at any part of Offutt AFB, however, shall not have the effect of creating, disposing, or altering any real property rights on Offutt AFB.

C.12. CORRECTIVE MEASURES IMPLEMENTATION

C.12.a. Corrective Measures Implementation Work Plan

C.12.a.1. Within **sixty (60) days** of approval by the Director of a final remedy/corrective measure, the Permittee shall submit a Corrective Measures Implementation (CMI) Work Plan to implement the selected corrective measure(s). The CMI Work Plan is subject to approval by the Director and shall be developed in a manner consistent with the CMI Scope of Work in the "RCRA Corrective Action Plan" EPA 520-R-94-004, OSWER Directive 9902.3-2A, May 1994, incorporated herein.

C.12.a.2. The CMI Work Plan shall detail the design, construction, operation, maintenance, and monitoring of the selected corrective measure. If the CMI

shall consider corrective measures that leave contamination onsite at a level that does not allow for UU/UE, the Permittee shall include as a component of such corrective measures a plan to implement institutional and/or engineering controls to prevent unacceptable exposures to human health and the environment. Within **ten (10) days** of a request by the Director, the Permittee shall provide an editable version of the CMI Work Plan in an electronic format as agreed upon between the Permittee and NDEE, in accordance with the "RCRA Corrective Action Plan" EPA 520-R-94-004, OSWER Directive 9902.3-2A, May 1994, incorporated herein. The CMI Work Plan, at a minimum, shall include the following sections:

a) Program Management;

b) Public Involvement;

c) Design Plans and Specifications;

d) Operation and Maintenance;

e) Monitoring and Recordkeeping Plan;

f) Cost Estimate;

g) Project Schedule, including provisions for thirty (30) days written advance notice of any field work;

h) Construction Quality Assurance/Quality Control Program;

i) Sampling and Analysis Plan;

j) Quality Assurance Project Plan

k) Data Management;

l) Waste Management Plan; and

m) Periodic Reports, including the Construction Complete Report.

C.12.a.3. Institutional Control (IC) Plan: If an IC Plan is necessary, the Permittee shall provide in the CMI Work Plan a detailed IC plan for the establishment of enforceable and other ICs, as required below:

a) The ICs shall be consistent with EPA guidance including but not limited to "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective

Action Cleanups," EPA 540-F-00-005, OSWER 9355.0-74FS-P, September 2000 and the draft "Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facility, UST and RCRA Corrective Action Cleanups," February 2003. The CMI Work Plan shall include drafts of all proposed IC documents. The CMI Work Plan shall include a schedule for the implementation of the IC plan. Upon approval of the CMI Work Plan by the Director, the Permittee shall implement the IC plan.

b) Long-Term Inspection, Monitoring and Maintenance: The Permittee shall provide in the CMI Work Plan required above a detailed plan to conduct long-term monitoring, inspection, maintenance, recordkeeping and reporting to demonstrate and report the effectiveness of the ECs and ICs corrective measures. The plan shall include inspection, monitoring and maintenance of the ECs and monitoring and review of ICs. The Permittee shall determine if any construction or excavation has not been in accordance with the ICs above. Upon approval of the CMI Work Plan by the Director, the Permittee shall implement the long-term monitoring, inspection, maintenance, recordkeeping and reporting plan.

C.12.a.4. Concurrent with the submission of a CMI Work Plan, the Permittee shall submit to the Director a CMI Health and Safety Plan.

C.12.a.5. The Director shall review the CMI Work Plan for approval in accordance with the procedures set forth in Permit Condition C.17 below. Upon approval thereof by the Director, the Permittee shall implement the plan in accordance with the schedule contained therein. The Permittee shall also submit an electronic copy of the CMI Work Plan in electronic format as agreed upon between the Permittee and NDEE that incorporates all changes and/or revisions required for, or as, a condition of approval.

C.12.a.6. The following CMI Work Plans (or equivalent) have been previously approved by EPA and are hereby incorporated into the permit:

a) Landfill 5 Remedial Action, dated 07/01/95

b) Landfill 5 Post-closure Plan, Final, dated 07/01/95

c) Final Design HF2C RA Groundwater Conveyance System and Treatment Wetland, dated 05/29/02

d) HF2C PRB – Final Design Drawings and Specifications, dated 10/25/02

e) FTA3 – Final Design Analysis, dated 03/28/03

f) FTA3 – Remedial Action Construction, dated 07/31/03

g) Final FTA3 Biosparging CMI Work Plan, dated 05/15/06

h) Final LF4 ISCO CMI Work Plan, dated 08/31/06

i) Final HF2C Dual-phase Extraction CMI Work Plan, dated 09/26/06

j) Final HF2C IRB CMI Work Plan Addendum, dated 06/22/07

k) B301 Dual-phase Extraction CMI Work Plan, dated 03/31/07

l) Final OJETS IRB CMI Work Plan Addendum, dated 11/06/07

m) Final B301 IRB CMI 2009 Work Plan Addendum, dated 07/02/09

n) Basewide IRB CMI Work Plan 2008 Addendum, dated 07/01/08

o) ZZ294 Final Interim Removal Action Report, dated 04/27/12, including EPA comments-dated, 03/19/14

C.12.b. Corrective Measures Construction Completion Report

The Permittee shall submit a Corrective Measures Construction Completion Report (CMCCR) to the Director in accordance with the approved CMI Work Plan schedule. Within **ten (10) days** of a request by the Director, the Permittee shall provide an editable version of the CMCCR in an electronic format as agreed upon between the Permittee and NDEE. The CMCCR shall be consistent with the "RCRA Corrective Action Plan" EPA 520-R-94-004, OSWER Directive 9902.3-2A, May 1994, incorporated herein. The CMCCR shall, at a minimum, include the following:

C.12.b.1. Description of the purpose of the CMCCR;

C.12.b.2. Synopsis of the corrective measure, design criteria, and certification that the corrective measure was constructed in accordance with the final plans and specifications as contained in the CMI Work Plan;

C.12.b.3. Explanation and description of any modifications to the final CMI Work Plan and specifications and why these were necessary for the project;

C.12.b.4. Results of any operational testing and/or monitoring, indicating how initial operation of the corrective measure compares to the design criteria;

C.12.b.5. Summary of significant activities that occurred during construction, including a discussion of problems encountered and how they were addressed;

C.12.b.6. Summary of any inspection findings (include copies of key inspection documents in appendices); and

C.12.b.7. As built drawings or photographs depicting the constructed corrective measure(s).

C.12.c. Corrective Measures Implementation Annual Report

The Permittee shall submit a CMI Annual Report to the Director **no later than March 1 of each year** of the prior year's effectiveness and performance of the corrective measures above. The CMI Annual Report shall include documentation of all samples and data collected and their analysis and determinations made from long-term inspection, monitoring and maintenance. The CMI Annual Report shall include any deficiencies or violations of ECs or ICs determined from the inspection, maintenance, and monitoring required in Permit Condition C.12.a.3.a). Based upon NDEE's review of the report, the Director may require the Permittee to conduct additional investigation, study, and/or work in order to modify an existing corrective measure or to select a new corrective measure or measures. If action is needed to protect human health or the environment from releases or to prevent or minimize the further spread of contamination while long-term remedies are pursued, the Director may require the Permittee to implement Interim Measures pursuant to Permit Condition C.4. Note that the Permittee must still report all instances of non-compliance as required elsewhere by this Permit.

C.12.d. Corrective Measures Implementation Five-Year Review

C.12.d.1. The Permittee shall submit a report to evaluate the corrective measures effectiveness and performance every **five (5) years** to the Director. Within **sixty (60) days** of the 5-year anniversary of EPA's approval of the CMCCR, the Permittee shall submit to the NDEE for review and approval a 5-Year Corrective Measures Performance Evaluation Report (CMPER). The evaluation shall be consistent with the CERCLA Comprehensive Five-Year Review Guidance, OSWER 9355.7-03B-P (EPA 540-R-01-007); and OSWER 9355.7-18, Recommended Evaluation of IC: Supplement to the Comprehensive Five-Year Review, Sept. 2011; and OSWER 9200.2-84, Assessing Protectiveness at Sites for Vapor Intrusion: Supplement to the Comprehensive Five-Year Review, Dec. 2012; and any other relevant guidance and shall include the following:

a) Annual reports required in Permit Condition C.12.c;

b) Effectiveness of corrective measures in protecting human health and the environment as planned in this Permit.

c) Effectiveness of ECs and ICs in protecting human health and the environment as planned in this Permit.

d) Results of sampling and analysis to determine the effectiveness and performance of the corrective measures.

e) Any changed circumstances that render the corrective measure, including ECs and ICs, ineffective.

f) Possible modifications to the corrective measures to provide necessary protection.

g) Any other reporting requirements included in the NDEE approved CMI Work Plan.

C.12.d.2. The Director shall review the report for approval in accordance with the procedures in Permit Condition C.17. Within **ten (10) days** of a request by the Director, the Permittee shall provide an editable version of the report in an electronic format as agreed upon between the Permittee and NDEE.

C.12.d.3. Based upon NDEE's review of the report, the Director may require the Permittee to conduct additional investigation, study, and/or work in order to modify an existing corrective measure or to select a new corrective measure or measures. If action is needed to protect human health or the environment from releases or to prevent or minimize the further spread of contamination while long-term remedies are pursued, the Director may require the Permittee to implement Interim Measures pursuant to Permit Condition C.4.

C.12.d.4. The first CMPER covered the period of April 23, 2008 to April 22, 2013. The second CMPER covered the period of April 23, 2013 to April 22, 2018. Subsequent CMPERs will follow the same pattern.

