ADDENDUM NO. 4

Clarifications, Plans, Contract Documents , Questions & Answers, Specs

NEW AIR TRAFFIC CONTROL TOWER
JEFFERSON MEMORIAL AIRPORT
JEFFERSON CITY, MO

To All Bidders: You are requested to make all changes and/or additions contained in this addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal shall result in rejection of bid. Bidders are informed that the below referenced are modified as follows as of May 16th, 2024:

1. Clarifications

ECR has established a 0% DBE goal for the construction portion of this project with 0 trainees.

For All Precast Concrete dimensions please refer to the Structural Sheets.

2. Plans

A002 Detail D3 :

Shifted the view range of this detail to show this wall and cap correctly (attached to end of the addendum).

A-561 Detail D1 :

Updated to show flashing correctly (attached to end of the addendum).

A-202 Detail A1:

Updated to show flashing in lieu of vinyl bead (attached to end of the addendum).

A-202 Detail A4 :

Updated to show flashing in lieu of vinyl bead (attached to end of the addendum).

3. Contract Documents

The Contractors Statement of Qualifications, Section B-25 sates The Contractor is required to perform an amount equal to or at least 50% of the total contract cost.

The Contract documents are now updated to 25% in both sections 80-01 and B-25.

The updated applicable Contract Documents page is attached to the end of the addendum.

4. Questions and Answers

Question: Can Genetec be added to the list of acceptable manufacturers for video recording?

Answer: Yes ,but submittals will still be required per spec.

Question: Does the Cab receive a ceiling ?

Answer: Yes ,please refer to E-106 for that ceiling and lighting plan. It is non-reflective black ceiling tile

Question: Please advise if SFRM can be utilized, and if so, specific location(s)?
Answer: All concealed spaces may receive a spray foam to achieve a 2 hour rating.

Question: Can you please provide the geotechnical report.
Answer: It is attached to the end of this addendum.

Question: Have any soils testing been performed on the new site or old tower site?
Answer: No, We had a Phase I ESA completed for the new site (did not include old site) which did not identify any contaminants so no additional soil testing was done. The ESA is attached at the end of the document. We will perform one for the old tower site.

Question: Demolition of old tower facilities, have tests been performed?
Answer: No, we committed to completing these prior to demolition in the EA but did not do them within the EA. We will perform one for the old tower site.

Question: Why is schedule 1 thru 8 dollar amounts required at bid time? It is difficult to get accurate cost breakdown just before a bid is submitted. Can these schedules 1 thru 8 dollar amounts be submitted one hour after the bid?
Answer: Per the Contract Documents please reference below in quotes…….

"Award of Contract. The Owner intends to award a contract resulting from this solicitation to the lowest, responsive, responsible bidder, whose offer, conforming to the solicitation, will be most advantageous to, and in the best interest of, the Owner, cost or price and other factors considered.

In addition to other factors, bid offers will be evaluated on the basis of advantages and disadvantages to the Owner that might result from offers received.

The Owner reserves the right to reject any or all proposals and to waive informalities and/or irregularities in the bid offer. Bids may be held by the owner for a period not to exceed 120 calendar days from the date of the bid opening for the purpose of conducting the bid evaluation.

Total bid will be evaluated and awarded as follows: It is the Owner's intent to award this bid based on the TOTAL BASE BID FOR ALL ITEMS, split awards will not be made.The Owner will determine which Schedules and/or Bid Alternates will be awarded based on the received bid prices and available funding. The project award will be based on the low bid sum of the Schedules and Bid Alternates awarded by the Owner. Not all Schedules and/or Bid Alternates may be awarded. A combination of Schedules and Bid Alternates may be awarded, including only a single Schedule. The numbering of the Schedules or Bid Alternates does not necessarily indicate the order of award. "

Question: Have any soils testing been performed on the new site or old tower site?
Answer: No, We had a Phase I ESA completed for the new site (did not include old site) which did not identify any contaminants so no additional soil testing was done. The ESA is attached at the end of the document. We will perform one for the old tower site.

Question: Have all drawings by Architects and Engineers been deconflicted through the BIM?
Answer: Yes, we detected no collisions with MEP

Question: At what point will the BIM be provided to the general contractor?
Answer: At any point after award the contractor requests.

Question: Can the BIM be released prior to bid?
Answer: No

Question: Where does 084113 – 1 Aluminum Framed Entrances and Storefronts relate to the drawings?
Answer: Upon further review this applies to how the cab glass is housed within the roof supports at the cab level.

Question: Does all blocking if wood, need to be fire treated?
Answer: All casework must fall under LS code summary sheet. Must meet or exceed interior finish requirements

Question: In terms of owner provided install items, what does the awarded contractor need to be concerned with?
Answer: The awarded contractor has no responsibility for coordinating any owner provided install items. This is all done separately, totally after the building is built. This includes FAA Equipment, movable furniture, Cab Consoles. All the awarded contractor needs to be

concerned with is building to the plans and specs given (particularly electrical and comm. in terms of owner provided items).

Question: It appears all ADA Compliance will cease after the first floor, is that correct?
Answer: This is incorrect. Please note grab bars in the bathroom for example and all necessary ADA Clearances. We have a code exception for not requiring an elevator. No ATCT's have elevators that go up to the control cab regardless.

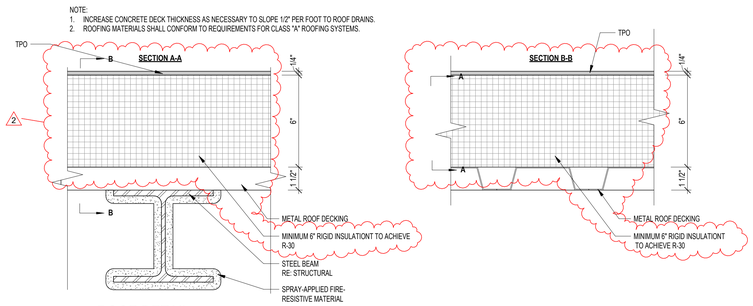
Question: Can we push the bid opening out to give us more time for pricing?
Answer: Unfortunately not, normally we would like to accommodate bidders here ,but because of our unique funding requirements and schedule we must stick to the original bid date.

Question: Is there a spec for the front sign of the tower on the site.
Answer: No, therefore do not worry about pricing this in the project.

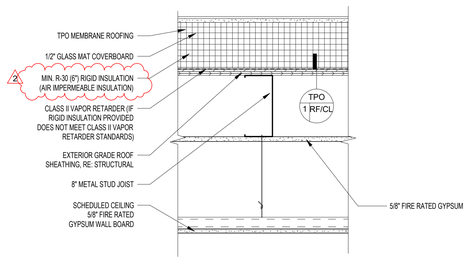
Question: Is ESD Carpet Tile acceptable in lieu of ESD Rubber Tile
Answer: Yes as long as it has the same ESD properties. A submittal will still be required.

Specs

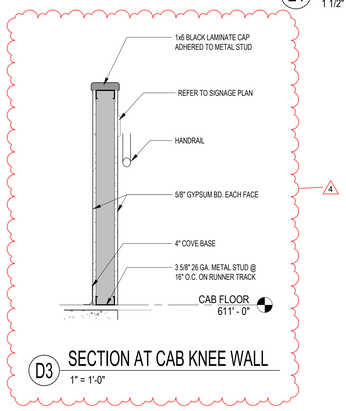
Added Section 04 20 01 Masonry Veneer attached at the end of this addendum.



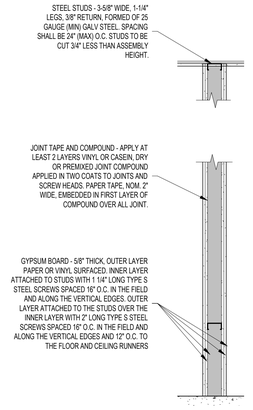
E1 ROOF DETAIL
3" = 1'-0"



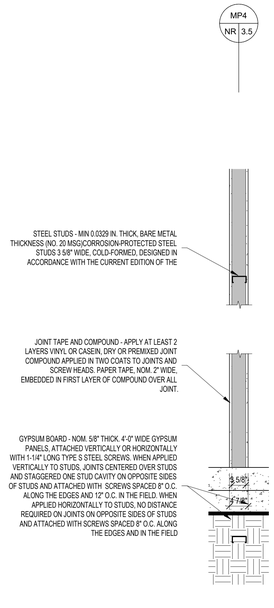
E4 TPO ROOF ASSEMBLY
1 1/2" = 1'-0"



D3 SECTION AT CAB KNEE WALL
1" = 1'-0"

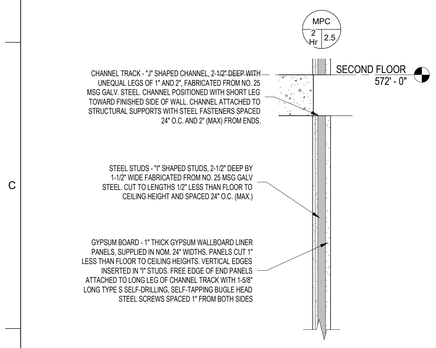


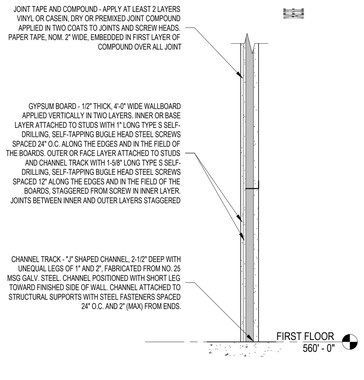
D5 INTERIOR STUD - 3 5/8" METAL STUD - 2 HOUR RATED
3/4" = 1'-0"



HEIGHT OF INTERIOR PARTITION WALLS SHALL BE 8'-0" ABOVE FINISHED FLOOR

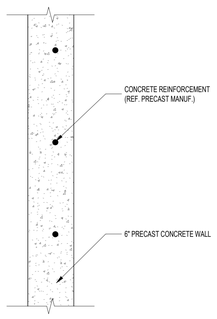
D7 INTERIOR STUD - 3 5/8" METAL STUD
3/4" = 1'-0"



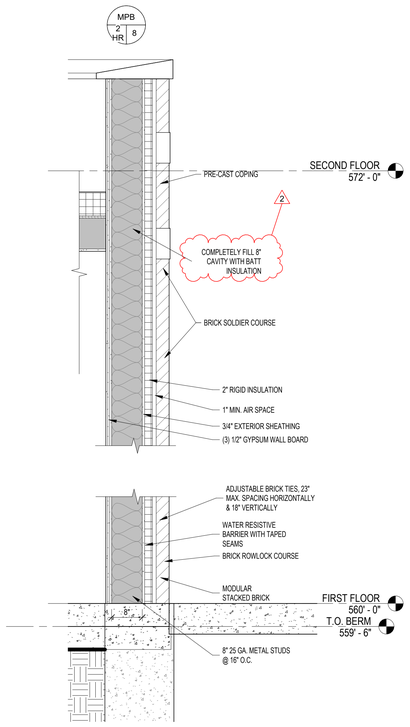


CONFORMING TO UNDERWRITERS LABORATORIES DESIGN NO. U497

A1 INTERIOR STUD - 2 1/2" METAL STUD - 2 HOUR RATED
1" = 1'-0"

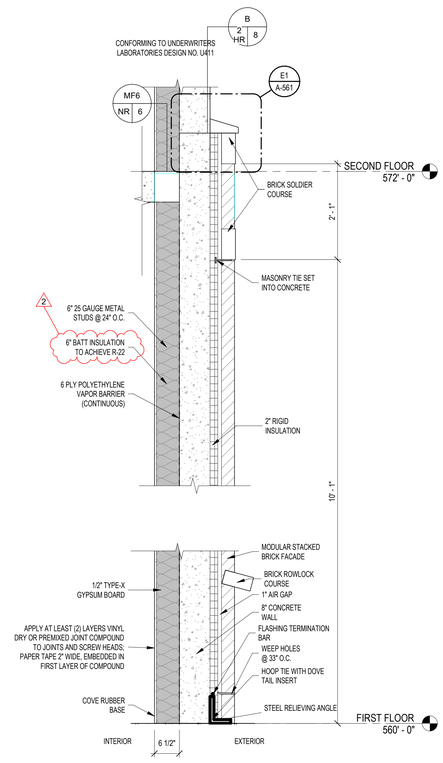


A3 INTERIOR 6" CONCRETE - 2 HOUR RATED
1 1/2" = 1'-0"



CONFORMING TO UNDERWRITERS LABORATORIES DESIGN NO. U424

A4 EXTERIOR BRICK - 6" METAL STUD - 2 HOUR RATED
3/4" = 1'-0"



GYPSUM BOARD SHALL BE ATTACHED TO STEEL STUDS AND FLOOR AND CEILING TRACK WITH 1" LONG, TYPE-S SELF-TAPPING STEEL SCREWS SPACED 8" O.C. ALONG EDGES OF BOARD AND 12" O.C. IN THE FIELD OF THE BOARD. JOINTS TO BE ORIENTED VERTICALLY AND STAGGERED ON OPPOSITE SIDES OF THE ASSEMBLY.

A7 EXTERIOR BRICK - 8" CONCRETE WALL - 2 HOUR RATED
3/4" = 1'-0"

GRAPHIC SCALE

3/4"=1'-0" 0 6" 1' 2' 3' 4'

1"=1'-0" 0 3" 6" 9" 1' 2' 3'

1 1/2"=1'-0" 0 3" 6" 9" 1' 2'

Jefferson City MEMORIAL AIRPORT

JVIATION® A WOOLPERT COMPANY
931 Wildwood Dr
Suite 101
Jefferson City, Missouri 65101

AIR TRAFFIC CONTROL TOWER

AIR TRAFFIC CONTROL TOWER
500 Airport Road, Jefferson City, MO 65101

A PROJECT FOR:
JEFFERSON CITY MEMORIAL AIRPORT

ISSUE RECORD

NO	BY	DATE	DESCRIPTION
1		03/08/24	IFB
2		05/08/24	Addendum 2
4		05/16/24	Addendum 4

ISSUED FOR BID

NOT FOR CONSTRUCTION

05-08-2024

NAME REG. NO. DATE

FOR AND ON BEHALF OF JVIATION, INC.

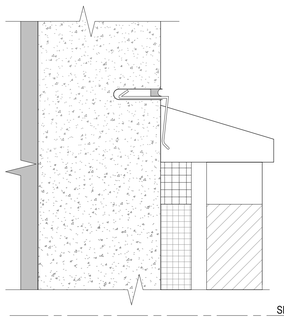
DRAWN: J.R.S. CHECKED:K.P.C. APPROVED:A.J.R.

PROJECT NUMBER:

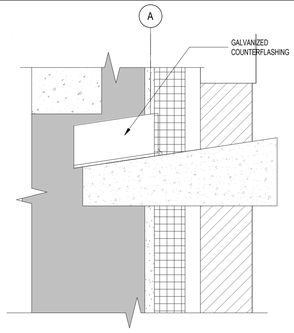
WALLS AND ROOF ASSEMBLIES

A-002

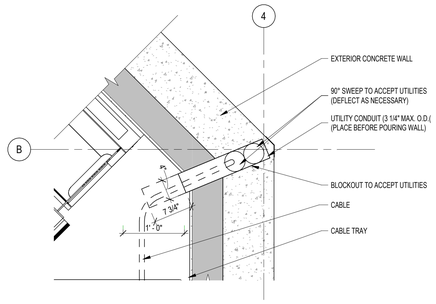
A-002 WALLS AND ROOF ASSEMBLIES 5/16/2024 2:38:58 PM Autodesk Docs://Jviation - JEF ATCT\JEF_ATCT_ARCH_R22.rvt



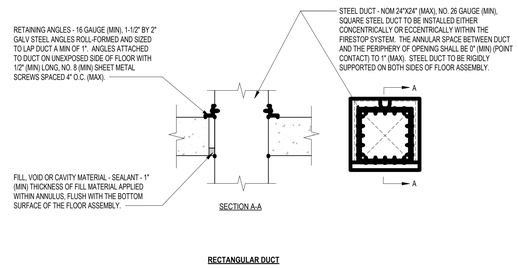
E1 TOP OF WALL FLASHING
3" = 1'-0"



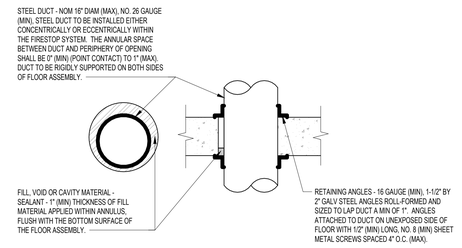
E2 PARAPET WALL FLASHING
3" = 1'-0"



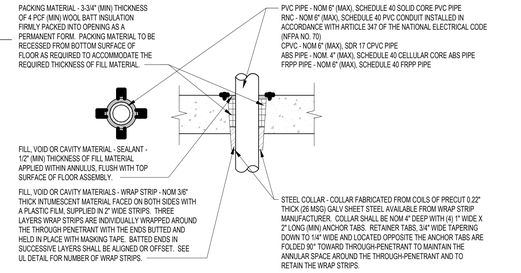
E3 CABLE TRAY PLAN
1" = 1'-0"



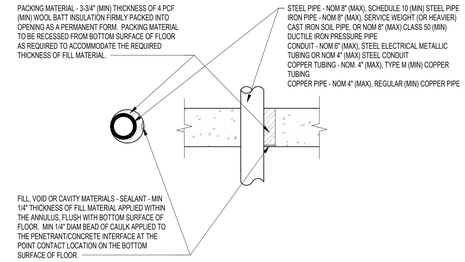
RECTANGULAR DUCT



ROUND DUCT

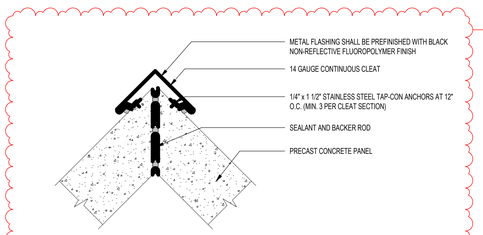


NON-METAL PENETRANTS

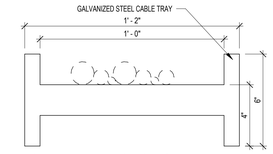


METAL PENETRANTS

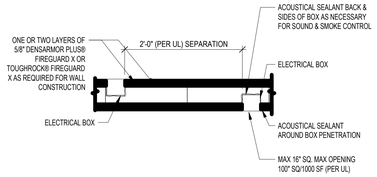
D4 PRECAST CONCRETRE FLOOR FIRESTOPPING
1 1/2" = 1'-0"



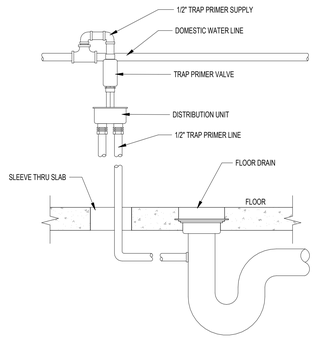
D1 PANEL JOINT FLASHING DETAIL
1 1/2" = 1'-0"



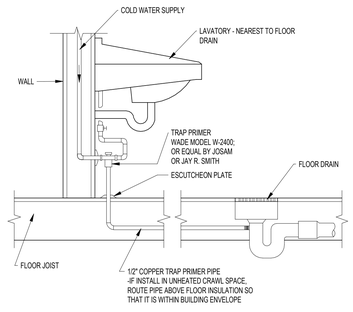
D2 CABLE TRAY SECTION
3" = 1'-0"



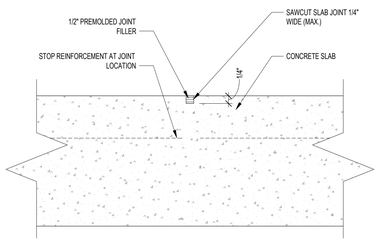
D3 ADJACENT ELECTRICAL BOXES
1" = 1'-0"



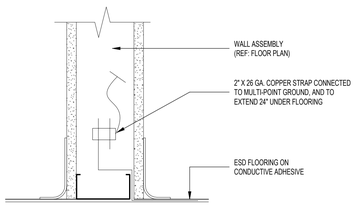
C1 TRAP SEAL PRIMER 1
3" = 1'-0"



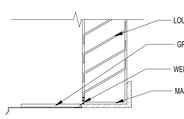
C2 TRAP SEAL PRIMER 2
1 1/2" = 1'-0"

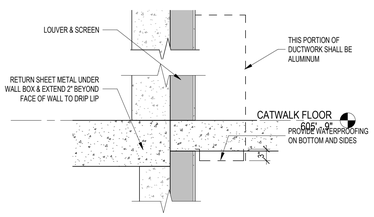


B1 SAWCUT DETAIL
6" = 1'-0"



B2 TYP. GROUND CONNECTION TO ESD FLOOR
3" = 1'-0"



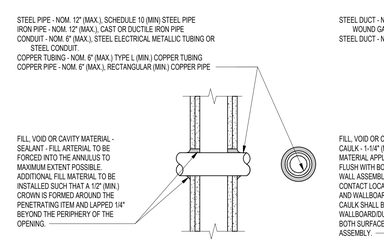


A1 ENLARGED CONNECTION
1 1/2" = 1'-0"

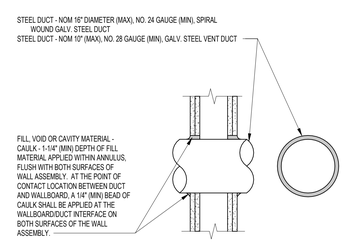
A2 WATERTIGHT LOUVER CONNECTION DIAGRAM
3/4" = 1'-0"

GENERAL NOTES:

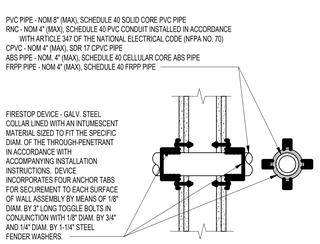
1. DRAWINGS NOT TO SCALE.
2. ALL WALL PENETRATION ASSEMBLIES SHALL BE UL LISTED.
3. ALL MATERIALS USED FOR FIRE RATED ASSEMBLIES SHALL BE UL LISTED.
4. ALL ROOF PENETRATIONS TO BE UL LISTED.
5. ALL PROPOSED ALTERNATE ASSEMBLIES SHALL BE SUBMITTED TO DESIGN ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. ALTERNATE ASSEMBLIES THAT INCREASE CONTRACT AMOUNT OR INCREASE CONSTRUCTION TIME WILL NOT BE CONSIDERED FOR APPROVAL.
6. SPRAY APPLIED FIRE RESISTIVE MATERIALS SHALL BE APPLIED TO ALL STRUCTURAL MEMBERS NOT PROTECTED BY GYPSUM BOARD ASSEMBLIES UNLESS OTHERWISE NOTED. THE COATING THICKNESS SHALL BE SUFFICIENT TO PROVIDE A 2 HOUR FIRE RESISTANCE RATING.
7. STRUCTURAL ELEMENTS ARE SHOWN FOR REFERENCE ONLY. SEE STRUCTURAL PLANS FOR ALL STRUCTURAL ELEMENTS.



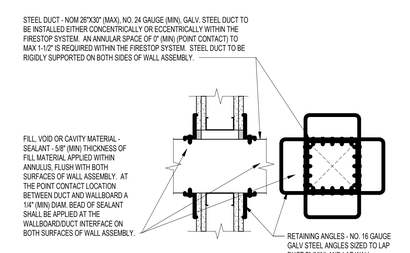
METAL PENETRANTS



ROUND DUCT



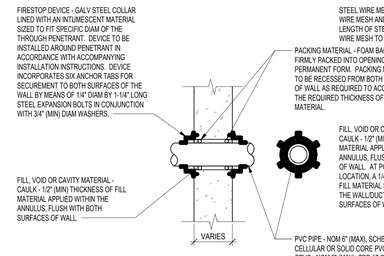
NON-METAL PENETRANTS



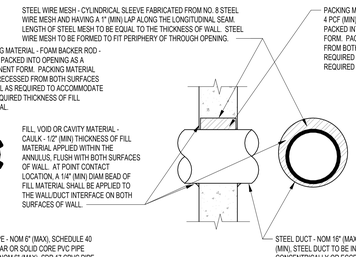
RECTANGULAR DUCT

NOTE: DRAWINGS NOT TO SCALE

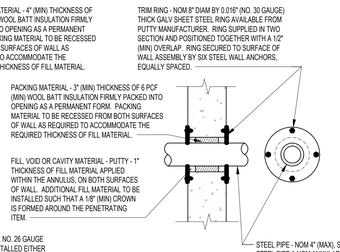
2-HOUR STUD WALLS



METAL PENETRANTS



ROUND DUCT



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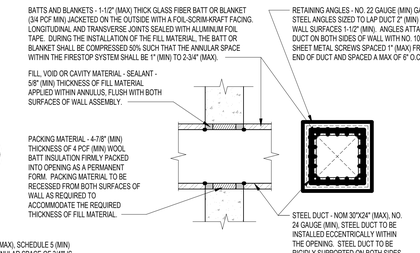


RECTANGULAR DUCT

NOTE: DRAWINGS NOT TO SCALE

2-HOUR PRECAST WALLS

A4 2 HOUR FIRESTOPPING WALLS
NTS

GRAPHIC SCALE

3/4"=1'-0" 0 6" 1' 2' 3' 4'
1"=1'-0" 0 3" 6" 9" 1' 2' 3'
1 1/2"=1'-0" 0 3" 6" 9" 1' 2'
3"=1'-0" 0 1" 2" 3" 4" 5" 6" 9" 1'
6"=1'-0" 0 1" 2" 3" 6"

Jefferson City MEMORIAL AIRPORT

AIR TRAFFIC CONTROL TOWER

JVIATION®
A WOOLPERT COMPANY
931 Wildwood Dr
Suite 101
Jefferson City, Missouri 65101

AIR TRAFFIC CONTROL TOWER

500 Airport Road, Jefferson City, MO 65101

A PROJECT FOR:

JEFFERSON CITY MEMORIAL AIRPORT

ISSUE RECORD

NO	BY	DATE	DESCRIPTION
1		03/08/24	IFB
4		05/16/24	Addendum 4

ISSUED FOR BID

NOT FOR CONSTRUCTION

05-08-2024

NAME REG. NO. DATE

FOR AND ON BEHALF OF JVIATION, INC.

DRAWN: J.B.F. CHECKED:A.M.A. APPROVED:A.J.R.

PROJECT NUMBER:

MISCELLANEOUS DETAILS

A-561

GENERAL SHEET NOTES:

A. REFER TO SHEET A-571 FOR TYPICAL CONTROL JOINT DETAILS.
B. REFER TO SHEET A-571 FOR TYPICAL VENEER JOINT DETAILS.
C. REFER TO SHEET A-541 FOR TYPICAL STOREFRONT ELEVATIONS AND DETAILS.
D. REFER TO SHEET A-601 FOR DOOR, WINDOW AND LOUVER SCHEDULES.
E. PROVIDE FLASHING & COUNTER-FLASHING AT ALL EXTERIOR OPENINGS.

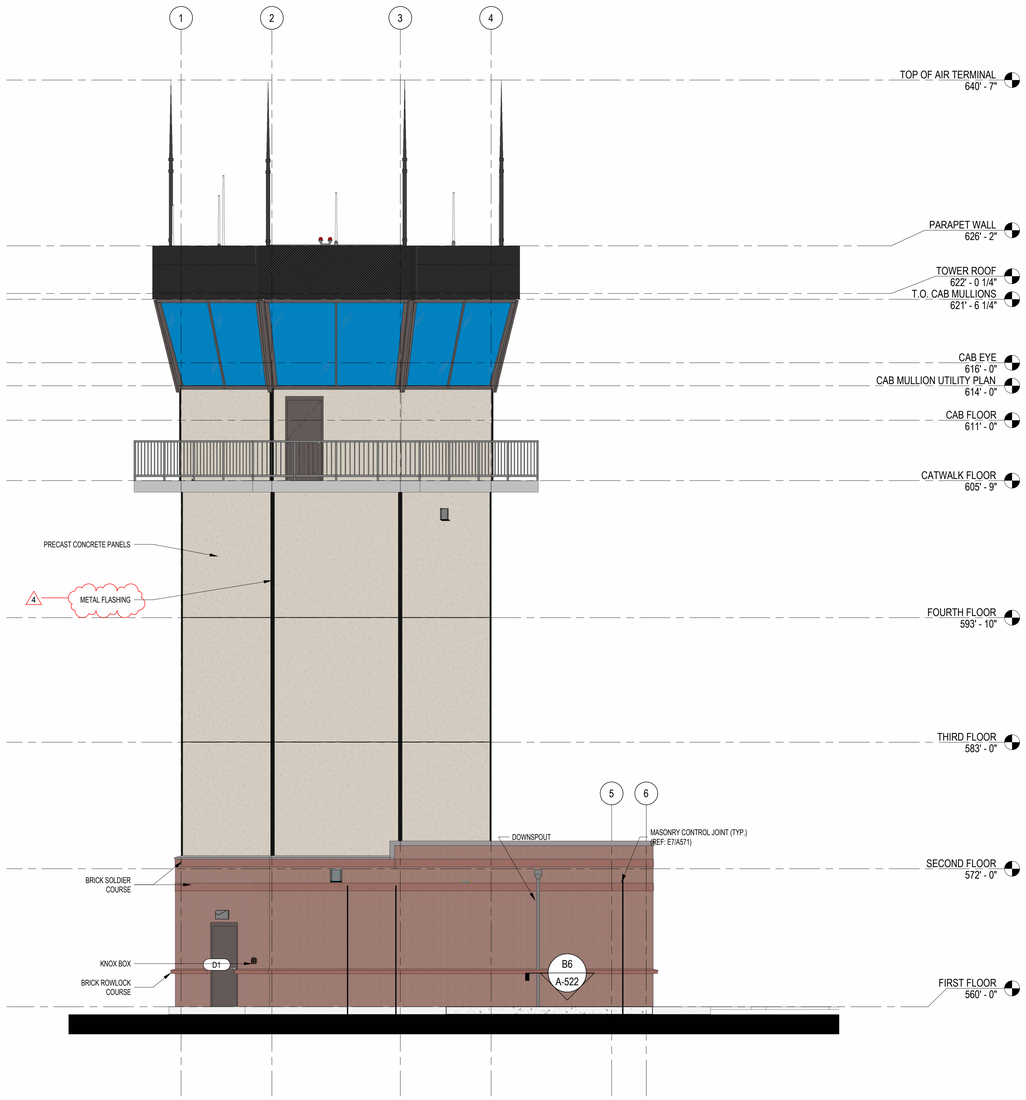
EXTERIOR MATERIALS LEGEND

- MODULAR STACKED BRICK
- PRECAST CONCRETE
- MCM PANEL SYSTEM

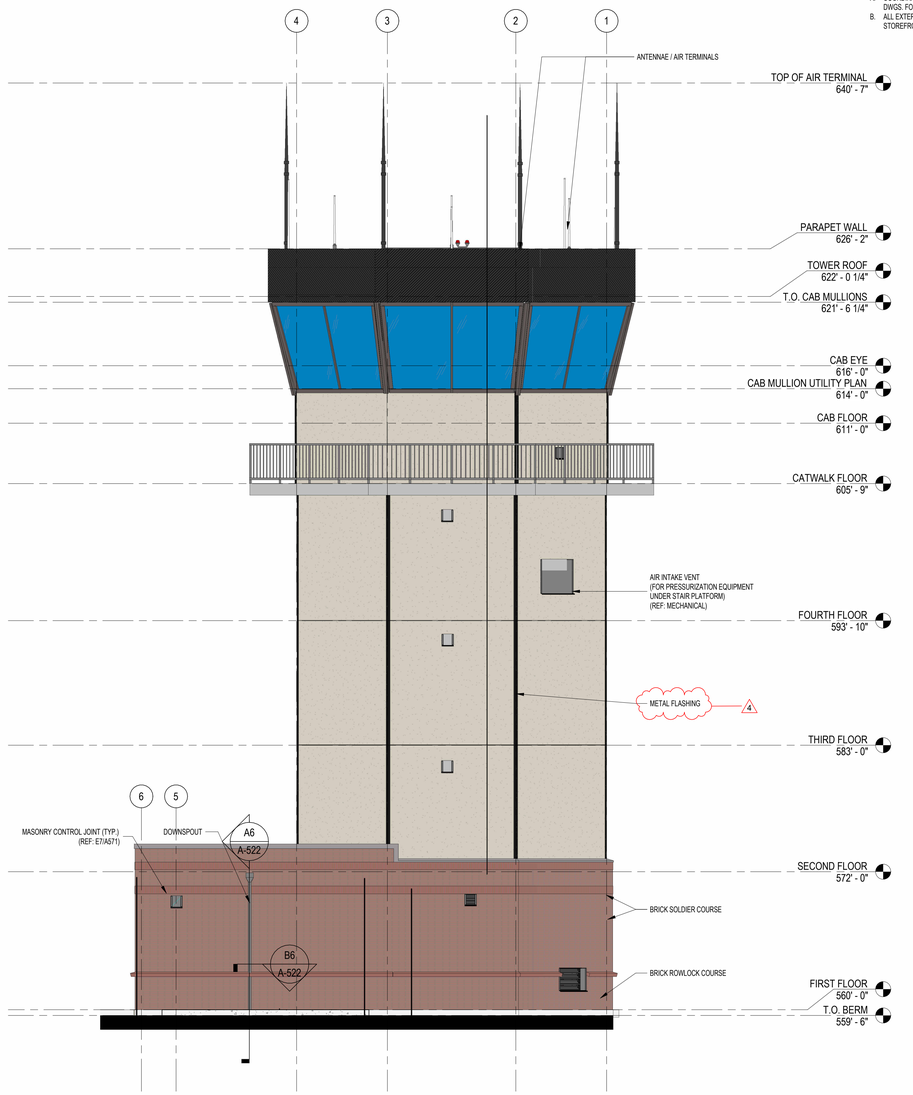
WINDOW GLAZING TYPES

- INSULATED GLASS
- INSULATED GLASS SPANDREL

NOTES:
A. COORDINATE FRAME PREP. AND CONDUIT ROUTING FOR DOOR CONTACTS; REFER TO ELEC. DWGS. FOR LOCATIONS.
B. ALL EXTERIOR CURTAIN WALL AND STOREFRONT SHALL BE THERMALLY BROKEN. INTERIOR STOREFRONT / SIDELIGHTS / BORROW LIGHTS SHALL NOT BE THERMALLY BROKEN.



A1 EXTERIOR ELEVATION - SOUTH
3/16" = 1'-0"



A4 EXTERIOR ELEVATION - NORTH
3/16" = 1'-0"

GRAPHIC SCALE
3/16"=1'-0"
0 2' 4' 8' 16'

Jefferson City MEMORIAL AIRPORT

AIR TRAFFIC CONTROL TOWER

JVIATION
A WOOLPERT COMPANY
931 Wildwood Dr
Suite 101
Jefferson City, Missouri 65101

AIR TRAFFIC CONTROL TOWER
500 Airport Road, Jefferson City, MO 65101
A PROJECT FOR:
JEFFERSON CITY MEMORIAL AIRPORT

ISSUE RECORD

NO	BY	DATE	DESCRIPTION
1		03/08/24	IFB
4		05/16/24	Addendum 4

ISSUED FOR BID

NOT FOR CONSTRUCTION

05-08-2024

NAME	REG. NO.	DATE
FOR AND ON BEHALF OF JVIATION, INC.		

DRAWN: J.B.F.	CHECKED:A.M.A.	APPROVED:A.J.R.

PROJECT NUMBER:

BUILDING ELEVATIONS

A-202

SECTION 80
EXECUTION AND PROGRESS

80-01 SUBLETTING OF CONTRACT. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least 25 percent of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

The Contractor shall provide copies of all subcontracts to the RPR [14] days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 NOTICE TO PROCEED. The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within **[** 10 **]** days of the NTP date. The Contractor shall notify the RPR at least **[** 24 hours **]** in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

****

Notification time in excess of 24 hours must be justified. Owner may allow limited mobilization to the work site provided such action does not require presence of the RPR and the Contractor assumes all risks associated with a delay to the NTP issuance.

****

80-03 EXECUTION AND PROGRESS. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least **[** 10 days **]** prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least **[** 24 hours **]** in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

CONTRACTOR'S STATEMENT OF QUALIFICATIONS

Qualifications shall be furnished with the bid proposal as described in Section 20 of the General Provisions, including resumes of all key personnel detailing experience on similar airfield construction projects as stated in paragraph 2 of Section 2, Instructions to Bidders.

_____

Name of firm, address with zip code

_____ _____ _____

Project Contact Name..... Area Code/Telephone Number Area Code/Fax Number

_____

Federal I.D. Number

The Contractor is **required** to perform an amount equal to or at least **25 percent** of the total contract cost.

_____ _____ _____

% of work by Contractor No. of permanent employees No. of years in business

_____

Have you done business under different name? If so, please give name and location.

- Provide list of equipment available for the work.
- Provide resumes of all key personnel that would be available.
- Provide list of projects completed within last five years that are similar in scope to the one being bid, including cost of each, and owner contact information.
- Provide list of projects currently under construction, including costs of each, and owner contact information.
- Provide "evidence of competency" and "evidence of financial responsibility" in accordance with Section 20-02 of the General Provisions. If the Bidder is presently pre-qualified with the Missouri Department of Transportation (MoDOT), evidence of this pre-qualification may serve as evidence of financial responsibility in lieu of the certified financial statements and reports.

SECTION 04 20 01 - MASONRY VENEER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete facing brick.

B. Clay facing brick.

C. Mortar and grout.

D. Reinforcement and anchorage.

E. Flashings.

F. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 05 40 00 - Cold-Formed Metal Framing: Steel stud backup for masonry veneer.

B. Section 07 62 00 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.

C. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. ASTM C55 - Standard Specification for Concrete Building Brick; 2017.

C. ASTM C91/C91M - Standard Specification for Masonry Cement; 2018.

D. ASTM C150/C150M - Standard Specification for Portland Cement; 2018.

E. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.

F. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale); 2017a.

G. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019.

H. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2018.

I. ASTM C476 - Standard Specification for Grout for Masonry; 2018.

J. ASTM C1634 - Standard Specification for Concrete Facing Brick; 2017.

K. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2017.

L. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing; 2017.

M. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls; 2005.

N. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2017.

O. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for masonry units, mortar, and brick ties.

C. Samples: Submit four samples of facing brick units to illustrate color, texture, and extremes of color range.

D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.07 MOCK-UP

A. Construct a masonry wall as a mock-up panel sized 8 feet long by 3 feet high; include mortar and accessories and structural backup in mock-up.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means of that will prevent mechanical damage and contamination by other materials.

1.09 FIELD CONDITIONS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 UNIT MASONRY - GENERAL

2.02 CONCRETE MASONRY UNITS

A. Concrete Brick:
1. Size: 3-5/8 inches thick, 2-1/4 inches high and 7-5/8 inches long.
2. Concrete Facing Brick: ASTM C1634; solid, normal weight; for below grade use.

2.03 BRICK UNITS

A. Manufacturers:
1. The Belden Brick Company: www.beldenbrick.com..
2. Substitutions: Not permitted.

B. Facing Brick: ASTM C216, Type FBX, Grade SW.
1. Color and Texture: Sienna Blend Velour A.
2. Nominal Size: 3-5/8 inches thick, 2-1/4 inches high and 7-5/8 inches long.
3. Special Shapes: Molded units as required by conditions indicated, unless standard units can be sawn to produce equivalent effect.

2.04 MORTAR AND GROUT MATERIALS

A. Masonry Cement: ASTM C91/C91M Type N.
1. Colored Mortar: Premixed cement as required to match Architect's color sample.

B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.

C. Hydrated Lime: ASTM C207, Type S.

D. Grout Aggregate: ASTM C404.

E. Water: Clean and potable.

F. Accelerating Admixture: Nonchloride type for use in cold weather.

2.05 REINFORCEMENT AND ANCHORAGE

A. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.

3. Vertical adjustment: Not less than 3-1/2 inches.

B. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.

2.06 FLASHINGS

A. Metal Flashing Materials: Copper, as specified in Section 07 62 00.

B. Metal Flashing Materials:

C. Combination Asphaltic Flashing Materials - Copper:
1. Copper/Asphalt Flashing: 7 oz/sq ft copper sheet coated with elastic asphalt compound on both sides.

D. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane, or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.

E. Drip Edge: Stainless steel; compatible with membrane and adhesives.

F. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.07 ACCESSORIES

A. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.

B. Building Paper: ASTM D226/D226M, Type I ("No. 15") asphalt felt.

C. Weeps:
1. Type: Molded PVC grilles, insect resistant.
2. Color(s): As selected by Architect from manufacturer's full range.

D. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
1. Mortar Diverter: Panels installed at flashing locations.

E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.08 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, Proportion Specification.
1. Masonry below grade and in contact with earth; Type S.
2. Exterior, non-loadbearing masonry; Type S.

B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.

C. Grout: ASTM C476; consistency as required to fill volumes completely for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
1. Bond: Running.
2. Coursing: One unit and one mortar joint to equal 8 inches.
3. Mortar Joints: Concave.

D. Brick Units:
1. Bond: Running.
2. Coursing: Three units and three mortar joints to equal 8 inches.
3. Mortar Joints: Concave.

3.03 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar as work progresses.

E. Interlock intersections and external corners.

F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.04 WEEPS/CAVITY VENTS

A. Install weeps in veneer walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.05 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. Install cavity mortar control panels continuously throughout full height of exterior masonry cavities during construction of exterior wythe, complying with manufacturer's installation instructions.
   1. Verify that airspace width is no more than 3/8 inch greater than panel thickness.
   2. Hold cavity mortar control panel tight to face wythe.
   3. Stagger end joints in adjacent rows.
   4. Fit to perimeter construction and penetrations without voids.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.06 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.07 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up at least 1 inch, minimum, to form watertight pan at non-masonry construction.
   2. Remove or cover protrusions or sharp edges that could puncture flashings.
   3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:
   1. Anchor vertical leg of flashing into backing with a termination bar and sealant.

C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.

D. Extend metal flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.

E. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.08 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

C. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.

3.09 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

3.10 CUTTING AND FITTING

A. Cut and fit for pipes and conduit. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.11 CLEANING

A. Remove excess mortar and mortar smears as work progresses.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

3.12 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION 04 20 01

GREDELL
ENGINEERING RESOURCES

CIVIL • GEOTECHNICAL • ENVIRONMENTAL • GEOLOGY • EARTH SCIENCES

March 24, 2023

Derek Johnson, PE, LEED AP
Jviation/Woolpert, Inc.
720 South Colorado Boulevard, Suite 1200-S
Glendale, CO 80246

RE: Subsurface Investigation, Analysis and Geotechnical Engineering Recommendations for New Air Traffic Control Tower – Jefferson City Memorial Airport
Jefferson City, Missouri

Dear Mr. Johnson:

GREDELL Engineering Resources, Inc. presents the attached report of "Subsurface Investigation, Analysis and Geotechnical Engineering Recommendations for New Air Traffic Control Tower – Jefferson City Memorial Airport" in Jefferson City, Missouri.

This report was prepared to provide geotechnical recommendations and construction considerations to assist in the preparation of construction documents for the planned construction. The investigation was conducted using methods and procedures consistent with the professional standard of care and customary practice for geotechnical engineering investigations of this nature in Missouri.

GREDELL Engineering Resources, Inc. looks forward to continuing to work with you as this project moves ahead in design and construction. If you have any questions or require additional information, please contact me at (573) 659-9078.

Sincerely,

Bruce Dawson

Bruce Dawson, P.E.

Enclosure: Report Titled: ***Subsurface Investigation, Analysis and Geotechnical Engineering Recommendations for New Air Traffic Control Tower – Jefferson City Memorial Airport, Jefferson City, Missouri***

c: Thomas R. Gredell, P.E., GREDELL Engineering Resources, Inc.

1505 East High Street
Jefferson City, Missouri 65101-4826

Telephone (573) 659-9078
Fax (573) 659-9079

GREDELL
ENGINEERING RESOURCES

Subsurface Investigation, Analysis and Geotechnical Engineering Recommendations for New Air Traffic Control Tower – Jefferson City Memorial Airport
Jefferson City, Missouri

Prepared for:

Derek Johnson, PE, LEED AP
Jviation/Woolpert, Inc.
720 South Colorado Boulevard, Suite 1200-S
Glendale, Colorado 80246

March 2023

1505 East High Street
Jefferson City, Missouri 65101-4826

Telephone (573) 659-9078
Fax (573) 659-9079

Subsurface Investigation, Analysis and Geotechnical Engineering Recommendations for New Air Traffic Control Tower – Jefferson City Memorial Airport

Jefferson City, Missouri

Prepared for

Derek Johnson, PE, LEED AP

Jviation/Woolpert, Inc.

720 South Colorado Boulevard, Suite 1200-S

Glendale, Colorado 80246

March 2023

Prepared by

GREDELL Engineering Resources, Inc.
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Jefferson City, Missouri 65101

Phone: (573) 659-9078
Fax: (573) 659-9079

3/24/23

Subsurface Investigation, Analysis and
Geotechnical Engineering Recommendations for
New Air Traffic Control Tower – Jefferson City Memorial Airport
Jefferson City, Missouri
March 2023

TABLE OF CONTENTS

APPENDICES

1.0 COMMISSION AND REPORT USE

GREDELL Engineering Resources, Inc. (Gredell Engineering) was retained by Jviation/Woolpert Inc. to perform a subsurface investigation at the site of the proposed new air traffic control tower at the Jefferson City Memorial Airport in Jefferson City, Missouri. This subsequent engineering report has been prepared for the exclusive use of our client to develop engineering plans and specifications for the proposed new construction at this site. Gredell Engineering completed the investigation using methods and procedures consistent with the professional standard of care and customary practice for geotechnical engineering investigations of projects of this nature in Missouri.

The proposed project consists of constructing a new air traffic control tower, a base building, and associated access drives and parking. The tower is expected to be founded on a reinforced concrete mat foundation. The base building may be founded on conventional shallow foundations or a reinforced concrete mat foundation. Available project information included preliminary site plans, building materials, and preliminary foundation loads for the tower, provided by Jviation/Woolpert Inc.

The primary purpose of this report is to identify feasible foundation systems for the proposed structures, and to provide geotechnical design recommendations and construction considerations for foundations, floor slabs, and pavements. The report also provides general specification content to be incorporated into the construction documents in coordination with related specifications and drawings. This information is provided in a recommendation format and should not be considered final specification format. The report also provides commentary and discussion on perceived constructability matters such as groundwater impacts, excavation conditions, satisfactory and unsatisfactory soils, potential deleterious materials, and similar matters. This information is provided in a schematic, pre-design context and should not be considered final specification content or a complete construction planning guide. Coordination of these pre-design recommendations, specification content, and constructability matters with concept and design development is typically necessary.

The following report describes Gredell Engineering's geotechnical investigation and related design recommendations for the proposed construction. This report is based on the findings of our geotechnical investigation, our interpretation of subsurface conditions at the site, our experience with the soil stratigraphy and geology of this region, and the currently anticipated engineering characteristics of the proposed project. This report represents our professional opinion concerning these matters based on information and data provided to us during the course of this assignment.

2.0 PROJECT SCOPE OF SERVICES

The scope of our geotechnical investigation and evaluation was as follows:

1. Perform a site reconnaissance and conduct a subsurface investigation consisting of five geotechnical borings at the proposed site in Jefferson City, Missouri.

2. Develop recommendations for primary foundation systems to include foundation type, allowable foundation bearing capacity, minimum depth to bearing, foundation settlement estimates, and seismic site classification.

3. Recommend geotechnical design parameters for pavement design.

4. Evaluate the excavation characteristics of the subsurface materials.

5. Assess the location of the groundwater or phreatic surface, if encountered, and evaluate its potential impact on geotechnical related design and construction.

6. Describe the nature, location, and estimated quantities of identifiable potentially deleterious materials that may interfere with construction progress or structure performance.

3.0 SITE DESCRIPTION

The proposed project site is in the Missouri River floodplain on the north side of the Missouri River. The site is located in Private Survey 2638 in Callaway County, Missouri. The private survey system predates the United States government Public Land Survey System in Missouri. The proposed air traffic control tower is anticipated to be constructed immediately south of the Jefferson City Memorial Airport runway, approximately 900 feet north of Mokane Road and 1,600 feet east of the Jefferson City Wastewater Treatment Plant (See Site Location Map, Appendix). The surrounding area is primarily agricultural, with industrial property to the north and west. Due to the location of the site within the Missouri River floodplain, topographic variation is modest and the site is perceived as flat.

The project includes construction of a new air traffic control tower, attached base building, parking lot and access roads. The proposed tower will have a base footprint of approximately 600 square feet. The base building has an anticipated footprint of about 830 square feet. The tower site will be filled to approximately twelve feet above existing grade to place the structures above design flood elevation. The borrow source for this fill material had not been identified as of the date of this report.

4.0 FIELD INVESTIGATION

The field investigation was conducted on February 24 and March 2, 2023 and included surface reconnaissance, identification of boring locations, location and identification of known underground utilities, and the advancement of five (5) rotary borings to target depths of 10 and 20 feet below existing ground surface with one deep boring advanced to rock. Ten feet of rock core was recovered at the deep boring. The boring locations are shown on the Exploration Plan in the Appendix. A project topographic survey was not available at the time of this investigation and the ground surface elevations reported on the boring logs are based on topography available at MidMoGIS.org. The ground surface elevations shown on the boring logs are considered accurate to within +/- 1 foot.

A track mounted CME 45C rotary drill equipped with 4-inch continuous flight augers was used to advance the borings on February 24. A Geoprobe 7822DT rotary drill equipped with 4-inch continuous flight augers was used on March 2 for the remaining 20- and 10-foot borings. Representative disturbed soil samples were obtained from Standard Penetration Tests performed in accordance with ASTM D 1586, "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". The rock core sample was obtained using NQ diamond core drilling in accordance with ASTM D 2113-14. Samples were preserved and transported in accordance with ASTM D 4220, "Standard Practices for Preserving and Transporting Soil Samples".

5.0 LABORATORY INVESTIGATION

Following the field investigation, a laboratory investigation was conducted to quantify the probable range of engineering characteristics of the subsurface materials necessary in analyzing and predicting foundation and earthwork performance. The laboratory investigation included supplementary visual classification by the geotechnical engineer, water content tests, grain size analyses, and Atterberg Limits determinations. Laboratory tests were conducted in coordination with Central Missouri Professional Services, Inc. of Jefferson City, Missouri, in accordance with ASTM procedures. A Summary of Laboratory Test Results is provided in the Appendix.

6.0 GEOLOGY OF AREA

Jefferson City, Missouri lies near the northern edge of the Ozark uplift. The regional geology is characterized by dolomitic limestone bedrock of the Ordovician age Jefferson City formation overlaid by gravelly residual soil. The residuum is typically overlaid by Pleistocene loess on the upland surfaces and by Holocene and older alluvium in the bottomlands.

The Jefferson City Memorial Airport is located on the Missouri River floodplain on the north side of the Missouri River. The soil stratigraphy of the floodplain is characterized by lensed and stratified deposits of clay, silt, sand, and gravel, often combined in varying proportions.

7.0 SUBSURFACE CONDITIONS

The following subsections identify the general site subsurface conditions, field observations and observed groundwater conditions.

7.1 General

Gredell Engineering visually classified the types of foundation materials encountered by the methods of ASTM D 2488, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)". The soils are described in detail by the Boring Logs and Summary of Laboratory Test Results provided in the Appendix. The stratification lines represent approximate boundaries and the transitions may be gradual.

7.2 Observed Stratigraphy

This investigation encountered subsurface materials consisting of clay, sandy clay, silty sand, sand, and intact limestone bedrock. The site has been cultivated and the initial approximately 1 to 1.5 feet is a frost affected plow zone. The upper one foot of this plow zone consisted of organic soil containing roots. The flood plain setting is typified by alluvial deposits. Alluvial soils continued to depths of greater than about 70 feet where they transitioned to residual soils. The alluvial soils were highly stratified and displayed significant variation in moisture content and strength within split spoon samples. The depth to bedrock was 93 feet.

The rock core was obtained from boring B1 between 93 and 103 feet below ground surface. Core recovery was measured at 90 percent, and the Rock Quality Designation (RQD) of the core was 87 percent, indicating good rock quality classification based on ASTM D 6032/D6032M.

Groundwater was encountered at a depth of 25-feet below the ground surface at boring B1 and at a depth of 20-feet below the ground surface at borings B2 and B3. Due to the setting and the sandy nature of the alluvial soils, the groundwater elevation is expected to fluctuate with precipitation and the Missouri River water elevation.

8.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

The design recommendations that follow are based on the findings of our geotechnical investigation, our interpretation of subsurface conditions at the site, our experience with the geology of this region, and current project information furnished by Jviation/Woolpert Inc. We recommend that Gredell Engineering be retained to review geotechnical related aspects of foundation plans, specifications, and design details at the design development phase.

8.1 Shallow Foundation Systems

In consideration of the anticipated foundation loads, the proposed building systems, and subsurface conditions encountered in these borings, and contingent upon execution of the recommendations described below, we recommend that the control tower foundations be designed as a shallow, reinforced concrete mat foundation using a net allowable bearing pressure of 2,500 pounds per square foot (psf). Foundations will bear on controlled fill materials. The recommended minimum depth to bearing is 30-inches below lowest adjacent exterior finished grade for frost protection and bearing capacity. Based on our observation of subsurface materials encountered during this investigation, and in consideration of the structural systems and anticipated range of loadings, we estimate that the total post-construction settlement of the shallow mat foundation will be approximately one inch. Differential settlement is expected to be negligible.

Similarly, we recommend that the base building's foundations be designed as conventional shallow foundations using an allowable bearing capacity of 2,500 psf. Estimated foundation loads for the base building have not been provided as of the date of this report, however, it is expected that the loading will be typical of single-story commercial structures and relatively modest. We anticipate that conventional continuous foundations will be designed and constructed for the base building. Based

on a depth to bearing of 30-inches, typical single-story foundation loads, and approximately 10-feet of controlled fill underlying the base building foundations, we anticipate foundation settlement of less than one inch.

8.2 Seismic Design Criteria.

The foundations for the proposed air traffic control tower are anticipated to bear on approximately ten feet of controlled fill over existing alluvial soils. Based on the findings of this investigation and our familiarity with the soil stratigraphy of the area, and in accordance with Chapter 20 of ASCE Standard ASCE / SEI 7-10, Minimum Design Loads for Buildings and Other Structures, we recommend a Seismic Site Class designation of "D".

8.3 Pavements.

General. New pavement construction for parking areas is anticipated to the north and east of the tower site, and for the site access roads running west and south from the tower. Because the upper 1 to 1.5 feet of existing soils are frost affected and disturbed by cultivation, we anticipate that a minimum of 12-inches of surface loam will be stripped during initial site preparation. Following stripping of surface loam, the resultant subgrade soils should be compacted to a minimum of 95 percent of maximum dry density according to ASTM D 698 “Standard” proctor. The underlying subgrade soils may require aeration and compaction to prepare them for controlled fill placement or aggregate base construction.

An estimated Bearing Ratio (ASTM D 1883) of 3 is recommended for flexible pavement design. This bearing ratio approximates a soaked condition for these subgrade materials compacted to a minimum of 95 percent of “Standard” proctor maximum dry density. The soaked condition is appropriate for a 'worst case' analysis, such as spring thaw conditions. For rigid pavement design, we recommend a modulus of subgrade reaction, k, of 100 pounds per cubic inch (pci).

We anticipate the design pavement section will include at least six inches of dense graded aggregate base similar to Missouri Standard Specifications for Highway Construction Section (MSSHC) 1007 Type 1 or Type 5 Aggregate for Base. Other aggregate types may be acceptable, at the discretion of the civil engineer of record. We do not recommend the use of dense graded crushed limestone aggregate base locally known as “buckshot”, “waste rock”, or “screenings” for pavement base or subbase. Pavement subgrade should be compacted to a minimum 95 percent of “Standard” maximum density before placing an aggregate base.

Gredell Engineering is available to collaborate with the civil design engineer to evaluate the use of thickened pavement sections and geosynthetic separation and reinforcement products to reduce aggregate base thickness. This analysis should consider pavement design life, subgrade conditions, traffic profiles, maximum pavement loadings, geosynthetic options, etc. to arrive at a suitable balance between initial cost, projected pavement life, and pavement maintenance costs.

9.0 CONSTRUCTION CONSIDERATIONS

The following subsections identify the recommendations for foundation excavation and construction, groundwater and storm water management, engineered fill and backfill, and quality assurance testing.

9.1 Foundation Construction

Foundations are expected to bear on controlled fill as noted in Section 8 of this report. Mat foundation bearing surfaces should be excavated flat and level. Loose materials or materials disturbed by the excavation process should be re-compacted to densify and stabilize the bearing material. Foundation excavations that become inundated during construction should be dewatered and re-evaluated prior to concrete placement.

9.2 Surface and Subsurface Drainage

The contractor should sequence and manage excavation and construction activities to eliminate or minimize ponding of runoff. Subgrade areas or foundation bearing surfaces that become inundated should be dewatered and re-evaluated prior to proceeding with construction. A permanent foundation drainage system is not considered practical or necessary for these structures. We generally recommend that paved exterior surfaces be graded away from buildings at a minimum grade of 2 percent, and that unpaved exterior surfaces be graded away from buildings at a minimum grade of 5 percent in the first 10-feet.

9.3 Engineered Fill

Materials. Material used as engineered fill or backfill should be free of significant organic matter, frozen material, significant construction debris, and corrodible or other deleterious material. Imported soils proposed for use as fill or backfill should be reviewed and analyzed by the geotechnical engineer prior to use on site. Soil classified as MH, OH, OL, or PT (high plasticity soils and organic soils) by the Unified Soil Classification System (ASTM D 2487) should not be imported for use as engineered fill. Suitable imported materials for general site fill are those that classify as GW, GM, GC, SC, and CL in accordance with ASTM D 2487. CH materials may be used for general site fill but should not be placed within ten feet vertically or horizontally of the buildings' footprint, nor within three feet vertically or horizontally from finished pavement areas.

Shot rock may be imported for use as general site fill under the tower and pavements in accordance with the following recommendations for maximum particle size, gradation, and lift thickness. Because the necessary restrictions on top size and gradation would require special screening and handling, it is generally not practical to use shot rock for trench or wall backfill applications without additional processing.

Placement and Compaction. Fine-grained soils used as general site fill should be placed and compacted in uniform, horizontal lifts with a maximum loose thickness of eight inches. Loose lift thickness for on-site soils should be reduced to six inches for compaction with small compaction equipment such as walk-behind rollers or gas-powered tampers. Crushed aggregate products should be placed and compacted in uniform, horizontal lifts with a maximum loose thickness of six inches. Shot rock should be placed and compacted in accordance with the maximum particle size and lift thickness requirements in Table 1.

Engineered fill composed of fine grained soil should be compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D 698 (Standard Proctor), at a moisture content ranging from two percent below optimum moisture to five percent above optimum moisture content as determined by ASTM D 698. Otherwise suitable fill materials that are outside this range of moisture contents may be wetted or

dried, as appropriate, to bring them to an acceptable moisture content. Soils that become saturated due to weather or disturbed by construction activities may be used as fill or backfill subject to preceding materials recommendations, final design requirements, and compaction and moisture content requirements recommended in this report. Excessively wet soils may require spreading, aeration, discing, or other manipulation to reduce their moisture content.

Dense graded aggregate base materials (GW) should be compacted to a minimum of 95 percent of maximum dry density as determined by ASTM D 698. Although moisture control is not necessary with these materials to control volume change characteristics, adequate moisture is essential to efficient compaction. These materials generally should be placed and compacted at moisture contents within two to three percentage points of their optimum moisture content. A smooth, steel-wheeled roller (static or vibratory) is expected to provide efficient compaction of dense graded aggregate base materials. In close quarters, where hand operated equipment is necessary, a large vibratory plate compactor or a "jumping jack" tamper is recommended. The loose lift thickness should be limited to about six inches.

Open graded or clean rock fill material with a thickness equal to or greater than three inches or in trench and wall backfill applications should be compacted to a minimum relative density of 70 percent, as determined in accordance with ASTM D 4253 and 4254.

Fractured rock, shot rock, and gravelly clays with more than thirty percent by weight retained on a 3/4 inch sieve are not amenable to quality assurance testing based on comparison to laboratory standards such as ASTM D 698. Quality assurance of these fill materials is typically based on construction monitoring by a qualified geotechnical engineer or his representative. Lift thickness and compaction procedures will vary based on rock gradation and proposed applications.

Properly planned and executed blasting by experienced blasting contractors in the Jefferson City Dolomite can typically yield a relatively uniform shot rock that is well graded between about one and eight inches. Some particles will be produced between eight and 24 inches, and an erratic proportion will exceed 24 inches. The following table provides recommendations for maximum particle size (based on 90-percent passing), lift thickness, and compaction procedures based on structural application and depth below finished grade (b.f.g.).

Table 1: Controlled Rock Fill Construction Recommendations

Structural Application	90% Passing Particle Size	Maximum Lift Thickness	Minimum Compaction Process
Building Elements, >8 ft. b.f.g.	12"	18"	Construction traffic plus min. 4 complete coverage passes with a vibratory roller having a minimum centrifugal force of 40,000 lbs.

Building Elements and Pavement, final 8 ft.	8"	12"	Construction traffic plus min. 4 complete coverage passes with a vibratory roller having a minimum centrifugal force of 40,000 lbs.
Pavements, >3 ft. b.f.g.	18"	18"	Construction traffic plus min. 4 complete coverage passes with a vibratory roller having a minimum centrifugal force of 40,000 lbs.
Pavements, final 3 ft.	8"	12"	Construction traffic plus min. 4 complete coverage passes with a vibratory roller having a minimum centrifugal force of 40,000 lbs.

The above criteria may require further restriction if shot rock quality degrades. Thinner lifts are necessary as the top size decreases or clay and shale content of the shot rock increases. For any of these applications, if shot rock material contains more than about 40 percent finer than two inches, or more than about 20 percent clay or shale, lift thickness must be reduced to a maximum of ten inches, and pieces larger than ten inches in any dimension must be removed from the fill. Shot rock with more than 20 percent clay or shale should not be placed within two feet of pavement subgrade elevation.

Controlled lift thickness will cause all particles larger than the lift thickness to be pushed out ahead of the placement equipment prior to compaction. These oversize pieces should be removed from the controlled rock fill, and may be placed in the outer shell or face of embankment slopes, recovered for use as rip-rap if required, or crushed and screened to meet gradation requirements for other uses.

9.4 Quality Assurance Testing

We recommend that Gredell Engineering be retained to observe all foundation bearing surfaces immediately after excavation and immediately prior to concrete placement, and to observe subgrade conditions prior to engineered fill or aggregate base placement. We recommend that site excavation and controlled fill construction be carefully monitored to verify that actual field conditions are compatible with recommended design criteria. If actual field conditions vary from our interpretation of subsurface data, recommendations can then be provided to maintain or improve design and construction quality and function.

10.0 WARRANTIES AND LIMITATIONS

This report has been prepared for the exclusive use of Jviation/Woolpert Inc. and their consultants for the specific project discussed, in accordance with generally accepted geotechnical engineering practices common to projects of this nature in Missouri. No other warranties, expressed or implied, are provided.

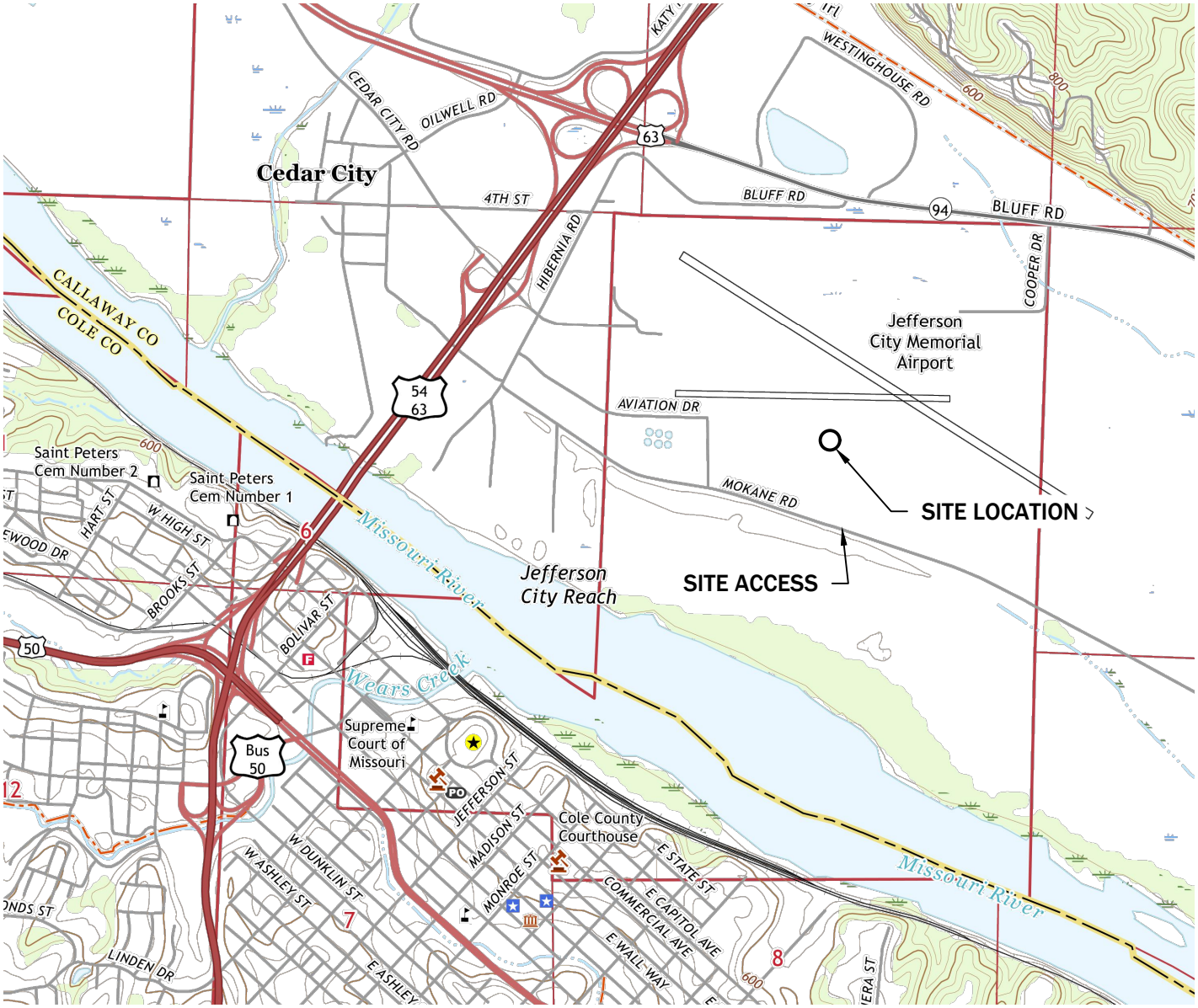
This investigation and report do not constitute a guarantee of subsurface conditions, groundwater conditions, excavation characteristics, or construction conditions. We recommend that foundation bearing conditions and excavation conditions across the site be evaluated during construction relative to this

interpretation of subsurface conditions. Variations in subsurface conditions may occur that require evaluation or revision of geotechnical design parameters or recommendations. If the scope of the project is altered or differing geotechnical conditions are encountered, it would be advisable to review and update our recommendations in consideration of those findings or variations.

Opinions and recommendations contained in this report are based on subsurface conditions, anticipated designs, and proposed designs provided as of this date. Factors affecting design and construction often become apparent during detailed design or actual construction that were not anticipated in the pre-design or early design phases. The above study and recommendations are applicable only for the project and site conditions described by this report. Any significant changes in project parameters or subsurface conditions should be brought to our attention. GREDELL Engineering Resources, Inc. will be available at any stage of design development and construction to assist in the interpretation and application of these recommendations.

Use of the data contained herein by others may require interpretation or analysis that was not contemplated by our investigation and analysis. The use of this data and any interpretations or conclusions developed by others are the sole responsibility of those firms or individuals.

Appendix



N

SCALE: 1" = 2000'
0 1000' 2000'

USGS JEFFERSON CITY QUADRANGLE
7.5 MINUTE SERIES, MISSOURI

JVIATION / WOOLPERT, INC.
JEFFERSON CITY AIRPORT - NEW ATCT

SITE LOCATION MAP

GREDELL Engineering Resources, Inc.

ENVIRONMENTAL ENGINEERING LAND - AIR - WATER

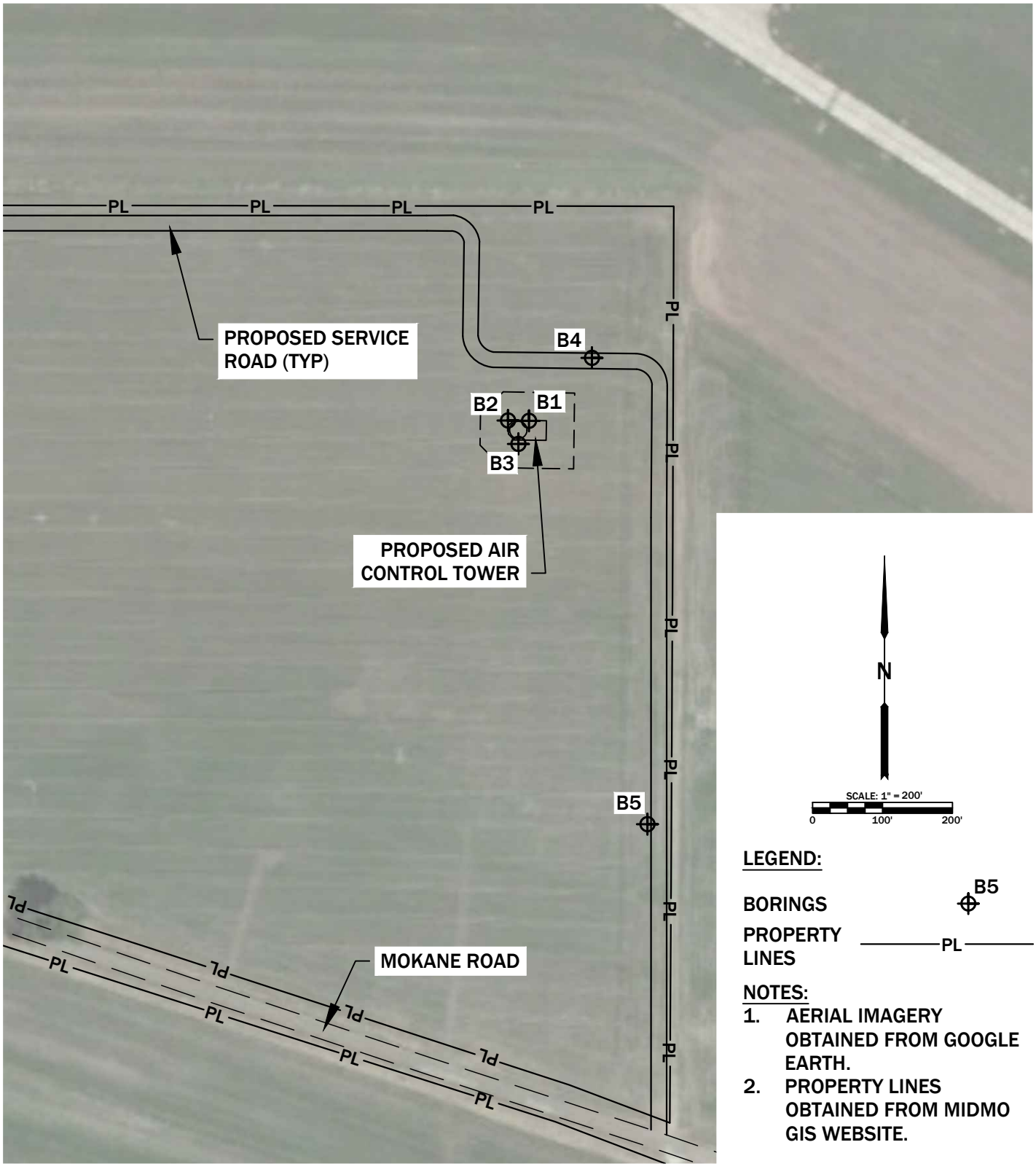
1505 East High Street
Jefferson City, Missouri

Telephone: (573) 659-9078
Facsimile: (573) 659-9079

MO CORP. ENGINEERING LICENSE NO. E-2001001669-D

DATE	SCALE	PROJECT NAME	REVISION
03/2023	1" = 2000'	JC AIRPORT NEW ATCT	N/A
DRAWN	**APPROVED**	**FILE NAME**	**SHEET #**
CM	BD	SITE-PLAN-01	1 OF 2

FILE PATH AND FILENAME: O:\CADDFiles\JVIATION\DRAWINGS\Site-Plan-01.dwg PRINTED ON: 3/24/23 BY: cm



LEGEND:

BORINGS — B5

PROPERTY LINES — PL

NOTES:

1. AERIAL IMAGERY OBTAINED FROM GOOGLE EARTH.
2. PROPERTY LINES OBTAINED FROM MIDMO GIS WEBSITE.

JVIATION / WOOLPERT, INC.
JEFFERSON CITY AIRPORT - NEW ATCT

EXPLORATION PLAN

GREDELL Engineering Resources, Inc.

ENVIRONMENTAL ENGINEERING LAND - AIR - WATER

1505 East High Street
Jefferson City, Missouri

Telephone: (573) 659-9078
Facsimile: (573) 659-9079

MO CORP. ENGINEERING LICENSE NO. E-2001001669-D

DATE	SCALE	PROJECT NAME	REVISION
03/2023	1" = 200'	JC AIRPORT NEW ATCT	N/A
DRAWN	APPROVED	FILE NAME	SHEET #
CM	BD	SITE-PLAN-02	2 OF 2

FILE PATH AND FILENAME: O:\CADDFiles\JVIATION\DRAWINGS\Site-Plan-02.dwg PRINTED ON: 3/24/23 BY: cm

Jviation/Woolpert Inc.
New ATCT Jefferson City Memorial Airport
Summary of Laboratory Test Results

					Atterberg Limits		
Boring	**Sample**	**Depth (ft)**	**Water Content**	**USCS**	**LL**	**PL**	**PI**
B2	SS1	3.5 - 5.0	34	ML	37	26	11
B2	SS2	8.5-10.0	35	CL	33	24	9
B2	SS3	13.5 - 15.0	4				
B2	SS4	18.5-20.0	16				
B3	SS1	3.5-5.0	37	CL	47	21	26
B3	SS2	8.5-10.0	34	ML	30	26	4
B3	SS3	13.5 - 15.0	6				
B3	SS4	18.5-20.0	17				
B4	S1	2.5-3.0	32				
B4	SS2	3.5-5.0	30				
B4	SS3	8.5-10.0	23				
B5	SS1	3.5-5.0	38				
B5	SS2	8.5-10.0	24				

Sieve Analysis Results

Sieve Size (U.S.B.S. SERIES)	**Boring B2 / SS3 / 13.5' - 15.0'**	
	Percentage Retained	**Percent Passing**
3/8 Inch	0	100
3/16 Inch (No. 4)	2.4	98
No. 8	2.9	97
No. 16	3.5	96
No. 30	3.9	96
No. 50	18.3	82
No. 100	66.4	33.6
No. 200	91.9	8.1

Prepared by:
GREDELL Engineering Resources, Inc.

March 2023

GREDELL Engineering Resources, Inc.

ENVIRONMENTAL ENGINEERING LAND - AIR - WATER

Offices in Jefferson City, Kansas City Metro and Springfield, Missouri

EXPLORATION LOG LEGEND AND NOMENCLATURE

Depth is in feet below ground surface. **Elevation** is in feet mean sea level, site datum, or as otherwise noted.

Sample Type

SS Split-spoon sample, disturbed, obtained by driving a 2-inch-O.D. split-spoon sampler (ASTM D 1586).

NX Diamond core bit, nominal 2-inch-diameter rock sample (ASTM D 2113).

ST Thin-walled (Shelby) tube sample, relatively undisturbed, obtained by pushing a 3-inch diameter tube (ASTM D 1587).

S Disturbed sample, obtained from cuttings.

CS Continuous sample, disturbed, obtained by pushing a split-barrel tube, Giddings tube, or similar.

Recovery is expressed as a ratio of the length recovered to the total length pushed, driven, cored.

Blows Numbers indicate blows per 6 inches of split-spoon sampler penetration when driven with a 140-pound hammer falling freely 30 inches. The number of total blows obtained for the second and third 6-inch increments is the N value (Standard Penetration Test or SPT) in blows per foot (ASTM D 1586). Practical refusal is considered as a ratio of 50 to actual penetration, e.g., 50/2 (50 blows for 2 inches).

For analysis, the N value is used when obtained by a cathead and rope system. When obtained by an automatic hammer, the N value may be increased by a factor of 1.3.

WH Weight of Hammer

Description indicates soil constituents and other classification characteristics using the visual-manual procedure (ASTM D 2488) and may include the laboratory determined Unified Soil Classification System (ASTM D 2487). Color is further defined by the Munsell notation using the Munsell Soil Color Book. Secondary soil constituents (expressed as a percentage) are described as follows:

Trace	0 to 5
Few	5 to 10
Little	15 to 25
Some	30 to 45

Stratigraphic Breaks may be observed or interpreted, and are indicated by a dashed line. Transition between described materials may be gradual.

Laboratory Test Results

- Natural moisture content (ASTM D 2216) in percent.
- Dry density in pounds per cubic foot (pcf).
- Hand penetrometer value of apparently intact cohesive sample in tons per square foot (tsf).
- Unconfined compressive strength (ASTM D 2166) in tons per square foot (tsf).
- Liquid and Plastic Limits (ASTM D 4318) in percent.

RQD (Rock Quality Designation) is the ratio between the total length of core segments 4 inches or more in length and the total length of core drilled. RQD (expressed as a percentage) indicates in-situ rock quality as follows:

Excellent	91 to 100
Good	76 to 90
Fair	51 to 75
Poor	26 to 50
Very Poor	0 to 25

1505 East High Street
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GREDELL Engineering Resources, Inc.

BORING LOG B1

New ATCT Jefferson City Airport
Mokane Road, Jefferson City MO
CLIENT: **Woolpert, Inc. (Jviation)**

LOCATION: See Plan of Boring Locations
ELEVATION: 546 ft DATUM: Mid MO GIS
DATE DRILLED: 02-24-23

DEPTH (FEET)	ELEVATION	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	MATERIAL DESCRIPTION
0.0	546				VEGETATIVE SOIL: Brown, dry to moist, frozen, crop roots.
0.8	545.2				
1.5	544.5				CLAY: Brown mottled orangish brown, soft to firm, dry to moist, plastic.
					- dark brown mottled light brown.
4.5	541.5				- light yellowish brown, dry to moist, very soft.
6.5	539.5				- soft.
7.5	538.5				SANDY CLAY: Yellowish brown, dry to moist, soft to firm.
10.0	536				SANDY SILT: Yellowish brown, dry to moist, soft to firm.
15.0	531				
20.0	526				
25.0	521	▽			- light yellowish brown, wet.
27.0	519				SAND: Brown, medium, wet.
30.0	516				- light tan, trace orangish brown gravel

SAMPLE ID
DRY DENSITY (pcf)
BLOWS PER 6 INCHES
RQD= ROCK QUALITY DES.
REC= RECOVERY

MOISTURE CONTENT
PERCENT BY WEIGHT

SHEAR STRENGTH, tsf
△ QU/2 ■ PP □ SV ⊕ TV
1 2 3

STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)

● MOISTURE CONTENT, %
○ % FINES (PASSING #200 SIEVE)

PL ——— LL
20 40 60

DRILLING COMPANY: IPES
DRILLING METHOD: 4" CFA
DRILL RIG: CME 45C
SPT HAMMER: Auto
LOGGED BY: WE

STRATIFICATION LINES ARE APPROXIMATE SOIL BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

WATER LEVELS: DURING DRILLING: 25.0 FEET
AFTER DRILLING: ____ FEET
COMPLETION DEPTH: 103.0 FEET
BACKFILLED WITH: cuttings/sand
CHECKED BY: WE REVIEWED BY: ____

Date Printed: 3/24/2023

GREDELL Engineering Resources, Inc.

