Tab 4

Description of Site

4. DESCRIPTION OF SITE – SB 257, Section 4(2)(b), Section 5(3)(a)

4.1 **SB 257, Section 5(3)(a)** Kentucky Pioneer Energy, LLC (KPE) proposes to develop a 540 MW_e (net) electric power generation facility at the East Kentucky Power Cooperative (EKPC) JK Smith site in Trapp, Clark County, Kentucky; where EKPC operates approximately 400 MW_e of existing combustion turbine based power generation capacity. The facility will be on a parcel leased from EKPC, jointly utilize existing buildings, roads, rail facilities and other infrastructure. KPE will lease approximately 300-acres wholly within the approximate 3200-acre EKPC JK Smith property.

EKPC graded and partially developed the site for an energy complex. Little if any new site development work is required. KPE will be able to immediately begin site layout and foundation development for its facility. Space within the existing buildings is suitable for office and project management.

The Integrated Gasification Combined Cycle (IGCC) plant essentially integrates a gasification process area, a combined cycle power island and a feedstock handling area. The gasification process area converts solid feed into synthesis gas (Syngas or SG) which is then purified by removing sulfur compounds and other contaminants before use as a fuel in the power island. The power island will consist or two GE 7FA combustion turbines driving electric generators, two heat recovery steam generators and a steam turbine also driving a generator. The feedstock receiving, storage and handling facility will receive feedstock materials by rail, store and handle them. All feedstock handling will be in enclosed structures.

Gasification is an oxygen-blown chemical conversion process requiring an Air Separation Unit to provide the oxygen for gasification and nitrogen for process and syngas uses. The facility will have a new operations control building, including chemical analysis and other laboratory capabilities, which will be developed during plant design.

While syngas is the primary fuel for the combustion turbines, natural gas will be the start-up and back-up fuel. The computer controlled fuel control module at the gas turbines is capable of automatic blending of the two fuels in various proportions.

Water for the facility will be received from EKPC under its Withdrawal Authorization using the existing large capacity pipeline originally installed by EKPC. KPE will install a new intake structure at the Kentucky River to support the volume requirements of both KPE and EKPC. EKPC will meter the flow to KPE. Any wastewater will be treated by Kentucky Pioneer Energy and discharged to the Kentucky River under a Discharge Permit via the existing large capacity discharge line installed by EKPC.

The Kentucky Pioneer Energy project site is approximately two-miles from Trapp Elementary School and one-mile from Highway 89. This is well outside the 1000 or 2000-foot “setback” criteria, which does not apply to this project in any case.

A gate controlled access road off Highway 89 leads to a security guard station within the EKPC property and the main site area. Figures 1 and 2 depict the EKPC JK Smith site, and the KPE lease portion.

EKPC utilizes several existing buildings for its operations at the site, as shown in Figure 3. A portion of one building will be available under the lease agreement for use by Kentucky Pioneer. EKPC developed roads within the property for its JK Smith project, which KPE will utilize. These are depicted in Figure 3. Figures 1 and 2 also depict the existing CSX Mainline Railroad with a Y-Intersection into the site. Also shown is the existing rail-loop, and associated track, serving the site. KPE will require little else for its needs.

There are not public or private parks within a two-mile radius of the project site, or within this rural part of Clark County.

There are not specific legal boundaries established for the Kentucky Pioneer Energy project, in its lease with EKPC. The KPE lease simply provides for use of the parcel generally within the rail-loop and cooperative and joint use thereof.

Construction power and general electric service, needed whenever the facility is not generating electricity, will be obtained from Clark Energy.

Telephone service requirements have not yet been determined.

