SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PROJECT DESCRIPTION

The Washington #16 project shall include the following wells:

Wells to be plugged per the individual plugging plan.

Well Name	API Number	County	Township	Ingress/Egress Latitude, Longitude	Wellhead Latitude, Longitude
Snider/German #1	34-167-6-6568-00-00	Washington	Independence	39.455168, -81.150484	39.470870, -81.163777
Snider/German #2	34-167-6-6569-00-00	Washington	Independence	Same as above	39.469580, -81.163907
Snider/German #3	34-167-6-6570-00-00	Washington	Independence	Same as above	39.470807, -81.161548
Snider/German #4	34-167-6-6571-00-00	Washington	Independence	Same as above	39.468526, -81.162906
Snider/German #5	34-167-6-6572-00-00	Washington	Independence	Same as above	39.468410, -81.161927
Snider/German #6	34-167-6-6573-00-00	Washington	Independence	Same as above	39.468361, -81.160926
Snider/Garman #7	34-167-6-6581-00-00	Washington	Independence	Same as above	39.463782, -81.160293
Snider/Garman #8	34-167-6-6582-00-00	Washington	Independence	Same as above	39.462639, -81.159358
Milton #7	34-167-6-6574-00-00	Washington	Independence	Same as above	39.467578, -81.161005
Farnsworth #1	34-167-6-6575-00-00	Washington	Independence	Same as above	39.466409, -81.162725
Farnsworth #2	34-167-6-6576-00-00	Washington	Independence	Same as above	39.467264, -81.162497
Farnsworth #3	34-167-6-6577-00-00	Washington	Independence	Same as above	39.466659, -81.163851
Farnsworth #4	34-167-6-6578-00-00	Washington	Independence	Same as above	39.465717, -81.161313
Farnsworth #5	34-167-6-6579-00-00	Washington	Independence	Same as above	39.464880, -81.161524
Farnsworth #6	34-167-6-6580-00-00	Washington	Independence	Same as above	39.464747, -81.161628
Farnsworth #7	34-167-6-6624-00-00	Washington	Independence	Same as above	39.464792, -81.162685

Wells to be cut off below grade and plated per the specifications.

Well Name	API Number	County	Township	Ingress/Egress Latitude, Longitude	Wellhead Latitude, Longitude
Deucher #12	34-167-6-2512-00-00	Washington	Independence	Same as above	39.459102, -81.156061

PROJECT SCOPE OF WORK:

This project includes mobilization, access and well site development, drilling or cleaning out of and plugging of sixteen (16) Orphan Wells, storage and disposal of all materials generated during the plugging of the well, decommissioning, removal, storage and disposal of all casing, tubing, well and production equipment and affiliated lines and restoration of all areas disturbed during this project.

This project shall also include all labor, equipment, and material necessary to excavate, cutoff, and plate one (1) Plugged Orphan Wells that were discovered within the proximity of this project.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

GENERAL SCOPE OF WORK

The Contractor, the Contractor's agents, representatives, and subcontractors shall perform this Plugging Project in accordance with Ohio Revised Code 1509, Ohio Administrative Code Chap. 1501:9-11 and 1501:9-12, the Agreement, and in accordance with the following documents that are attached hereto and made a part hereof:

1. Project Description;
2. General Scope of Work;
3. General Conditions;
4. General Specifications;
5. Sequence of Work;
6. Well Description;
7. Plugging Plan;
8. Detailed Specifications;
9. Appendix I – Ohio One-Call;
10. Appendix II – Well Records;
11. Quantity Sheet;
12. & Drawing Plan Set.

Subject to the Contractor's compliance with this Scope of Work, Contractor is solely responsible for and has control over all plugging and reclamation construction means, methods, manners, techniques, sequences, and procedures, for safety precautions and programs in connection with the Plugging Project, and for coordinating all portions of the Plugging Project.

SCOPE OF WORK
WASHINGTON #16 PROJECT
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Orphan Well Sites
Washington County, Independence Township

GENERAL CONDITIONS

PART 1: OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS

This Washington #16 Project (Project) references the Ohio Department of Transportation (ODOT) Construction and Material Specifications (ODOT CMS). Any reference to these specifications is to ODOT's most current version of the specifications. The ODOT CMS can be found at https://www.dot.state.oh.us/Divisions/ConstructionMgt/OnlineDocs/Pages/2023-Online-Spec-Book.aspx

PART 2: PRE-SITE MEETING

The Contractor or Contractor's representative must attend the pre-site meeting. Failure to attend the pre-site meeting is grounds for the Division to reject the Contractor's Offer.

The Ohio Department of Natural Resources, Division of Oil & Gas Resources Management (Division) intends to begin the pre-site meeting on time. At the meeting, the Division will circulate and collect attendance sign-in forms to all contractors present. Only those contractors in attendance throughout the pre-site meeting, including the discussion of the Scope of Work, will be considered present for the pre-site meeting.

PART 3: MODIFICATIONS TO THE SCOPE OF WORK PRIOR TO AWARD

The Scope of Work may only be altered by written modification. The Division may issue an Amendment to the Scope of Work and will provide a notification of the Amendment by email to all Department of Administrative Services (DAS) pre-qualified contractors. Each contractor is responsible for logging into OhioBuys and submitting an offer that is responsive to all Amendments issued. All offers submitted prior to an amendment being issued shall become null/void and not consider in the opening. All Amendments shall become part of the Scope of Work.

Any interpretation or clarification of the Scope of Work made by any person other than the Division, or in any manner other than a written Amendment, is not binding and the Contractor cannot rely upon any such interpretation or clarification.

The Contractor cannot, at any time after the award of the Scope of Work be compensated for any issue with the Scope of Work, including alleging insufficient data, incomplete, ambiguous, conflicting, or erroneous language, or incorrectly assumed conditions regarding the nature or character of the work.

PART 4: PERMIT AND INSPECTION REQUIREMENTS

The Division will obtain and pay for all building and U.S. Army Corps of Engineers permits unless otherwise specified in the Detailed Specifications. However, the Contractor shall determine and include in his or her Offer Sheet the costs required to obtain and pay for all other requirements by the applicable governmental agencies; including but not limited to, all certificates of inspection/operation, guarantees,

licenses, etc. required to complete the work as described within this document. The contractor shall follow all applicable laws and permit requirements and the Division will not be held responsible for damages that result from violation of laws or permits.

A Contractor's offer must be submitted online through **OhioBuys**. (https://procure.ohio.gov/bidders-and-suppliers). **All offers submitted prior to an Amendment being issued shall automatically become null/void and not consider in the opening.**

Offers shall include labor, equipment, and material cost plus a proportionate share of the Contractor's overhead costs, other indirect costs, and anticipated profit. An offer must be mathematically and materially balanced. A "mathematically unbalanced offer" is an offer containing lump sum or unit price items that do not include reasonable labor, equipment, and material costs plus a reasonable proportionate share of the Contractor's overhead costs, other indirect costs, and anticipated profit. A mathematically unbalanced offer typically contains token prices (i.e. $1 prices), front loadings, or prices with large variations from the engineer's estimate. A "materially unbalanced offer" is a mathematically unbalanced offer that will not result in the lowest ultimate cost to the Division.

During the Division's initial review of offers, if the Division finds an offer may be mathematically unbalanced, the Contractor may be required to submit proof of the mathematically unbalanced line items' proposed cost within 24 hours after notification from the Division. At a minimum, a Contractor may be required to submit copies of all material/rental quotes, intended labor costs (hours/rates), and contract agreements with subcontractors to support their offer. If the Contractor fails to submit the required proof, the Contractor's offer shall be deemed withdrawn from consideration. The Division shall evaluate the documentation and may verify quotes with vendors. After a review of the documentation, the Division will reject any offer it determines is mathematically and materially unbalanced.

A Contractor shall maintain an up-to-date schedule on file with the Division that sets forth dates by which the Contractor will plug each well that the Division previously awarded to the Contractor. A Contractor shall update their work schedule as often as necessary to maintain a current schedule with the Division. To be awarded new contracts, the Contractor must be able to complete all previously awarded work within the due dates set in each contract with the Division. Upon request, a Contractor shall provide an up-to-date schedule to the Division that reflects when all awarded work will be completed.

Please note that a Contractor's offer must be submitted online through OhioBuys.

1. Refer to the Scope of Work posted in OhioBuys with this solicitation.
2. **Only Contractors who are pre-qualified to offer this service on an existing State Contract beginning with CSP900-922 (DAS Index No. MAC110) may respond to this solicitation.** All CSP900922 Contract Terms & Conditions apply to this solicitation. No additional terms and conditions will be accepted. The Division will reject Offers from any Contractor that is not pre-qualified.
3. Completion of the grid is required and will be considered the response for evaluation. No outside or additional documentation will be considered.
4. Fixed prices will be automatically added to Contractor's proposals when shown. Contractors are not to enter pricing for fixed price items.
5. Confirm that your bid has been successfully imported into OhioBuys for all items before submitting. Incomplete bids and/or attachments will not be evaluated.
6. The most recent bid submitted in OhioBuys will be the bid that is evaluated, all prior bids submitted in the same solicitation will not be evaluated.
7. **The Contractor or Contractor's representative must attend the site meeting.** Failure to attend the site meeting is grounds for the Division to reject the Contractor's Offer.

PART 6: DIVISION'S OFFER SELECTION

Except when the Division rejects an offer, the Division will select the lowest offer submitted to the Division. The Division may reject an offer if any one of the following applies to the Contractor's offer:

- Is not submitted online through **OhioBuys**;
- Fixed reference prices and/or any other imported information is incorrectly and/or not imported into **OhioBuys**;
- Is conditional;
- Is a mathematically unbalanced offer and a materially unbalanced offer;
- Is behind schedule on other projects with the Division; or
- Is not able to schedule this project within the contract due dates.

PART 7: WITHDRAWAL OF OFFERS

At any time prior to the opening of the Offers, a Contractor may submit a written request to the Division, at the location where the Offers are received, to withdraw its offer. The request to withdraw the Offer must be signed by the person who executed the Offer.

PART 8: EFFECTIVE DATE AND TERM

The effective date of this Project is the date of the Letter to Proceed that is sent to the Contractor. The Contractor must start work at the project site within twelve (12) months of the end of the contract and the Contractor shall continue diligently working toward the completion of the project once work has commenced. The Project must be completed **eighteen (18) months after the effective date** or by June 30, 2025, whichever is sooner. If the Project terminates on June 30, 2025 and the Project is not completed, the Scope of Work may be renewed on the same terms if the Division sends written notice to the Contractor. Failure to complete work by the contract due dates may result in the suspension or termination of the contract and may result in the Division pursuing the Suspension and Termination and/or the Contract Remedies sections defined in the MAC 110 contract.

(Note: All in stream work is NOT to occur between March 15th and June 30th. Therefore, if the start or end time fall within that time frame the deadline shall be moved to July 31st. The access shall be completely installed at the start of the project, no work shall begin on any well without having the crossings and access installed or being installed at the same time.)

PART 9: TERMINATION AT WILL

The Division may terminate this Scope of Work without cause. Any payment due to the Contractor at the time of termination by the Division shall be paid to the Contractor on a pro rata basis.

PART 10: RELATIONSHIP BETWEEN COMPONENTS OF THE SCOPE OF WORK

This Scope of Work includes drawings that are duplicates of drawings on file with the Division. The Scope of Work documents are complementary. All sections of the Scope of Work are binding. The titles and headings in the Scope of Work are for reference and in no way affect the interpretation of the provisions of the Scope of Work. Further, if any part of this Scope of Work is found to be unenforceable, no such event will affect the enforceability or applicability of any other part of the Scope of Work.

If a conflict between the drawings and the specifications arises, the Contractor must notify the Division. In the event of a conflict of any provision in the Scope of Work the order of priority within the Scope of Work

is as follows: Drawings, Detailed Specifications, General Specifications, Plugging Plan, and Sequence of Work.

PART 11: CONTRACTOR'S RESPONSIBILITY FOR SUBCONTRACTORS

The Contractor is responsible for the conduct of its subcontractors and for persons its subcontractors directly or indirectly employ.

PART 12: STANDARDS

If the Division identifies a "standard" by reference to manufacturer and/or model number, all offers will be evaluated to ensure that the identified standard is used. The Division will not consider an offer in which a substitution for the standard is offered. After the Letter to Proceed is issued, the Contractor may submit a written proposal for a substitution of a standard.

PART 13: SUBSTITUTIONS DURING THE PROJECT

After the Letter to Proceed is issued, the Contractor may offer substitutions for the standards set forth in the Scope of Work. The decision to allow substitution is solely within the discretion of the Division, which will consider, among other factors, availability, time of delivery, the aesthetic value of the proposed substitution, general differences in the knowledge of the product, service history, quality, efficiency, performance, and architectural, engineering, inspection, testing and administrative expenses. Any changes to the Offer price and/or Scope or Work must be memorialized by a Field Order or Change Order, as applicable. The savings in cost in allowing any substitutions during the Project will be solely to the benefit of the Division.

PART 14: QUANTITIES OF WORK

14.1 Unit Price Items

For items in the Offer that require a unit price, the quantities listed on the Offer Sheet are an approximation and are to be used only for the comparison of offers. The scheduled quantities may be increased or decreased without invalidating or altering the Offer and will be considered within the Scope of Work.

Payments for unit price items will be made to the Contractor for actual quantities of work performed and materials furnished in accordance with the Scope of Work; however, the Contractor may not exceed the unit quantities shown on the Offer Sheet without prior written approval of the Division through a Field Order. Even if the Contractor determines that additional unit priced quantities (above and beyond the original Offer Sheet quantity) are required to meet plan and/or specification dimensions, the Contractor must not exceed the Offer Sheet quantities without prior written approval of the Division. The Division will not pay for quantities above and beyond the Offer Sheet quantity without prior written approval of the Division.

14.2 Lump Sum Items

For items in the Offer Sheet that require a lump sum price, the Division will not pay for work, materials, or equipment that exceeds the amount provided by the Contractor on the Offer Sheet. The lump sum price on the Offer Sheet must include all work, materials and equipment necessary to properly complete the Project.

14.3 Additional/Contingency Items

The contingency items set forth in the Offer Sheet are not projected as necessary to complete the Project. Rather, the contingency items will first be used when unforeseen work arises, and the Division determines the contingency item is applicable. To be compensated for contingency items, the Contractor must have a written Field Order from the Division authorizing the contingency item in a specified quantity. Use of contingency items will not require the execution of a Change Order. The Contractor must be prepared to supply all items identified in the contingency specifications for use on this Project.

PART 15: OMISSIONS IN THE SCOPE OF WORK

If the Contractor notices an error or omission in the Scope of Work during performance of the Project, the Contractor shall immediately notify the Division of such omission or error and shall not proceed with the Project until directed by the Division. Any work performed by the Contractor prior to clarification by the Division may not be entitled to compensation.

PART 16: INTERPRETATIONS CONCERNING THE SCOPE OF WORK

During the Project, if a question arises on the Scope of Work, the labor or materials to be supplied, or costs potentially exceeding the Contractor's Offer, such questions must, prior to the work being performed, be submitted to the Division for a determination. A Division determination will be issued in writing and any work performed prior to such a determination will be performed at no cost to the Division. The Division will also begin executing a Change Order, when appropriate.

If the Division receives a written question concerning the Project, the Division will determine if the work must be performed by the Contractor at no increase in price to the Scope of Work. If so, the Division will issue a Field Order setting forth the Division's determination. Each Field Order issued must be signed by the Contractor acknowledging receipt. If the Contractor disagrees with the Division's interpretation in a Field Order, the Contractor may submit a protest by certified mail to the Chief within ten (10) days following the date of issuance of the protested Field Order. However, the Contractor must immediately proceed with the instructions given in the issued Field Order.

If, upon receipt of a written protest of a Field Order, the Division determines that the work referred to in the protest is outside the Scope of Work, the Division will not issue a Field Order and instead will issue a Change Order.

Field Orders, which are interpretations of the requirements of the Scope of Work, may be issued by the Division at any time during the performance of the work. The Contractor, at all times, is required to immediately execute the instructions of all issued Field Orders.

PART 17: CHANGES IN THE SCOPE OF WORK

17.1 The Division's Right to Require Change Orders

The Division may issue a Change Order directing the Contractor to immediately perform extra work that differs from the Scope of Work. The Contractor shall perform the work as directed. The changes in the work will consist of additions, deletions, or other revisions. When the Contractor performs the work, the Offer amount will be adjusted as described within this Scope of Work.

If the Contractor protests the issuance of the Change Order, any such protest has no bearing on any work requirements arising out of the Change Order in that the Contractor must immediately perform the work required in the Change Order so as not to delay the progress of the work at the Project.

17.2 Unauthorized Work

Only work performed under the Scope of Work or work authorized by a Field Order or a Change Order is eligible for compensation. If the Contractor performs any work or purchases any materials without an approved, applicable Field Order or Change Order, such work performed, and purchases made are within the Scope of Work at no additional cost to the Division.

17.3 Contractor's May Request Change Orders

If the Contractor determines that the Scope of Work does not address conditions at the Project, the Contractor may provide written notice to the Division of the conditions and request a Change Order. No oral communications will be acceptable as justification for a Change Order.

17.4 Determining Price of a Proposed Change Order

The following methods will be used to determine the price of a proposed Change Order:

a. If a Change Order involves items not listed on the Offer Sheet, the Contractor must present the Division with labor and/or material price quotes for the proposed Change Order item(s). The Division may request these quotes either in unit prices or as lump sums; or

b. If the work involved in the Change Order is not definable, the Division may request the work be performed on a time and material basis and include a maximum amount to be paid for the work. The method will be based on unit prices for both labor and materials agreed to by the Division prior to the Contractor commencing the work.

17.5 Disputes Regarding Change Order Prices

If the Contractor and the Division cannot agree on the cost of the work for a Change Order, using site-specific information including, but not limited to, Division historic public offer information, the Division will determine and set a fair price for the work and materials that are the subject of the Change Order.

PART 18: PAY ESTIMATES

18.1 General Information

Payments issued to the Contractor as the work progresses are not acceptance of any portion of the work not completed in accordance with the Scope of Work nor do such payments relieve the Contactor of liability with respect to any obligation or any expressed or implied warranties or responsibilities for faulty materials or workmanship.

18.2 Required Review by the Division

Prior to the submittal of each payment request, the Contractor and the Division must meet at the Project site to review the Project progress. The Contractor and the Division's Project Representative must mutually agree on quantity and percent of work completed for all offer items prior to submittal of each payment request. No payment request will be approved for work that has not been approved

by the Division's Project Representative. Field verification of all lump sum quantities and weight slips for all unit price quantities invoiced must be submitted to the Division's Project Representative for review during the meeting.

The Contractor's payment request must be submitted to the Division via the Orphan Well Program email at OrphanWellProgram@dnr.ohio.gov. The payment request must include a form furnished by the Division along with all backup documentation. The Division will confirm in writing that the payment request is accurate.

Payment requests received by the Division containing errors or requesting amounts that cannot be approved will be returned to the Contractor. The Contractor may resubmit a payment request after correcting errors.

18.3 Documents to be Submitted for Payment

Once the Division confirms the payment request is accurate, the contractor may submit an invoice on company letterhead to Ohio Shared Services at invoices@ohio.gov. Refer to the instruction on the payment request form furnished by the Division for additional submittal details.

With each request for payment the Contractor certifies that:

a. The request for payment is accurate as to materials and the work completed under the terms and conditions of the Scope of Work and any Change Order, as applicable, including full compliance with all labor provisions; and

b. All subcontractors and material suppliers have been paid for the work or materials that are applicable to all previous payment requests. As certification, each request for payment, at the Division's request, may need to be accompanied with a properly executed "Waiver of Liens" from all subcontractors and material suppliers to show that all previous payments made by the Division to the Contractor have been applied to fulfill, in full, all of the Contractor's obligations reflected in prior requests for payment.

18.4 Effect of Liens on Payment Requests

All work, materials, and equipment covered by any request for payment, whether incorporated in the Project or not, will pass to the Division at the time of payment free and clear of all liens, claims, security interests and encumbrances.

If there is evidence of any lien or claim that is chargeable to the Contractor, the Division will withhold all payments due to the Contractor to secure such lien or claim. If there are any previous liens or claims after payments are made to the Contractor, the Contractor may be required to refund to the Division a sum of money equal to the sum of all monies that the Division may be compelled to pay in discharging any lien or claim as a result of the Contractor's default.

PART 19: RETAINAGE FOR FINAL STABILIZATION

If the Scope of Work requires revegetation of disturbed area, the Division will retain five percent (5%) of the sum of (1) the Offer amount and (2) all approved Change Orders. The five percent (5%) amount retained shall be released once the Division completes a Final Stabilization Inspection and determines that vegetation has reached final stabilization. "Final stabilization" means vegetation established in a uniform perennial vegetative cover with at least a seventy percent (70%) grass cover. "Final stabilization" also means that no large barren areas exist, and the vegetation is of an equal or better condition than before the

project started. The Contractor must remove all temporary erosion and sediment controls once final stabilization is achieved.

SCOPE OF WORK
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Orphan Well Sites
Washington County, Independence Township

GENERAL SPECIFICATIONS

Unless there is a specific pay item in the Detailed Specifications, the work defined in the General Specification shall be incorporated into other items of work.

PART 1: HOURS OF WORK

The Contractor, the Contractor's agents, representatives, and subcontractors shall perform plugging projects during the days of Monday through Friday. Work will not be conducted on weekends or state/national holidays except with Division approval or during emergency situations. A workday is defined as eight (8) hours. However, additional hours may be worked with Division approval or during emergency situations.

PART 2: EQUIPMENT

The Contractor equipment shall pass all safety requirements of local, state, and federal agencies. The Ohio Department of Natural Resources, Division of Oil and Gas Resources Management reserves the right to inspect the equipment prior to the Recommendation of Award.

Unless otherwise noted, all equipment and materials required to complete the work described shall be provided by the Contractor.

PART 3: NOTIFICATIONS

3.1 Seven Working Day Notice

The Contractor, the Contractor's agents, representatives, subcontractors, or independent contractors shall contact the responsible Division Orphan Well Inspector (the "Inspector") no less than seven (7) working days prior to commencement of work. Notice may be written or oral. This notice will allow the appropriate Division staff time to mark the approved access route and any sensitive areas that need to be left undisturbed.

The Contractor, the Contractor's agents, representatives, and sub-contractors shall contact each utility company that has utilities that directly affect plugging activities at the well location(s).

3.2 Public 48 Hour Notice

Prior to initiating well plugging operations, the Contractor shall give a minimum of 48-hour notice to the local fire department. Confirmation of this notification shall also be made to the Inspector or the Division Regional Office.

3.3 Emergency Notification

When emergency conditions are encountered, such as a release of hydrogen sulfide gas (H_2S), natural gas, crude oil, condensate, or brine that threatens human health, safety or the environment, as

described in Ohio Administrative Code 1501:9-08-02, the Contractor shall notify the local fire department, the Local Emergency Planning Committee (LEPC) and call the 24/7 incident notification number: 1-844-OH-Call1 (1-844-642-2551) within 30 minutes of the occurrence.

3.4 Plugging Completion Notice

No sooner than three business days after emplacing the uppermost plug, the Division will review the well to determine if any additional plugging work shall be required at that time. If additional work is needed, a Field Order will be issued by the Division. The Field Order shall state what must be completed and what, if any, Change Orders shall be required. If additional work is not needed the contractor shall cut the casing as defined in the Plugging Plan and set the plugged well identification as outlined in these **General Specifications** and Ohio Administrative Code 1501-9-11-10.

PART 4: ACCESS AND PRESERVATION OF SITE

All costs for the adequate access to the well site for the plugging equipment shall be included in the Offer. Unless waived, placement of all tanks and equipment shall be subject to Division's approval. If requested by the Division, access roads will be chained or cabled to prevent unauthorized use.

Special attention shall be given to maintaining trees and other vegetation that have scenic value, provide shade, reduce erosion and runoff, or add to the aesthetics of the area. No trees three (3) inches or larger in diameter shall be removed without the Division's permission. Any alterations to the natural topography required to provide ingress and egress to the well site must be approved by the Division before work begins.

PART 5: DAMAGE CAUSED BY CONTRACTOR

All damage caused by the Contractor's negligence in carrying out of this scope of work to any public or private property of any nature whatsoever, including trees, shrubs, and crops, shall be corrected to Division's satisfaction at the expense of the Contractor. If crops are damaged and the Contractor, landowner, or tenant cannot reach a settlement, the County Cooperative Extension Service shall set a fair price for crop damages and the decision shall be final and binding upon all parties. All subsequent payments due the Contractor shall be withheld until the Contractor provides proof of payment of any such claim.

The Contractor shall be responsible for all costs of repairing or replacing any survey monument that is disturbed or destroyed by the Contractor. The Contractor shall utilize a professional surveyor who is licensed and registered by the State of Ohio to perform the re-establishment of said monuments according to the standards set forth by the governing body or law of said monument. For the purpose of this scope of work, the term survey monument shall apply to any property boundary marker, federal, state or county geodetic benchmark, state or county right of way monument, FEMA benchmarks or flood elevation markers.

PART 6: SAFETY

The following safety protocols shall be completed for each well that is being plugged. The Division, at its discretion, may waive the requirement if all wells in the project are on the same lease\property.

6.1 Public Safety Coordination Meeting

The Contractor shall hold a safety meeting with the local fire department, Division Emergency Operations staff and Inspector, and other applicable contracting staff prior to commencement of plugging activities. The meeting shall review 1) the safety of the public during operations, 2) the

safety of workers during operations, 3) emergency notifications of events, 4) site set up and layout, 5) general overview of operations, 6) nearest hospital's address and directions.

6.2 Daily Safety Meetings

The Contractor shall hold a daily safety meeting for all personnel on-site prior to the commencement of work. The Contractor shall provide and maintain a sign in/out sheet for all people on location. The Contractor shall immediately report any accidents and/or safety concerns to the Inspector.

6.3 Operational Standards

The Contractor shall follow the rules established by Occupational Safety and Health Administration (OSHA) Basic Construction Safety 29 CFR 1926 on all onsite project operations.

6.4 Excavation and Trenching Requirements

The Contractor shall follow the notification protocol as specified in Part 3 of the General Specifications before the start of any excavating activities. The Contractor will comply with OSHA Construction Standards for excavation and trenching under 29CFR 1926 Subpart P.

6.5 Hazardous Communications Requirements

The Contractor shall maintain Safety Data Sheets (SDS) for all chemicals stored and/or used on-site. A copy of all SDS will be supplied to the local Fire Department and to the Division.

6.6 Site Security

The Contractor shall provide and install protective barriers/fencing around the work area to prevent unauthorized access. Ingress and Egress access must be maintained at all times.

6.7 Wind Direction Indicator

The Contractor shall install a windsock in an open area of the well location where it is visible to all onsite personnel. It shall be constructed of high visibility material and deployed no less than six (6) feet above grade during the plugging operations.

6.8 Muster and Smoking Areas

The Contractor shall mark and assign a primary and a secondary muster area daily upwind of the well location. These are to be determined based on prevailing wind direction, as indicated by the windsock. The Contractor will post an emergency contact information sheet at each muster site. The Contractor will establish a safe location for a designated smoking area.

6.9 Ignition Sources and Parking Areas

The Contractor shall identify and mark all potential ignition sources within a 50-foot radius of the well. The designated parking area will be outside the 50-foot radius from the well.

6.10 Air Monitoring and Worker Safety

The Contractor shall supply and place a 4-gas monitor at the wellhead. The gas monitor must be calibrated and maintained to monitor Methane (CH_4), Oxygen (O_2), Carbon Monoxide (CO) and Hydrogen Sulfide (H_2S).

Stop work must be followed when any of the levels listed below occur:

- Methane - 1000 parts per million (PPM)/5% Lower Explosive Limit (LEL),
- Oxygen - saturation below 19.5% or above 23%,
- Carbon Monoxide – 50 PPM,
- Hydrogen Sulfide - 10 PPM.

The levels stated above are directly from the Occupational Safety and Health Administration (OSHA) and The National Institute for Occupational Safety and Health (NIOSH) and are standard for air monitoring procedures for safety and work environments. If any of the above levels are alarmed, all personnel will shut down ignition sources and report to the muster area. From the muster area, the Contractor will call 911 for assistance from the local Fire Department.

Division Emergency Operations personnel or the Inspector has the right to stop work if the actions are unsafe or the actions cause or are likely to cause danger to the workers, public, or the environment.

PART 7: MAINTENANCE OF TRAFFIC

The Contractor shall at all times install, maintain, and operate all traffic and traffic control devices in conformance with the requirements of the "Ohio Manual of Uniform Traffic Control Devices for Streets and Highways," hereinafter called The Ohio Manual.

The Contractor shall notify the appropriate public officials and the Division and shall obtain all required permits prior to any lane closure of a public road.

The Contractor shall maintain ingress/egress to all properties associated with the project at all times during the project unless agreed upon in writing by the Division and the landowner.

7.1 STREET CLEANING

The Contractor shall be required to provided street cleaning services in order to remove sediment/debris tracked from the construction site/access drive onto private or public roadways during all phases of the Project.

The Contractor shall work diligently to minimize the amount of sediment tracked onto roadway. The Contractor will conduct all construction and ingress/egress operations in conformance with Part 9: Erosion and Sediment Control of the General Specifications. Use of other erosion and sediment control measures to prevent sediment runoff during period of rains and non-working hours.

The Contractor will provide street cleaning, such as sweeping or vacuuming, at locations around the project ingress/egress where plugging operations has caused tracking of sediments onto roadways. Mechanical sweepers shall be vacuum-type or regenerative sweepers. Sweeping speed will not exceed 6 mph. A minimum of two passes shall be made. Streets must be cleaned daily before the end of the workday. If excess sediments have been tracked onto the streets or if rain is

expected, the Division may direct the Contractor to clean the street as often as necessary to keep the street clean at all times.

The Contractor shall be required to remove and dispose of sediments properly. Removal of collected sediment deposits will be disposed on the project site. If sediment deposits cannot be disposed of on-site, an alternative location will be approved by the Division. No offsite disposal will be in or adjacent to a stream and/or floodplain. Sediments to be placed at the project site will be in conjunction with site restoration and should be spread, compacted, covered, and stabilized in accordance with the site restoration line item. **Sediment will not be allowed to flush into stream or drainage way and washing or flushing of sediments into adjacent drainage systems is prohibited.** If sediment has been contaminated, it will be disposed of in accordance with the contaminated material disposal line item.

The cost of this work shall be included in Contract bid prices for items of which this work is a component.

PART 8: PROTECTION OF EXISTING UTILITIES

Before construction begins, the Contractor, acting as an agent for the Division, shall locate all utilities in the vicinity of the work. The Contractor shall be responsible for complying with the regulations pertaining to utilities in the State of Ohio. The Contractor shall assume all risk for all utilities located in the vicinity of the work, whether above or below the surface of the ground. The Contractor shall also be responsible for all damages and assume all expense for direct or indirect injury, caused by his work, to any of the utilities, or any person or property by reason of injury to them, whether such utilities are or are not shown on the drawings, once they have been uncovered by the work. **In compliance with Ohio Revised Code 3781, two working days before digging the Contractor shall contact the Ohio Utility Protection Service (OUPS) and Oil and Gas Producers Underground Protection Service (OGPUPS) using the Ohio811 one call service by calling 811 or by using the i-dig login found on the internet at OHIO811.org. The Contractor shall maintain a current OUPS/OGPUPS call ticket during the entire project.**

PART 9: EROSION AND SEDIMENT CONTROL

Temporary erosion control measures are required during the course of this project. These measures may consist of the installation of straw bale dikes, silt fence, filter socks, inlet protection structures, erosion control blankets, energy dissipation, and temporary seeding and mulching.

