



Ohio Department of
NATURAL RESOURCES



2022

Orphan Well Program Report



Mahoning #4 Project, Northstar #1, Plugging & Tank Battery Removal March 2022

Orphan Well Program Annual Report

January 1, 2022 to December 31, 2022

Calendar Year 2022

Introduction

Ohio Revised Code (ORC) 1509.071 establishes the Orphan Well Program and charges the Ohio Department of Natural Resources, Division of Oil and Gas Resources Management (Division) with plugging orphaned wells, restoring land surfaces, and correcting conditions that cause imminent health or safety risks at idle and orphaned wells. ORC 1509.071(J) requires the Division and the Technical Advisory Council (TAC) to submit a written report to the Ohio Speaker of the House of Representatives, the President of the Senate, the Chair of the Committee of the House of Representatives Energy and Natural Resources Committee, and the Chair of the Committee of the Senate Agriculture and Natural Resources Committee, pertaining to the Orphan Well Program and specifies the contents of the report, including the following details:

- (a) The total number of known orphaned wells in the state and the total number in each county of the state;
- (b) The total number of newly discovered orphaned wells during the immediately preceding calendar year;
- (c) The total number of wells plugged in accordance with this section during the immediately preceding calendar year;
- (d) The total number of wells plugged in accordance with this section and the estimated average and indirect costs of plugging activities conducted under this section prior to the date of the report; and

(e) The number of wells approved for plugging in accordance with this section and the estimated average and indirect costs of plugging activities conducted under this section during the immediately preceding calendar year.

Idle and Orphaned Well Inventory

Table 1 below shows the inventory of orphaned wells listed by county at the end of calendar years 2021 and 2022. The table also shows the number of wells added to the Division's inventory, wells removed from the program, wells plugged, and wells in contract to be plugged.

Table 1: Orphaned Well Inventory for Calendar Year 2022

County	Well Count 2021	Well Count 2022 ¹	Wells Added	Wells Removed from the Program	Wells Plugged ¹	Wells in Contract ¹
Adams	0	0	0	0	0	0
Allen	11	16	5	0	0	0
Ashland	44	70	26	0	0	0
Ashtabula	39	29	3	0	13	4
Athens	28	27	14	0	15	17
Auglaize	6	12	6	0	0	0
Belmont	28	8	1	0	21	3
Brown	0	0	0	0	0	0
Butler	0	0	0	0	0	0
Carroll	14	3	2	0	13	13
Champaign	0	0	0	0	0	0
Clark	0	0	0	0	0	0
Clermont	1	1	0	0	0	0
Clinton	0	0	0	0	0	0
Columbiana	18	19	8	0	7	9
Coshocton	14	7	0	0	7	0
Crawford	0	0	0	0	0	0
Cuyahoga	79	86	13	0	6	11
Darke	1	9	8	0	0	0

¹ Wells Awarded by Contract to be plugged remain in the Well Count until they become Wells Plugged. Wells Plugged have been removed from the Well Count.

County	Well Count 2021	Well Count 2022 ¹	Wells Added	Wells Removed from the Program	Wells Plugged ¹	Wells in Contract ¹
Defiance	2	2	0	0	0	0
Delaware	4	3	0	0	1	3
Erie	1	1	0	0	0	0
Fairfield	10	10	0	0	0	2
Fayette	0	0	0	0	0	0
Franklin	1	1	0	0	0	1
Fulton	1	1	0	0	0	0
Gallia	12	11	0	0	1	12
Geauga	2	2	0	0	0	0
Greene	0	0	0	0	0	0
Guernsey	9	10	1	0	0	0
Hamilton	0	0	0	0	0	0
Hancock	40	20	0	0	20	10
Hardin	3	1	0	0	2	2
Harrison	7	17	10	0	0	0
Henry	12	12	0	0	0	0
Highland	0	0	0	0	0	0
Hocking	3	14	11	0	0	1
Holmes	41	41	0	0	0	0
Huron	6	3	0	0	3	0
Jackson	1	1	0	0	0	0
Jefferson	12	14	2	0	0	2
Knox	14	13	2	0	3	5
Lake	30	37	10	0	3	7
Lawrence	1	3	2	0	0	0
Licking	38	43	7	0	2	15
Logan	1	18	17	0	0	12
Lorain	63	64	6	0	5	10
Lucas	1	5	4	0	0	0
Madison	0	0	0	0	0	0
Mahoning	17	7	2	0	12	5
Marion	0	0	0	0	0	0
Medina	64	75	11	0	0	23
Meigs	31	75	49	0	5	18
Mercer	21	41	20	0	0	0
Miami	1	1	0	0	0	1
Monroe	13	14	1	0	0	1