C.12.e. Corrective Measures Completion Report

C.12.e.1. The Permittee shall submit a Corrective Measures Completion (CMC) Report to the Director within **ninety (90) days** of the completion of all remedial activities required by Permit Condition C and generally conform to the "RCRA Corrective Action Plan" EPA 520-R-94-004, OSWER Directive 9902.3-2A, May 1994, incorporated herein. The purpose of the CMC Report is to fully document how the corrective measure completion criteria have been satisfied and to justify why the corrective measure and/or monitoring may cease. The CMC Report shall, at a minimum, include the following elements:

a) Purpose;

b) Synopsis of the corrective measure;

c) CMC Criteria: Describe the process and criteria for determining when corrective measures, maintenance and monitoring may cease. CMC criteria were given in the final Operation and Maintenance (O&M) Plan;

d) Demonstration that the completion criteria have been met. Include results of testing and/or monitoring, indicating how operation of the corrective measure compares to the completion criteria;

e) Summary of work accomplishments (e.g., performance levels achieved, total treated and/or excavated volumes, nature and volume of wastes generated, etc.);

f) Summary of significant activities that occurred during operations. Include a discussion of problems encountered and how they were addressed;

g) Summary of inspection findings (include copies of key inspection documents in appendices);

h) Summary of total operation and maintenance costs; and

i) Determination of whether ECs and/or ICs are required to continue to be maintained.

C.12.e.2. The Director shall review the CMC Report for approval in accordance with the procedures set forth in Permit Condition C.17. The Permittee shall also submit an electronic copy of the report as agreed upon between the Permittee and NDEE that incorporates all changes and/or revisions required for approval.

C.12.e.3. The requirements for ICs and ECs shall be maintained as specified in this Permit and shall not be terminated until NDEE has determined that the concentration of hazardous constituents in the soil and groundwater are at such levels to allow for UU/UE.

C.13. CHANGE IN PROPERTY USE

To change the property use allowed in this Permit, the Permittee shall submit a request for a permit modification to include a new risk assessment and corrective measures study that addresses potential exposures associated with the proposed facility use. The Director shall review the revised risk assessment/CMS Report for approval in accordance with the procedures set forth in Permit Condition C.17. The corrective measure shall be selected in accordance with procedures in Permit Condition C.11. Upon final selection and modification into the Permit, the Permittee may implement the new corrective measure.

C.14. ADDITIONAL WORK

If at any time during implementation of corrective action under this Permit the NDEE determines that additional work is necessary to accomplish the corrective action required under this Permit, NDEE shall provide written notification to the Permittee of the requirement for additional work to be performed by the Permittee. NDEE may determine that certain tasks, including, but not limited to, investigatory work or engineering evaluation are necessary in addition to the tasks and deliverables already required under this Permit. NDEE shall specify the basis and reasons for its determination that the additional work is necessary and shall request submittal of a draft work plan to perform the additional work. Within **sixty (60) days** of the NDEE's request, the Permittee shall submit a draft work plan for NDEE review and approval pursuant to Permit Condition C.17. Upon NDEE approval, the Permittee shall perform the additional work according to the approved work plan. The completion of the additional work, as specified in this Permit Condition, shall be documented by the Permittee in accordance with the approved schedule for the additional work.

C.15. FUNDING FOR CORRECTIVE ACTION

Corrective action activities are currently funded through a performance-based contract (PBC). If activities required under this permit at any time entails a need for additional funding, the following provisions shall apply.

C.15.a. The Department of the Air Force shall seek sufficient funding through the Department of Defense budgetary process to fulfill their obligations under this permit. Any requirement for the obligation of funds by the Department of the Air Force established by the conditions of this permit shall be subject to the availability of appropriated funds in the Defense Environmental Restoration Account or other appropriate account, and no provision herein shall be interpreted to require obligation of funds in violation of the Anti-Deficiency Act, 31 USC § 1341. Where obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the obligation of such funds shall be appropriately adjusted.

C.15.b. The Permittee shall submit to the Director an annual funding report demonstrating requests for funding sufficient to fulfill the Permittee's obligations under this permit. This funding report shall be submitted annually on a schedule compatible with the Permittee's programming cycle unless no funding requests are submitted in a given year.

C.15.c. Within **ninety (90) days** after this permit has been modified to include a remedy, the Permittee shall provide all necessary documentation to demonstrate a request for funds sufficient to implement the selected remedy. The funding request shall be based on the approved cost estimates contained in the CMS report. If, in order to perform a selected remedy, the Permittee is required, through appropriate channels, to submit a funding request to the U.S. Congress, the Permittee shall notify the Director of such requirement within **thirty (30) days** after this permit has been modified to include such selected remedy.

C.15.d. If cost estimates increase above those contained in the approved CMS report, the Permittee shall, in the next annual funding report under paragraph C.15.b above, demonstrate that the cost increase has been reflected in the Permittee's programming documents.

C.16. QUARTERLY PROGRESS REPORTS

The Permittee shall submit to the Director a signed Quarterly Progress Report covering all activities within the current reporting period which are conducted pursuant to the corrective action provisions of this Permit. Each Quarterly Progress Report shall be due **thirty (30) days** after the last day of each calendar quarter. The first quarter for which a Quarterly Progress Report is due is the first quarter in which the Director requires the Permittee to begin corrective action activities pursuant to this Permit, including development of Work Plans. These Quarterly Progress Reports shall be submitted until such time that the activities pursuant to the corrective action provisions of this Permit are complete as determined by the Director. The Director may change, reduce or discontinue reporting requirements if technical documentation demonstrates the change, reduction or cessation in reporting requirements shall not impact operation and monitoring of remedial actions. If previously discontinued, the Director can, upon written request to Permittee, reinstitute the requirement for progress reports when new corrective action activities commence, or other activities require such reporting to the Director. The Progress Reports shall include the following information for the period being reported:

C.16.a. A description of all work completed in that period;

C.16.b. Summaries of all findings, including summaries of laboratory data;

C.16.c. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;

C.16.d. Deviations from the approved work plan(s), SAPs;

C.16.e. Projected work for the next period; and

C.16.f. Any instances of noncompliance with this Permit not otherwise required to be reported pursuant to Permit Condition B.5.k and B.5.p.

C.17. REVIEW AND APPROVAL PROCEDURES

C.17.a. After submission of any document, plan, or report, required by this Permit, the Director shall either approve or disapprove the document, plan, or report in writing.

C.17.b. If the Director disapproves the document, plan, or report, the Director shall notify the Permittee in writing of the document, plan, or report's deficiencies, indicate required revisions, and specify a due date for submittal of a revised document, plan, or report.

C.17.c. If the Director also disapproves the revised document, plan or report, the Director may modify the document, plan or report and notify the Permittee of the modifications. The document, plan, or report, as modified by the Director is the approved document, plan, or report, and shall become part of this Permit.

C.17.d. If the Permittee takes exception to the modifications made by the Director, the Permittee shall follow the procedures outlined in the Permit Condition C.18, Dispute Resolution.

C.17.e. The Permittee shall implement all documents, plans, or reports according to the specifications and schedules contained in the approved documents, plans, or reports.

C.18. DISPUTE RESOLUTION

C.18.a. If the Permittee disagrees, in whole or in part, with any NDEE disapproval, modification, or other decision or directive made by NDEE pursuant to the provisions of this Permit, the Permittee shall notify NDEE in writing of his or her objections and bases for them within **fifteen (15) days** of receipt of NDEE's disapproval, decision, or directive. The notice shall set forth specific points of the dispute, the position the Permittee maintains should be adopted as consistent with the requirements of this Permit, the factual and legal basis for the Permittee's position, and all matters the Permittee considers necessary for NDEE's determination. NDEE and the Permittee shall then have an additional **thirty (30) days** from NDEE's receipt of the Permittee's objection to attempt to resolve the dispute. If agreement is reached, the resolution shall be reduced to writing by NDEE and shall become part of this Permit. If the parties are unable to reach complete agreement within the thirty (30) day period, the matter shall be submitted to the Director for resolution. This resolution shall become part of this Permit.

C.18.b. The existence of a dispute as defined herein and NDEE's consideration of such matters as placed in dispute shall not excuse, toll or suspend any obligation or deadline required pursuant to this Permit, that is not the subject of dispute, during pendency of the dispute resolution process.

D. LAND DISPOSAL RESTRICTIONS

The Permittee must comply with all regulations implementing the land disposal restrictions required in 40 CFR Part 268 as incorporated by reference in Title 128, Chapter 20. The Permittee also must comply with regulations implementing the land disposal restrictions that are promulgated after the effective date of this Permit, as these requirements are self-implementing provisions of HSWA.

E. FACILITY SUBMISSION SUMMARY

Table 5 - Summary of the planned reporting requirements pursuant to this Permit.

SUBMISSION REQUIREMENTS	DUE DATE	PERMIT CONDITION
RFI Work Plan	Within 90 days of receipt of a written request from the Director	C.5.b
RFI Report	According to the schedule contained in the approved RFI Work Plan and/or any RFI Work Plan addenda	C.7.a
CMS Work Plan	Within 60 days of notification from Director	C.8.b
CMS Report	According to the schedule contained in the approved CMS Work Plan	C.10.a
CMI Work Plan	Within sixty (60) days of approval by the Director of a final remedy/corrective measure	C.12.a
CMI Report	In accordance with the approved CMI Work Plan schedule	C.12.b
CMI Annual Report	No later than March 1 of each year of the prior year's effectiveness and performance of the corrective measures	C.12.c
CMI 5-year Review (Corrective Measures Performance Evaluation Report, CMPER)	Sixty (60) days of the 5-year anniversary of EPA approval of the CMI Report	C.12.d
Permit Renewal	180 days prior to the Permit expiration	B.5.b
Corrective Measure Completion Report	Within ninety (90) days of the completion of all remedial activities	C.12.e
Quarterly Progress Reports	30 days after the last day of each calendar quarter, beginning the first quarter in which the Director requires corrective action pursuant to this Permit	C.16

Table 6 - Summary of possible reporting requirements pursuant to this Permit.