Once construction begins, the Contractor shall be solely responsible for all construction related to the control of off-site sedimentation. This sediment shall be removed by the Contractor at the Division's direction.

9.1 Temporary Measures

Temporary erosion control structures shown on the Drawing Plan Set, identified with these specifications, or as directed by the Division shall be placed as soon as construction starts and must be maintained during the course of the project. At the direction of the Division, the Contractor shall remove the temporary controls when they are no longer needed or when required permanent control measures have been completed.

If sediment escapes the site, accumulations must be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next rain event.

The contractor shall be responsible for revegetation of all areas in which sediment escapes the site. These areas shall be included in the final stabilization of the project and shall be at the cost of the contractor.

9.2 Maximum Exposed Areas

Stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, must be initiated no more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased.

Where the initiation of stabilization measures by the seventh day after construction activity temporarily or permanently ceased is precluded by snow cover, or frozen ground conditions, stabilization measures must be initiated as soon as practicable.

Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within fourteen (14) days, temporary stabilization measures do not have to be initiated on that portion of site.

The Division may limit the area of excavation, borrow and embankment operations in progress commensurate with the Contractor's capability and progress in keeping the finished grading, re-soiling, mulching, seeding and other such permanent control measures current in accordance with the acceptable schedule.

9.3 Winterization

When an incomplete project will be left exposed throughout the winter season, the Contractor shall furnish the Division a plan indicating the control measures to be installed and maintained until the next construction season.

If the winter period falls within the anticipated construction period of the Scope of Work and as indicated in the original approved construction schedule, control structures will be paid for by the Division at the unit prices in the Offer.

If the project is not substantially completed prior to the winter season due to the failure of the Contractor to meet the completion date, these necessary control structures will be installed and maintained by the Contractor at his expense and these items will not be paid for under the terms of the Scope of Work, except those that are permanent facilities to be left in place in accordance with the Drawing Plans Set and Specifications.

9.4 Other Controls

Off-site vehicle tracking of sediments and the generation of dust must be minimized, and any waste must be properly disposed.

9.5 Inspections

The Division Inspector shall conduct inspections to ensure that the control practices are functional and to evaluate whether the erosion and sediment control measures are adequate and properly implemented.

9.6 Enforcement

The Division shall take appropriate steps to ensure that sedimentation does not leave the project site. The Division shall require the removal of off-site sediment by the Contractor if such sediment resulted from the Contractor's negligence to place and maintain sediment control structures in accordance with the Drawing Plan Set and Specifications.

PART 10: SPILL PREVENTION AND REMEDIATION

The Contractor is expected to prevent and, if necessary, contain and remediate any spills that may occur at the site due to plugging activities. All stationary plugging equipment on well locations that are in tiled farm fields, residential neighborhoods, parks, or in/adjacent to areas determined by the Division to be environmentally sensitive, will be staged on an impermeable liner and berm. **The Contractor will have oil absorbent pads and booms available onsite during the plugging operations.**

PART 11: HYDROGEN SULFIDE

If the well that is being plugged is known to produce hydrogen sulfide (H_2S), the following considerations must be observed:

A. The Contractor must provide the appropriate equipment, on-site, to properly detect and abate any H_2S emitted from the well. If the Contractor does not have the appropriate equipment to properly detect and abate any H_2S emitted from the well, they will utilize an appropriate party to provide these services.

B. The Contractor will shut-in the well each night after the plugging operations have ceased, unless otherwise instructed by the Division. The Contractor will continue this process until the plugging operations are complete and there are no further signs of a gas release.

PART 12: CASING

The Division reserves the right to require the removal and or placement of any tubing, casing, or liners deemed necessary to properly plug and abandon the well. If a string of casing that would normally be pulled cannot be removed, the Contractor may be required to log the well and perforate the casing, in accordance with the Division's instructions, so that cement can be circulated behind the casing.

The Contractor shall run an operational string of casing when caving of the well prevents clean out to depth required in the scope of work.

PART 13: DEFINITIONS

13.1 Clean Out

The process in which the contractor would use a smaller diameter tubular to circulate out material from inside a larger diameter wellbore/tubular. This shall include removing mud-laden fluid, prepared clay, bridge plugs (e.g. brush and stone plugs, surface debris), and wellbore cave-in (e.g. swelling shales, red clays). Equipment needed includes, but is not limited to, tubing, a mud pump, a power swivel/power sub or a tubing swivel, a drill bit with the jets removed and/or a notched collar.

13.2 Drill Out

The process in which the contractor would use a drill string, associated fittings, and a bit to remove an obstruction from inside of the wellbore or casing. This shall include removing cement, grout, wood plugs, or other materials in which a cleanout operation failed to remove. Equipment needed includes, but is not limited to, a mud pump, power swivel/power sub, drill string (including collars and casing or tubing), cross over subs, bit sub, and drill bit.

13.3 Wash Over

A process in which the contractor would use an intermediate size working string of casing, usually equipped with a carbide coated collar on the bottom joint, to run down over the smaller well tubular and clean out the annular space between the well tubulars. This process would include utilizing a power swivel or power sub to rotate the working string of casing and a mud pump to circulate fluid down between the working string and the outside of the smaller well tubular to wash out the material in the annular space between the well tubulars. This shall include removing mud-laden fluid, prepared clay, cement, grout, field packers, and surface debris. When needed, a wash over bit shall be attached on the bottom of the larger casing to act as a cutting edge for the material on the backside of the tubular being washed over.

13.4 Milling

The process in which the contractor shall use a drill string and bit to remove a metal obstruction from inside of the wellbore or casing. Equipment needed includes, but is not limited to, a mud pump, power swivel/power sub, drill string (includes collars and casing or tubing), cross over subs, bit sub, and mill. The mill type would depend on the material encountered.

13.5 Fishing

The process in which the contractor shall use a specialized tools or fishing tool to eliminate an obstruction from inside of the wellbore or casing. Equipment needed includes, but is not limited to, a fishing tool(s) and fishing string.

13.6 Bail & Grout

The process the contractor shall use when determined that the wellbore can be bailed of all fluid, and grouted. Equipment needed includes, but is not limited to, tubing, a bailer, and a grout pump. Grout shall be gravity feed to the bottom. This can be done in one application or in stages, depending on the well depth and condition. If the well cannot be bailed completely dry the contractor shall use a siphon string/tremie tube to remove the water from the well during grout application.

PART 14: WELL OBSTRUCTION ASSESSMENT

If an obstruction is encountered in the well bore that prevents the Contractor from reaching total depth, the Contractor will attempt to identify/assess the nature of the obstruction and attempt to remove any obstruction deemed an impediment to the plugging operation. **The Contractor will supply impression blocks as part of their normal rig equipment.**

PART 15: REMOVAL OF AN OBSTRUCTION

The removal of an unknown obstruction that is encountered during the cleanout of a well may require the use of milling and/or fishing tooling and equipment. The Contractor will include the costs for these services on the appropriate line items in the contingency section of this offer unless these costs are part of a planned procedure. The Division will approve a method for the Contractor to remove the well obstruction. The Division will first utilize contingency specifications and line items to define this work. **The Division will not be responsible for milling or fishing charges that are due to Contractor negligence or Contractor equipment failure.**

PART 16: PLUGGED WELL IDENTIFICATION

In compliance with Ohio Administrative Code 1501:9-11-10, a steel plate, a minimum of ¼-inch thick, shall be tack welded on top of all plugged wells. The well's permit number and "ODNR" shall be welded on the plate in numbers/letters as large as practical. Letters shall have a minimum relief of 1/8-inch.

PART 17: TOILET FACILITIES

Where there are no readily accessible public toilet facilities, the Contractor will provide a portable field toilet on the location during plugging operations.

PART 18: COMPLETION, GUARANTEES AND WARRANTIES

Upon completion of the work described in the Project SOW, the Contractor shall request a Project Completion Inspection be performed by the Division. The Division shall inspect the Project site(s) for completeness and acceptance against the Project SOW, and if the Division determines necessary, develop a list of incomplete and unacceptable work and conditions to be corrected by the Contractor. The Division will reinspect the Project site(s) until the Division determines all work described in the Project SOW is complete and acceptable.

The Contractor warrants (represents) that their work will be conducted in accordance with the standards described in the Project SOW (i.e., the SOW Detailed Drawings and Specifications) and that the Contractor's work be free of defects. Contractor guarantees their work and materials for a Warranty Period of one year, unless otherwise stated as a special provision of the SOW Detailed Specifications. The one-year Warranty Period commences on the date of inspection on the Project Completion Inspection form that accepted the work.

Should defects develop with the Contractor's work or materials within the Warranty Period, the Contractor shall, upon written notice of the Division, remedy the defects and any associated disturbance at their own expense. If the Contractor, after receiving the Division's notice, does not remedy the defects to the satisfaction of the Division, the Division may proceed against the Contractor as prescribed by the Department of Administrative Services (DAS), Index Number MAC110. All representations, warranties, and guarantees made in the DAS Index Number MAC110 contract and the Project SOW shall survive final payment and termination or completion of this Contract.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

SEQUENCE OF WORK

General: Performance of all work shall be coordinated with the Division of Oil and Gas Resources Management ("Division") Orphan Well Inspector ("Inspector"). The Sequence of Work shall be repeatable for all the project's wells. The Sequence of Work for the Orphan Well Project shall be as follows:

Phase I:

1) Contact the Ohio Utility Protection Service and the Ohio Oil & Gas Producers Underground Protection Service.

2) Coordinate with the Orphan Well Inspector and the local authorities for the mobilization of equipment over the roads and bridges to the site as applicable.

3) Verify with the Orphan Well Inspector that the pre-construction staking (i.e. Construction Work Limits) has been completed by the Division. **The pre-construction staking must be completed prior to mobilization.**

Phase II:

1) Mobilize all necessary equipment to the site and develop the site access as shown on the **Drawing Plan Set**.

   All in stream work is NOT to occur between March 15th and June 30th. The temporary bridges may be in place during this period of time as long as the construction was completed prior to this time frame. Due to this restriction and to ensure work is not hindered by this restriction, the access shall be completely installed at the start of the project, no work shall begin on any well without having the crossings and access installed or being installed at the same time. Access may be staged during the end of the work as the area is approved by the Division.

2) Implement site safety and secondary containment as described in the **Detailed Specifications**.

3) Install perimeter sediment controls as required by the Division.

4) Prepare the well for plugging as described in the **Detailed Specifications, "Well Head Control."**

5) Upon successful installation and approval of the wellhead and establishment of well control, the Contractor shall begin to plug the well as described in the **Plugging Plan** and **Detailed Specifications, "Well Preparation & Plugging."**

6) **No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut the casing as defined in the Plugging Plan.**

7) The Contractor shall set the plugged well identification as outlined in the **General Specifications** and Ohio Administrative Code 1501-9-11-10.

Phase III:

1) Within three (3) working days after Division has determined the plugging operations are completed, the Contractor shall remove all well and well plugging-related equipment, fluids, and cuttings from the site. The Contractor shall also excavate and remove all contaminated soils present onsite if present.

   All in stream work is NOT to occur between March 15th and June 30th. The temporary bridges may NOT be removed during this period of time. The access must remain until the site restoration is complete and approved by the Division. Access may be staged during the end of the work as the area is approved by the Division.

2) Within fourteen (14) days after the completion of the plugging operations, the Contractor shall resoil as applicable, final grade, disc, fertilize, seed, and mulch all disturbed areas. **If work cannot be complete due to the season or weather conditions, the site shall be winterized per the General Specifications, Part 9 Erosion and Sediment Control and the site restoration shall be scheduled for completion.**

3) All reclamation shall be finished to an equal or better condition than what existed prior to construction. The Division shall give the final approval for the restoration of the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-German #1: 34-167-6-6568-00-00, Washington County, Independence Township

Background: The Snider-German #1 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-German #1 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch diameter casing, and 2.38-inch diameter production tubing with rods. The well was shut-in and there was a black plastic line attached to a valve on the tubing.

There are no well records for the Snider-German #1; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the McLaughlin #22 (API 34-167-2-1928-0000) which is located approximately 900 feet to the southeast, states the well was drilled in 1954 to a total depth of 1,951 feet in the Squaw sandstone and subsequently plugged and abandoned. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Sandstone, shale, lime, red rock	80	960	
2nd Cow Run Sandstone	960	1,011	*show of gas at 994’
Salt Sand	1,183	1,210	*Salt water @ 1,183’ to 1,210’
2nd Salt Sand	1,367	1,406	*oil odor
3rd Salt Sand	1,461	1,504	*show of oil
Maxton Sandstone	1,640	1,669	
Keener Sandstone	1,725	1,758	*saltwater taste
Big Injun Sandstone 1st and 2nd pay	1,758	1,794	*show of oil 1,770 to 1,779’
Big Injun Sandstone 3rd pay	1,865	1,905	*show of oil @ 1,880 to 1,884’
Squaw Sandstone	1,921	1,935	*oil odor @ 1,922’
Total Depth		1,951	

Casing record for the McLaughlin #22 is as follows:

- 10.75-inch casing set to 78 feet; cemented with 50 sacks
- 5.19-inch casing set to 1,940 feet

For the purposes of this Scope of Work it is assumed that the Snider-German #1 was drilled to a total depth of approximately 1,950 feet in the Squaw Sandstone and is equipped with a pumping unit,

wooden conductor, approximately 1,500 feet of 6.63-inch casing, and approximately 1950 feet of 2.38-inch diameter tubing with rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-German #1.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-German #1: 34-167-6-6568-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-German #1 was drilled to a total depth of approximately 1,950 feet in the Squaw Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,500 feet of 6.63-inch casing, and approximately 1950 feet of 2.38-inch diameter tubing with rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing 6.63-inch diameter casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will then clean out the hole to its total depth of 1,950 feet or a depth approved by the Division.

6) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

7) The Contractor will set a 550-foot bottom cement plug from 1,950 feet to 1,400 feet to cover the Squaw and Big Injun Formations as well as the bottom of the 6.63-inch diameter casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

8) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the bond quality behind this casing, and lithology for cementing purposes.

9) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

10) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

11) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

12) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-German #2: 34-167-6-6569-00-00, Washington County, Independence Township

Background: The Snider-German #2 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-German #2 found the well idle and abandoned and equipped with 6.63-inch diameter surface casing, 5.5-inch diameter production casing on a hanger, and 2.38-inch diameter production tubing. The well is equipped with a four-port wellhead with the 2.38-inch tubing equipped at the top with a tee-joint and closed valve. Several of the ports are plugged and one has a tee-joint connected to a bleeder valve. The well is not hooked up to any production lines.

There are no well records for the Snider-German #2; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the McLaughlin #22 (API 34-167-2-1928-0000) which is located approximately 974 feet to the northeast, states the well was drilled in 1954 to a total depth of 1,951 feet in the Squaw sandstone and subsequently plugged and abandoned. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Sandstone, shale, lime, red rock	80	960	
2nd Cow Run Sandstone	960	1,011	*show of gas at 994’
Salt Sand	1,183	1,210	*Salt water @ 1,183’ to 1,210’
2nd Salt Sand	1,367	1,406	*oil odor
3rd Salt Sand	1,461	1,504	*show of oil
Maxton Sandstone	1,640	1,669	
Keener Sandstone	1,725	1,758	*saltwater taste
Big Injun Sandstone 1st and 2nd pay	1,758	1,794	*show of oil 1,770 to 1,779’
Big Injun Sandstone 3rd pay	1,865	1,905	*show of oil @ 1,880 to 1,884’
Squaw Sandstone	1,921	1,935	*oil odor @ 1,922’
Total Depth		1,951	

Casing record for the McLaughlin #22 is as follows:

- 10.75-inch casing set to 78 feet; cemented with 50 sacks
- 5.19-inch casing set to 1,940 feet

For the purposes of this Scope of Work it is assumed that the Snider-German #2 was drilled to a total depth of approximately 1,950 feet in the Squaw Sandstone and is equipped with approximately 1,500 feet of 6.63-inch casing, approximately 1,940 feet of 5.5-inch production casing on a hanger, and approximately 1,950 feet of 2.38-inch production tubing.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-German #2.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Rd. and Elifritz Rd. to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-German #2: 34-167-6-6569-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-German #2 was drilled to a total depth of approximately 1,950 feet in the Squaw Sandstone and is equipped with approximately 1,500 feet of 6.63-inch casing, approximately 1,940 feet of 5.5-inch production casing on a hanger, and approximately 1,950 feet of 2.38-inch production tubing.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing 6.63-inch and 5.5-inch diameter casings to evaluate their condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will then clean out the hole to its total depth of 1,950 feet or a depth approved by the Division.

6) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

7) The Contractor will set a 300-foot bottom cement plug from 1,950 feet to 1,650 feet to cover the Squaw and Big Injun Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

8) The Contractor will rip the 5.5-inch diameter casing at its lowest free point in the wellbore, which is estimated at a depth of 1,600 feet and remove it from the wellbore. Any casing retrieved shall be staged on a bermed liner for further evaluation. An accurate tally shall be provided for any casing retrieved.

9) The Contractor will set a 250-foot cement plug from 1,600 feet to 1,350 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the bond quality behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-German #3: 34-167-6-6570-00-00, Washington County, Independence Township

Background: The Snider-German #3 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-German #3 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch diameter surface casing, and 2.38-inch diameter production tubing with rods. The well was shut-in and there was an orange plastic line attached to a valve on the tubing.

There are no well records for the Snider-German #3; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the McLaughlin #22 (API 34-167-2-1928-0000) which is located approximately 300 feet to the southeast, states the well was drilled in 1954 to a total depth of 1,951 feet in the Squaw sandstone and subsequently plugged and abandoned. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Sandstone, shale, lime, red rock	80	960	
2nd Cow Run Sandstone	960	1,011	*show of gas at 994’
Salt Sand	1,183	1,210	*Salt water @ 1,183’ to 1,210’
2nd Salt Sand	1,367	1,406	*oil odor
3rd Salt Sand	1,461	1,504	*show of oil
Maxton Sandstone	1,640	1,669	
Keener Sandstone	1,725	1,758	*saltwater taste
Big Injun Sandstone 1st and 2nd pay	1,758	1,794	*show of oil 1,770 to 1,779’
Big Injun Sandstone 3rd pay	1,865	1,905	*show of oil @ 1,880 to 1,884’
Squaw Sandstone	1,921	1,935	*oil odor @ 1,922’
Total Depth		1,951	

Casing record for the McLaughlin #22 is as follows:

- 10.75-inch casing set to 78 feet; cemented with 50 sacks
- 5.19-inch casing set to 1,940 feet

For the purposes of this Scope of Work it is assumed that the Snider-German #3 was drilled to a total depth of approximately 1,950 feet in the Squaw Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,500 feet of 6.63-inch diameter casing, and approximately 1,950 feet of 2.38-inch diameter tubing with rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-German #3.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Rd, and Elifritz Rd. to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-German #3: 34-167-6-6570-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-German #3 was drilled to a total depth of approximately 1,950 feet in the Squaw Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,500 feet of 6.63-inch diameter casing, and an unknown amount of 2.38-inch diameter tubing with rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the 2.38-inch diameter tubing and rods and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,950 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 550-foot bottom cement plug from 1,950 feet to 1,400 feet to cover the Squaw and Big Injun Formations as well as the bottom of the 6.63-inch diameter casing. The Contractor will

wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the bond quality behind this casing, and lithology for cementing purposes.

10) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

11) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

12) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

13) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-German #4: 34-167-6-6571-00-00, Washington County, Independence Township

Background: The Snider-German #4 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-German #4 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch diameter surface casing, and 2.38-inch diameter production tubing with rods. The well was shut-in and there was an orange plastic line attached to a valve on the tubing.

There are no well records for the Snider-German #4; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 570 feet to the southeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Snider-German #4 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing with rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information

for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-German #4.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-German #4: 34-167-6-6571-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-German #4 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing with rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the 2.38-inch diameter tubing and rods and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has

dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-German #5: 34-167-6-6572-00-00, Washington County, Independence Township

Background: The Snider-German #5 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-German #5 found the well idle and abandoned and equipped with a "scissor" style pumping unit, wooden conductor, 6.63-inch surface casing, and 2.38-inch production tubing with rods.

There are no well records for the Snider-German #5; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 378 feet to the southeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145'
Sandstone	1,210	1,255	*gas and show of oil at 1,213' to 1,219'
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596' and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Snider-German #5 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing with rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-German #5.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-German #5: 34-167-6-6572-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-German #5 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing with rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the 2.38-inch diameter tubing and rods and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-German #6: 34-167-6-6573-00-00, Washington County, Independence Township

Background: The Snider-German #6 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-German #6 found the well idle and abandoned and equipped with a pumping unit standing over wooden conductor and 6.63-inch surface casing open to the atmosphere. The old wooden sucker rods are stacked beside the well and there is a 50-bbl. tank at the top of the hill which is no longer in use.

There are no well records for the Snider-German #6; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 378 feet to the southeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Snider-German #6 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, and approximately 1,190 feet of 6.63-inch diameter casing.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-German #6.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Rd. and Elifritz Rd. to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-German #6: 34-167-6-6573-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-German #6 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, and approximately 1,190 feet of 6.63-inch diameter casing.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing 6.63-inch diameter casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

6) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

7) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

8) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

10) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

11) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

12) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

13) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-Garman #7: 34-167-6-6581-00-00, Washington County, Independence Township

Background: The Snider-Garman #7 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096064000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-Garman #7 found the well idle and abandoned and equipped with wooden conductor and 6.63-inch casing with an old open bradenhead. The well has historically leaked oil and the inspection noted oily soil along the old roadbed leading away from the well area. The well was not leaking at the time of inspection.

There are no well records for the Snider-Garman #7; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Deucher Heirs #2 (API 34-167-2-2431-0000) which is located approximately 1,990 feet to the southeast, states the well was drilled in 1960 to a total depth of 1,459 feet in the Big Injun sandstone and subsequently plugged and abandoned the same year. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	165	180	*water at 30 feet
Red rock	215	225	
Pittsburgh coal	250	251	
Red rock	435	475	
Red rock	535	575	
1st Salt Sand	795	839	
2nd Salt Sand	1,000	1,050	
3rd Salt Sand	1,215	1,280	
Sandstone	1,350	1,340	*gas 1,322 to 1,344, show of black oil
Keener Sandstone	1,408	1,437	
Big Injun Sandstone	1,437	1,459	
Total Depth		1,459	

Casing record for the Deucher Heirs #2 is as follows:

- 10-inch casing set to 95.3 feet
- 8.25-inch set at 630 feet
- 5.19-inch casing set to 1,073 feet

For the purposes of this Scope of Work it is assumed that the Snider-Garman #7 was drilled to a total depth of approximately 1,460 feet in the Big Injun Sandstone and is equipped with wooden conductor and approximately 1,070 feet of 6.63-inch diameter casing.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-Garman #7.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-Garman #7: 34-167-6-6581-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-Garman #7 was drilled to a total depth of approximately 1,460 feet in the Big Injun Sandstone and is equipped with wooden conductor and approximately 1,070 feet of 6.63-inch diameter casing.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will then clean out the hole to its total depth of 1,460 feet or a depth approved by the Division.

6) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

7) The Contractor will set a 500-foot bottom cement plug from 1,460 feet to 960 feet to cover the Big Injun Sandstone and the bottom of the 6.63-inch diameter casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

8) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the free point behind the 6.63-inch diameter casing and lithology for cementing purposes.

9) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

10) The Contractor will set a 400-foot cement plug from across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

11) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

12) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Snider-Garman #8: 34-167-6-6582-00-00, Washington County, Independence Township

Background: The Snider-Garman #8 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096048000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Snider-Garman #8 found the well idle and abandoned and equipped with wooden conductor and 6.63-inch casing with an old open bradenhead. The casing is open to the atmosphere and leaking natural gas.

There are no well records for the Snider-Garman #8; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Deucher Heirs #2 (API 34-167-2-2431-0000) which is located approximately 1,457 feet to the southeast, states the well was drilled in 1960 to a total depth of 1,459 feet in the Big Injun sandstone and subsequently plugged and abandoned the same year. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	165	180	*water at 30 feet
Red rock	215	225	
Pittsburgh coal	250	251	
Red rock	435	475	
Red rock	535	575	
1st Salt Sand	795	839	
2nd Salt Sand	1,000	1,050	
3rd Salt Sand	1,215	1,280	
Sandstone	1,350	1,340	*gas 1,322 to 1,344, show of black oil
Keener Sandstone	1,408	1,437	
Big Injun Sandstone	1,437	1,459	
Total Depth		1,459	

Casing record for the Deucher Heirs #2 is as follows:

- 10-inch casing set to 95.3 feet
- 8.25-inch set at 630 feet
- 5.19-inch casing set to 1,073 feet

For the purposes of this Scope of Work it is assumed that the Snider-Garman #8 was drilled to a total depth of approximately 1,460 feet in the Big Injun Sandstone and is equipped with wooden conductor and approximately 1,070 feet of 6.63-inch diameter casing which is open to the atmosphere.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Snider-Garman #8.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Snider-Garman #8: 34-167-6-6582-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Snider-Garman #8 was drilled to a total depth of approximately 1,460 feet in the Big Injun Sandstone and is equipped with wooden conductor and approximately 1,070 feet of 6.63-inch diameter casing which is open to the atmosphere.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will then clean out the hole to its total depth of 1,460 feet or a depth approved by the Division.

6) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

7) The Contractor will set a 500-foot bottom cement plug from 1,460 feet to 960 feet to cover the Big Injun Sandstone and the bottom of the 6.63-inch diameter casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

8) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the free point behind the 6.63-inch diameter casing and lithology for cementing purposes.

9) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

10) The Contractor will set a 400-foot cement plug from across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

11) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

12) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Milton #7: 34-167-6-6574-00-00, Washington County, Independence Township

Background: The Milton #7 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096108000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Milton #7 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch casing, and 2.38-inch production tubing with rods. There is a 50-bbl. tank at the top of the hill that is no longer in use.

There are no well records for the Milton #7; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 180 feet to the southwest, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Milton #7 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information

for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 50 and 100 feet below ground surface. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Milton #7.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Milton #7: 34-167-6-6574-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Milton #7 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the 2.38-inch diameter tubing and rods and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has

dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #1: 34-167-6-6575-00-00, Washington County, Independence Township

Background: The Farnsworth #1 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096062000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #1 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch casing, and 2.38-inch production tubing with a gas escape packer and rods. There is a 100-bbl. tank at the top of the hill that is no longer in use.

There are no well records for the Farnsworth #1; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 470 feet to the northeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #1 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods, and 1-inch diameter tubing set on a gas escape packer at approximately 1,180 feet.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #1 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #1.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #1: 34-167-6-6575-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #1 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods, and 1-inch diameter tubing set on a gas escape packer at approximately 1,180 feet.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the rods, the 1-inch tubing, 2.38-inch tubing and packer and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8)

hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to cover the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #2: 34-167-6-6576-00-00, Washington County, Independence Township

Background: The Farnsworth #2 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096062000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #2 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch casing, and 2.38-inch production tubing and rods.

There are no well records for the Farnsworth #2; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 250 feet to the northeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #2 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information

for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #2 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #2.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #2: 34-167-6-6576-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #2 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing 6.63-inch diameter casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the rods and 2.38-inch diameter tubing and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has

dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #3: 34-167-6-6577-00-00, Washington County, Independence Township

Background: The Farnsworth #3 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096062000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #3 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch casing, and 2.38-inch production tubing and rods.

There are no well records for the Farnsworth #3; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 625 feet to the northeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #3 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information

for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #3 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #3.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #3: 34-167-6-6577-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #3 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the 2.38-inch diameter tubing and rods and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8)

hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to cover the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #4: 34-167-6-6578-00-00, Washington County, Independence Township

Background: The Farnsworth #4 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096107000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #4 found the well idle and abandoned and equipped with a pumping unit, wooden conductor, 6.63-inch casing, and 2.38-inch production tubing with a gas escape packer and rods. There is a 100-bbl. tank at the top of the hill that is no longer in use.

There are no well records for the Farnsworth #4; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 250 feet to the northeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #4 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods, and 1-inch diameter tubing set on a gas escape packer at approximately 1,180 feet.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #4 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #4.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #4: 34-167-6-6578-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #4 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods, and 1-inch diameter tubing set on a gas escape packer at approximately 1,180 feet.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the rods, the 1-inch tubing, 2.38-inch tubing and packer and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has

dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to cover the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #5: 34-167-6-6579-00-00, Washington County, Independence Township

Background: The Farnsworth #5 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096107000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #5 found the well idle and abandoned and equipped with a 13-inch conductor and 6.63-inch casing which was open to the atmosphere. Fluid with oil was noted in the annulus between the two casings at the time of inspection.

There are no well records for the Farnsworth #5; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 960 feet to the north, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #5 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with 13-inch conductor and approximately 1,190 feet of 6.63-inch diameter casing.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2

gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #5 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #5.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #5: 34-167-6-6579-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #5 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with 13-inch conductor and approximately 1,190 feet of 6.63-inch diameter casing.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing 13-inch and 6.63-inch diameter casing to evaluate their condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

6) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

7) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

8) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

10) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

11) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

12) The Contractor will then sever the 6.63-inch diameter casing at its lowest free point, which is estimated to be 200 feet, remove it from the wellbore, and stage any casing removed on a bermed liner for further evaluation. The Contractor will provide the Division with an accurate tally of the amount of casing removed from the wellbore.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #6: 34-167-6-6580-00-00, Washington County, Independence Township

Background: The Farnsworth #6 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096107000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #6 found the well idle and abandoned and equipped with wooden conductor, 6.63-inch casing, and 2.38-inch production tubing and rods.

There are no well records for the Farnsworth #6; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 470 feet to the northeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #6 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and an unknown amount of 2.38-inch diameter tubing and rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2

gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #6 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #6.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #6: 34-167-6-6580-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #6 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and an unknown amount of 2.38-inch diameter tubing and rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the rods and 2.38-inch diameter tubing and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8)

hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the free point behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

WELL DESCRIPTION

This Well Description is for:

Farnsworth #7: 34-167-6-6624-00-00, Washington County, Independence Township

Background: The Farnsworth #7 is located approximately 25 miles northeast of the City of Marietta and is located within Wayne National Forest on a 77-acre parcel (#170096062000) which is owned by the United States of America. The address to access these wells is 245 Elifritz Road.

Division inspection of the Farnsworth #7 found the well idle and abandoned and equipped with a wooden conductor, 6.63-inch casing, and 2.38-inch production tubing and rods.

There are no well records for the Farnsworth #7; however, an Ohio Fuel gas map for Independence Township identifies multiple wells at this location. Offset well record for the Cooley & McLaughlin #100 (API 34-167-2-2021-0000) which is located approximately 950 feet to the northeast, states the well was drilled in 1955 to a total depth of 1,651 feet in the Big Injun sandstone and subsequently plugged and abandoned in 1958. Formation data included in these records show the following:

Formation	Top	Bottom	Remarks
Red rock	112	121	
Red rock	340	356	
Red rock	615	635	
Red rock	663	700	
Sandstone	1,090	1,150	*show of gas at 1,090, show of oil at 1,127, water at 1,145’
Sandstone	1,210	1,255	*gas and show of oil at 1,213’ to 1,219’
Keener Sandstone	1,495	1,522	
Big Injun Sandstone	1,522	1,650	*show of oil at 1,594 to 1,596’ and 1,630 to 1,649
Total Depth		1,651	

Casing record for the Cooley & McLaughlin #100 is as follows:

- 10-inch casing set to 120 feet
- 8.25-inch set at 720 feet
- 6.63-inch casing set to 1,188 feet

For the purposes of this Scope of Work it is assumed that the Farnsworth #7 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with a pumping unit, wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

The deepest underground source of drinking water (USDW) is unmapped in this area. Based on local water well data, offset oil and gas well records within the reviewed area, and published groundwater resources information

for Washington County, alternating layers of shale, sandstones, fireclay, coal, and limestone yield around 2 gallons per minute. According to the Division of Water Resources, there are no documented water wells within the reviewed area; however, the deepest useable groundwater is anticipated to be between 70 and 140 feet below ground surface. The Farnsworth #4 is located adjacent to Elephant Run, a tributary that connects with Leith Run, which empties into the Ohio River. The work zone does not fall within any source water protection areas. There are no surface or deep mines within the area of review of the Farnsworth #4.

