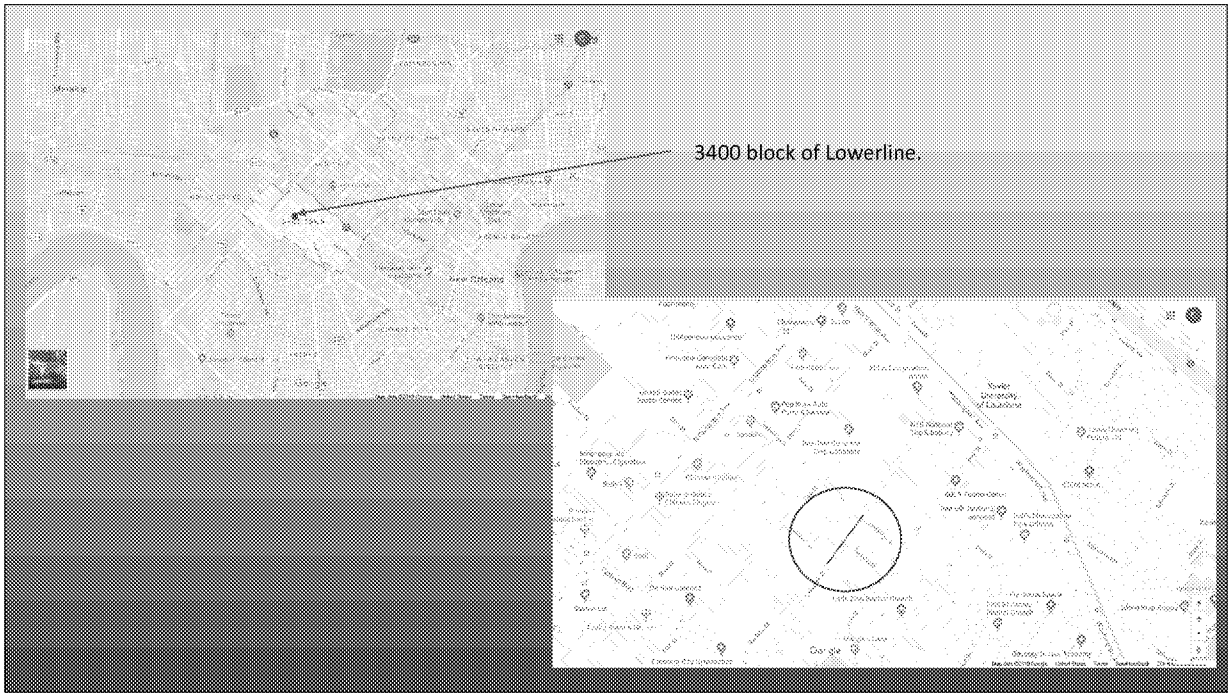
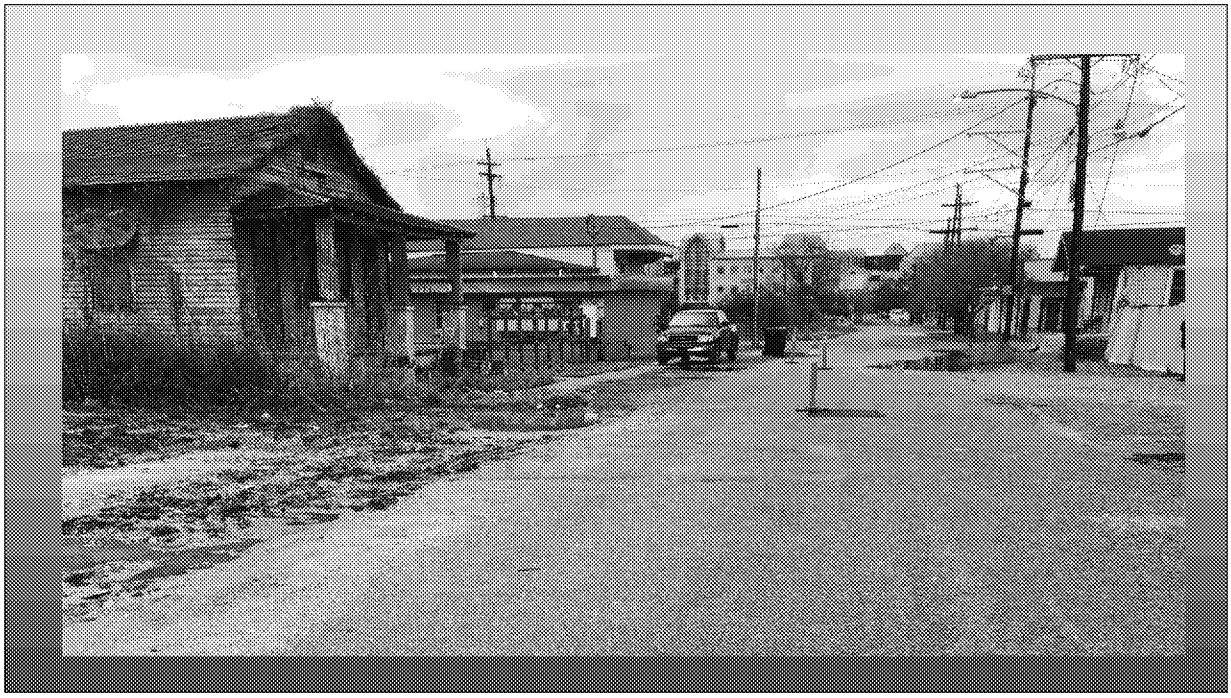
LOWERLINE
NEW ORLEANS, LOUISIANA

The Site was originally brought to EPA by the Department of Energy. They contacted Superfund Division Director. Originally, DOE informed the City and then the State that there was a problem.