BORING LOG B1

New ATCT Jefferson City Airport

DEPTH (FEET)	ELEVATION	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	MATERIAL DESCRIPTION
					fragments less than 1/4", moist to wet.
35.0	511				- began wash bore.
40.0	506				- white and black, coarse, trace gravel subangular fragments, less than 1/16".
45.0	501				- gray, coarse, similar gravel fragments less than 10%.
50.0	496				GRAVEL AND SAND: Gray and white in wash, harder drilling, occasional hard fragments.
60.0	486				- easier drilling.

SAMPLE ID
DRY DENSITY (pcf)
BLOWS PER 6 INCHES
RQD= ROCK QUALITY DES.
REC= RECOVERY

MOISTURE CONTENT
PERCENT BY WEIGHT

SHEAR STRENGTH, tsf
△ QU/2 ■ PP □ SV ⊕ TV
1 2 3

STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)

● MOISTURE CONTENT, %
○ % FINES (PASSING #200 SIEVE)

PL LL
20 40 60

Date Printed: 3/24/2023

GREDELL Engineering Resources, Inc.

BORING LOG B1

New ATCT Jefferson City Airport

DEPTH (FEET)	ELEVATION	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	MATERIAL DESCRIPTION	SAMPLE ID / DRY DENSITY (pcf) / BLOWS PER 6 INCHES / RQD= ROCK QUALITY DES. / REC= RECOVERY	MOISTURE CONTENT PERCENT BY WEIGHT
70.0	476				- harder drilling, residual soils.		
90.0	456				- hit bedrock at 93.0 feet.		
93.0	453				DOLOMITE LIMESTONE: Bedrock, 12" shale lens.	NX1 REC=100%	
103.0	443				Boring terminated at 103.0 feet in Dolomite Limestone.		

SHEAR STRENGTH, tsf

△ QU/2 ■ PP □ SV ⊕ TV

1 2 3

STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)

● MOISTURE CONTENT, %

○ % FINES (PASSING #200 SIEVE)

PL LL

20 40 60

Date Printed: 3/24/2023

GREDELL Engineering Resources, Inc.

BORING LOG B2

New ATCT Jefferson City Airport
Mokane Road, Jefferson City MO
CLIENT: **Woolpert, Inc. (Jviation)**

LOCATION: See Plan of Boring Locations
ELEVATION: 546 ft DATUM: Mid MO GIS
DATE DRILLED: 03-02-23

DEPTH (FEET)	ELEVATION	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	MATERIAL DESCRIPTION	SAMPLE ID / DRY DENSITY (pcf) / BLOWS PER 6 INCHES / RQD= ROCK QUALITY DES. / REC= RECOVERY	MOISTURE CONTENT PERCENT BY WEIGHT
0.0	546				VEGETATIVE SOIL: Brown, dry to moist, soft to firm, crop roots, tillage.		
0.8	545.2						
1.5	544.5				CLAY: Dark brown, soft to firm, dry to moist, slightly plastic.		
2.0	544						
3.5	542.5				CLAY: Brown, dry to moist, firm to hard, plastic.	SS1 2-2-3 REC=100%	34
					- brown with black spots, silty clay soft.		
5.0	541				SILTY CLAY: Light brown, dry to moist, soft, sticky.		
7.5	538.5						
8.5	537.5				SANDY CLAY: Dry to moist, soft to firm, wet section after 1", coarse sand in end of sampler.	SS2 2-1-3 REC=100%	35
10.0	536				SAND: Light brown, dry, soft to firm, coarse.		
12.0	534						
13.5	532.5				- firm to hard, dense poorly graded coarse, crumbling.	SS3 10-13-15 REC=100%	4
15.0	531						
17.5	528.5						
18.5	527.5				- water on end of sampler.	SS4 5-8-14 REC=100%	16
20.0	526	▽			Boring terminated at 20.0 feet in medium to coarse Sand.		

SHEAR STRENGTH, tsf
△ QU/2 ■ PP □ SV ⊕ TV
1 2 3
STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)
● MOISTURE CONTENT, %
○ % FINES (PASSING #200 SIEVE)
PL LL
20 40 60

DRILLING COMPANY: IPES
DRILLING METHOD: 4" hollow stem auger
DRILL RIG: Geoprobe 7822DT
SPT HAMMER: Auto
LOGGED BY: WE

STRATIFICATION LINES ARE APPROXIMATE SOIL BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

WATER LEVELS: DURING DRILLING: 20.0 FEET
AFTER DRILLING: ____ FEET
COMPLETION DEPTH: 20.0 FEET
BACKFILLED WITH: cuttings
CHECKED BY: WE REVIEWED BY: ____

Date Printed: 3/24/2023

GREDELL Engineering Resources, Inc.

BORING LOG B3

New ATCT Jefferson City Airport
Mokane Road, Jefferson City MO
CLIENT: **Woolpert, Inc. (Jviation)**

LOCATION: See Plan of Boring Locations
ELEVATION: 546 ft DATUM: Mid MO GIS
DATE DRILLED: 03-02-23

DEPTH (FEET)	ELEVATION	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	MATERIAL DESCRIPTION	SAMPLE ID / DRY DENSITY (pcf) / BLOWS PER 6 INCHES / RQD= ROCK QUALITY DES. / REC= RECOVERY	MOISTURE CONTENT PERCENT BY WEIGHT
0.0	546				VEGETATIVE SOIL: Brown, dry to moist, soft to firm, crop roots, tillage.		
0.8	545.2				CLAY: Dark brown, soft to firm, dry to moist. - grayish brown.		
2.0	544						
3.5	542.5				CLAY into SILTY CLAY: grayish brown mottled orangish brown, dry to moist, firm to hard, Silty Clay soft to firm, plastic.	SS1 3-4-3 REC=100%	37
5.0	541				SILTY CLAY: Light brown, dry to moist, soft, sticky.		
8.5	537.5				SILTY CLAY: Grayish brown mottled orangish brown, moist to wet, soft to firm, wet section.	SS2 2-1-3 REC=89%	34
10.0	536				SANDY CLAY: Brown, dry to moist, soft to firm.		
12.0	534				SAND: Dry to moist, soft to firm.		
13.5	532.5				- dense.	SS3 6-12-16 REC=100%	6
15.0	531				- light tan.		
16.5	529.5						
18.5	527.5				SAND: Grayish brown with orange grains interspersed, subangular, poorly graded coarse, wet at end of sampler.	SS4 8-10-12 REC=89%	17
20.0	526	▽			Boring terminated at 20.0 feet in medium to coarse Sand.		

SHEAR STRENGTH, tsf
△ QU/2 ■ PP □ SV ⊕ TV
1 2 3
STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)
● MOISTURE CONTENT, %
○ % FINES (PASSING #200 SIEVE)
PL LL
20 40 60

DRILLING COMPANY: IPES
DRILLING METHOD: 4" hollow stem auger
DRILL RIG: Geoprobe 7822DT
SPT HAMMER: Auto
LOGGED BY: WE

STRATIFICATION LINES ARE APPROXIMATE SOIL BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

WATER LEVELS: DURING DRILLING: 20.0 FEET
AFTER DRILLING: ____ FEET
COMPLETION DEPTH: 20.0 FEET
BACKFILLED WITH: cuttings
CHECKED BY: WE REVIEWED BY: ____

Date Printed: 3/24/2023

GREDELL Engineering Resources, Inc.

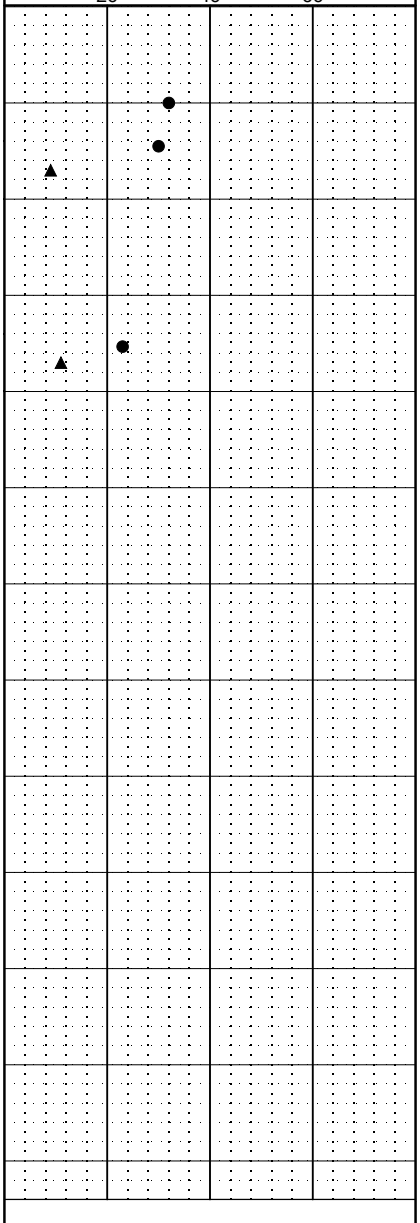
BORING LOG B4

New ATCT Jefferson City Airport
Mokane Road, Jefferson City MO
CLIENT: **Woolpert, Inc. (Jviation)**

LOCATION: See Plan of Boring Locations
ELEVATION: 546 ft DATUM: Mid MO GIS
DATE DRILLED: 02-24-23

DEPTH (FEET)	ELEVATION	MATERIAL DESCRIPTION	SAMPLE ID / DRY DENSITY (pcf) / BLOWS PER 6 INCHES / RQD= ROCK QUALITY DES. / REC= RECOVERY	MOISTURE CONTENT PERCENT BY WEIGHT
0.0	546	VEGETATIVE SOIL: Brown, dry to moist, soft to firm, crop roots, tillage.		
0.8	545.2	CLAY: Dark brown, dry to moist, plastic.		
2.5	543.5		S1	32
3.0	543			
3.5	542.5	CLAY: Brown mottled orangish brown, dry to moist, soft to firm.	SS2 3-4-5 REC=17%	30
5.0	541	- brown.		
6.0	540			
7.5	538.5	SANDY CLAY: Yellowish brown, dry to moist, soft.		
8.5	537.5	SAND: Yellowish brown, dry to moist, soft.	SS3 4-5-6 REC=44%	23
10.0	536	Boring terminated at 10.0 feet in medium Sand.		

SHEAR STRENGTH, tsf
△ QU/2 ■ PP □ SV ⊕ TV
1 2 3
STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)
● MOISTURE CONTENT, %
○ % FINES (PASSING #200 SIEVE)
PL LL
20 40 60



DRILLING COMPANY: IPES
DRILLING METHOD: 4" hollow stem auger
DRILL RIG: CME 45C
SPT HAMMER: Auto
LOGGED BY: WE

STRATIFICATION LINES ARE APPROXIMATE SOIL BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

WATER LEVELS: DURING DRILLING: none FEET
AFTER DRILLING: ____ FEET
COMPLETION DEPTH: 10.0 FEET
BACKFILLED WITH: cuttings
CHECKED BY: WE REVIEWED BY: ____

Date Printed: 3/24/2023

GREDELL Engineering Resources, Inc.

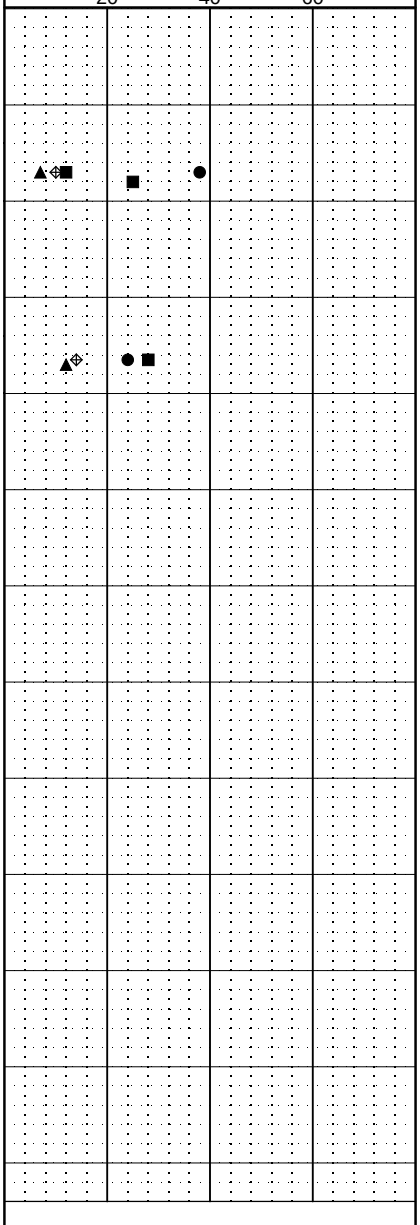
BORING LOG B5

New ATCT Jefferson City Airport
Mokane Road, Jefferson City MO
CLIENT: **Woolpert, Inc. (Jviation)**

LOCATION: See Plan of Boring Locations
ELEVATION: 545 ft DATUM: Mid MO GIS
DATE DRILLED: 03-02-23

DEPTH (FEET)	ELEVATION	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	MATERIAL DESCRIPTION	SAMPLE ID / DRY DENSITY (pcf) / BLOWS PER 6 INCHES / RQD= ROCK QUALITY DES. / REC= RECOVERY	MOISTURE CONTENT PERCENT BY WEIGHT
0.0	545				VEGETATIVE SOIL.		
0.8	544.2				CLAY: Dark brown, dry to moist, soft to firm.		
1.5	543.5				SILTY CLAY: Light brown, wet, soft.		
3.5	541.5				SILTY CLAY into CLAY: Grayish brown mottled orangish red, dry to moist, top silty clay soft, lower clay hard.	SS1 3-3-4 REC=100%	38
4.5	540.5						
5.0	540				CLAY: grayish brown mottled orangish red, dry to moist, hard.		
6.0	539						
7.0	538				SILTY CLAY: Light brown, dry to moist, soft to firm.		
8.5	536.5				SILTY CLAY into CLAY and Medium SAND: Poorly graded.	SS2 2-5-7 REC=83%	24
9.5	535.5				SAND: Grayish brown, dry to moist. Medium Sand in lower end of sampler.		
10.0	535				Boring terminated at 10.0 feet in Medium Sand.		

SHEAR STRENGTH, tsf
△ QU/2 ■ PP □ SV ⊕ TV
1 2 3
STANDARD PENETRATION TEST
▲ N-VALUE (BLOWS PER LAST FOOT)
● MOISTURE CONTENT, %
○ % FINES (PASSING #200 SIEVE)
PL LL
20 40 60



DRILLING COMPANY: IPES
DRILLING METHOD: 4" hollow stem auger
DRILL RIG: Geoprobe 7822DT
SPT HAMMER: Auto
LOGGED BY: WE

STRATIFICATION LINES ARE APPROXIMATE SOIL BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

WATER LEVELS: DURING DRILLING: none FEET
AFTER DRILLING: ____ FEET
COMPLETION DEPTH: 10.0 FEET
BACKFILLED WITH: cuttings
CHECKED BY: WE REVIEWED BY: ____

Date Printed: 3/24/2023

Figure Sheet 1 of 1

KEY TO SYMBOLS

New ATCT Jefferson City Airport

Symbol Description

Strata symbols

Topsoil

Clay

Sandy Clay

Sandy Silt

Sand

Gravel, some Sand

Dolomite

Silty Clay

Misc. Symbols

Water table during drilling

Boring continues

Penetrometer

Torvane

Soil Samplers

Rock core

Standard penetration test

Phase I Environmental Site Assessment

Jeff City Airport Project

East Aviation Drive and Northeast Mokane Road

Jefferson City, Cole County, MO

November 16, 2022

Terracon Project No. 15227245

Prepared for:
Jviation, A Woolpert Company
Glendale, Colorado

Prepared by:
Terracon Consultants, Inc.
St. Louis, Missouri

November 16, 2022

Jviation, A Woolpert Company
720 South Colorado Boulevard
Suite 1200-S
Glendale, CO 80246

Attn: Mr. Morgan Einspahr
E: Morgan.Einspahr@jviation.com

Re: Phase I Environmental Site Assessment
Jeff City Airport Project
500 Airport Road
Jefferson City, Cole County, Missouri 65101
Terracon Project No. 15227245

Dear Mr. Einspahr:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Phase I Environmental Site Assessment (ESA) report for the above-referenced site. This assessment was performed in accordance with Terracon Proposal No. P15227245 dated July 19, 2022.

We appreciate the opportunity to be of service to you on this project. In addition to Phase I services, our professionals provide geotechnical, environmental, construction materials, and facilities services on a wide variety of projects locally, regionally and nationally. For more detailed information on all of Terracon's services please visit our website at www.terracon.com. If there are any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
Terracon Consultants, Inc.

Christina R. Bienz
Assistant Scientist

Nicole V. Azmanov
Due Diligence Manager

Danielle N. Richardson
Staff Scientist

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed in accordance with Terracon Proposal No. P15227245, dated July 19, 2022, and was conducted consistent with the procedures included in ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ESA was conducted under the supervision or responsible charge of Nicole V. Azmanov, Environmental Professional. Christina R. Bienz performed the site reconnaissance on October 20, 2022.

Findings and Opinions

A summary of findings is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

Site Description and Use

The site is an approximate 33.9-acre tract of land, addressed as East Aviation Drive and Northeast Mokane Road, Jefferson City, Cole County, Missouri (Cole County Parcel Number 27-05.0-15.0-00-000-006.000). The site is currently agricultural land and used as a soybean field.

Historical Information

Based on a review of historical information, the site consisted of agricultural with a farmstead on the southern portion from at least the 1930s to 1980 when the farmstead was removed. A new agricultural building was constructed by 1986 which remained though the 1990s but was no longer apparent by 2006.

The surrounding areas to the north, east, and west were vacant land, and a river was located to the south as early as 1886. By the 1950s, an airport runway was constructed north of the site, with the associated airport located further northwest. The area to the east remained primarily agricultural land until the north adjoining runway was extended to the east-northeast of the site in the 1960s. The river to the south was narrowed, and the intervening space has historically consisted of agricultural land. South adjoining Mokane Road was apparent as early as 1886. The area to the west remained agricultural until the 1970s when the Jefferson City Water Treatment Plant was constructed. In the 1990s, a storage building for the airport was constructed northwest of the site.

Records Review

Selected federal and state environmental regulatory databases were reviewed. The site, addressed East Aviation Drive and Northeast Mokane Road, was not listed in the regulatory database.

Multiple off-site facilities were identified within the specified search distances. The off-site facilities listed in the database report do not appear to represent RECs to the site at this time based on distance, gradient, and/or regulatory status.

Site Reconnaissance

The site consisted of vacant, agricultural land with soybeans at the time of the site reconnaissance. RECs were not identified during the site reconnaissance.

Adjoining Properties

The site is adjoined to the north by a soybean field and airport runways; to the east by a soybean field; to the west by a wheat field, scrap metal pile, soil pile, and airplane hanger followed by Aviation Drive and a wastewater treatment plant; and to the south by Mokane Road and a soybean field.

Significant Data Gaps

Significant data gaps were not identified during the course of this assessment.

Conclusions

We have performed a Phase I ESA consistent with the procedures included in ASTM Practice E 1527-13 at the approximate 33.9-acre parcel of land located at East Aviation Drive and Northeast Mokane Road in Jefferson City, Cole County, Missouri, the site. RECs were not identified in connection with the site.

Recommendations

Based on the scope of services, limitations, and findings of this assessment, Terracon did not identify RECs, and as such, no additional investigation is warranted at this time.

1.0 INTRODUCTION

1.1 Site Description

Site Name	Jeff City Airport Project
Site Location/Address	East Aviation Drive and Northeast Mokane Road, Jefferson City, Cole County, Missouri (Cole County Parcel Number 27-05.0-15.0-00-000-006.000)
Land Area	Approximately 33.9-acre tract of land
Site Improvements	The site is vacant
Anticipated Future Site Use	Airport communication tower
Reason for the ESA	Due diligence prior to site acquisition

The location of the site is depicted on Exhibit 1 of Appendix A, which was reproduced from a portion of the USGS 7.5-minute series topographic map. The site and adjoining properties are depicted on the Site Diagram, which is included as Exhibit 2 of Appendix A. Acronyms and terms used in this report are described in Appendix F.

1.2 Scope of Services

This Phase I ESA was performed in accordance with Terracon Proposal No. P15227245, dated July 19, 2022, and was conducted consistent with the procedures included in ASTM E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The purpose of this ESA was to assist the client in developing information to identify RECs in connection with the site as reflected by the scope of this report. This purpose was undertaken through user-provided information, a regulatory database review, historical and physical records review, interviews, including local government inquiries, as applicable, and a visual noninvasive reconnaissance of the site and adjoining properties. Limitations, ASTM deviations, and significant data gaps (if identified) are noted in the applicable sections of the report.

ASTM E1527-13 contains a new definition of "migrate/migration," which refers to “the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.” By including this explicit reference to migration in ASTM E1527-13, the Standard clarifies that the potential for vapor migration should be addressed as part of a Phase I ESA. This Phase I ESA has considered vapor migration in evaluation of RECs associated with the site.

1.3 Standard of Care

This ESA was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. Where appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted.

Phase I ESAs, such as the one performed at this site, are of limited scope, are noninvasive, and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited scope of this ESA. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. It should be recognized that environmental concerns may be documented in public records that were not reviewed. No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs. No warranties, express or implied, are intended or made. The limitations herein must be considered when the user of this report formulates opinions as to risks associated with the site or otherwise uses the report for any other purpose. These risks may be further evaluated – but not eliminated – through additional research or assessment. We will, upon request, advise you of additional research or assessment options that may be available and associated costs.

1.4 Additional Scope Limitations, ASTM Deviations and Data Gaps

Based upon the agreed-on scope of services, this ESA did not include subsurface or other invasive assessments, vapor intrusion assessments or indoor air quality assessments (i.e. evaluation of the presence of vapors within a building structure), business environmental risk evaluations, or other services not particularly identified and discussed herein. Credentials of the company (Statement of Qualifications) have not been included in this report but are available upon request. Pertinent documents are referred to in the text of this report, and a separate reference section has not been included. Reasonable attempts were made to obtain information within the scope and time constraints set forth by the client; however, in some instances, information requested is not, or was not, received by the issuance date of the report. Information obtained for this ESA was received from several sources that we believe to be reliable; nonetheless, the authenticity or reliability of these sources cannot and is not warranted hereunder. This ESA was further limited by the following:

- Client didn't provide ATSM E1527-13 User Questionnaire with signed proposal. Based on other available resources reviewed, this data failure is not considered a significant data gap.
- A subject property and/or owner contact was not provided by the client at the issuance of this report; therefore, an interview was not conducted. Based on

other available resources reviewed, this data failure is not considered a significant data gap.

An evaluation of the significance of limitations and missing information with respect to our findings has been conducted, and where appropriate, significant data gaps are identified and discussed in the text of the report. However, it should be recognized that an evaluation of significant data gaps is based on the information available at the time of report issuance, and an evaluation of information received after the report issuance date may result in an alteration of our conclusions, recommendations, or opinions. We have no obligation to provide information obtained or discovered by us after the issuance date of the report, or to perform any additional services, regardless of whether the information would affect any conclusions, recommendations, or opinions in the report. This disclaimer specifically applies to any information that has not been provided by the client.

This report represents our service to you as of the report date and constitutes our final document; its text may not be altered after final issuance. Findings in this report are based upon the site's current utilization, information derived from the most recent reconnaissance and from other activities described herein; such information is subject to change. Certain indicators of the presence of hazardous substances or petroleum products may have been latent, inaccessible, unobservable, or not present during the most recent reconnaissance and may subsequently become observable (such as after site renovation or development). Further, these services are not to be construed as legal interpretation or advice.

1.5 Reliance

This ESA report is prepared for the exclusive use and reliance of Jviation, A Woolpert Company. Use or reliance by any other party is prohibited without the written authorization of Jviation, A Woolpert Company and Terracon Consultants, Inc. (Terracon).

Reliance on the ESA by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, ESA report, and Terracon's Agreement. The limitation of liability defined in the Agreement is the aggregate limit of Terracon's liability to the client and all relying parties.

Continued viability of this report is subject to ASTM E1527-13 Sections 4.6 and 4.8. If the ESA will be used by a different user (third party) than the user for whom the ESA was originally prepared, the third party must also satisfy the user's responsibilities in Section 6 of ASTM E1527-13.

1.6 Client Provided Information

Prior to the site visit, the client's representative was asked to provide the following user questionnaire information as described in ASTM E1527-13 Section 6.

Client Questionnaire Responses

Client Questionnaire Item	Client Did Not Respond	Client's Response	
		Yes	No
Specialized Knowledge or Experience that is material to a REC in connection with the site.	X		
Actual Knowledge of Environmental Liens or Activity Use Limitations (AULs) that may encumber the site.	X		
Actual Knowledge of a Lower Purchase Price because contamination is known or believed to be present at the site.	X		
Commonly Known or Reasonably Ascertainable Information that is material to a REC in connection with the site.	X		
Obvious Indicators of Contamination at the site.	X		

The client did not provide the requested User's information as of the issuance data of the report. Terracon assumes the client is evaluating the questionnaire information outside the context.

2.0 PHYSICAL SETTING

Physical Setting Information		Source
Topography		
Site Elevation	Approximately 540 feet above mean sea level (amsl).	USGS Topographic Map, Jefferson City, Missouri, Quadrangle, 1981 (Appendix A).
Topographic Gradient	The site slopes toward the south.	
Closest Surface Water	Missouri River, approximately 2,000 feet south of the site.	
Soil Characteristics		
Soil Type	66019- Lowmo silt loam 66028- Blencoe silty clay loam 66110- SansDessein silty clay	Hamilton County, Indiana United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, issued 2022
Description	The Lowmo sit loam complex consists of well drained soils formed in alluvium on flood plain steps. Surface runoff is low. The Blenco silty clay loam complex consists of somewhat poorly drained soils formed in clayey alluvium over loamy alluvium. Surface runoff is very high. The SansDesserin silty clay complex consists of poorly drained soils formed in alluvium. Surface runoff is high.	

Physical Setting Information		Source
Geology/Hydrogeology		
Formation	Ordovician	Geologic Map of Missouri, Missouri Department of Natural Resources, Division of Geology and Land Survey, accessed October 2022.
Description	Consists of largely carbonates and thin shales, with three distinctive sandstone layers: Gunter, Roubidoux, and St. Peter. Few shales and limestones are also present. The dolomites are thinly bedded, fossiliferous, and contain large amounts of clay creating a micritic texture.	
Estimated Depth to First Occurrence of Groundwater	Within 15 feet below ground surface (bgs).	State of Missouri, Division of Geological Survey and Water Resources, Water Well Report #18963, approximately 1,300 feet northwest of the site.
*Hydrogeologic Gradient	Not known - may be inferred to be parallel to topographic gradient (primarily to the south).	

* The groundwater flow direction and the depth to shallow, unconfined groundwater, if present, would likely vary depending upon seasonal variations in rainfall and other hydrogeological features. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

3.0 HISTORICAL USE INFORMATION

Terracon reviewed the following historical sources to develop a history of the previous uses of the site and surrounding area, in order to help identify RECs associated with past uses. Copies of selected historical documents are included in Appendix C.

3.1 Historical Topographic Maps, Aerial Photographs, Sanborn Maps

Readily available historical USGS topographic maps, selected historical aerial photographs (at approximately 10 to 15 year intervals) and historical fire insurance maps produced by the Sanborn Map Company were reviewed to evaluate land development and obtain information concerning the history of development on and near the site. Reviewed historical topographic maps, aerial photographs and Sanborn maps are summarized below.

Historical fire insurance maps produced by the Sanborn Map Company were requested from Environmental Data Resources Inc. (EDR) to evaluate past uses and relevant characteristics of the site and surrounding properties. Sanborn maps were not available for the site (the site and vicinity are beyond the horizontal extents of historical Sanborn mapping).

- Topographic map: Jefferson City, Missouri, published in **1886** and **1894**
- (1:125,000)
- Topographic map: Jefferson City, Missouri, published in **1939**, **1940**, **1942**, **1967**, **1974**, **1980**, **1981**, **2015**, and **2017** (1:24,000)

- Aerial photographs: EDR, **1956**, **1965**, **1974**, **1976**, **1980**, **1986**, **1991**, **1995**, **2006**, **2009**, **2012**, **2016** (1"=500')

Historical Maps and Aerial Photographs

Direction	Description
Site	Vacant land (1886-1894) Agricultural land with a farmstead (1939-1980); Former farmstead was no long apparent, a barn was apparent on eastern portion of site (1986-1995); The site was vacant agricultural land (2006-2017).
North	Vacant land (1886-1942) Agricultural land followed by Jefferson City Memorial Airport runway, an extension to the runway was constructed in the 1970s (1956-2017).
East	Agricultural land, the north adjoining runway expanded to the east of the site in the 1970s (1886-2017).
South	Current-day Mokane Road followed by the Missouri River (1886-1894); The river was narrowed, and agricultural land adjoined the site to the south followed by the Missouri River (1939-2017).
West	Agricultural land (1886-1965); agricultural land followed by the current-day wastewater treatment plant (1974-1991); apparent aviation hangar constructed northwest of site (1995); aviation hanger followed by Aviation Drive followed by the wastewater treatment plant (2006-2021).

The airport to the north of the site was identified in regulatory records and is further discussed in applicable sections of this report.

3.2 Historical City Directories

The EDR Digital Archive and Haines Criss-Cross Directory city directories used in this study were made available through EDR (selected years reviewed: 1967 and 1992-2017) and were reviewed at approximate five-year intervals, if readily available. Street listings not available prior to 1992. The current street address for the site was identified as East Aviation Drive and Northeast Mokane Road.

Historical City Directories

Direction	Description
Site	**East Aviation Drive and Northeast Mokane Road**: No listings.
North	**500 Airport**: Hertz Rent A Car (2000); Hertz Rent A Car, LC Flight Products LLC, *Midwest Air Traffic Control Services*, Nicks Family Restaurant (2005); Hertz Rent A Car, Nicks Family Restaurant (2010); City of Jefferson City, Hertz Rent a Car, Nicks Family Restaurant (2014); Hertz Rent a Car, Nicks Family Restaurant (2017). **541 West Highway 94**: Lauf Equipment Co Inc (2014). **500 West Highway 94**: ABB Ink Inc (2005); ABB Ink Inc, Swanson Corp (2010). **501 Airport Road**: *Jefferson City Flying Service* (2000-2017); Hertz (2017). **507 Airport Road**: *Missouri Aviation* (2014-2017). **510 Airport Road**: Abbot Aviation Technologies (2010-2017).

Direction	Description
	511 Airport Road: Dyncorp Technical Services (2005). **1225 Cooper Street**: Dyncorp, *US Army Aviation Support (*2005-2017). **1231 Cooper Street**: *Midwest Air Traffic Control* (2010-2014).
East	No addresses listed.
South	**700 Mokane Road**: Jefferson City River Terminal (2014).
West	**401 Mokane Road**: Jefferson City Treatment Plant (2010); City of Jefferson (2014).

The Midwest Air Traffic Control Services, Jefferson City Flying Service, and US Army Aviation Support to the north were identified in the regulatory database and are further discussed in section 4.1.

3.3 Site Ownership

Based on a review of information obtained from the Cole County Assessor's records, the current site owner is David Boessen.

3.4 Title Search

At the direction of the client, a title search was/was not included as part of the scope of services. Unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

3.5 Environmental Liens and Activity and Use Limitations

Environmental lien and activity and use limitation records recorded against the site were not provided by the client. At the direction of the client, performance of a review of these records was not included as part of the scope of services and unless notified otherwise, we assume that the client is evaluating this information outside the scope of this report.

While not requested by the client, the EDR regulatory database report included a review of both Federal and State Engineering Control (EC) and Institutional Control (IC) databases. Based on a review of the database report, the site was not listed on the EC or IC databases. Review of this information does not constitute an environmental lien/AUL search per ASTM E1527-13. Please note that in addition to these federal and state listings, AULs can be recorded at the county and municipal level that may not be listed in the regulatory database report. Based on its limited nature, this review does not constitute a review of AULs per ASTM E1527-13.

3.6 Interviews Regarding Current and Historical Site Uses

The objective of completing interviews with knowledgeable subject property contacts is to obtain information about the uses and physical characteristics of the property. In general, interviewees supported the information reviewed from other historical sources (i.e., aerial photos, etc.). A

subject property and/or owner contact was not provided by the client at the issuance of this report; therefore, an interview was not conducted.

3.7 Prior Report Review

Terracon requested the client provide any previous environmental reports they are aware of for the site. Previous reports were not provided by the client to Terracon for review.

4.0 RECORDS REVIEW

Regulatory database information was provided by EDR, a contract information services company. The purpose of the records review was to identify RECs in connection with the site. Information in this section is subject to the accuracy of the data provided by the information services company and the date at which the information is updated. The scope herein did not include confirmation of facilities listed as "unmappable" by regulatory databases.

In some of the following subsections, the words up-gradient, cross-gradient and down-gradient refer to the topographic gradient in relation to the site. As stated previously, the groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and the depth to the soil/bedrock interface. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

4.1 Federal and State/Tribal Databases

Listed below are the facility listings identified on federal and state/tribal databases within the ASTM-required search distances from the approximate site boundaries. Database definition, descriptions, and the database search report are included in Appendix D.

Federal Databases

Database	Description	Distance (miles)	Listings
CERCLIS	Comprehensive Environmental Response, Compensation, & Liability Information System	0.5	0
CERCLIS / NFRAP	Comprehensive Environmental Response, Compensation, & Liability Information System/No Further Remedial Action Planned	0.5	0
ERNS	Emergency Response Notification System	Site	0
IC / EC	Institutional Control/Engineering Control	Site	0
NPL	National Priorities List	2.5	0
NPL (Delisted)	National Priorities Delisted List	0.5	0

Database	Description	Distance (miles)	Listings
RCRA CORRACTS/ TSD	RCRA Corrective Action Activity	1	0
RCRA Generators	Resource Conservation and Recovery Act	Site and adjoining properties	0
RCRA Non-CORRACTS/ TSD	RCRA Non-Corrective Action Activity	0.5	0

State/Tribal Databases

Database	Description	Distance (miles)	Listings
AUL	Activity and Use Limitations	Site	0
Brownfields	Listing of Brownfields Sites	0.5	0
LUST	Leaking Underground Storage Tanks	0.5	2
SHWS	State Hazardous Waste Site	0.5	0
SWF/LF	Solid Waste Facilities/Landfills	0.5	0
UST	Underground Storage Tanks	Site and adjoining properties	2
VCP	Voluntary Cleanup Program Sites	0.5	0
CERCLIS	Comprehensive Environmental Response, Compensation, & Liability Information System	0.5	0
IC / EC	Institutional Control/Engineering Control	Site and adjoining properties	0

In addition to the above ASTM-required listings, Terracon reviewed other federal, state, local, and proprietary databases provided by the database firm. A list of the additional reviewed databases is included in the regulatory database report included in Appendix D.

The following table summarizes the site-specific information provided by the database and/or gathered by this office for identified facilities. Facilities are listed in order of proximity to the site. Additional discussion for selected facilities follows the summary table.

Listed Facilities

Facility Name And Location	Estimated Distance / Direction/Gradient	Database Listings	Is a REC, CREC, or HREC to the Site
Jefferson City Airport Terminal Building/ Jefferson Flying Service 500 Airport Road	Northwest adjoining / up-gradient	ASBESTOS, ECHO, NPDES, RCRA-NLR	No, see discussion below.

Facility Name And Location	Estimated Distance / Direction/Gradient	Database Listings	Is a REC, CREC, or HREC to the Site
Memorial Airport Missouri Aviation Hanger / Army Aviation Support Facility Memorial Airport 1225-1231 Cooper Street	Approximately 1,200 feet NE / up-gradient	LUST, UST	No, based on distance.

Jefferson City Airport Terminal Building / Jefferson Flying Service

Northern adjoining Jefferson City Airport Terminal Building and Jefferson Flying Service, located at 500 Airport Road was listed in the Asbestos, Enforcement and Compliance History Online (ECHO), National Pollutant Discharge Elimination System (NPDES), and RCRA non-generator/no longer regulated (NonGen/NLR) regulatory databases. According to the regulatory database, Jefferson City Airport Terminal Building was assessed for asbestos containing materials. Various materials were identified and subsequently abated associated with a demolition project. Jefferson Flying Service was listed as no longer regulated and does not presently generate hazardous wastes. Information regarding formerly generated wastes was not available.

In addition, Terracon reviewed the Missouri Department of Natural Resources (MDNR) E-START system for additional information on the property. According to E-START website, one open UST and five closed USTs are registered to the site. The following describes the tanks associated with the facility.

Tank	Capacity (gallons)	Contents	Install Date	Closure Date	Current Status
1	10,000	Jet Fuel	9/1/1989	N/A	Open
2	10,000	Other	N/A	N/A	Closed
3	10,000	Other	N/A	N/A	Closed
4	6,000	Gasoline	N/A	N/A	Closed
5	6,000	Gasoline	N/A	N/A	Closed
6	8,000	Gasoline	N/A	N/A	Closed

Although the airport adjoins the site to the north, the terminal and hangar buildings are located at least 1,600 feet northwest of the site. Based on regulatory status and the distance from the site, the Jefferson City Airport Terminal Building / Jefferson Flying Service database listings and registered USTs are not considered a REC. A map of the UST location can be found in Appendix F

The remaining facilities listed in the database report do not appear to represent RECs to the site at this time based upon regulatory status, apparent topographic gradient, and/or distance from the site.

Unmapped facilities

Unmapped facilities are those that do not contain sufficient address or location information to evaluate the facility listing locations relative to the site. The report did not list facilities in the unmapped section.

4.2 Local Agency Inquiries

Agency Contacted/ Contact Method	Response
Jefferson City Fire Department contacted by email (JTurner@jeffersoncitymo.gov) on October 19, 2022	Emily Donaldson with the City of Jefferson had no records indicating previous environmental impacts to the property.
Cole County Health Department contacted by email (mwelchmeyer@colecounty.com) on October 19, 2022	Kristi Campbell with the Cole County Health Department had no records indicating previous environmental impacts on the property.

4.3 Local Area Knowledge

Terracon reviewed the MDNR E-START mapper to assess if additional regulated facilities are located in the vicinity of the site. Based on this review, the west adjoining water treatment plant formerly operated one 7,300-gallon Ferric Chloride UST. The UST was removed in 1994 and a No Further Action Letter was issued. The NFA letter stated that the facility addressed the requirements for sites with minimal or no contamination. Although the parcel adjoins the site to the west, facility operations are located over 400 feet from the nearest site boundary; therefore, this facility is not considered a REC.

5.0 SITE RECONNAISSANCE

5.1 General Site Information

Information contained in this section is based on a visual reconnaissance conducted while walking through the site and the accessible interior areas of structures, if any, located on the site. The site and adjoining properties are depicted on the Site Diagram, which is included in Exhibit 2 of Appendix A. Photo documentation of the site at the time of the visual reconnaissance is provided in Appendix B. Credentials of the individuals planning and conducting the site visit are included in Appendix E.

General Site Information

Site Reconnaissance	
Field Personnel	Christina R. Bienz
Reconnaissance Date	October 17, 2022
Weather Conditions	Sunny and approximately 70 degrees Fahrenheit
Site Contact/Title	Eric Bowers / Airport Manager

5.2 Overview of Current Site Occupants

The site is an approximate 33.9-acre tract of land, addressed as 500 Airport Road, Jefferson City, Cole County, Missouri. The site is currently agricultural land.

5.3 Overview of Current Site Operations

The site is currently in use as a soybean field.

5.4 Site Observations

The following table summarizes site observations and interviews. Affirmative responses (designated by an "X") are discussed in more detail following the table.