Scope of Work: This project includes preparation of the sites, plugging the orphan wells, and regrading and revegetating all disturbed areas.

Designated Route: The Contractor shall utilize SR-7, Leith Run Road, and Elifritz Road to access the site during all times of construction.

It is the Contractor's responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over all the roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Division of all road use notifications/approvals prior to mobilizing equipment to the site.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

PLUGGING PLAN

This Plugging Plan is for:

Farnsworth #7: 34-167-6-6624-00-00, Washington County, Independence Township

For the purposes of this Scope of Work it is assumed that the Farnsworth #6 was drilled to a total depth of approximately 1,650 feet in the Big Injun Sandstone and is equipped with wooden conductor, approximately 1,190 feet of 6.63-inch diameter casing, and approximately 1,650 feet of 2.38-inch diameter tubing and rods.

1) The Contractor will safely relieve any pressure that may be built up on this well prior to commencing plugging operations. The Contractor will give the property owner and local fire authorities a minimum of twenty-four (24) hour notice prior to blowing down the well.

2) The Contractor shall visually examine the existing casing to evaluate its condition immediately below grade. If the casing(s) is found to be severely degraded, the Contractor will remove the incompetent section of casing and install enough new casing, of similar diameter, to bring the top of the existing casing to a suitable working height.

3) The Contractor shall then install an appropriately sized and lined temporary cellar around the wellhead to capture any fluids generated during the plugging process.

4) The Contractor shall install an appropriate wellhead and an approved method of well control on the most appropriate casing string to insure there is control of any natural gas and/or fluids generated by the well. **The Contractor shall establish and maintain wellhead control throughout the entire plugging process** and shall maintain a minimum of 100 barrels of freshwater on location for use as well-control fluid.

5) The Contractor will remove the 2.38-inch diameter tubing and rods and stage them on a bermed liner for further evaluation. The Contractor shall provide an accurate measurement of the amount of tubing and rods retrieved from the wellbore.

6) The Contractor will then clean out the hole to its total depth of 1,650 feet or a depth approved by the Division.

7) All cement plugs shall be set through a working string of 1.5-inch minimum inside diameter (ID) tubing using an approved cement with 2% Calcium Chloride, mixed at 15.6 pounds per gallon. Circulation must be established, and all free crude oil shall be circulated from the wellbore prior to setting any plug.

8) The Contractor will set a 450-foot bottom cement plug from 1,650 feet to 1,200 feet to cover the Big Injun, Keener, and Maxton Formations. The Contractor will wait on cement a minimum of eight (8)

hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

9) The Contractor will set a 250-foot cement plug from 1,200 feet to 950 feet to isolate the bottom of the 6.63-inch casing. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

10) The Contractor will load the hole with freshwater and run Gamma Ray, CCL, and Bond logs to verify the depth of the 6.63-inch diameter casing, the bond quality behind this casing, and lithology for cementing purposes.

11) Based on log data, the Contractor will perforate any zones of poor or no bond in the annulus of the existing 6.63-inch diameter casing to allow for cement to be squeezed into the open annular voids.

12) The Contractor will set a 400-foot cement plug across the perforated zones and will apply appropriate squeeze pressure to facilitate flow of cement into any open annular voids. The Contractor will wait on cement a minimum of eight (8) hours and then run their tools into the well to verify the depth to the top of the plug. If the plug has dropped or it is determined that a competent plug has not been achieved, additional plugs may be required at the discretion of the Division.

13) The Contractor will then set a cement plug from 200 feet to within thirty (30) inches of ground level, wait on cement a minimum of eight (8) hours and top off with additional cement, if necessary.

14) No sooner than three (3) business days after placing the uppermost plug, the Division will inspect the well at surface to determine if any additional plugging work shall be required at that time. If additional work is not needed the Contractor shall cut to a depth of 30 inches below the surface and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

DETAILED SPECIFICATIONS

The Contractor is reminded to review the Scope of Work documents carefully. Coordination, permission, or direction of the Division may be required for use of individual Detailed Specification line items. The Division shall only pay for quantities of items that are correctly installed and completed in accordance with the Detailed Specifications and Drawing Plan Set. The Division shall not guarantee payment of any work completed without or prior to following the conditions described herein of each line item.

MOBILIZATION

A. Description: This work shall consist of the development of access and the mobilization of the Contractor's forces and equipment necessary for performing the required work under the Scope of Work for the well site.

This item shall include the transportation of personnel, equipment, and supplies to and from each site as well as the maintenance of all onsite access roads.

As part of this line item, the Contractor shall also include any maintenance of traffic required within the road right-of-way per Part 7 of the General Specifications.

Also, the Contractor shall be responsible for cleaning mud and dirt associated with construction from all roadway surfaces (public and private) as per Part 7.1 of the General Specification for the duration of the Project and as directed by the Division.

B. Execution: No additional compensation shall be made to the Contractor for remobilization after his equipment has been removed from the site. If applicable, this shall include remobilization of equipment if removed due to winterization of the project.

Any damage to the road, drives, and/or culverts caused by the mobilization shall be repaired by the Contractor at the Contractor's expense. All repairs shall be done equal to or better to that which existed prior to construction activities.

All in stream work is NOT to occur between March 15th and June 30th. The temporary bridges may be in place during this period of time as long as the construction was completed prior to this time frame. Due to this restriction and to ensure work is not hindered by this restriction, the access shall be completely installed at the start of the project, no work shall begin on any well without having the crossings and access installed or being installed at the same time. Access may be staged during the end of the work as the area is approved by the Division.

C. Measurement: Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division. **Mobilization of equipment between wells shall be considered incidental to this line item for wells using a common entrance.**

If any portion of the item is non-performed to the satisfaction of the Division (i.e., the mud and dirt are not cleaned from the roadway, the proper signage is not used as detailed) this is considered unsatisfactory and shall be cause for the rejection of payment of this item.

D. Payment: The cost of this work shall be included in the lump sum price for **"Mobilization."**

CLEARING & GRUBBING

A. Description: This item covers the removal of the vegetation within the limits shown on the Drawing Plan Set to provide adequate space to maneuver equipment to complete the proposed work at each well.

B. Execution: The Contractor shall only clear enough of the site within the limits shown on the Drawing Plan Set to provide adequate space to maneuver equipment to complete the proposed work. The Division shall exercise control over clearing and shall designate all trees, plants, shrubs, abandoned material, trash, etc., to be removed or to remain. This work shall also include the preservation from injury or defacement of all trees designated to remain.

If the Contractor clears and/or grubs beyond the construction work limits, whether knowingly or accidentally, the Contractor shall replant and/or otherwise restore all areas outside of the limits to a condition equal to or better than what existed prior to beginning work. This shall be no at no additional expense to the Division.

All tree disturbance (trimming and/or removal) activities shall be coordinated with the Division as these trees may provide suitable roosting, foraging, or traveling habitat for Threatened & Endangered species. To prevent adverse impacts to Threatened & Endangered species, clearing of trees with a DBH (Diameter at Breast Height) greater than 3inches, **shall take place at any time, upon final site\project approval by Wayne National Forest staff.**

All removed vegetation shall be placed in a stable manner. The Division shall make the final determination as to the stability and location of the constructed piles. The log pile(s) shall not exceed four (4) feet in height or eight (8) feet in width, and thirty (30) feet in length. The Contractor shall be responsible for the repair/reconstruction of the piles, at the discretion of the Division, up to the final acceptance of the project.

As directed by the Division, Stumps shall be cut off flush with the existing ground surface prior to placement of material or grubbed, and holes graded to assure positive drainage. Approved resoil shall be used if the area can't be properly graded.

Burning of debris materials shall not be permitted on-site.

C. Measurement: Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division. This measurement shall be for the entire project as one unit.

D. Payment: Payment shall be made at the contract lump sum price per **"Clearing & Grubbing."**

EARTHWORK

A. Description: This work consists of all work required to excavate, transport and redeposit material to the lines and grades in the areas indicated on the Drawing Plan Set. This line item shall include,

but not be limited to, the excavation for development of access, work areas channels, drainage ditches, culverts, test pits, blending excess materials, general grading for sediment controls and final grading.

This shall include all the earthwork to prepare the access as shown on the Drawing plan set including the ditching to redirected drainage to the new culvert.

B. Definitions:

General Soils: Considered to be an unclassified soils unit. It is anticipated that the majority of the material to be removed will consist of a mixture of loose, unconsolidated soil, vegetative debris and rock. Also, large seams of shale and/or boulders not designated for rock excavation may exist within the proposed excavation areas.

Rock: Rock shall be defined as material that cannot be removed by normal excavation methods and must be removed by means such as blasting, ripping, hoe ram or other methods used in the construction industry that are generally accepted practices.

C. Execution:

1. General:

Perform the required clearing and grubbing before starting the earthwork operations. Coordinate the amount of and limit the areas of the project that are cleared and grubbed with the quantity of erosion controls that are placed according to the Drawing Plan set and/or as advised by the Division.

Profiles, cross sections and grading plans provided on the Drawing Plan Set are only approximate and are to be used as a guide during construction. Fixed elevations shall not be held to; however, the grades shall not be steeper than three to one (3:1) or **those shown on the Drawing Plan Set** or no less than one percent (1%) grade unless approved by the Division.

At the end of each day's work and throughout the earthwork operations, the work areas shall be graded to drain, and be compacted or re-compacted to a uniformed cross-section. All ruts and low spots that could potentially hold water shall be removed.

Positive drainage shall be provided (greater than one percent (1%) grade) for all areas during and after construction unless approved by the Division. No water shall be impounded during or after construction.

Areas not designated for sheet runoff shall be graded to drain into existing or proposed swale areas. This shall include the use of diversion swales and other measures to direct runoff into storm-water collection features. The Division must approve all additional drainage swales and ditches prior to revegetation.

Slope erosion shall be repaired up to the final acceptance of the project.

All areas that settle below final plan elevation or impound water before completion of the Project shall be filled in, regraded, and reseeded.

If earthwork operations encounter any abnormal material such as, but not limited to, drums, tanks, or stained earth or any unusual odors during operations, temporally discontinue the work in this area, leave the equipment in place, cordon off the area, and notify the Division.

a. Follow the requirements of the Ohio EPA when handling any contaminated material.

b. Excavate the contaminated soils to a depth to be determined by the Division. Material hauled away under the item shall be paid separately and **is not to be included** in this item.

If damage occurs to the project site caused by improper excavation or embankment (fill) methods, the Division shall not pay for removing breakages beyond the limits of the planned finished work.

If the damage was caused by the lack of implementing erosion controls, the Division will not pay for reshaping shoulders, slopes and ditches damaged by erosion during construction.

With the approval of the Division either bury or break up existing boulders, not designated for rock excavation, lying within the reclamation area. A boulder shall be defined as any stone larger than 24-inches in diameter. The Contractor shall place the boulders in a stable manner so it will not move or cause future harm.

2. Excavation (Cut):

All "cut" areas shall be reclaimed to original contour upon completion of the project per line item "Approved Resoil".

Utilize material removal techniques that are generally considered conducive to retaining stability. This includes, but is not limited to, working slopes from the top to the bottom in a manner as to preclude undermining and maintain the work areas in a fashion that will not induce instability.

All excess cut material shall be stockpiled and "tracked in" in the locations shown on the Drawing Plan Set. All cut shall be stockpiled on site and saved for use as designated by the Division

3. Approved Resoil:

Any encountered resoil shall be stockpiled on site and saved for use as designated by the Division.

Approved Resoil shall not be buried or used for general embankment.

4. Exploratory Excavation (Test Pits):

This shall consist of exploratory excavation to determine subsurface features and materials. The location, type, and size of the excavation shall be as directed by the Division.

Excess material, which is unsuitable for backfill, shall be disposed of on site as directed by the Division.

5. Embankment (Fill):

General Embankment (Fill) material shall be placed in uniform lifts not exceeding eighteen (18) inches in thickness and tracked-in using on-site excavation equipment not less than four (4) passes per lift.

The Division shall be notified a minimum of three (3) business days prior to commencement of embankment construction. The Contractor shall receive approval of the prepared sub grade prior to placing any embankment or fill.

All areas of embankment shall be keyed into the existing ground. Placement of embankment shall only be made on scarified, moist surfaces. No embankment shall be placed on frozen soil, unstable soil, or soil where water is ponded.

No areas of the embankment shall be more than three (3) feet higher or lower than any other adjacent embankment areas during placement.

Rocks larger than six (6) inch diameter shall not be concentrated in any areas of the fill.

If precipitation saturates the embankment construction area, the Contractor shall stay off the embankment construction area until the embankment dries or stabilizes. Embankment construction may be expedited by removing the saturated embankment or drying the embankment by scarifying, plowing, disking and re-compacting the embankment.

No side dumping of material on slopes shall be permitted. Dumped material in piles or windrows shall be moved and spread into uniformed lifts as described in these specifications or as detailed on the Drawing Plan Set.

Successive loads of material shall be dumped to the best distribution. The distribution throughout the areas of fill shall be such that the fill will be free from voids, pockets, and bridging of materials.

D. Measurement:

1. The approximate amount of earthwork has been listed on the drawings as a total cubic yardage of "cut". However, this figure shall only be used for estimating purposes. There shall be no final measurement.

2. The Division may use three-dimensional measurements where it is impractical to measure material by the cross-section method due to the erratic location of isolated deposits.

E. Payment: Payment for this work, which includes excavation and re-depositing material to the grades as indicated on the Drawing Plan Set, placement, construction of swales and ditches, construction of temporary erosion control measures, test pits, burial, disposal of boulders, segregation, stockpiling of resoil material and offsite disposal shall be made at the contract lump sum price for **"Earthwork"**.

SITE SAFETY

A. Description: The work will include the installation and implementation of safety procedures for the plugging of the orphan well as described herein.

B. Definitions & Installation: It is the Contractor's responsibility to properly maintain all of the latter mentioned throughout the duration of the project. Any damages shall be repaired or replaced at no additional cost to the Division. Site safety measures shall be removed prior to the demobilization of the Contractor's workforces.

Any release of materials into or onto the ground or surface waters outside of the primary and/or secondary containment shall follow the Ohio One-Call System as described in Appendix I, "One Call". The Ohio One-Call System shall be contacted at 1-844-OHCALL1 within 30-minutes of becoming aware of the occurrence.

1. Notification: Due to the close proximity of the wells to residences, buildings and the potential safety issues involved with the plugging procedure, the contractor or contractor's representative will contact the residents two weeks prior to the commencement of plugging activities to notify them of the potential safety issues.

2. Temporary Construction Fence & Posts: The temporary construction fencing shall be composite, orange mesh with a minimum overall height of four (4) feet. Fence posts are to be steel five (5) feet t-posts. Fence materials shall meet the 2023 ODOT Construction and Materials Specifications (CMS) Item 710.11.

   The posts shall be driven or set in holes to a minimum depth of one (1) foot and at intervals not to exceed ten (10) feet. The fence shall be stretched and securely fastened to each post using metal or plastic ties.

   Fencing shall be placed around the work area immediately surrounding the well head. The Contractor shall work in conjunction with the Division for placement of the temporary fence. All fence shall be removed at the completion of the project.

3. Air Movers (Industrial Fans): The Contractor will also be required to have onsite industrial fans or air movers in the event natural gas is detected and found to be settling at ground level and not properly dissipating from the site.

4. FEMA 100-year Floodplain Requirements: The entrance to the site is located within the FEMA 100-year floodplain limits therefore, extra precautions shall be taken if flooding were to occur. In an event that the access begins to flood, the Contractor will be required to plan for an alternative access or wait until there is a clear access to the site to ensure safety vehicles can reach the site in the event of an emergency.

5. Absorbent Boom: In addition to the requirements of Part 10 of the General Specifications, the Contractor shall supply and install an absorbent boom as shown on the Drawing Plan Set. The Contractor shall work in conjunction with the Division for the placement of the boom. The boom shall be in place for the entire duration of the Project and shall be flipped or replaced as needed in order to continually absorb any oil/hydrocarbon materials. Any pooled oil/hydrocarbon material shall be removed prior to removal of the boom.

6. Temporary Shut-In: The Contractor will shut-in the well each night after the plugging operations have ceased, unless otherwise instructed by the Division. The Contractor will continue this process until the plugging operations are complete and there are no further signs of a gas release.

7. Emergency Response Plan: The Contractor will assemble an Emergency Response Plan (ERP) with all contact information, emergency preventative measures, and for any well-related issues that may occur. ERPs shall be submitted to the Division via email to DOGRM.EMNOTIFY@dnr.ohio.gov for approval prior to beginning work.

   The Contractor will be responsible for maintaining this ERP on site during the plugging operations. Ingress/Egress for evacuation and/or public safety will be discussed in the safety

meeting to be held on location by the Contractor with local responders and Division personnel. These routes will be listed in the ERP. The Division will review with the Contractor prior to the start of plugging operations.

C. Measurement: Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division.

D. Payment: Payment for this work, including labor, installation, materials and removal shall be made at the lump sum price for **"Site Safety."**

ROAD MATS

A. Description: This item shall consist of the transportation, delivery, installation, and removal of road mats as described. The placement of road mats within the limits of construction shall be at the discretion of the Division. This item shall be utilized to protect the existing utilities, driveways, roadway, curbs, sidewalks and lawn space that will be traversed within the construction work limits.

B. Material: Road matting shall be non-permeable, composite mats. Non-permeable, composite mats shall be a minimum of four (4) inches thick with a minimum surface dimension of seven (7) feet wide and thirteen (13) feet long. Non-permeable, composite mats and associated components (i.e. ramps, berms, and fittings) shall be installed per the manufacturer's recommendations.

All materials delivered to the site must be in a shape to be able to cover the area properly and still have the strength and integrity to complete the required work. The Division may reject any mats determined to be damaged beyond useful life or remove square footage as measured from each individual mat.

C. Execution: Mats shall be kept clean throughout the project. If it is determined by the Division, the mats do not meet this requirement the Contractor shall have any sediment or mud removed immediately.

D. Measurement: Measurement for payment for the road mats shall be made by actual field measurements of quantities satisfactorily installed at the site. Each road mat shall be measured for a square foot installed.

Road mats shall be utilized to access all wells on this project, for the duration of the contract. Only one measurement and payment shall be made for "Road Mats".

E. Payment: The cost of this work shall be included in the unit price per square foot for **"Road Mats."**

TIMBER MATS

A. Description: This item shall consist of the transportation, delivery, installation, and removal of road mats as described. The placement of road mats within the limits of construction shall be at the discretion of the Division and/or as shown on the Drawing Plan Set in order to enhance the subgrade conditions and/or for overtop utility crossings.

B. Material: Timber matting shall be composed of dense hardwood, shall be a minimum of six (6) inches thick, four (4) feet wide, and sixteen (16) feet long, and shall have a minimum of 1-1/4-inch

diameter lift bolts installed at each end and through the width of the mat. The size required will vary depending on the use, see details on the drawing plan sets for variations on these sizes. **The size required will vary depending on the use (airbridge), see details on the Drawing Plan Set for variations on these sizes.**

All materials delivered to the site must be in a shape to be able to cover the area properly and still have the strength and integrity to complete the required work. The Division may reject any mats determined to be damaged beyond useful life. The following grade descriptions for used mats shall be used by the Division to determine if the materials are acceptable.

1. **GRADE A** - Visually, Grade A mats look like new mats. The timbers are still square and in excellent condition and all the mat bolts are in place and fully intact. Mats must have all bolts and timbers fully intact. Mats are less than 9 months old. Very minimal wear, no chunks out of timbers missing.

2. **GRADE B** - Essentially, Grade B mats are less pretty versions of Grade A mats. They have no structural faults; they just look a bit worn. Edges of timbers are still square, and timbers are also sound and free of rot. If one or two of the bolts are bent, they qualify as Grade B mats. These mats might also be stained, but the discoloration is not enough to affect the durability of the mat. Typically, 10-18 months of age/usage makes the mat fall into a B grade. **(All mats used to bridge over anything shall be Grade B or better and shall be as detailed on the Drawing Plan Set.)**

3. **GRADE C** - Grade C mats are not quite up to the challenges that Grade A and B mats can handle, but they still have life left in them. Grade C Mats can have a missing or pulled rod on one end of the mat. The mat still has structural integrity inside 2' from each end though. Timbers may be broken within 2' of either end but no timbers are broken inside of the 2' of each end. No hanging timbers allowed in C grade mats. As you can imagine, these are not going to be the picture-perfect image of timber mats. They might be missing numerous bolts, incurred excessive repairs, or be slightly varied in shape. Grade C mats are less expensive, but they also have a shorter life expectancy. **Any mat meeting the Grade C rating shall be measured for square footage of acceptable usable area.**

C. Measurement: Measurement for payment for the road mats shall be made by actual field measurements of quantities satisfactorily installed at the site. Each road mat shall be measured for a square foot installed.

Timber mats shall be utilized to access all wells on this project, for the duration of the contract. Only one measurement and payment shall be made for "Timber Mats".

D. Payment: **The contractor should note timber mats used for air bridges as part of the stream crossing require unique lengths and widths. Additional costs associated with these unique dimensions shall be incorporated into the unit price of this line item.** The cost of this work shall be included in the unit price per square foot for **"Timber Mats."**

AIRBRIDGE W/ ABUTMENTS

A. Description: This item shall consist of the transportation, delivery, installation, and removal of airbridge w/ abutments as described. The placement of airbridge w/ abutments within the limits of construction shall be at the discretion of the Division. This item shall be utilized to protect the

existing stream that will be traversed within the construction work limits. This item shall include all work that require airbridge w/ abutments as shown on the Drawing Plan Set.

B. Material: Airbridge and abutments shall be composed of dense hardwood, shall be a minimum of eight (8) inches thick (see site plans for required widths & lengths) and shall have a minimum of 1-1/4-inch diameter lift bolts installed at each end and through the width of the mat. **Additional costs associated with these unique dimensions as well as the abutments shall be incorporated into the unit price of this line item.** Strapping material shall be a minimum of 1/4" thick x 2" wide hot rolled steel per ASTM A36 and lag bolts shall be minimum of 1/2" x 5" long.

All materials delivered to the site must be in a shape to be able to cover the area properly and still have the strength and integrity to complete the required work. The Division may reject any mats determined to be damaged beyond useful life. The following grade descriptions for used mats shall be used by the Division to determine if the materials are acceptable.

All in stream work is NOT to occur between March 15th and June 30th. The temporary bridges may be in place during this period of time as long as the construction was completed prior to this time frame. Due to this restriction and to ensure work is not hindered by this restriction, the access shall be completely installed at the start of the project, no work shall begin on any well without having the crossings and access installed or being installed at the same time. Access may be staged during the end of the work as the area is approved by the Division.

1. **GRADE A** - Visually, Grade A mats look like new mats. The timbers are still square and in excellent condition and all the mat bolts are in place and fully intact. Mats must have all bolts and timbers fully intact. Mats are less than 9 months old. Very minimal wear, no chunks out of timbers missing.

2. **GRADE B** - Essentially, Grade B mats are less pretty versions of Grade A mats. They have no structural faults; they just look a bit worn. Edges of timbers are still square, and timbers are also sound and free of rot. If one or two of the bolts are bent, they qualify as Grade B mats. These mats might also be stained, but the discoloration is not enough to affect the durability of the mat. Typically, 10-18 months of age/usage makes the mat fall into a B grade. **(All mats used to bridge over anything shall be Grade B or better.)**

3. **GRADE C** - Grade C mats are not quite up to the challenges that Grade A and B mats can handle, but they still have life left in them. Grade C Mats can have a missing or pulled rod on one end of the mat. The mat still has structural integrity inside 2' from each end though. Timbers may be broken within 2' of either end but no timbers are broken inside of the 2' of each end. No hanging timbers allowed in C grade mats. As you can imagine, these are not going to be the picture-perfect image of timber mats. They might be missing numerous bolts, incurred excessive repairs, or be slightly varied in shape. Grade C mats are less expensive, but they also have a shorter life expectancy. **Any mat meeting the Grade C rating shall be measured for square footage of acceptable usable area.**

C. Execution: Airbridge shall be kept clean throughout the project. If it is determined by the Division the bridge surface does not meet this requirement the Contractor shall have any sediment or mud removed immediately. Contractor shall take care not to deposit sediment or mud in the existing stream.

D. Measurement: Measurement for the airbridge or airbridge w/ abutments, which includes all materials, labor, and equipment necessary to provide the required airbridge along with any abutments

needed per the detail will be considered and measured as a unit satisfactorily completed and accepted by the Division. Airbridge w/ abutments shall not be considered complete until the airbridge and abutments have been removed from the site at the completion of the project.

Any Airbridge w/ Abutments shall remain in place until all wells on the other side have been completed including site restoration. Only one measurement and payment shall be made for "Airbridge" or "Airbridge w/ Abutments".

E. Payment: The cost of this work shall include all material, labor, and equipment necessary to complete the work and be made at the lump sum price for **"Airbridge" or "Airbridge w/ Abutments."**

SECONDARY CONTAINMENT

A. Description: This item shall include all labor and materials required for the installation, maintenance, and deconstruction of the secondary containment. Onsite materials and equipment required to be stored within the secondary containment shall be as follows: containers that store liquid brine, oilfield waste, and/or fuels as well as any required pumps. In determining the method, design, and capacity for secondary containment, the Contractor shall address the typical failure mode, and the most likely quantity of brine or other oil field waste substance that would be discharged.

B. Materials: The Contractor shall supply catchment basins or diversion structures to intercept and contain discharges of brine or other oilfield waste substances during the project. Materials shall consist of impermeable containers or liners made of a material that is compatible with the waste stored or used within the containment. Containment materials shall be impervious and have supporting documentation of the permeability, chemical compatibility, and other applicable QA/QC standards, is acceptable. **Use of a liner shall at a minimum be a 20-mil thickness**.

Materials shall be durable enough to support the weight of heavy equipment used for the plugging operations. Materials shall have sufficient strength and thickness to maintain the integrity of the container or liner. The container or liner shall be designed, constructed, and maintained so that the physical and chemical characteristics of the container or liner are not adversely affected by the waste and the container or liner is resistant to physical, chemical and other failure during transportation, handling, installation and use.

Liner walls shall consist of metal, wood, concrete, plastic, or approved equal. Wall materials shall be designed, constructed, and maintained to withstand the overtopping and sliding forces of secondary containment filled to capacity.

The Division shall determine the merit of the proposed materials compatibility, impermeability, integrity, and durability in determining if the material is sufficient for the project.

C. Installation: Secondary containment shall be installed prior to any drilling or liquid storage at the project site.

Upon request of the Division, the Contractor shall provide calculations in tabular format of the containment providing both the secondary containment capacity and the on-site material storage. The Division can require that sections of a secondary containment be removed for inspection and sampling if a spill occurs during the project.

Installation of the containers or liners, including seams and pipe penetrations, shall be in accordance with the manufacturer's recommendations. All seams and non-seam area of the container or liner shall be inspected by the Division for defects, holes, and blisters.

Care shall be taken when operating equipment on or near the container or liner to prevent any damage to the secondary containment. If damage occurs, it shall be repaired by the Contractor at his/her expense prior to continuing the project.

The Contractor shall retain all ownership and responsibility for the secondary containment. All secondary containment shall be removed from the site and retained by the Contractor at the conclusion of the project.

D. Measurement: Secondary containment, which includes all materials, labor, and equipment necessary to provide the required secondary containment, will be considered and measured as a unit satisfactorily completed and accepted by the Division. Secondary containment shall not be considered complete until all secondary containment has been removed from the site at the completion of the project.

E. Payment: Payment for this work shall include all material, labor, and equipment necessary to complete the work and be made at the lump sum price for **"Secondary Containment."**

SILT FENCE

A. General: This item covers construction of the silt fences and/or straw bale dikes. The Division shall designate utilization of silt fence, straw bale dikes or a combination of both at locations selected for placement.

The placement of silt fence and straw bale dikes within the limits of construction shall be at the discretion of the Division.

During the life of the project, the Contractor shall maintain these silt and erosion-control structures. Accumulated silt shall be removed when it, in the Division's opinion, may damage or reduce the effectiveness of the structure.

B. Straw Bale Dikes

1. Materials: Straw bale dikes shall be constructed with twine-bound square straw or hay bales, staked to remain in place.

2. Installation and Execution: The location of the dikes shall be as directed by the Division, at the time of construction. When the usefulness of the dikes has ended, they shall be removed and disposed. Dikes may remain in place upon completion of the project only when permitted by the Division.

C. Silt Fence

1. Materials

a. The silt fence fabric shall conform to the 2023 ODOT Item 712.09, Type C. The silt fence shall be installed in accordance with all manufacturers' instructions.

The fabric shall be free of any treatment that might significantly alter its physical properties. During shipment and storage, the fabric shall be wrapped in a heavy-duty protective covering to protect it from direct sunlight, dirt, and other debris.

The manufacturer shall submit certified test data to cover each shipment of material.

b. The silt fence used shall be a prefabricated silt fence with fabric already attached to posts or shall be assembled in the field according to the following installation guidelines.

The fabric shall be a pervious sheet composed of a strong, rot-proof polymeric yard or fiber oriented into a stable network, which retains its relative structure during handling, placement, and long-term service. It shall have excellent resistance to deterioration from ambient temperatures, acid, and alkaline conditions, and shall be indestructible to microorganisms and insects. The material shall be resistant to deterioration by ultraviolet light and protected until placement as recommended by the manufacturer such that no deterioration occurs. During shipment and storage, the rolls of fabric shall be protected against deterioration from the sun, mud, dirt, dust, and other harmful conditions at all times until their use.

2. Installation Guidelines for Silt Fence: Silt fence shall be installed in the following manner.

a. First, a small toe-in trench shall be dug along the line where the silt fence is to be placed. The trench shall be a minimum of 6-inch deep and 6-inch wide. The excavated material shall be placed on the front or uphill side of the trench to facilitate backfilling later.

b. Next, fence posts shall be driven into the back or downstream side of the trench. The posts shall be driven so that at least one-third (1/3) of the height of the post is in the ground. When installing a prefabricated silt fence with fabric attached to the posts, the posts shall be driven so that at least 6-inch of fabric shall be buried in the ground. Most prefabricated silt fences have posts spaced approximately 6 feet – 8 feet apart, which is usually adequate. If there is a low spot where most sediment tends to collect, the prefabricated silt fences can be backed up with bale backup. Posts shall be hardwood with sufficient strength to support a full load of deposited sediment.

c. Finally, the trench shall be backfilled with the excavated material and tamped so that at least 6-inch of the fabric is securely toed into the ground to prevent under-mining.

d. The silt fences shall be maintained throughout construction. The Contractor shall conduct regular inspections and after all heavy rains. Damaged fences must be repaired immediately.

e. At the completion of construction and upon establishment of suitable vegetation as determined by the Division, all silt fence structures shall be removed. Areas disturbed by the removal operation including temporary access roads shall be revegetated. In general, this operation shall consist of regrading, re-fertilizing, reseeding, and mulching.

D. Measurement: Measurement for payment for the above-described work shall be made by actual field measurements of quantities satisfactorily installed and completed. When using silt fence with bale backup the measurement shall be the length of the silt fence installed, plus the length of the straw bale dike installed.