CONDITIONAL REQUIREMENTS	DUE DATE	PERMIT CONDITION
Provisions for the Permit Transfer	90 days prior to date of the Permit transfer	B.5.n
Appeal of a Permit	Within 30 days after a RCRA final permit decision has been issued	B.3.f
Reporting Planned Changes	30 days advance notice of any planned alterations or additions	B.5.j
Reporting Anticipated Noncompliance	30 days advance notice prior to any planned changes	B.5.k
Written Notice of Noncompliance	Within 5 days of Permittee's awareness of the circumstance	B.5.o.4
Written Notification of Newly-Identified SWMUs, AOCs & Releases	No later than 15 days after discovery	C.3.a
SWMU/AOC/Release Assessment Work Plan	60 days after receipt of notice	C.3.c
SWMU/AOC/Release Assessment Report	According to the schedule in the approved Assessment Work Plan	C.3.d
Interim Measures & Stabilization Notification	Within 24 hours of discovery	C.4.b
Written Notification that Stabilization/Interim Measures is Not Effective	10 days after determination that stabilization/interim measures not effective	C.4.e

FIGURES

Figure 1. Location of SWMUs.

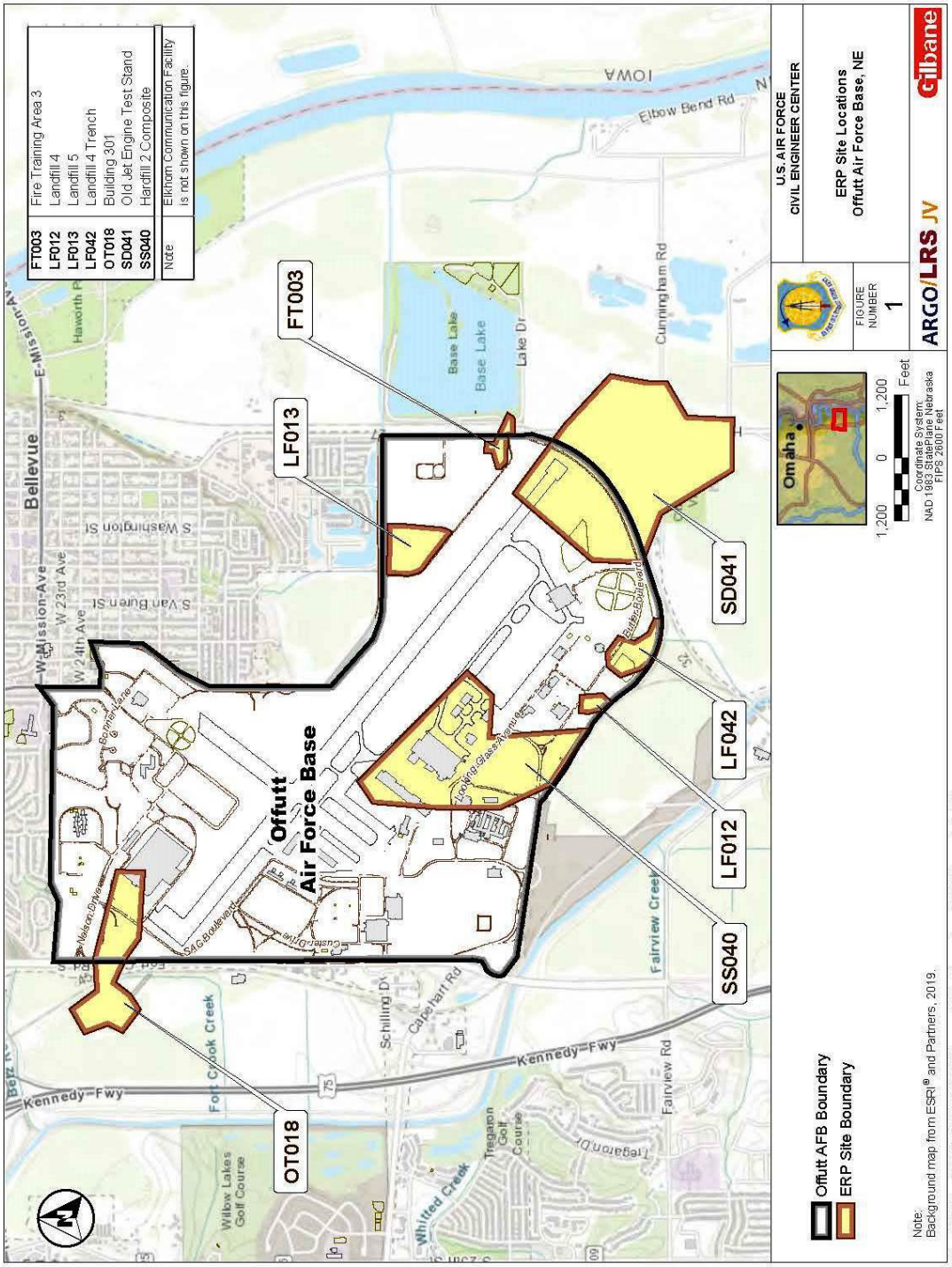

Figure 2. Site Plan, Fire Training Area 3.

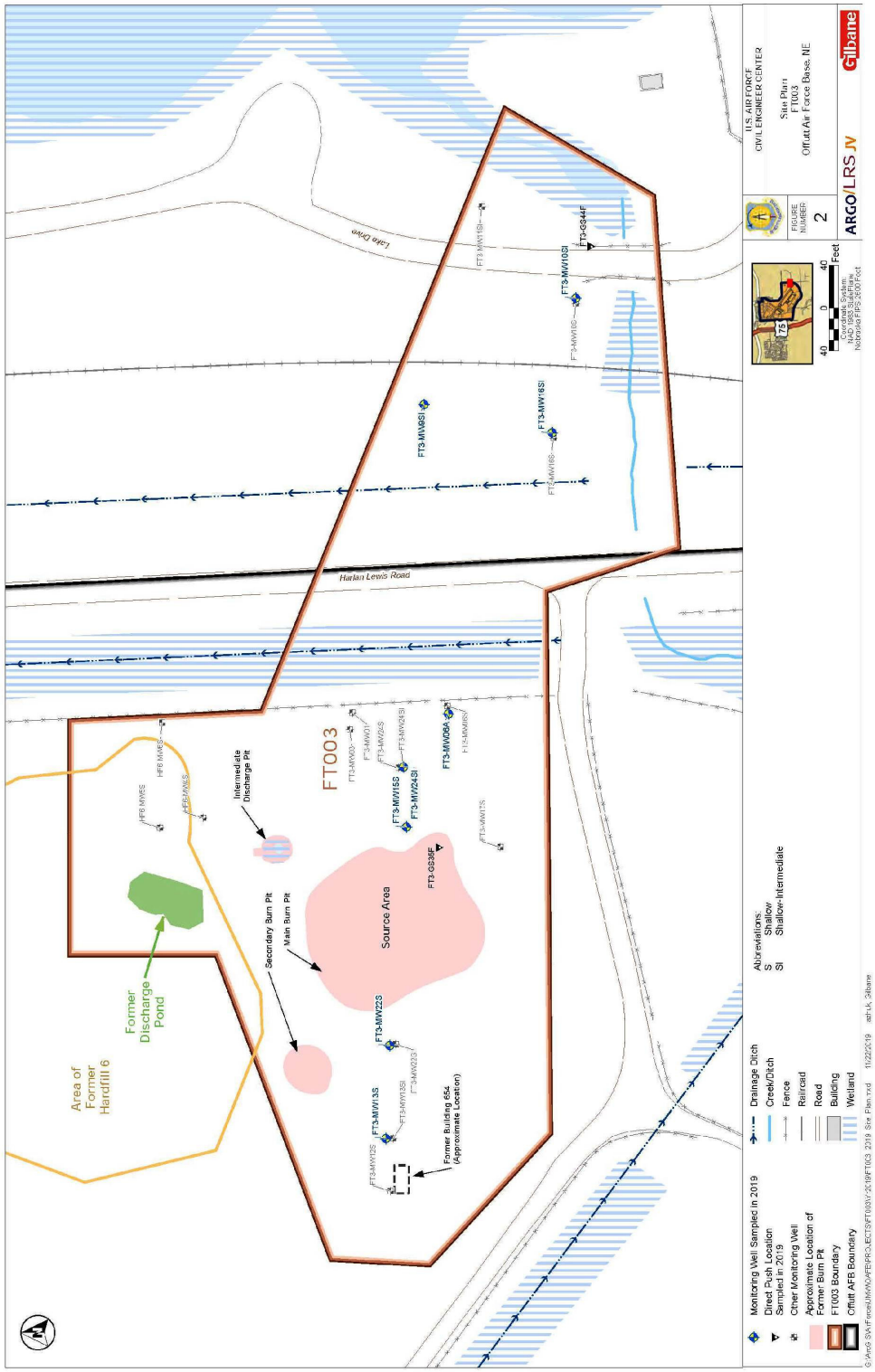

Figure 3. Land Treatment Unit Boundaries, FTA3.