Site Characteristics

Category	Item or Feature	Observed or Identified
Site Operations, Processes, and Equipment	Emergency generators	
	Elevators	
	Air compressors	
	Hydraulic lifts	
	Dry cleaning	
	Photo processing	
	Ventilation hoods and/or incinerators	
	Waste treatment systems and/or water treatment systems	
	Heating and/or cooling systems	
	Paint booths	
	Sub-grade mechanic pits	
	Wash-down areas or carwashes	
	Pesticide/herbicide production or storage	
	Printing operations	

Category	Item or Feature	Observed or Identified
	Metal finishing (e.g., electroplating, chrome plating, galvanizing, etc.)	
	Salvage operations	
	Oil, gas or mineral production	
	Other processes or equipment	
Aboveground Chemical or Waste Storage	Aboveground storage tanks	
	Drums, barrels and/or containers ≥ 5 gallons	
	MSDS or SDS	
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground storage tanks or ancillary UST equipment	
	Sumps, cisterns, French drains, catch basins and/or dry wells	
	Grease traps	
	Septic tanks and/or leach fields	
	Oil/water separators, clarifiers, sand traps, triple traps, interceptors	
	Pipeline markers	
	Interior floor drains	
Electrical Transformers/ PCBs	Transformers and/or capacitors	
	Other equipment	
Releases or Potential Releases	Stressed vegetation	
	Stained soil	
	Stained pavement or similar surface	
	Leachate and/or waste seeps	
	Trash, debris and/or other waste materials	
	Dumping or disposal areas	
	Construction/demolition debris and/or dumped fill dirt	
	Surface water discoloration, odor, sheen, and/or free floating product	
	Strong, pungent or noxious odors	
	Exterior pipe discharges and/or other effluent discharges	
Other Notable Site Features	Surface water bodies	
	Quarries or pits	
	Wastewater lagoons	
	Wells	

The above referenced features were not observed on site during the site reconnaissance.

6.0 ADJOINING PROPERTY RECONNAISSANCE

Visual observations of adjoining properties (from site boundaries) are summarized below.

Adjoining Properties

Direction	Description
North	Soybean field and runway associated with airport.
East	Soybean field.
South	Mokane Road followed by soybean field.
West	Wheat field, airplane hanger scrap pile, and soil pile followed by Aviation Drive and wastewater treatment plant (401 Mokane Road).

RECs were not observed with the current adjoining properties.

7.0 ADDITIONAL SERVICES

Per the agreed scope of services specified in the proposal, additional services (e.g. asbestos sampling, lead-based paint sampling, wetlands evaluation, lead in drinking water testing, radon testing, vapor encroachment screening, etc.) were not conducted.

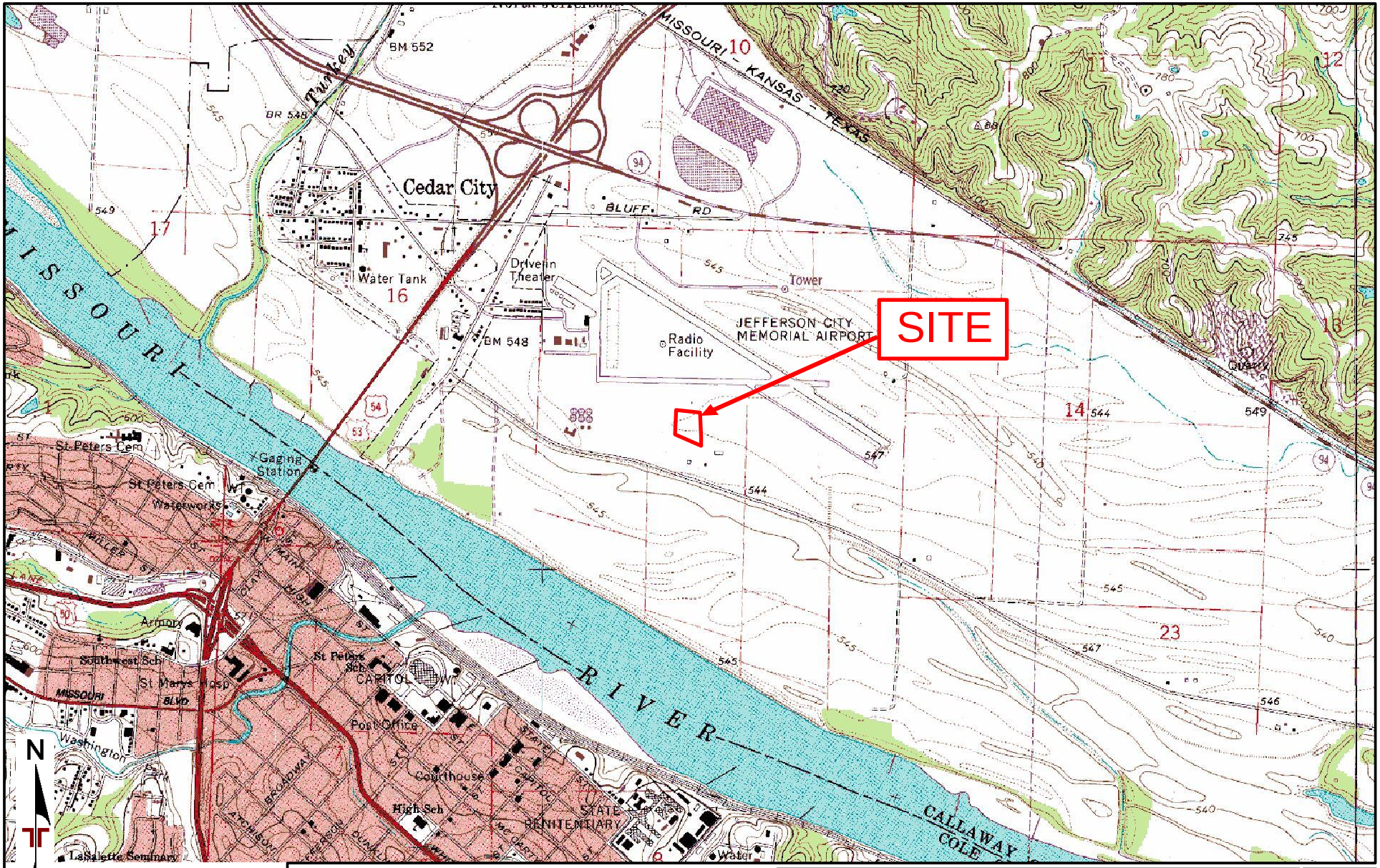
8.0 DECLARATION

I, Nicole V. Azmanov, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312; and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the site. I have developed and performed the All Appropriate Inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Nicole V. Azmanov
Due Diligence Manager

APPENDIX A

EXHIBIT 1 - TOPOGRAPHIC MAP
EXHIBIT 2 – SITE DIAGRAM



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: JEFFERSON CITY, MO (1/1/1981) and OSAGE CITY, MO (1/1/1981).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	CB
Drawn by:	DR
Checked by:	NA
Approved by:	NA

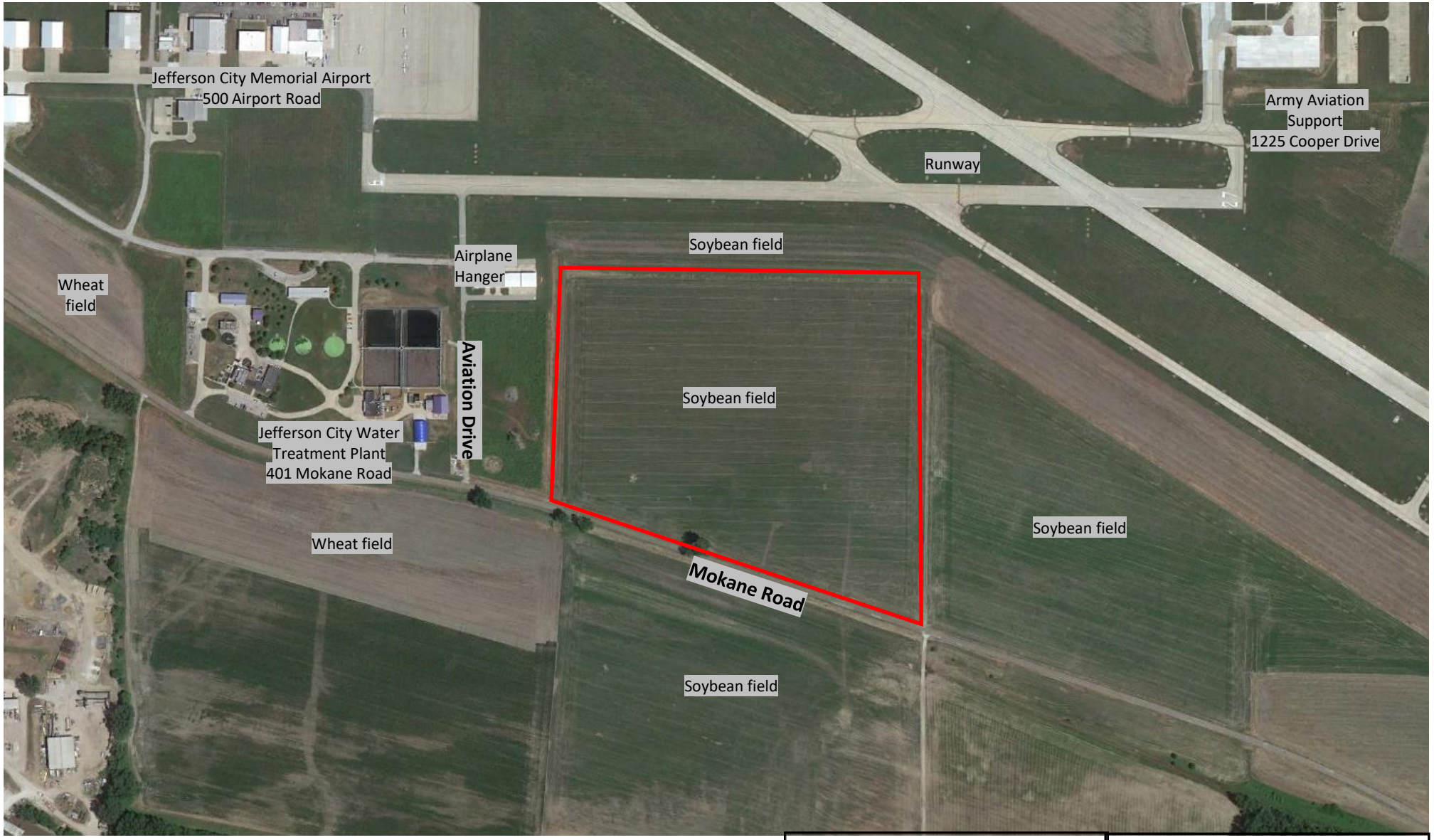
Project No.	15227245
Scale:	1"=2,000'
File Name:	
Date:	10/25/2022

Terracon
11600 Lilburn Park Rd
Saint Louis, MO 63146-3535

TOPOGRAPHIC MAP

Jeff City Airport Project
East Aviation Drive and Northeast Mokane Road Jefferson City, MO
Jefferson City, Missouri

Exhibit 1



LEGEND

- SITE BOUNDARY

Source: Google Earth: 2021

N

240’ 480’

Terracon

Exhibit 2
Site Diagram
Jeff City Airport Project
500 Airport Road
Jefferson City, Missouri

APPENDIX B

PROPERTY PHOTOGRAPHS FROM SITE RECONNAISSANCE

Photo 1 View across the northern portion of the site.

Photo 2 View across the southern portion of the site.

Photo 3 View along the eastern site boundary.

Photo 4 View along the western site boundary.

Photo 5 View of northern adjoining agricultural field, followed by the airport runway.

Photo 6 View of the eastern adjoining agricultural field.

Photo 7 View of Mokane Road to the south, followed by an agricultural field.

Photo 8 View of the airplane hangar and wheat field to the west.

APPENDIX C

SUPPORTING DOCUMENTATION

Jeff City Airport Project

500 Airport Road

Jefferson City, MO 65101

Inquiry Number: 7148420.3

October 14, 2022

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/14/22

Site Name:

Jeff City Airport Project
500 Airport Road
Jefferson City, MO 65101
EDR Inquiry # 7148420.3

Client Name:

Terracon
7770 West New York Street
Indianapolis, IN 46214
Contact: Danielle Richardson

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Terracon were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 58CE-4CE9-80DE

PO # 15227245

Project Jeff City Airport Project

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 58CE-4CE9-80DE

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

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Jeff City Airport Project

500 Airport Road

Jefferson City, MO 65101

Inquiry Number: 7148420.4

October 18, 2022

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/18/22

Site Name:

Jeff City Airport Project
500 Airport Road
Jefferson City, MO 65101
EDR Inquiry # 7148420.4

Client Name:

Terracon
7770 West New York Street
Indianapolis, IN 46214
Contact: Danielle Richardson

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Terracon were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 15227245

Project: Jeff City Airport Project

Coordinates:

Latitude:	38.588171 38° 35' 17" North
Longitude:	-92.1599 -92° 9' 36" West
UTM Zone:	Zone 15 North
UTM X Meters:	573166.13
UTM Y Meters:	4271411.67
Elevation:	541.00' above sea level

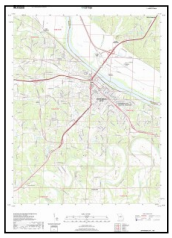
Maps Provided:

2017	1939
2015	1894
1981	1886
1980	
1974	
1967	
1942	
1940	

Topo Sheet Key

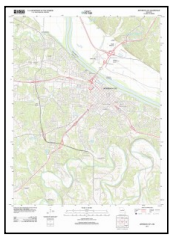
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2017 Source Sheets



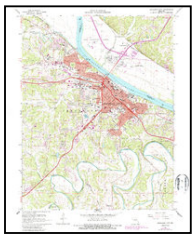
Jefferson City
2017
7.5-minute, 24000

2015 Source Sheets



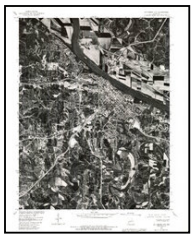
Jefferson City
2015
7.5-minute, 24000

1981 Source Sheets



Jefferson City
1981
7.5-minute, 24000
Aerial Photo Revised 1980

1980 Source Sheets



Jefferson City
1980
7.5-minute, 24000
Aerial Photo Revised 1980

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1974 Source Sheets

Jefferson City
1974
7.5-minute, 24000
Aerial Photo Revised 1974

1967 Source Sheets

Jefferson City
1967
7.5-minute, 24000
Aerial Photo Revised 1965

1942 Source Sheets

Jefferson City
1942
15-minute, 62500

1940 Source Sheets

JEFFERSON CITY
1940
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1939 Source Sheets

Jefferson City
1939
7.5-minute, 24000

1894 Source Sheets

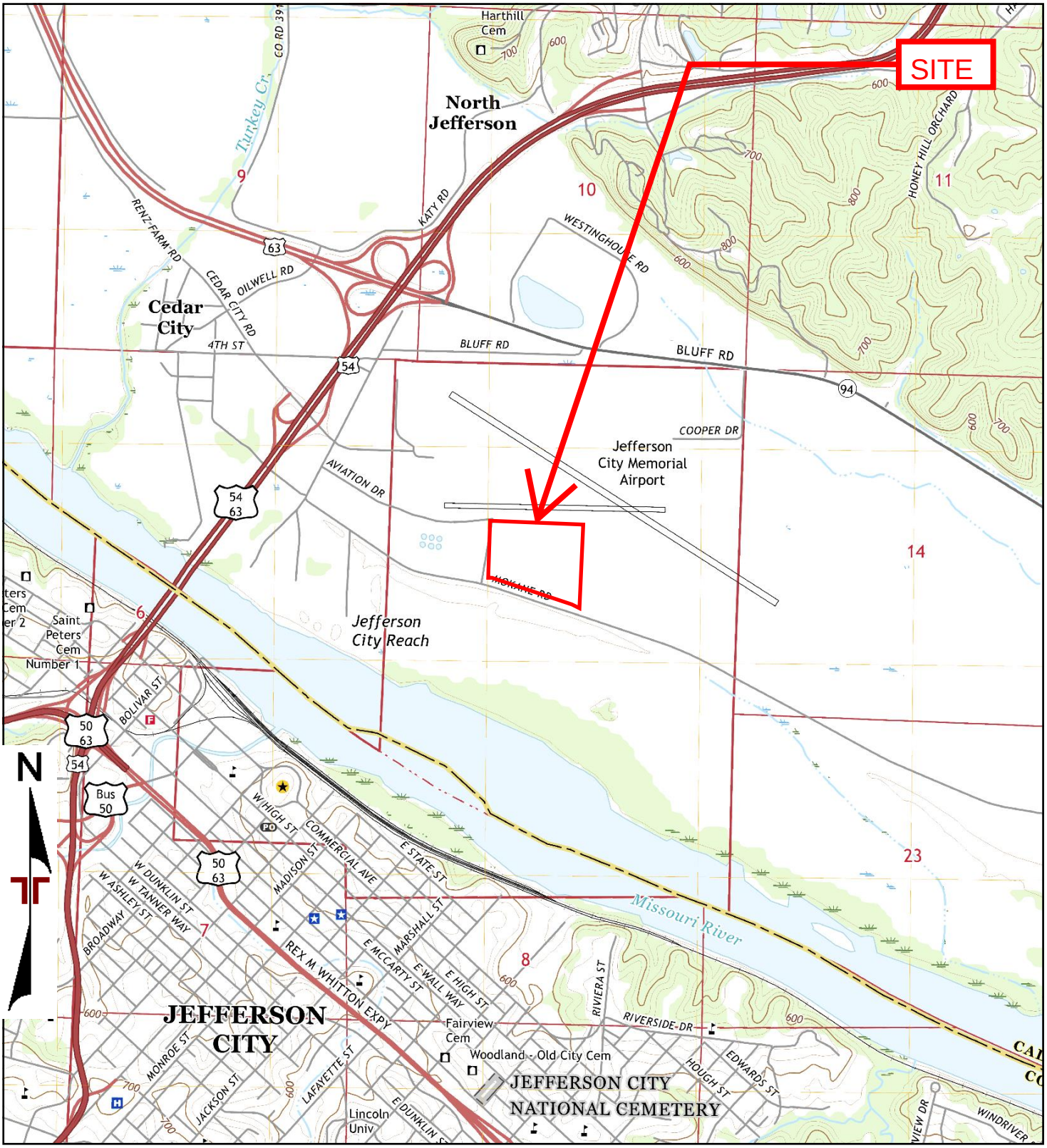
Jefferson City
1894
30-minute, 125000

1886 Source Sheets

Jefferson City
1886
30-minute, 125000

Topographic Map

2017



TP, Jefferson City, 2017, 7.5-minute

0 Miles 0.25 0.5 1 1.5

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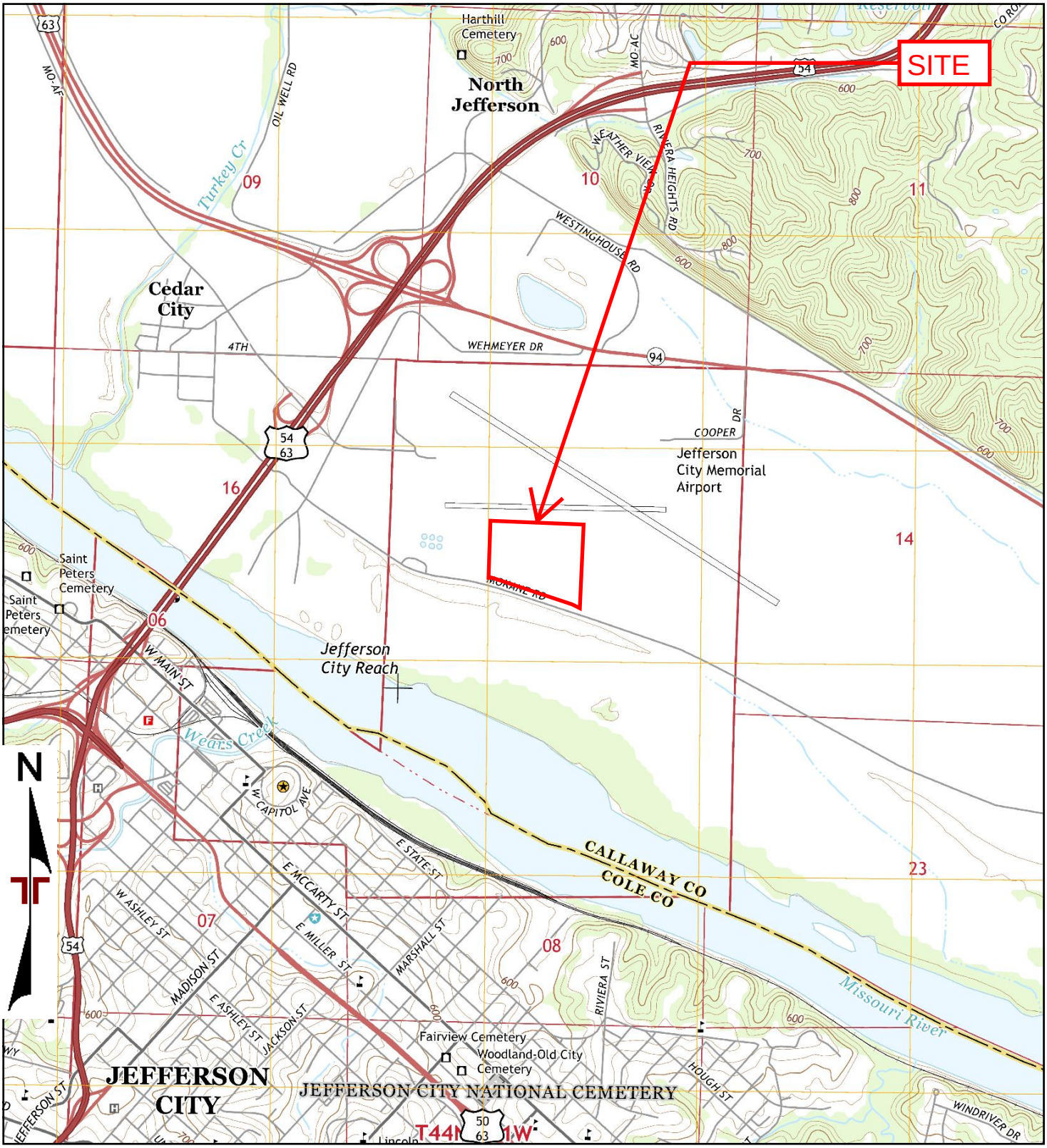
Checked by:	File Name:		
Approved by:	Date: 2017		



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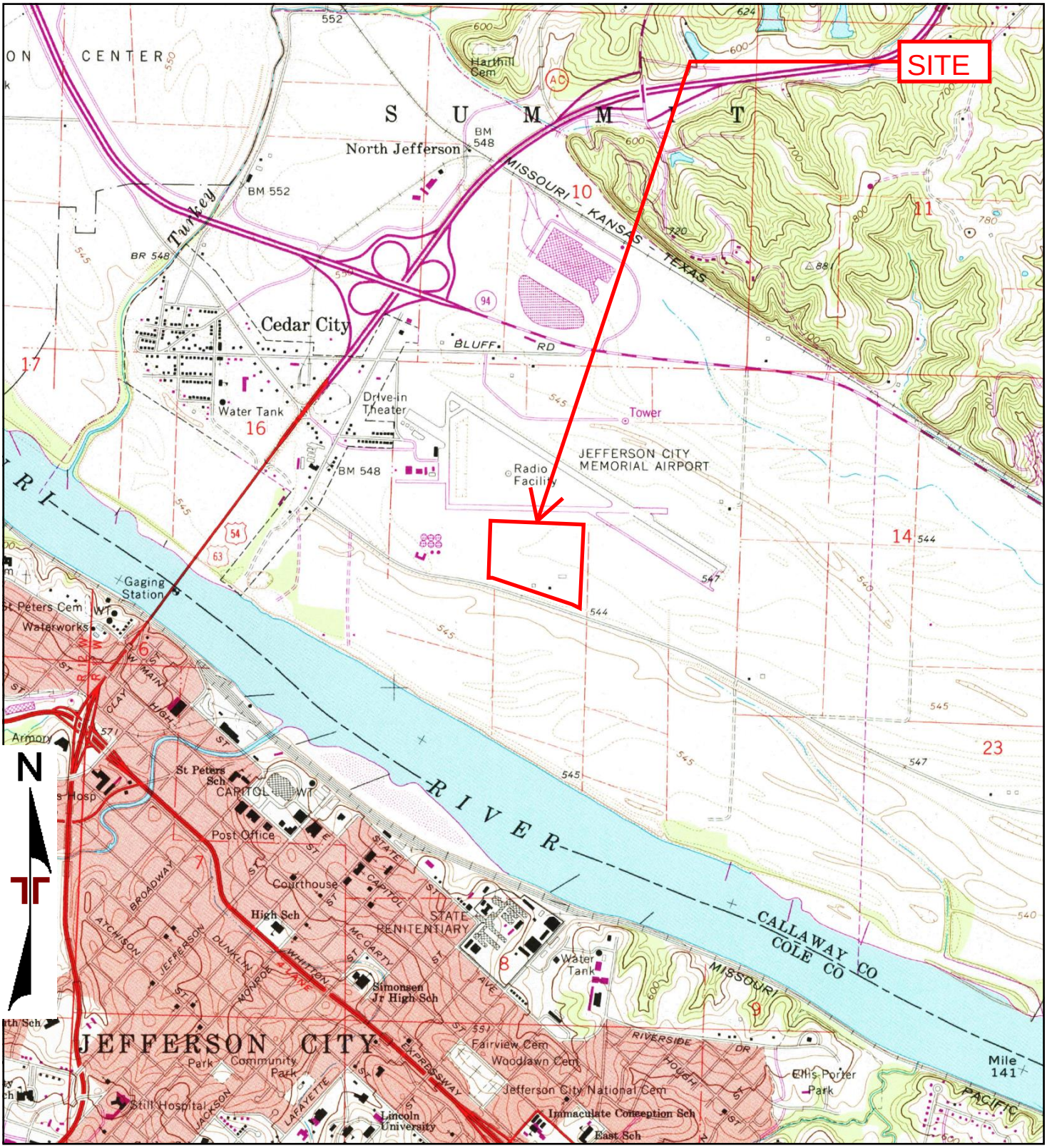
Approved by:	Date: 2015		



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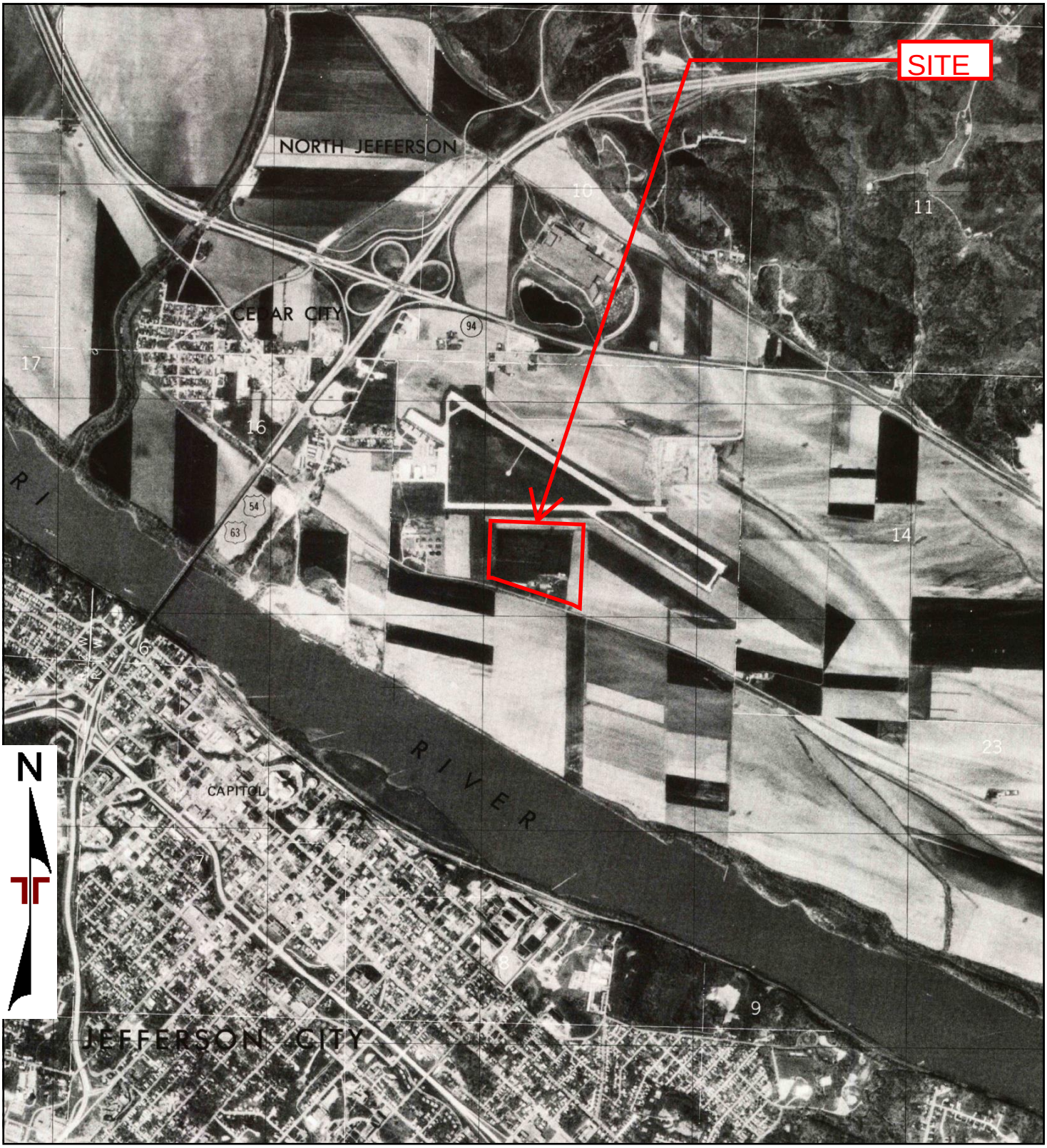
Approved by:	Date: 1981		



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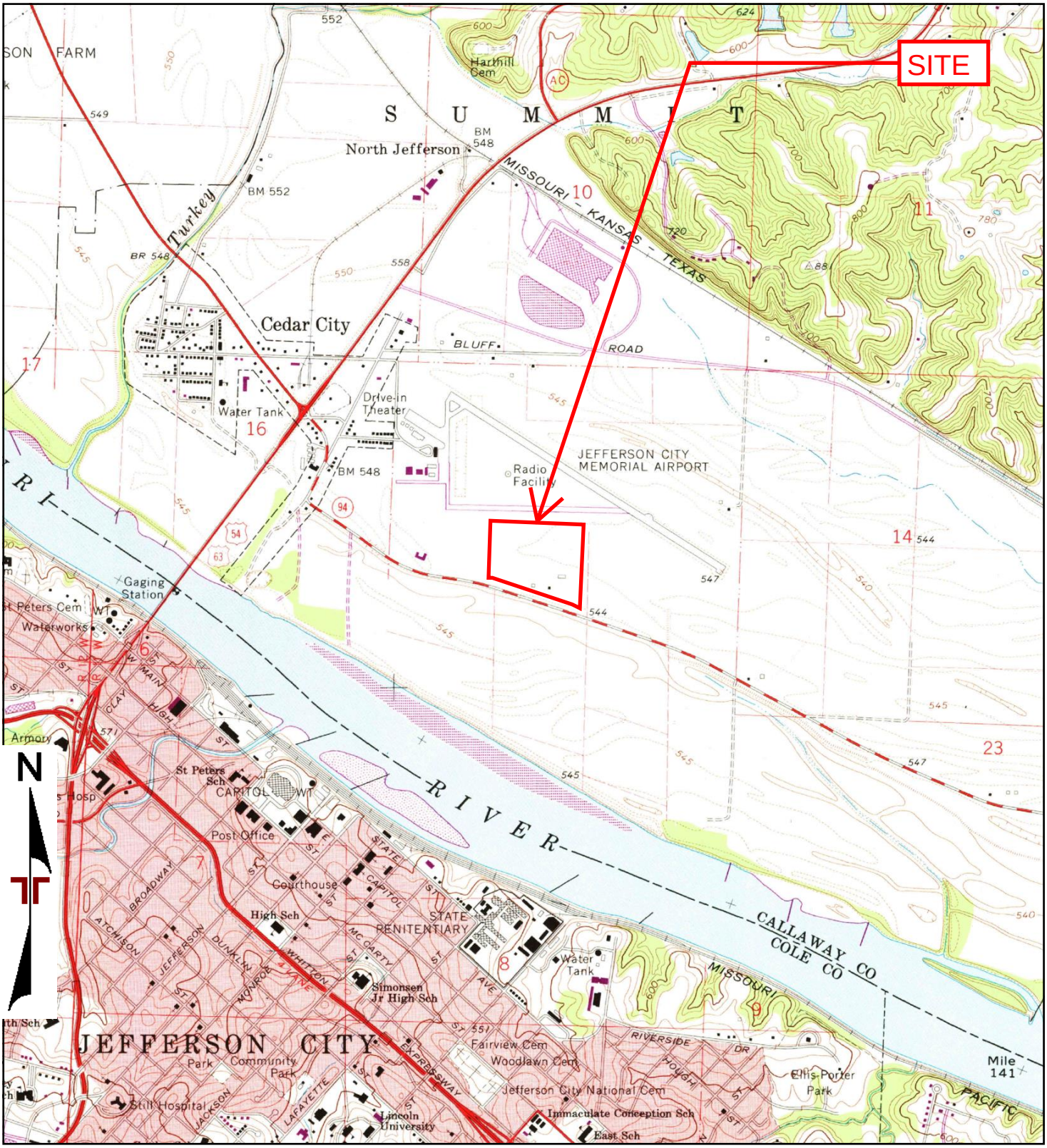

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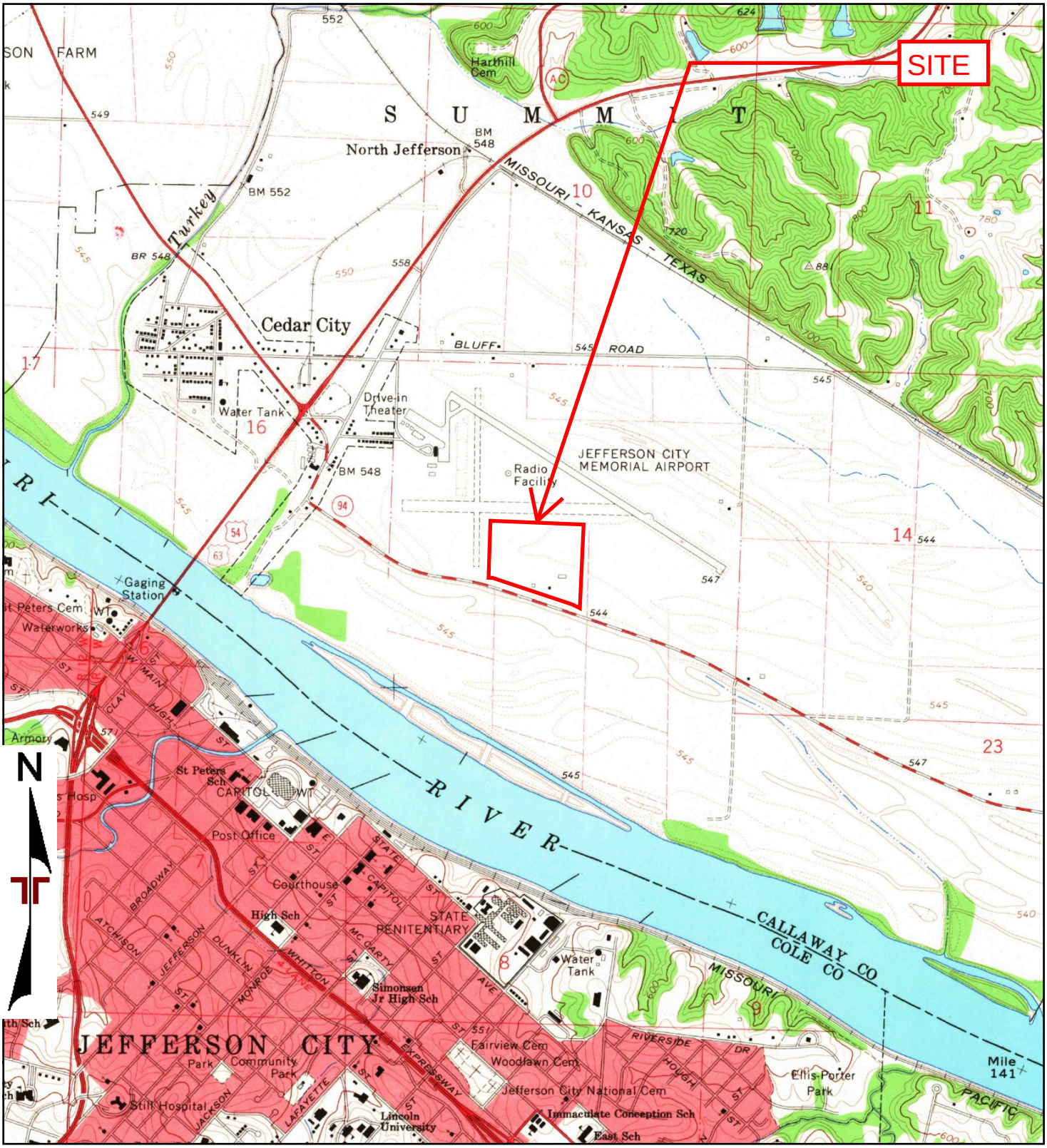
Approved by:	Date: 1974		



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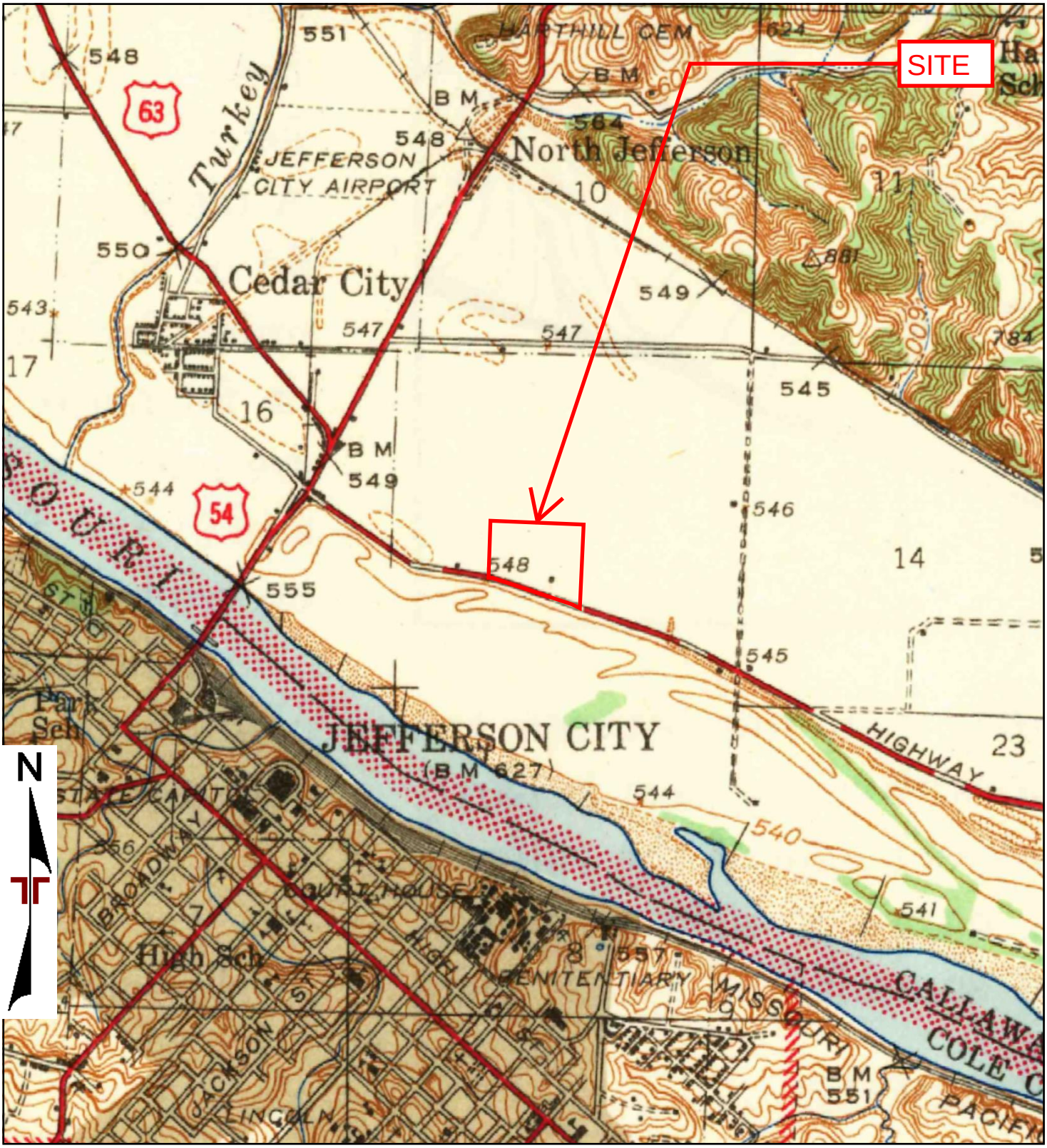
Approved by:	Date: 1967		