E. Payment for Silt Fence and Straw Bale Dikes: Payment for this item shall be made at the unit price per linear foot of **"Silt Fence."** The Division shall only pay for quantities of items that are completed.

UNDERDRAINS

A. Description: This work covers the quality, material placement and requirements for construction of the underdrains as detailed in the Drawing Plan Set.

The Contractor shall excavate and maintain the sides of the trenches as required by OSHA. **No person shall be permitted to enter the trench unless OSHA required standards are constructed for the trenches.**

B. Materials:

1. Gravel Backfill: The aggregate shall be washed river gravel and be included in unit price bid per ton for **"No. 4 Washed River Gravel"**.

2. Filter Fabric: Where shown, the top, bottom and sides of the washed river gravel backfill in the underdrain trench shall be lined with ODOT 712.09, Type "A" filter fabric as detail in the Drawing Plan Set. It shall be composed of strong rot-proof polymeric fibers formed into a non-woven fabric which is UV stabilized. The cost for **filter fabric shall be considered incidental** to this line item.

3. Underdrain Pipe: The drainpipe shall be perforated PVC sewer pipe (Gasketed PVC SDR 35 Pipe) of the size indicated on the Drawing Plan Set and shall meet the AASHTO D 3034 & F 477 specification. Manufacturer's certification shall be furnished to the Division. The perforations shall be 6-hole perforated.

4. Underdrain Fittings: The pipe fittings shall be for HDPE pipe and installed in accordance with manufacturer's instructions. All fittings and pipe shall be installed in accordance with the details in the Drawing Plan Set and at the locations shown. Plastic pipe shall be stored out of direct sunlight.

5. Earth Backfill: The compacted earth backfill for the underdrain shall be specified on the Drawing Plan Set. A minimum 12" of topsoil shall be utilized at trench backfill completion. Resoil shall be included in the contract unit price bid per cubic yard for **"Approved Resoil"** of these specifications.

C. Installation: A surveyor from the Division shall place location/grade stakes for the underdrain to be utilized during construction on this project.

Locations of underdrains and flow directions as indicated on the Drawing Plan Set are approximate and based on the best information available and are subject to changes as directed in the field by the Division (Additional excavation as a result in a change in location and elevation shall be considered incidental to the **"Earthwork"** line item).

Construction of the underdrains shall begin at the outlet ends so that ponding and wet excavation can be held to a minimum. Any dewatering required to keep the trench dry during construction shall be performed by the Contractor.

No backfilling shall be permitted without visual inspection and approval of the Division.

D. Measurement: Measurement of underdrains shall be by actual linear feet of drain installed as measured in the field and verified by delivery tickets.

E. Payment: Payment for this work, including the cost of excavating, backfilling, grading, filter fabric and solid & perforated HDPE pipe and fittings, shall be made at the unit price per linear foot for **"Underdrains"**.

OUTLET PIPE

A. Description: This work covers the quality, material, placement, and requirements for construction of the outlet pipe as detailed in the Construction Plan Set.

The Contractor shall excavate and maintain the sides of the trenches as required by OSHA. **No person shall be permitted to enter the trench unless OSHA required standards are constructed for the trenches.**

B. Materials:

1. Gravel Backfill: The aggregate shall be washed river gravel and be included in unit price bid per ton for **"No. 4 Washed River Gravel"**.

2. Filter Fabric: Where shown, the top, bottom and sides of the washed river gravel backfill in the underdrain trench shall be lined with ODOT 712.09, Type "A" filter fabric as detail in the Drawing Plan Set. It shall be composed of strong rot-proof polymeric fibers formed into a non-woven fabric which is UV stabilized. The cost for **filter fabric shall be considered incidental** to this line item.

3. Outlet Pipe: Where indicated on the Drawing Plan Set the drainpipe shall be solid PVC sewer pipe (Gasketed PVC SDR 35 Pipe) of the size indicated on the Drawing Plan Set and shall meet the AASHTO D 3034 & F 477 specification. Manufacturer's certification shall be furnished to the Division.

4. Animal Guard: An Animal Guard as shown on the Drawing Plan Set shall be installed at the end of the Outlet Pipe. The Animal Guard shall be considered **incidental** to the outlet pipe construction.

5. Earth Backfill: The compacted earth backfill for the outlet pipe shall be specified on the Construction Plan Set. A minimum 6" of topsoil shall be removed and stockpiled during construction. Topsoil shall be utilized at trench backfill completion.

C. Installation: A surveyor from the Division shall place location/grade stakes for the underdrain to be utilized during construction on this project.

Locations and elevations of underdrains and flow directions as indicated on the Drawing Plan Set are approximate and based on the best information available and are subject to changes as directed in the field by the Division (Additional excavation as a result in a change in location and elevation shall be considered incidental to the **"Earthwork"** line item.)

Construction of the outlet pipe shall begin at the outlet ends so that ponding and wet excavation can be held to a minimum. Any dewatering required to keep the trench dry during construction shall be performed by the Contractor.

D. Measurement: Measurement of outlet pipe shall be by actual linear feet of drain installed as measured in the field and verified by delivery tickets.

E. Payment: Payment for this work, including the cost of excavating, backfilling, grading, filter fabric, solid PVC sewer pipe and fittings shall be made at the unit price per linear foot for **"Outlet Pipe"**.

10" STEEL CULVERT

A. Description: This item covers the quality, material placement and requirements for the installation of the culvert for the temporary entrance. This item shall also include the removal of the pipe which shall become the property of the Contractor.

B. Materials:

1. Culvert Pipe: The culvert pipe shall be 10" steel pipe or approved equal. The pipe shall be examined for condition and approved by the Division prior to installation.

2. Backfill: Backfill material shall be placed around the pipe to as shown on the Drawing Plan Set. Backfill material shall be on site material closely meeting the specification for **"No. 57 Stone".**

C. Installation: The Division shall verify locations prior to commencing installation. Installation shall be in compliance with all manufacturer's specifications.

The temporary culvert shall be removed at the completion of the project. **The culvert shall become the property of the Contractor at the completion of the project and shall be removed and reused or disposed of at the Contractor's expense.**

D. Measurement: Measurement of 10" Steel Culvert shall be by actual linear feet of pipe installed as measured in the field.

E. Payment: The cost for work under this item, including Steel pipe and installation, shall be at the unit price per linear foot for **"10" Steel Culvert"**.

24" PE/PVC CULVERT

A. Description: This item covers the quality, material placement and requirements for the installation of the culvert for the temporary stream crossing. This item shall also include the removal of the pipe which shall become the property of the Contractor.

B. Materials:

1. Culvert Pipe: The culvert pipe shall be 24" corrugated N-12 HDPE smooth interior pipe or approved equal and shall meet the AASHTO M294 specification, except the average elongation shall not exceed 7.5 percent when tested as described in that specification. Manufacturer's certification shall be furnished to the Division.

2. Backfill: Backfill material shall be placed around the pipe to as shown on the Drawing Plan Set. Backfill material shall be on site material closely meeting the specification for **"No. 4 Stone". The placement of this stone shall be included in the line item. All other cost shall be in other line items.**

C. Installation: The Division shall verify locations prior to commencing installation. Installation shall be in compliance with all manufacturer's specifications.

The temporary culvert shall be removed at the completion of the project. **The culvert shall become the property of the Contractor at the completion of the project and shall be removed and reused or disposed of at the Contractor's expense.**

D. Measurement: Measurement of 24" PE/PVC Culvert shall be by actual linear feet of pipe installed as measured in the field.

E. Payment: The cost for work under this item, including HDPE pipe and installation, shall be at the unit price per linear foot for **"24" PE/PVC Culvert"**.

No. 4 STONE

A. Description: This work covers the quality, material placement and requirements as a base course stone for the project access as shown in the Drawing Plan Set.

B. Materials: The materials shall consist of sound and durable rock, gravel or stone of the proper gradation meeting ODOT specifications. The material shall be free from cracks, seams, and other defects, which tend to increase deterioration from natural causes. It shall be highly resistant to weathering and disintegration under freezing and thawing and wetting and drying as evidenced by laboratory tests and/or service records. The Division at any time during the project may reject any materials, at the source or job site, not meeting the requirements of these specifications.

Acceptability of material will be determined by laboratory tests, visual inspection and/or service records as required by the Division. Service records will include documentation to show the material has performed satisfactory on similar structures.

C. Installation: Upon delivery of the material to the site the Contractor shall install the material in place as directed by the Division. The Contractor shall not stockpile materials at the site.

The Contractor shall remove the topsoil prior to installation of any access road or work area stone. Topsoil shall be stockpiled adjacent to the location it is removed from. At the conclusion of the project, all topsoil will be replaced it original location as part of the line item **"Site Restoration." Existing drives upgraded for the purpose of this work shall be restored to a condition better than prior to construction.**

All No. 4 stone used for the construction of a temporary access drives shall be removed at the completion of the project to allow for the completion of the **"Site Restoration"** line item. **The No. 4 stone shall become the property of the Contractor at the completion of the project and shall be removed and reused or disposed of at the Contractor's expense.**

D. Measurement: The material shall be measured for payment by the ton (2,000 pounds) for material acceptably placed in the work area as determined by certified scale weight tickets.

All material wasted or used by the Contractor for other purposes and any material not placed in the work area in accordance with the requirements of the work order and these specifications and drawings shall be measured and not included for payment by weight. A conversion factor of 1.5 ton per cubic yard of No. 4 Stone shall be used if necessary.

E. Payment: Payment this work as specified above shall be made based on the unit price per ton for **"No. 4 Stone."**

No. 57 STONE

A. Description: This work covers the quality, material placement and requirements as a top course stone for the access drives as shown in the Drawing Plan Set. This material shall be placed within the current limits of the landowner's drive.

B. Materials: The materials shall consist of sound and durable rock, gravel or stone of the proper gradation meeting ODOT specifications. The material shall be free from cracks, seams, and other defects, which tend to increase deterioration from natural causes. It shall be highly resistant to weathering and disintegration under freezing and thawing and wetting and drying as evidenced by laboratory tests and/or service records. The Division at any time during the project may reject any materials, at the source or job site, not meeting the requirements of these specifications.

Acceptability of material will be determined by laboratory tests, visual inspection and/or service records as required by the Division. Service records will include documentation to show the material has performed satisfactory on similar structures.

C. Installation: Upon delivery of the material to the site the Contractor shall install the material in place as shown on the Drawing Plan Set.

D. Measurement: The material shall be measured for payment by the ton (2,000 pounds) for material acceptably placed in the work as determined by certified scale weight tickets.

All material wasted or used by the Contractor for other purposes and any material not placed in the work in accordance with the requirements of the work order and these specifications and drawings shall be measured and not included for payment by weight. A conversion factor of 1.5 ton per cubic yard of No. 57 Stone shall be used if necessary.

E. Payment: Payment for this work as specified above shall be made based on the unit price per ton for **"No. 57 Stone."**

FILTER FABRIC

A. General: This item shall include all material, labor, and equipment necessary for the installation of the filter fabric for the base of the access drive that will be temporary as specified on the Drawing Plan Set.

B. Materials: The filter fabric shall be composed of strong, rot-proof polymeric fibers formed into a fabric meeting 2019 Ohio Department of Transportation Specifications, Section 712.09, Type "D".

C. Installation: At the time of installation, fabric shall be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. It shall be laid smooth and free from tension, stress, folds, wrinkles, or creases. The strips shall be placed to provide a minimum width of 6 inches of overlap for each side or end. Any damage to the fabric during its installation or during placement of the stone shall be replaced or repaired by the

Contractor at no cost to the Division. The filter fabric shall be protected from damage due to placement of the stone or other materials by limiting the height of the drop of the material.

The Contractor shall install the filter fabric once **the subgrade has been properly prepared and approver by the Division** and prior to the stone in the areas of the access drive that is required to be temporary as described on the Drawing Plan Set. The fabric shall be removed and properly disposed of by the contractor at the completion of this project and shall be part of line item **"Filter Fabric."**

D. Measurement: Measurement shall be determined in the field by the Chief's representative with no allowance for the overlap of 6-inch recommended above. Measurement shall be based on the length and height of the underdrain/stone drain as indicated on the Drawing Plan Set.

E. Payment: Payment for all of the work specified above shall be made at the unit price per square yard for **"Filter Fabric".**

No. 4 WASHED RIVER GRAVEL

A. Description: This work covers the quality, material placement and requirements for the gravel bedding and backfill as detailed in the Drawing Plan Set. **It is critical that fine material is washed from this aggregate, therefore, the material shall contain no more than 5%, by weight, finer than #200 sieve.**

B. Materials: The materials shall consist of sound and durable **No. 4 Washed River Gravel**. The material shall be free from cracks, seams, and other defects, which tend to increase deterioration from natural causes. It shall be highly resistant to weathering and disintegration under freezing and thawing and wetting and drying as evidenced by laboratory tests and/or service records. The Division at any time during the contract may reject any materials, at the source or job site, not meeting the requirements of these specifications. Any cracking, spalling, sign of bedding or deterioration shall cause gravel to be rejected and replaced up to completion of job. Materials, that have been delivered to the project site and are rejected, shall be removed from the project site at the Contractor's expense.

Acceptability of material shall be determined by laboratory tests, visual inspection and/or service records as required by the Division. Service records shall include documentation to show the material has performed satisfactory on similar structures. Material, upon visual inspection appearing not to meet the less than 5%, by weight, finer than #200 sieve shall be rejected. **At that point, the Contractor shall provide lab test results, using approved methods, showing the percentage passing the #200 sieve.**

C. Installation: The Contractor shall use special care during placement. Minor excavation, rehandling and rearranging of stones may be required to ensure that all rock is placed as shown in the plans.

Storage prior to permanent placement is subject to approval by the Division and shall include appropriate weight adjustments for losses, which shall be at the Contractor's expense.

Material placement in advance of construction shall be at the Contractor's risk. In the event an uncompleted section of material is damaged, or causes damage to a completed section, the damaged portions shall be replaced or reshaped, as approved by the Division at the Contractor's expense. The Contractor shall keep the Chief advised as to any and all situations that may result in a possible interruption of the work.

Material shall be placed in a manner that shall permit the smaller rocks to fill the voids between the bigger rocks. Material shall be placed and worked so as to attain maximum density. No large voids or concentrations of similar size rocks shall be permitted. **All No. 4 Gravel shall be placed in nine (9) inch maximum lifts and compacted by a minimum of three (3) passes of a vibratory plate compactor capable exerting a minimum of 2,000 lbs. of centrifugal force.**

The Contractor shall maintain and protect the construction areas at all times until final completion and acceptance of the work. Any material displaced by the Contractor's operations or negligence, shall be repaired at his expense.

D. Measurement: Materials shall be measured for payment by the ton (2,000 pounds) of each type material acceptably placed in the work as determined by certified scale weight tickets. Material placed beyond the tolerance limits specified for each type of material shall not be paid for. Reduction for materials placed beyond tolerance limits shall be made on the basis of 3,000 pounds per cubic yard for all material.

All material wasted or used by the Contractor for other purposes and any material not placed in the work in accordance with the requirements of the work order and these specifications and drawings shall be measured and not included for payment by weight. A conversion factor of 1.5 ton per cubic yard shall be used if necessary.

E. Payment: Payment for placement of any washed river gravel on this project shall be made at the unit price bid per ton for **"No. 4 Washed River Gravel"**.

TRACK DUMP TRUCK

A. Description: The work shall consist of the use of a track dump truck with a **Minimum Load Capacity of 12,000 pounds.** Operations include but are not limited to channel construction, access road construction, clearing and grubbing operations, drainage pipe and waterline installations, drainage structure installations, earthwork and rock excavations, etc. **This item shall only include additional work not already included in other line items or described on the Construction Plan Set.**

Sizing of the track dump truck shall be as directed/approved by the Division.

This item shall include the cost of operation of the track dump truck by a qualified operator.

The contractor shall ensure that all safety equipment installed on the equipment is compliant with all Occupational Safety & Health Administration (OSHA) guidelines. These items include but are not limited to all lights, turn signals, backup alarms, guards, mirrors, windshield wipers, seatbelts, rollover protection (ROPS) and emergency shut off switches.

B. General Specifications: The following general specifications shall apply to each detailed equipment specification listed hereafter.

1. Commencement of Work: A signed Field Order authorizing the use of and payment basis for the following listed equipment shall be issued before the contractor may commence work.

2. Remobilization: No additional compensation shall be made to the Contractor for remobilization after equipment has been removed from the project work area without prior approval from the Division.

3. Equipment Delays: All delays and costs associated with the interruption of work due to equipment malfunction or failure will be the responsibility of the Contractor.

4. Unforeseen Delays: If during the course of operations, it is determined that operations must be suspended due to circumstances outside of the contractor's control (excluding weather delays), the Division may respond in one of the following manners:

    a. If the delay(s) is determined to be substantial in nature, the Division is authorized to order the demobilization of the equipment and pay an agreed upon remobilization cost upon resolution of the delay.

    b. If the delay(s) is determined to be minor in nature, the Division may pay an idle rate on the equipment equal to one half (1/2) the unit price bid for the equipment for every agreed upon unit of measure the piece of equipment remains idle.

5. Payment for Delays: Delay payments detailed above shall only be subject to equipment that was authorized for use by the Division prior to commencement of work on the project. All idle cost for unauthorized equipment onsite shall fall upon the Contractor.

6. Employee Safety: The Contractor shall ensure compliance with all Occupational Safety & Health Administration (OSHA) guidelines concerning Personal Protective Equipment (PPE) necessary for its employees to safely operate all equipment specified hereafter.

C. Measurement: Upon the completion of the utilization of the following specified equipment, the Division and Contractor shall agree to and record a measurement of units performed.

D. Payment: Payment for this work shall be at the Contract unit price bid **per month** for **"Track Dump Truck"**.

EXCAVATOR (OW > 25 Mton)

A. Description: The work shall consist of the use of an excavator with an **Operating Weight (OW) of greater than twenty-five (25) metric ton (Mton).** Operations include but are not limited to channel construction, access road construction, clearing and grubbing operations, drainage pipe and waterline installations, drainage structure installations, earthwork and rock excavations, etc. **This item shall only include additional work not already included in other line items or described on the Construction Plan Set.**

Sizing of the excavator shall be as directed/approved by the Division.

This item shall include the cost of operation of the excavator by a qualified operator.

The contractor shall ensure that all safety equipment installed on the equipment is compliant with all Occupational Safety & Health Administration (OSHA) guidelines. These items include but are not limited to all lights, turn signals, backup alarms, guards, mirrors, windshield wipers, seatbelts, rollover protection (ROPS) and emergency shut off switches.

B. General Specifications: The following general specifications shall apply to each detailed equipment specification listed hereafter.

1. Commencement of Work: A signed Field Order authorizing the use of and payment basis for the following listed equipment shall be issued before the contractor may commence work.

2. Remobilization: No additional compensation shall be made to the Contractor for remobilization after equipment has been removed from the project work area without prior approval from the Division.

3. Equipment Delays: All delays and costs associated with the interruption of work due to equipment malfunction or failure will be the responsibility of the Contractor.

4. Unforeseen Delays: If during the course of operations, it is determined that operations must be suspended due to circumstances outside of the contractor's control (excluding weather delays), the Division may respond in one of the following manners:

    a. If the delay(s) is determined to be substantial in nature, the Division is authorized to order the demobilization of the equipment and pay an agreed upon remobilization cost upon resolution of the delay.

    b. If the delay(s) is determined to be minor in nature, the Division may pay an idle rate on the equipment equal to one half (1/2) the unit price bid for the equipment for every agreed upon unit of measure the piece of equipment remains idle.

5. Payment for Delays: Delay payments detailed above shall only be subject to equipment that was authorized for use by the Division prior to commencement of work on the project. All idle cost for unauthorized equipment onsite shall fall upon the Contractor.

6. Employee Safety: The Contractor shall ensure compliance with all Occupational Safety & Health Administration (OSHA) guidelines concerning Personal Protective Equipment (PPE) necessary for its employees to safely operate all equipment specified hereafter.

C. Measurement: Upon the daily completion of the utilization of the following specified equipment, the Division and Contractor shall agree to and record a daily measurement of units performed.

D. Payment: Payment for this work shall be at the Contract unit price bid **per hour** for **"Excavator (OW > 25 Mton)"**.

TRACK-TYPES TRACTOR (170 HP < BULLDOZER ≤ 260 HP)

A. Description: The work shall consist of the use of a bulldozer having an **engine rating of between one hundred and seventy (170) and two hundred and sixty (260) horsepower (HP)** on various reclamation operations. These operations include but are not limited to grading operations, channel construction, access road construction, clearing and grubbing operations, etc. **This item shall only include additional work not already included in other line items or described on the Construction Plan Set.**

Sizing of the bulldozer shall be as directed/approved by the Division.

This item shall include the cost of operation of the excavator by a qualified operator.

The contractor shall ensure that all safety equipment installed on the equipment is compliant with all Occupational Safety & Health Administration (OSHA) guidelines. These items include but are

not limited to all lights, turn signals, backup alarms, guards, mirrors, windshield wipers, seatbelts, rollover protection (ROPS) and emergency shut off switches.

B. General Specifications: The following general specifications shall apply to each detailed equipment specification listed hereafter.

1. Commencement of Work: A signed Field Order authorizing the use of and payment basis for the following listed equipment shall be issued before the contractor may commence work.

2. Remobilization: No additional compensation shall be made to the Contractor for remobilization after equipment has been removed from the project work area without prior approval from the Division.

3. Equipment Delays: All delays and costs associated with the interruption of work due to equipment malfunction or failure will be the responsibility of the Contractor.

4. Unforeseen Delays: If during the course of operations, it is determined that operations must be suspended due to circumstances outside of the contractor's control (excluding weather delays), the Division may respond in one of the following manners:

   a. If the delay(s) is determined to be substantial in nature, the Division is authorized to order the demobilization of the equipment and pay an agreed upon remobilization cost upon resolution of the delay.
   b. If the delay(s) is determined to be minor in nature, the Division may pay an idle rate on the equipment equal to one half (1/2) the unit price bid for the equipment for every agreed upon unit of measure the piece of equipment remains idle.

5. Payment for Delays: Delay payments detailed above shall only be subject to equipment that was authorized for use by the Division prior to commencement of work on the project. All idle cost for unauthorized equipment onsite shall fall upon the Contractor.

6. Employee Safety: The Contractor shall ensure compliance with all Occupational Safety & Health Administration (OSHA) guidelines concerning Personal Protective Equipment (PPE) necessary for its employees to safely operate all equipment specified hereafter.

C. Measurement: Upon the daily completion of the utilization of the following specified equipment, the Division and Contractor shall agree to and record a daily measurement of units performed.

D. Payment: Payment for this work shall be at the Contract unit price bid **per hour** for **"TRACK-TYPES TRACTOR (170 HP < BULLDOZER ≤ 260 HP)"**.

ROCK EXCAVATION

A. Description: This work shall consist of furnishing all labor and equipment necessary for the hydraulic excavation, sizing and stockpile of the onsite surface boulders as shown on the Drawing Plan Set. Sized on-site rock shall be used to reconstruct drainage ditches and as rock channel protection.

Several areas within the construction work limits contain surface boulders that impede access for the work. These boulders shall be "busted up" and sized to effectively be use in the Division's access and site restoration efforts.

B. This work shall require that all stone be broken down to no larger than Type "D" Rock Channel Protection.

C. Broken down material shall be used as Type D Rock Channel Protection or stockpiled for reconstruction of drainage ditches as shown in the Drawing Plan Set and shall be placed in accordance with the destination line item.

D. Measurement: Upon the daily completion of the utilization of the following specified equipment, the Division and Contractor shall agree to and record a daily measurement of units performed.

The approximate amount of rock excavation has been listed on the Construction Plan Set as a total cubic yardage. Measurement by the Division and contractor shall be made in the field at the time of construction.

E. Payment: Payment for this work shall be at the Contract unit price bid **per hour** for "**Rock Excavation".**

WELL HEAD CONTROL

A. Description: This work consists of all labor, equipment, and material necessary to establish control of the well. This item shall include the installation of a wellhead control device/flow diverter on the most appropriate well casing as described in the plugging plans.

In the event Division UPC work has been completed on the well, resulting in surface equipment (swages, fittings, valves, gauges, etc.) being installed, the Contractor shall coordinate with the inspector in returning this equipment to the Division for future use. At no point shall the Contractor assume ownership of any surface equipment associated with the well.

B. Execution: The Contractor is responsible for installing, according to best management practices, a wellhead control device/flow diverter on the well casing.

The casing shall be free from any damages or defects. If required, the casing shall be cut and cleaned of any dirt, oils, and debris prior to welding extensions and/or installation of the diverter.

The Contractor shall supply a cellar with a cement base around the wells. This cellar shall be set around the well and extended up to working elevation, as the depressed area around the well head will be modified to establish workable base. This cellar shall be made of steel, concrete, or polyethylene pipe. **The cellar shall be a minimum of 48 inches in diameter. This work shall include a six (6) inch minimum of Approved Cement as specified or Portland Cement in the cellar base with a three (3) inch minimum port near the well. The port shall extend up to within three (3) inches of the well at working height and be used to monitor and contain any gas/oil escaping around the back side of the casing.**

Once a well head control device is installed, all fluids, gases and solids generated by the plugging process shall be diverted into a tank. This tank shall be set a minimum of twenty (20) feet from the well. The Contractor shall also maintain an adequate supply of freshwater at the well for possible well control emergencies, which shall be paid under the line item **"Well Control Fluid."** The injection point for the kill line will be a minimum of twenty (20) feet from the well.

For the duration of this project the following wellhead control will need to be utilized. The wellhead control device/flow diverter assembly will have two 4.5-inch diameter discharge ports. The diverter lines running from both 4.5-inch diameter discharge ports on the wellhead assembly to the above ground steel tank will consist of two (2) – 4.5-inch diameter steel lines. Both diverter lines will have inline valves for control of flow. These lines will discharge into the tank at a downward angle or at an angle that will reduce fluids from splashing or spraying out of the tank if a sustained blow is encountered while drilling out the plugged wells. These lines will be firmly secured to the steel pit with equipment that is capable of withstanding the possible pressures encountered. One of the 4.5-inch diverter lines will be equipped with a 2-inch diameter port and valve that will serve as the kill line access. This port and valve will be installed between the wellhead and the 4.5-inch inline valve.

No plugging operations shall begin until a satisfactory inspection of the prepared well has been completed by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the well head control shall be made at the cost proposal lump sum price for **"Well Head Control."**

WELL CONTROL FLUID

A. Description: The work covered by this section shall consist of furnishing all labor, equipment, and material necessary to provide and use water as a "kill" fluid for the drilling and plugging process of the well.

B. Requirements: The Contractor shall receive prior approval from the Division before using any onsite waters for the plugging process (i.e. streams, lakes, or ponds). If approved, withdrawing waters of the state shall not exceed 100,000 gallons per day from an individual water source.

The Division will require a minimum of 100 barrels of freshwater well control fluid be maintained on the site during the plugging project.

A mud pump (or equivalent) of sufficient size/capacity shall be required to be onsite at all times during plugging operations as means to pump well control fluid when required.

C. Measurement: Measurement for payment for the above-described work shall be made by the actual quantity of barrels (bbls) of water used to successfully plug and/or drill the orphan as approval by the Division. The Division will at a minimum pay for the quantity required to be maintained on site.

D. Payment: Payment for the above work shall be made at the unit price per barrel (bbls) for **"Well Control Fluid."**

LOGGING

A. Description: This work consists of all labor, equipment, and material necessary to determine the total depth of the well and the casing, if a packer is present (along with its depth and thickness), determine bond quality behind the casing and the free point of the casing. The Log should also confirm zones of gas production and formation tops for cementing purposes.

B. Execution: The contractor shall complete the logging of the well bore, casing, tubing, packer, and/or cement to the depth of the existing well bore, casing, tubing, packer, and/or cement. The methods of logging to be used shall be as indicated on the individual plugging plan and may include but not be limited to **gamma ray (GR), casing collar locator (CCL), temperature, bond, and caliper log as well as perforating, shooting etc.**. Prior to use, the Contractor shall propose the method of logging and shall be approved by the Division.

A copy of the completed Log must be submitted to the Division via email at OrphanWellProgram@dnr.state.oh.us.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the investigation of the well shall be included at the per unit price per each for **"Logging."**

WELL PREPARATION & PLUGGING

A. Description: This work consists of all labor, equipment, and material necessary to prepare the well for plugging and complete all required plugs. This shall include cleanout, drillout, and washover of the well bore to the total depth of the well based on the well description(s) and plugging plan(s), circulating the well bore prior to each plug, setting all required plugs, and verification of each plug depth.

B. Execution: The Contractor shall supply all equipment needed to complete the well preparation in an efficient manner that will be approved by the Division. This shall include but not be limited to the rig, drill pipe, collars, mud pump, circulating fluid, cementing equipment, mix water, and associated equipment.

Cable tool/spudding rigs shall not be permitted for use unless otherwise authorized by the Division as described under the General Conditions, Part 13 "Substitution During the Project".

Once well head control has been established, the Contractor will cleanout, drillout and/or washover and then circulate the well bore prior to setting any casing or well plugs. The Contractor shall be responsible for having a minimum of two (2) hole volumes of fluid available for circulation.

The Contractor shall identify the diameter of the well bore below the surface casing and cleanout or drillout with a full-size bit to total depth. **In addition to the full-sized bit, the contractor shall also supply a bore brush and/or casing scraper at the appropriate size to fully clean out any casing remaining per the plugging plan.** In any case where an obstruction is encountered and total depth cannot be achieved, the Contractor shall immediately notify the Division. The Contractor shall propose a plan to assess the nature of the obstruction that shall be approved by the Division. Additional work associated with removal of the obstruction shall be described and paid for under the Contingency Specifications and as listed on the Quantity Sheet and agreed upon by the Division.

When required the Contractor shall complete the ripping of the casing or tubing at a depth approved by the Division. Ripping shall be considered incidental to this line item.

The Contractor shall trip out or up into the nearest competent cased string and secure all tools at the end of each workday or when work shall be paused for an extended time. Any tools left in the hole during such paused work time shall be at the Contractor's own risk. Any tools or tubing that are lost due to the Contractor's failure to complete the task of tripping out during paused work times shall be at their own expense as well as any work required to then prepare the hole to continue the plugging process (this shall include but not be limited to shooting, fishing, over drilling, lost or damaged tools, etc.). The tripping out of the tools during paused work times shall be incidental to this line item.

Formations within the well bore known to be producing H_2S gas will not be circulated prior to setting a plug.

Prior to setting any plugs the Contractor shall remove all free crude oil by **circulating the wellbore two-hole volumes or until the well is static**; **a minimum of ten (10) barrels of gel is required to be run ahead of each cement plug that may come into contact with open hole formation at the discretion of the Division**. This work shall be considered incidental to this line item. No additional payment shall be made for circumstances where the Contractor does not have the appropriate material on location.

Lost Circulation Material (LCM) may be used to aid in obtaining circulation, as approved by the Division. **Lost Circulation Material (LCM) shall NOT be used when tubing smaller than 1.5 inch inside diameter will be utilized. Circulation must be established prior to conducting cementing procedures.** Use of LCM shall be per the **"Lost Circulation Material"** specification included in the Contingency Specification. LCM shall be available at the site during the completion of this line item **"Well Preparation & Plugging." The well shall be in a static condition prior to beginning any cementing activities.**

The Contractor shall set all plugs as described in the **Plugging Plan** to the depths described with the materials described. This shall include setting the bottom plug, intermediate plugs, and the surface plug. All plugs shall be allowed to set for the periods described in the **Plugging Plan**. The Contractor shall determine with the required tools if any plug has dropped. **If a plug has dropped or is determined to not be a competent plug, then drill out of the plug or additional staged plugs may be required at the discretion of the Division as a part of this line item. The Division reserves the right to adjust the Plugging Plan during the plugging process based on site conditions.**

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the well preparation and plugging shall be made at the lump sum price for **"Well Preparation & Plugging."**

TUBING

A. Description: This item covers all labor, equipment, and material required to supply tubing at the site for the purposes of placement of cement and spacers.