The DOE conducted sweeps of the area near the Superdome in advance of the WWE event, the wrestling event. The Dome is to the southeast.
The sweeps for radiological items found one unexplained hotspot on Lowerline.
That part of Lowerline is in a neighborhood known as Gert Town (a grocery store with a like sounding name),
2 miles from the Dome. And a little more to the CBD, Quarter, and River.
Two blocks from Xavier University.
Predominately residential with supporting businesses.



This is Lowerline. Xavier in the background. Residences along the street. The one to the left is believed to be adandoned. The markings in the street are from the City's contractor doing a post-removal scan of the area. They excavated what they showed as the hotspot.

There is only speculation about what is the source of the radiation. It is definitely Radium-226. The City and their contractor believe it was a sealed-source, something used in industry, and then fell off a truck right there. It was only after they reached the contamination that they realized that it was not a discrete sealed source but actually contaminated soil.

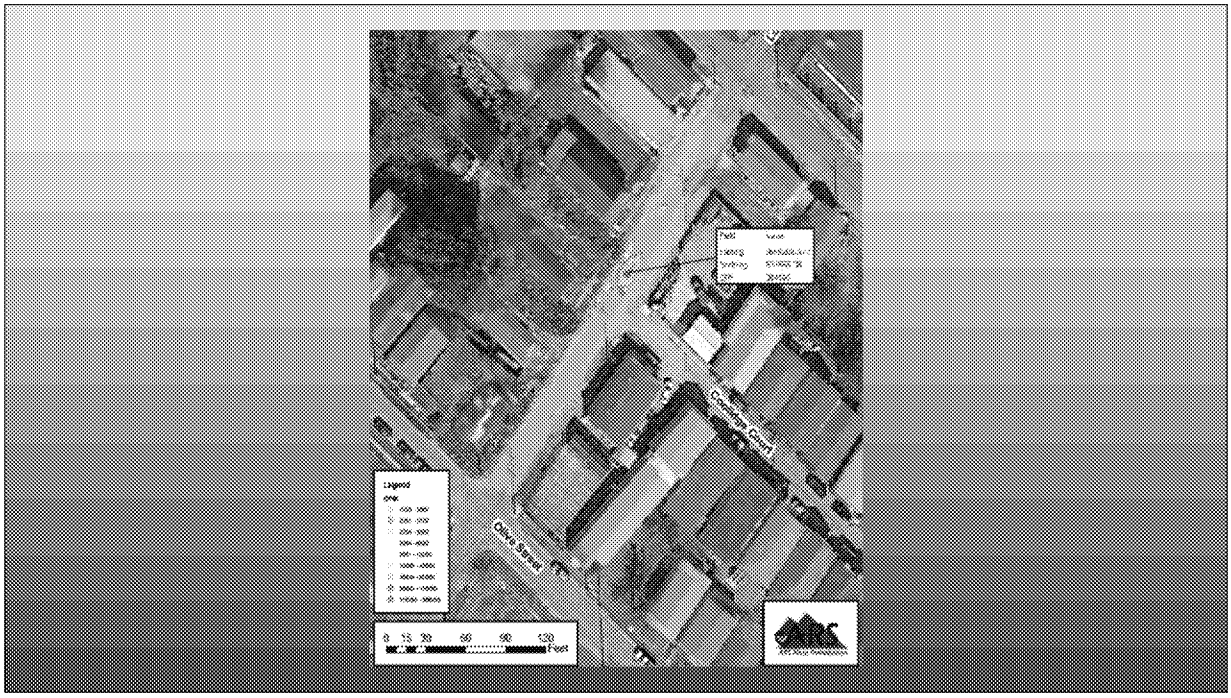
The orange markings on the street is where the City's contractor detected additional hotspots. Our START contractor could easily reproduce those spots with out meter. We used a "micro-R" meter and it was pegged out at 25,000 micro R per hour at a couple of the spots.

Take note of the side of the road. Muddy, standing water, not fit to walk on.

The City's contractor excavated the original hotspot. A 3 by 3 foot area down to about 30 inches.

The overburden of pavements were clean and were separated. You can see the top pavement, another layer in red and then the 'original' street level. The white is oystershells. According to the records that the City has, the first paving improvements there occurred in the 1940s or early -50s. The radium was found at the oyster shell level.

Three drums were removed. Two were clean enough that they don't require radioactive disposal, such as EnviroCare in Utah. The third barrel had Radium concentration of about 24,000 picoCuries per gram of soil. EPA's cleanup goal is 5 picoCuries per gram.