County	Well Count 2021	Well Count 2022 ¹	Wells Added	Wells Removed from the Program	Wells Plugged ¹	Wells in Contract ¹
Montgomery	0	0	0	0	0	0
Morgan	18	21	4	0	1	10
Morrow	12	12	1	0	1	5
Muskingum	14	4	1	0	11	0
Noble	6	16	11	0	1	1
Ottawa	5	11	6	0	0	5
Paulding	0	0	0	0	0	0
Perry	8	1	0	0	7	1
Pickaway	0	0	0	0	0	0
Pike	1	2	1	0	0	0
Portage	3	3	1	0	1	4
Preble	0	0	0	0	0	0
Putnam	1	1	0	0	0	0
Richland	4	4	1	0	1	2
Ross	1	1	0	0	0	0
Sandusky	16	16	0	0	0	0
Scioto	2	2	0	0	0	0
Seneca	28	22	0	0	6	0
Shelby	0	2	2	0	0	0
Stark	6	5	0	0	1	3
Summit	2	9	7	0	0	4
Trumbull	4	3	0	0	1	1
Tuscarawas	1	1	0	0	0	0
Union	0	1	1	0	0	1
Van Wert	5	5	0	0	0	0
Vinton	0	2	2	0	0	0
Warren	0	0	0	0	0	0
Washington	57	65	11	0	3	0
Wayne	13	13	0	0	0	3
Williams	0	0	0	0	0	0
Wood	67	67	3	0	3	4
Wyandot	11	11	0	0	0	0
Totals	1030	1147	293	0	176	231

¹ Wells Awarded by Contract to be plugged remain in the Well Count until they become Wells Plugged. Wells Plugged have been removed from the Well Count.

Contracts Awarded for Plugging Idle and Orphaned Wells

For the period beginning January 1, 2022, and ending December 31, 2022, the Division awarded \$29,484,311.71 in work to contractors to plug orphaned wells. The projects awarded in the Orphan Well Program for the calendar year 2022 are summarized in Tables 2, 3 and 4. The Division awarded contracts for orphan well plugging and restoration work on 225 orphan wells at a total cost of \$28,859,092.39 for the Traditional Program as illustrated in Table 2. The Division awarded contracts for orphan well plugging and restoration work on 6 orphan wells at a total cost of \$234,778.00 for the Landowner Pass-through Payment Program as illustrated in Table 3. The Division approved \$390,441.32 for change orders to address unanticipated conditions encountered in the plugging of the wells as illustrated in Table 4.

Table 2: Traditional Program Orphaned Well Contracts Awarded for Plugging and Restoration for Calendar Year 2022

Project / County	Well Count	Producing Formations	Era of Production	Awarded Amount	Contractor
Ashtabula #9	4	Clinton & Oriskany Sandstone	1900s-1980s	\$615,219.50	Harley Oil Field Services, LLC
Athens #7	12	Berea, 2nd Berea Sandstone & Bedford Shale	1960s-1980s	\$1,240,766.15	Monroe Drilling Operations, LLC
Athens #8	4	Clinton Sandstone	1960s-1980s	\$576,255.50	Next LVL Energy, LLC
Athens #9	1	Berea Sandstone	1920s	\$397,450.00	Knox Energy, Inc.
Belmont #5	3	Berea Sandstone & Ohio Shale	Late 1800s-1980s	\$338,299.50	Next LVL Energy, LLC
Carrol #4	3	Ohio Shale & Berea Sandstone	1922, 1998	\$287,217.50	Harley Oil Field Services, LLC
Carroll #3	10	First Cow Run Sandstone, Berea Sandstone & Queenston Shale	1910s-1920s, 1950s, 1980's	\$960,870.85	Harley Oil Field Services, LLC
Columbiana #4	9	Berea Sandstone	1917, 1920s, 1945	\$952,155.06	B&B Oilfield Services, Inc.
Cuyahoga #14	6	Berea & Clinton Sandstone	1910s-1960s	\$797,264.84	Summit Petroleum, Inc
Cuyahoga #15	4	Clinton Sandstone	1910s	\$905,031.83	Summit Petroleum, Inc

Cuyahoga #16	1	Newburg Dolomite	1920s	\$380,750.15	Moore's Well Service Inc.
Delaware #1	3	Trempealeau, Clinton, Newburg, Mount Simon Sandstone	1960s-1970s	\$540,912.88	Next LVL Energy, LLC
Exploratory 2023 NE	N/A	N/A	N/A	\$150,000.00	CSR Services, LLC
Exploratory 2023 NW	N/A	N/A	N/A	\$150,000.00	Second Oil LTD
Exploratory 2023 SE	N/A	N/A	N/A	\$150,000.00	NuPointe Energy, LLC
Fairfield #1 Re-Offer	2	Newburg, Clinton Sandstone	1940's, 1950's	\$450,078.06	MH Oilfield
Franklin #1 Re-Offer	1	Ohio Shale	1980	\$188,579.13	MH Oilfield
Gallia #3	4	Berea Sandstone	1950s-1970s	\$283,643.00	Nupointe Energy, LLC
Gallia #4	8	Berea Sandstone	1970s-1990s	\$419,468.00	Nupointe Energy, LLC
Geauga #2	N/A	N/A	N/A	\$38,697.00	B&B Oilfield Services, Inc.
Hancock #4	2	Trenton Limestone	1900s-1950s	\$306,432.80	Second Oil LTD
Hancock #5	8	Trempealeau & Trenton Limestone	1930s-1980s	\$560,975.00	Second Oil LTD
Hardin #1	2	Trempealeau Limestone	1930s-1960s	\$201,276.80	Nupointe Energy, LLC
Hocking #4	1	Clinton Sandstone	1920s	\$651,761.00	HAD, Inc.
Jefferson #2	2	Berea Sandstone	1919, 1943-1948	\$324,777.00	CSR Services, LLC
Knox #4	5	Clinton Sandstone & Berea Sandstone	1909, 1950s-1960s, 1985	\$650,701.97	Next LVL Energy, LLC
Lake #8	3	Ohio Shale, Morton Salt Test Cores	1950s	\$338,255.00	Nick's Well Plugging LLC
Lake #9	4	Clinton Sandstone	1970s, 1984-1985	\$640,027.00	CSR Services, LLC
Licking #4	15	Berea Sandstone, Clinton Sandstone, Newburg,	1930's, 1940's, 1950's, 1970's, 1980's	\$1,786,008.13	Next LVL Energy, LLC