B. Materials: The Contractor shall supply a 1.5-inch inside diameter (ID) or larger tubing in a condition that will allow for the pumping of cement for the purposes of plugging the well.

For this project the Contractor shall supply up to 2,000 feet of 1.5-inch ID or larger tubing to all the project wells.

C. Installation: The Contractor will install and remove the tubing as necessary in order to complete the **Plugging Plan.** The Contractor shall maintain ownership at the conclusion of the project of all tubing that was brought to the site for these purposes.

D. Measurement: Measurement for payment of the above-described work shall be made by actual field measurements per linear foot of tubing delivered to the site.

Tubing shall be measured as one use for the duration of the project.

E. Payment: Payment for this item shall be made at the lump sum price for **"Tubing."**

PERFORATING

A. Description: This work consists of all labor, equipment, and material necessary to perforate a casing or tubing at a determined depth for the purpose of squeezing cement outside the casing or tubing string.

B. Execution: The Contractor shall complete the perforating of the casing or tubing at a depth approved by the Division. This work shall include a CCL and Bond Log at the discretion of the Division to identify perforation interval(s).

The Contractor shall propose the material and method for perforating the casing or tubing and shall be approved by the Division. **Each unit for perforating shall include two (2) shots with ten (10) perforations per shot, for a total of 20 perforations.**

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the perforating the casing or tubing made at the unit price per each for **"Perforating."**

SEVERING

A. Description: This work consists of all labor, equipment, and material necessary to sever a casing at a determined depth for the purpose of removing the casing string from the wellbore.

B. Execution: The Contractor shall complete the severing of the casing at a depth approved by the Division. The Contractor shall propose the material and method for severing of the casing, which shall be approved by the Division. This includes, but is not limited to, **locating free point**, ripping, shooting, or cutting.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the severing the casing made at the unit price per each for **"Severing"**.

APPROVED CEMENT

A. Description: This item shall cover all labor, materials, and equipment necessary to plug the well as specified in the **Plugging Plan**.

B. Materials: Cement materials shall be approved prior to placement. The cement must conform to the following options:

a. API Class "A"
b. API Class "L"
c. ASTM C150 Type 1
d. ASTM C595 Type 1L
(Note: These are the only material options that will be approved, any other materials may be submitted to the Division for review but will **not** be approved for this project)

The cement shall contain 2% Calcium Chloride, properly blended, **only if directed** by the Division in advance of placing the cement. **Coordinate with the Division prior to ordering cement.**

The cement shall not contain bentonite or extenders which delay set time or decrease the overall compressive strength unless otherwise noted.

Water used for cementing shall be free of any impurities that will adversely affect set time and compressive strength.

C. Installation: **The Contractor shall notify the Division at least 24 hours in advance of placing the cement, including notification of the type of cement being used for approval.**

Additional wait times may be required for the type of cement used. This wait time shall be incidental to this line item. Upon approval of the type of cement the Division shall inform the Contractor of the required wait times for each staged plug.

Preparation of the well bore, including the running of gel flush ahead, shall be completed per line item **"Well Preparation & Plugging"** prior to placement of the cement.

The cement slurry shall be mixed at the API recommendation, between 15.4 and 15.8 pounds per gallon.

The Cement shall be placed to the depths and intervals described in **Plugging Plan**.

It is the Contractor's responsibility to provide a mud scale for weighing the cement slurry.

When using API Class "L" cement or ASTM C595 Type 1L cement, all the following conditions apply:

• Mill test information must be provided to the applicable Division inspector prior to utilization of API Class L cement or ASTM C595 Type 1L cement. The mill test information must be of a representative sample of the mixture of cement proposed to be used to plug the well. A person is not required to provide the mill test information if the Division already has the mill test information of the mixture of cement for a batch.

• Performance data shall be provided in compliance with Ohio Administrative Code 1501:9-11-07 prior to usage. To determine if Ohio Administrative Code 1501:9-11-07 is met, test results shall include at a minimum slurry density, composition, compressive

strength, free fluids, thickening time, curing pressure, and curing temperature. The data also shall include percent limestone and percent pozzolan material.

• For blended cement containing limestone and pozzolanic material, the combination of the materials shall not exceed fifty per cent by volume.

• A sample of at least 20lbs representative of the of cement mixture proposed to be used in a well must be provided to the Division at the request of the Division.

• A person using API Class L cement or ASTM C595 Type 1L cement shall leave the plugged well in a manner that will allow for further inspection past the contract requirement of three days after the completion of the uppermost plug unless the applicable Division inspector determines that the contract requirement of three days is sufficient.

D. Setting: Setting times shall be completed as described in the **Plugging Plan.** For the surface plug any void space between the top of the cement and the top of the casing shall be filled to achieve a level cement line with the top of the casing. This shall be done at no additional cost to the Division.

The cement must develop a minimum compressive strength of 500 PSI after 24 hours at well bore temperatures. The Division reserves the right to collect test cylinders throughout the duration of the cementing process.

E. Measurement: Measurement for payment shall be based on the actual quantity of sacks of cement acceptably placed and shall be verified with delivery tickets. A sack shall be considered to be 94 pounds prior to mixing.

F. Payment: The above-described work shall be paid for at the unit price per sack for **"Approved Cement."**

CEMENT MIXING & PUMPING

A. Description: This item shall cover all labor, materials, and equipment necessary to mix and pump cement as specified in the **Plugging Plan**.

B. Execution: Cementing equipment required on site to mix and pump casing cement and cement plugs shall be provided until each individual casing cementing or plug cementing is completed. This shall include but not be limited to pump truck, mud pump, and associated equipment.

C. Measurement: Measurement for payment shall be for each trip to the project site in order to complete the plug(s) as described in the **Plugging Plan**. Payment for staged plugs shall be measured as one unit.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the mixing & pumping of cement into the well shall be made at the unit price per each for **"Cement Mixing & Pumping."**

FLUID DISPOSAL

A. Description: This item shall consist of removing and disposing of the fluid generated from the well plugging process. Fluids to be removed shall be at the discretion of the Division and shall be injected at an approved Class II disposal well as provided by the Contractor prior to removal from the site.

B. Material: Materials will be defined below as described for the purposes of this scope of work.

Contaminated Fluids: Contaminated fluid will be considered as all fluids used in the circulation of the well bore, fluids utilized as a "kill" substance and/or fluids generated from the well. The Division reserves the right to deem a fluid "contaminated" at its discretion.

Contaminated fluids are further defined as water that contains quantifiable concentrations of oil, natural gas(es), condensate, brine, plugging products, or other oil field waste substances.

Freshwaters: Water that has not been classified as a contaminated fluid and has been stored in an uncontaminated container shall be visually inspected for oil sheen, and field tested for pH and chlorides. The chloride concentration shall be less than 250 mg/L and the pH shall be within a range of 6.5-8.5 standard units (SU). If a water is deemed as freshwater based on these inspections and tests, the Contractor may discharge freshwater into or onto the land in an appropriate manner. Freshwater disposal shall not be paid for under this line item **"Fluid Disposal."**

C. Off-Site Disposal: Fluids designated as "contaminated" shall be hauled to an appropriate Class II disposal well. Proof of disposal from the disposal well shall be furnished within three (3) days of acceptance to the Division.

No additional compensation shall be made for onsite fluid storage. If contaminated fluids remain onsite, proper containment shall be established meeting all requirements as described in line item **"Secondary Containment"** at no additional cost to the Division. Onsite storage time shall not exceed 72 hours after plugging activities have been completed.

D. Measurement: Measurement for payment shall be verified based on documentation proof of a quantity of disposal from the disposal well utilized.

E. Payment: Payment shall be made at the unit price per barrel for **"Fluid Disposal."**

CONTAMINATED MATERIAL DISPOSAL

A. Description: This item shall consist of removing contaminated soils and cuttings from the site for off-site disposal. Soils and cuttings to be removed shall be at the discretion of the Division and shall be disposed of at an approved EPA licensed landfill as provided by the Contractor prior to removal from the site.

B. Material:

Contaminated Soils/Cuttings: Contaminated soils and cuttings are defined as soils or cuttings in which oil, gas, condensate, brine, plugging products, or oil field waste substances have been released in or on the land.

The Contractor will excavate and properly dispose of all soils from the location that are visibly impacted with oilfield contaminants. The Contractor shall solidify any residual fluid associated with these soils with Portland Cement, prior to removal as a part of this line item. Prior to solidification of contaminated materials, the contractor shall use due diligence to remove fluids from the contaminated materials. Fluids removed from the contaminated materials shall be disposed of per line item **"Fluid Disposal."**

Soils deemed "contaminated" as a result of Contractor negligence during the plugging process will be removed and disposed of at the Contractor's expense. Disposal procedures will conform to all requirements stated within this line item.

C. Off-Site Disposal: Soils designated as "contaminated" shall be hauled to an appropriate licensed landfill. Copies of truck weight tickets from the landfills shall be furnished within 3 days of acceptance to the Division.

Contaminated soils shall be loaded and hauled away as they are excavated.

No additional compensation shall be made for onsite contaminated soil storage. If excavated soils remain onsite, proper containment shall be established meeting all requirements as described in line item **"Secondary Containment"** at no additional cost to the Division. Onsite storage time shall not exceed 72 hours after plugging activities have been completed.

D. Measurement: Measurement for payment shall be verified based on weight tickets of quantities disposed at the approved EPA licensed landfill.

E. Payment: Payment shall be made at the unit price per ton for **"Contaminated Material Disposal."**

SALVAGE MATERIAL DISPOSAL

A. Description: This item shall consist of preparing, removing, and salvaging all materials from the site that have a salvage value as shown on the Drawing Plan Set or as required by the Division. All items to be salvaged shall include all surface equipment, well casing, and production equipment. Salvage items shall also include any hydrocarbon materials (oil, condensate, etc.) that have a marketable value. Salvage items shall be stored onsite within the construction project limits until removed for salvage.

B. Off-Site Disposal: Prior to removal from the site the Contractor shall supply in writing to the Division an inventory of all materials to be salvaged. On the behalf of the Division the Contractor shall salvage materials inventoried. Once materials have been salvaged the contractor shall reimburse the Division for the salvage value per the line item **"Salvage Material Reimbursement."**

At the request of the Division, surface equipment deemed as reusable shall be forfeited directly to the Division's onsite representative. This shall include but not be limited to swages, wellheads, fittings, appurtenances, etc. At no time shall salvageable material become property of the Contractor.

Prior to disposal of any salvage materials from the project site, the Division will complete a radiological assessment of salvage materials that have been provided on an inventory to the Division. **The Division shall be given a minimum of two (2) working days notice to complete the assessment.** Salvage materials staged on the project site shall be staged on a pipe rack where determined applicable by the Division. Salvage materials shall be on an impervious liner that will collect any residual fluids or scale.

Prior to disposal of any salvage materials the Contractor shall prepare, including cleaning, the salvage materials for lawful salvage.

All salvageable material shall be cleaned onsite. The final product shall be non-hazardous and, in a condition, to not cause offsite pollution/contamination during transport and/or disposal.

C. Execution: The Contractor shall include in this line item any expense incurred with the removal and the salvaging.

D. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

E. Payment: Payment shall be made at the lump sum price for **"Salvage Material Disposal."**

GAS LINE ABANDONMENT

A. Description: The work covers all labor, equipment, and material required for abandoning the existing gas lines associated with the orphan well.

B. Execution: The flushing of the line shall be accomplished by an approved method submitted to the Division prior to the initiation of work. The Contractor shall submit a plan to the Division, which fully details the proposed method for flushing the line. This plan shall include the following:

1. Flushing equipment;
2. Pumping equipment (if necessary);
3. Size and capacities of holding sumps;
4. Method for cementing or grouting in the ends of the line;
5. Method for permanently capping the ends of the line

The Contractor shall excavate and expose the gas line at each end as shown on the Drawing Plan Set or as determined in the field. If it is determined that holding sumps will be used upon excavation, the Contractor shall sever the line and temporarily line the entire excavated area(s). Liner materials shall be impervious and have supporting documentation of the permeability, chemical compatibility, and other applicable QA/QC standards, is acceptable. Use of a liner shall at a minimum be a 20-mil thickness.

The Contractor shall notify the Division 24 hours in advance of flushing the line.

Once the liners are in place, the Contractor shall begin flushing line toward the well with freshwater. Freshwater shall be continually flushed through the line until fluid discharge is observed at the outlet end and no residual oil/gas waste is observed. All generated residuals and fluids shall be properly removed and disposed of per line item “Fluid Disposal” and/or “Contaminated Material Disposal.”

If after several attempts the Contractor is unsuccessful in achieving fluid at the outlet end, the Division may authorize the Contractor to cease operations and cement/grout the ends of the line.

The cement or grout shall be included in the unit price line items **“Approved Cement” or “Nine Sack Grout”**. **All other costs for pumping shall be incidental to this line item.** Care shall be taken to ensure the line is not over filled as to cause cement or grout to fill beyond the line itself. Once the end is cemented the Contractor shall cap the line. This shall be solely at the discretion of the Division.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for this work, including equipment, labor, installation, and materials shall be made at the lump sum price for **"Gas Line Abandonment."**

PLUGGED WELL CASING ABANDONMENT

A. Description: This work shall consist of all labor, equipment, and material necessary to excavate, cutoff and the removal of the existing casing(s) as well as backfilling and restoration of the disturbed area for the following wells:

Well Name	API Number	County	Township	Latitude	Longitude
Deucher #12	34-167-6-2512-00-00	Washington	Independence	39.459102	-81.156061

This work shall also include mobilization and demobilization to the well location.

B. Execution: All work described herein is in addition to the wells to be plugged as part of this Scope of Work. Prior to beginning work, the Contractor shall take photos of the wellbore/casing(s). Photos and casing diameter(s) shall be supplied electronically to the Division. No work shall begin without notification to the Division.

The Contractor shall at a minimum excavate to the cutoff depth listed below for each well. Once this depth is reached, the Contractor shall cutoff all casings present and set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.

- Deucher #12 (API No. 34-167-6-2512-00-00): 30-inches

Once the plugged well identification is set, the Contractor shall photo document and backfill the area. Onsite backfill shall be utilized, placed, and compacted so as to prevent long-term settlement. Compacted lifts shall not exceed eight (8) inches. If onsite materials are not suitable for the establishment of vegetative growth, line item "Approved Resoil" may be authorized for use via a Field Order from the Division.

Disturbed areas shall be reclaimed and executed as described under "Site Restoration (Wayne National Forest)".

Each location shall be held to the appropriate standard as described in Part D "Maintenance Period" of the site restoration line item.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, equipment, and material necessary to excavate, cutoff and the removal of the existing casing(s) as well as backfilling and restoration of the disturbed area for the abandonment of the well shall be made at the lump sum price for **"Plugged Well Casing Abandonment."**

APPROVED RESOIL

A. Description: This work shall consist of furnishing all labor, material, and equipment necessary for the hauling, spreading, and grading of the resoil material for the replacement of the removed

contaminated soils. This work shall also include shaping for positive drainage and matching the surrounding contours.

B. Material: Material shall be a good quality resoil and **not** include rocks, stones, and objectionable material over three (3) inches in any one dimension. All resoil that will compose the top eighteen (18) inches of resoil at the ground surface shall be topsoil. Topsoil shall be defined as during excavation having a brown matrix color, less than 50% clay content, and enough organic materials to be generally suitable for vegetative growth.

C. Installation: Care shall be taken to keep heavy equipment off the surface material after it has been spread. If the resoiling material becomes compacted, the Contractor shall disc the material to a depth of four (4) inches at the Contractor's expense.

D. Measurement: The material shall be measured for payment by the ton (2,000 pounds) for material acceptably placed in the work as determined by certified scale weight tickets.

All material wasted or used by the Contractor for other purposes and any material not placed in the work in accordance with the requirements of the work order and these specifications and drawings shall be measured and not included for payment by weight. A conversion factor of 1.2 ton per cubic yard of resoil shall be used if necessary.

E. Payment: Payment for this work shall be made at the unit price per ton for **"Approved Resoil."**

SITE RESTORATION (Yard)

A. Description: This work shall cover all operations incidental to the establishment of grasses within the areas disturbed by the Contractor, including the furnishing and sowing of seed; and furnishing and applying of mulch materials, all in accordance with these specifications. Additionally, this work shall include, but not be limited to, repair of grounds and vegetation, including landscaping amenities, ornamental shrubs and trees damaged in any manner during the work operations. All areas shall be properly graded to a smooth final grade with topsoil and blended into adjoining areas at the most moderate slope possible. Seedbed preparation through the use of scarifying equipment is also required. All site restoration work is to be completed within **fourteen (14) days** of the completion of the construction activities. The Contractor may request in writing to the Division an extension for site restoration. Requests shall only be granted based on season or weather conditions.

B. Materials: The materials to be used for restoration shall conform to the applicable requirements of these specifications.

1. Lime: Pelletized lime shall be applied at a maximum rate of 400 pounds per acre. Rates may be adjusted by the Division at the time of application.

2. Fertilizer: Fertilizer shall be commercial grade (19-19-19) and shall be applied at a rate up to a maximum of 20-lbs/1000 sq. ft. Rates may be adjusted by the Division at the time of application.

3. Seed: The varieties of grass seed to be furnished to the project shall bear a tag on each bag of each species showing the lot number, grower's name, percent of purity, percent of germination, and weed content. Tags shall be provided to the Division.

   All seeds shall be free from noxious weeds and under no condition shall the total weed content of any lot of seed or seed mixture exceed one-half of one percent by weight.

No seed shall be utilized which has a mix date older than one year. The Division reserves the right to test, reject, or approve all seed after delivery to the project.

Species Composition:
Seed shall be applied to the project area, at a rate of 10 lbs/1000 sq. ft. and shall conform to the following seed mixture ratio:

98/85 Kentucky Bluegrass	50%
Perennial Ryegrass	50%

Other types of seed may be substituted if requested by the property owner(s). If such substitutions are made, they are to be made at no additional cost to the Division.

4. Mulching Material: All mulch material shall be free from mature seed-bearing stalks or roots or prohibited or noxious weeds. Any type of hay is not acceptable. Mulch shall include baled wheat straw or oat straw. It shall be dry and reasonably free of weeds, stalks, or other foreign material.

   For all required materials listed above, the Division reserves the right to request receipts, material specifications and/or weight tickets for verification.

C. Installation:

1. Start of Work: Site restoration work shall begin as soon as possible after the completion of construction. Final site restoration operations shall be completed within fourteen (14) working days of the final construction activities. The Contractor may request in writing to the Division an extension for site restoration. Requests shall only be granted based on **season or weather conditions.**

2. Area Preparation of Soil: Spread and grade available topsoil uniformly over all disturbed areas. All areas to be seeded shall be loosened by discing, harrowing, or other approved methods immediately prior to seeding. The soil shall be loosened to a depth of approximately three inches.

   Hand raking shall be required in all areas where machines do not obtain the results desired by the Division.

   Following tilling of the soil, the seedbed shall be allowed to firm up.

   Final prepared surface shall have a smooth final grade and be appropriate for a residential yard, free from rocks, large dirt clumps and any other foreign debris.

   Immediately following area preparation for seeding, materials shall be applied in the following order:
   - Lime, as applicable
   - Fertilizer, as applicable
   - Seed, after broadcasting or otherwise applying the seed, the surface of the seedbed shall be loosely disturbed by hand raking, dragging, and/or cultipacking.

   Lime, fertilizer and/or seed shall be sown by approved methods that provide for uniform distribution of the mixes as specified above.

3. Mulching: Apply the equivalent of 100 pounds per 1,000 square feet of clean straw mulch.

   Apply mulch to the sown area within 24 hours of seeding at the rate per square feet as specified above and spread to a uniform depth.

   The straw shall be placed in a moist condition or shall be moistened immediately after placement.

4. Maintenance and Repairs: The Contractor shall, during construction and prior to acceptance, properly care for all areas mulched and perform all mulching operations necessary to provide protection and establish growth of the seeded areas. Mulch that becomes displaced shall be reapplied at once, together with any necessary reseeding, all at no expense to the Division.

   No additional payment shall be made for acts of God, i.e. fire, flood, drought, etc.

D. Maintenance Period: The permanent planting of trees, shrubs, perennials, annuals, grasses and legumes, etc. shall be deemed to be acceptable if the species that were planted in accordance with the approved plans are established and maintained for one (1) "growing season" as defined below and meeting the following standards:

1. Growing Season: All landscaping shall be guaranteed for a period of one (1) summer growing season after planting. Planting material installed in the Fall shall be in full count and thrifty condition on the next succeeding September 15 at which time replacement shall be determined and scheduled for installation during the planting period of October 15 - December 1 of that same season. Planting material installed in the Spring shall be in full count and thrifty condition on the next succeeding May 15 at which time replacements shall be determined and scheduled for installation prior to June 1 of the same season. All plants installed in the summer shall be guaranteed for one (1) full summer and shall be in full count and thrifty condition the next succeeding September 15.

2. Acceptable Lawn/Turf Areas: A series of four (4) random line transects are to be laid out within the project boundaries. A string one hundred (100) feet long having one (1) foot graduation, shall be placed along the transect line. The person conducting the transect will then walk along the line counting only the markers which are in actual contact with the vegetation. The number of count points are to be recorded as subtotals. When the four transects are completed, the average of the four transects subtotals is then equal to the percent of vegetative cover for the project.

   a) Residential Lawns: At least one hundred percent (100%) of the land affected shall be judged to be of good quality, and "good" is defined as an area that has at least ninety percent (90%) cover.

      i. All land affected and having less than ninety percent (90%) cover shall be judged poor and deemed unacceptable; and

      ii. All areas judged to be good must have species diversity requirements of those recommended for planting.

   b) Farm & Field Turf: At least ninety percent (90%) of the land affected shall be judged to be of good quality, and "good" is defined as an area that has at least seventy-five percent (75%) cover.

i. The remaining ten percent (10%) of the land affected shall be judged to be of fair quality, and “fair” is defined as an area that has at least fifty percent (50%) cover but less than seventy-five percent (75%) cover;

ii. All land affected and having less than fifty percent (50%) cover shall be judged poor and deemed unacceptable; and

iii. All areas judged to be good or fair must have species diversity requirements of those recommended for planting.

E. Measurement: Measurement for payment of site restoration, which includes seedbed preparation, lime, fertilizer as applicable, seeding, mulching, shall be considered and measured as a unit satisfactorily completed and accepted by the Division.

F. Payment: Payment for this work, which includes seedbed preparation, liming, fertilizing, seeding, mulching, etc., and general cleanup shall be made at the lump sum price for **"Site Restoration (Yard)."**

SITE RESTORATION (Wayne National Forest)

A. Description: This work shall cover all operations incidental to the establishment of grasses within the areas disturbed by the Contractor, including the furnishing and sowing of seed; and furnishing and applying of mulch materials, all in accordance with these specifications. Additionally, this work shall include, but not be limited to, repair of grounds and vegetation, including landscaping amenities, ornamental shrubs and trees damaged in any manner during the work operations. All areas shall be properly graded to a smooth final grade with topsoil and blended into adjoining areas at the most moderate slope possible. Seedbed preparation through the use of scarifying equipment is also required. All site restoration work is to be completed within **fourteen (14) days** of the completion of the construction activities. The Contractor may request in writing to the Division an extension for site restoration. Requests shall only be granted based on season or weather conditions.

B. Materials: The materials to be used for restoration shall conform to the applicable requirements of these specifications.

1. Seed: The varieties of grass seed to be furnished to the project shall bear a tag on each bag of each species showing the lot number, grower's name, percent of purity, percent of germination, and weed content. Tags shall be provided to the Division.

   All seeds shall be free from noxious weeds and under no condition shall the total weed content of any lot of seed or seed mixture exceed one-half of one percent by weight.

   No seed shall be utilized which has a mix date older than one year. The Division reserves the right to test, reject, or approve all seed after delivery to the project.

2. Species Composition:

SEED MIX –WAYNE NATIONAL FOREST

February 1 to May 1	August 16 to November 15
25 lbs/acre Spring Oats	50 lbs/acre Winter Wheat or Annual Rye
10 lbs/acre Orchard Grass	10 lbs/acre Orchard Grass
15 lbs/acre Perennial Rye Grass	15 lbs/acre Perennial Rye Grass
10 lbs/acre Timothy Grass	10 lbs/acre Timothy Grass
Total 60 lbs/acre	Total 80 lbs/acre

May 2 to August 15	November 16 to January 31
50 lbs/acre Annual Rye Grass	50 lbs/acre Winter Wheat or Annual Rye
5 lbs/acre Orchard Grass	10 lbs/acre Orchard Grass
15 lbs/acre Perennial Rye Grass	15 lbs/acre Perennial Rye Grass
10 lbs/acre Timothy Grass	10 lbs/acre Timothy Grass
Total 80 lbs/acre	Total 85 lbs/acre

To aid in establishment the following fertilizer and lime recommended rates are encouraged. Lime may not be needed if known soil pH is higher than 6.

Quantity	Material
200 lbs/acre	14-14-14 Fertilizer / Acre
400 lbs/acre	Pelletized Lime / Acre

3. Mulching Material:
   a. The purpose of mulching is to provide a protective cover over seeded areas to reduce seed predation by birds, reduce soil erosion and aid in vegetation recovery by holding in moisture.

   b. Mulching is NOT necessary on very shaded and flat areas (LESS THAN 15% SLOPE).

   c. If the slope of the project area is GREATER THAN 15%, you must mulch with weed free straw at 1-1/2 tons per acre (sixty 50-lb bales per acre). This is equivalent to 1-1/2 (50 lb) bales per 1,000 square feet.

   d. On slopes GREATER THAN 25% additional mulching materials, such as fiber or plastic matting or netting, must also be used. All mulch material shall be free from mature seed-bearing stalks or roots or prohibited or noxious weeds. Any type of hay is not acceptable. Mulch shall include baled wheat straw or oat straw. It shall be dry and reasonably free of weeds, stalks, or other foreign material.

4. Fertilizer: If soil conditions justify its use, then minimum fertilization is recommended and should be no more than 5 to 10 pounds per 1,000 square feet or 200 to 400 pounds per acre of 14-14-14. Specific rate to be determined by the Division at the time of application.

5. Wayne National Forest Coordination: The Forest Service may consider alternative restoration measures depending on site conditions or negotiated terms of the project.

C. Installation:

1. Start of Work. Site restoration work shall begin as soon as possible after the completion of construction. Final site restoration operations shall be completed within fourteen (14) working days of the final construction activities. The Contractor may request in writing to the Division

an extension for site restoration. Requests shall only be granted based on **season or weather conditions.**

2. Area Preparation of Soil. Spread and grade available topsoil uniformly over all disturbed areas. All areas to be seeded shall be loosened by discing, harrowing, or other approved methods immediately prior to seeding. The soil shall be loosened to a depth of approximately three inches.

   Following tilling of the soil, the seedbed shall be allowed to firm up.

   Final prepared surface shall have a smooth final grade and be appropriate for a residential yard.

   Immediately following area preparation for seeding, seed shall be sown. Seed shall be sown by approved methods that provide for uniform distribution of the seed mix as specified above.

   After broadcasting or otherwise applying the seed, the surface of the seedbed shall be raked.

3. Mulching. As described above.

4. Applying and Anchoring Mulch. Apply mulch to the sown area within 24 hours of seeding at the rate per square feet as specified above and spread to a uniform depth.

   The straw shall be placed in a moist condition or shall be sprinkled immediately after placement.

5. Maintenance and Repairs. The Contractor shall, during construction and prior to acceptance, properly care for all areas mulched and perform all mulching operations necessary to provide protection and establish growth of the seeded areas. Mulch that becomes displaced shall be reapplied at once, together with any necessary reseeding, all at no expense to the Division.

D. Maintenance Period. The permanent planting of trees, shrubs, perennials, annuals, grasses and legumes, etc. shall be deemed to be acceptable if the species that were planted in accordance with the approved plans are established and maintained for one (1) "growing season" as defined below and meet the following standards:

1. Growing Season: All landscaping shall be guaranteed for a period of one (1) summer growing season after planting. Planting material installed in the Fall shall be in full count and thrifty condition on the next succeeding September 15 at which time replacement shall be determined and scheduled for installation during the planting period of October 15 - December 1 of that same season. Planting material install in the Spring shall be in full count and thrifty condition on the next succeeding May 15 at which time replacements shall be determined and scheduled for installation prior to June 1 of the same season. All plants installed in the summer shall be guaranteed for one (1) full summer and shall be in full count and thrifty condition the next succeeding September 15.

2. Acceptable Lawn/Turf Areas: A series of four (4) random line transects are to be laid out within the project boundaries. A string one hundred (100) feet long having one (1) foot graduation, shall be placed along the transect line. The person conducting the transect will then walk along the line counting only the markers which are in actual contact with the vegetation. The number of count points are to be recorded as subtotals. When the four transects are completed, the average of the four transects subtotals is then equal to the percent of vegetative cover for the project.

a) Residential Lawns: At least one hundred percent (100%) of the land affected shall be judged to be of good quality, and "good" is defined as an area that has at least ninety percent (90%) cover

i. All land affected and having less than ninety percent (90%) cover shall be judged poor and deemed unacceptable; and

ii. All areas judged to be good must have species diversity requirements of those recommended for planting.

b) Farm & Field Turf: At least ninety percent (90%) of the land affected shall be judged to be of good quality, and "good" is defined as an area that has at least seventy-five percent (75%) cover

i. The remaining ten percent (10%) of the land affected shall be judged to be of fair quality, and "fair" is defined as an area that has at least fifty percent (50%) cover but less than seventy-five percent (75%) cover;

ii. All land affected and having less than fifty percent (50%) cover shall be judged poor and deemed unacceptable; and

iii. All areas judged to be good or fair must have species diversity requirements of those recommended for planting.

E. Measurement: Measurement for payment of site restoration, which includes seedbed preparation, seeding, mulching, and fertilizing shall be considered and measured as a unit satisfactorily completed and accepted by the Division.

F. Payment: Payment for this work, which includes seedbed preparation, seeding, mulching, fertilizing, etc., and general cleanup shall be made at the lump sum price for **"Site Restoration (WNF)."**

DEMOBILIZATION

A. Description: This work shall consist of the demobilization of all personnel, plugging related equipment and materials as well as the cleanup of all areas upon completing all other work required under the scope of work for the well site.

B. Execution: Any damage to the road, drives, and/or culverts caused by the demobilization shall be repaired by the Contractor at the Contractor's expense. All repairs shall be done equal to or better to that which existed prior to construction activities.

This item shall also include the continued and proper use of any maintenance of traffic required within the road right-of-way per Part 7 of the General.

Also, the Contractor shall be responsible for cleaning mud and dirt associated with construction from all roadway surfaces (public and private) as per Part 7.1 of the General Specification for the duration of the Project and as directed by the Division.

C. Measurement: Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division. **Demobilization of equipment from the well site to well site for this project shall be considered incidental to this line item.**

If any portion of the item is non-performed (i.e., the mud and dirt are not cleaned from the roadway, damaged items not restored to the satisfaction of the Division, etc.) this is considered unsatisfactory and shall be cause for the rejection of payment of this item.

D. Payment: The cost of this work shall be included in the lump sum price for **"Demobilization."**

DETAILED SPECIFICATIONS
FIXED PRICE ITEMS
(Values set by the Division.)

SALVAGE MATERIAL REIMBURSEMENT

A. Description: This item shall consist of reimbursing the Division for all materials removed from the site for salvage including all surface equipment, well casing, tubing, production equipment, and marketable hydrocarbons.

