From:	Puco ContactOPSB
To:	Puco Docketing
Subject:	public comment: 16-2443-EL-BGN, 18-0090-EL-BGA, 20-0033-EL-BGA, 21-0182-EL-BGA
Date:	Monday, July 18, 2022 8:59:43 AM
Attachments:	GPS report 6-29-2022-Draft.docx

From: Leatra Harper
Sent: Friday, July 15, 2022 4:33 PM
To: Puco ContactOPSB <contactopsb@puco.ohio.gov>
Subject: Re: Urgent request re: Guernsey Power Station

Per your recent correspondence, please enter the attached document into the file for the Caithness Energy Guernsey Power Station in Byesville, Ohio. Please acknowledge when the record is added. Thanks so much, and have a good weekend.
Best,
Lea Harper
Managing Director
FreshWater Accountability Project

Guernsey Power Station: Environmental Impacts Status Report

June 29, 2022

Byesville, OH is home to the Guernsey Power Station, the nation's largest gas-fired power plant constructed in a single phase. Figure 1 shows the idyllic, rural location of the plant prior to construction.

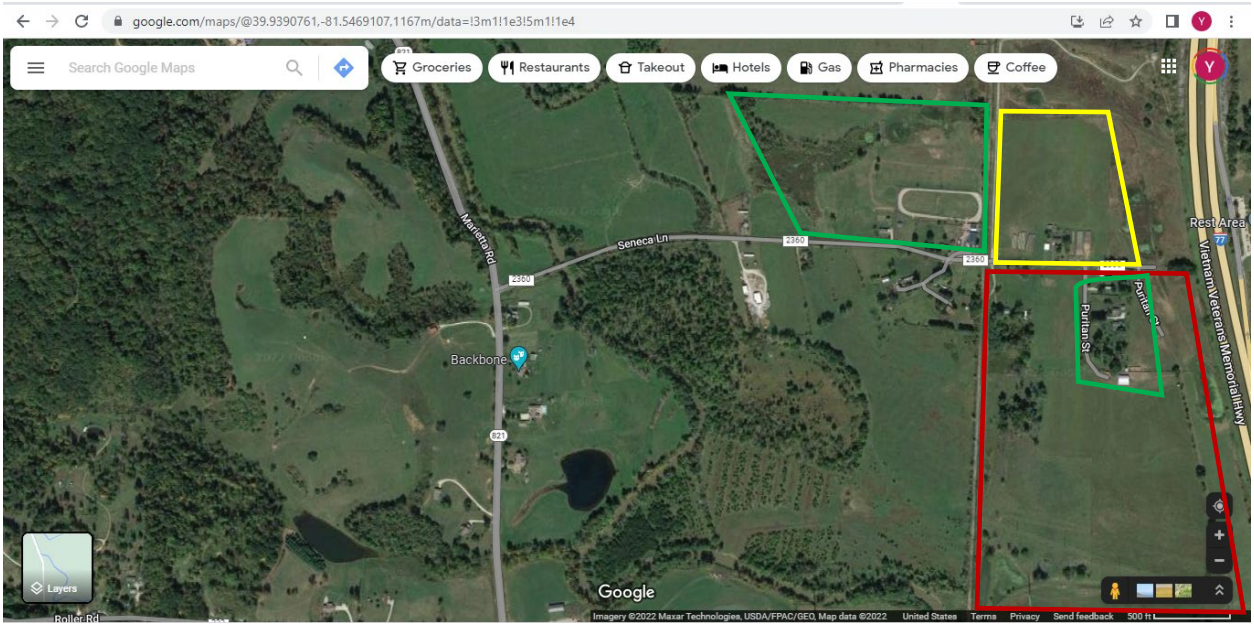


Figure 1. Location of GPS before preparation and construction. The location of the industrial site (approximately 150 acres) is outlined in red. The location of the laydown yard (approximately 100 acres) is outlined in yellow. Resident properties and homes directly impacted by site preparation and construction are outlined in green. Please note the oval horse track located on property owned by Kevin Young.

Figure 2 reveals the extent of construction and proximity of GPS to private residences.

Figure 2. Aerial view of GPS and surrounding area during construction.