		Trempealeau Dolomite			
Logan #2	12	Trenton, Black River Group	1880, 1960's	\$1,150,265.06	Wellsite Fishing & Rental Services
Lorain #7	5	Clinton Sandstone & Ohio Shale	1909, 1938, 1966	\$751,800.85	Summit Petroleum, Inc.
Mahoning #4	1	Saltwater Injection Well	2010s	\$663,463.00	Plants & Goodwin, Inc.
Mahoning #5	4	Berea Sandstone, Clinton Sandstone	1900s, 1961, 1976, 1986	\$733,808.46	B&B Oilfield Services, Inc.
Medina #5	6	Clinton Sandstone	1940s	\$1,071,287.50	HAD, Inc.
Medina #6	6	Berea Sandstone	1960s	\$442,705.00	Harley Oil Field Services, LLC
Medina #7	11	Berea Sandstone	1982-1984	\$483,196.00	Harley Oil Field Services, LLC
Meigs #3	5	Berea Sandstone	1970s	\$333,603.00	Nupointe Energy, LLC
Meigs #4	13	Berea Sandstone & 2nd Sandstone	1940's, 1950's	\$1,909,629.45	Next LVL Energy, LLC
Miami #1	1	Mt. Simon Sandstone	1964	\$133,600.00	Huwer Drilling
Monroe #3	1	Big Injun Sandstone	1948	\$210,558.00	CSR Services, LLC
Morgan #3	10	Berea Sandstone	1939, 1940s, 1951	\$1,062,941.05	Carper Well Service, Inc.
Morrow #4	3	Lockport Dolomite & Trempealeau Dolomite	1964, 1974, 1984	\$667,923.30	Summit Petroleum, Inc.
Morrow #5	2	Trempealeau Dolomite	1965, 1996	\$393,437.00	Next LVL Energy, LLC
Noble #7	1	Buell Run Sandstone	1950s	\$112,351.00	Harley Oil Field Services, LLC
Ottawa #2	5	Trenton Limestone	1960s	\$330,450.87	Second Oil LTD
Perry #5	1	Clinton Sandstone	1940s	\$218,771.20	Next LVL Energy, LLC
Portage #2 Re-offer	3	Clinton Sandstone & Cabot Head Formation	1970s	\$356,124.12	CSR Services, LLC
Richland #3	2	Lockport Dolomite, Knox Dolomite	1966, 1982	\$363,522.30	Harley Oil Field Services, LLC
Stark #4	3	Clinton Sandstone	1931, 1947, 1967	\$403,460.00	Gonzol, Inc.

Summit #4 Re-Offer	4	Cabot Head Shale, Queenston, Clinton Sandstone	1929, 1942, 1979, 1983	\$830,473.80	B&B Oilfield Services, Inc.
Trumbull #1 Re-Offer	1	Clinton Sandstone	1981	\$116,815.75	B&B Oilfield Services, Inc.
Trumbull #1 Site Restoration	N/A	N/A	N/A	\$39,069.50	HAD Inc.
Union #1	1	Trempealeau Dolomite	1964	\$194,720.30	Wellsite Fishing & Rental Services
Wayne #1	3	Clinton Sandstone	1980s	\$283,495.23	Hagen Well Services, LLC
Wood #6	4	Trenton Limestone	1980s	\$318,747.00	Second Oil LTD
Total	225			\$28,859,092.39	

¹ The Fairfield #1, Franklin #1, Portage #2, Summit #4, Trumbull #1 projects were originally awarded to two different contractors in previous calendar years. These two contractors were found in default and terminated from the Multiple Award Contract with the Ohio Department of Administrative Services in calendar year 2022. As a result, the Division then re-bid and re-awarded the portions of these projects that remained incomplete to new contractors shown in this table.