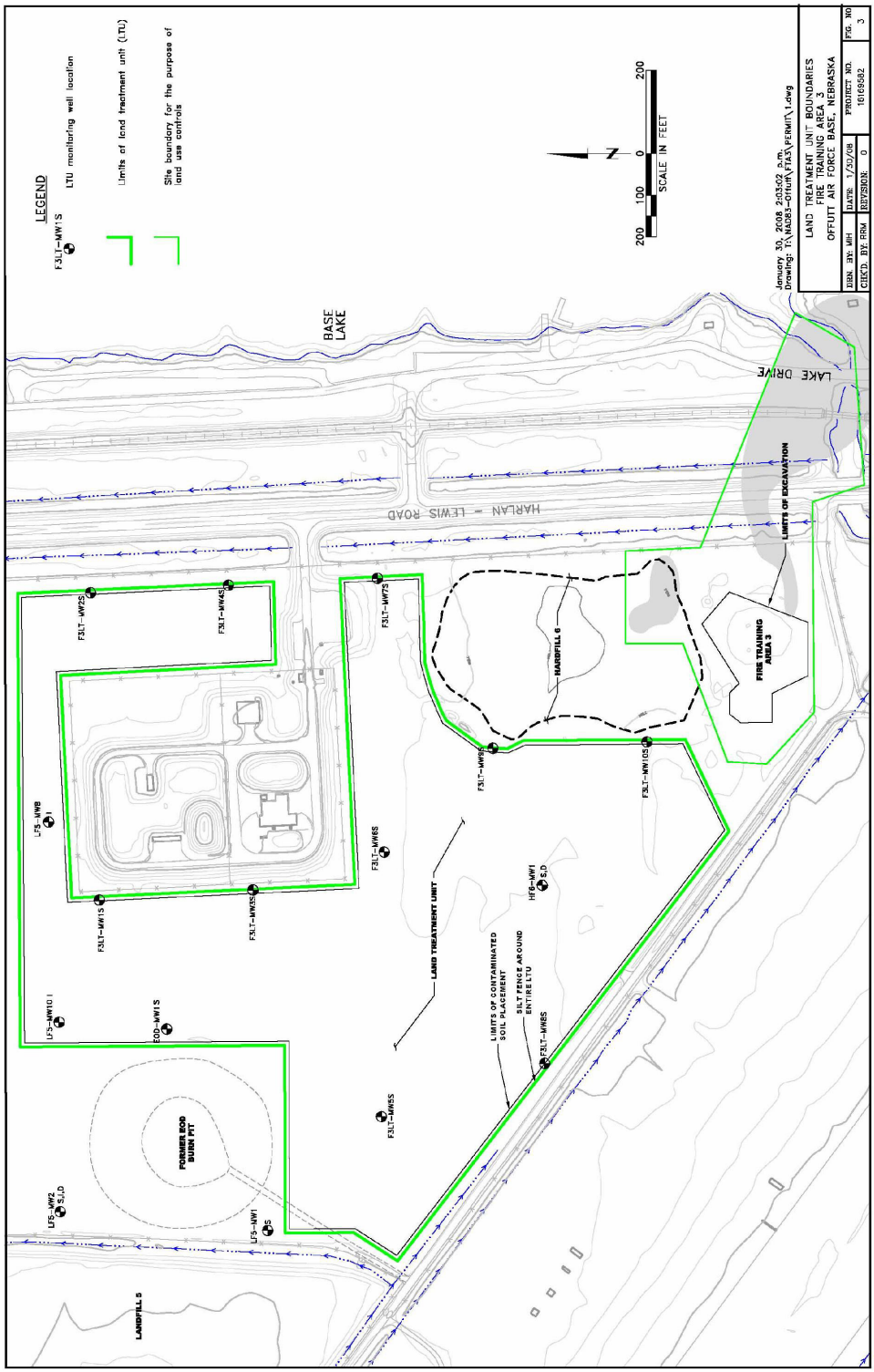

Figure 4. Site Plan, Landfill 4 Trench Area.

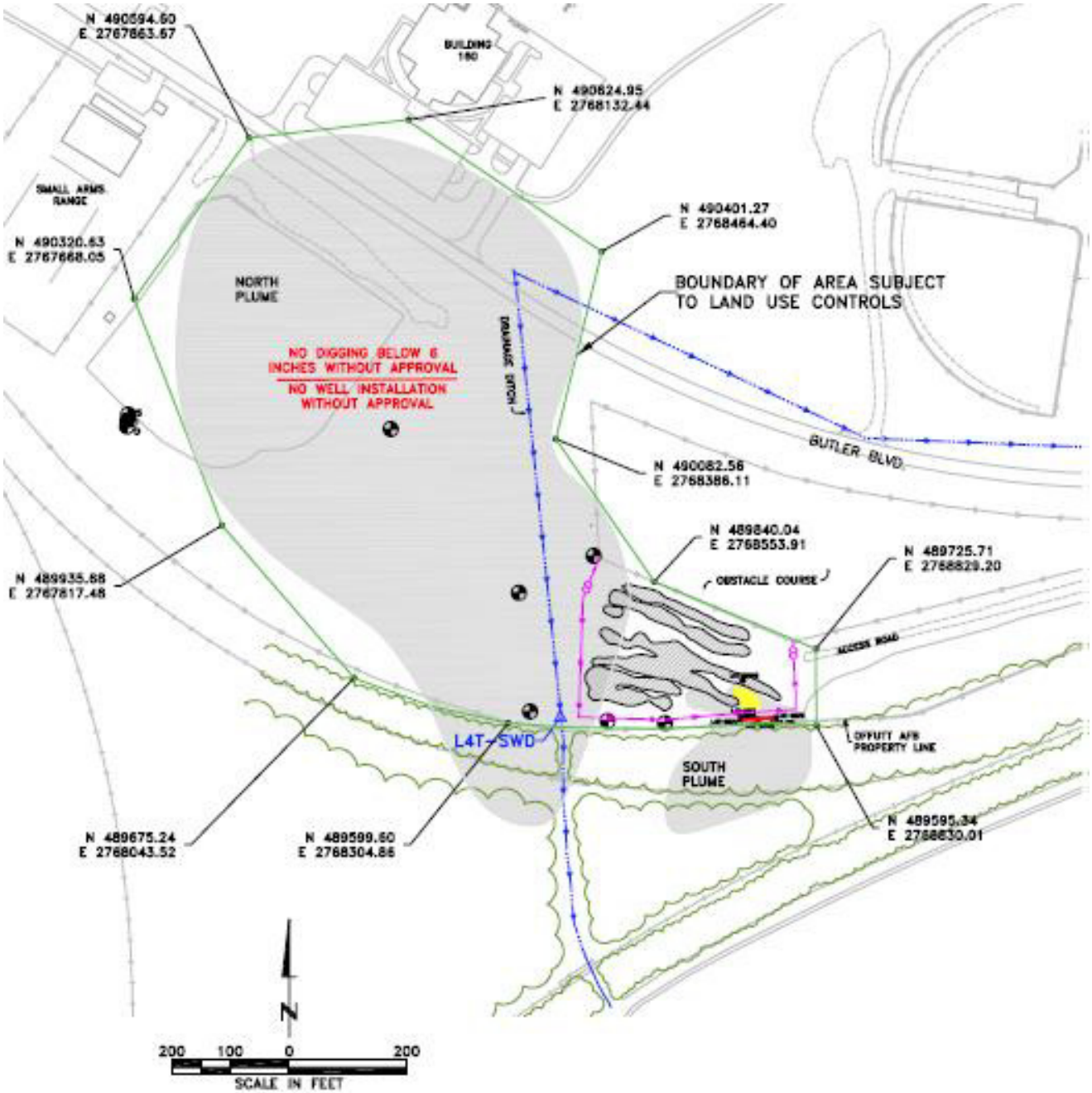

Figure 5. HF2C IRB Treatment Zones.

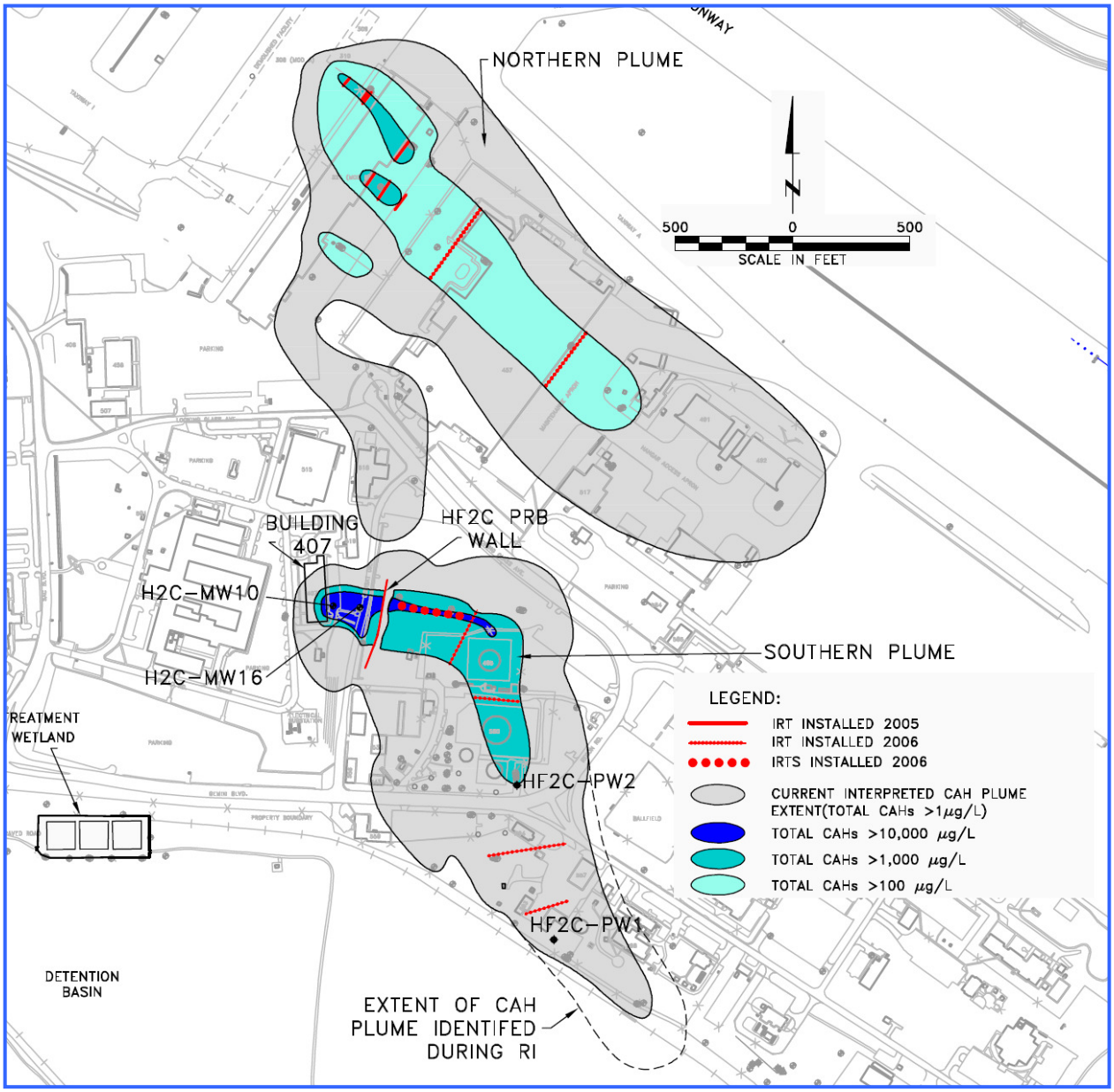

Figure 6. HF2C Land Use Control Boundaries.