B. Reimbursement: The Contractor shall supply salvage receipts to the Division for materials inventoried and removed from the site for salvage. The Division shall use these receipts as deduction of payment that will be represented on the Offer for this line item for this project.

C. Measurement: Measurement shall be made by salvage receipts amounts.

D. Payment: Deduction shall be entered as an amount for **"Salvage Material Reimbursement."**

CONTINGENCY SPECIFICATIONS

CONTINGENCY SPECFICATIONS WILL ONLY BE DIRECTED VIA A FIELD ORDER FROM THE DIVISION. THE FIELD ORDER WILL DEFINE THE QUANTITY APPROVED. CONTINGENCY SPECIFICATION USE WILL BE DETERMINED BASED ON-SITE CONDITIONS THAT ARE DETERMINED BY THE DIVISION.

SHOOTING

A. Description: This work consists of all labor, equipment, and material necessary to sever/shoot a casing or tubing at a determined depth for the purpose of removing the casing or tubing string by the means of shooting.

B. Execution: The Contractor shall complete the shooting of the casing or tubing at a depth approved by the Division. This work shall include a CCL and Bond Log at the discretion of the Division to locate free point of casing or tubing in the well.

The Contractor shall propose the material and method for shooting of the casing or tubing, which shall be approved by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the shooting the casing or tubing made at the unit price per each for **"Shooting"**.

ALTERNATIVE WELL CONTROL FLUID

A. Description: The work covered by this section shall consist of furnishing all labor, equipment, and material necessary to provide and use a weighted brine as a "kill" fluid for the plugging process of the well.

B. Materials: The Contractor shall provide a ten (10) pound per gallon brine solution.

A mud pump (or equivalent) of sufficient size/capacity shall be required to be onsite at all times during plugging operations as means to pump well control fluid when required.

C. Measurement: Measurement for payment for the above-described work shall be made by the actual quantity of barrels (bbls) of kill fluid used to successfully plug and/or drill the orphan well. The Division will at a minimum pay for the quantity required to be maintained on site.

D. Payment: Payment for the above work shall be made at the unit price per barrel (bbls) for **"Alternative Well Control Fluid."**

FISHING

A. Description: This work consists of all labor, equipment, and material necessary to remove and/or clear the well bore as needed in order to reach total depth by the means of fishing the obstruction in the well bore.

B. Execution: The Contractor shall supply the equipment needed to complete the fishing in an efficient manner that will be approved by the Division. This shall include but not be limited to the rig, impression blocks, and associated equipment. **This shall not include the fishing tools required to complete this work. The Division will develop a negotiated change order to deliver and use the appropriate fishing tools required based on the unforeseen conditions.** Appropriate fishing tools shall be provided for the circumstances encountered.

C. Measurement: Measurement for payment shall be made by field inspection of the actual quantity of hours in which the drilling rig and other fishing equipment were diligently operating in a manner to remove the obstruction.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the obstruction removal shall be made at the unit price per hour for **"Fishing"**.

MAGNET

A. Description: This work consists of all labor, equipment, and material necessary to supply a magnet and the required subs as the fishing tool.

B. Execution: The Contractor shall supply all equipment needed for a magnet fishing tool to be used for fishing out the well bore to the depth of the current obstruction and extracting it. This shall include but not be limited to the rig, subs, and associated equipment. Appropriate tools shall be provided for the circumstances encountered. The work to complete the fishing shall be per line item **"Fishing"**.

C. Measurement: Measurement for payment shall be made by the delivery of the magnet to extract the obstruction as satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary to supply the magnet to extract the obstruction shall be made at the per unit price per each for **"Magnet"**.

MILLING

A. Description: This work consists of all labor, equipment, and material necessary to remove and/or clear the well bore as needed in order to reach total depth by the means of milling the well bore.

B. Execution: The Contractor shall supply the equipment needed to complete the milling in an efficient manner that will be approved by the Division. This shall include but not be limited to the rig, swivel, mud pump, and associated equipment. **This shall not include the milling bits required to complete this work. The Division will develop a negotiated change order to deliver and use the appropriate milling bits required based on the unforeseen conditions.** Appropriate milling bits shall be provided for the circumstances encountered. Milling bits shall be factory made unless approved otherwise in writing by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of the actual quantity of hours in which the drilling rig and other milling equipment were diligently operating in a manner to remove the obstruction.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the obstruction removal shall be made at the unit price per hour for **"Milling"**.

LOST CIRCULATION MATERIALS

A. Description: This work shall include furnishing all labor, materials, equipment, and supplies necessary to expose portions of the well bore to lost circulation materials (LCM) as determined necessary. Lost circulation materials shall be implemented to aid in obtaining well bore circulation prior to any cementing operations.

B. Materials: Lost circulation materials shall be selected by the Contractor based on site conditions encountered and proposed to the Division for approval.

C. Measurement: Measurement for payment shall be based on the actual quantity of sacks of lost circulation materials satisfactorily placed and shall be verified with delivery tickets. For estimating purposes, it has been assumed that one (1) sack is equal to fifty (50) pounds.

D. Payment: Payment for all the above-described work shall be made at the unit price per sack for **"Lost Circulation Materials"**.

DRILLING MUD

A. Description: The work covered by this section shall consist of furnishing all labor, equipment, and material necessary to provide and use a water-based drilling mud for the drilling and plugging process of the well.

B. Materials: Based on the onsite conditions the Contractor shall propose a water-based drilling mud for approval from the Division. Once a material is approved the Division will require a minimum quantity be maintained at the site during the plugging project based on circumstances encountered.

C. Measurement: Measurement for payment for the above-described work shall be made by the actual quantity of sacks (50 lbs) of additives for the water-based drilling mud used to successfully plug the orphan well.

D. Payment: Payment for the above work shall be made at the unit price per sack for "Drilling Mud."

WELL CASING TAP

A. Description: This work consists of all labor, equipment, and material necessary to establish pressure relief control of the well. This item shall include the installation of a tap and valve onto the existing well casing as determined by the Division in the field.

B. Execution: The contractor is responsible for tapping the well casing, installing a new valve and "relieving" the well of any pressure according to best management practices.

All components associated with the tapping process shall be of size to properly fit the steel casing of interest and be able to withstand a minimum gas pressure of 1000 psi.

The Division shall make the determination for the overall exposed depth of casing. The casing shall be free from any damages or defects. If required, the casing shall be cleaned of any dirt, oils and debris prior to the installation of the saddle. At the discretion of the Division, further investigation of the well may be required in order to determine the adequacy of casing. This shall be paid for under line item **"Logging"**.

After the well casing is cleaned and the saddle is installed, the Contractor will then install the valve and all associated appurtenances. Upon approval from the Division, the Contractor may tap the casing. After tapping, the Contractor shall remove the tap along with the generated "coupon" and close the installed valve.

Once the valve is operational, the Contractor shall attach a 2-inch diameter (minimum) line to the valve which will be placed into a tank. This tank will be set a minimum of twenty (20) feet from the well. The Contractor will then slowly open the valve to relieve the pressure in the well. All fluids, gases and solids generated during this process will be diverted into the tank.

No plugging operations shall begin until the well pressure has ceased, and a satisfactory inspection of the well has been completed by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the well tap, valve and "relieving" process shall be made at the unit price per each for **"Well Casing Tap"**.

NINE SACK GROUT

A. Description: This work shall include furnishing all labor, materials, equipment, and supplies necessary to plug the well as specified in the **Plugging Plan**.

B. Materials: Nine Sack Grout shall consist of the following materials and requirements:

Constituent	SSD Weight (lbs.)	Volume ($ft.^3$)
Cement Type I-II	846.00	4.30
Sand	2550.00	15.54
Water	417.00	6.68

(SSD means saturated surface dry)

1. Cement Type I-II: Cement shall conform to 2023 ODOT CMS Item 701.02 and 701.04.

2. Sand: Sand shall be in accordance with ASTM C150.

3. Water: Water shall be in accordance with ASTM C1602.

The grout shall contain a maximum of 1% entrapped air.

Grout shall have a water to cement ratio (W/C) equal to 0.50 and an overall unit weight of 142.30 pounds per cubic foot.

Slump tests may be done at the discretion of the Division. Slump requirements shall be determined in the field at the time of construction.

The Division has accounted for excess materials due to loss in the wellbore in the quantities on the **Quantity Sheet**.

C. Installation: **The Contractor shall notify the Division at least 24 hours in advance of placing grout.** The surface plug shall be grouted to the depth described in the **Plugging Plan**.

Well preparation and circulation shall be achieved as detailed in the **"Well Preparation & Plugging"** line item and the **Plugging Plan**.

D. Setting: Setting times shall be completed as described in the **Plugging Plan.** For the casing any void space between the top of the grout and the top of the casing shall be filled to achieve a level grout line with the top of the casing. This shall be done at no additional cost to the Division.

E. Measurement: Measurement for payment for the above-described work shall be based upon material quantities satisfactorily installed as well as delivery tickets furnished to the Division.

F. Payment: Payment for all the above-described work shall be made at the unit price per cubic yard for **"Nine Sack Grout."**

DOWNHOLE VIDEOGRAPHY

A. Description: This work consists of all labor, equipment, and material necessary to video record the well bore in order to assess a well bore obstruction.

B. Execution: The Contractor shall supply all equipment needed and complete the videography recording of the well bore to the depth of the current obstruction. The Contractor shall supply the Division with an electronic copy of the videography recorded in a format viewable in readily available current software.

C. Measurement: Measurement for payment shall be made by the delivery of an acceptable video and photos to the Division of the current obstruction. Measurement shall be per obstruction, not per video or photo.

D. Payment: Payment for the above-described work, which includes all labor, materials, equipment necessary for the video recording of the current obstruction made at the per unit price per each for **"Downhole Videography"**.

PAVEMENT REPAIR

A. Description: This work shall include furnishing all labor, materials, equipment, and supplies necessary to complete the pavement repair, as required per Division inspection, once all equipment has been removed from the site during the final site restoration. This work shall also include furnishing all labor, materials, equipment, and supplies necessary to cut and remove the existing asphalt pavement and unsuitable base material. This work shall be completed per ODOT Standard Specification 253 Pavement Repair.

This work shall only include pavement that is located within the limits approved by the Division to complete the project as determined in the field. Any damage caused by the Contractor by working outside of the limits set shall be repaired at the Contractor's expense and conform to this line item.

B. Materials:

1. Chip Seal. For Township Road 420 the contractor shall conform to ODOT Standard Specifications Items 422 Chip Seal. Material shall be furnished from an ODOT approved source. Proof of current ODOT approval and aggregate samples may be required. The asphalt shall be rolled until smooth and match the grade and width of the existing pavement to the satisfaction of the Division.

2. Base. Dependent upon the condition of the encountered subgrade, No. 304 Aggregate base, a minimum of three (3) inches thick, shall be installed prior to the placement of asphalt at the discretion of the Division. All No. 304 Aggregate base placed shall be compacted by a minimum of three (3) passes of a vibratory plate compactor capable of exerting a minimum of 2,000 pounds of centrifugal force.

3. Surface Preparation. The areas between the existing subgrade and proposed asphalt shall be properly prepared as shown below conforming to ODOT Standard Specifications Items 408 Bituminous Prime Coat (0.25 gallons/square yard) and 407 Tack Coat (0.075 gallons/square yard).

4. Sealer. The joints between the existing and proposed asphalt will be sealed with a crack seal that conforms to ODOT Standard Specifications Item 423 Crack Seal (Type 1) and then the proposed

asphalt coated with an asphalt sealer (1.5 gallons/square yard). Asphalt sealer shall be as manufactured by Black Jack, Drive Maxx 700, or an approved equal.

C. Installation: The Division shall be notified at least 24 hours in advance of placing asphalt.

1. Excavation. Upon field evaluation of the existing asphalt pavement, within the limits of construction, by the Division, the Contractor shall excavate a minimum of three (3) inches below the existing grade of the pavement designated by the Division for removal. **All existing asphalt shall be removed by means of saw cutting based on Division inspection. All removal and disposal shall be considered incidental to this line item.**

2. Stone Base. The No. 304 Aggregate Base shall be placed within the limits of the excavation and compacted at the discretion on the division **as needed**.

3. Asphalt/Chip. The sub-base shall be inspected and approved by the Division prior to commencing with the asphalt/chip.

   Before placing the asphalt, all surfaces which will be in contact with the asphalt shall be thoroughly cleaned and the space occupied by the asphalt shall be free from all silt, dirt, shavings, rust, and other debris.

   Asphalt shall not be deposited in water

4. Hot Applied Joint Sealer. For the Asphalt Repair, the Contractor shall seal the joints between the existing and constructed asphalt and shall ensure the seal has a smooth finish.

D. Construction Methods:

1. The Contractor shall compact the pavement subgrade using a vibrating plate compactor as field conditions require per the Division. Sub-grade compaction shall be incidental to this line item.

2. Aggregate Base (ODOT Item 304 Aggregate Base) shall be placed and compacted using a vibrating plate compactor. The placement of the base material shall be approved by the Division prior to placement of the asphalt pavement. Compacted No. 304 aggregate shall be incidental to this line item.

3. The Contractor shall apply the Bituminous Prime Coat (ODOT Item 408) at the rate of 0.25 gallons per square yard with a pressure distributor or approved pressure spray method.

   When the prime coat has become tacky but not dry and hard, ODOT Item 441 Asphalt Concrete Intermediate Course, (Type 2), 448, shall be placed. The asphalt shall be compacted per ODOT Item 401.

   The Contractor shall apply the tack coat (ODOT Item 407) at the rate of 0.055 gallons per square yard with a pressure distributor or approved pressure spray method.

   When the tack coat has become tacky but not dry and hard, ODOT Item 441 Asphalt Concrete Surface Course, (Type 1), PG 64-22, shall be placed. The asphalt shall be compacted per ODOT Item 401.

   The completed surface shall match the grades and slopes of the adjacent existing surfacing and be free of offsets, depressions, raised places, and all other irregular surfaces.

The Contractor shall apply asphalt sealer at 1.5 gallons per square yard to the top of the asphalt pavement.

4. In the event the progress and scheduling of the work is such that the asphalt pavement replacement would occur in the winter months, during adverse cold weather, and/or during such times the asphalt plants are not in operation, then the final pavement replacement shall be postponed until favorable weather occurs in the spring and the asphalt and concrete plants resume normal operations. No bituminous concrete shall be laid when the temperature is below 40° F except by written permission of the Chief. "Cold Mix" asphalt is specifically prohibited.

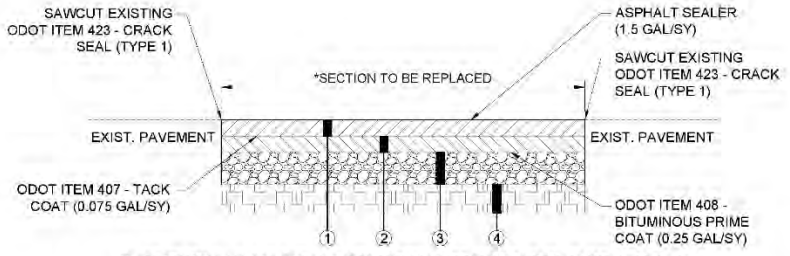
5. Pavement shall not be placed when the temperature is such that the pavement placed will freeze before it has had adequate time to set.

6. The Contractor shall be responsible for replacement of pavement that has been placed and which has been damaged by inclement weather conditions without additional compensation.

7. The joints between the replaced and existing sections of pavement shall be sealed with ODOT Item 705.04 Hot Applied Joint Sealer in a way that creates a smooth transition and completely seals the gap to the satisfaction of the Division.

E. Measurement: Measurement for payment for the asphalt pavement shall be made by actual field measurements of quantities satisfactorily installed at the site. The asphalt pavement shall be measured per square foot installed.

F. Payment: Payment for all the above-described work shall be made at the unit price per square foot for **"Pavement Repair"**.



① ODOT ITEM 441-1.5" ASPHALT CONCRETE, SURFACE COURSE, (TYPE 1), PG 64-22
② ODOT ITEM 441-2.5" ASPHALT CONCRETE, INTERMEDIATE COURSE, (TYPE 2)
③ 3" NO.304 AGGREGATE BASE (COMPACTED)
④ EXISTING SUBGRADE SECTION

NOTES:
1. THE PAVEMENT SECTION SHOWN IS FOR ESTIMATING PURPOSES CONTINGENCY LINE ITEM "PAVEMENT REPAIR".
2. THE CONTRACTOR SHALL BE REQUIRED TO PHOTO DOCUMENT THE EXISTING ASPHALT APRON PRIOR TO THE MOBILIZATION OF PLUGGING EQUIPMENT TO THE SITE.
3. *AT THE DISCRETION OF THE DIVISION, THE CONTRACTOR SHALL BE REQUIRED TO REPLACE ANY DAMAGED PORTIONS OF THE ROADWAY/DRIVE. THE FINAL PAVEMENT SECTION SHALL BE BASED ON THE EVALUATION OF EXISTING PAVEMENT SECTION.
4. IN ADDITION TO THE REPLACEMENT SECTION SHOWN. REMOVAL AND LAWFUL DISPOSAL OF THE DAMAGE DRIVE SHALL BE CONSIDERED INCIDENTAL TO THIS LINE ITEM.

ASPHALT PAVEMENT REPAIR SECTION
NOT TO SCALE

SCOPE OF WORK
WASHINGTON #16 PROJECT
Snider/German #1-8, Milton #7, & Farnsworth #1-7
Orphan Well Sites
Washington County, Independence Township

APPENDIX I – OHIO ONE-CALL

THE FOLLOWING ARE REPORTABLE INCIDENTS: *(OAC 1501:9-8-02)*		
TYPE OF INCIDENT (All Incident types associated with production operation or other activity regulated under Chapter 1509)	**QUANTITY** **(GAL, BBL,PPM)** **NOTE: 1 Barrel = 42 US Gallons**	**ADDITIONAL FACTORS**
Release of Gas	Any amount	Resulting from a Blow out; **OR**
		Uncontrolled Pop-off Valve (in Urban Area); **OR**
		Any gas release that is a threat to public safety
Release of Hydrogen Sulfide(H_2S) Gas (within the Working Area)	Exceeding **20 ppm** (Sustained airborne concentration); For duration > 10 min	**OR** any H_2S release resulting in injury or death of person
Fire / Explosion	N/A	In which a reporting person has called an emergency responder (9-1-1 or Fire Dept)
Release of Oil, Condensate, or Materials Saturated with Oil or Condensate	> 210 US gallons in any 24-hr period (Estimated)	**AND** the release is OUTSIDE secondary containment & into the environment
Release of Oil, Condensate, or Materials Saturated with Oil or Condensate	> 25 US gallons in any 24-hr period (Estimated); **AND** the release is outside secondary containment and into the environment	In an urban area; **OR**
		In an Emergency Management Zone of a surface water public drinking supply; **OR**
		In a 5-year time of travel with a groundwater-based public drinking supply; **OR**
		In a 100-year flood hazard area as delineated on the federal emergency management agency's (FEMA) national flood insurance rate map
Release of Refined Oil Products *(**EX:** oil-based drilling fluid, petroleum distillate, spent or unused paraffin solvent, gasoline, fuel oil, diesel fuel, or lubricants)*	> 25 US gallons in any 24-hr period	**AND** the release is OUTSIDE secondary containment & into the environment
Release of Oil, Condensate, or Materials Saturated with Oil or Condensate; OR Refined Oil Products	Any amount	That enters waters of the state in an amount that causes a film or sheen on the surface of the water
Release of Brine or Semi-Solid Waste *(EX: drilling mud, sludge, or tank bottom sediments)*	> 42 US gallons in any 24-hr period	**AND** the release is OUTSIDE secondary containment & into the environment
	> 42 US gallons	**AND** is operated by a person to whom a registration certificate has been issued (ORC 1509.222), or to whom a resolution has been issued (ORC 1509.226)

Release of Brine from a Vehicle, Vessel, Railcar, or Container		**AND** enters the environment
Release of Hazardous Substance (HS) / Extremely Hazardous Substance (EHS); OR Mixture or Solution including a HS or EHS	An amount Equal to or > than applicable reportable quantities listed in 40CFR tables; in any 24-hr period If the amount of one or more HS or EHS released is in an **unknown** mixture or solution, notify when the total amount of the mixture or solution released is equal to or > than the reportable quantity for the HS or EHS with the **lowest** reportable quantity	**List available at:** http://oilandgas.ohiodnr.gov/portals/oilgas/pdf/emergency/list_of_lists.pdf *Code of Federal Regulations (C.F.R.) References:* HS- *Appendix A 40 CFR Part 302.4* EHS- *Appendix A 40 CFR Part 355*

THE FOLLOWING ARE NOT REPORTABLE INCIDENTS: *(OAC 1501:9-8-02 (A)(7))*

1. Controlled flaring or controlled burns authorized under Chapter 1509. of the Revised Code or under 1501:9 of the Administrative Code or authorized by the terms and conditions of a permit issued under Chapter 1509. of the Revised Code;
2. Properly functioning emission control devices authorized pursuant to Revised Code Section 3704.03;
3. Subsurface detonation of perforation-guns;
4. Seismic shots;
5. Controlled blasting for well site construction

Date Last Edited & Printed: 9/27/2018

APPENDIX II: Well Photos

Snider-German #1
API # 34-167-6-6568-00-00
Washington County, Independence Township

Snider-German #1Wellhead

Snider-German pump and powerhouse

Snider-German #2
API # 34-167-6-6569-00-00
Washington County, Independence Township

Snider-German #2 Wellhead

Snider-German #3
API # 34-167-6-6570-00-00
Washington County, Independence Township

Snider-German #3

Snider-German #4
API # 34-167-6-6571-00-00
Washington County, Independence Township

Snider-German #4 Wellhead

Snider-German #5
API # 34-167-6-6572-00-00
Washington County, Independence Township

Snider-German #5 Wellhead

Snider-German #6
API # 34-167-6-6573-00-00
Washington County, Independence Township

Snider-German #6 Wellhead

Snider-German #7
API # 34-167-6-6581-00-00
Washington County, Independence Township

Snider-German #7 wellhead

Snider-German #8
API # 34-167-6-6582-00-00
Washington County, Independence Township

Snider-German #8 wellhead

Milton #7
API # 34-167-6-6574-00-00
Washington County, Independence Township

Milton #7 wellhead

Cooley-Milton 50-bbl tank

Farnsworth #1
API # 34-167-6-6575-00-00
Washington County, Independence Township

Farnsworth #1 wellhead

Production tanks for the Farnsworth wells

Power unit motor and 50-bbl steel tank

Farnsworth #2
API # 34-167-6-6576-00-00
Washington County, Independence Township

Farnsworth #2 wellhead

Farnsworth #3
API # 34-167-6-6577-00-00
Washington County, Independence Township

Farnsworth #3 wellhead

Farnsworth #4
API # 34-167-6-6578-00-00
Washington County, Independence Township

Farnsworth #4 wellhead

Farnsworth #5
API # 34-167-6-6579-00-00
Washington County, Independence Township

Farnsworth #5 wellhead

Farnsworth #6
API # 34-167-6-6580-00-00
Washington County, Independence Township

Farnsworth #6 wellhead

Farnsworth #7
API # 34-167-6-6624-00-00
Washington County, Independence Township

Farnsworth #7 wellhead

SCOPE OF WORK
WASHINGTON 16 PROJECT
Multiple Orphan Well Sites
Washington County, Independence Township

Appendix II – Well Records

Cooley & McLaughlin #100 (Offset Well)
API # 34-167-2-2021-00-00
Washington County, Independence Township

[redacted]

GEOLOGICAL SURVEY OF OHIO 22021 2021

OIL AND GAS WELL LOG

State Ohio
County Washington Township Independence Quadrangle
Lot Quarter Tract Section 9 NW NE SW
Measured 2638 Feet From S Line And 1072 Feet From E Line Of SE¼
107 acres
Land Owner W.H. Cooley & J.C. McLaughlin Well No. 100 Date Started July 23, 1955
Operator Barron Kidd (Leon Kearns) Well No. Date Completed Aug. 13, 1955
Elevation Bar. S. L. Total Depth 1651 Plugged Back
Formation Drilled To Producing Form Big Lime Init. Prod. Nat. oil
Shot or Acid Record Prod. A. S. or Acid Water flood
Init. Rock Press. Abandoned P & A 11/17/58
Casing Record 1- 12-': 8-¼ 763': 6-5/8 1198':

Formation	Top	Bottom	Remarks
soil	0	20	
sandstone	20	40	
shale	40	108	
limestone	108	112	
red rock	112	121	
shale	121	133	
red lime	133	212	
sandstone	212	240	
shale	240	305	
limestone	305	320	
shale	320	340	
red rock	340	356	
blue shale	356	375	
sandstone blue	375	385	
shale red & gr.	385	590	
limestone	590	600	
shale	600	615	
red rock	615	635	
shale blue	635	663	
red rock	663	700	
shale blue	700	754	
sandstone	754	785	
slate black	785	813	
sandstone	813	826	
shale	826	848	
sandstone	848	865	
sandy shale	865	930	
sandstone	930	978	
slate	978	981	
sandstone	981	1005	
shale	1005	1030	
shells & slate	1030	1090	
sandstone	1090	1150	gas at 1091: show oil 1127: water 1145:
shale	1150	1210	hole caving 1162-1170
sandstone	1210	1255	gas & show oil 1213-1219
slate & shells	1255	1301	
sandstone	1301	1352	
slate	1352	1397	
sandstone	1397	1420	
sandy slate bl.	1420	1448	
limestone	1448	1495	
Keener sandstone	1495	1522	Shale break at 1576-1585
Big Injin sand	1522	1650	shale break at 1593
shale gray	1650	1651	show oil at 1594-1596
			cored 1631-1651
			show oil at 1630-1649

S.B. McLaughlin #22 (Offset Well)
API # 34-167-2-1928-00-00
Washington County, Independence Township

8151 SCH:-GR-ML

GEOLOGICAL SURVEY OF OHIO

1928

21928

OIL AND GAS WELL LOG

State Ohio
County Washington Township Independence Quadrangle
Lot 1842 Quarter Tract Section 9 NW NE ¼ SW
Measured W Feet From Line And 1165 Feet From S Line Of NE¼
40 ~~&~~ acres
Land Owner S. B. McLaughlin Well No. 22 Date Started 5/29/54
Operator Tennessee Prod. Co. Well No. Date Completed 6/12/54
Elevation Bar. 1107 S. L. Total Depth 1951' Plugged Back
Formation Drilled To Producing Form Init. Prod. Nat. dry
Shot or Acid Record Prod. A. S. or Acid
Init. Rock Press. Abandoned
Casing Record 10 3/4"-78'; 5 3/16"-1940'

Formation	Top	Bottom	Remarks
Shale	80	120	red, S
shells		170	Brn & Gry, S
sand		280	gry, S
~~shale & shells~~		500	Var., S
Sandy Lime		560	Wh, S
Sandy shale		580	brn, S
Limestone		630	gry, H
Shale w/ Shells		960	Gry, Red, S
2nd C.R. sand		1011	Show gas @ 994
~~Shaly Sd~~		1050	gry, Med
~~Sandy shale~~		1160	Gry, Red, S
~~Sand~~		1175	Gry, H
Shale	1175	1183	gry, S
Lst. Salt sand		1210	Salt water 118
			@ 1183 cored
shale		1230	
sand		1280	Wh
shale		1367	Red, & gry
2nd Salt sand		1406	Oil odor
shale		1461	
3rd Salt sand		1504	show oil
Shale		1530	
sand		1565	gry
shale		1640	gry, red

Formation	Top	Bottom	Remarks
Maxton sand	1640	1669	Gry, cored
Shale Lime		1725	gry
Keener sand		1758	salt water taste
Big Injun sand 1st & 2nd		1794	show oil @ 1770 to 1779
Shaley sand		1880	
Sandy shale	1830	1865	
Big Injun sand 3rd	pay	1905	Show oil @ 1880 to 1884
Shaly sand		1921	
Squaw sand		1935	Oil odor @ 1922'
Shale		1951	
T.D.		1951	
Tr. Coal @ 375'			
Tr. Coal @ 610'			
2nd C.R. Sand cored with show gas @ 994			
1st Salt sand cored with salt water @ 1183 to 1210			
2nd Salt sand cored with oil odor			
3rd salt sand cored with show oil			
Maxton sand cored with no show			
Keener sand had salt water taste			
Big Injun Sand 1st & 2nd Pay had show oil from 1770 to 1779			
Big Injun sand 3rd pay had show oil from 1880 to 1884			
Squaw sand had oil odor @ 1922'			

Scope of Work
Quantity Sheet
Washington #16 Project
Washington County, Independence Townships
Well Name: Snider/German #1-8, Milton #7, & Farnsworth #1-7

Permit Number: 34-167-6-6568, 6569, 6570, 6571, 6572, 6573, 6581, 6582, 6574, 6575, 6576, 6577, 6578, 6579, 6580, & 6624

TD = 1460, 1650, 1950 Big Injun,

Line Number	Description		Quantity	Unit	
1	Mobilization		1	Lump Sum	
2	Clearing & Grubbing		1	Lump Sum	
3	Earthwork		1	Lump Sum	
4	Site Safety		16	Lump Sum	
5	Road Mats		16016	Sq. Ft.	
6	Timber Mats		4032	Sq. Ft.	
7	Airbridge (416 S.F.)		14	Lump Sum	
8	Airbridge (Stream Crossing #1)		1	Lump Sum	
9	Airbridge w/ Abutments (Stream Crossing #2)		1	Lump Sum	
10	Airbridge (Stream Crossing #3)		1	Lump Sum	
11	Airbridge w/ Abutments (Stream Crossing #4&5)		1	Lump Sum	
12	Airbridge w/ Abutments (Stream Crossing #9)		1	Lump Sum	
13	Secondary Containment		16	Lump Sum	
14	Silt Fence		150	Linear Ft	
15	Underdrains		40	Linear Ft	
16	Outlet Pipe		80	Linear Ft	
17	10" Steel Culvert		70	Linear Ft	
18	24" PE/PVC Culvert		60	Linear Ft	
19	No. 4 Stone		500	Ton	
20	No. 57 Stone		150	Ton	
21	Filter Fabric		1470	Sq. Yd.	
22	No. 4 Washed River Gravel		20	Ton	
23	Track Dump Truck		6	Month	
24	Excavator (OW>25Mton)		80	Hour	
25	Track-Types Tractor (170 HP<Bulldozer≤260 HP)		80	Hour	
26	Rock Excavation		50	Cu. Yd.	
27	Well Head Control		16	Lump Sum	
28	Well Control Fluid		1600	BBL	
29	Logging (GR/CCL/Bond)		16	Each	
30	Well Preparation & Plugging (Snider/German #1)		1	Lump Sum	
31	Well Preparation & Plugging (Snider/German #2)		1	Lump Sum	
32	Well Preparation & Plugging (Snider/German #3)		1	Lump Sum	
33	Well Preparation & Plugging (Snider/German #4)		1	Lump Sum	
34	Well Preparation & Plugging (Snider/German #5)		1	Lump Sum	

35	Well Preparation & Plugging (Snider/German #6)		1	Lump Sum	
36	Well Preparation & Plugging (Snider/German #7)		1	Lump Sum	
37	Well Preparation & Plugging (Snider/German #8)		1	Lump Sum	
38	Well Preparation & Plugging (Milton#7)		1	Lump Sum	
39	Well Preparation & Plugging (Farnsworth #1)		1	Lump Sum	
40	Well Preparation & Plugging (Farnsworth #2)		1	Lump Sum	
41	Well Preparation & Plugging (Farnsworth #3)		1	Lump Sum	
42	Well Preparation & Plugging (Farnsworth #4)		1	Lump Sum	
43	Well Preparation & Plugging (Farnsworth #5)		1	Lump Sum	
44	Well Preparation & Plugging (Farnsworth #6)		1	Lump Sum	
45	Well Preparation & Plugging (Farnsworth #7)		1	Lump Sum	
46	Tubing		1	Lump Sum	
47	Perforating		25	Each	
48	Severing		2	Each	
49	Approved Cement		6500	Sack	
50	Cement Mixing & Pumping		70	Each	
51	Fluid Disposal		2000	BBL	
52	Contaminated Material Disposal		160	Ton	
53	Salvage Material Disposal		1	Lump Sum	
54	Gas Line Abandonment		1	Lump Sum	
55	Plugged Well Casing Abandonment		1	Lump Sum	
56	Approved Resoil		80	Ton	
57	Site Restoration (Yard)		1	Lump Sum	
58	Site Restoration (WNF 100+00)		1	Lump Sum	
59	Site Restoration (WNF 200+00)		1	Lump Sum	
60	Site Restoration (WNF 300+00)		1	Lump Sum	
61	Site Restoration (WNF 400+00)		1	Lump Sum	
62	Site Restoration (WNF 500+00)		1	Lump Sum	
63	Site Restoration (WNF 600+00)		1	Lump Sum	
64	Site Restoration (WNF 700+00)		1	Lump Sum	
65	Site Restoration (WNF 800+00)		1	Lump Sum	
66	Demobilization		1	Lump Sum	
	Fixed Price Items				
67	Salvage Material Reimbursement	N/A	N/A	Each	N/A
	Additional/Contingency Services				
68	Logging (GR/CCL/Temp/Bond/Caliper)		5	Each	
69	Shooting		5	Each	
70	Alternative Well Control Fluid		1600	BBL	
71	Fishing		100	Hour	
72	Magnet		1	Each	
73	Milling		100	Hour	

74	Lost Circulation Materials		100	Sack	
75	Drilling Mud		100	Sack	
76	Well Casing Tap		4	Each	
77	Nine Sack Grout		5	Cubic Yard	
78	Downhole Videography		1	Each	
79	Pavement Repair		10000	Square Ft.	