After the contractor completed that excavation. The conducted a post-removal scan. They found much more than originally anticipated. (Beyond their contract and tasking) They identified many more spots. As was seen with orange paint on the previous slide. These were very high. They also were almost linear in position as if deposited by the tire of the grader or just by the action of the grader.

As EPA scanned the road, Some measurements exceeded the meter's capability at 25,000 micro R per hour.

The City's contractor offered additional work that when consolidating the hotspots found, resulted in three areas to excavate: a 5 by 5, 10 by 20 and 20 by 40 areas. That does appear consistent with the scan EPA did. There may be other conditions dealing with repavement as well as identifying other hotspots that would become measurable when the hotter material is removed.

Gamma radiation background .....0.005 milliR/hour (mR/hr)

EPA's considers elevated at twice background.....0.010 mR/hr

Allowable annual dose for general public .....500 mRem/yr

Measured on 4/3/19 .....25 mR/hr

EPA's established clean-up level .....5 picoCuries/gram (pCi/g)

Measured in previous excavation .....24,000 pCi/g

To put some numbers to what is involved:
That part of New Orleans has a radiation background level of 0.005 milli R per hour. Or 5 micro R per hour.

EPA considers areas to have an elevated level of radiation at twice background. Or 0.010 milli R per hour.

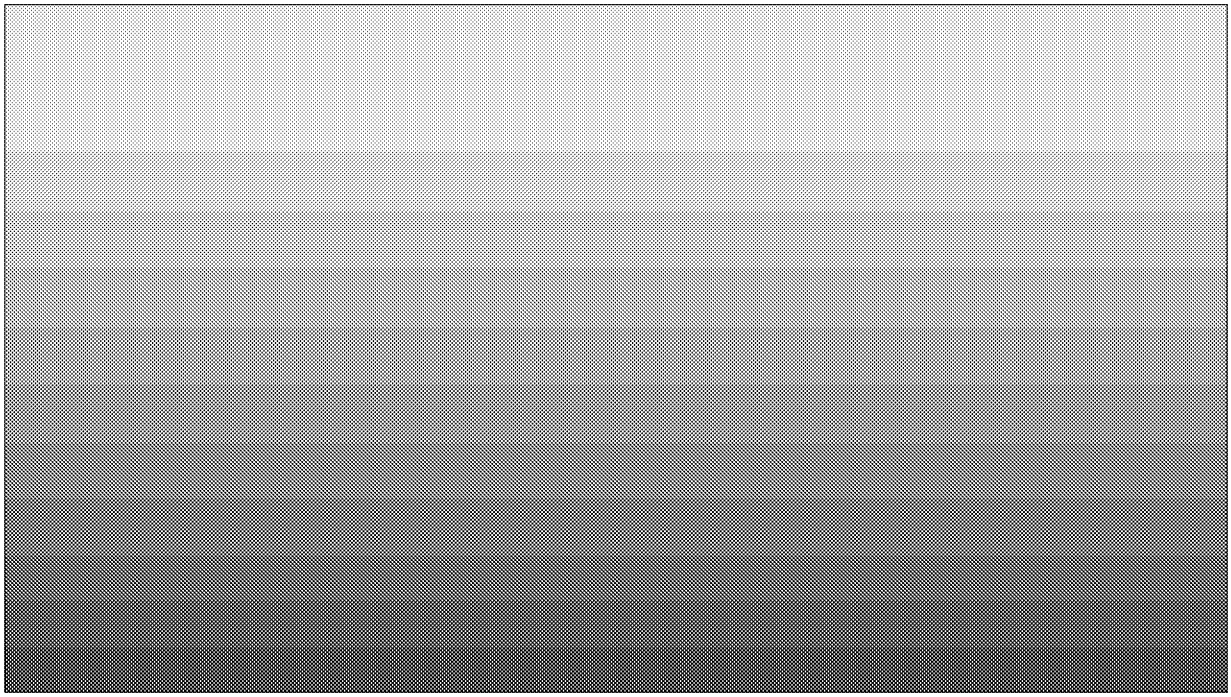
The allowable dose for the general publc is 500 milli Rem per year. Generally 500 milli R per year.

The measured activity, at knee level, below about 2 feet of shielding, is at least 25 milli R per hour.

So, in about 20 hours over a years time, the exposure level could be reached.

We witnessed a lot of cars parked on the street, mostly students from Xavier. And we also saw quite a few people visiting while standing in the street. If you recall the street level picture, the shoulders of the road are not a great choice to walk on, - mud, standing water, rutted --- so the street is the walking path.

As far as clean up levels. EPA has established a level for Radium, at 5 pico Curies per gram of soil. The previous excavation found 24,000 pico curies per gram



The City's contractor's estimate on volume is about 150 cubic yards.

Disposal Cost for that is about $530,000.

On top of that is the excavation, the transportation, post-removal scans, laboratory and profiling, etc.

City has offered repavement, and other technical involvement during excavation.

State is supportive of EPA's action. Looks to participate in the messaging to the public.