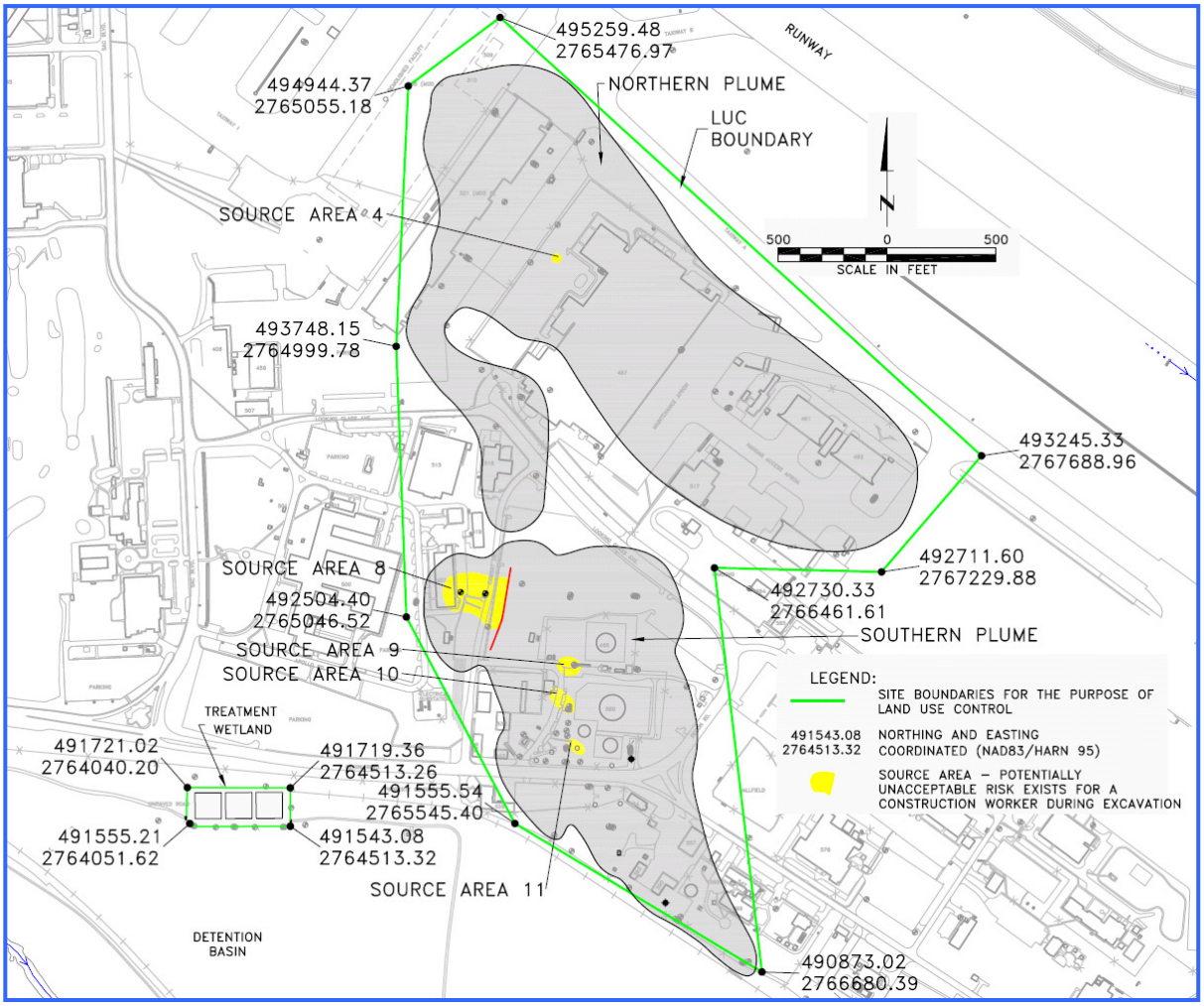

Figure 7. HF2C Technical Impracticability Zone Boundaries.

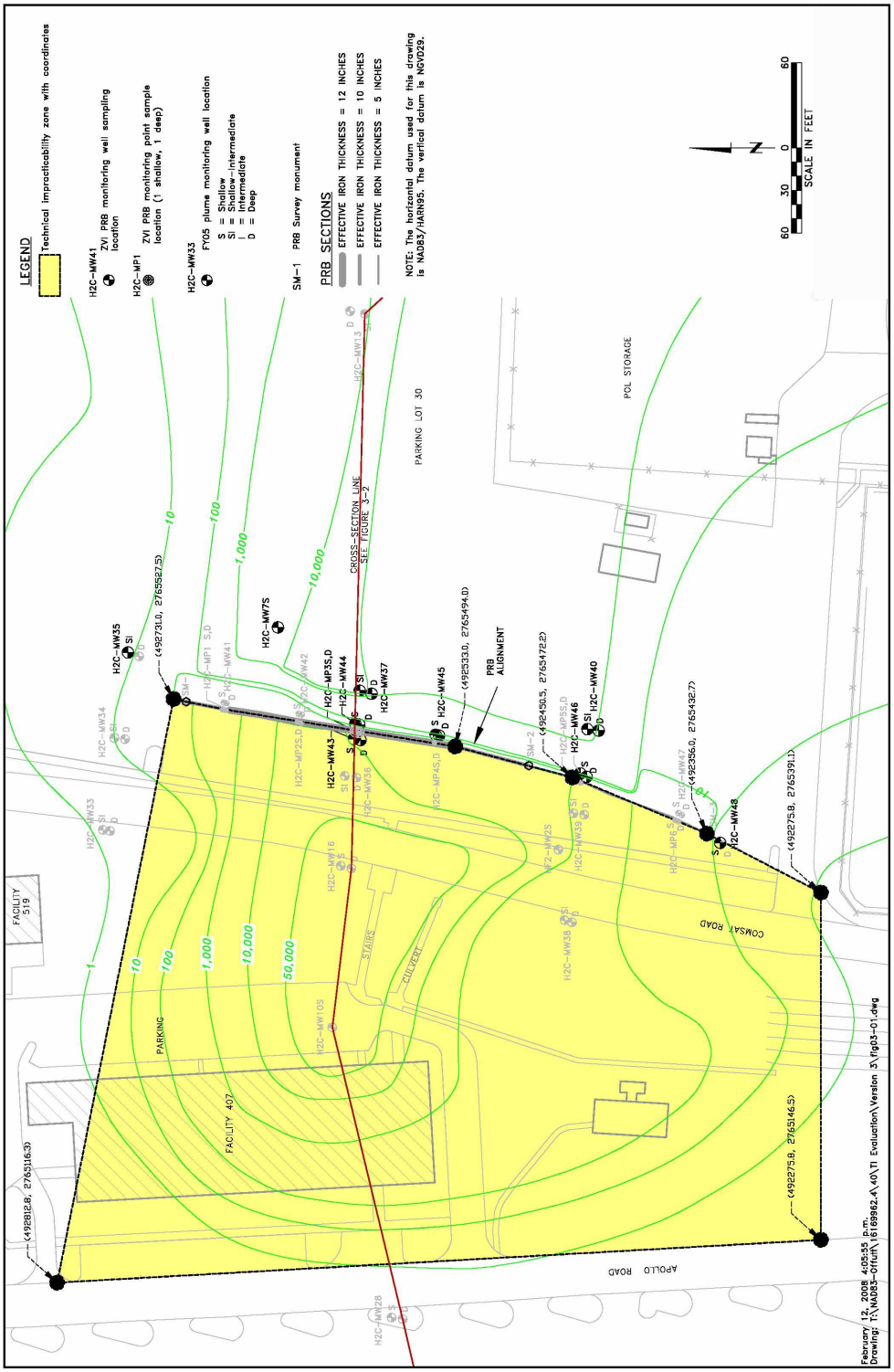

Figure 8. Landfill 4 Corrective Measures Components.