Note: This quantity sheet is provided for reference only. The Contractor's Offer must be submitted online through Ohio Buys (https://das.ohio.gov/Divisions/General-Services/Procurement-Services/Ohio-Buys). Quantities are only an estimate. Payment shall be based on quantities satisfactorily completed.

Each contractor is responsible for logging into Ohio Buys and submitting an offer that is responsive to all amendments issued. All offers submitted prior to an amendment being issued shall become null/void and not considered in the opening. All amendments shall become part of the Scope of Work.

Offers must be fully submitted online through Ohio Buys (https://das.ohio.gov/Divisions/General-Services/Procurement-Services/Ohio-Buys) not later than,

12:00 PM on April 11, 2024.

SHEET INDEX

CONTACT INFORMATION

DIVISION OF OIL & GAS RESOURCES MANAGEMENT
OHIO DEPARTMENT OF NATURAL RESOURCES
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PROJECT ENGINEER
JAMES J. JUDGE, P.E.
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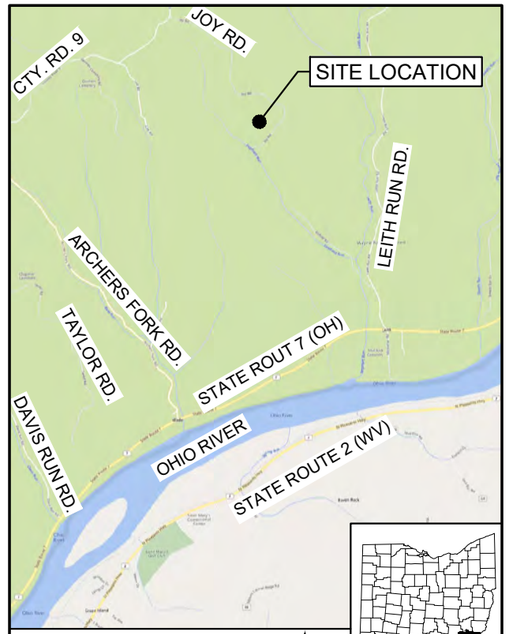
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT

WASHINGTON #16

SNIDER/GERMAN #1-8, MILTON #7, & FARNSWORTH #1-7 ORPHAN WELL SITES

ORPHAN WELL INFORMATION

WELL NAME	API NUMBER	COUNTY	TOWNSHIP	LATITUDE	LONGITUDE
SNIDER/GERMAN #1	34-167-6-6568-00-00	WASHINGTON	INDEPENDENCE	39.470870°	-81.163777°
SNIDER/GERMAN #2	34-167-6-6569-00-00	WASHINGTON	INDEPENDENCE	39.469580°	-81.163907°
SNIDER/GERMAN #3	34-167-6-6570-00-00	WASHINGTON	INDEPENDENCE	39.470807°	-81.161548°
SNIDER/GERMAN #4	34-167-6-6571-00-00	WASHINGTON	INDEPENDENCE	39.468526°	-81.162906°
SNIDER/GERMAN #5	34-167-6-6572-00-00	WASHINGTON	INDEPENDENCE	39.468410°	-81.161927°
SNIDER/GERMAN #6	34-167-6-6573-00-00	WASHINGTON	INDEPENDENCE	39.468361°	-81.160926°
SNIDER/GERMAN #7	34-167-6-6581-00-00	WASHINGTON	INDEPENDENCE	39.463782°	-81.160293°
SNIDER/GERMAN #8	34-167-6-6582-00-00	WASHINGTON	INDEPENDENCE	39.462639°	-81.159358°
MILTON #7	34-167-6-6574-00-00	WASHINGTON	INDEPENDENCE	39.467578°	-81.161005°
FARNSWORTH #1	34-167-6-6575-00-00	WASHINGTON	INDEPENDENCE	39.466409°	-81.162725°
FARNSWORTH #2	34-167-6-6576-00-00	WASHINGTON	INDEPENDENCE	39.467264°	-81.162497°
FARNSWORTH #3	34-167-6-6577-00-00	WASHINGTON	INDEPENDENCE	39.466659°	-81.163851°
FARNSWORTH #4	34-167-6-6578-00-00	WASHINGTON	INDEPENDENCE	39.465717°	-81.161313°
FARNSWORTH #5	34-167-6-6579-00-00	WASHINGTON	INDEPENDENCE	39.464880°	-81.161524°
FARNSWORTH #6	34-167-6-6580-00-00	WASHINGTON	INDEPENDENCE	39.464747°	-81.161628°
FARNSWORTH #7	34-167-6-6624-00-00	WASHINGTON	INDEPENDENCE	39.464792°	-81.162685°



LOCATION MAP
SCALE 1" = 1 MILE

LEGEND

PROPOSED WORK LIMITS — CWL
PROPOSED STONE
PROPOSED MATTING
PROPOSED SILT FENCE — SF
PROPOSED VENT LINE — G
EXISTING GUTTER LINE
EXISTING CURB
EXISTING EDGE OF PVMT
EXISTING EDGE OF DRIVE
EXISTING BUILDING
EXISTING PROPERTY LINE
EXISTING TOP OF BANK
EXISTING TOE OF SLOPE
EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
EXISTING BURIED ELECTRIC — E

PROPOSED VAULT
EXISTING ORPHAN WELL
EXISTING POWER POLE
EXISTING HYDRANT
EXISTING WATER VALVE
EXISTING GAS VALVE
EXISTING MONUMENT BOX
EXISTING CURB INLET
EXISTING ELECTRIC METER
EXISTING LIGHT POLE
EXISTING IRON PIN FOUND — I.P.F.
EXISTING SANITARY MANHOLE
FLOW DIRECTION ARROW
ABSORBENT BOOM
EXISTING STORM — ST
EXISTING SANITARY — SAN
EXISTING GAS — G
EXISTING OVERHEAD ELEC. — OHP

OHIO811.org Before You Dig
Call Before You Dig
CALL TWO WORKING DAYS BEFORE YOU DIG (NON MEMBERS MUST BE CALLED DIRECTLY)

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN APPROXIMATELY, BASED EITHER ON REPORTING BY RESPECTIVE OWNERS AND/OR BY FIELD LOCATION. HOWEVER, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES THAT MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL MAINTAIN A CURRENT 10 DAY OUPS/OGPUPS TICKET DURING THE ENTIRE PROJECT BY CONTACTING OUPS EVERY 10 DAYS. BOTH OUPS AND OGPUPS CAN BE COMPLETED USING THE OHIO 811 ONE CALL SERVICE BY PHONE OR ON THE WEB.

THIS DOCUMENT WAS ORIGINALLY ISSUED BY JAMES J. JUDGE, P.E.
THIS DOCUMENT IS NOT CONSIDERED A SEALED DOCUMENT & IS FOR OFFER SUBMITTAL PURPOSES ONLY

71899

JAMES J. JUDGE, P.E. NO. DATE
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MGMT

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
http://oilandgas.ohiodnr.gov

TITLE SHEET

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

DESIGN UNIT
O&G ENGINEERING
DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
DATE: 09/12/2022
SHEET NO.
1 OF 13

EDIT DATE: 8/10/2023 8:48 AM EDIT BY: 10103347 DRAWING FILE: M:\ORPHAN WELL PROGRAM\PROJECTS\WASHINGTON COUNTY\WASHINGTON16 (FARNSWORTH, MILTON, SNIDER)\ENGINEERING DESIGN\DRAWINGS\FINAL DRAWING\WASHINGTON16.DWG

ESTIMATED SITE RESTORATION QUANTITIES 700+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	40 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	12 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	16 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	16 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	17 LBS
MULCH	ALL	75 LBS/ACRE	20 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	80 LBS

NOTE: THIS IS FOR THE 700+00 ALIGNMENT. IT SHALL INCLUDE THE SNIDER/GERMAN #3.

ESTIMATED SITE RESTORATION QUANTITIES 500+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	111 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	33 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	45 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	45 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	47 LBS
MULCH	ALL	75 LBS/ACRE	54 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	223 LBS

NOTE: THIS IS FOR THE 500+00 ALIGNMENT. IT SHALL INCLUDE THE SNIDER/GERMAN #4.

ESTIMATED SITE RESTORATION QUANTITIES 400+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	65 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	20 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	26 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	26 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	28 LBS
MULCH	ALL	75 LBS/ACRE	32 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	131 LBS

NOTE: THIS IS FOR THE 400+00 ALIGNMENT.

ESTIMATED SITE RESTORATION QUANTITIES 800+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	145 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	44 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	58 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	58 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	62 LBS
MULCH	ALL	75 LBS/ACRE	71 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	290 LBS

NOTE: THIS IS FOR THE 800+00 ALIGNMENT INCLUDING THE SNIDER/GERMAN #6, AND MILTON #7.

ESTIMATED SITE RESTORATION QUANTITIES 600+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	433 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	130 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	173 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	173 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	184 LBS
MULCH	ALL	75 LBS/ACRE	210 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	865 LBS

NOTE: THIS IS FOR THE 600+00 ALIGNMENT. IT SHALL INCLUDE THE SNIDER/GERMAN #1, #2, AND EQUIPMENT SITE #1.

PROPOSED INGRESS/EGRESS POINT
N=532843.39, E=2349533.81, EL=616.41
LAT=39.455168°, LONG=-81.150484°

YOST #3 PRODUCTION WELL
API No.34-167-2-5910-00-00
N= 538367.70, E= 2345624.09, EL= 1097.34
LAT=39.470493°, LONG=-81.164040°

YOST #5 PRODUCTION WELL
API No.34-167-2-2475-00-00
N= 533032.38, E= 2349336.54, EL= 624.86
LAT=39.455695°, LONG=-81.151173°

ENTRANCE & STREAM CROSSING #1 SEE SHEET 11

EQUIPMENT SITE #8
SEE SHEET 11

MATTED WET AREA & DITCH CROSSING #1 SEE SHEET 9

DITCH CROSSING #2 & 3 SEE SHEET 10

GRIMES #1 PRODUCTION WELL
API No.34-167-2-6563-00-00
N= 534084.38, E= 2348054.87, EL= 717.10
LAT=39.458635°, LONG=-81.155656°

EQUIPMENT SITE #7
SEE SHEET 10

PLUGGED ORPHAN WELL
TO BE CUT OFF BELOW GRADE PER
"PLUGGED WELL CASING ABANDONMENT"
API No.34-167-6-XXXX-00-00
N= 534252.55, E= 2347937.97, EL= 725.00
LAT=39.459102°, LONG=-81.156061°
SEE SHEET 10

SNIDER/GERMAN #8 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6582-00-00
N= 535526.93, E= 2346988.01, EL= 774.93
LAT=39.462639°, LONG=-81.159358°
SEE SHEET 4

EQUIPMENT SITE #6
SEE SHEET 10

DITCH CROSSING #4
SEE SHEET 9

PRODUCTION COLLECTOR LINE TO BE MOVED OR BRIDGED AS NEEDED. COORDINATE WITH PRODUCTION COMPANY AND REPAIR IF NEEDED.

DITCH CROSSING #5
SEE SHEET 9

ABANDONED HOME SITE DO NOT DISTURB

FARNSWORTH #5 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6579-00-00
N= 536334.15, E= 2346364.38, EL= 765.20
LAT=39.464880°, LONG=-81.161524°
SEE SHEET 6

FARNSWORTH #6 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6580-00-00
N= 536285.17, E= 2346335.90, EL= 766.88
LAT=39.464747°, LONG=-81.161628°
SEE SHEET 6

FARNSWORTH #4 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6578-00-00
N= 536639.65, E= 2346419.49, EL= 847.28
LAT=39.465717°, LONG=-81.161313°
SEE SHEET 6

FARNSWORTH #7 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6624-00-00
N= 536297.11, E= 2346037.25, EL= 856.34
LAT=39.464792°, LONG=-81.162685°
SEE SHEET 7

EQUIPMENT SITE #3
SEE SHEET 7

STREAM CROSSING #6, 7, & 8
SEE SHEET 7

FARNSWORTH #1 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6575-00-00
N= 536885.96, E= 2346017.33, EL= 783.11
LAT=39.466409°, LONG=-81.162725°
SEE SHEET 5

FARNSWORTH #3 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6577-00-00
N= 536972.31, E= 2345698.07, EL= 818.40
LAT=39.466659°, LONG=-81.163851°
SEE SHEET 5

HOME SITE DO NOT DISTURB

SNYDER #1 PRODUCTION WELL
API No.34-167-2-5910-00-00
N= 538367.70, E= 2345624.09, EL= 1097.34
LAT=39.470493°, LONG=-81.164040°

STREAM CROSSING #9
SEE SHEET 8

STREAM CROSSING
#4 & 5 SEE SHEET 7

EQUIPMENT SITE #4
SEE SHEET 6

STREAM CROSSING #3
SEE SHEET 6

STREAM CROSSING #2
SEE SHEET 6

EQUIPMENT SITE #5
SEE SHEET 6

DITCH CROSSING #6
SEE SHEET 9

MILTON #7 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6574-00-00
N= 537318.56, E= 2346496.43, EL= 955.15
LAT=39.467578°, LONG=-81.161005°
SEE SHEET 5

EQUIPMENT SITE #1
SEE SHEET 7

SNIDER/GERMAN #7 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6581-00-00
N= 535939.20, E= 2346718.05, EL= 790.02
LAT=39.463782°, LONG=-81.160293°
SEE SHEET 4

EQUIPMENT SITE #2
SEE SHEET 4

STREAM CROSSING #10
SEE SHEET 4

SNIDER/GERMAN #6 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6573-00-00
N= 537604.26, E= 2346514.59, EL= 951.69
LAT=39.468361°, LONG=-81.160926°
SEE SHEET 4

SNIDER/GERMAN #5 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6572-00-00
N= 537617.89, E= 2346231.71, EL= 869.15
LAT=39.468410°, LONG=-81.161927°
SEE SHEET 4

SNIDER/GERMAN #4 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6571-00-00
N= 537655.93, E= 2345954.80, EL= 982.90
LAT=39.468526°, LONG=-81.162906°
SEE SHEET 3

SNIDER/GERMAN #3 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6570-00-00
N= 538492.55, E= 2346325.83, EL= 1035.23
LAT=39.470807°, LONG=-81.161548°
SEE SHEET 3

SNIDER/GERMAN #2 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6569-00-00
N= 538035.62, E= 2345666.40, EL= 1088.78
LAT=39.469580°, LONG=-81.163907°
SEE SHEET 3

PRODUCTION WELL
TANK BATTERY DO
NOT DISTURB

US/M JOY #1 PRODUCTION WELL
API No.34-167-2-6431-00-00
N= 539634.38, E= 2345902.90, EL= 1035.00
LAT=39.473959°, LONG=-81.162986°

SNIDER/GERMAN #1 ORPHAN WELL
TO BE PLUGGED PER THE "PLUGGING PLAN"
API No.34-167-6-6568-00-00
N= 538506.16, E= 2345696.25, EL= 1096.17
LAT=39.470870°, LONG=-81.163777°
SEE SHEET 3

ESTIMATED SITE RESTORATION QUANTITIES		
COMPONENT	RATE	QUANTITY
FERTILIZER	20 LBS/1000 S.F.	312 LBS
SEED (YARD)	75 LBS/1 ACRE	156 LBS
MULCH	100 LBS/1000 S.F.	35 BALES
PELLETIZED LIME	400 LBS/ACRE	143 LBS

NOTE: THIS IS FOR THE 100+00 ALIGNMENT FROM TOWNSHIP ROAD 420 TO CROSSING #1.

ESTIMATED SITE RESTORATION QUANTITIES 100+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	615 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	185 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	246 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	246 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	262 LBS
MULCH	ALL	75 LBS/ACRE	298 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	1,229 LBS

NOTE: THIS IS FOR THE 100+00 ALIGNMENT NORTH OF CROSSING #1. IT SHALL INCLUDE THE SNIDER/GERMAN #7, #8, FARNSWORTH #4, #5, #6, EQUIPMENT SITE #5, #6, AND STREAM CROSSING #1, #2, & #3.

ESTIMATED SITE RESTORATION QUANTITIES 200+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	322 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	97 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	129 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	129 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	137 LBS
MULCH	ALL	75 LBS/ACRE	156 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	644 LBS

NOTE: THIS IS FOR THE 200+00 ALIGNMENT. IT SHALL INCLUDE THE SNIDER/GERMAN #5, FARNSWORTH #1, #2, #3, EQUIPMENT SITE #5, #6, AND STREAM CROSSING #4, & #5.

ESTIMATED SITE RESTORATION QUANTITIES 300+00			
COMPONENT	DATES	RATE	QUANTITY
FERTILIZER	ALL	200 LBS/ACRE	70 LBS
SEED (WAYNE NATIONAL FOREST)	FEB 1 TO MAY 1	60 LBS/ACRE	21 LBS
	MAY 2 TO AUG 15	80 LBS/ACRE	28 LBS
	AUG 16 TO NOV 15	80 LBS/ACRE	28 LBS
	NOV 16 TO JAN 31	85 LBS/ACRE	30 LBS
MULCH	ALL	75 LBS/ACRE	34 BALES
PELLETIZED LIME	ALL	400 LBS/ACRE	140 LBS

NOTE: THIS IS FOR THE 300+00 ALIGNMENT. IT SHALL INCLUDE THE FARNSWORTH #7, THE 10+00 ALIGNMENT, AND EQUIPMENT SITE #3.

0' 250' 500' 750'

BAR SCALE

NOTE: ALL WORK SHOWN ON THIS SHEET SHALL ALSO BE IN ACCORDANCE WITH THE ASSOCIATED SCOPE OF WORK DOCUMENT AND THE GENERAL NOTES LISTED ON THE DETAIL SHEET.

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
http://oilandgas.ohiodnr.gov

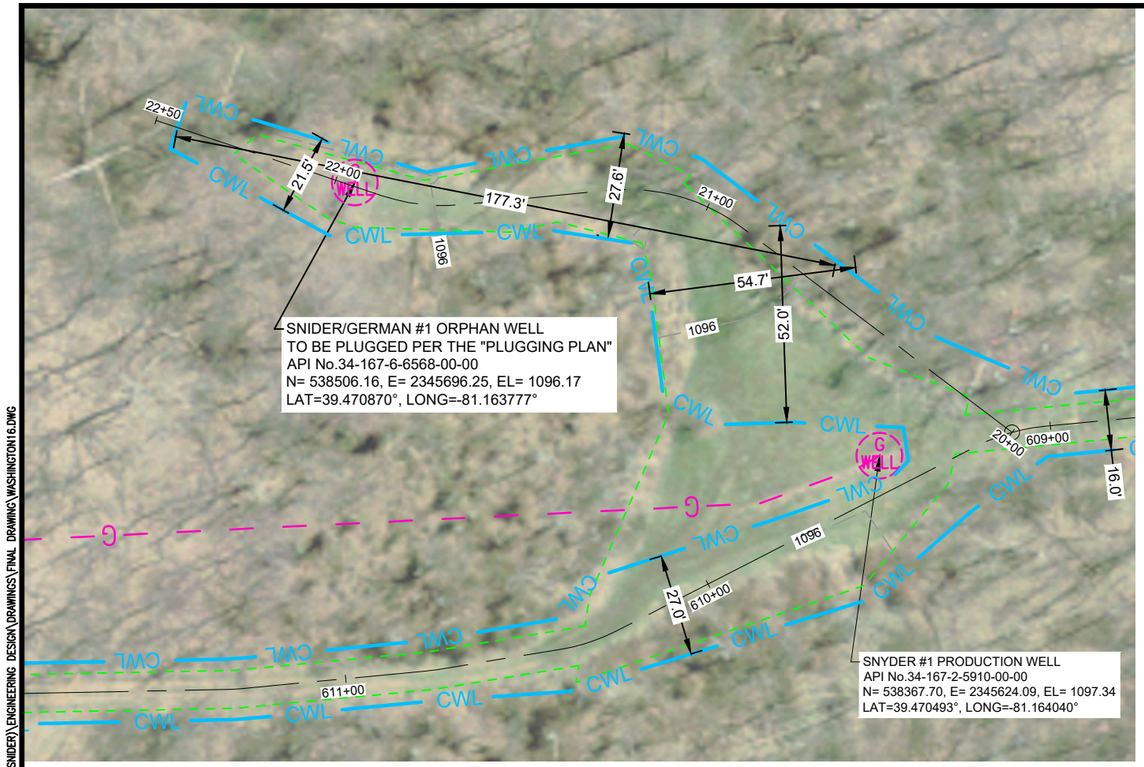
SITE MAP

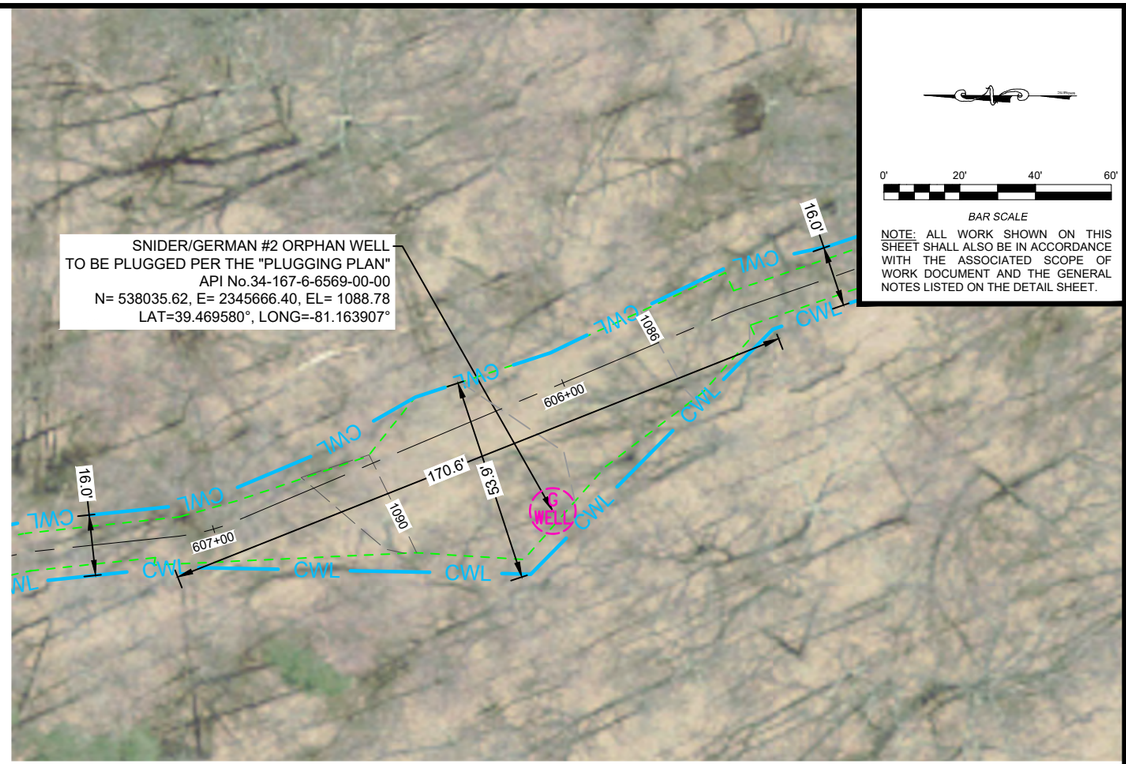
WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

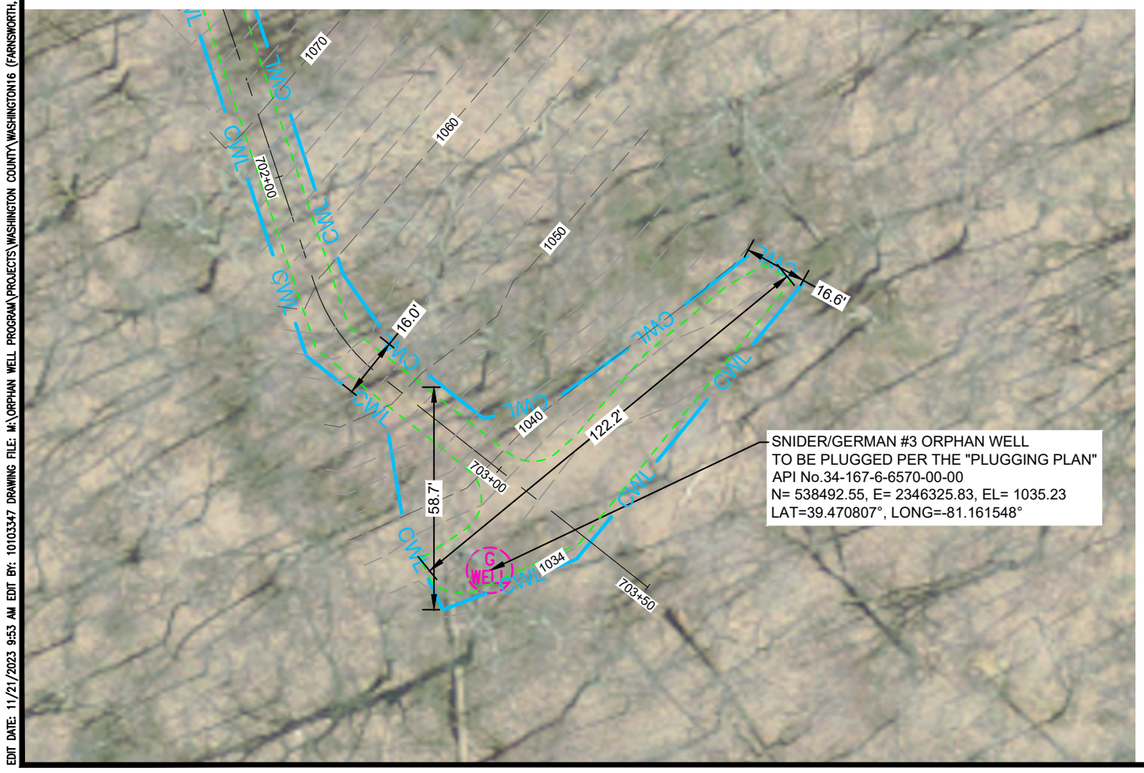
REVISION

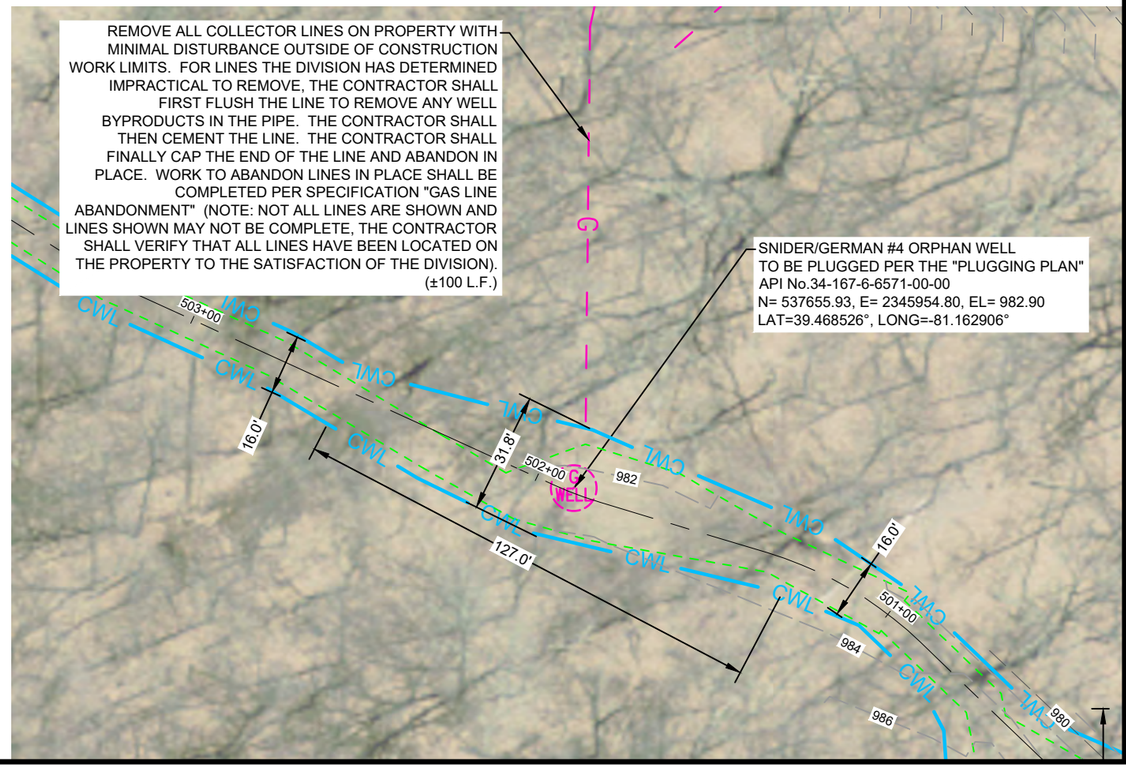
DESIGN UNIT
O&G ENGINEERING
DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
DATE: 09/12/2022
SHEET NO.
2 OF 13

EDIT DATE: 8/10/2023 8:48 AM EDIT BY: 10103347 DRAWING FILE: M:\ORPHAN WELL PROGRAM\PROJECTS\WASHINGTON COUNTY\WASHINGTON16 (FARNSWORTH, MILTON, SNIDER)\ENGINEERING DESIGN\DRAWINGS\FINAL DRAWING\WASHINGTON16.DWG









0' 20' 40' 60'

BAR SCALE

NOTE: ALL WORK SHOWN ON THIS SHEET SHALL ALSO BE IN ACCORDANCE WITH THE ASSOCIATED SCOPE OF WORK DOCUMENT AND THE GENERAL NOTES LISTED ON THE DETAIL SHEET.