Table 3: Landowner Pass-through Payment Program Orphan Well Contracts Awarded for Calendar Year 2022

Project / County	Well Count	Producing Formations	Era of Production	Awarded Amount	Contractor
4283 E. Lake Rd. 1/Lorain County	1	Ohio Shale	Early 1900s	\$40,375.00	Ronald A. Gibson & Associates
Avon Belden Road 753 #1/Lorain County	1	Ohio Shale	1980s	\$35,900.00	Ronald A. Gibson & Associates
Brigger WE 1/Portage County	1	Clinton Sandstone	1978	\$63,803.00	Moore's Well Service Inc.
Center Road 3260 #1/Lorain County	1	Ohio Shale	1940's	\$35,900.00	Ronald A. Gibson & Associates
Chester Rd. 37779 #1/Lorain County	1	Ohio Shale	1900s	\$33,300.00	Ronald A. Gibson & Associates
Schwartz Rd. 32301/Lorain County	1	Ohio Shale	Early 1900s	\$25,500.00	Ronald A. Gibson & Associates
Total	6			\$234,778.00	

Table 4: Orphaned Well Project Change Orders for Calendar Year 2022

Project / County	Awarded Amount	Contractor
Athens #4	\$46,612.50	Unlimited Energy Services, LLC
Exploratory SE 2022	\$30,000.00	NuPointe Energy LLC
Exploratory NE 2022	\$50,000.00	NuPointe Energy LLC
Trumbull #1	\$263,828.82	HAD, Inc
Total	\$390,441.32	

The following paragraphs describe several notable projects addressed by the Division's Orphan Well Program to illustrate the diversity of projects addressed in the previous year. Each paragraph lists the project name, the number of wells in the project, the amount of money awarded, and a synopsis of the project. Additional information related to each project awarded during the reporting period can be obtained by request to the Division.

Notable Projects

Project: Athens #7

Well Count: 12

Awarded Amount: \$1,240,766.15

The Athens #7 project consists of twelve wells. Division records indicate the wells were drilled between 1967 and 1983 into the Berea, 2nd Berea Sandstone and the Bedford Shale. The wells are located in rural and/or wooded areas and many require long access routes off of the local roads. For the Jarvis Bible School #1, the Division conducted an inspection in 2020. The inspection found this well to be idle and abandoned and equipped with various equipment including a pumping unit, separator, drip tank and several tank batteries. One of the tanks had fluid and was leaking brine from the tank bottom. There was evidence of brine release inside the dike. The well site is approximately a quarter of a mile from the road. This well has been plugged and site restoration will be completed in the Spring 2023. The contractor is currently plugging the remaining wells.



Jarvis-Bible School #1 Well



Jarvis-Bible School #1 Well

Project: Athens #9 - Emergency

Well Count: 1

Awarded Amount: \$397,450.00

The Athens #9 - Emergency project consists of one well. The well is located 15' offshore in Dow Lake.

The well was first reported to the Division in October 2020 when natural gas was seen bubbling to the surface. The Division does not have detailed well records for this well. However, historical maps indicate a

well was drilled at this location to the Berea Sandstone. In February 2022, the Division utilized a contractor for exploratory work around the location of the gas bubbles. During excavation, wood casing was seen near the surface. The contractor was able to remove the wooden casing and install a temporary

cellar and riser to capture the gas until the well could be plugged. In the winter of 2022, the Division elevated the classification of this well to emergency due to the conditions present and plugged the well.

The Division worked closely with the ODNR Division of Parks and Watercraft to complete the plugging of the well. Matting and booms were some of the items used to protect the lake's water.



Athens #9 - Emergency, Dow Lake #1 Well

Project: Hocking #4

Well Count: 1

Awarded Amount: \$651,761.00

The Hocking #4 project consists of one well. The well is situated in the channel of East Fork Queer Creek approximately six feet from the north bank of the creek on a 13.7-acre residential parcel. The KLC #1 well was first referred to the Orphan Well Program in 2015. The Division does not have detailed records for the KLC #1; however, an old Ohio Fuel Gas Company map refers to a well corresponding to this location as being a “dry hole” in the Clinton Sandstone. The KLC #1 has leaked natural gas into the streambed where it is located. The Ohio EPA has been sampling the Creek for many years and has noted, although not measured, the presence of oil and brine in its waters. East Fork Queer Creek is a high-quality stream and is designated as an Exceptional Warm Water Habitat stream. In July of 2020, a contractor working on behalf of the Orphan Well Program began work to plug the KLC #1. Due to the poor condition of the existing casing and the wellbore located in the stream, the contractor was not able to establish wellhead control after several failed attempts that included attempting to install 35 feet of 7-inch diameter casing. Due to concerns about further communication between the wellbore and the stream and due to lack of practical options for wellhead control, the Division had the contractor de-mobilize their equipment and restore the site so that the project could be re-evaluated for future plugging.

Due to the condition of the well, the Division designed a plan to relocate over 250 linear feet of Queer Creek so the appropriate plugging equipment could access the well. This work will include massive rock channel protections and heavy vegetative planting to prevent stream movement, which will provide a stable base for the contractor to safely work, prevent communication between the wellbore and the new stream bed, and keep the stream away from the plugged well to protect from any future erosion. The Division worked closely with the U.S. Army Corps of Engineers to ensure all permitting requirements were met and all other health, safety, and environmental precautions were considered before the start of

any construction activity. Construction will start late Spring/early Summer of 2023 after the spring rains have ended.



Hocking #4 Project, KLC #1 Well, July 2020

Project: Jefferson #2

Well Count: 2

Awarded Amount: \$324,777.00

The Jefferson #2 project consists of two wells, one drilled in 1919 and the other in the 1940's into the Berea Sandstones. The Ohio Power Company #1 is located across the Salt Run Creek, south of Traymore Road. Access to this well requires a temporary stream crossing along with stream channel

restoration and rock stabilization. The Division worked closely with the U.S. Army Corps of Engineers to ensure all permitting requirements were met and all other health, safety and environmental precautions were considered prior to the start of any construction activity.