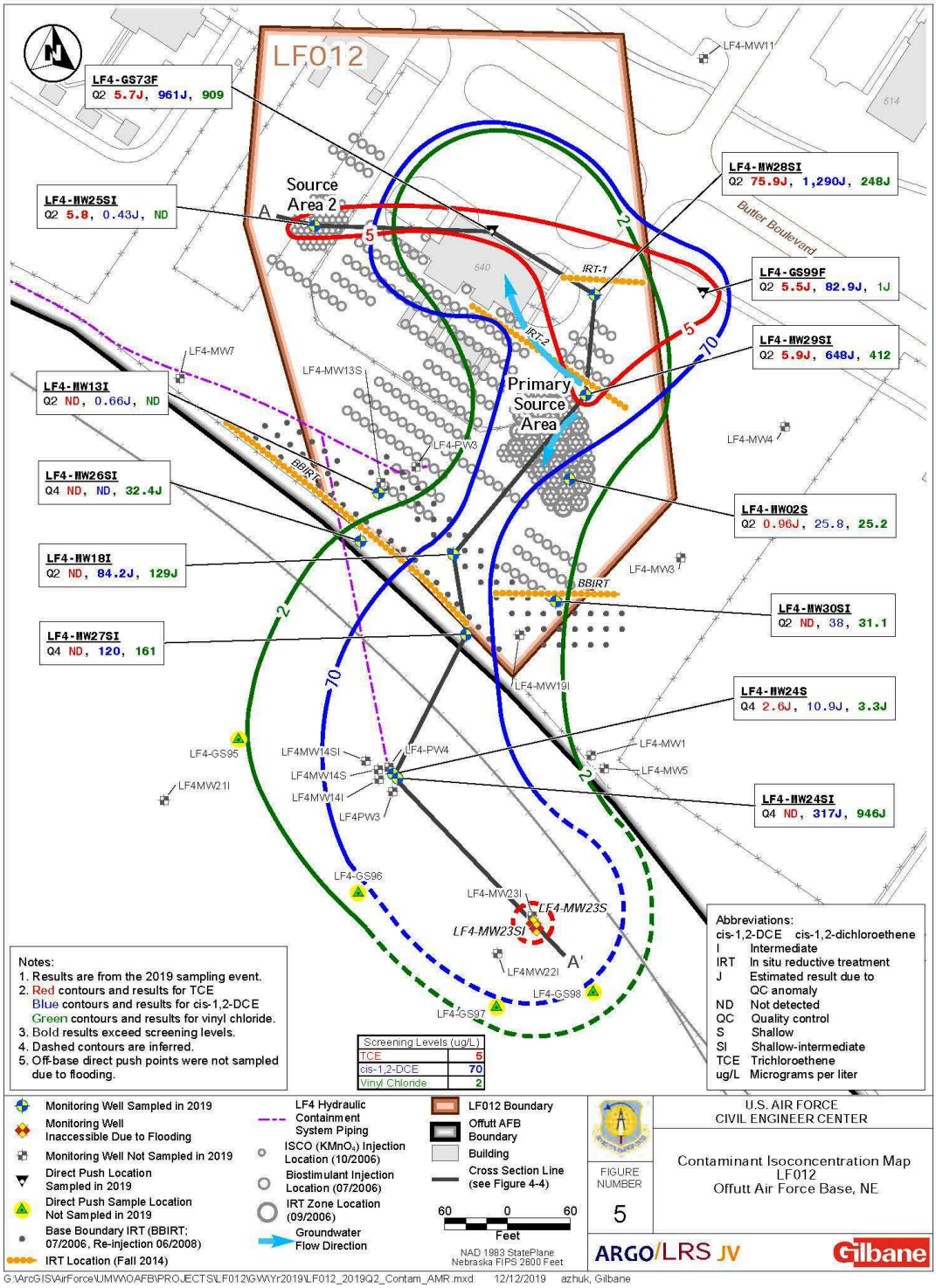

Figure 9. Landfill 4 Land Use Control Boundaries.

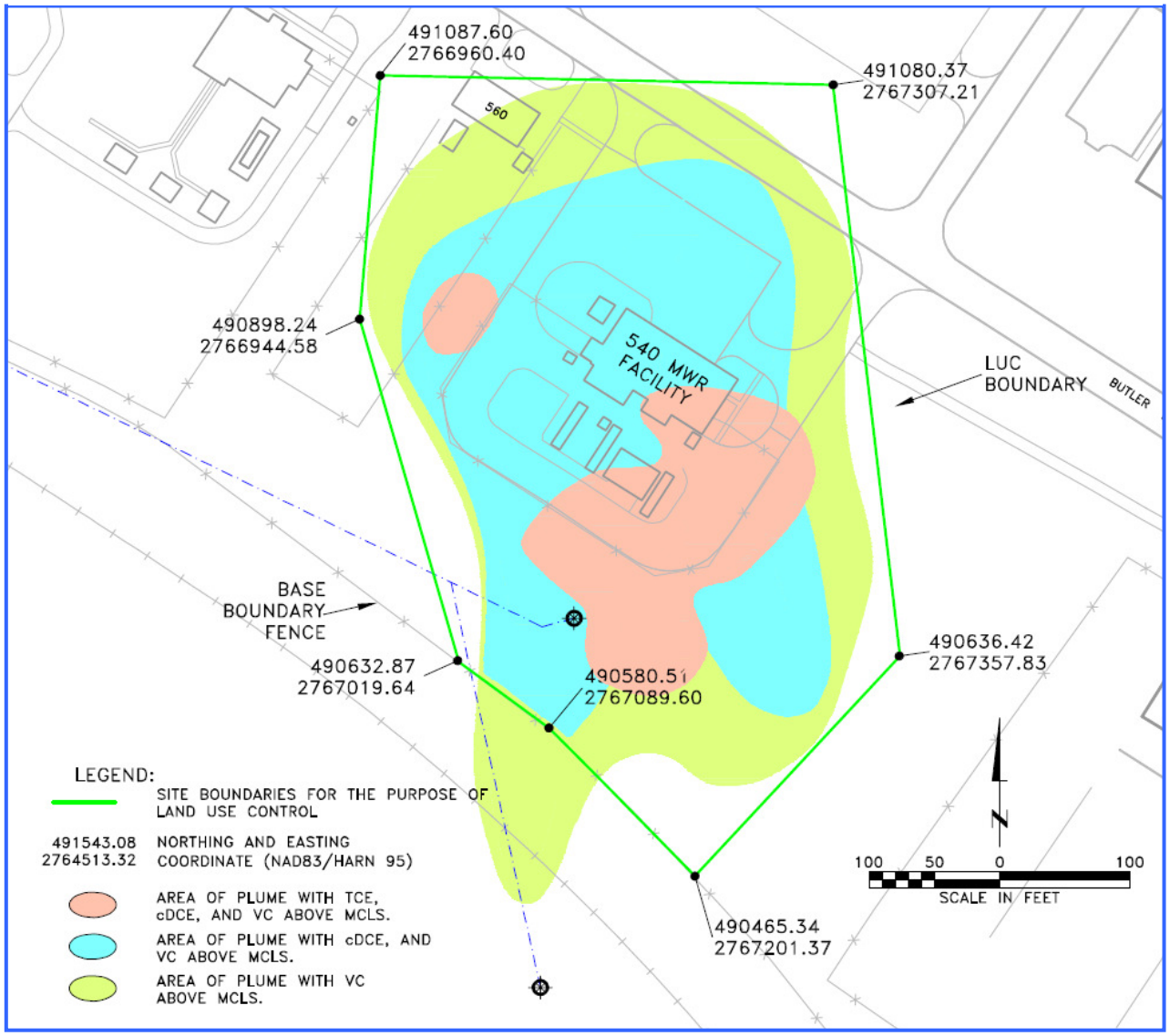

Figure 10. OJETS Corrective Measure Components.

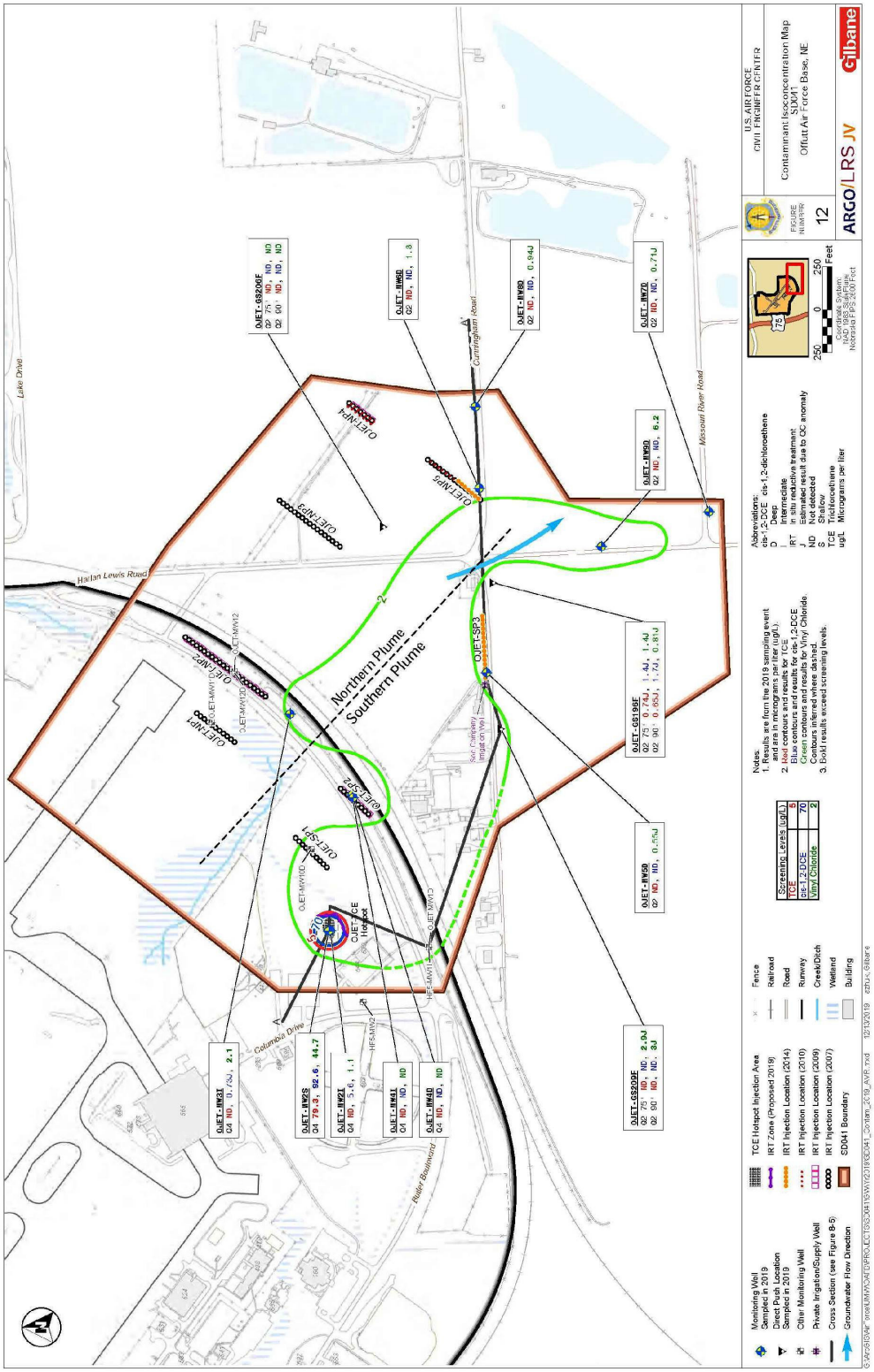

Figure 11. OJETS Land Use Control Boundaries.