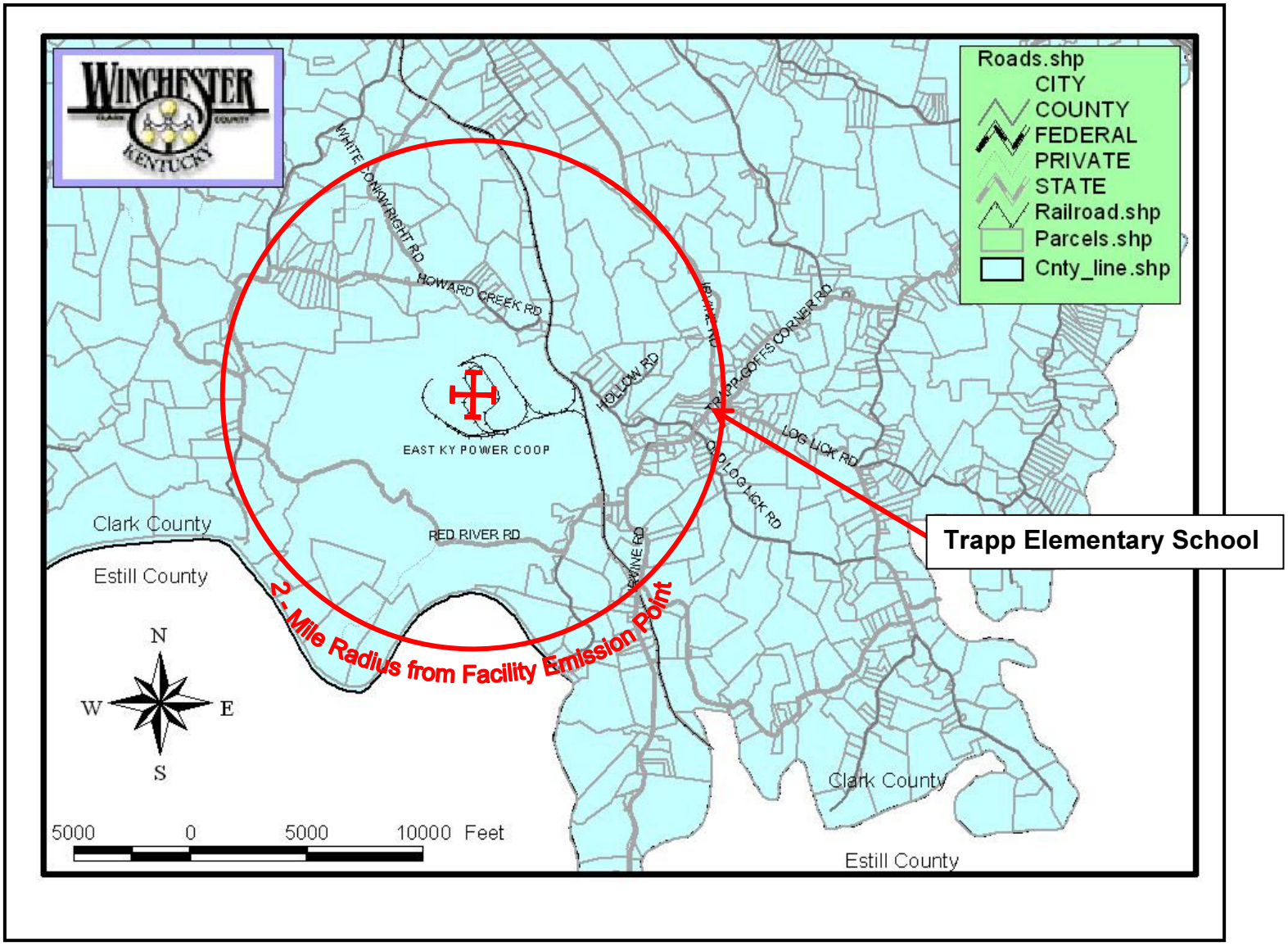

Figure 1
Kentucky Pioneer Energy at EKPC – JK Smith Site

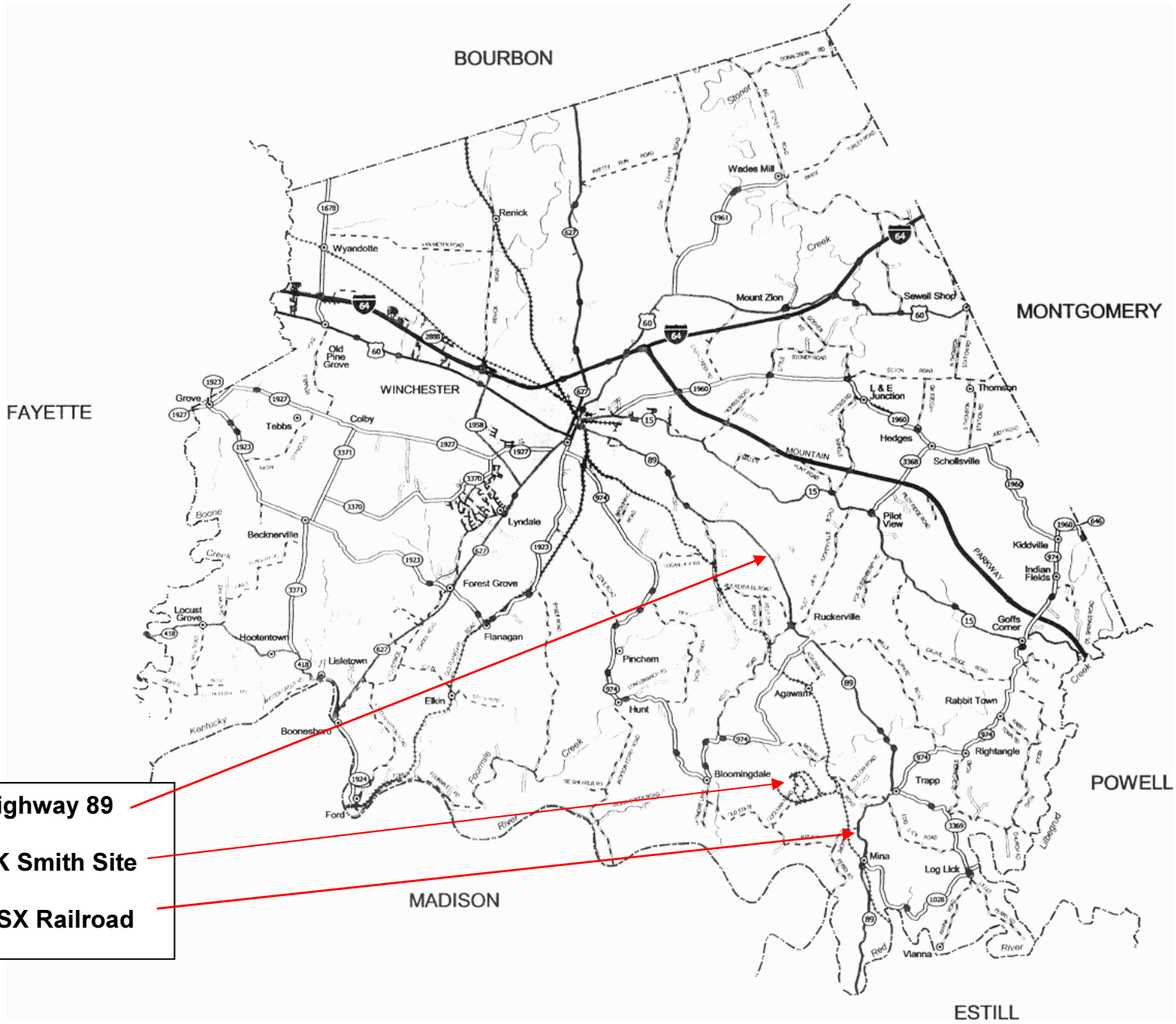

Figure 2
Kentucky Department of Transportation
Map of Clark County

Kentucky Pioneer Energy, LLC
Topographic Presentation

300-Acre Site Lease Area (Inside Rail Loop)
At EKPC ~ 3200-Acre JK Smith Site
Trapp, Clark County, Kentucky