The entire GPS construction site and much of the private property sits above an abandoned coal mine. Figure 3 shows the network of tunnels located about 150' below the surface (ODNR Mine Map Viewer). Tunnels located below GPS were filled with coal ash prior to construction to stabilize the subsurface and support the weight of the facility. Coal ash was blended with fluids of unknown composition and the slurries were injected using hundreds of injection wells that were drilled every 25'. Residents endured extremely poor air quality during the injection period, which lasted for several months. One family living next to the site, which included a 4-year-old girl and her mother and grandfather, were relocated after being forced to find a lawyer and endure a lawsuit to be compensated for property values that became worthless after air and drinking water well contamination that caused serious health problems.

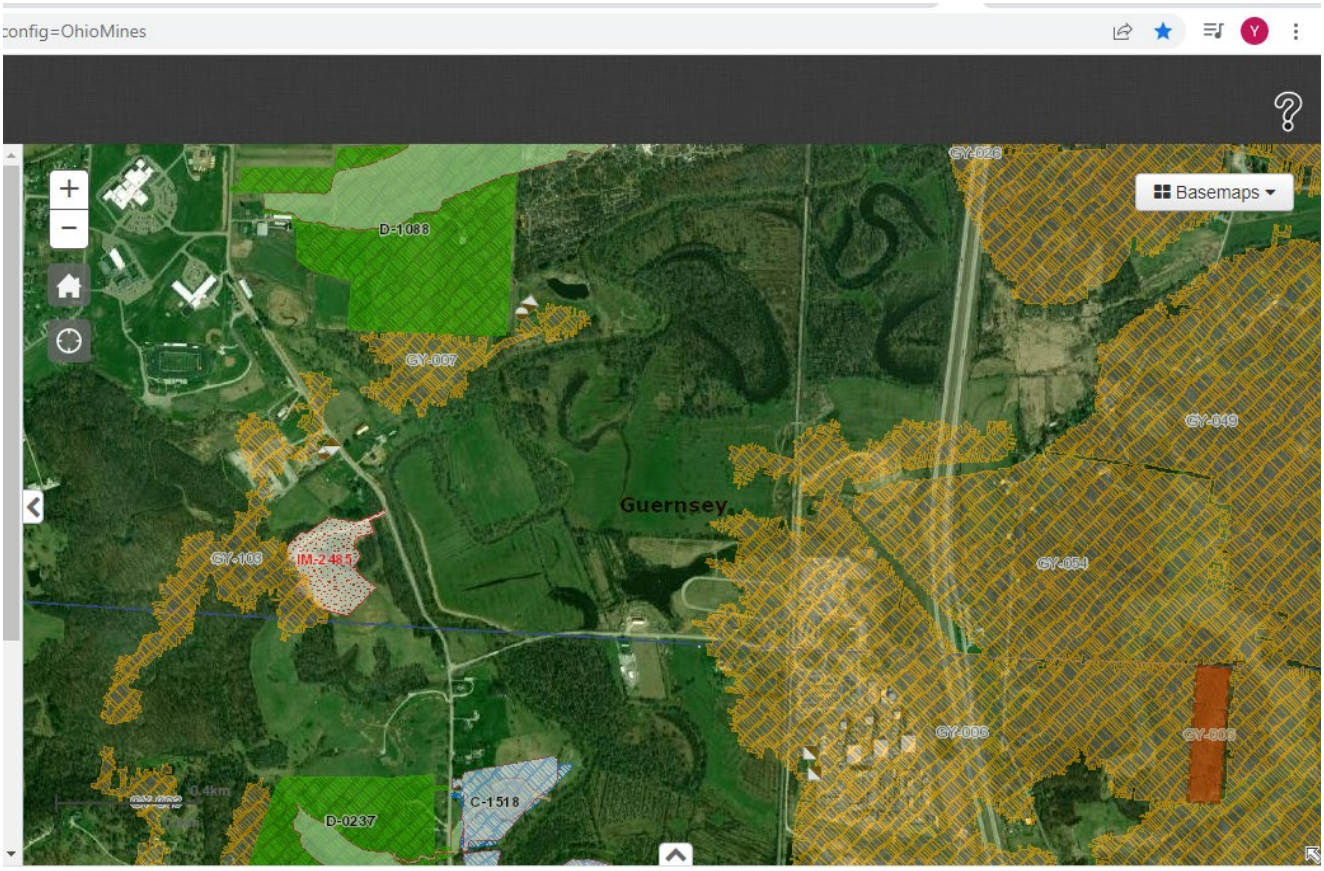


Figure 3. This map illustrates the extent of abandoned coal mines (yellow grids). Note that the fringe of the mines is located directly under the oval horse track and continues northward. An open airshaft located north of the track previously contained water and formed a small pond measuring about 5' in diameter. Following subsurface stabilization (coal ash injection) and addition of compacted fill material that increased the elevation of the construction site and laydown yard by approximately 30', this small pond developed into a 2-acre lake.

Subsurface stabilization and application of 30' of compacted fill corresponded with fundamental changes in surface water and groundwater. Large culverts installed on the laydown yard and the construction site diverted meteoric water toward and onto the Youngs' property resulting in routine flooding. Mr. Young also reports that *2 geysers measuring about 4" in diameter and shooting nearly 70' in the air* occurred during the injection and stabilization process. These geysers formed in the middle of his oval horse track and directly above the fringe of the mine shafts (see Figure 3). Mr. Young also noted a significant decrease of water quality from his private well during the stabilization process. Water that was once deemed "excellent" by the Department of Health became effervescent and contained unacceptable levels of iron, manganese, and arsenic. The homeowners and their animals (horses and cats) began to experience serious health effects, including visible respiratory and neurological distress leading to death of 17 outdoor cats during construction with the remaining feral cats showing obvious sickness. Since the beginning of construction, the Youngs' have become seriously ill to the extent they could no long work, and Mrs. Young is in critical condition.