TP, Jefferson City, 1942, 15-minute

0 Miles 0.25 0.5 1 1.5

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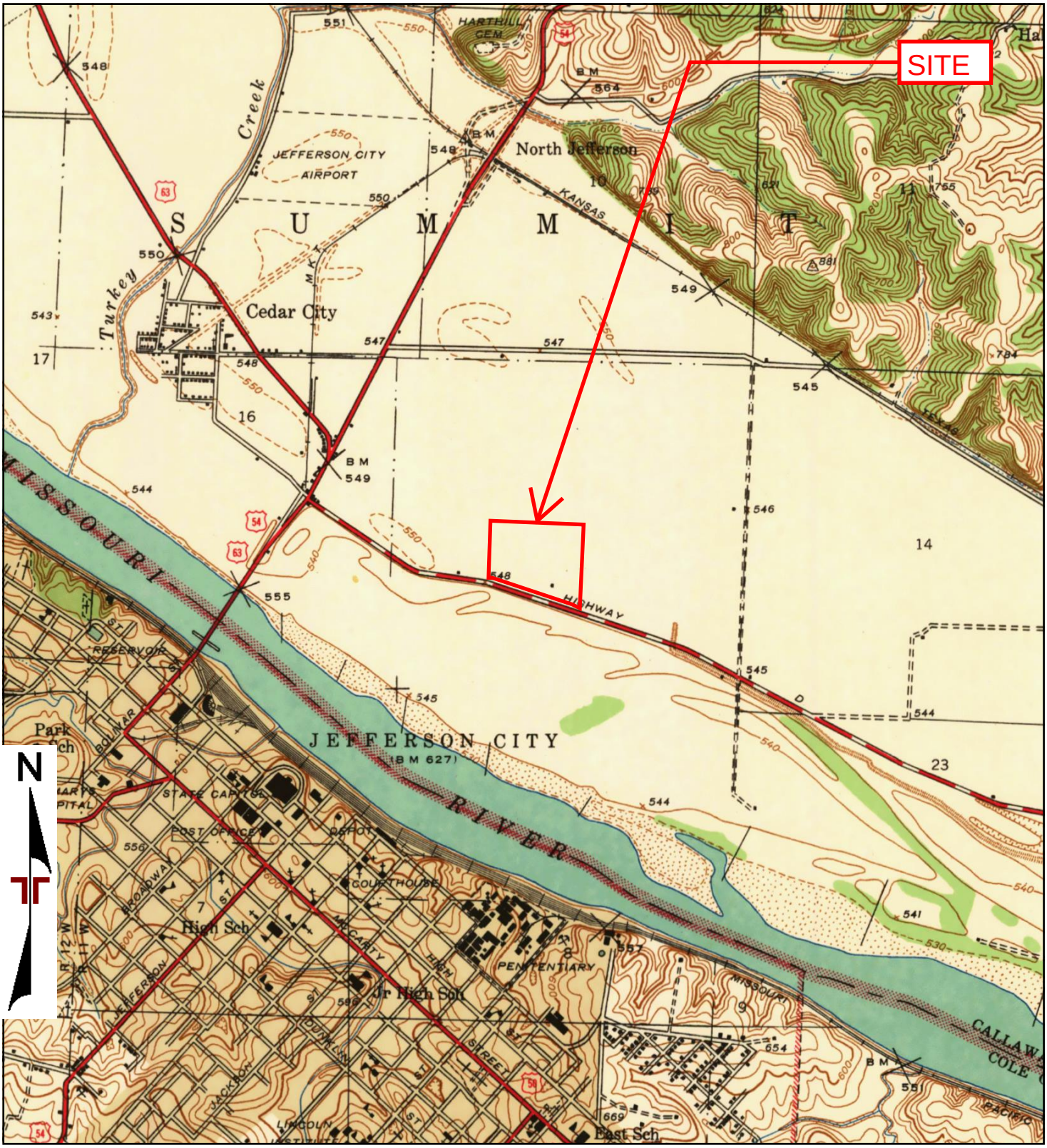
Approved by:	Date: 1942		



TP, JEFFERSON CITY, 1940, 7.5-minute

0 Miles 0.25 0.5 1 1.5

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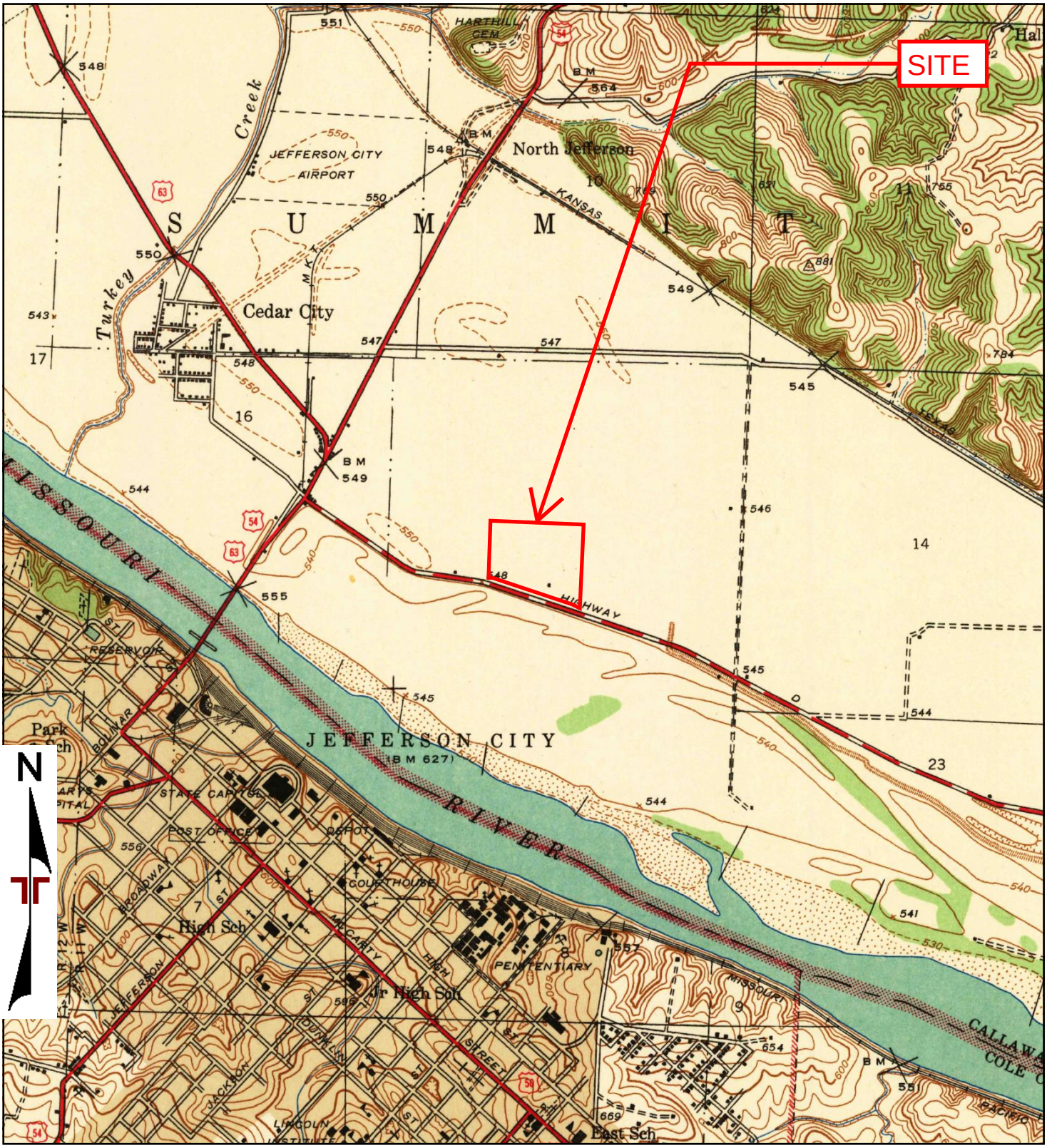
Approved by:	Date: 1940		



TP, Jefferson City, 1939, 7.5-minute

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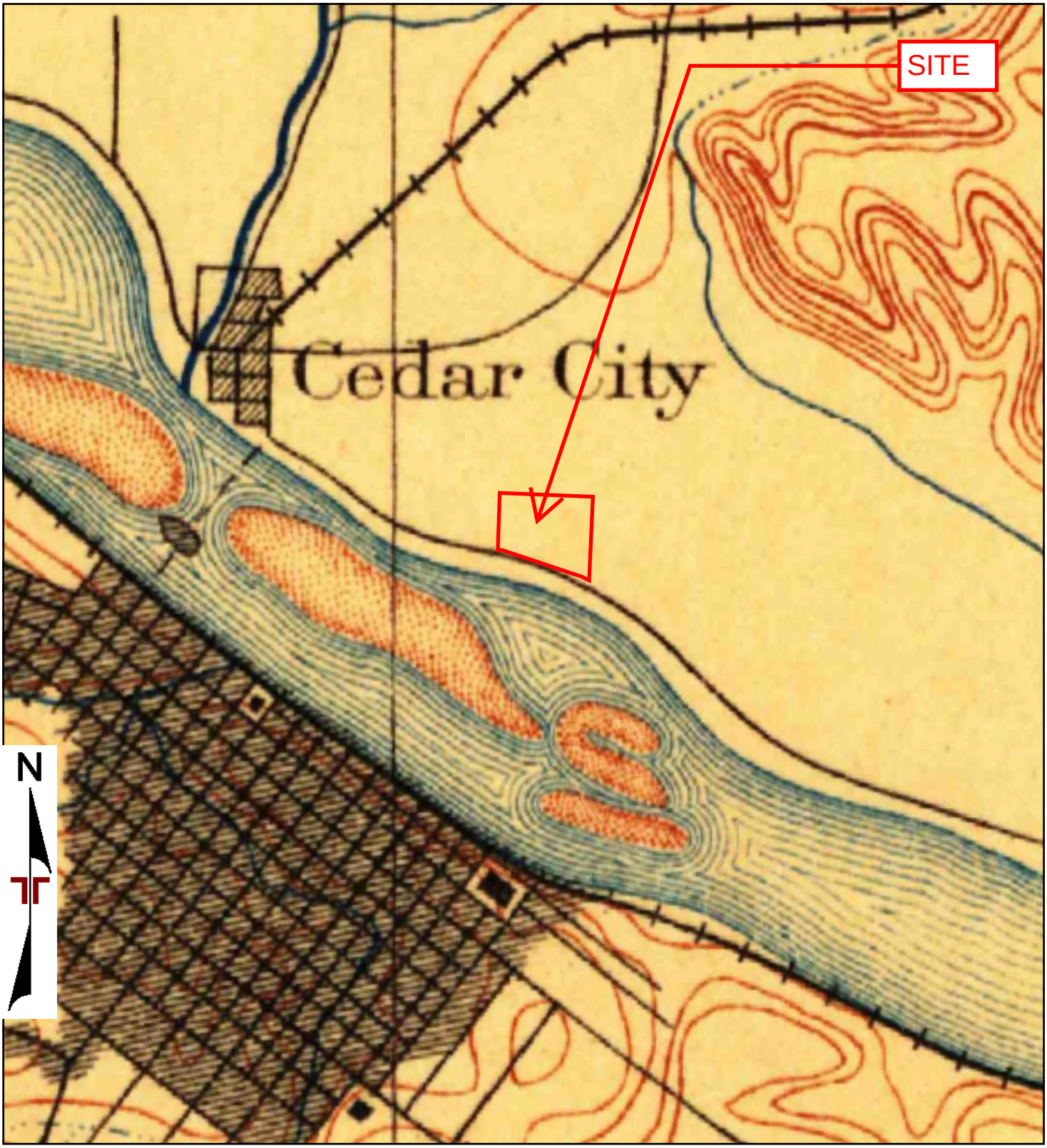
Approved by:	Date: 1939		



TP, Jefferson City, 1894, 30-minute

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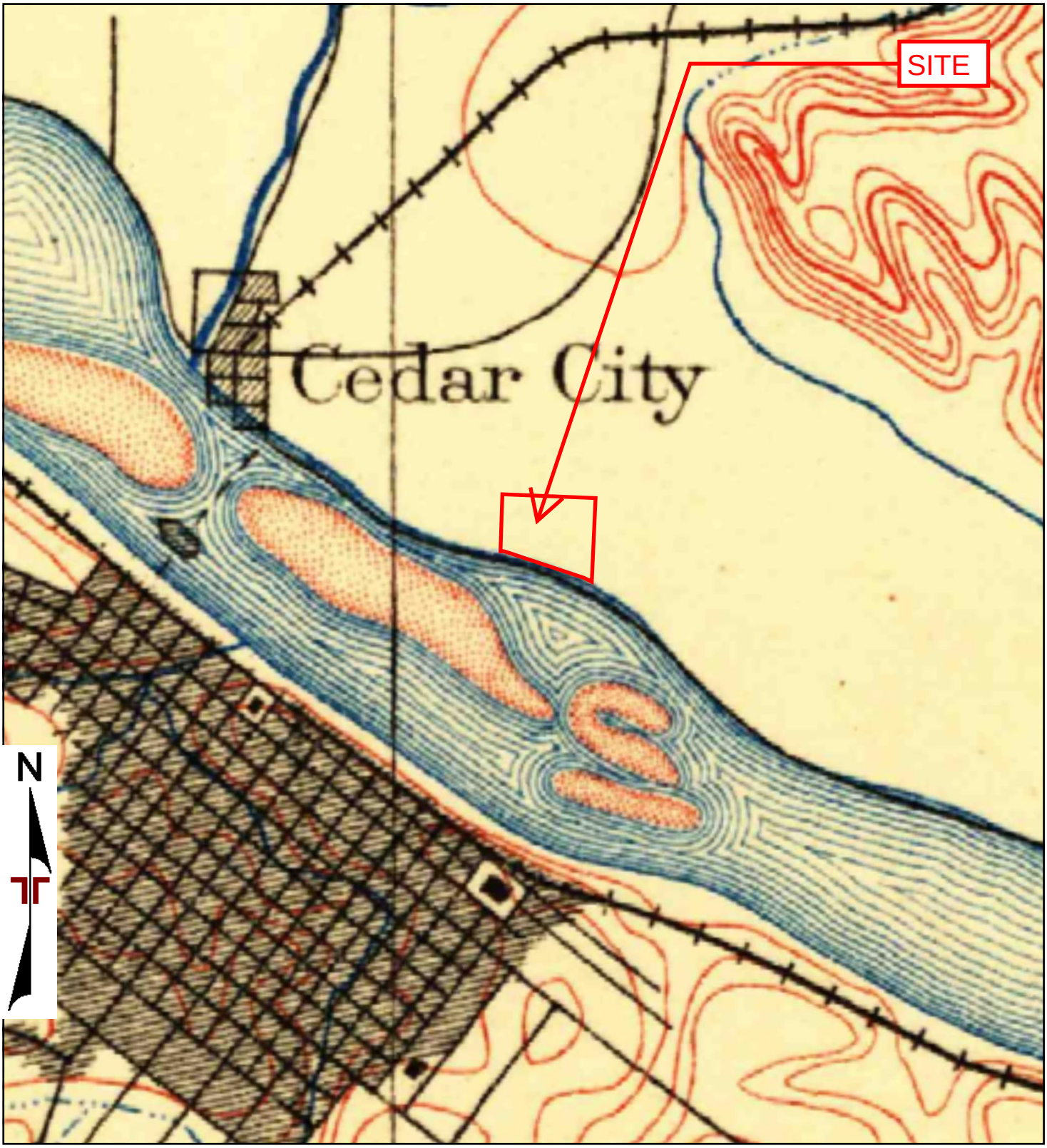
Approved by:	Date: 1894		



TP, Jefferson City, 1886, 30-minute

0 Miles 0.25 0.5 1 1.5

Project Manager:	Project No.	Terracon	1886 TOPOGRAPHIC MAP
Drawn by:	Scale:		
Checked by:	File Name:		
Approved by:	Date: 1886		

Jeff City Airport Project

500 Airport Road

Jefferson City, MO 65101

Inquiry Number: 7148420.8

October 19, 2022

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/19/22

Site Name:

Jeff City Airport Project
500 Airport Road
Jefferson City, MO 65101
EDR Inquiry # 7148420.8

Client Name:

Terracon
7770 West New York Street
Indianapolis, IN 46214
Contact: Danielle Richardson

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1995	1"=500'	Acquisition Date: January 01, 1995	USGS/DOQQ
1991	1"=500'	Acquisition Date: January 01, 1991	USGS/DOQQ
1986	1"=500'	Flight Date: March 22, 1986	USDA
1980	1"=500'	Flight Date: March 18, 1980	USGS
1976	1"=500'	Flight Date: March 13, 1976	USGS
1974	1"=500'	Flight Date: March 26, 1974	USGS
1965	1"=500'	Flight Date: April 07, 1965	USGS
1956	1"=500'	Flight Date: March 08, 1956	USGS

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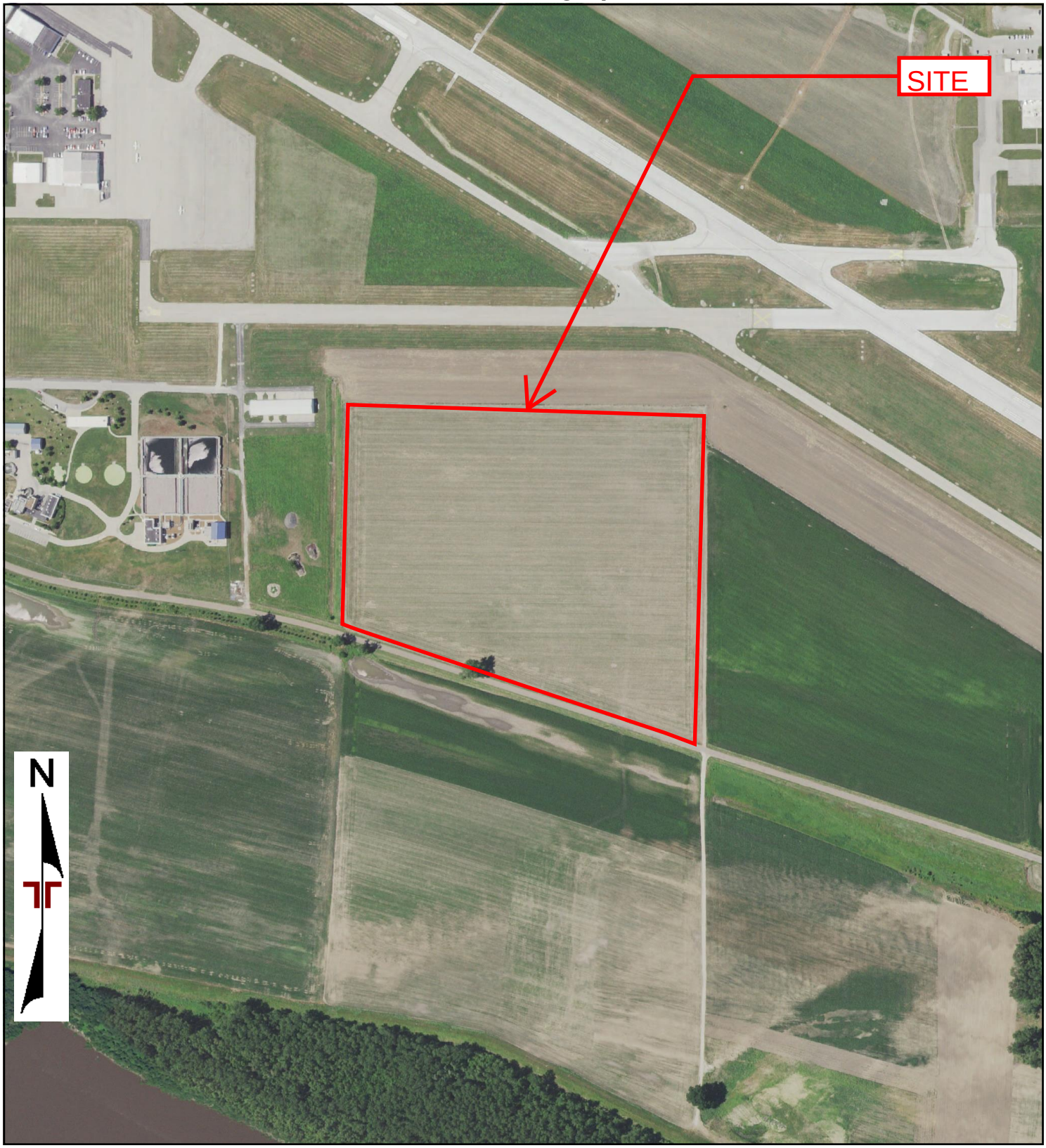

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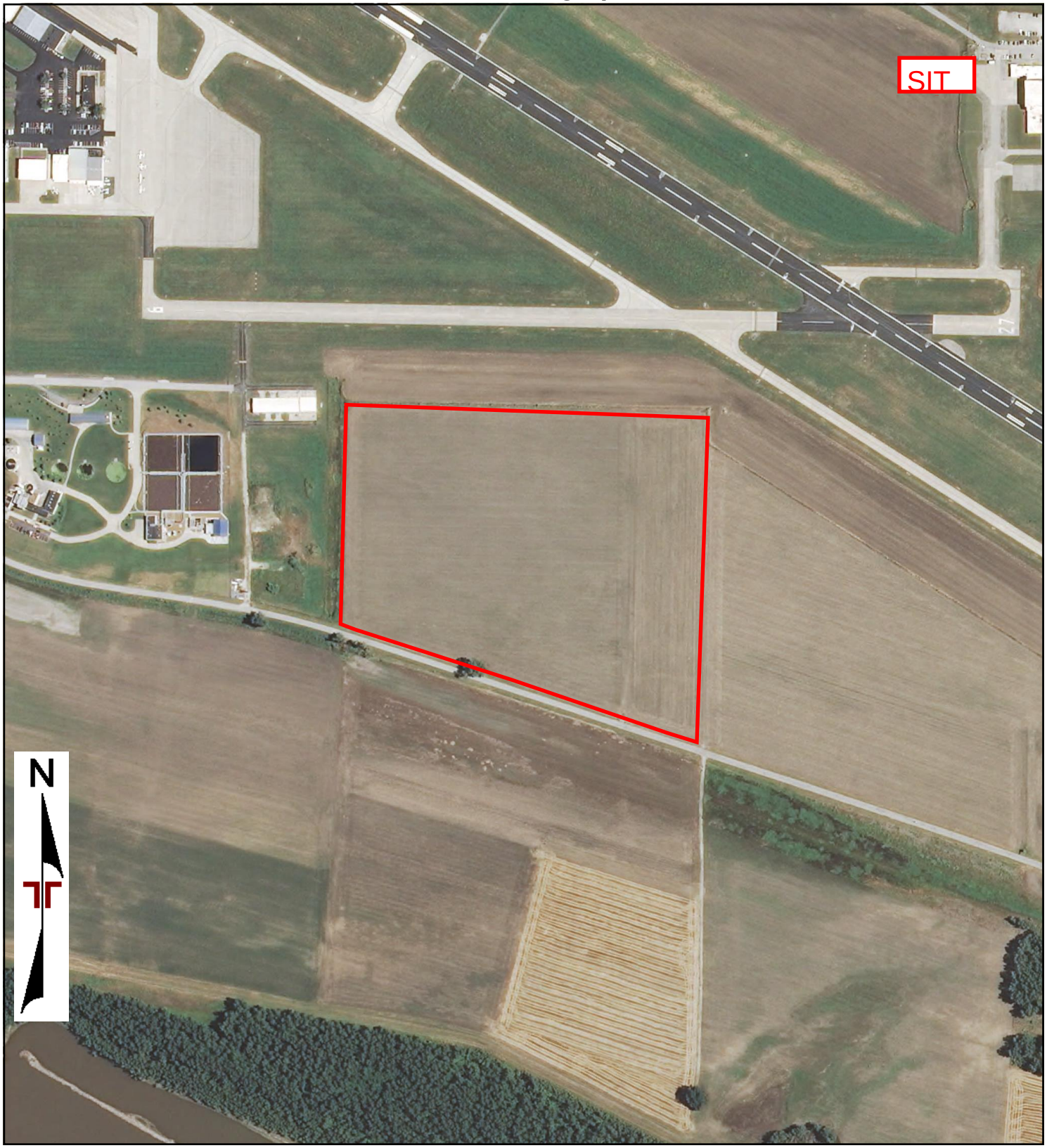
Approved By:	Date: 2016		



0 Feet 500 1000 2000

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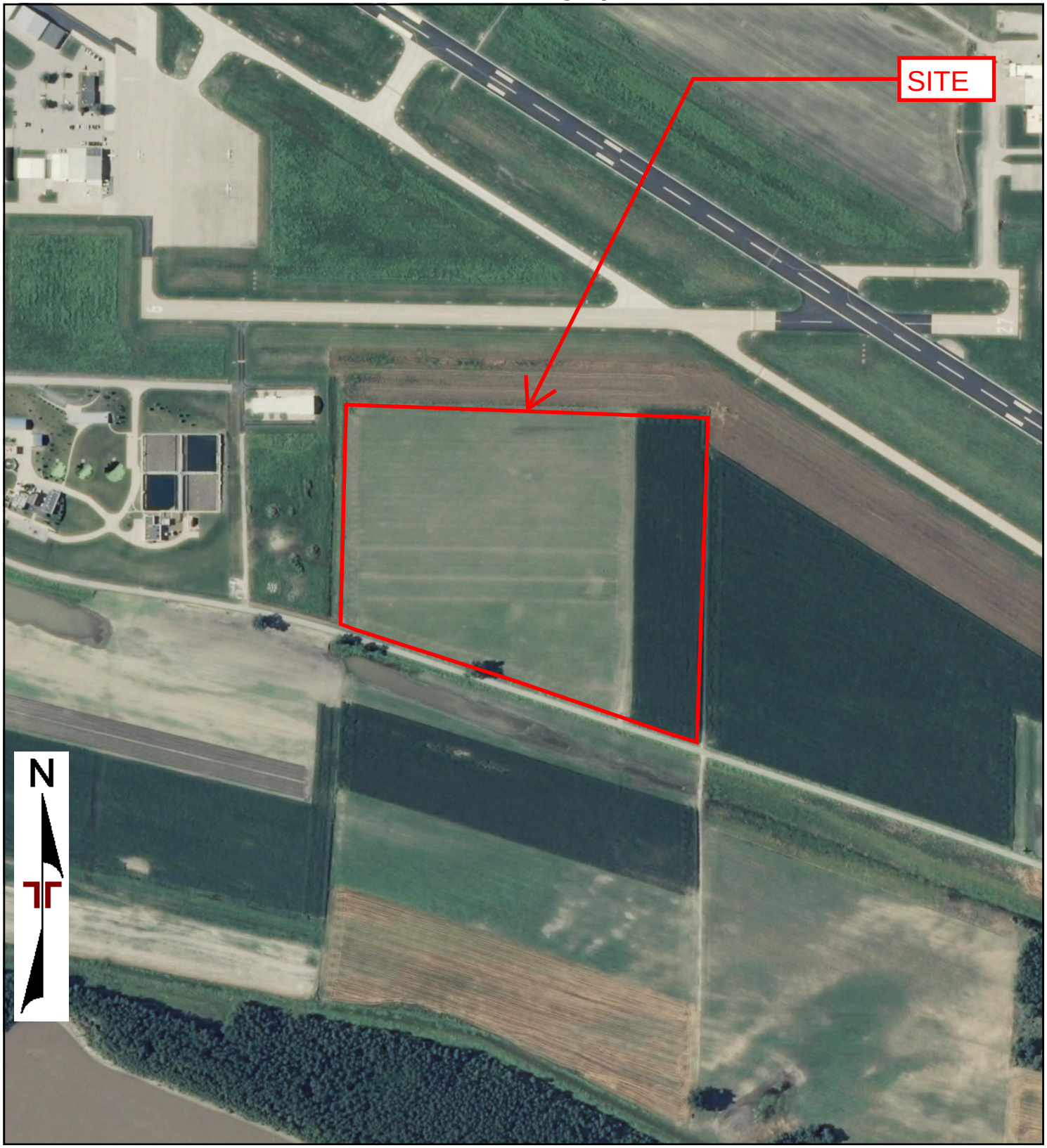
Approved By:	Date: 2012		



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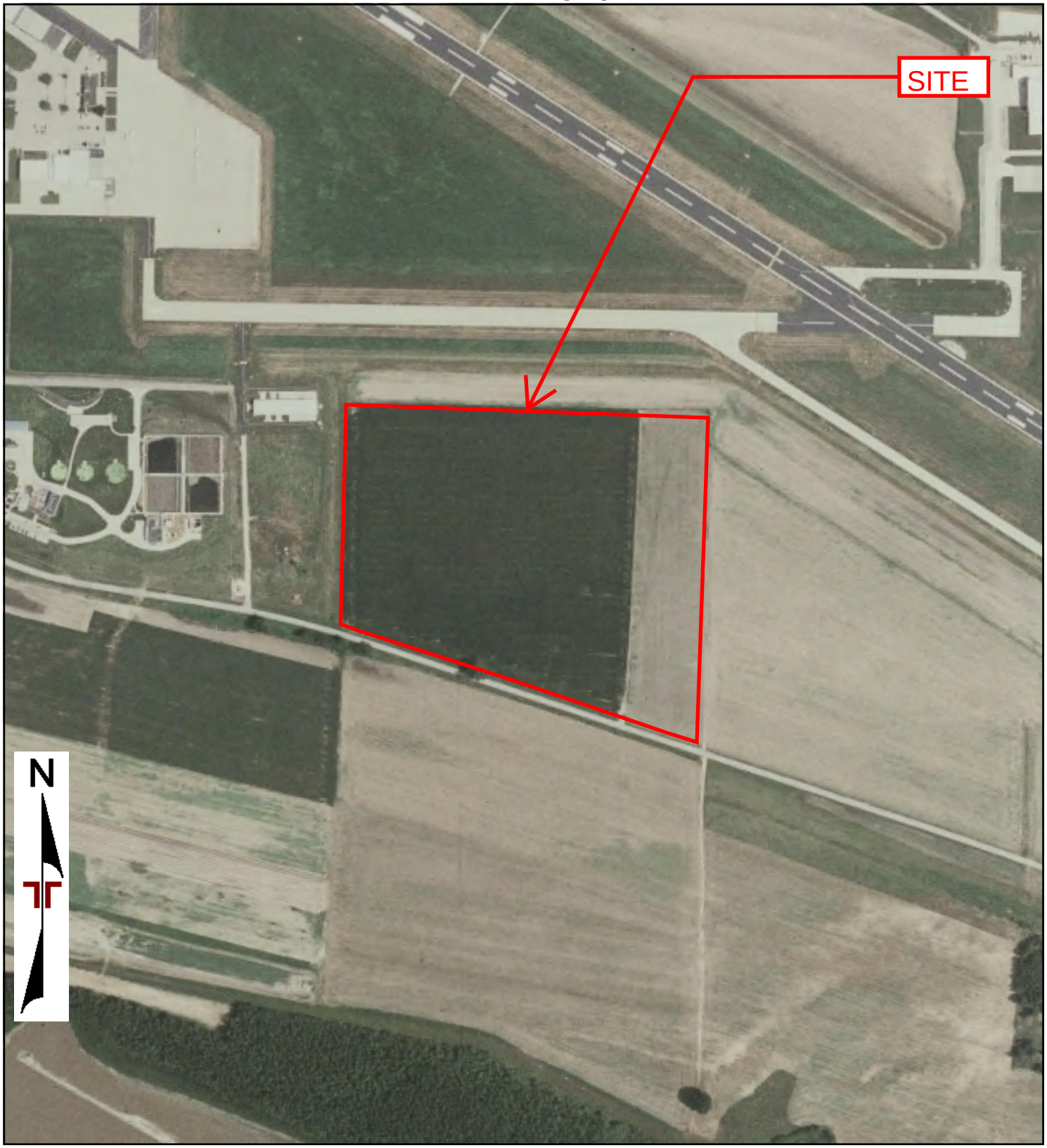
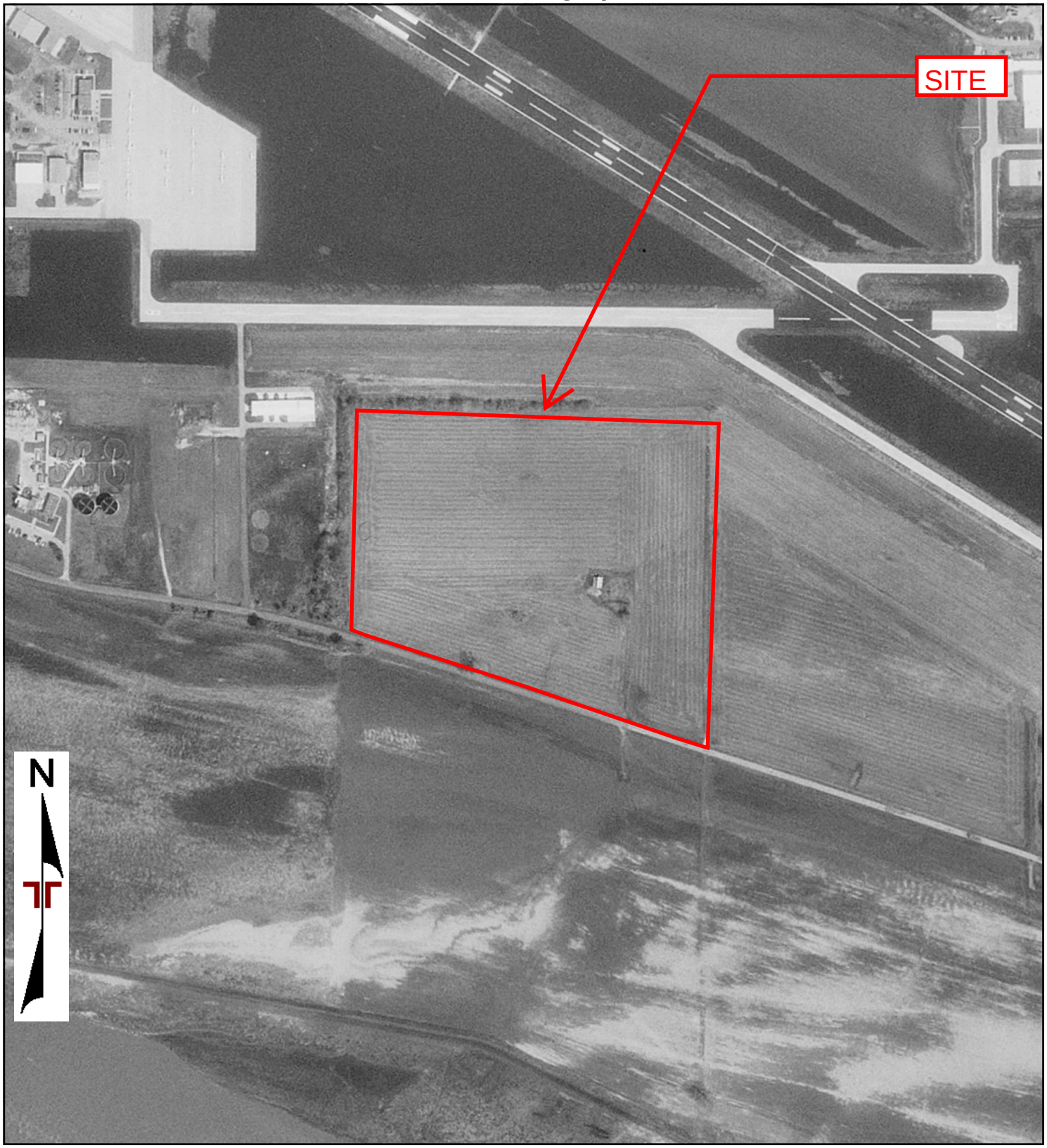
Approved By:	Date: 2009		



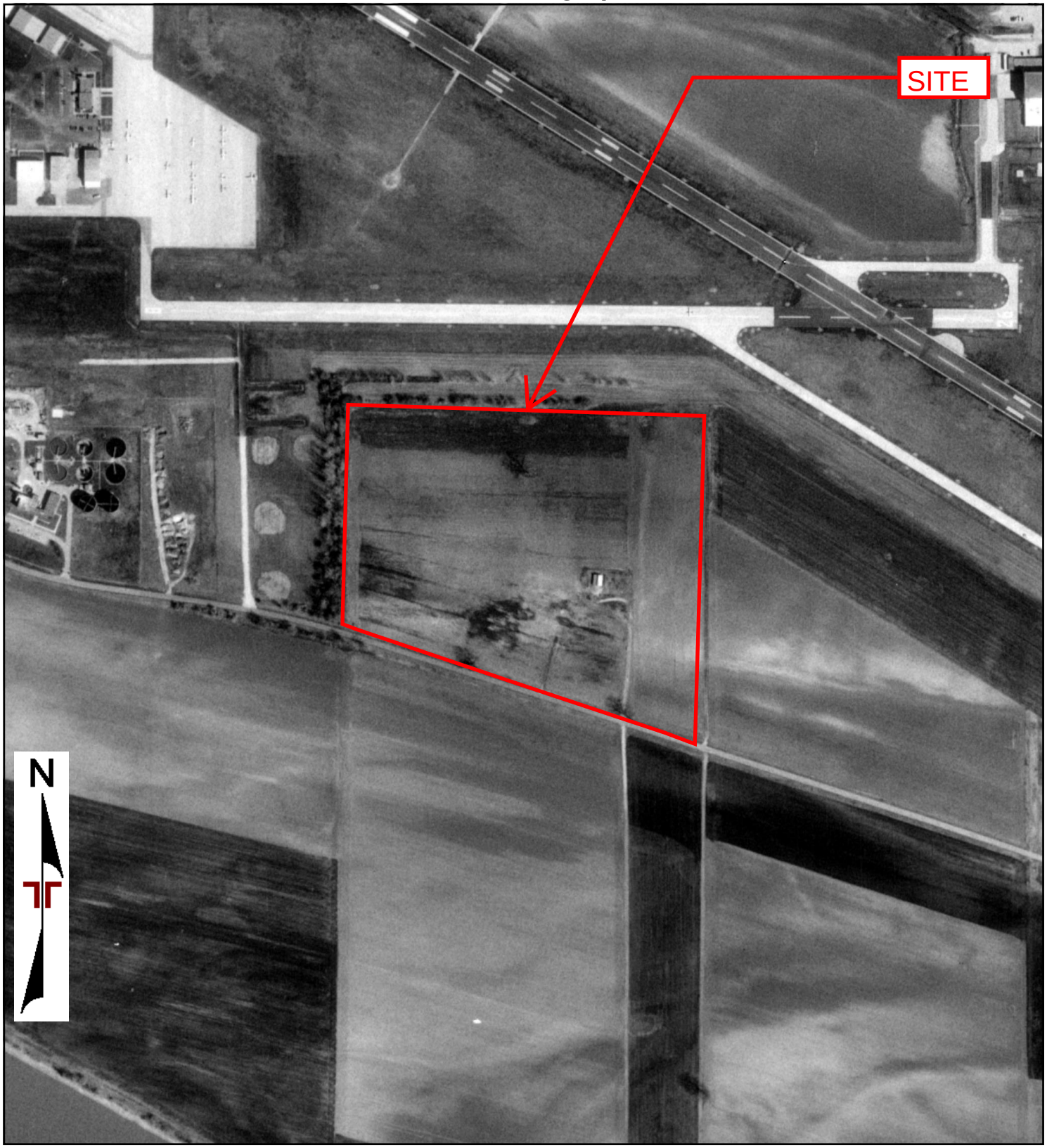
0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	2006 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 2006		