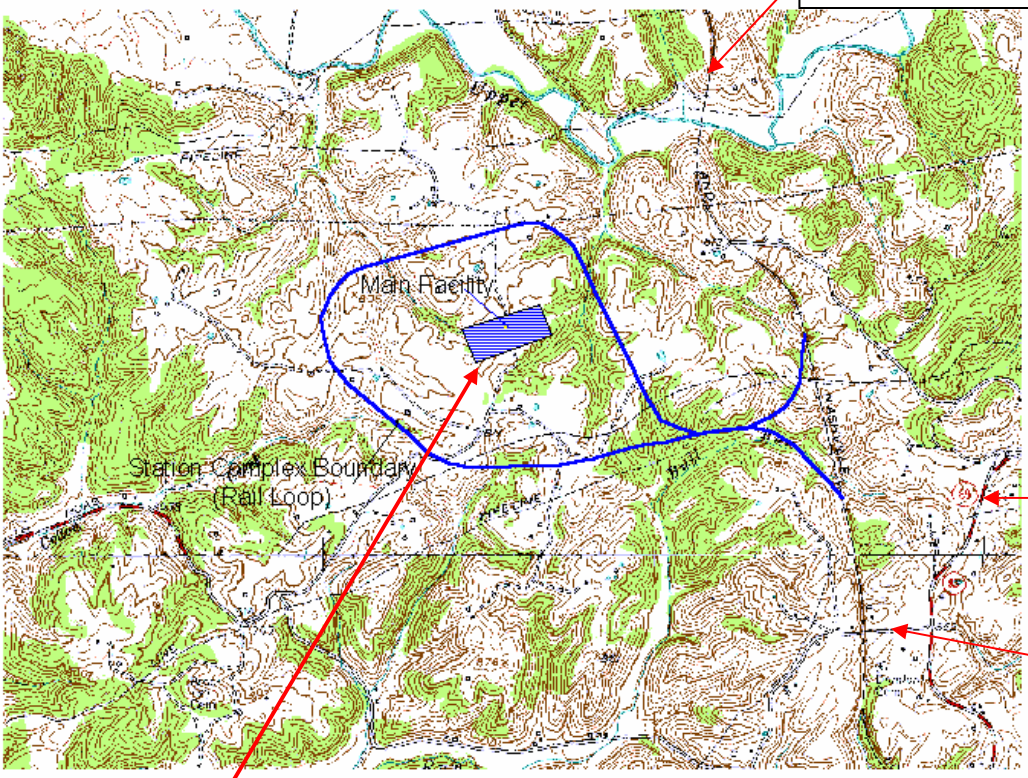

Figure 3

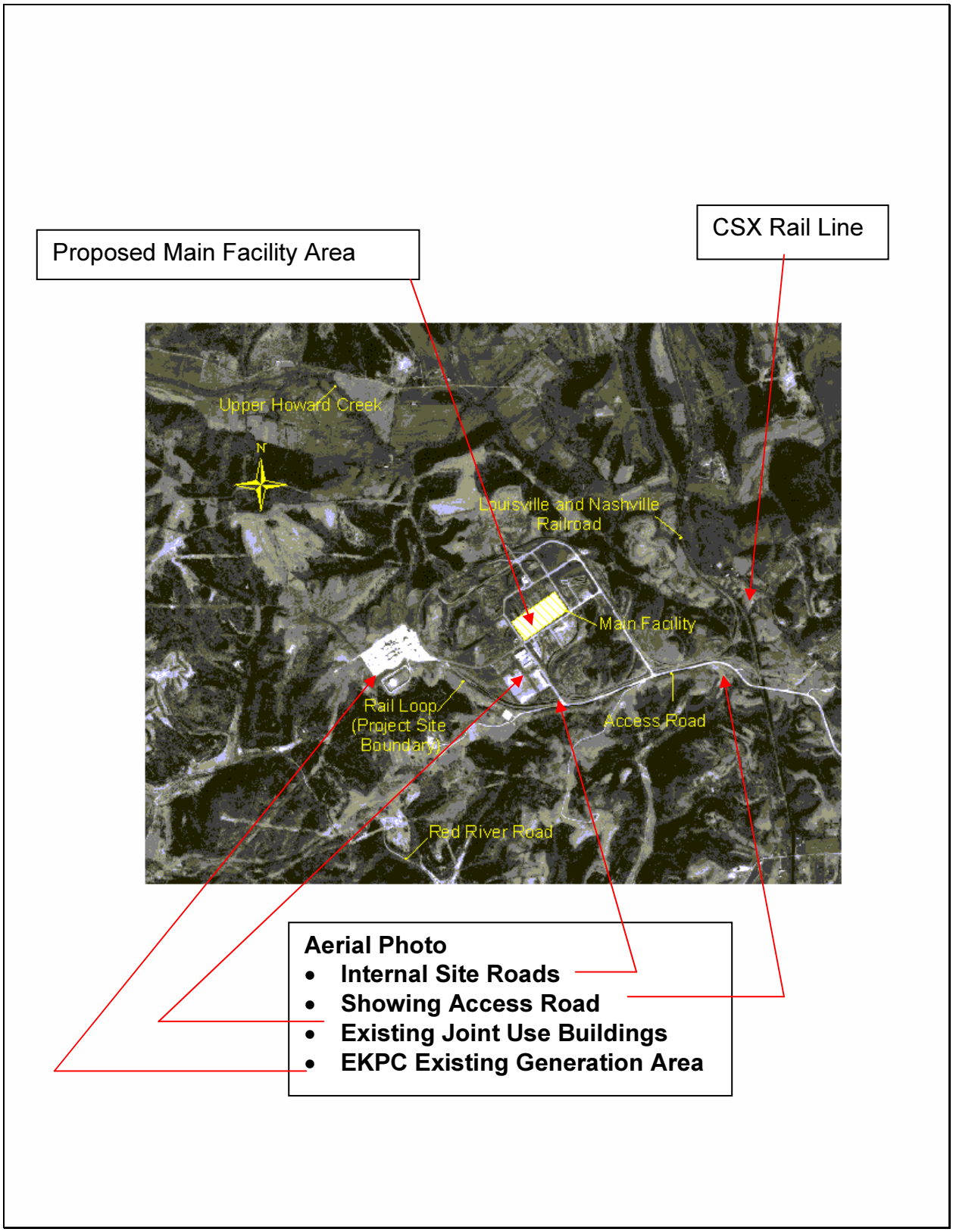
Proposed Main Facility Area
CSX Rail Line
Upper Howard Creek
N
Louisville and Nashville Railroad
Main Facility
Rail Loop (Project Site Boundary)
Access Road
Red River Road
Aerial Photo
• Internal Site Roads
• Showing Access Road
• Existing Joint Use Buildings
• EKPC Existing Generation Area

Figure 4

Tab 5

Existing Generation

And

Setback Requirements

5. EXISTING GENERATION AND SETBACK REQUIREMENTS - – SB 257, Section 4(2)(g), Section 3(2), Section 4(2)(e)

5.1 **Co-Located with Existing Generation – SB 257, Section 4(2)(g):** Kentucky Pioneer Energy will be located at an existing generating facility, on a 300-acre parcel leased from East Kentucky Power Cooperative (EKPC), fully within their approximate 3200-acre JK Smith site. KPE will be located on a parcel leased from and fully within the property owned by EKPC, who is therefore the sole adjacent landowner.

5.2 **Existing Generating Capacity at Site – SB 257, Sections 3(2) and 4(2)(e):** EKPC has five gas turbine driven generators operating at the JK Smith location, with an existing generating capacity of approximately 400 MW. KPE is therefore exempt from setback requirements relative to exhaust stacks of the combustion turbines.

If the setback requirement were applicable, the combustion turbine stacks would comply with the requirement in any case by being approximately 2-miles from the nearest school. There are also no residential neighborhoods, hospitals or nursing homes within this radius.