In response, we (members of the Freshwater Accountability Project) launched a scientific campaign to investigate air and water quality in and around the Youngs' home.

Indoor Air Quality

Our initial efforts focused on indoor air quality resulting from well water that visibly degassed once the taps were open. This video was taken on November 13th, 2021, and documents the release of combustible gasses from tap water inside the Young's home. This second video shows a grab-sample collected using a Summa canister for TO-15 chemical analysis to identify hazardous chemicals entering his home through his domestic water supply. A second gas sample was collected over a 24-hour period to evaluate persistence of chemicals inside the home and is documented in this video.

Results from TO-15 analyses of Grab Samples and 24-Hour Samples are presented in Table 1. For brevity, only those compounds with concentrations above MRL values are listed. The results clearly show unacceptable levels of hazardous chemicals occurring in the 24-hour grab sample. Except for Ethanol and 2-Propanol, concentrations of all chemicals in the 24-hour grab sample either exceeded or were equal to chemical concentrations from 24-hour samples.

Table 1. TO-15 results for indoor air quality.

	Grab Sample	Grab Sample	24-Hour Sample	24-Hour Sample
Compound	ug/m3	ppb	ug/m3	ppb
Methane	10 ppm		4.8 ppm	
Ethanol	210	110	330	170
m,p-Xylenes	67	15	ND	ND
o-Xylene	24	5.6	ND	ND
Propene	36	21	23	13
Ethyle Benzene	17	3.9	ND	ND
n-Nonane	4.5	8.6	ND	ND
n-Hexane	30	8.6	11	3.2

Toluene	72	19	7.7	2.0
n-Octane	8.4	1.8	ND	ND
2-Propanol (Isopropyl Alcohol)	1.6	0.65	7.5	3.1
1,3,5-Trimethylbenzene	8.3	1.7	ND	ND
4-Ethyltoluene	7.6	1.6	ND	ND
n-Propylbenzene	5.4	1.1	ND	ND
Alpha-Pinene	1.4	0.25	ND	ND
Cumene	4.4	0.9	ND	ND
Styrene	0.95	0.22	ND	ND
Benzene	11	3.4	5.4	1.7
Ethyl Acetate	ND	ND	5.4	1.5
Cyclohexane	5.6	1.6	3.1	0.9
Dichlorodifluoromethane (CFC 12)	1.7	0.35	1.8	0.37
n-Heptane	20	4.8	1.6	0.39
Acetone	26	11	26	11
Acetonitrile	4.0	2.4	4.6	2.7
2-Butanone	3.1	1.0	3.8	1.3
Acrolein	2.6	1.1	3.5	1.5
Methylene Chloride	2.8	0.79	2.7	0.77
1,3-Butadiene	1.6	0.74	2.1	0.95
n-Butyl Acetate	1.6	0.34	ND	ND
Chloromethane	1.2	0.56	1.2	0.6
Trichlorofluoromethane (CFC 11)	1.0	0.18	0.98	0.17

Soil vapor sampling.