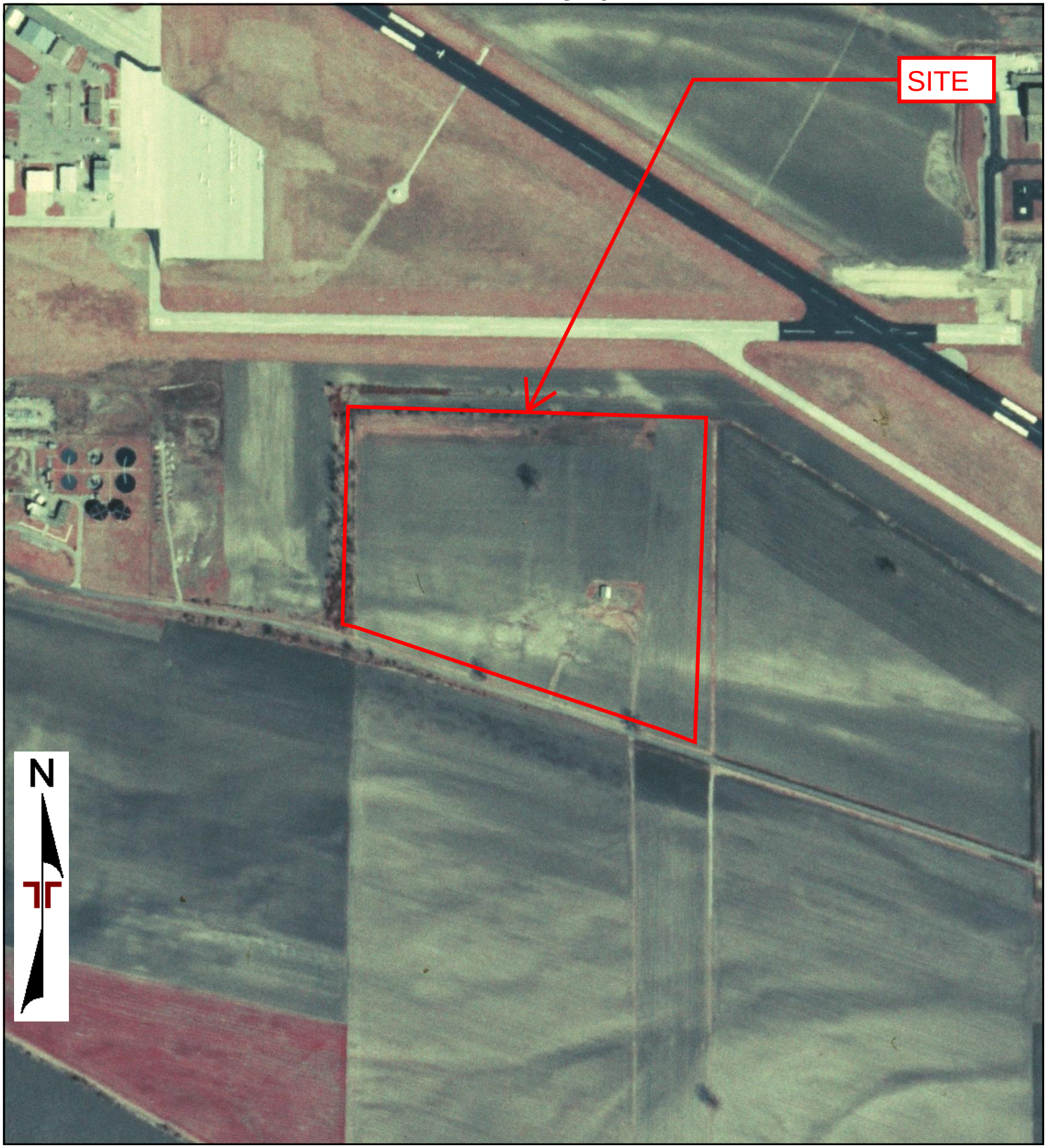
0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1995 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1995		



0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1991 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1991		

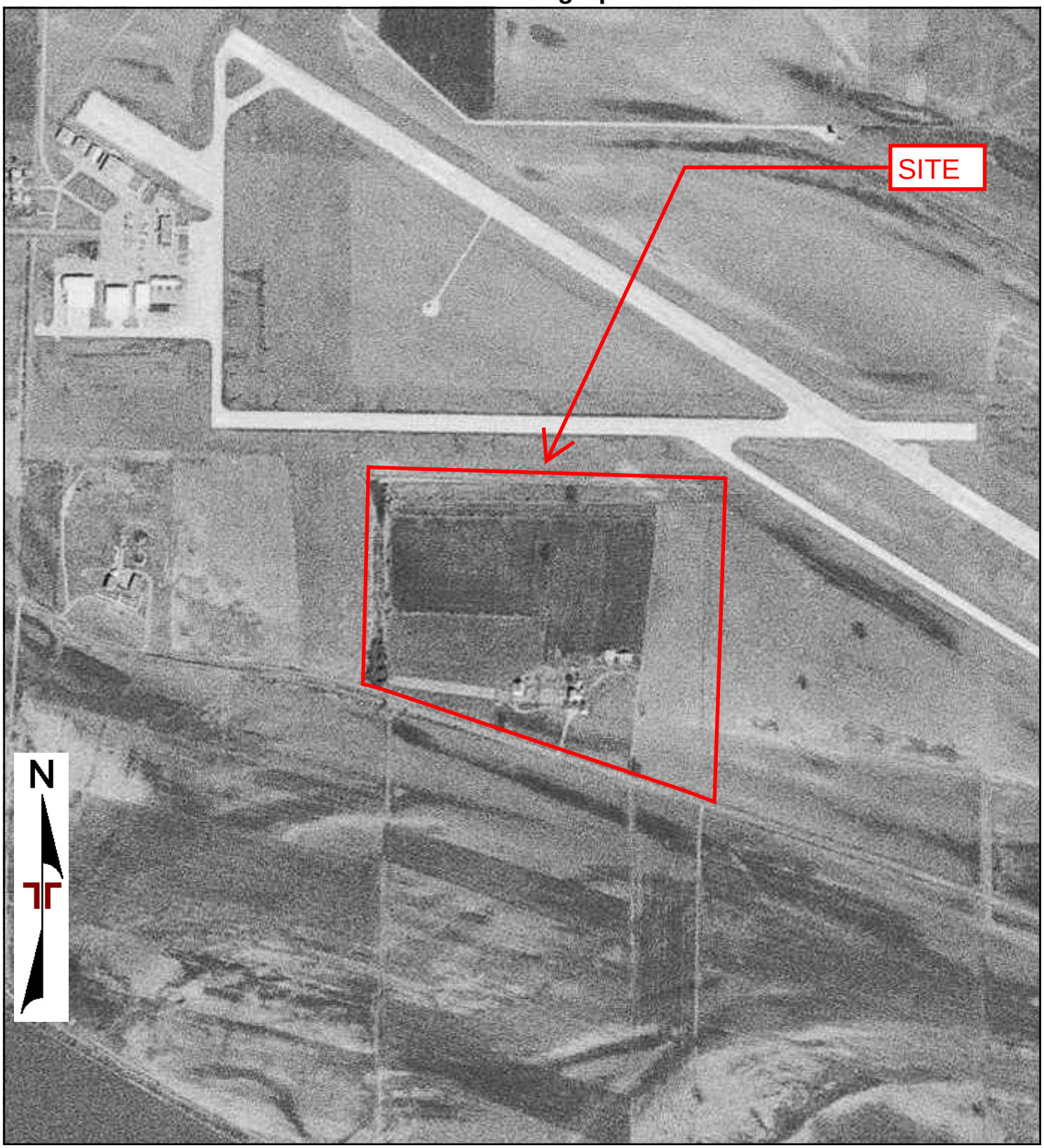


0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1986 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1986		

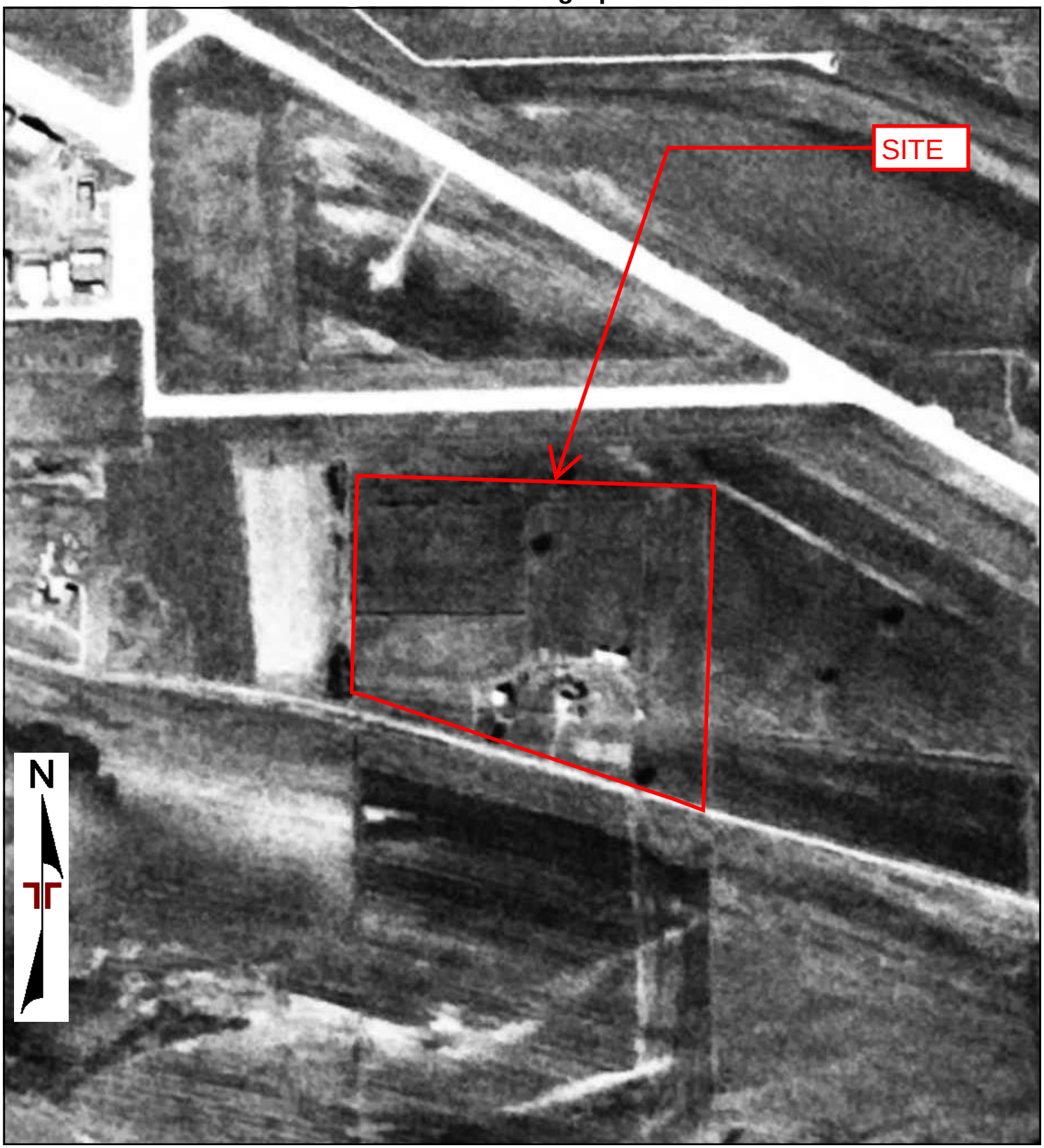
0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1980 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1980		



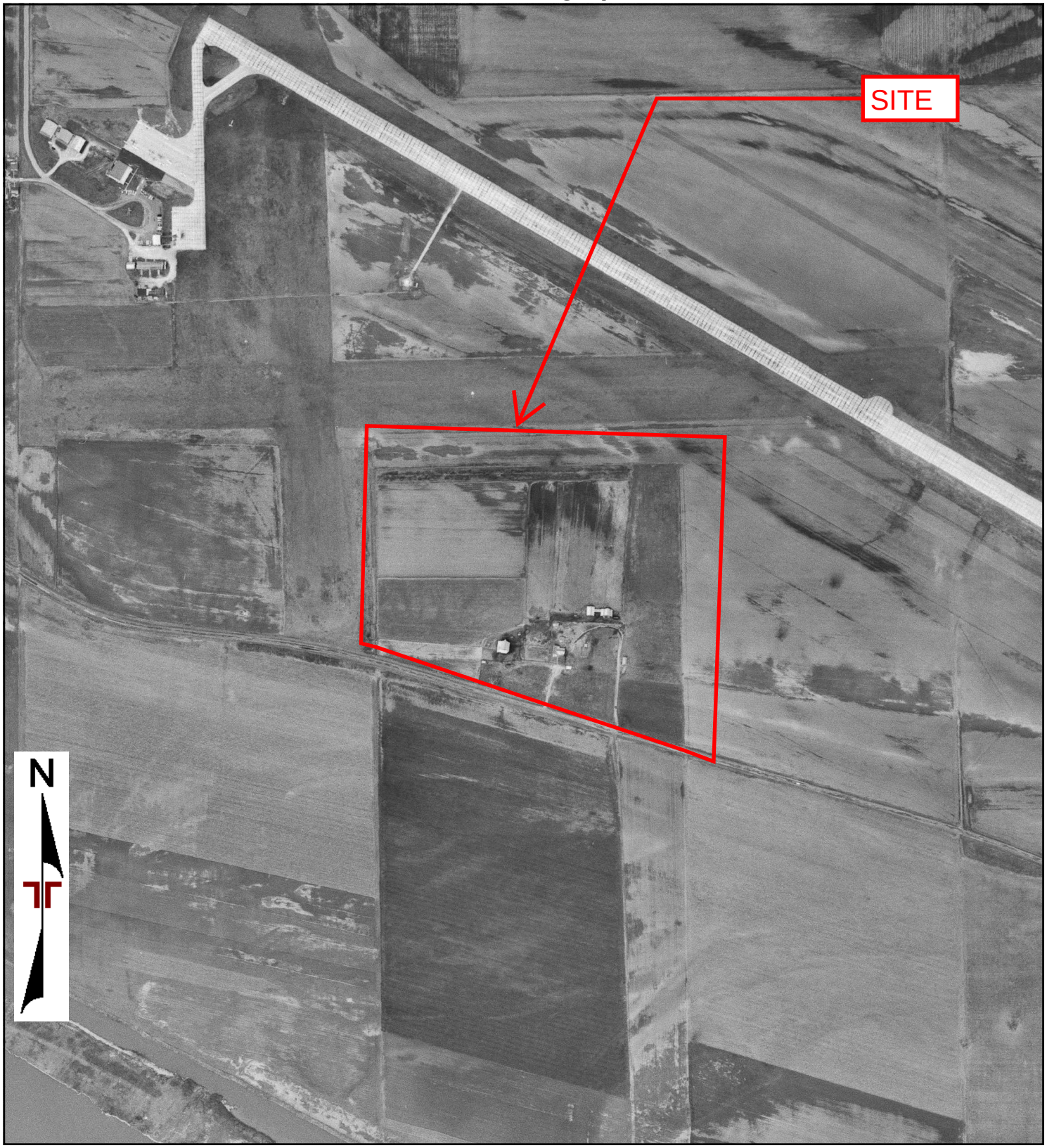
0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1976 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1976		



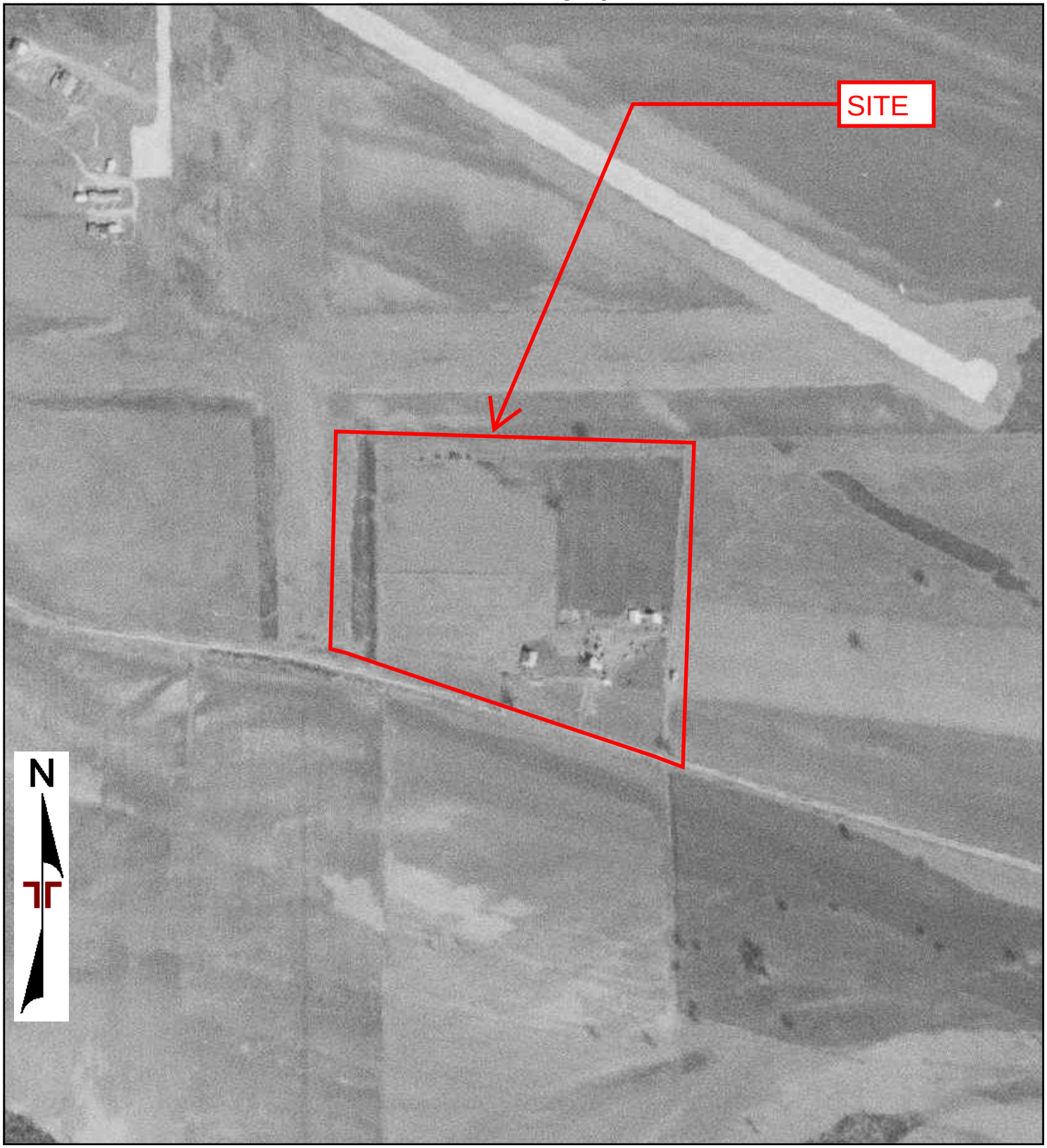
0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1974 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1974		



0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1965 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1965		



0 Feet 500 1000 2000

Project Manager:	Project No:	Terracon	1956 AERIAL PHOTOGRAPH
Drawn By:	Scale:		
Checked By:	File Name:		
Approved By:	Date: 1956		

Jeff City Airport Project
500 Airport Road
Jefferson City, MO 65101

Inquiry Number: 7148420.10
October 18, 2022

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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Data by infoUSA®

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☑	EDR Digital Archive
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☐	☑	EDR Digital Archive
1992	☐	☑	EDR Digital Archive
1967	☐	☐	Mullin-Kille's City Directory

FINDINGS

TARGET PROPERTY STREET

500 Airport Road
Jefferson City, MO 65101

Year	*CD Image*	*Source*	
AIRPORT RD			
2017	pg A2	EDR Digital Archive	
2014	pg A9	EDR Digital Archive	
2010	pg A18	EDR Digital Archive	
2005	pg A26	EDR Digital Archive	
2000	pg A33	EDR Digital Archive	
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1967	-	Mullin-Kille's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
4TH ST			
2017	pg. A1	EDR Digital Archive	
2014	pg. A8	EDR Digital Archive	
2010	pg. A17	EDR Digital Archive	
2005	pg. A25	EDR Digital Archive	
2000	pg. A32	EDR Digital Archive	
1995	pg. A37	EDR Digital Archive	
1992	pg. A41	EDR Digital Archive	
1967	-	Mullin-Kille's City Directory	Street not listed in Source
COOPER ST			
2017	pg. A3	EDR Digital Archive	
2014	pg. A10	EDR Digital Archive	
2010	pg. A19	EDR Digital Archive	
2005	pg. A27	EDR Digital Archive	
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1967	-	Mullin-Kille's City Directory	Street not listed in Source
E HIGHWAY 94			
2017	pg. A4	EDR Digital Archive	
2014	pg. A11	EDR Digital Archive	
2010	pg. A20	EDR Digital Archive	
2005	pg. A28	EDR Digital Archive	
2000	pg. A34	EDR Digital Archive	
HIBERNIA RD			
2017	pg. A5	EDR Digital Archive	

FINDINGS

Year	CD Image	Source	
2014	pg. A12	EDR Digital Archive	
2010	pg. A21	EDR Digital Archive	
2005	pg. A29	EDR Digital Archive	
2000	pg. A35	EDR Digital Archive	
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	pg. A42	EDR Digital Archive	
1967	-	Mullin-Kille's City Directory	Street not listed in Source

MOKANE

2017	pg. A6	EDR Digital Archive	
2014	pg. A13	EDR Digital Archive	

MOKANE RD

2014	pg. A14	EDR Digital Archive	
2010	pg. A22	EDR Digital Archive	
1995	pg. A38	EDR Digital Archive	
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1967	-	Mullin-Kille's City Directory	Street not listed in Source

OLD MOKANE RD

2014	pg. A15	EDR Digital Archive	
2010	pg. A23	EDR Digital Archive	
2005	pg. A30	EDR Digital Archive	
2000	pg. A36	EDR Digital Archive	

STATE HIGHWAY 94

1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1967	-	Mullin-Kille's City Directory	Street not listed in Source

FINDINGS

Year	*CD Image*	*Source*
STATE HIGHWY 94		
1995	pg. A39	EDR Digital Archive
STATE HIWAY 94		
1995	pg. A40	EDR Digital Archive
W HIGHWAY 94		
2017	pg. A7	EDR Digital Archive
2014	pg. A16	EDR Digital Archive
2010	pg. A24	EDR Digital Archive
2005	pg. A31	EDR Digital Archive

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 2017

1009 MFA AGRI SERVICES

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

AIRPORT RD 2017

500	HERTZ
	HERTZ CAR RENTAL
	NICKS FAMILY RESTAURANT
501	HERTZ
	JEFFERSON CITY FLYING SERVICE
507	MISSOURI AVIATION
510	ABBOT AVIATION TECHNOLOGIES

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COOPER ST 2017

1225 DYNCORP
MISSOURI NATIONAL GUARD
STATE OF MISSOURI
1231 MIDWEST AIR TRAFFIC CONTROL SERVICE

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

E HIGHWAY 94 2017

120 BISGES TRUCKING INC

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

HIBERNIA RD 2017

625 K & K MOBILE HOME SALES & SUPPLIES
700 CAPITAL STEEL & DESIGN LLC
703 MFA OIL COMPANY
719 HOODS
TNT SUR PLUS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

MOKANE 2017

719 JEFFERSON CITY RIVER TERMINAL WAREHO

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W HIGHWAY 94 2017

307 RITEWAY TRUCK BROKERS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 2014

927 PARK & RECREATION DEPT
PARK, A
1009 MFA AGRI SERVICES

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

AIRPORT RD 2014

500	CITY OF JEFFERSON CITY
	HERTZ RENT A CAR LIC
	NICKS FAMILY RESTAURANT
501	JEFFERSON CITY FLYING SERV
507	MISSOURI AVIATION
510	ABBOT AVIATION TECHNOLOGIES
523	GOODE, JAMES

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COOPER ST 2014

1225 DYNCORP
STATE OF MISSOURI
1231 MIDWEST AIR TRAFFIC CONTROL SERVICE

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

E HIGHWAY 94 2014

120 BISGES TRUCKING INC

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

HIBERNIA RD 2014

700	CAPITAL STEEL & DESIGN LLC
	DAM STEEL & SUPPLIES II
703	MFA OIL COMPANY
719	TNT SUR PLUS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

MOKANE 2014

401 CITY OF JEFFERSON CITY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

MOKANE RD 2014

700 JEFFERSON CITY RIVER TERMINAL

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

OLD MOKANE RD 2014

1905 FISCHER, JAY P

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W HIGHWAY 94 2014

307 RITEWAY TRUCK BROKERS
541 LAUF EQUIPMENT CO INC

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 2010

410 HORNBACK, MARK
927 PARK, A
1009 MFA AGRI SVC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

AIRPORT RD 2010

500	HERTZ RENT A CAR
	NICKS FAMILY RESTAURANT
501	JEFFERSON CITY FLYING SVC
510	ABBOT AVIATION TECHNOLOGIES

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COOPER ST 2010

1225 DYNCORP
US ARMY
1231 MIDWEST AIR TRAFFIC CONTROL

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

E HIGHWAY 94 2010

120 LEROY H BISGES INC TRUCKING

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

HIBERNIA RD 2010

625 K & K MOBILE HOME SALES & SUPL
700 CAPITAL STEEL & SUPPLY INC
703 MFA OIL
719 HOODS
TNT SUR PLUS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

MOKANE RD 2010

401 JEFFERSON CITY TREATMENT PLANT

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

OLD MOKANE RD 2010

1905 FISCHER, JAY P

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W HIGHWAY 94 2010

307 RITEWAY TRUCK BROKERS
500 ABB INK INC
SWANSON CORP

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 2005

927 PARK, A

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

AIRPORT RD 2005

500	HERTZ RENT A CAR LIC
	LC FLIGHT PRODUCTS LLC
	MIDWEST AIR TRAFFIC CONTROL SERVICES
	NICKS FAMILY RESTAURANT
501	JEFFERSON CITY AVIATION
	JEFFERSON CITY FLYING SERVICE
511	DYNCORP TECHNICAL SERVICES

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COOPER ST 2005

1225 DYNCORP
US ARMY AVIATION SUPPORT

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

E HIGHWAY 94 2005

120 BISGES LEROY H INC TRUCKING

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

HIBERNIA RD 2005

625 KEMPKER ENTERPRISES INC
MOBIL HOME BUSINESS

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

OLD MOKANE RD 2005

1905 FISCHER GRAIN FARMS
FISCHER, JAY P

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W HIGHWAY 94 2005

307 MEYER INC JOHN
RITE WAY TRUCK BROKERS
500 A B B INC
ABB INK INC
ABB POWER T & D CO HOUSE

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 2000

927 PARK AND RECREATION DEPARTMENT
1018 IUE
1116 RICHARDSON, JOHN
1201 POSSUM CREEK FURNITURE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

AIRPORT RD 2000

500 HERTZ RENT A CAR LIC
STRICKER, WILLIAM E
501 JEFFERSON CITY FLYING SERVICE

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

E HIGHWAY 94 2000

120 BISGES LEROY H INCORPORATED TRUCKING

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

HIBERNIA RD 2000

719 HOODS
1016 BENDERLOCK FLOORING SUPPLY INCORPORATED

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

OLD MOKANE RD 2000

1905 FISCHER, JAY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 1995

902 FOX, JODY
942 LOVE, BOBBY J SR

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

MOKANE RD 1995

521 MIDDAUGH, CHARLES H SR

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STATE HIGHWY 94 1995

2731 CORDES, LLOYD C

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

STATE HIWAY 94 1995

2839 BOESSEN, RAY

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

4TH ST 1992

1114 EICKOFF, L G
1117 COOTS, C W JR
1215 AULT, HERBERT C JR
1219 HAYDEN, CHARLES
1302 GREEN, DEAN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

HIBERNIA RD 1992

720 GILBERT, PAUL
810 BLOOMER, WARREN

APPENDIX D

ENVIRONMENTAL REGULATORY DATABASE REPORT

Jeff City Airport Project
500 Airport Road
Jefferson City, MO 65101

Inquiry Number: 7148420.2s
October 17, 2022

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

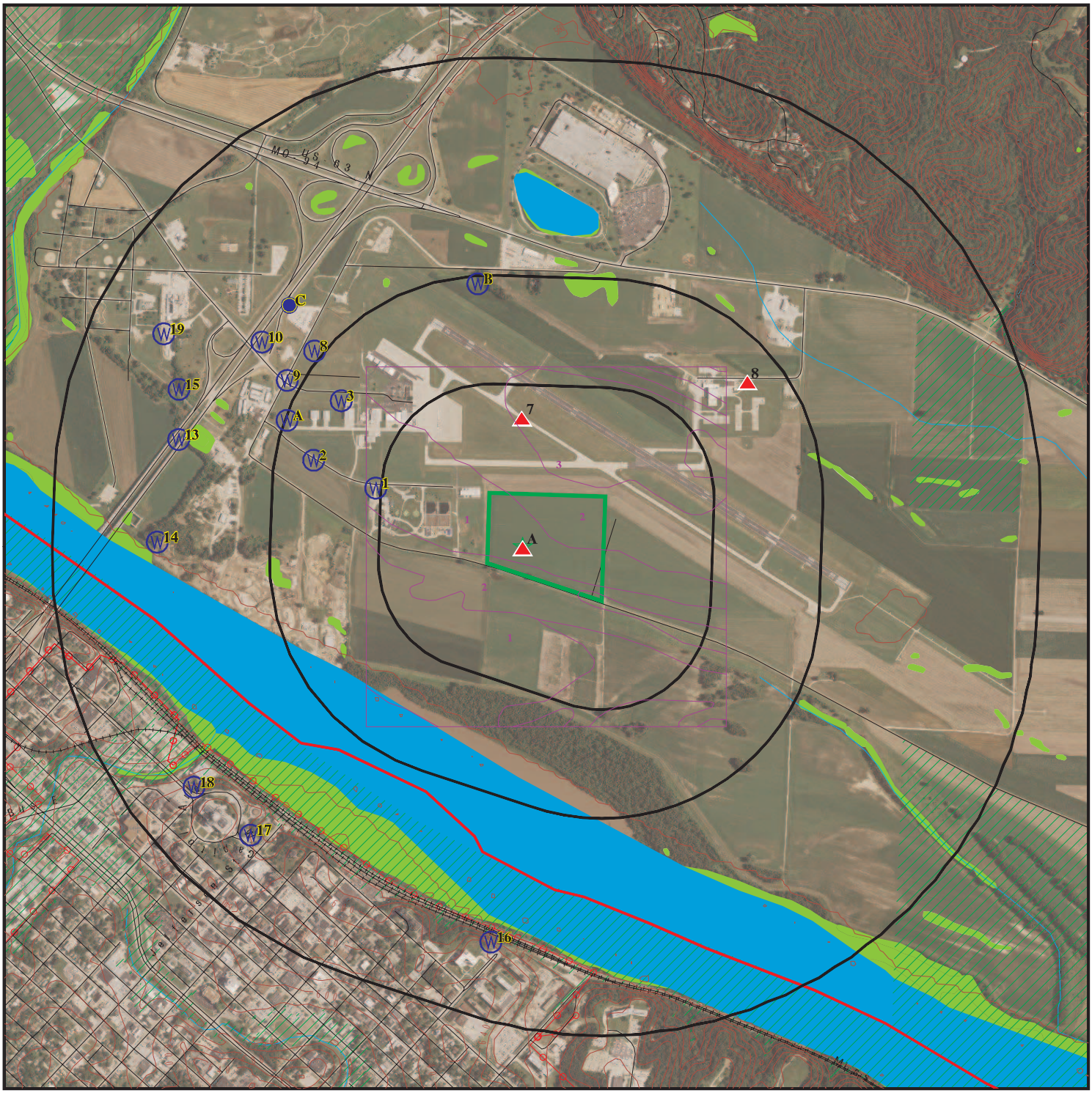
MAPPED SITES SUMMARY

Target Property Address:
500 AIRPORT ROAD
JEFFERSON CITY, MO 65043

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	JEFFERSON CITY MEMOR	500 AIRPORT RD	ECHO		TP
A2	JEFFERSON CITY AIRPO	500 AIRPORT ROAD	ASBESTOS		TP
A3	ARIPORT TERMINAL BUI	500 AIRPORT ROAD	ASBESTOS		TP
A4	JEFFERSON FLYING SER	500 AIRPORT DR	RCRA NonGen / NLR		TP
A5	JEFFERSON CITY MEMOR	500 AIRPORT RD	NPDES		TP
A6	JEFFERSON FLYING SER	500 AIRPORT ROAD	ECHO		TP
7	MEMORIAL AIRPORT	MISSOURI AVIATION HA	LUST, UST	Higher	912, 0.173, North
8	ARMY AVIATION SUPPOR	MEMORIAL AIRPORT	LUST, UST	Higher	2215, 0.420, NE

OVERVIEW MAP - 7148420.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- National Priority List Sites
- Dept. Defense Sites

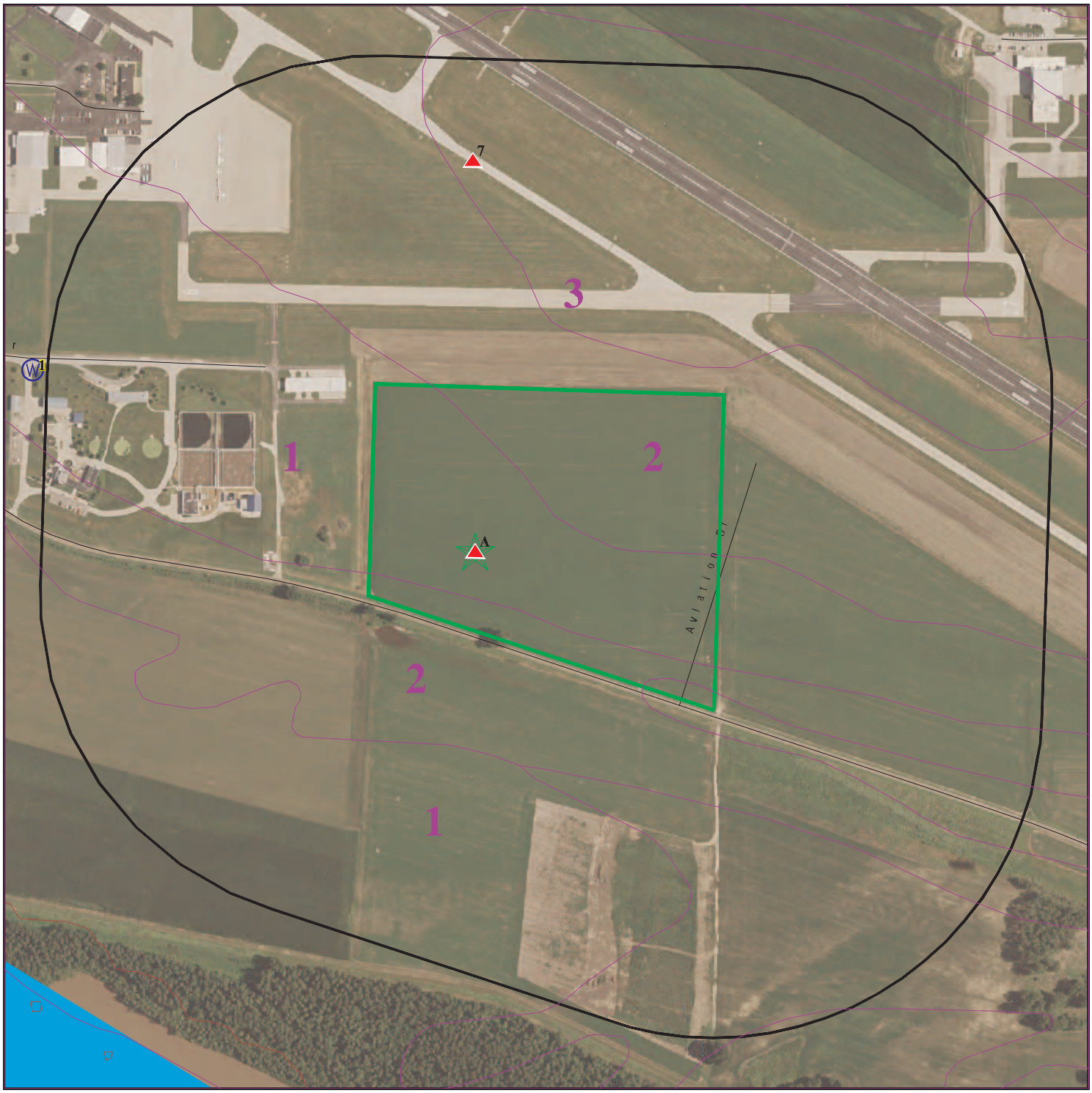
0 1/4 1/2 1 Miles

- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Jeff City Airport Project	CLIENT:	Terracon
ADDRESS:	500 Airport Road Jefferson City MO 65101	CONTACT:	Danielle Richardson
LAT/LONG:	38.588171 / 92.159948	INQUIRY #:	7148420.2s
		DATE:	October 17, 2022 8:22 am

DETAIL MAP - 7148420.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Jeff City Airport Project	CLIENT:	Terracon
ADDRESS:	500 Airport Road Jefferson City MO 65101	CONTACT:	Danielle Richardson
		INQUIRY #:	7148420.2s
LAT/LONG:	38.588171 / 92.159948	DATE:	October 17, 2022 8:22 am

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	TP		NR	NR	NR	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal hazardous waste facilities								
SHWS	1.000		0	0	0	0	NR	0
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0
Lists of state and tribal leaking storage tanks								
LAST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST	0.500		0	1	1	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.100		0	NR	NR	NR	NR	0
AST	0.100		0	NR	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
HIST LF	0.500		0	0	0	NR	NR	0
SWRCY	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
DEL SHWS	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250	1	0	0	NR	NR	NR	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP	2	NR	NR	NR	NR	NR	2
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP	2	NR	NR	NR	NR	NR	2
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
NPDES	TP	1	NR	NR	NR	NR	NR	1
MO RRC	TP		NR	NR	NR	NR	NR	0
SMARS	0.500		0	0	0	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		6	0	1	1	0	0	8

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **JEFFERSON CITY MEMORIAL AIRPORT** **ECHO** **1014759520**
Target **500 AIRPORT RD** **N/A**
Property **JEFFERSON CITY, MO 65101**

Site 1 of 6 in cluster A

Actual: **541 ft.**

ECHO:

Envid:	1014759520
Registry ID:	110042487957
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110042487957
Name:	JEFFERSON CITY MEMORIAL AIRPORT
Address:	500 AIRPORT RD
City,State,Zip:	JEFFERSON CITY, MO 65101

A2 **JEFFERSON CITY AIRPORT TERMINAL BLDG** **ASBESTOS** **S126319892**
Target **500 AIRPORT ROAD** **N/A**
Property **JEFFERSON CITY, MO 65101**

Site 2 of 6 in cluster A

Actual: **541 ft.**

ASBESTOS:

Name:	JEFFERSON CITY AIRPORT TERMINAL BLDG
Address:	500 AIRPORT ROAD
City,State,Zip:	JEFFERSON CITY, MO 65101
Permit Number:	A8050-2020
Paid:	True
Postmark/Email Date:	02/05/2020
Operation Type:	R
Contractor Name:	Stan Morris Construction LLC
Regional Office:	NERO
Owner:	Jefferson City
Owner Address:	320 McCarty Street
Owner City:	Jefferson City
Square Feet:	1530
Linear Feet:	10
Asbestos Type:	1500sf frbl white textured ceiling coating, 30sf n-f black mastic/brown 12x12 floor tile, 10lf frbl grey hard mudded fittings
Present Use:	Vacant
Prior Use:	Airport Terminal Bldg/Business
Start Date:	02/19/2020
End Date:	02/22/2020
Post Date:	04/22/2020
Start Time:	700
End Time:	1530
Disposal Site:	Lemons Landfill
Contact Person:	Quan Vaughn
Post Complete:	False
Contractor Phone:	(618) 806-5074
Contractor Registration Number:	20-07-0833
Comments:	D10251-2020
Amendments:	end 2/22/20@3:30pm;
Fiel Name:	Asbestos_Abatement_Project_Notifications

A3 **ARIPORT TERMINAL BUILDING** **ASBESTOS** **S126319284**
Target **500 AIRPORT ROAD** **N/A**
Property **JEFFERSON CITY, MO 65101**

Site 3 of 6 in cluster A

Actual: **541 ft.**

ASBESTOS:

Name:	ARIPORT TERMINAL BUILDING
Address:	500 AIRPORT ROAD
City,State,Zip:	JEFFERSON CITY, MO 65101
Permit Number:	10251-2020
Paid:	True
Operation Type:	DEMOLITION
Contractor Name:	Stan Morris Construction, LLC
Regional Office:	NERO
Owner:	Jefferson City
Asbestos Type:	mudded pipe fitting, textured ceiling, floor tile/mastic
Present Use:	vacant
Prior Use:	airport terminal
Start Date:	02/21/2020
End Date:	04/14/2020
Contact Person:	Doug Bielicke
Contractor Phone:	(618) 806-5074
Inspection Date:	-
Demo Date Recieved:	02/07/2020
Asbestos Quantity:	10-20 lf, 1500 sf, 30 sf
Total Days:	53
Comments:	see related abatement A8050-2020
Amendments:	revd end fm 3/10 to 4/14
Fiel Name:	Demolitions

A4 **JEFFERSON FLYING SERVICE** **RCRA NonGen / NLR** **1007107311**
Target **500 AIRPORT DR** **MOP000005843**
Property **JEFFERSON CITY, MO 65102**

Site 4 of 6 in cluster A

Actual: **541 ft.**

RCRA Listings:

Date Form Received by Agency:	19970714
Handler Name:	JEFFERSON FLYING SERVICE
Handler Address:	500 AIRPORT DR
Handler City,State,Zip:	JEFFERSON CITY, MO 65102
EPA ID:	MOP000005843
Contact Name:	DAVID WARD
Contact Address:	500 AIRPORT DR
Contact City,State,Zip:	JEFFERSON CITY, MO 65102
Contact Telephone:	573-636-5118
EPA Region:	07
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Mailing Address:	AIRPORT DR
Mailing City,State,Zip:	JEFFERSON CITY, MO 65102
Owner Name:	JEFFERSON CITY FLYING SERVICE
Owner Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No

JEFFERSON FLYING SERVICE (Continued) **1007107311**

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Hazardous Secondary Material Indicator:	NN
Commercial TSD Indicator:	No
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Handler Date of Last Change:	20000916
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	NONE
Waste Description:	Not Defined

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	JEFFERSON CITY FLYING SERVICE
Legal Status:	Private
Owner/Operator Address:	500 AIRPORT DR
Owner/Operator City,State,Zip:	JEFFERSON CITY, MO 65102
Owner/Operator Telephone:	573-636-5118

Historic Generators:

Receive Date:	19970714
Handler Name:	JEFFERSON FLYING SERVICE
Federal Waste Generator Description:	Not a generator, verified
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No

JEFFERSON FLYING SERVICE (Continued) **1007107311**

Spent Lead Acid Battery Exporter: No
Current Record: Yes

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A5 **JEFFERSON CITY MEMORIAL AIRPORT** **NPDES** **S107853306**
Target **500 AIRPORT RD** **N/A**
Property **JEFFERSON CITY, MO 65101**

Site 5 of 6 in cluster A

Actual: **541 ft.**

NPDES:
Name: JEFFERSON CITY MEMORIAL AIRPORT
Address: 500 AIRPORT RD
City,State,Zip: JEFFERSON CITY, MO 65101
Permit Number: MOR80F006
Permit Status: Effective
SIC: 4581
SIC Description: AIRPORTS, FLYING FIELDS, AND SERVICES
Issue Date: 02/01/2018
Effective Date: 02/01/2018
Category Description: General Storm Water Industrial
Treatment Type Description: Storm Water
Facility Telephone: 5736346410
Owner Name: CITY OF JEFFERSON
Owner Address: 320 E MCCARTY ST
Owner City: JEFFERSON CITY
Owner State: MO
Owner Zip: 65101

A6 **JEFFERSON FLYING SERVICE** **ECHO** **1007144446**
Target **500 AIRPORT ROAD** **N/A**
Property **JEFFERSON CITY, MO 65101**

Site 6 of 6 in cluster A

Actual: **541 ft.**

ECHO:
Envid: 1007144446
Registry ID: 110015929058
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110015929058
Name: JEFFERSON FLYING SERVICE
Address: 500 AIRPORT ROAD
City,State,Zip: JEFFERSON CITY, MO 65101

7
North
1/8-1/4
0.173 mi.
912 ft.

MEMORIAL AIRPORT
MISSOURI AVIATION HANGER
JEFFERSON CITY, MO 65101

LUST **U003756890**
UST **N/A**

Relative:
Higher

Actual:
546 ft.