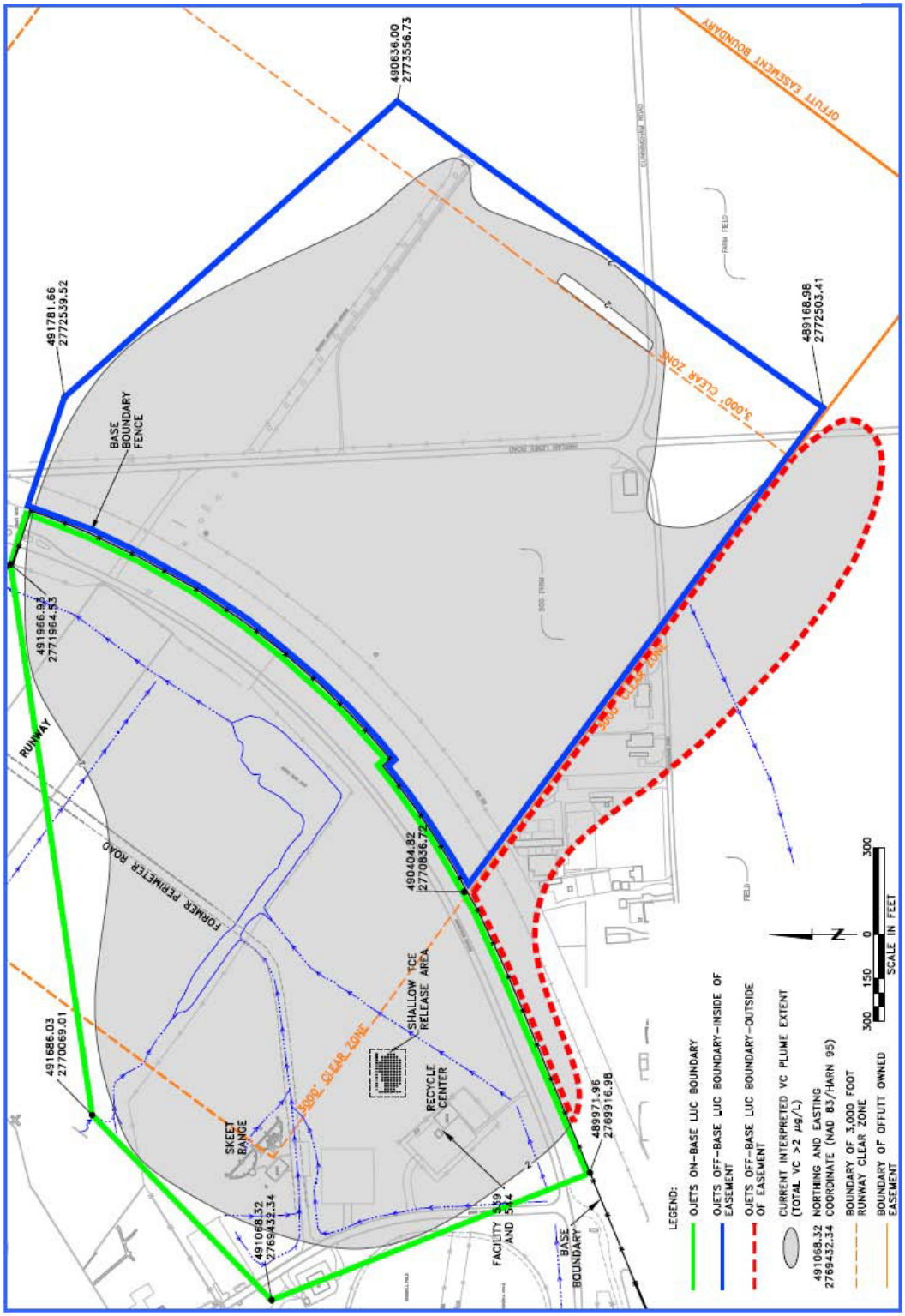

Figure 12. Building 301 Corrective Measure Components.

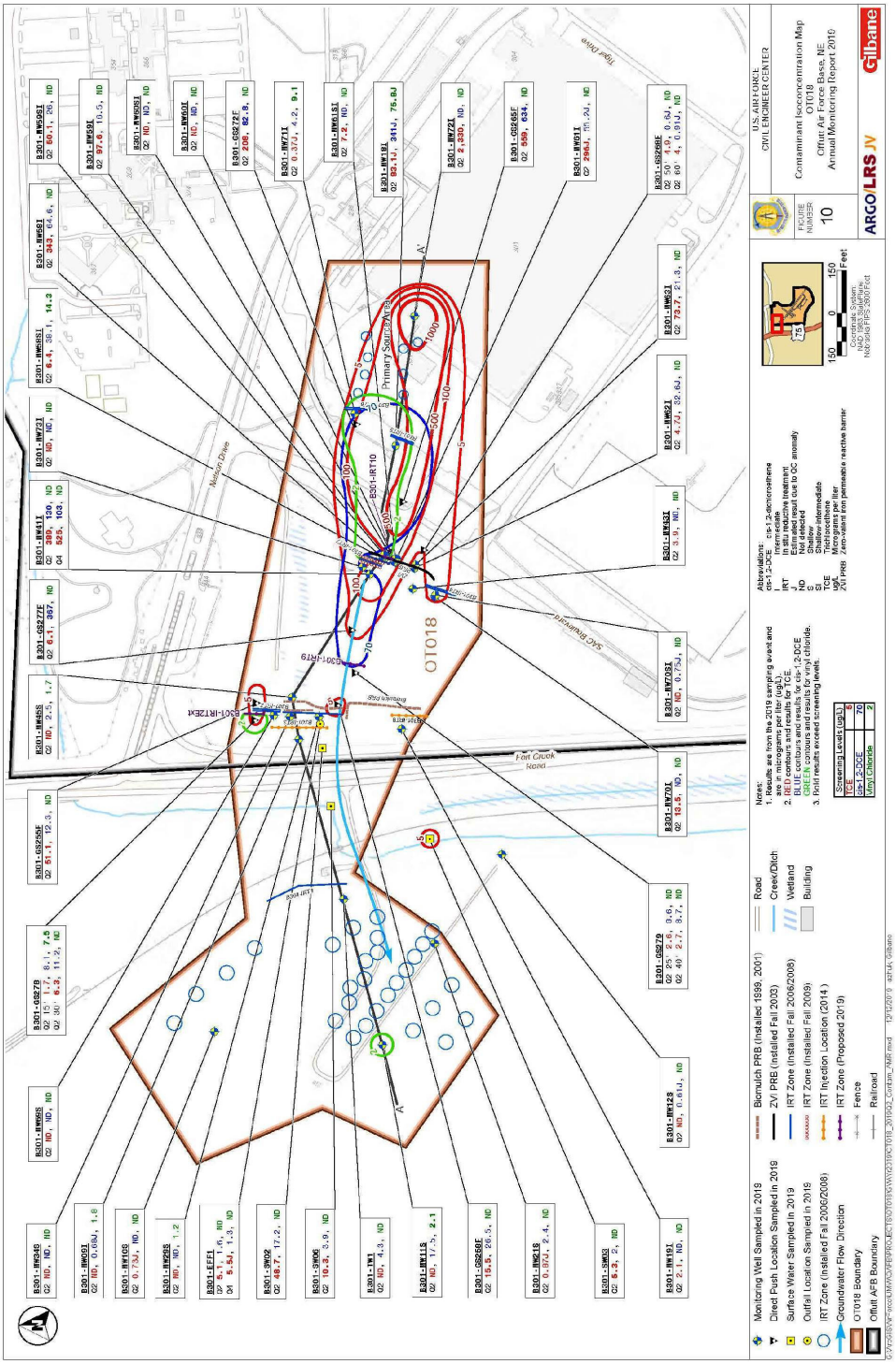

Figure 13. Building 301 Land Use Control Boundaries.