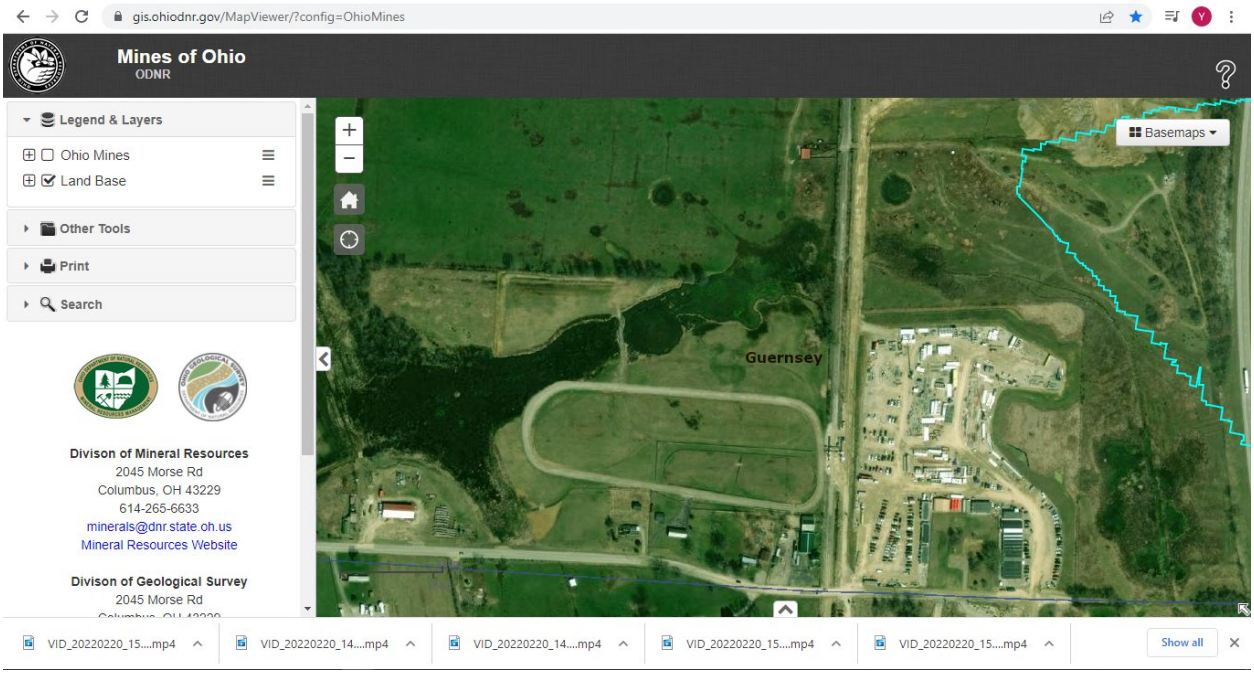
Considering poor indoor air quality resulting from contaminated well water and the formation of geysers that occurred along the fringe of the abandoned coal mine, soil vapor samples were collected from one of the many 'vent holes' located throughout the Youngs' property. This video describes the location and properties of one of these vents, which is located several hundred feet away from his residence and quite close to the pond that formed during subsurface stabilization and site preparation at GPS. Deployment of a Summa canister is documented in this video and sample collection is shown in this one.

Results for the chemical composition from this soil vent sample are listed in Table 2. Indoor air quality results for a sample collected on the same day as the vent sample. The sample was taken after allowing the cold water kitchen faucet to run for 5 minutes.

Table 2. T0-15 analytical results for soil gas (vent sample) and indoor air sample.