LUST:

Name:	MEMORIAL AIRPORT
Address:	MISSOURI AVIATION HANGER
City,State,Zip:	JEFFERSON CITY, MO 65101
Facility ID:	ST0001718
Region:	NE - Northeast Regional Office
Release Date:	11/03/1993
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	11/16/1993
Date Cleanup Finished:	09/29/1995
Expedited:	No
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Number Of Remediation Monitoring Wells:	0
Active:	No
Remediation ID:	R004409
RBCA NFA:	No
Project Manager:	L
Date Added:	06/30/1995
Date Record Edited:	06/01/1998
Person Adding Or Editing Record:	N$PREWJ2
Facility Sent To State Archive:	Yes
Site Affectd By Funding Level From PSTIF:	No
General Comments:	09-29-95 - JM - SITE CLOSED

UST:

Facility ID:	ST0001718
Region:	NE
Easting:	573857.729
Northing:	4271976.11
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	CARES
Date GIS Data Collected:	02/16/2000
Lat/Long:	38.5932 / -92.1519

Tanks:

Owner:

Owner ID:	OW01518
Owner Name:	JEFFERSON CITY FLYING
Owner Address:	PO BOX 336
Owner City,St,Zip:	JEFFERSON CITY, MO 65102
Owner Phone:	6365118
Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-01-08 00:00:00

Tank ID:	1
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Permanently Closed in place**
Date Tank Installed:	01/01/1971
Tank Material:	Steel

MEMORIAL AIRPORT (Continued) **U003756890**

Date Tank Last Used: 01/01/1993
Date Tank Permanently Closed/ Removed: 10/13/1995
Tank Fees Waived: No
Expedite Closure On Tank?: No
Date Record Added: 06/30/1995
Date Record Edited: 06/01/1998
Person Adding/Editing Record: N$PREWJ2
Date Of NFA Letter: 10/13/1995
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 09/03/1993
Date Of Aprroval Letter: 10/13/1995
Firm Closing Tank: CENTRAL ENVRIONMENTAL
Date Closure Report Received: 01/01/1994
LockOut Flag: No

Tank Compartment:
Tanks Use: False
Compartment No: 1
Tank Compartment PK: 4287
Tank PK: 4287
Compartment Status: Permanently Closed in place
Capacity: 6000
Substance: Other
Substance Other: P.AV GAS
Mixture: False
Date of Last Use: 1993-01-01 00:00:00
Pipe Material: 1
Pipe Double Wall: 0
Spill Protection: False

Owner:
Owner ID: OW01518
Owner Name: JEFFERSON CITY FLYING
Owner Address: PO BOX 336
Owner City,St,Zip: JEFFERSON CITY, MO 65102
Owner Phone: 6365118
Mail Was Not Deliverable: No
Is Owner Active?: No
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: 1996-01-08 00:00:00

Tank ID: 2
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: Permanently Closed in place
Date Tank Installed: 01/01/1971
Tank Material: Steel
Date Tank Last Used: 01/01/1993
Date Tank Permanently Closed/ Removed: 10/13/1995
Tank Fees Waived: No
Expedite Closure On Tank?: No
Date Record Added: 06/30/1995
Date Record Edited: 06/01/1998
Person Adding/Editing Record: N$PREWJ2
Date Of NFA Letter: 10/13/1995

MEMORIAL AIRPORT (Continued) **U003756890**

Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 09/03/1993
Date Of Aprroval Letter: 10/13/1995
Firm Closing Tank: CENTRAL ENVRIONMENTAL
Date Closure Report Received: 01/01/1994
LockOut Flag: No

Tank Compartment:
Tanks Use: False
Compartment No: 1
Tank Compartment PK: 4288
Tank PK: 4288
Compartment Status: Permanently Closed in place
Capacity: 8000
Substance: Other
Substance Other: P.AV GAS
Mixture: False
Date of Last Use: 1993-01-01 00:00:00
Pipe Material: 1
Pipe Double Wall: 0
Spill Protection: False

Owner:
Owner ID: OW01518
Owner Name: JEFFERSON CITY FLYING
Owner Address: PO BOX 336
Owner City,St,Zip: JEFFERSON CITY, MO 65102
Owner Phone: 6365118
Mail Was Not Deliverable: No
Is Owner Active?: No
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: 1996-01-08 00:00:00

Tank ID: 3
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: **Permanently Closed in place**
Date Tank Installed: 01/01/1971
Tank Material: Steel
Date Tank Last Used: 01/01/1993
Date Tank Permanently Closed/ Removed: 10/13/1995
Tank Fees Waived: No
Expedite Closure On Tank?: No
Date Record Added: 06/30/1995
Date Record Edited: 06/01/1998
Person Adding/Editing Record: N$PREWJ2
Date Of NFA Letter: 10/13/1995
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 09/03/1993
Date Of Aprroval Letter: 10/13/1995
Firm Closing Tank: CENTRAL ENVRIONMENTAL
Date Closure Report Received: 01/01/1994
LockOut Flag: No

Tank Compartment:
Tanks Use: False

MEMORIAL AIRPORT (Continued) **U003756890**

Compartment No: 1
Tank Compartment PK: 4289
Tank PK: 4289
Compartment Status: Permanently Closed in place
Capacity: 8000
Substance: Other
Substance Other: P.JET FUEL
Mixture: False
Date of Last Use: 1993-01-01 00:00:00
Pipe Material: 1
Pipe Double Wall: 0
Spill Protection: False

Owner:
Owner ID: OW01518
Owner Name: JEFFERSON CITY FLYING
Owner Address: PO BOX 336
Owner City,St,Zip: JEFFERSON CITY, MO 65102
Owner Phone: 6365118
Mail Was Not Deliverable: No
Is Owner Active?: No
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: 1996-01-08 00:00:00

Tank ID: 4
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: **Permanently Closed in place**
Date Tank Installed: 01/01/1971
Tank Material: Steel
Date Tank Last Used: 01/01/1993
Date Tank Permanently Closed/ Removed: 10/13/1995
Tank Fees Waived: No
Expedite Closure On Tank?: No
Date Record Added: 06/30/1995
Date Record Edited: 06/01/1998
Person Adding/Editing Record: N$PREWJ2
Date Of NFA Letter: 10/13/1995
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 09/03/1993
Date Of Aprroval Letter: 10/13/1995
Firm Closing Tank: CENTRAL ENVRIONMENTAL
Date Closure Report Received: 01/01/1994
LockOut Flag: No

Tank Compartment:
Tanks Use: False
Compartment No: 1
Tank Compartment PK: 4290
Tank PK: 4290
Compartment Status: Permanently Closed in place
Capacity: 8000
Substance: Other
Substance Other: P.JET FUEL
Mixture: False

MEMORIAL AIRPORT (Continued) **U003756890**

Date of Last Use: 1993-01-01 00:00:00
Pipe Material: 1
Pipe Double Wall: 0
Spill Protection: False

Tank Aug 2011:
Facility Id: ST0001718
Tank Id: 1
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

Facility Id: ST0001718
Tank Id: 2
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

Facility Id: ST0001718
Tank Id: 3
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

Facility Id: ST0001718
Tank Id: 4
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

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8 **ARMY AVIATION SUPPORT FACILITY** **LUST** **U001159517**
NE **MEMORIAL AIRPORT** **UST** **N/A**
1/4-1/2 **JEFFERSON CITY, MO 65101**
0.420 mi.
2215 ft.

Relative:
Higher

Actual:
543 ft.

LUST:
Name: ARMY AVIATION SUPPORT FACILITY
Address: MEMORIAL AIRPORT
City,State,Zip: JEFFERSON CITY, MO 65101

ARMY AVIATION SUPPORT FACILITY (Continued) **U001159517**

Facility ID:	ST0012316
Region:	NE - Northeast Regional Office
Lat/Long (dms):	38 36 37 / 92 9 2
Release Date:	03/26/1992
Release Type:	UNDERGROUND STORAGE TANK
Date Cleanup Started:	12/08/1994
Date Cleanup Finished:	03/03/1995
Expedited:	No
Expenditures From The American Recovery and Reinvestment Act of 2009	No
Number Of Remediation Monitoring Wells:	0
Active:	No
Remediation ID:	R003112
RBCA NFA:	No
Project Manager:	L
Date Added:	06/30/1995
Facility Sent To State Archive:	Yes
Site Affectd By Funding Level From PSTIF:	No
General Comments:	3-3-95 - SJ - SITE CLOSED.

UST:

Facility ID:	ST0012316
Region:	NE
Easting:	573987.847
Northing:	4272032.80
Owner Of Geospatial Data:	Hazardous Waste Program
Geospatial Data Collected By:	CARES
Date GIS Data Collected:	02/16/2000
Lat/Long:	38.5937 / -92.1504
Lat/Long (dms):	38 36 37 / 92 9 2

Tanks:

Owner:

Owner ID:	OW10227
Owner Name:	MISSOURI ARMY NATIONAL GUARD
Owner Address:	2301 MILITIA DR/NGMO-RPE
Owner City,St,Zip:	JEFFERSON CITY, MO 65101 1203
Owner County Code:	51
Owner Phone:	7519694
Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-06-27 00:00:00

Tank ID:	1
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Date Tank Installed:	01/01/1959
Tank Material:	Steel
Other Tank Internal Protection:	I Lining SW1856
Date Tank Last Used:	03/07/1995
Date Tank Permanently Closed/ Removed:	03/07/1995
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Date Record Added:	06/30/1995
Date Record Edited:	01/21/1998

ARMY AVIATION SUPPORT FACILITY (Continued) **U001159517**

Person Adding/Editing Record:	N$ATKIG
Date Of NFA Letter:	03/07/1995
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	09/27/1994
Date Of Aprroval Letter:	03/07/1995
Firm Closing Tank:	CET ENVIRONMENTAL
Date Closure Report Received:	02/01/1995
LockOut Flag:	No
Comments:	FINAL LETTER FOR 1-16,000 JP-4. 1-16,000 GAL JP4. 400 CUBIC YDS OF CONTAMINATED SOIL REMOVED.

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	30547
Tank PK:	30547
Compartment Status:	Removed
Capacity:	16000
Substance:	Other
Substance Other:	JP4
Mixture:	False
Date of Last Use:	1995-03-07 00:00:00
Pipe Material:	1
Pipe Double Wall:	0
Spill Protection:	False

Owner:

Owner ID:	OW10227
Owner Name:	MISSOURI ARMY NATIONAL GUARD
Owner Address:	2301 MILITIA DR/NGMO-RPE
Owner City,St,Zip:	JEFFERSON CITY, MO 65101 1203
Owner County Code:	51
Owner Phone:	7519694
Mail Was Not Deliverable:	No
Is Owner Active?:	No
Date Record Added:	1995-06-30 00:00:00
Date Record Edited:	1996-06-27 00:00:00

Tank ID:	2
Tank Double Wall:	0
Tank Type:	Below Ground
Tank Status:	**Removed**
Date Tank Installed:	01/01/1983
Tank Material:	Steel
Other Tank Internal Protection:	I Lining SW1856
Date Tank Last Used:	07/25/1994
Date Tank Permanently Closed/ Removed:	07/25/1994
Tank Fees Waived:	No
Expedite Closure On Tank?:	No
Date Record Added:	06/30/1995
Date Record Edited:	01/21/1998
Person Adding/Editing Record:	N$ATKIG
Date Of NFA Letter:	07/25/1994
Is Tank Used For Emergency Generator:	No
Date Closure Notice Received:	03/16/1992

ARMY AVIATION SUPPORT FACILITY (Continued) **U001159517**

Date Of Aprroval Letter:	07/25/1994
Firm Closing Tank:	MO ARMY NATIONAL GUARD
Date Closure Report Received:	09/08/1992
LockOut Flag:	No
Comments:	FINAL LETTER FOR 1-1000 GAL AVIATION GAS.

Tank Compartment:

Tanks Use:	False
Compartment No:	1
Tank Compartment PK:	30548
Tank PK:	30548
Compartment Status:	Removed
Capacity:	1000
Substance:	Other
Substance Other:	AV GAS
Mixture:	False
Date of Last Use:	1994-07-25 00:00:00
Pipe Material:	1
Pipe Double Wall:	0
Spill Protection:	False

Tank Aug 2011:

Facility Id:	ST0012316
Tank Id:	1
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Facility Id:	ST0012316
Tank Id:	2
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
MO	AIRS	Permit Facility Listing	Department of Natural Resources	11/01/2021	11/29/2021	02/24/2022
MO	ASBESTOS	Asbestos Notification Listing	Department of Natural Resources	07/04/2022	07/05/2022	09/21/2022
MO	AST	Aboveground Petroleum Storage Tanks	Department of Agriculture	05/26/2022	05/27/2022	08/11/2022
MO	AUL	Sites with Controls	Department of Natural Resources	05/02/2022	05/09/2022	07/29/2022
MO	BROWNFIELDS	Brownfields Site List	Department of Natural Resources	05/02/2022	05/09/2022	07/29/2022
MO	CDL	Environmental Emergency Response System	Department of Natural Resources	03/15/2022	03/16/2022	06/13/2022
MO	COAL ASH	Coal Ash Disposal Sites	Department of Natural Resources	01/03/2018	02/01/2018	03/22/2018
MO	DEL SHWS	Registry Sites Withdrawn or Deleted	Department of Natural Resources	04/26/2022	05/13/2022	08/05/2022
MO	DRYCLEANERS	Drycleaners in Missouri Listing	Department of Natural Resources	11/30/2017	12/13/2017	01/18/2018
MO	HIST LF	Solid Waste Facility Database List	Department of Natural Resources	04/12/2005	07/19/2006	08/18/2006
MO	HWS DETAIL	Registry Annual Report	Department of Natural Resources	06/30/2021	02/25/2022	05/20/2022
MO	LAST	Leaking Aboveground Storage Tanks	Department of Natural Resources	08/29/2022	09/01/2022	09/27/2022
MO	LUST	Leaking Underground Storage Tanks	Department of Natural Resources	08/29/2022	09/01/2022	09/27/2022
MO	MINES	Industrial Mineral Mines Database	Department of Natural Resources	04/30/2021	07/14/2021	10/07/2021
MO	NPDES	Permitted Facility Listing	Department of Natural Resources	03/28/2022	06/29/2022	09/16/2022
MO	PFAS	PFAS Detections	Department of Natural Resources	03/22/2022	03/22/2022	06/16/2022
MO	RGA HWS	Recovered Government Archive State Hazardous Waste Facilitie	Department of Natural Resources		07/01/2013	01/03/2014
MO	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Natural Resources		07/01/2013	01/15/2014
MO	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	Department of Natural Resources		07/01/2013	01/03/2014
MO	RRC	Certified Hazardous Waste Resource Recovery Facilities	Department of Natural Resources	09/30/2020	10/06/2020	12/28/2020
MO	SHWS	Registry of Confirmed Abandoned or Uncontrolled Hazardous Wa	Department of Natural Resources	04/26/2022	05/13/2022	08/04/2022
MO	SMARS	Site Management and Reporting System	Department of Natural Resources	07/06/2022	07/25/2022	10/07/2022
MO	SPILLS	Environmental Response Tracking Database	Department of Natural Resources	03/15/2022	03/16/2022	06/13/2022
MO	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	06/27/2012	01/03/2013	02/22/2013
MO	SWF/LF	Solid Waste Facility List	Department of Natural Resources	05/24/2022	05/25/2022	08/11/2022
MO	SWRCY	Solid Waste Recycling Facilities	Department of Natural Resources	03/16/2022	03/17/2022	06/10/2022
MO	UIC	Underground Injection Wells Database	Department of Natural Resources	01/11/2022	02/15/2022	05/12/2022
MO	UST	Petroleum Storage Tanks	Department of Natural Resources	08/29/2022	09/01/2022	09/27/2022
MO	VCP	Sites Participating in the Voluntary Cleanup Program	Department of Natural Resources	05/02/2022	05/09/2022	07/29/2022
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	09/30/2017	05/08/2018	07/20/2018
US	ABANDONED MINES	Abandoned Mines	Department of Interior	06/14/2022	06/15/2022	08/22/2022
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2019	03/02/2022	03/25/2022
US	COAL ASH DOE	Steam-Electric Plant Operation Data	Department of Energy	12/31/2020	11/30/2021	02/22/2022
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	01/12/2017	03/05/2019	11/11/2019
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	06/30/2022	07/21/2022	09/30/2022
US	CORRACTS	Corrective Action Report	EPA	06/20/2022	06/21/2022	06/28/2022
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DOCKET HWC	Hazardous Waste Compliance Docket Listing	Environmental Protection Agency	05/06/2021	05/21/2021	08/11/2021
US	DOD	Department of Defense Sites	USGS	06/07/2021	07/13/2021	03/09/2022
US	DOT OPS	Incident and Accident Data	Department of Transporation, Office of Pipeli	01/02/2020	01/28/2020	04/17/2020
US	Delisted NPL	National Priority List Deletions	EPA	07/26/2022	08/02/2022	08/22/2022
US	ECHO	Enforcement & Compliance History Information	Environmental Protection Agency	06/25/2022	07/01/2022	09/30/2022
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	06/14/2022	06/15/2022	06/21/2022
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	05/25/2021	06/24/2021	09/20/2021
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	04/02/2018	04/11/2018	11/06/2019
US	FEMA UST	Underground Storage Tank Listing	FEMA	10/14/2021	11/05/2021	02/01/2022

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	08/11/2022	08/11/2022	09/30/2022
US	FUELS PROGRAM	EPA Fuels Program Registered Listing	EPA	08/11/2022	08/11/2022	09/30/2022
US	FUSRAP	Formerly Utilized Sites Remedial Action Program	Department of Energy	07/26/2021	07/27/2021	10/22/2021
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	09/19/2022	09/19/2022	09/30/2022
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	11/18/2016	11/23/2016	02/10/2017
US	IHS OPEN DUMPS	Open Dumps on Indian Land	Department of Health & Human Serivces, Indian	04/01/2014	08/06/2014	01/29/2015
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	04/28/2021	06/11/2021	09/07/2021
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	04/20/2022	06/13/2022	08/16/2022
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	06/02/2022	06/13/2022	08/31/2022
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	04/11/2022	06/13/2022	08/16/2022
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	04/28/2022	06/13/2022	08/16/2022
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	04/14/2022	06/13/2022	08/16/2022
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	04/20/2022	06/13/2022	08/16/2022
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	04/08/2022	06/13/2022	08/16/2022
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2014	07/14/2015	01/10/2017
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	04/07/2022	06/13/2022	08/16/2022
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	04/20/2022	06/13/2022	08/16/2022
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	06/02/2022	06/13/2022	08/31/2022
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	04/11/2022	06/13/2022	08/16/2022
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	04/28/2022	06/13/2022	08/16/2022
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	04/14/2022	06/13/2022	08/16/2022
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	04/20/2022	06/13/2022	08/16/2022
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	04/08/2022	06/13/2022	08/16/2022
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	07/27/2015	09/29/2015	02/18/2016
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	07/26/2022	08/02/2022	08/22/2022
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	07/26/2022	08/02/2022	08/22/2022
US	LUCIS	Land Use Control Information System	Department of the Navy	05/16/2022	05/19/2022	07/29/2022
US	MINES MRDS	Mineral Resources Data System	USGS	04/06/2018	10/21/2019	10/24/2019
US	MINES VIOLATIONS	MSHA Violation Assessment Data	DOL, Mine Safety & Health Admi	08/01/2022	08/02/2022	09/30/2022
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	06/10/2022	06/14/2022	08/22/2022
US	NPL	National Priority List	EPA	07/26/2022	08/02/2022	08/22/2022
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	01/20/2022	01/20/2022	03/25/2022
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	09/13/2019	11/06/2019	02/10/2020
US	PCS	Permit Compliance System	EPA, Office of Water	07/14/2011	08/05/2011	09/29/2011
US	PCS ENF	Enforcement data	EPA	12/31/2014	02/05/2015	03/06/2015
US	PCS INACTIVE	Listing of Inactive PCS Permits	EPA	11/05/2014	01/06/2015	05/06/2015
US	PRP	Potentially Responsible Parties	EPA	07/26/2022	08/02/2022	08/31/2022
US	Proposed NPL	Proposed National Priority List Sites	EPA	07/26/2022	08/02/2022	08/22/2022

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	07/01/2019	07/01/2019	09/23/2019
US	RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated	Environmental Protection Agency	06/20/2022	06/21/2022	06/28/2022
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	06/20/2022	06/21/2022	06/28/2022
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	06/20/2022	06/21/2022	06/28/2022
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	06/20/2022	06/21/2022	06/28/2022
US	RCRA-VSQG	RCRA - Very Small Quantity Generators (Formerly Conditionall	Environmental Protection Agency	06/20/2022	06/21/2022	06/28/2022
US	RMP	Risk Management Plans	Environmental Protection Agency	04/27/2022	05/04/2022	05/10/2022
US	ROD	Records Of Decision	EPA	07/26/2022	08/02/2022	08/22/2022
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	01/01/2017	02/03/2017	04/07/2017
US	SEMS	Superfund Enterprise Management System	EPA	07/26/2022	08/02/2022	08/22/2022
US	SEMS-ARCHIVE	Superfund Enterprise Management System Archive	EPA	07/26/2022	08/02/2022	08/22/2022
US	SSTS	Section 7 Tracking Systems	EPA	07/18/2022	07/18/2022	07/29/2022
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2018	08/14/2020	11/04/2020
US	TSCA	Toxic Substances Control Act	EPA	12/31/2016	06/17/2020	09/10/2020
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	08/30/2019	11/15/2019	01/28/2020
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/12/2016	10/26/2016	02/03/2017
US	US AIRS MINOR	Air Facility System Data	EPA	10/12/2016	10/26/2016	02/03/2017
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	02/23/2022	03/10/2022	03/10/2022
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	04/30/2022	05/24/2022	07/29/2022
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	05/16/2022	05/24/2022	07/29/2022
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	04/30/2022	05/24/2022	07/29/2022
US	US INST CONTROLS	Institutional Controls Sites List	Environmental Protection Agency	05/16/2022	05/24/2022	07/29/2022
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	08/03/2022	08/17/2022	08/31/2022
US	US MINES 2	Ferrous and Nonferrous Metal Mines Database Listing	USGS	05/06/2020	05/27/2020	08/13/2020
US	US MINES 3	Active Mines & Mineral Plants Database Listing	USGS	04/14/2011	06/08/2011	09/13/2011
US	UXO	Unexploded Ordnance Sites	Department of Defense	12/31/2020	01/11/2022	02/14/2022
CT	CT MANIFEST	Hazardous Waste Manifest Data	Department of Energy & Environmental Protecti	05/08/2022	05/09/2022	07/28/2022
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	01/01/2019	10/29/2021	01/19/2022
PA	PA MANIFEST	Manifest Information	Department of Environmental Protection	06/30/2018	07/19/2019	09/10/2019
RI	RI MANIFEST	Manifest information	Department of Environmental Management	12/31/2020	11/30/2021	02/18/2022
WI	WI MANIFEST	Manifest Information	Department of Natural Resources	05/31/2018	06/19/2019	09/03/2019
US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.			
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services			
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health			
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics			
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics			
MO	Daycare Centers	Sensitive Receptor: Licensed Child Care Facilities	Department of Health & Senior Services			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	Flood Zones	100-year and 500-year flood zones	Emergency Management Agency (FEMA)			
US	NWI	National Wetlands Inventory	U.S. Fish and Wildlife Service			
MO	State Wetlands	National Wetland Inventory of Missouri	Department of Natural Resources			
US	Topographic Map	Current USGS 7.5 Minute Topographic Map	U.S. Geological Survey			
US	Oil/Gas Pipelines		Endeavor Business Media			
US	Electric Power Transmission Line Data		Endeavor Business Media			

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

JEFF CITY AIRPORT PROJECT
500 AIRPORT ROAD
JEFFERSON CITY, MO 65101

TARGET PROPERTY COORDINATES

Latitude (North):	38.588171 - 38ˆ 35’ 17.42’’
Longitude (West):	92.159948 - 92ˆ 9’ 35.81’’
Universal Tranverse Mercator:	Zone 15
UTM X (Meters):	573163.8
UTM Y (Meters):	4271204.5
Elevation:	541 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	10435845 JEFFERSON CITY, MO
Version Date:	2017

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

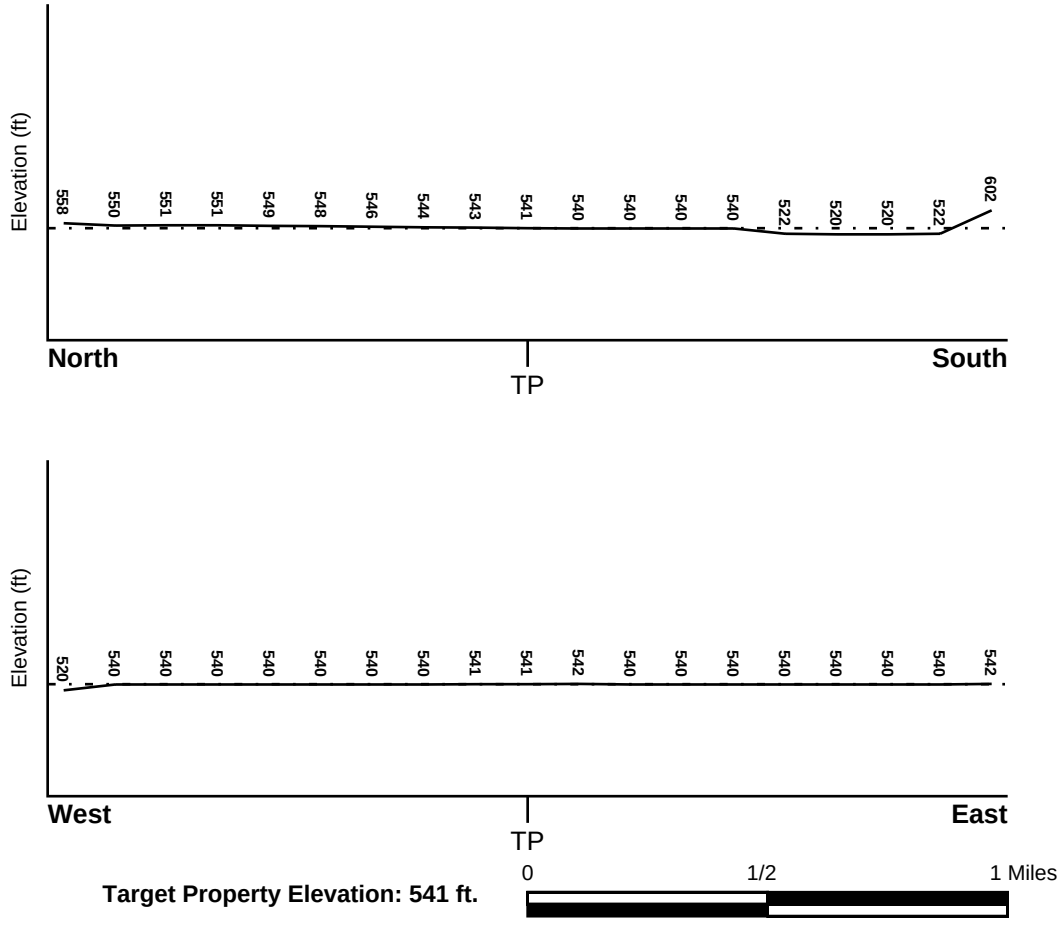
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
29027C0510E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
JEFFERSON CITY	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

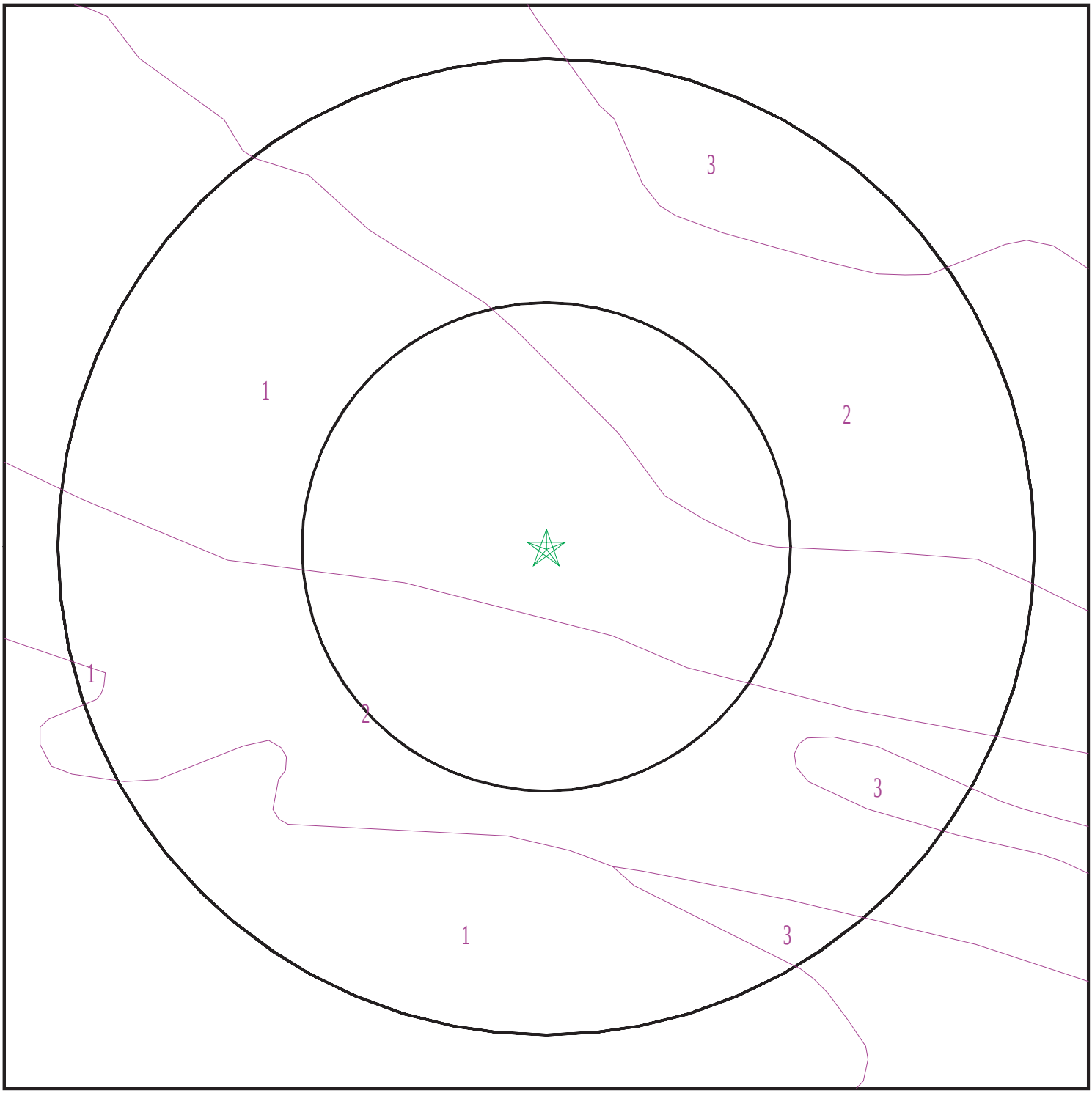
Era:	Paleozoic
System:	Ordovician
Series:	Lower Ordovician (Canadian)
Code:	O1b *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7148420.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Jeff City Airport Project	CLIENT:	Terracon
ADDRESS:	500 Airport Road	CONTACT:	Danielle Richardson
	Jefferson City MO 65101	INQUIRY #:	7148420.2s
LAT/LONG:	38.588171 / 92.159948	DATE:	October 17, 2022 8:22 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Grable

Soil Surface Texture: very fine sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	very fine sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4
2	7 inches	22 inches	very fine sandy loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4
3	22 inches	33 inches	loamy fine sand	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4
4	33 inches	59 inches	sr to loamy fine sand to silt loam	Not reported	Not reported	Max: 42 Min: 14	Max: 8.4 Min: 7.4

Soil Map ID: 2

Soil Component Name: Waldron

Soil Surface Texture: silty clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 53 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay	Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.4
2	11 inches	48 inches	sr to silty clay loam to silty clay	Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.4
3	48 inches	74 inches	sr to very fine sandy loam to silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: Leta

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 61 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	silty clay loam	Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	11 inches	25 inches	silty clay	Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
3	25 inches	44 inches	sr to very fine sandy loam to silt loam	Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4
4	44 inches	72 inches	fine sand	Not reported	Not reported	Max: 141 Min: 42	Max: 8.4 Min: 7.4

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
B6	USGS40000694638	1/2 - 1 Mile North
B7	USGS40000694640	1/2 - 1 Mile North
10	USGS40000694627	1/2 - 1 Mile NW
14	USGS40000694588	1/2 - 1 Mile West
16	USGS40000694488	1/2 - 1 Mile South
19	USGS40000694629	1/2 - 1 Mile WNW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
C11	MO3010146	1/2 - 1 Mile NW

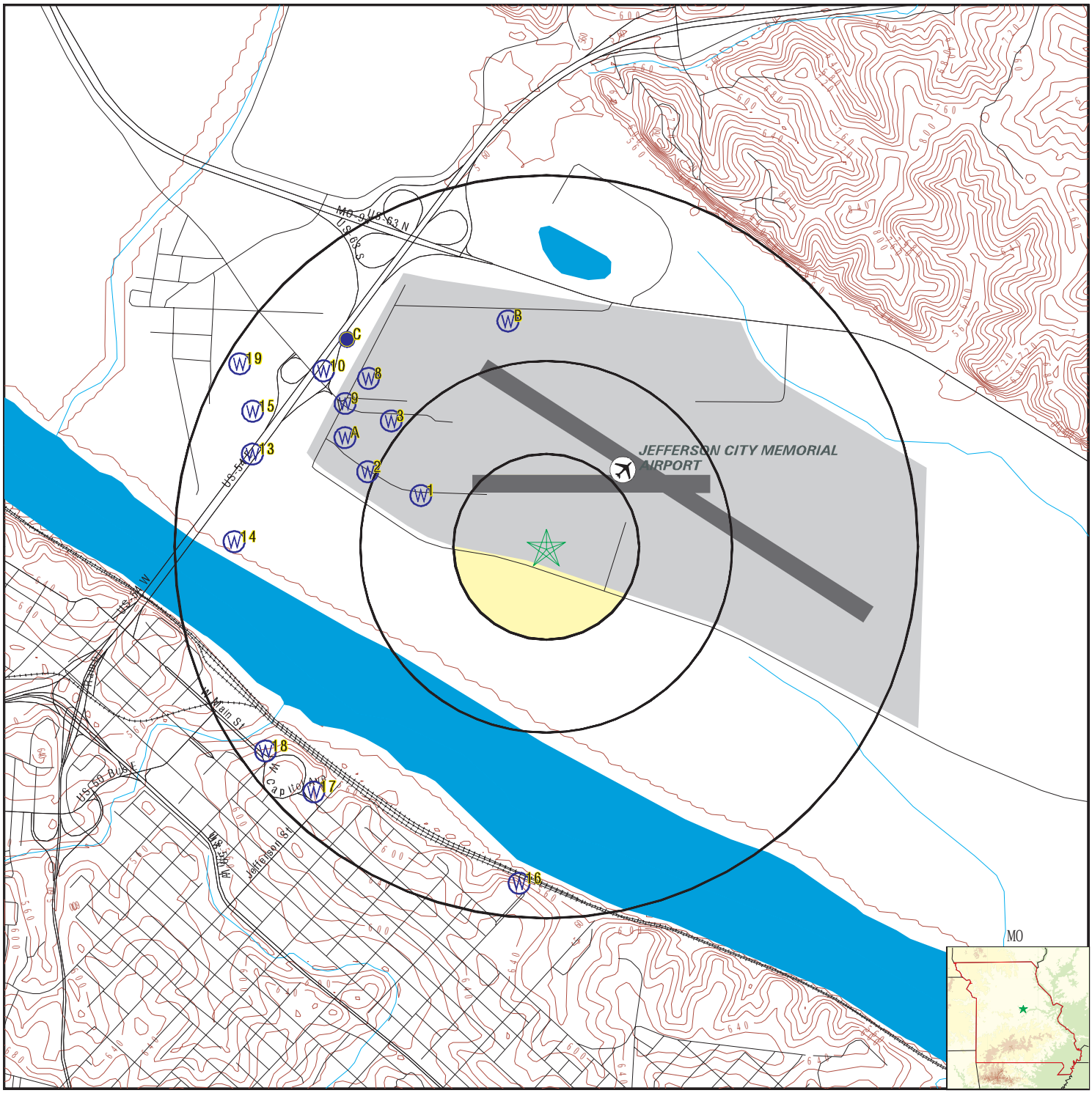
Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	MOLOG1000017882	1/4 - 1/2 Mile WNW
2	MOLOG1000017891	1/2 - 1 Mile WNW
3	MOLOG1000017915	1/2 - 1 Mile NW
A4	MOLOG1000017901	1/2 - 1 Mile WNW
A5	MOLOG1000017902	1/2 - 1 Mile WNW
8	MOLOG1000017931	1/2 - 1 Mile NW
9	MOLOG1000017920	1/2 - 1 Mile NW
C12	MO7000000004041	1/2 - 1 Mile NW
13	MOLOG1000017896	1/2 - 1 Mile WNW
15	MOLOG1000017917	1/2 - 1 Mile WNW
17	MO7000000004830	1/2 - 1 Mile SW
18	MO7000000004829	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 7148420.2s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- Oil, gas or related wells