The Zadeck Burris #1 was discovered after a spring above the well flowed into the existing annulus causing oil to overflow from the annulus. The Division placed a temporary structure over the casing to prevent the spring from entering the casing annulus until the well could be plugged. The well card in the Division's records state this well was drilled in 1919 and was dry and abandoned.

The Ohio mining records document this well within the footprint of a historic underground deep mine. The Division does not have detailed records for this well. However, historical records indicate the well was likely drilled in the early 1900s in the Berea Sandstone formation. An offset historic Berea well had issues during plugging due to mine water breaking into the casing. The Burris #1 well plugging plan anticipates similar mine string issues. Construction will begin Spring 2023 at the Zadeck Burris #1.



Jefferson #2 Project, Zadeck Burris #1 Well

Project: Knox #4

Well Count: 5

Awarded Amount: \$650,701.97

The Knox #4 project consists of five wells drilled between 1909 and the 1980's into the Clinton and Berea Sandstones. Four of the wells are located in open fields or lightly wooded areas. The Merrillat #5 is located along the wood line of a residential property. In 2003, this well was referred to the Orphan Well Program by the landowner at the time. The inspection showed the well was equipped with 7-inch OD and 4.5-inch OD casing. There was no production, transmission or storage equipment associated with this well. Division records indicate the well was drilled in 1985 to a total depth of 2,699 feet through the Clinton Sandstone. All the wells have been plugged and the contractor is working on the final site restorations.



Knox #4 Project, Merrillat #5 Well

Project: Lake #8

Well Count: 3

Awarded Amount: \$338,255.00

The Lake #8 project consists of three wells with two of the wells located in residential areas. The third well, the State of Ohio #1 well, is located at the Headlands Beach State Park next to a parking lot. The ODNR Division of Parks and Watercraft is removing the existing parking lot and walks around the well to convert the site to wetlands. The Division worked closely with the Division of Parks and Watercraft to ensure the well plugging was completed prior to the start of wetland restoration work and to ensure all permitting and other health, safety, and environmental precautions were implemented prior to the start of plugging activity. The State of Ohio #1 was drilled in 1954 as an exploratory well to the Morton salt and then plugged back the Ohio Shale. The Division does not have detailed records for the other two wells. A review of offset well records and the current condition of the wells indicate the wells were drilled as exploratory wells and then plugged back to producing formations. All three wells were found to have produced from the Ohio Shale. The wells were plugged in the spring of 2022 and the sites have been

restored.

*Lake #8 Project, State of Ohio #1 Well*



Lake #8 Project, Lake Road #1 Well

Project: Logan #2

Well Count: 12

Awarded Amount: \$1,150,265.06

The Logan #2 project consists of 12 wells with 2 wells drilled in the 1880's and remaining 10 drilled between 1964-1965 into the Trenton Limestone and Black River Group. Most of the wells are located in agricultural fields with a few located in residential and/or urban areas.

None of the wells in this project are located in townships known to produce Hydrogen Sulfide gas (H₂S), but six of the wells are located less than an ½ mile from the Harold N. Babcock #1 well that is a part of this project. Division inspections show that Harold N. Babcock #1 produces H₂S gas. This well was drilled to a total depth of 1,477 feet to the Trenton Limestone in 1964. The well is visually equipped with

9 inch outside diameter (OD), 7.625-inch OD casing with a swage nipped down to a gate valve with a 90 degree elbow, another valve and cap plug. The contractor will follow the H2S protocols for all the affected wells. The contractor is currently working on the Logan #2 project.



Logan #2 Project, Harold N. Babcock #1 Well

Project: Mahoning #4

Well Count: 1

Awarded Amount: \$663,463.00

The Mahoning #4 project consisted of one well. The Northstar #1 well is a saltwater injection well drilled in 2010 to a total depth of 9,184 feet. Oilfield brine injections into the well ceased in December 2011 after the well caused induced seismicity. This well had high annular pressure and it is the deepest well the Division has plugged to date. The annular pressure was 1225 psi on January 3, 2012, and after the well was blown down, annular pressure was measured at 1100 psi on January 4, 2012, and the well was again blown down. Along with the well plugging, all associated equipment including 15 storage tanks, injection pump/equipment, spent filters, well head and barrels were to be removed offsite for proper disposal. Much of the equipment had elevated radioactivity due to exposure to radium-226 and

radium-228 during the use of the well. Division senior health physicists conducted surveys of the equipment and the site and monitored the disposal of materials with elevated radioactivity. Work also included decommissioning and flushing of all injection lines, pumping and flushing sumps, temporary storage and proper disposal of all fluid and materials removed. This well was plugged, and the site was restored in the spring of 2022.



Mahoning #4, H. Northstar #1 (SWIW #10) Well



Mahoning #4, Northstar #1 (SWIW #10) Tank Battery

Project: Mahoning #5

Well Count: 4

Awarded Amount: \$733,808.46

The Mahoning #5 project consists of four wells. Two of the wells were drilled to the Clinton Sandstone in 1961 and 1976 respectively. The other two wells were drilled to the Berea Sandstone dating back to the early 1900's and more recently in 1986. Both Clinton wells are showing high pressures and are currently leaking.