	Vent Sample	Vent Sample	Indoor Sample	Indoor Sample

Compound	ug/m3	ppb	ug/m3	ppb
Ethanol	**280**	**150**	**330**	**180**
m,p-Xylenes	**ND**	ND	**59**	**14**
o-Xylene	**ND**	**ND**	**22**	**5.0**
Propene	**14**	**8**	**48**	**28**
Ethylbenzene	**ND**	**ND**	**16**	**3.6**
n-Nonane	**0.88**	**0.17**	**4.0**	**0.76**
n-Hexane	**1.8**	**0.5**	**57**	**16**
Toluene	**14**	**3.8**	**78**	**21**
n-Octane	**1.1**	**0.23**	**8.8**	**1.9**
2-Propanol (Isopropyl Alcohol)	**59**	**24**	**7.5**	**3.1**
1,3,5-Trimethylbenzene	**ND**	**ND**	**6.6**	**1.3**
4-Ethyltoluene	ND	ND	**6.8**	**1.4**
n-Propylbenzene	**ND**	**ND**	**4.6**	**0.94**
Alpha-Pinene	**ND**	**ND**	**2.9**	**0.53**
Cumene	**ND**	**ND**	**2.2**	**0.45**
Styrene	**ND**	**ND**	**2.7**	**0.62**
Benzene	**0.66**	**0.21**	**20**	**6.2**
Ethyl Acetate	**3.8**	**1.1**	**15**	**4.3**
Cyclohexane	**ND**	ND	**11**	**3.1**
Dichlorodifluoromethane (CFC 12)	**2.3**	**0.47**	**2.2**	**0.45**
n-Heptane	**1.4**	**0.35**	**50**	**12**
Acetone	**270**	**110**	**93**	**39**