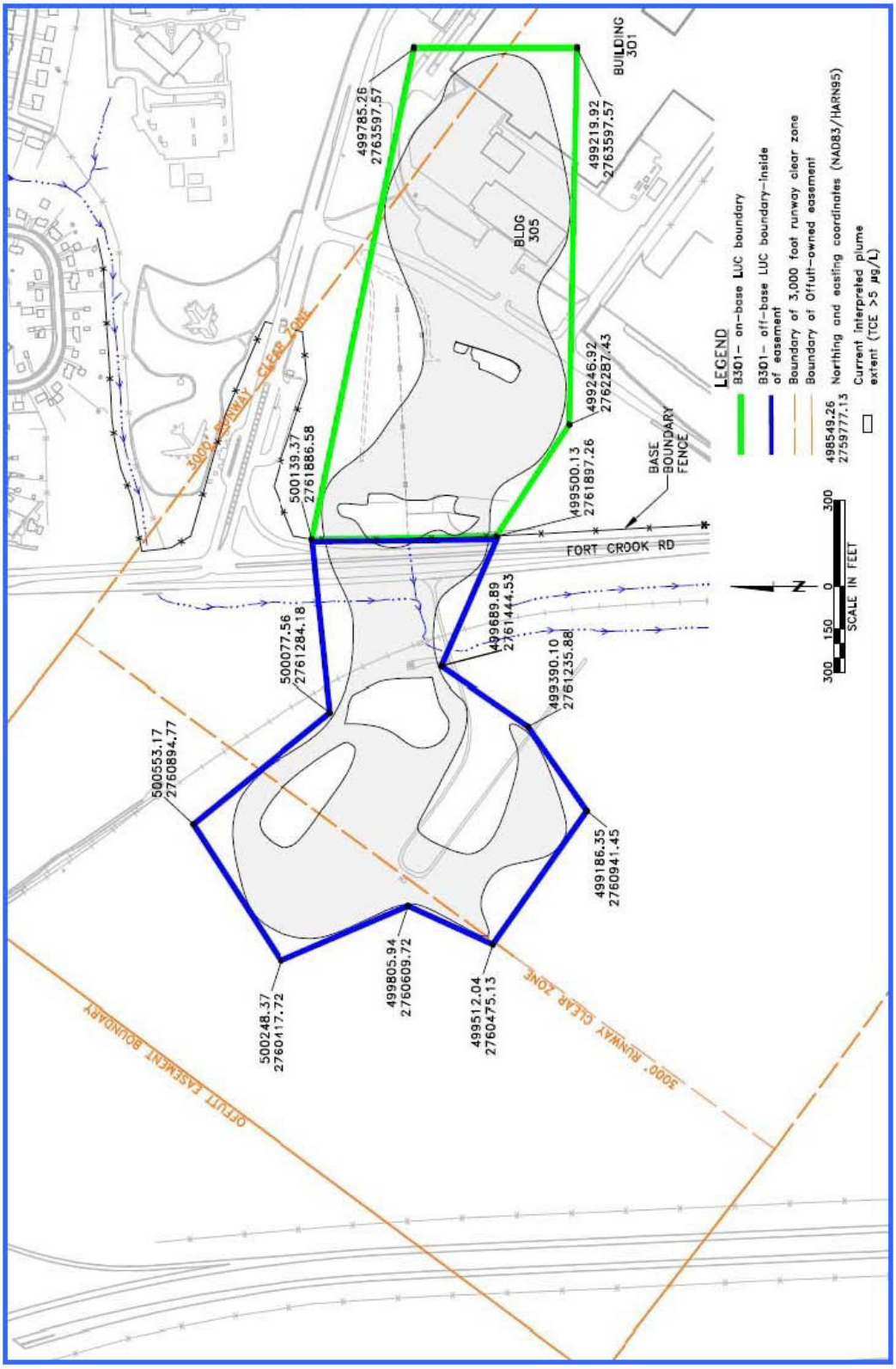

Figure 14. Golf Course Drum Site LUC Boundaries and Monitoring Points.

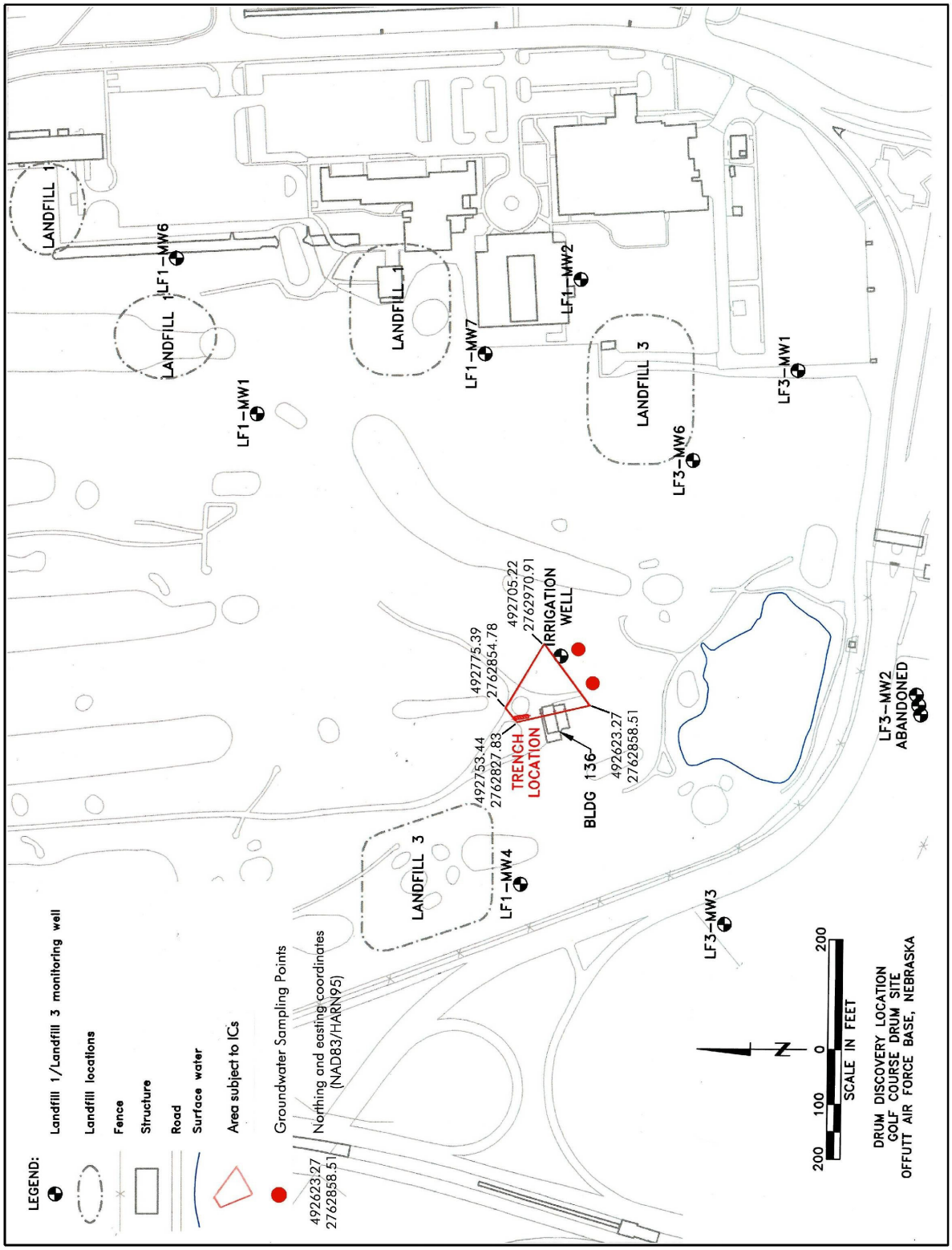

Figure 15. Skeet and Trap Range LUC Boundaries.

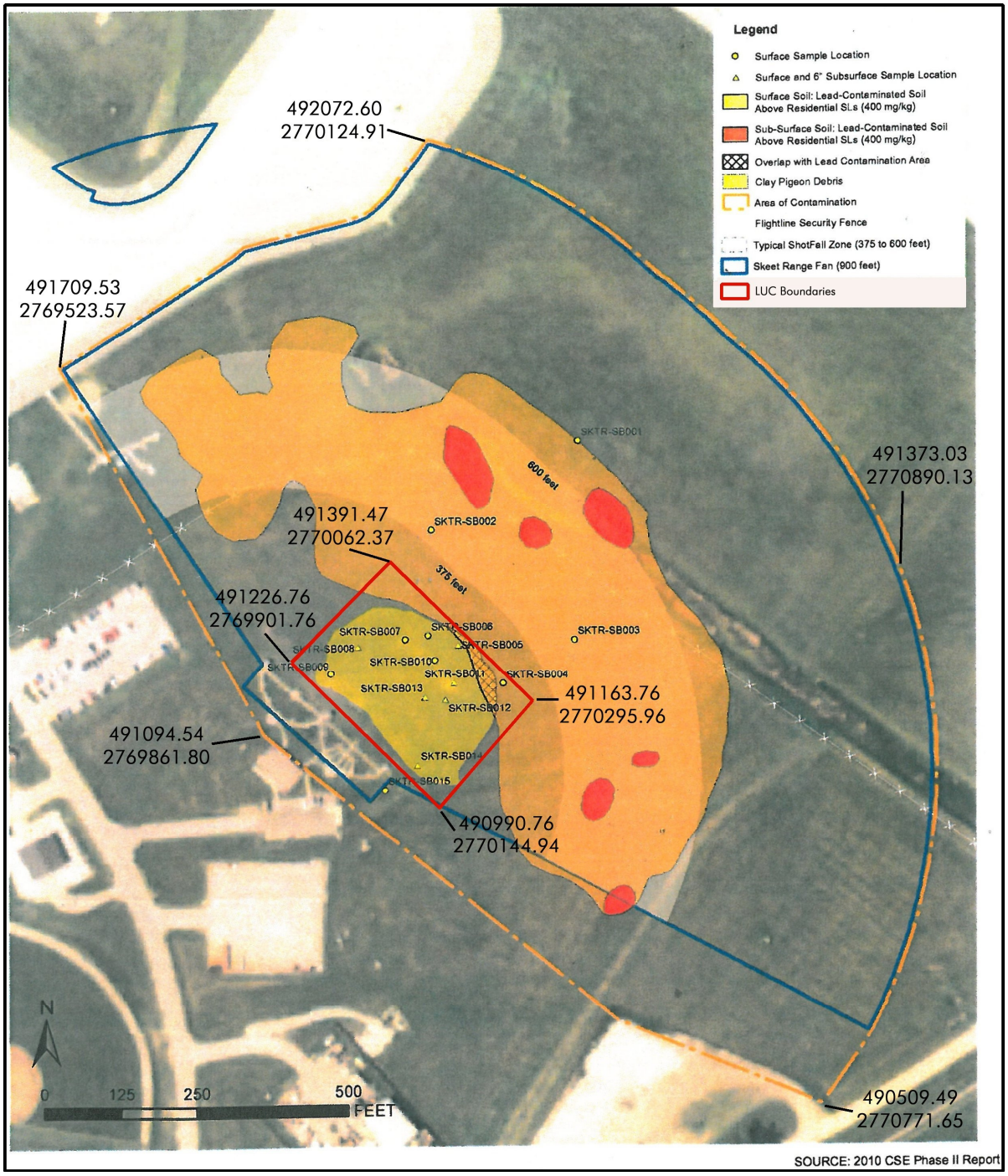

Figure 16. RCRA/CERCLA Cross Reference List.