The Sarich #1 was drilled in the early 1900's into the Berea and is equipped with a shackle line driven pumping unit, rods, 1.6-inch diameter tubing, 3-inch casing on a hanger, and drive pipe. There is no storage, transmission, or production equipment associated with this well. Outside of the Orphan Well Program, the Division has no records for this well. Plugging records for similar vintage wells in this area indicate these wells were drilled to the Berea Sandstone at a depth of approximately 700 feet to 750 feet. Casing records for similar wells are extremely limited and come from plugging reports. These wells typically had 8-inch casing driven to bedrock, 6.25-inch casing was set to approximately 350 feet to 450 feet, and tubing was run to total depth. The contractor is currently working on the Mahoning #5 project.



Mahoning #5 Project, Sarich #1 Well

Project: Meigs #4

Well Count: 13

Awarded Amount: \$1,909,629.45

The Meigs #4 project consists of 13 wells drilled between the 1940's and 1950's into the Berea and 2nd Berea Sandstones. The wells are in various terrains ranging from open fields to heavily wooded areas. Access to several of the wells require low water and temporary stream crossings along with timber air bridging. The Division worked closely with the U.S. Army Corps of Engineers to ensure all permitting requirements were met and all other health, safety, and environmental precautions were considered prior to the start of construction activity.

The Herbert Blankenship #1 is located on the toe of a failing dam and due to the site constraints, a conventional service rig cannot be utilized. The Herbert Blankenship #1 is idle and abandoned and visibly equipped with 10-inch surface casing, 5.19-inch casing, and 3.5-inch production casing. An obstruction was noted 27 feet below the top of casing between the 10-inch and 5.19-inch casing. There is fluid at the top of the 3.5-inch casing annulus. No oil, gas, or brine is leaking from the well. Well records for the Herbert Blankenship #1 state that it was drilled to the 2nd Berea Sandstone in 1958. The Division has well records and casing data for the well in this project. The active well sites on the Meigs #4 have been winterized and the contractor will start back in the Spring of 2023.



Meigs #4 Project, Herbert Blankenship #1 Well, well left of pipe/failing dam



Meigs #4 Project, Herbert Blankenship #1 Well

Project: Noble #7

Well Count: 1

Awarded Amount: \$112,351.00

The Noble #7 project consists of one well. The Barnhart #1 was brought to the Division's attention in April 2019 due to a landowner inquiry. Initial inspections found remnants of wooden conductor adjacent to a residential house with oil and gas leaking from the hole. A temporary riser was installed until the well could be plugged. The Division does not have detailed well records for this well. However, a review of offset well records indicate the well was likely drilled in the 1950s to the Buell Run Sandstone. This well has been plugged and final restoration has been completed.



Noble #7, H. Barnhart #1 Well



Noble #7, Barnhart #1 Well

Project: Stark #4

Well Count: 3

Awarded Amount: \$403,460.00

The Stark #4 project consists of three wells. The wells are located within commercial and industrial areas. The John Strouble #2 is located on the southeast side of Jackson Township. This well was referred to the Orphan Well Program in 2021 as the result of an inspection request. The well consists of a four-foot-tall section of 5.5-inch casing with a ball valve on top. According to Dominion Energy, who monitors the pressure yearly, the well averages 14 pounds per square inch. There is no production, storage, or transmission equipment associated with this well.

The plugging record from 1948 states, “Ripped 3-inch tubing 4,200 feet, filled with rock sediment and fire clay mixture from 4,377 feet to 4,200 feet. A 5.19-inch lead plug set at 4,200 feet and milled. Filled with rock sediment to 4,050 feet. Ripped 5.5-inch casing at 2,900 feet and set a 7-inch cast iron ball. Filled with rock sediment to 2,750 feet. Removed all or 788 feet of 8.63-inch casing and set 9-inch cast iron ball on 8.63-inch seat. Filled to 678 feet with rock sediment. Set 10-inch common wood plug at 678 feet and filled to surface with rock sediment.” The Division was able to drill through the wood plug and mill through a steel ball in order to re-plug this well. Two of the three wells have been plugged and the well sites restored. The third well, Quarantine Hospital #1, was dropped from the program when the landowner required that the State sign their Right of Entry and Hold Harmless forms. The well is not leaking and does not presently threaten the public’s health, safety & welfare.



Wood from Stark #4 Project, John Strouble #2 Well

Project: Trumbull #1 Re-Offer

Well Count: 1

Awarded Amount: \$116,815.75

The Trumbull #1 Re-Offer project consists of one well. This well was originally part of a previously contracted three (3) well project. Due to a lack of performance, the original contractor was removed from the Department of Administrative Services' Multiple Award Contract. At the time of removal, work on the Sawyer #1 well had not been started. The Trumbull #1 Re-offer includes the Sawyer #1 well. The Trumbull #1 Site Restoration project included the other two (2) wells from the previous contract. Those two wells were plugged by the previously removed contractor, but the sites were not restored.