SITE NAME:	Jeff City Airport Project	CLIENT:	Terracon
ADDRESS:	500 Airport Road Jefferson City MO 65101	CONTACT:	Danielle Richardson
LAT/LONG:	38.588171 / 92.159948	INQUIRY #:	7148420.2s
		DATE:	October 17, 2022 8:22 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1 **WNW** **1/4 - 1/2 Mile** **Higher**	**MO WELLS**	**MOLOG1000017882**

Database:	Geologic Well Log Database	ID:	018963
Elevation:	541	Static Water Level:	0

	Database	EDR ID Number
2 **WNW** **1/2 - 1 Mile** **Higher**	**MO WELLS**	**MOLOG1000017891**

Database:	Geologic Well Log Database	ID:	004357
Elevation:	608	Static Water Level:	0

	Database	EDR ID Number
3 **NW** **1/2 - 1 Mile** **Higher**	**MO WELLS**	**MOLOG1000017915**

Database:	Geologic Well Log Database	ID:	006024
Elevation:	652	Static Water Level:	0

	Database	EDR ID Number
A4 **WNW** **1/2 - 1 Mile** **Higher**	**MO WELLS**	**MOLOG1000017901**

Database:	Geologic Well Log Database	ID:	015610
Elevation:	620	Static Water Level:	95

	Database	EDR ID Number
A5 **WNW** **1/2 - 1 Mile** **Higher**	**MO WELLS**	**MOLOG1000017902**

Database:	Geologic Well Log Database	ID:	014729
Elevation:	590	Static Water Level:	0

	Database	EDR ID Number
B6 **North** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000694638**

Organization ID:	USGS-MO	Organization Name:	USGS Missouri Water Science Center
Monitor Location:	T44N R11W 10CCD	Type:	Well
Description:	Not Reported	HUC:	10300102
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported

Aquifer:	Mississippian aquifers	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

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B7
North
1/2 - 1 Mile
Higher

FED USGS **USGS40000694640**

Organization ID:	USGS-MO	Organization Name:	USGS Missouri Water Science Center
Monitor Location:	Jefferson City	Type:	Well
Description:	Not Reported	HUC:	10300102
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Alluvial aquifers	Formation Type:	Holocene Alluvium
Aquifer Type:	Unconfined single aquifer	Construction Date:	19560420
Well Depth:	95	Well Depth Units:	ft
Well Hole Depth:	95	Well Hole Depth Units:	ft

8
NW
1/2 - 1 Mile
Higher

MO WELLS **MOLOG1000017931**

Database:	Geologic Well Log Database	ID:	013936
Elevation:	561	Static Water Level:	30

9
NW
1/2 - 1 Mile
Higher

MO WELLS **MOLOG1000017920**

Database:	Geologic Well Log Database	ID:	013950
Elevation:	560	Static Water Level:	0

10
NW
1/2 - 1 Mile
Higher

FED USGS **USGS40000694627**

Organization ID:	USGS-MO	Organization Name:	USGS Missouri Water Science Center
Monitor Location:	T44N R11W 16AAC1	Type:	Well
Description:	Not Reported	HUC:	10300102
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Cambrian-Ordovician aquifer system		
Formation Type:	Gasconade Dolomite, Lower	Aquifer Type:	Confined multiple aquifer
Construction Date:	19550801	Well Depth:	330
Well Depth Units:	ft	Well Hole Depth:	330
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	1	Level reading date:	1955-08-01

Feet below surface:	30	Feet to sea level:	Not Reported
Note:	Not Reported		

C11
NW
1/2 - 1 Mile
Higher

FRDS PWS **MO3010146**

Epa region:	07	State:	MO
Pwsid:	MO3010146	Pwsname:	JEFFERSON CITY NORTH
Cityserved:	Not Reported	Stateserved:	MO
Zipserved:	Not Reported	Fipscounty:	29027
Status:	Closed	Retpopsrvd:	95
Pwssvcconn:	38	Psource longname:	Groundwater
Pwstype:	CWS	Owner:	Local_Govt
Contact:	SULLIVAN, PAT	Contactorgname:	SULLIVAN, PAT
Contactphone:	573-634-6328	Contactaddress1:	CITY HALL
Contactaddress2:	320 E MC CARTY	Contactcity:	JEFFERSON CITY
Contactstate:	MO	Contactzip:	65101-0000
Pwsactivitycode:	I		

Pwsid:	MO3010146	Facid:	70611
Facname:	NEXT TO THE TOW	Factype:	Treatment_plant
Facactivitycode:	I	Trtobjective:	disinfection
Trtprocess:	hypochlorination, post	Factypecode:	TP

Pwsid:	MO3010146	Facid:	70612
Facname:	0.NEXT TO THE HYW	Factype:	Treatment_plant
Facactivitycode:	A	Trtobjective:	disinfection
Trtprocess:	hypochlorination, post	Factypecode:	TP

PWS ID:	MO3010146	PWS name:	JEFFERSON CITY - NORTH
Address:	320 E. MCCARTY	Care of:	CITY HALL
City:	JEFFERSON CITY	State:	MO
Zip:	65101	Owner:	JEFFERSON CITY - NORTH
Source code:	Ground water	Population:	7

PWS ID:	MO3010146	PWS type:	Not Reported
PWS name:	Not Reported	PWS address:	Not Reported
PWS city:	Not Reported	PWS state:	Not Reported
PWS zip:	Not Reported	PWS ID:	MO3010146
Activity status:	Active	Date system activated:	6301
Date system deactivated:	Not Reported	Retail population:	00000490
System name:	JEFFERSON CITY - NORTH	System address:	CITY HALL
System address:	320 E. MCCARTY	System city:	JEFFERSON CITY
System state:	MO	System zip:	65101

County FIPS:	Not Reported	City served:	JEFFERSON CITY
Population served:	101 - 500 Persons	Treatment:	Untreated
Latitude:	383546	Longitude:	0921011
Latitude:	383543	Longitude:	0921032
State:	MO	Latitude degrees:	38
Latitude minutes:	35	Latitude seconds:	43.0000
Longitude degrees:	92	Longitude minutes:	10
Longitude seconds:	32.0000		
State:	MO	Latitude degrees:	38

Latitude minutes:	35	Latitude seconds:	46.0000
Longitude degrees:	92	Longitude minutes:	10
Longitude seconds:	11.0000		

C12
NW
1/2 - 1 Mile
Higher

MO WELLS **MO7000000004041**

Database:	Missouri Public Drinking Water Wells		
DGLS ID:	103739	LOGMAIN ID:	Not Reported
Well Certification #:	00388921	PWSS Name:	Jefferson City - North
PWSS ID:	3010146	IPWS ID:	MO3010146
Well #:	2		
Local Name:	Next To Hwy. - disconnected		
Well ID:	13319	Facility Type:	City
Federal Water System Type:	Non-Public	Status:	Plugged
Drill Date:	0	Abandoned:	0
Plugged:	2009	Material Type:	Consolidated
Formation at Casing Depth:	Not Reported	Formation at Total Depth:	Not Reported
Total Depth:	0	Ground Elevation:	555
Top Seal Type:	Not Reported	Bottom Seal Type:	Not Reported
Casing Depth:	0	Casing Diameter:	0
Casing Type:	Not Reported	Casing Elevation:	557
Casing Height:	0	Outer Well Casing Depth:	0
Outer Casing Diameter:	0	Screen Length (ft):	-9999
Screen Size (in):	-9999	Depth to Static Water Level:	0
Max Yield (gal/min):	0	Dynamic Head of Pump:	0
Drawdown:	0	Year of Pump Test:	0
Pump Type:	Not Reported	Pump Manufacturer:	Not Reported
Pump Depth:	0	Pump Capacity:	0
Has Pump Meter:	Not Reported	Has Stand-by Power:	Not Reported
VOC detections:	N	Nitrates Detected:	N
Chlorination Used:	N	Filtration Used:	N
GWUDISW:	Not Reported	Meets Construction Requirements:	Not Reported
Surface Drainage:	Not Reported	Water System Entry Point ID:	Y
SWIP Wellhead Status:	Verified		

13
WNW
1/2 - 1 Mile
Higher

MO WELLS **MOLOG1000017896**

Database:	Geologic Well Log Database	ID:	024561
Elevation:	545	Static Water Level:	0

14
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000694588**

Organization ID:	USGS-MO	Organization Name:	USGS Missouri Water Science Center
Monitor Location:	T44N R11W 16DBC1	Type:	Well
Description:	Not Reported	HUC:	10300102
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Alluvial aquifers	Formation Type:	Holocene Alluvium

Aquifer Type:	Unconfined single aquifer	Construction Date:	19661031
Well Depth:	40	Well Depth Units:	ft
Well Hole Depth:	40	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	25	Level reading date:	1975-04-10
Feet below surface:	13.5	Feet to sea level:	Not Reported
Note:	Not Reported		

Level reading date:	1970-06-03	Feet below surface:	7.03
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1970-01-21	Feet below surface:	18.27
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-08-21	Feet below surface:	10.7
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-06-09	Feet below surface:	10.48
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-04-29	Feet below surface:	3.77
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1969-03-10	Feet below surface:	12.06
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-12-18	Feet below surface:	16.94
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-10-15	Feet below surface:	13.75
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-09-04	Feet below surface:	14.49
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-07-08	Feet below surface:	14.19
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-06-13	Feet below surface:	14.42
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-04-04	Feet below surface:	15
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-02-27	Feet below surface:	16.95
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1968-01-10	Feet below surface:	20.58
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-11-08	Feet below surface:	11.8
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-10-03	Feet below surface:	13.52
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-08-30	Feet below surface:	13.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-07-18	Feet below surface:	10.81
Feet to sea level:	Not Reported	Note:	Not Reported

Level reading date:	1967-05-11	Feet below surface:	14.18
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-04-04	Feet below surface:	10.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-03-01	Feet below surface:	20.82
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-02-09	Feet below surface:	18.73
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1967-02-01	Feet below surface:	18.76
Feet to sea level:	Not Reported	Note:	Not Reported
Level reading date:	1966-12-07	Feet below surface:	17.51
Feet to sea level:	Not Reported	Note:	Not Reported

15
WNW **MO WELLS** **MOLOG1000017917**
1/2 - 1 Mile
Higher

Database:	Geologic Well Log Database	ID:	006834
Elevation:	736	Static Water Level:	0

16
South **FED USGS** **USGS40000694488**
1/2 - 1 Mile
Higher

Organization ID:	USGS-MO	Organization Name:	USGS Missouri Water Science Center
Monitor Location:	T44N R11W 08DBD1	Type:	Well
Description:	Not Reported	HUC:	10300102
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Ozark Plateaus aquifer system		
Formation Type:	Lamotte Sandstone	Aquifer Type:	Confined multiple aquifer
Construction Date:	193801	Well Depth:	1570
Well Depth Units:	ft	Well Hole Depth:	1570
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1938-01-27
Feet below surface:	9	Feet to sea level:	Not Reported
Note:	Not Reported		
Level reading date:	1938-01	Feet below surface:	9
Feet to sea level:	Not Reported	Note:	Not Reported

17
SW **MO WELLS** **MO7000000004830**
1/2 - 1 Mile
Higher

Database:	Missouri Public Drinking Water Wells		
DGLS ID:	104692	LOGMAIN ID:	0005747
Well Certification #:	Not Reported	PWSS Name:	Missouri State Capitol

PWSS ID:	3152178	IPWS ID:	MO3152178
Well #:	2	Local Name:	East
Well ID:	14158	Facility Type:	Other State Facility
Federal Water System Type:	Non-Transient, Non-Community		
Status:	Active	Drill Date:	1939
Abandoned:	0	Plugged:	0
Material Type:	Consolidated	Formation at Casing Depth:	Gasconade
Formation at Total Depth:	Elvins	Total Depth:	1000
Ground Elevation:	0	Top Seal Type:	Not Reported
Bottom Seal Type:	Not Reported	Casing Depth:	300
Casing Diameter:	12	Casing Type:	Steel
Casing Elevation:	0	Casing Height:	0
Outer Well Casing Depth:	0	Outer Casing Diameter:	0
Screen Length (ft):	-9999	Screen Size (in):	-9999
Depth to Static Water Level:	90	Max Yield (gal/min):	325
Dynamic Head of Pump:	0	Drawdown:	90
Year of Pump Test:	1972	Pump Type:	Vertical Turbine
Pump Manufacturer:	Not Reported	Pump Depth:	380
Pump Capacity:	420	Has Pump Meter:	Not Reported
Has Stand-by Power:	N	VOC detections:	N
Nitrates Detected:	N	Chlorination Used:	Y
Filtration Used:	N	GWUDISW:	N
Meets Construction Requirements:	Not Reported	Surface Drainage:	Not Reported
Water System Entry Point ID:	Y	SWIP Wellhead Status:	Verified

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18
SW
1/2 - 1 Mile
Higher

MO WELLS **MO7000000004829**

Database:	Missouri Public Drinking Water Wells		
DGLS ID:	104691	LOGMAIN ID:	0005493
Well Certification #:	Not Reported	PWSS Name:	Missouri State Capitol
PWSS ID:	3152178	IPWS ID:	MO3152178
Well #:	1	Local Name:	West
Well ID:	14157	Facility Type:	Other State Facility
Federal Water System Type:	Non-Transient, Non-Community		
Status:	Active	Drill Date:	1939
Abandoned:	0	Plugged:	0
Material Type:	Consolidated	Formation at Casing Depth:	Gasconade
Formation at Total Depth:	Lamotte	Total Depth:	1594
Ground Elevation:	0	Top Seal Type:	Not Reported
Bottom Seal Type:	Not Reported	Casing Depth:	300
Casing Diameter:	12	Casing Type:	Steel
Casing Elevation:	0	Casing Height:	0
Outer Well Casing Depth:	0	Outer Casing Diameter:	0
Screen Length (ft):	-9999	Screen Size (in):	-9999
Depth to Static Water Level:	90	Max Yield (gal/min):	325
Dynamic Head of Pump:	0	Drawdown:	90
Year of Pump Test:	1972	Pump Type:	Vertical Turbine
Pump Manufacturer:	Not Reported	Pump Depth:	400
Pump Capacity:	420	Has Pump Meter:	Not Reported
Has Stand-by Power:	N	VOC detections:	N
Nitrates Detected:	N	Chlorination Used:	Y
Filtration Used:	N	GWUDISW:	N
Meets Construction Requirements:	Not Reported	Surface Drainage:	Not Reported
Water System Entry Point ID:	Y	SWIP Wellhead Status:	Verified

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
19 **WNW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000694629**

Organization ID:	USGS-MO	Organization Name:	USGS Missouri Water Science Center
Monitor Location:	T44N R11W 16BAD1	Type:	Well
Description:	Not Reported	HUC:	10300102
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Cambrian-Ordovician aquifer system		
Formation Type:	Potosi Dolomite	Aquifer Type:	Confined multiple aquifer
Construction Date:	19621101	Well Depth:	935
Well Depth Units:	ft	Well Hole Depth:	935
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	2	Level reading date:	1979-03-29
Feet below surface:	45.90	Feet to sea level:	Not Reported
Note:	The site had been pumped recently.		
Level reading date:	1962-11-01	Feet below surface:	37
Feet to sea level:	Not Reported	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: MO Radon

Radon Test Results

Zipcode	Test Date	Result
65043	02/17/09	2.1
65043	02/17/09	4.1
65043	02/17/09	6.2
65043	02/17/09	< 0.3
65043	02/20/09	5
65043	02/20/09	< 0.3
65043	02/21/09	0.5
65043	01/09/07	9.8
65043	01/09/08	< 0.3
65043	01/28/08	1.9
65043	01/29/09	< 0.3
65043	02/04/06	4.2
65043	02/06/09	< 0.3
65043	02/07/09	0.9
65043	02/07/09	1.2
65043	02/09/06	2.2
65043	02/09/09	0.6
65043	02/13/06	0.6
65043	02/14/09	9
65043	03/31/07	1.4
65043	02/28/08	0.7
65043	03/02/09	< 0.3
65043	08/11/08	1.2
65043	05/10/08	1.3
65043	09/20/07	11.9
65043	09/22/08	0.7
65043	10/09/06	0.8
65043	10/26/05	15.2
65043	12/10/07	2.2
65043	12/10/07	3
65043	12/13/07	2.4
65043	12/14/07	0.6

Federal EPA Radon Zone for CALLAWAY County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 65043

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	Not Reported	Not Reported	Not Reported	Not Reported
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.300 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: National Wetland Inventory of Missouri
Source: Department of Natural Resources
Telephone: 573-751-5110

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Missouri Public Drinking Water Wells
Source: Department of Natural Resources
Telephone: 573-526-5448

Missouri Geologic Well Log Database
Source: Department of Natural Resources
Telephone: 573-526-5448

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Database
Source: Department of Natural Resources
Telephone: 573-368-2143

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

APPENDIX E

PROFESSIONAL RESUMES

NICOLE AZMANOV
GROUP MANAGER - ENVIRONMENTAL

PROFESSIONAL EXPERIENCE
Ms. Azmanov is the due diligence group manager in Terracon's St. Louis office. She is an Environmental Professional (EP) with more than 8 years experience in the environmental industry. She supervises entry level staff and manages and prepares Phase I Environmental Site Assessments (ESAs) for commercial, multi-family, agricultural, and industrial properties. Other duties include preparing proposals, performing business development and client outreach activities, and training entry level environmental staff professionals.

PROJECT EXPERIENCE
Due Diligence – Property Transactions
Nicole has prepared hundreds of Phase I ESAs on single- and multi-tenant commercial structures, automobile repair facilities, gasoline stations, commercial developments, industrial manufacturing sites, and multi-family residential structures. She has also managed Phase I ESA portfolios for local clients.

Due Diligence – Telecommunications Sector
Conducted Phase I ESAs for individual new build telecommunications towers, tower collocations, and building antennae collocations nationwide. Duties included site visits, historical research, information interpretation, project tracking, subcontractor relations, and report writing.

NEPA/SHPO Services – Telecommunications Sector
Ms. Azmanov has five years of experience conducting NEPA Reviews for existing and proposed communications towers in multiple states. NEPA responsibilities included field work, contact with federal, state, and local government agencies, coordination of Cultural Resource Investigation for historical preservation clearance, evaluating the presence/absence of wetlands, floodplains, federal land, tribal land, threatened and endangered species, and critical habitat, and report writing.

Asbestos and Lead-Based Paint Inspections
Ms. Azmanov has performed NESHAP, AHERA, and asbestos inspections on residential and commercial facilities in Missouri.

Education
Bachelor of Science, Environmental Science, Maryville University, 2011

Affiliations
Missouri Botanical Gardens, Earthways Center, St. Louis, MO August 2007-Present

Commercial Real Estate Women (CREW) 2014-2017

Work History
Terracon Consultants, Inc., Staff Professional, Aug 2013-Dec 2017; Project Manager Oct 2018-Feb 2020
Group Manager March 2020-Present

Trileaf Environmental, Project Scientist, May 2012-August 2013

TestAmerica, Inc, Earth City, MO, Analyst, August 2011-April 2012

Certifications
Asbestos Building Inspector, Missouri

CPR/First Aid certified

DANIELLE RICHARDSON

STAFF SCIENTIST

PROFESSIONAL EXPERIENCE

Ms. Richardson is a Staff Scientist in Terracon's Indianapolis, Indiana Office. Ms. Richardson is responsible for performing Phase I Environmental Site Assessments (ESAs). She has conducted Phase I ESAs throughout Indiana, including commercial facilities and vacant land.

Ms. Richardson's experience also includes Geographic Information Systems (GIS) data analyses and mapping, lab testing, wetland conservation and invasive species removal, water, air, and soil sampling. Below is a cursory summary of Ms. Richardson's most significant project experience.

PROJECT EXPERIENCE

Vacant Land – Fishers, Indiana
Assisted in a Phase I ESA of a vacant property including visual observations of on-site operations, historical uses of the site, and adjoining commercial structures.

Retail Property – West Lafayette, Indiana
Assisted in the production of a Phase I ESA study of a retail supercenter. This project included historical uses of the site and adjoining commercial structures.

Tank Removal- LaPorte, Indiana
Assisted in oversight and sample collection for 13 above ground oil storage tanks. This project included preliminary drilling and sample collection as well as a full excavation of contaminated soil.

Field Sampling- Indianapolis, Indiana
Completed water, soil, and air sampling throughout Indiana, Ohio, and Michigan as well as partaking in monitoring well installations, and remedial injection oversight.

Wetland Work- Porter, Indiana
Conducted wetland restoration work by doing invasive special removal using a Marsh Master, native plant propagation, and native seed collection.

EDUCATION

Bachelor of Science, Geography, Environmental Science,

Valparaiso University, 2020

CERTIFICATIONS

40-Hour OSHA Hazardous Waste Operations and Emergency Response Training (HAZWOPER), 2020

WORK HISTORY

Terracon Consultants, Inc., Staff Scientist, August 2022 to Present

Patriot Engineering and Environmental, Staff Scientist, January 2022 to August 2022.

Heritage Environmental Services, QA/QC Lab Technician, January 2021-January 2022

Indiana Dunes National Park, Biological Science Technician, May 2019-December 2020

APPENDIX F

DESCRIPTION OF TERMS AND ACRONYMS

Description of Selected General Terms and Acronyms

Term/Acronym	*Description*
ACM	Asbestos Containing Material. Asbestos is a naturally occurring mineral, three varieties of which (chrysotile, amosite, crocidolite) have been commonly used as fireproofing or binding agents in construction materials. Exposure to asbestos, as well as ACM, has been documented to cause lung diseases including asbestosis (scarring of the lung), lung cancer and mesothelioma (a cancer of the lung lining). Regulatory agencies have generally defined ACM as a material containing greater that one (1) percent asbestos, however some states (e.g. California) define ACM as materials having 0.1% asbestos. In order to define a homogenous material as non-ACM, a minimum number of samples must be collected from the material dependent upon its type and quantity. Homogenous materials defined as non-ACM must either have 1) no asbestos identified in all of its samples or 2) an identified asbestos concentration below the appropriate regulatory threshold. Asbestos concentrations are generally determined using polarized light microscopy or transmission electron microscopy. Point counting is an analytical method to statistically quantify the percentage of asbestos in a sample. The asbestos component of ACM may either be friable or non-friable. Friable materials, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure and have a higher potential for a fiber release than non-friable ACM. Non-friable ACM are materials that are firmly bound in a matrix by plastic, cement, etc. and, if handled carefully, will not become friable. Federal and state regulations require that either all suspect building materials be presumed ACM or that an asbestos survey be performed prior to renovation, dismantling, demolition, or other activities that may disturb potential ACM. Notifications are required prior to demolition and/or renovation activities that may impact the condition of ACM in a building. ACM removal may be required if the ACM is likely to be disturbed or damaged during the demolition or renovation. Abatement of friable or potentially friable ACM must be performed by a licensed abatement contractor in accordance with state rules and NESHAP. Additionally, OSHA regulations for work classification, worker training and worker protection will apply.
AHERA	Asbestos Hazard Emergency Response Act
AST	Aboveground Storage Tanks. ASTs are generally described as storage tanks less than 10% of which are below ground (i.e., buried). Tanks located in a basement, but not buried, are also considered ASTs. Whether, and the extent to which, an AST is regulated, is determined on a case-by-case basis and depends upon tank size, its contents and the jurisdiction of its location.
BGS	Below Ground Surface
Brownfields	State and/or tribal listing of Brownfield properties addressed by Cooperative Agreement Recipients or Targeted Brownfields Assessments.
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes. BTEX are VOC components found in gasoline and commonly used as analytical indicators of a petroleum hydrocarbon release.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act (a.k.a. Superfund). CERCLA is the federal act that regulates abandoned or uncontrolled hazardous waste sites. Under this Act, joint and several liability may be imposed on potentially responsible parties for cleanup-related costs.
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System. An EPA compilation of sites having suspected or actual releases of hazardous substances to the environment. CERCLIS also contains information on site inspections, preliminary assessments and remediation of hazardous waste sites. These sites are typically reported to EPA by states and municipalities or by third parties pursuant to CERCLA Section 103.
CESQG	Conditionally exempt small quantity generators.
CFR	Code of Federal Regulations

Description of Selected General Terms and Acronyms (cont.)

Term/Acronym	*Description*
CREC	Controlled Recognized Environmental Condition is defined in ASTM E1527-13 as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority) , with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report."
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System. An EPA-maintained federal database which stores information on notifications of oil discharges and hazardous substance releases in quantities greater than the applicable reportable quantity under CERCLA. ERNS is a cooperative data-sharing effort between EPA, DOT, and the National Response Center.
ESA	Environmental Site Assessment
FRP	Fiberglass Reinforced Plastic
Hazardous Substance	As defined under CERCLA, this is (A) any substance designated pursuant to section 1321(b)(2)(A) of Title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title; (C) any hazardous waste having characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (with some exclusions); (D) any toxic pollutant listed under section 1317(a) of Title 33; (E) any hazardous air pollutant listed under section 112 of the Clean Air Act; and (F) any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action under section 2606 of Title 15. This term does not include petroleum, including crude oil or any fraction thereof which is not otherwise listed as a hazardous substance under subparagraphs (A) through (F) above, and the term include natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
Hazardous Waste	This is defined as having characteristics identified or listed under section 3001 of the Solid Waste Disposal Act (with some exceptions). RCRA, as amended by the Solid Waste Disposal Act of 1980, defines this term as a "solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."
HREC	Historical Recognized Environmental Condition is defined in ASTM E1527-13 as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time of the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."

IC/EC	A listing of sites with institutional and/or engineering controls in place. IC include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. EC include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.
ILP	Innocent Landowner/Operator Program
LQG	Large quantity generators.
LUST	Leaking Underground Storage Tank. This is a federal term set forth under RCRA for leaking USTs. Some states also utilize this term.
MCL	Maximum Contaminant Level. This Safe Drinking Water concept (and also used by many states as a ground water cleanup criteria) refers to the limit on drinking water contamination that determines whether a supplier can deliver water from a specific source without treatment.
MSDS	Material Safety Data Sheets. Written/printed forms prepared by chemical manufacturers, importers and employers which identify the physical and chemical traits of hazardous chemicals under OSHA's Hazard Communication Standard.
NESHAP	National Emissions Standard for Hazardous Air Pollutants (Federal Clean Air Act). This part of the Clean Air Act regulates emissions of hazardous air pollutants.
NFRAP	Facilities where there is "No Further Remedial Action Planned," as more particularly described under the Records Review section of this report.
NOV	Notice of Violation. A notice of violation or similar citation issued to an entity, company or individual by a state or federal regulatory body indicating a violation of applicable rule or regulations has been identified.
NPDES	National Pollutant Discharge Elimination System (Clean Water Act). The federal permit system for discharges of polluted water.
NPL	The NPL is the EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program.
OSHA	Occupational Safety and Health Administration or Occupational Safety and Health Act
PACM	Presumed Asbestos-Containing Material. A material that is suspected of containing or presumed to contain asbestos but which has not been analyzed to confirm the presence or absence of asbestos.

Description of Selected General Terms and Acronyms (cont.)

Term/Acronym	*Description*
PCB	Polychlorinated Biphenyl. A halogenated organic compound commonly in the form of a viscous liquid or resin, a flowing yellow oil, or a waxy solid. This compound was historically used as dielectric fluid in electrical equipment (such as electrical transformers and capacitors, electrical ballasts, hydraulic and heat transfer fluids), and for numerous heat and fire sensitive applications. PCB was preferred due to its durability, stability (even at high temperatures), good chemical resistance, low volatility, flammability, and conductivity. PCBs, however, do not break down in the environment and are classified by the EPA as a suspected carcinogen. 1978 regulations, under the Toxic Substances Control Act, prohibit manufacturing of PCB-containing equipment; however, some of this equipment may still be in use today.
pCi/L	Pico Curies per Liter of Air. Unit of measurement for Radon and similar radioactive materials.
PLM	Polarized Light Microscopy (see ACM section of the report, if included in the scope of services)
PST	Petroleum Storage Tank. An AST or UST that contains a petroleum product.
Radon	A radioactive gas resulting from radioactive decay of naturally-occurring radioactive materials in rocks and soils containing uranium, granite, shale, phosphate, and pitchblende. Radon concentrations are measured in Pico Curies per Liter of Air. Exposure to elevated levels of radon creates a risk of lung cancer; this risk generally increases as the level of radon and the duration of exposure increases. Outdoors, radon is diluted to such low concentrations that it usually does not present a health concern. However, radon can accumulate in building basements or similar enclosed spaces to levels that can pose a risk to human health. Indoor radon concentrations depend primarily upon the building's construction, design and the concentration of radon in the underlying soil and ground water. The EPA recommended annual average indoor "action level" concentration for residential structures is 4.0 pCi/l.
RCRA	Resource Conservation and Recovery Act. Federal act regulating solid and hazardous wastes from point of generation to time of disposal ('cradle to grave"). 42 U.S.C. 6901 et seq.
RCRA Generators	The RCRA Generators database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as either large (LQG), small (SQG), or conditionally exempt (CESQG). LQG produce at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQG produce 100-1000 kg/month of non-acutely hazardous waste. CESQG are those that generate less than 100 kg/month of non-acutely hazardous waste.
RCRA CORRACTS/TSDs	The USEPA maintains a database of RCRA facilities associated with treatment, storage, and disposal (TSD) of hazardous materials which are undergoing "corrective action". A "corrective action" order is issued when there is a release of hazardous waste or constituents into the environment from a RCRA facility.
RCRA Non-CORRACTS/TSDs	The RCRA Non-CORRACTS/TSD Database is a compilation by the USEPA of facilities which report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.
RCRA Violators List	RAATS. RCRA Administrative Actions Taken. RAATS information is now contained in the RCRIS database and includes records of administrative enforcement actions against facilities for noncompliance.
RCRIS	Resource Conservation and Recovery Information System, as defined in the Records Review section of this report.
REC	Recognized Environmental Conditions are defined by ASTM E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1)due to any release to the environment; 2) under conditions indicative of a release to the environment. *De minimis* conditions are not recognized environmental conditions."
SCL	State "CERCLIS" List (see SPL /State Priority List, below).

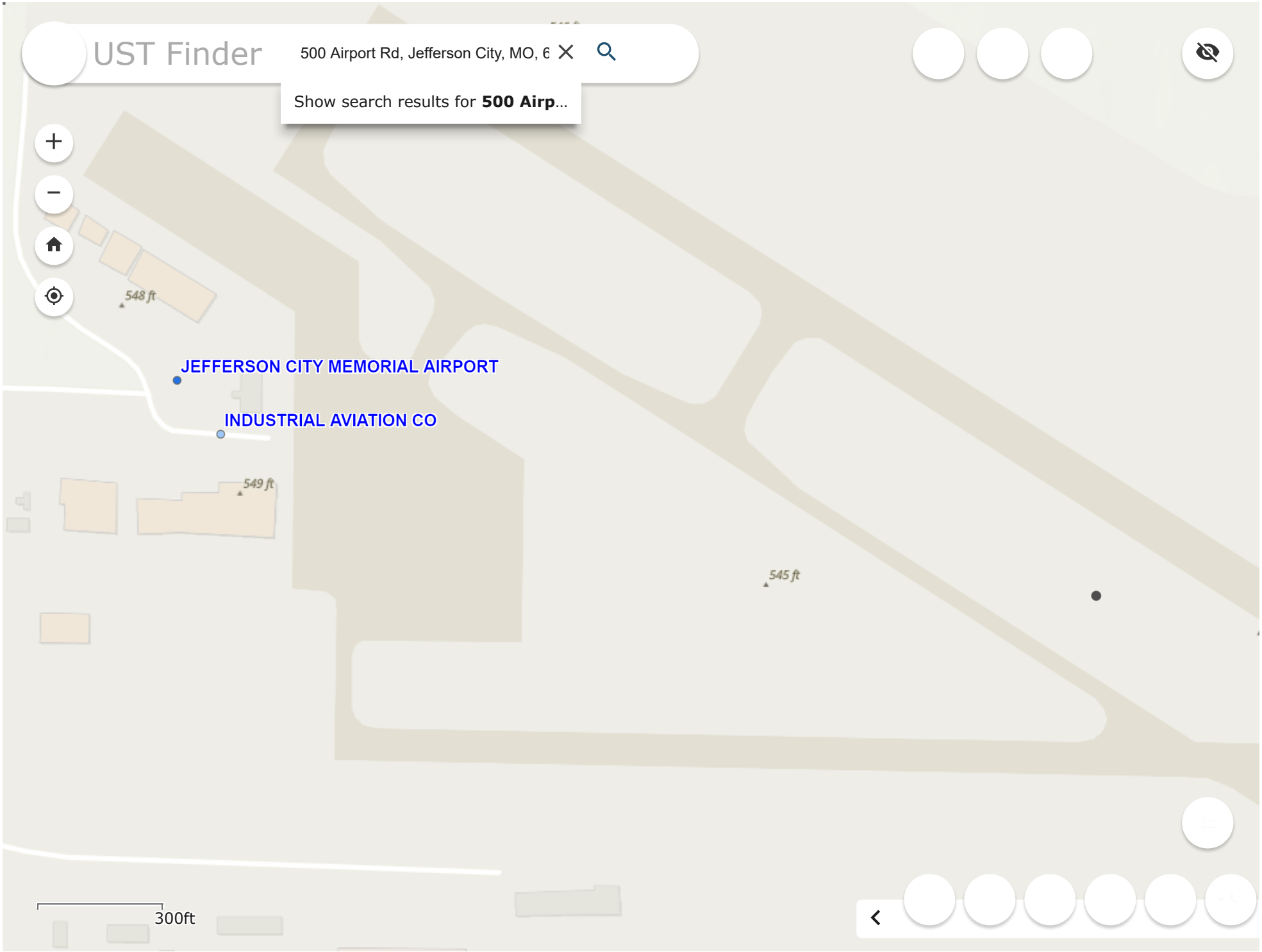
Description of Selected General Terms and Acronyms (cont.)

Term/Acronym	*Description*
SPCC	Spill Prevention, Control and Countermeasures. SPCC plans are required under federal law (Clean Water Act and Oil Pollution Act) for any facility storing petroleum in tanks and/or containers of 55-gallons or more that when taken in aggregate exceed 1,320 gallons. SPCC plans are also required for facilities with underground petroleum storage tanks with capacities of over 42,000 gallons. Many states have similar spill prevention programs, which may have additional requirements.
SPL	State Priority List. State list of confirmed sites having contamination in which the state is actively involved in clean up activities or is actively pursuing potentially responsible parties for clean up. Sometimes referred to as a State "CERCLIS" List.
SQG	Small quantity generator.
SWF/LF	State and/or Tribal database of solid waste/Landfill facilities. The database information may include the facility name, class, operation type, area, estimated operational life, and owner.
TPH	Total Petroleum Hydrocarbons
TRI	Toxic Release Inventory. Routine EPA report on releases of toxic chemicals to the environment based upon information submitted by entities subject to reporting under the Emergency Planning and Community Right to Know Act.
TSCA	Toxic Substances Control Act. A federal law regulating manufacture, import, processing and distribution of chemical substances not specifically regulated by other federal laws (such as asbestos, PCBs, lead-based paint and radon). 15 U.S.C 2601 et seq.
USACE	United States Army Corps of Engineers
USC	United States Code
USGS	United States Geological Survey
USNRCS	United States Department of Agriculture-Natural Resource Conservation Service
UST	Underground Storage Tank. Most federal and state regulations, as well as ASTM E1527-13, define this as any tank, incl., underground piping connected to the tank, that is or has been used to contain hazardous substances or petroleum products and the volume of which is 10% or more beneath the surface of the ground (i.e., buried).
VCP	State and/or Tribal facilities included as Voluntary Cleanup Program sites.
VOC	Volatile Organic Compound
Wetlands	Areas that are typically saturated with surface or ground water that creates an environment supportive of wetland vegetation (i.e., swamps, marshes, bogs). The Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1) defines wetlands as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. For an area to be considered a jurisdictional wetland, it must meet the following criteria: more than 50 percent of the dominant plant species must be categorized as Obligate, Facultative Wetland, or Facultative on lists of plant species that occur in wetlands; the soil must be hydric; and, wetland hydrology must be present. The federal Clean Water Act which regulates "waters of the US," also regulates wetlands, a program jointly administered by the USACE and the EPA. Waters of the U.S. are defined as: (1) waters used in interstate or foreign commerce, including all waters subject to the ebb and flow of tides; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, etc., which the use, degradation, or destruction could affect interstate/ foreign commerce; (4) all impoundments of waters otherwise defined as waters of the U. S., (5) tributaries of waters identified in 1 through 4 above; (6) the territorial seas; and (7) wetlands adjacent to waters identified in 1 through 6 above. Only the USACE has the authority to make a final wetlands jurisdictional determination.

APPENDIX G

AIRPORT UST SUPPORTING DOCUMENTS


UST
500 Airport Rd, Jefferson City, MO, 6
Show search results for **500 Airp**...
Cooper Dr
Cooper Dr
ARMY AVIATION SUPPORT FA
555 ft
MEMORIAL AIRPORT
555 ft
200ft


UST Finder
500 Airport Rd, Jefferson City, MO, 6
Show search results for **500 Airp**...
548 ft
JEFFERSON CITY MEMORIAL AIRPORT
INDUSTRIAL AVIATION CO
549 ft
545 ft
300ft

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Home Search Full Extent

- [ ] Brownfield Assessment
- [ ] Inactive VCP (Terminated/Withdrew)

- [ ] REGULATED PETROLEUM AND HAZARDOUS SUBSTANCE STORAGE TANK FACILITIES
  - [ ] Activity and Use Limitation Area
  - [x] All Operating Underground Storage Tank Facilities
    - [x] Investigation/Corrective Action is Ongoing or Incomplete
    - [x] No Further Action Letter Issued With Restriction
    - [x] Facility Closed Prior to Implementation of 2004 Tanks RBCA
    - [x] No Further Action Letter Issued Without Restriction
    - [x] Operating UST Facilities with No Known Release
    - [x] Administrative Closure
  - [ ] Former Underground Storage Tank Facilities
    - [ ] Investigation/Corrective Action is Ongoing or Incomplete
    - [ ] No Further Action Letter Issued With Restriction
    - [ ] Facility Closed Prior to Implementation of 2004 Tanks RBCA
    - [ ] No Further Action Letter Issued Without Restriction
    - [ ] Administrative Closure
  - [ ] Other Known Petroleum Facilities
    - [ ] Investigation/Corrective Action is Ongoing or Incomplete
    - [ ] No Further Action Letter Issued With Restriction
    - [ ] Facility Closed Prior to Implementation of 2004 Tanks RBCA
    - [ ] No Further Action Letter Issued Without Restriction
    - [ ] Other Reported Petroleum Facilities with No Known Release
    - [ ] Administrative Closure

**** END OF ADDENDUM NO. 4 ****