Acetonitrile	**5.4**	**3.2**	**20**	**12**
Acrolein	**2.8**	**1.2**	**11**	**5**
Methylene Chloride	**ND**	**ND**	**2.1**	**0.61**
1,3-Butadiene	**ND**	**ND**	**10**	**4.6**
n-Butyl Acetate	**ND**	**ND**	**4.1**	**0.87**
Chloroethane	**ND**	**ND**	**0.64**	**0.24**
Trichlorofluoromethane (CFC 11)	**1.1**	**0.2**	**0.98**	**0.17**
Carbon disulfide	**4.2**	**1.3**	**ND**	**ND**
2-Butanone	**52**	**18**	**12**	**4.2**
2-Hexanone	**17**	**4.2**	**ND**	**ND**
d-Limonene	**4.8**	**0.86**	**7.2**	**1.3**
o-Xylene	**ND**	**ND**	**22**	**5**
1,2,4-Trimethylbenzene	**ND**	**ND**	**25**	**5.2**
Naphthalene	**ND**	**ND**	**2.8**	**0.54**
Acrylonitrile	**ND**	**ND**	**3.9**	**1.8**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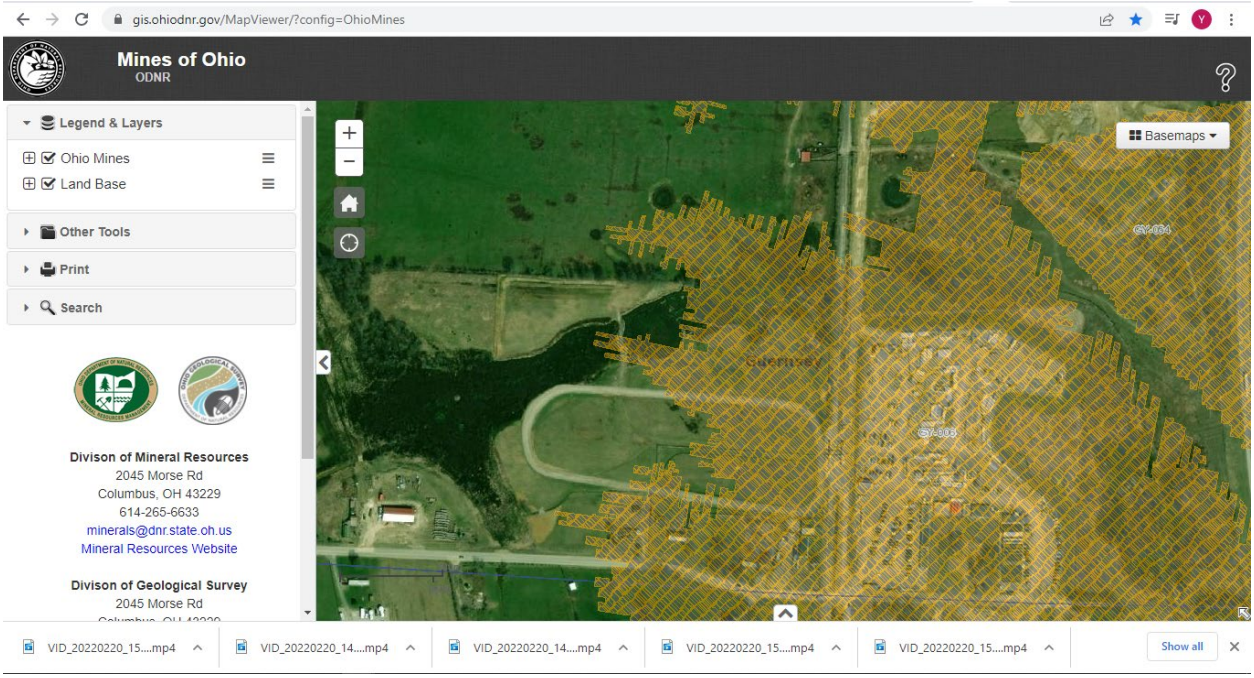
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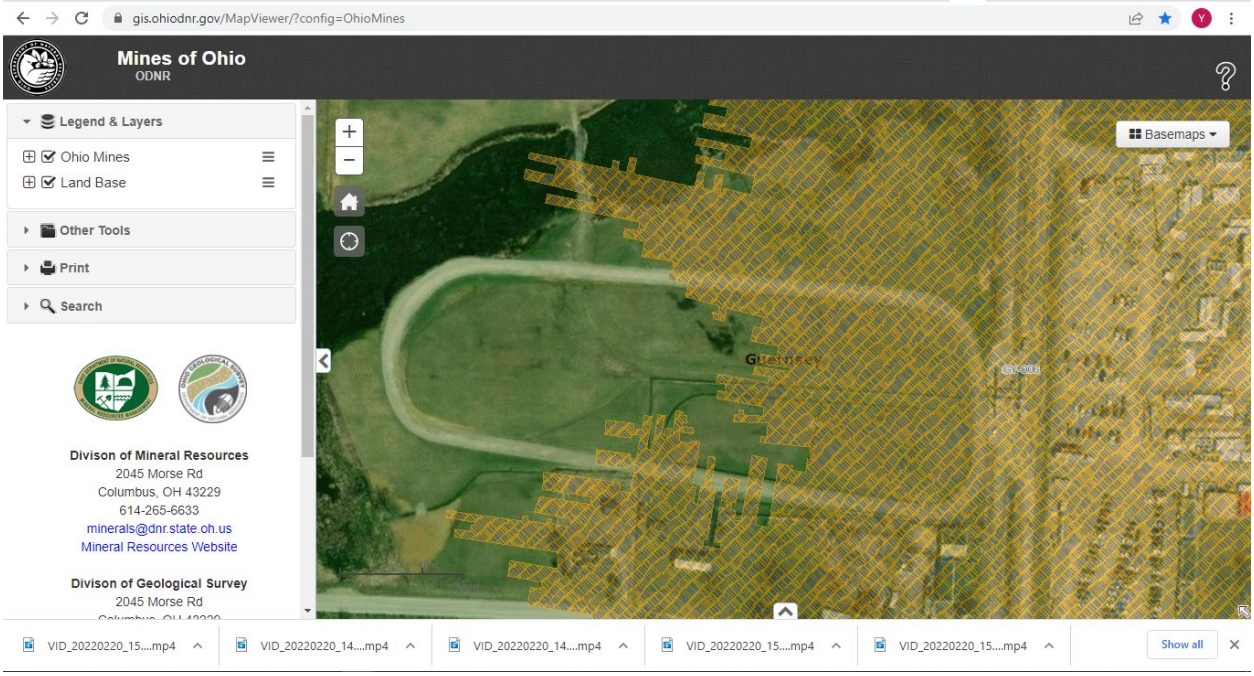
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Summary: Public Comment of Leatra Harper, via website, electronically filed by Docketing Staff on behalf of Docketing