The Sawyer #1 well is situated in an active agricultural field. The well is visibly equipped with 4.5-inch outside diameter steel casing that is fitted with a 4.5-inch to 2-inch swage, 2-inch fittings and a closed valve. There is no production or storage equipment associated with this well. Division records for the Sawyer #1 well show that it was drilled in 1981 to a depth of 4,304 feet, through the Clinton Sandstone, and into the Queenstone Shale. The Sawyer #1 has been plugged and the site restoration will begin Spring of 2023.



Trumbull #1 Re-Offer Project, Sawyer #1 Well

Orphan Well Program Costs

Between January 1, 2022, and December 31, 2022, the Division's Orphan Well Program awarded and expended the costs shown in Table 5. The Division awarded contracts to contractors for orphan well plugging and restoration work on 225 orphan wells at a total cost of \$29,249,533.71 for the Traditional Program. This includes change orders awarded. The average awarded plugging cost per well was

\$129,997.93. This is a fifty-four percent increase in the awarded cost versus the costs for calendar year 2021. Between January 1, 2022, and December 31, 2022, Division Contractors plugged 170 wells and invoiced for \$13,367,477.87 for plugging and restoration work for the Traditional Program. The average expended plugging cost per well was \$78,632.22. This is a forty-five percent increase in the expended cost versus the costs for calendar year 2021. The Division typically awards contracts with contingencies for unforeseen work included in the contract. The lower average cost expended versus the average awarded cost is partially a result of not using all contingencies that were available, if needed. Typically, contractors must complete projects within one-year of the date the contract is awarded. Many contractors have completed plugging work past the one-year project deadline. Therefore, the wells plugged in any given year usually consist of wells from projects awarded in the previous years and current year. The lag in time from when a well is awarded versus plugged combined with rising costs also contributes to the difference in the lower average cost expended versus the average awarded cost.

Between January 1, 2022, and December 31, 2022, the Division awarded contracts to contractors for orphan well plugging and restoration work on 6 orphan wells at a total cost of \$234,778.00 for the Landowner Pass-through Payment Program. The average awarded plugging cost per well was \$39,129.67. Between January 1, 2022, and December 31, 2022, Division Contractors plugged 6 wells via the Landowner Pass-through Payment Program. However, only 4 wells were invoiced in calendar year 2022 for \$120,414.95 for plugging and restoration work. The average expended plugging cost per well was \$30,103.74.

During the third quarter the Division executed three contracts with three design consulting firms to complete Orphan Well Program designs. Each contract was for a total of \$3,000,000.00. However, initial purchase orders were for \$1,000,000.00 to each design consultant. Additional purchase orders will be issued in the future as needed for the remainder of each contract. These design consultants are

completing the design work needed to be able to access, plug, remediate, and restore orphan wells for both the Traditional and Federal Programs.

The amount budgeted for Fiscal Year 2022 (July 1, 2021 to June 30, 2022) from Ohio's Oil and Gas Well Fund was \$22,481,036. The amount budgeted for Fiscal Year 2023 (July 1, 2022 to June 30, 2023) from Ohio's Oil and Gas Well Fund was \$22,849,836. This report is required by the law to reflect calendar years. Therefore, a direct correlation between this report and the Division's budget cannot be made. However, in both Fiscal Year 2022 and 2023 the Division has awarded more than the original amount budgeted from the Ohio Oil and Gas Well Fund by requesting & receiving additional funds from the Ohio Controlling Board.

In August 2022 the Division was awarded its first grant from the Infrastructure, Investment, and Jobs Act. This grant is a Large-scale Initial Grant in the amount of \$25 million. No money from this grant was expended between January 1, 2022, and December 31, 2022.

Table 5: Summary of Costs for Calendar Year 2022

Description	Awarded Total ²	Expenditure Total ²
Traditional Program Plugging	\$29,249,553.71	\$13,367,477.87
Landowner Pass-through Payment Program Plugging	234,778.00	120,414.95
Registered Well Emergency Mitigation	\$0.00	\$2,607.50 ³
Design Consultants	\$3,022,600.00	\$1,090,138.65
Title Work	\$32,760.00	\$31,010.00
Public Notice	\$97,616.29	\$92,910.18
Indirect Costs ¹	\$3,097,462.87	\$3,097,462.87
Total	\$35,734,750.87	\$17,802,019.02

¹ The funds allocated to the Orphan Well Program (ALI 725677) each fiscal year are based on thirty percent of the revenue credited to the oil and gas well fund during the previous fiscal year (ORC1509.071(B)(1)).

Indirect Costs are not expensed from the Orphan Well Program (ALI 725677). All Wage & Fringe, General Operating, & Equipment expenses are taken out of the General Operating Budget for the Division (ALI 725643).

- a. General Operating – expenses include items such as office supplies, certified mailings, postage, phones, copy meter usage, janitorial services, Voyager fuel and non-fuel, business cards, soil analysis, OIT charges, field supplies & equipment, FR gear, training/conference registration fees, travel, etc.
- b. Public Information- the Division completed a public information campaign on radio and TV with the Ohio Association of Broadcasters for \$52,000.

² Expenditures from each year are typically a combination of projects awarded in the current year and previous year.

³ This registered well emergency mitigation work was awarded in calendar year 2021. The Division was invoiced for the work in calendar year 2022.

Program Expansion

The Orphan Well Program has seen significant growth over the last five years and the Division anticipates this trend will continue. During calendar year 2022, the Orphan Well Program had an average of 12 rigs plugging orphan wells each week. Prior to House Bill 225 that significantly changed Ohio Revised Code 1509.071, typically the Orphan Well Program had one to three rigs actively plugging wells.

In 2017 the Division established the Multiple Award Contract with Department of Administrative Services to qualify contractors for the plugging of orphan wells. Each contractor qualified under the Multiple Award Contract is eligible to bid on a project. Each project cost is awarded to the lowest responsive and responsible bidder as submitted by the qualified contractors.

The Department of Administrative Services issued a new Request for Proposal (RFP) in February 2021 that established a new Orphan Well Program plugging contract in July 2021. This contract replaced the former contract without significant changes and will be in place for a three-year period with the option to renew up to an additional four years. In 2022, the Division finalized with the Department of Administrative Services an add-on solicitation for contractors. The Division is currently working with the Department of Administrative Services to complete an add-on solicitation for contractors in 2023. A total of 45 contractors are currently established on the contract.

In November 2019, per Ohio Revised Code 1509.071(E)(2)(a), the Division received approval of the Landowner Pass-through Payment Plugging Application form from the Technical Advisory Council. The Division activated the Landowner Pass-through Payment Plugging Program in Fiscal Year 2021. This program serves as an opportunity for landowners to expedite the plugging of wells on their property that

do not score high on the Division's priority scoring matrix. The plugging of wells through the Landowner Pass-through Payment Plugging Program requires an agreement between the landowner and a plugging contractor regularly engaged in the business of plugging oil and gas wells pursuant to Ohio Revised Code 1509.071(E). The Division's role is to ensure contract amounts are reasonable, approve applications, issue plugging permits, ensure lawful completion of well plugging and restoration, and provide payment directly to the contractor. Contractors do not need to be a part of the Department of Administrative Services' Multiple Award Contract to participate in the Landowner Pass-through Payment Plugging Program. The Division has approved the first eight applications for the program. Six wells from these approved applications were plugged in calendar year 2022. This Division is continually processing new applications. Over 100 wells have been committed to this program by landowners. Also, multiple contractors have become active and began to utilize the program in calendar year 2022. The Division anticipates continued growth in this program.

On November 15, 2021, President Joe Biden signed the Infrastructure, Investment, and Jobs Act into law. This included Section 40601 of Division D, "Orphaned Well Site Plugging, Remediation, and Restoration." This portion of the bill provides funding for states to plug orphan wells. The bill will make available an estimated \$326 million to Ohio for what are referred to as Initial Grants, Formula Grants, Performance Grants, and Matching Grants. These federal grants will be available until 2030. The Division is actively participating in the development of this federal program by gathering and supplying information and completing forms to be eligible for these funds. The Division applied to the Department of Interior for a Large-scale Initial Grant and was awarded \$25 million. The Division anticipates that many of the Large-scale Initial Grant funds will be used in calendar year 2023 to plug orphan wells. The Division intends to apply for additional grants as they become available. The bill can be located at this link:

<https://www.congress.gov/bill/117th-congress/house-bill/3684/text>.

In response to anticipating these federal grants, the Division is actively developing and implementing contracts for locating, analyzing, and scoring orphan wells; designing the plugging plans for the orphan wells; managing the plugging of orphan wells; and completing the plugging of orphan wells. After use of a public information campaign, landowner inquiries are helping the Division locate orphan wells. The Division, with help from its consultants, is also locating wells through drone-flown magnetometer surveys. Once a well is located, a well determination is completed by an inspector, who analyzes the condition of the well and evaluates human health, safety, and environmental concerns. The well is then scored based on this analysis. These inspections are performed by Division inspectors and will be done by consultants in the future as well. The designing of plugging plans for the wells, which is completed by engineers, geologists, hydrogeologists, surveyors, environmental scientists, health physicists, and safety officers, is done by both Division staff and consultants. Many projects will continue to be awarded and managed by Division staff. However, construction managers have been hired to both award and manage much of the additional plugging work that will be conducted under the federal grants.

In calendar year 2022, the Division identified changes to Ohio Revised Code Section 1509.071 to clarify the Orphan Well Program's responsibilities as well as improve efficiencies in the Program's work. In May 2022, House Bill 430 was enacted and included these changes. On September 23, 2022, the law became effective and contained all of the following:

- allows the packaging of lower-priority wells with higher-priority wells to improve efficiencies;
- exempted orphan well projects from ORC 153, as the work is non-construction work at both the state and federal level;
- clarified the definition of orphan wells;
- authorized the publication of notices in an electronic format rather than just in newspapers;
- clarified ownership of abandoned equipment and payment for proceeds for the equipment;

- authorized the use Orphan Well Program money for different types of contracts, when necessary, to complete all work needed to plug an orphan well;
- exempted the Landowner Pass-through Payment Program (LOPTP) from Controlling Board review;
- created a mechanism for the Chief to approve changes required when plugging a well in the LOPTP;
- authorized access to all parcels needed to plug a well; and
- authorized the Division to enter cooperative agreements with not-for-profit organizations.