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
http://oilandgas.ohiodnr.gov

SITE PLAN
SNIDER/GERMAN #1-4

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

DESIGN UNIT: O&G ENGINEERING
DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
DATE: 09/12/2022
SHEET NO. 3 OF 13

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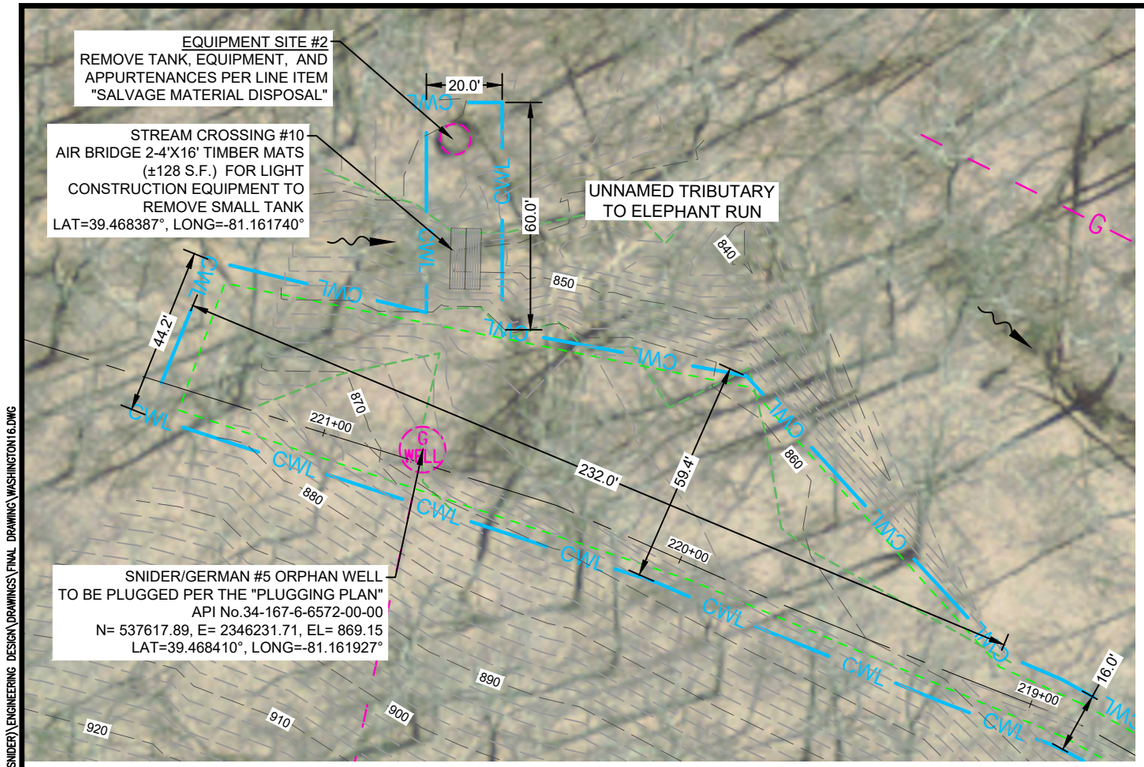
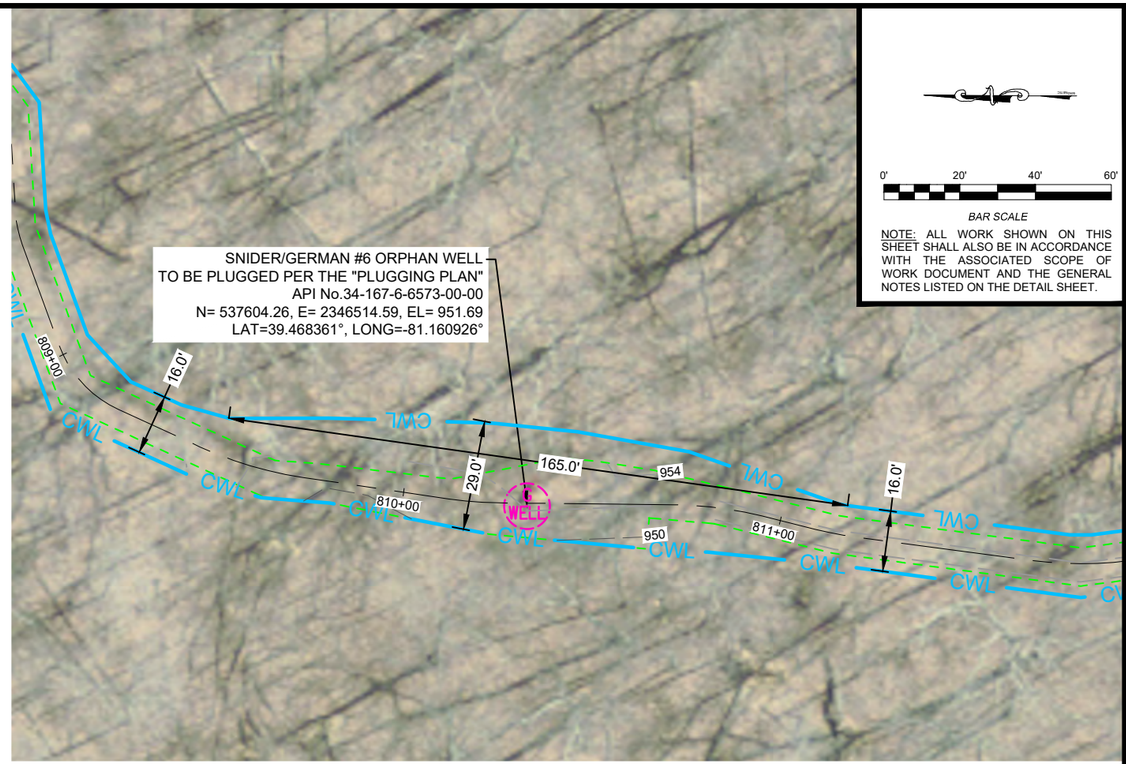
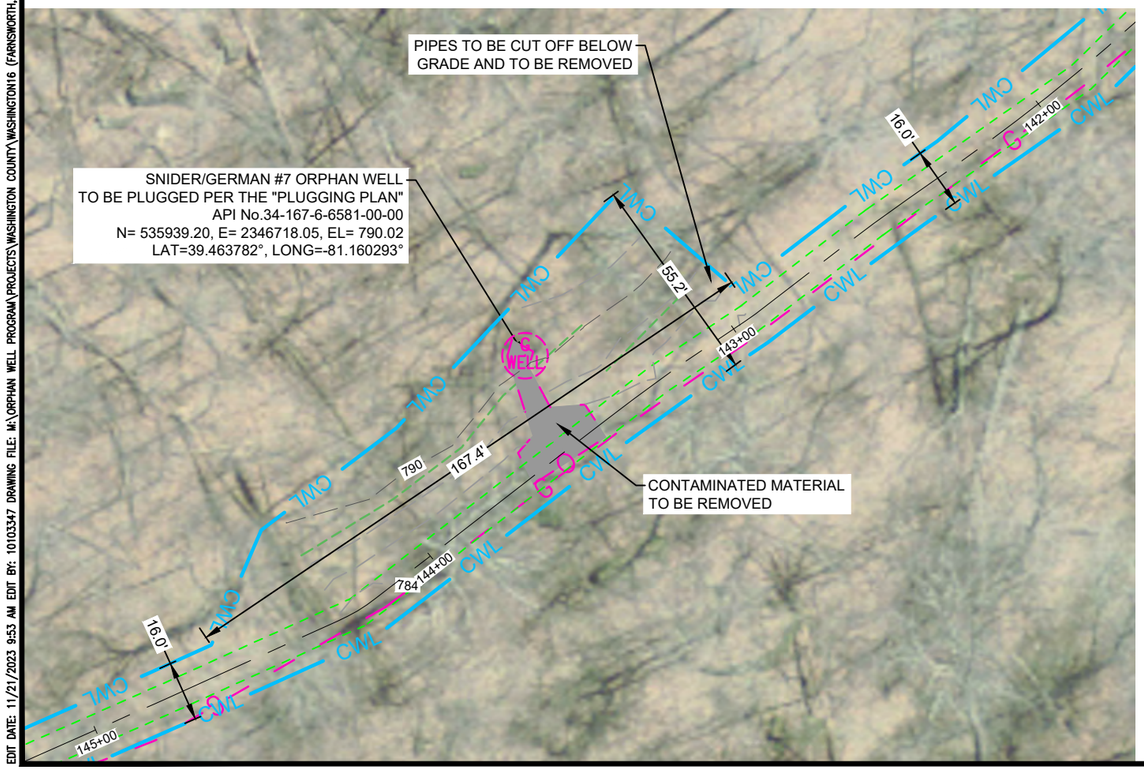
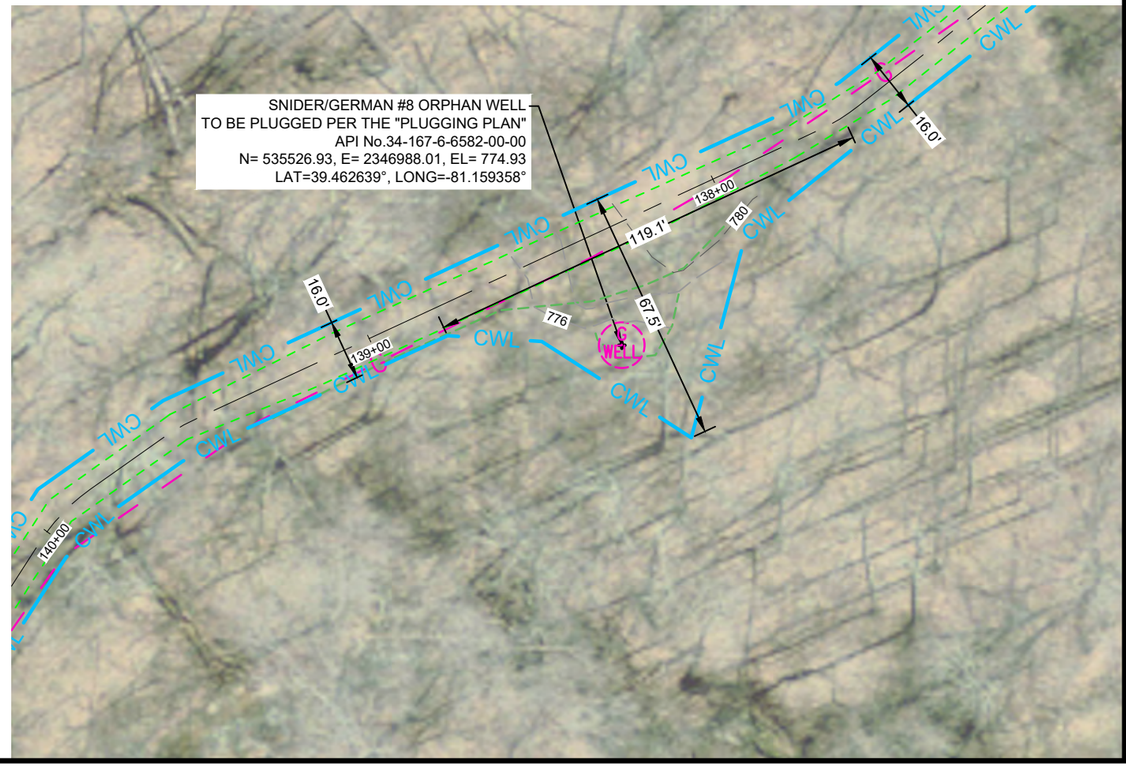








0' 20' 40' 60'

BAR SCALE

NOTE: ALL WORK SHOWN ON THIS SHEET SHALL ALSO BE IN ACCORDANCE WITH THE ASSOCIATED SCOPE OF WORK DOCUMENT AND THE GENERAL NOTES LISTED ON THE DETAIL SHEET.

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
http://oilandgas.ohiodnr.gov

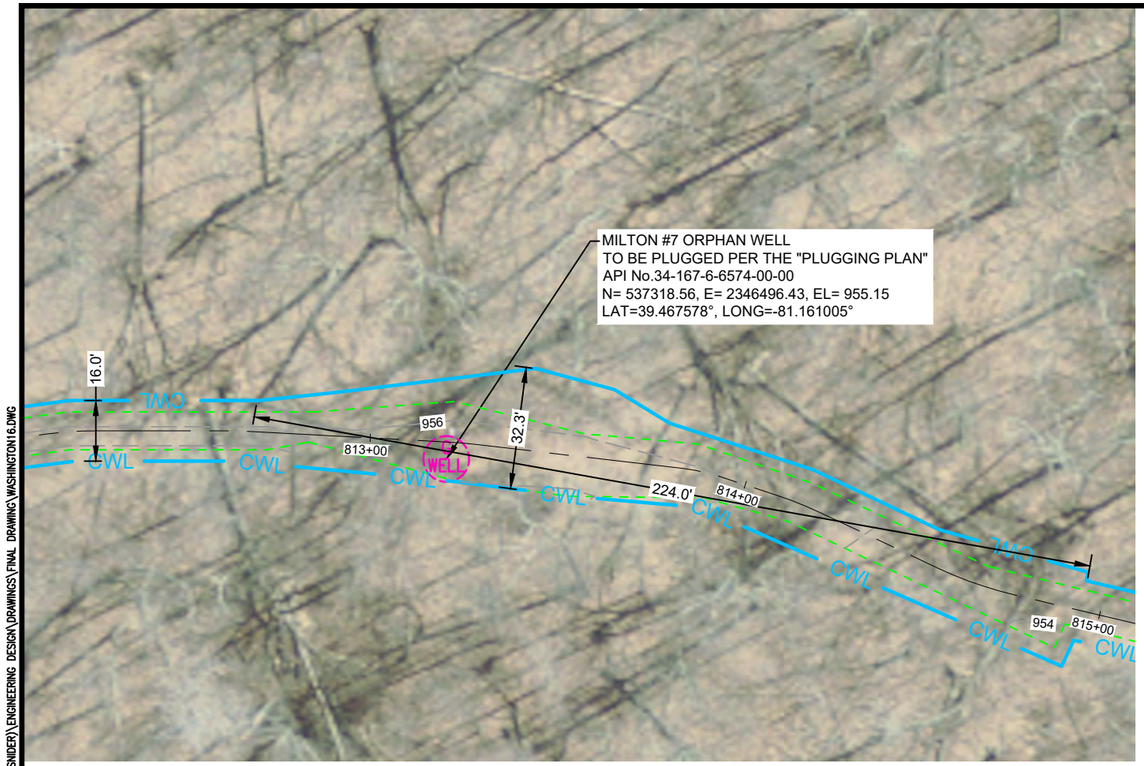
SITE PLAN
SNIDER/GERMAN #5-8, & EQUIPMENT SITE #2

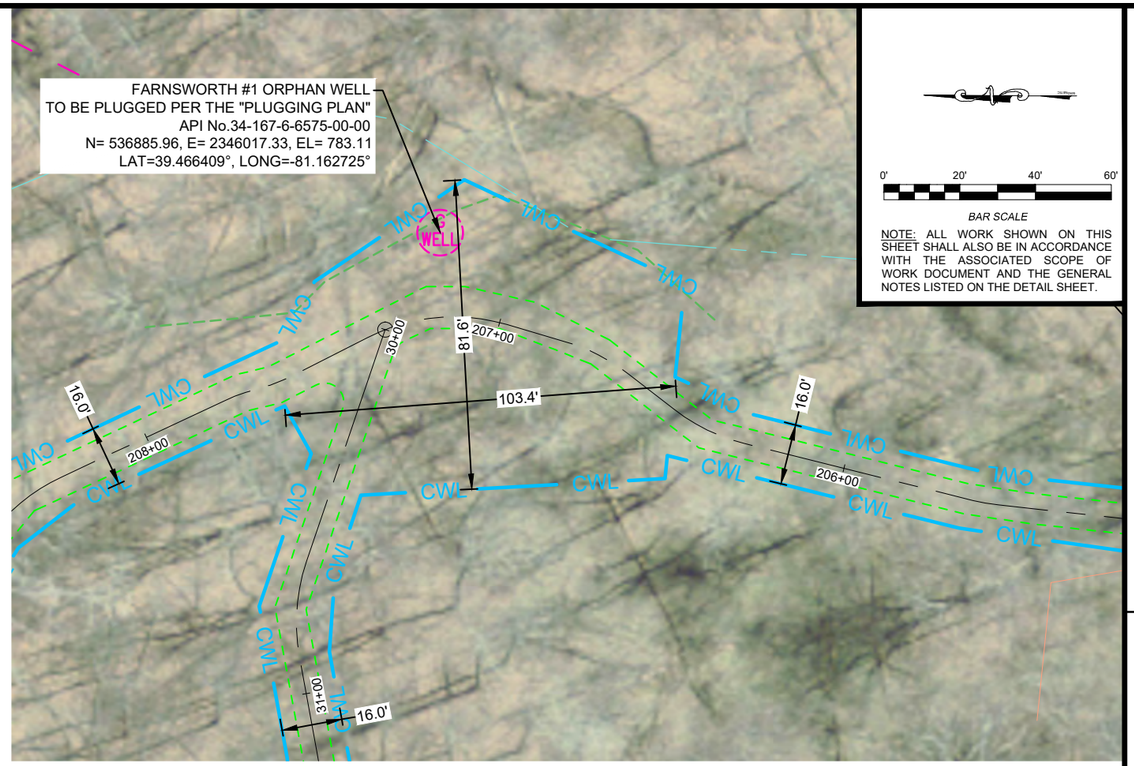
WASHINGTON #16 MULTIPLE ORPHAN WELL SITES

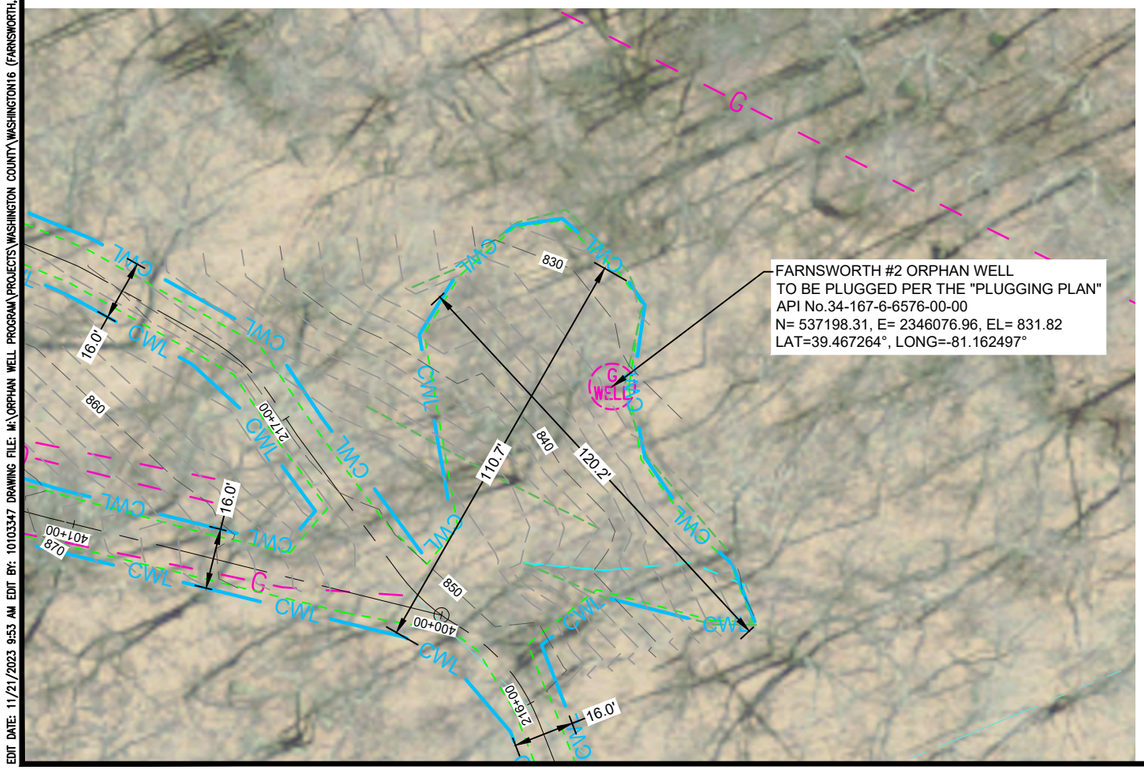
REVISION

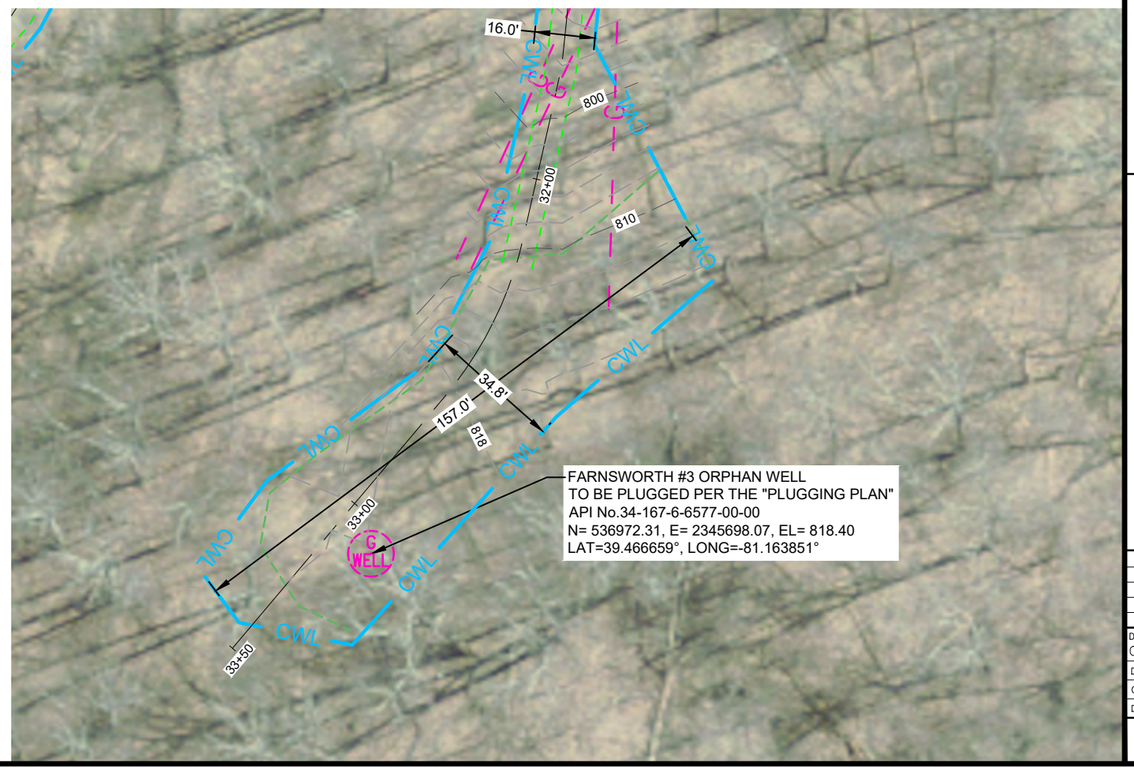
DESIGN UNIT: O&G ENGINEERING
DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
DATE: 09/12/2022
SHEET NO. 4 OF 13

EDIT DATE: 11/21/2023 9:53 AM EDIT BY: 10103347 DRAWING FILE: M:\ORPHAN WELL PROGRAM\PROJECTS\WASHINGTON COUNTY\WASHINGTON16 (FARNSWORTH, MILTON, SNIDER)\ENGINEERING DESIGN\DRAWINGS\FINAL DRAWING\WASHINGTON16.DWG









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BAR SCALE

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DIVISION OF OIL & GAS
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SITE PLAN
MILTON #7, &
FARNSWORTH #1-3

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

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5 OF 13

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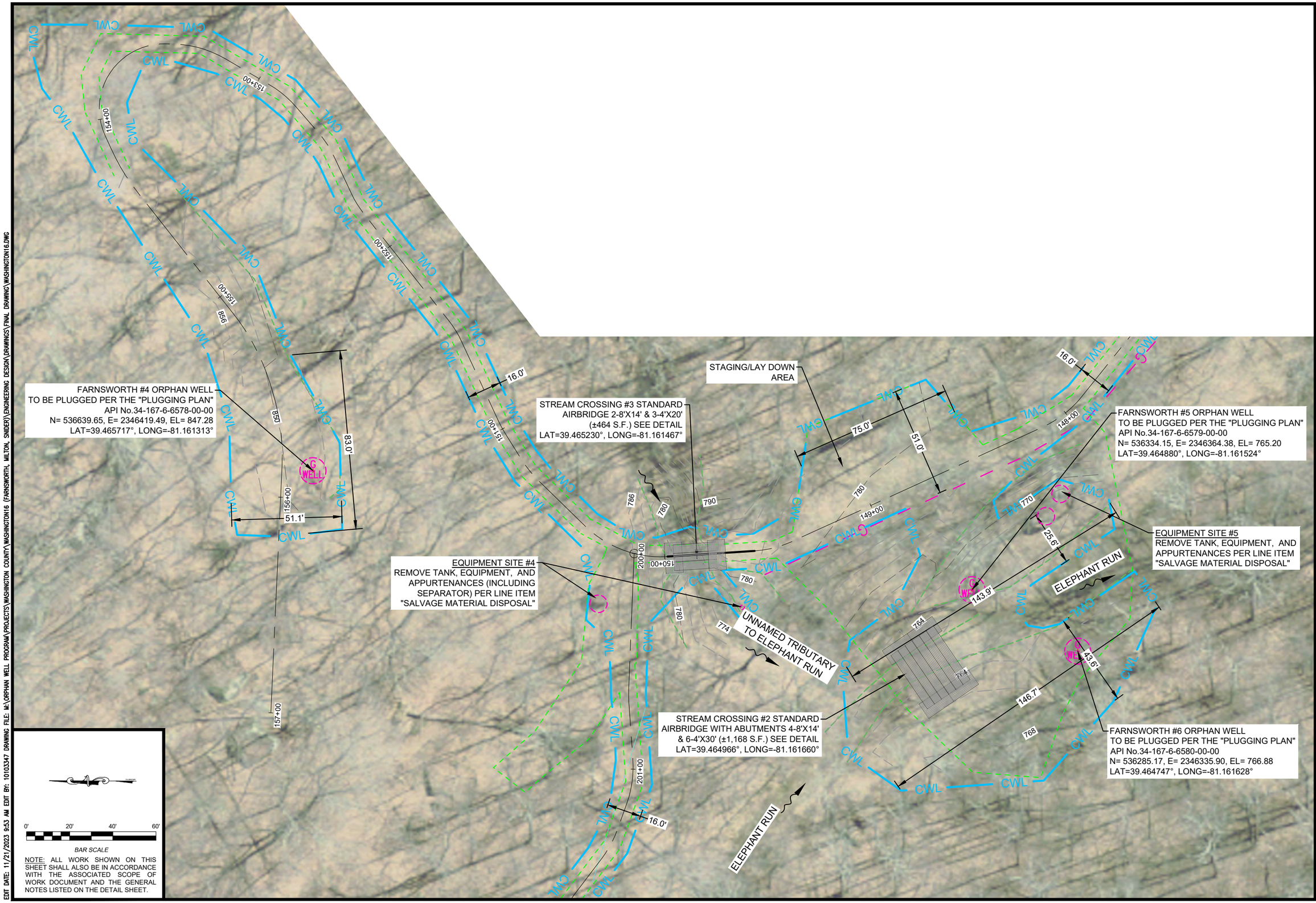

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BAR SCALE

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SITE PLAN
FARNSWORTH #4-6, STREAM CROSSINGS #2-3, & EQUIPMENT SITE #4-5

WASHINGTON #16 MULTIPLE ORPHAN WELL SITES

REVISION

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DATE: 09/12/2022
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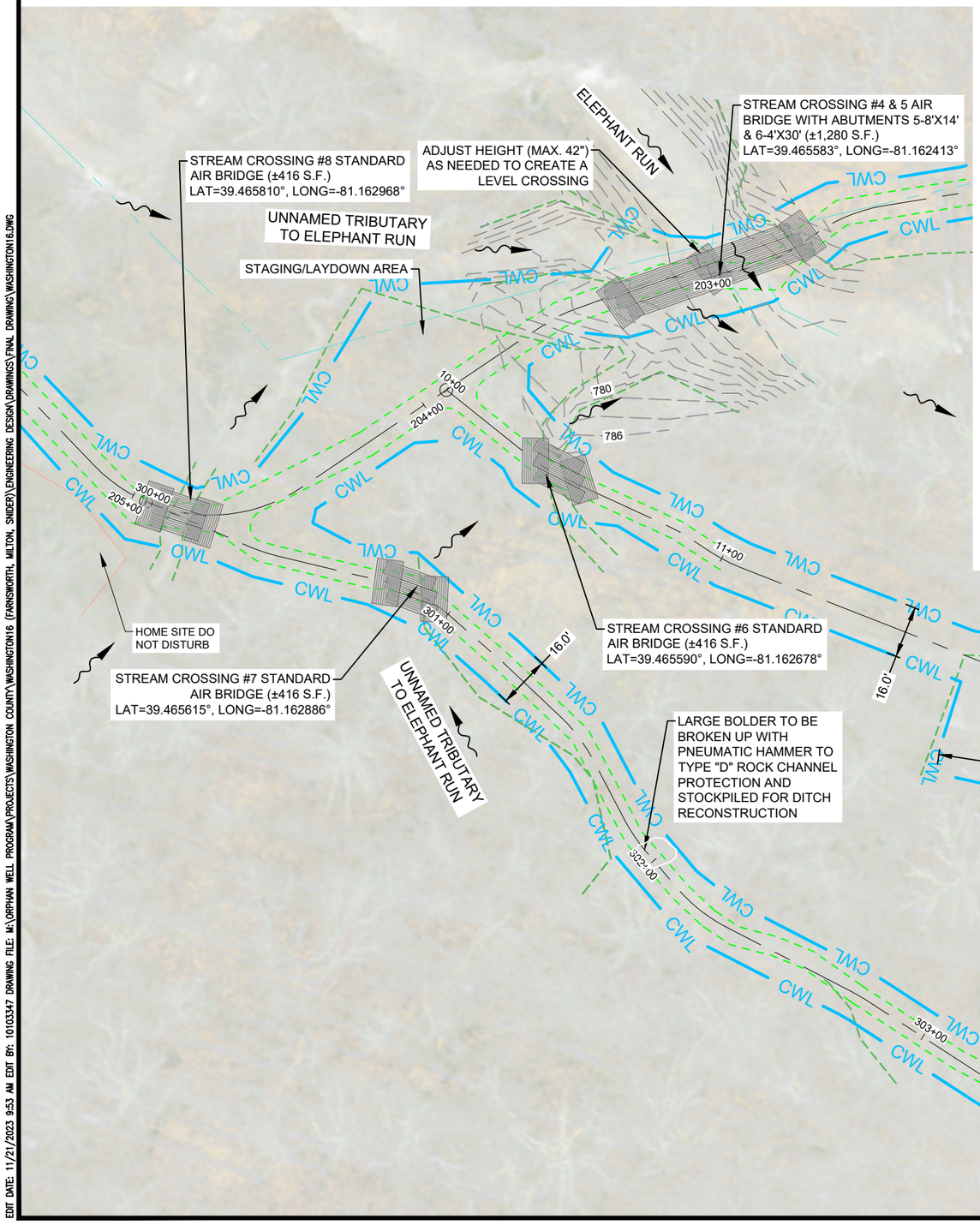

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BAR SCALE

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DIVISION OF OIL & GAS
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SITE PLAN
FARNSWORTH #7,
STREAM CROSSING #4-8, &
EQUIPMENT SITES #3

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

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7 OF 13

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0' 10' 20' 40'

BAR SCALE

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DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
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SITE PLAN
STREAM CROSSINGS #9

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

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DATE: 09/12/2022

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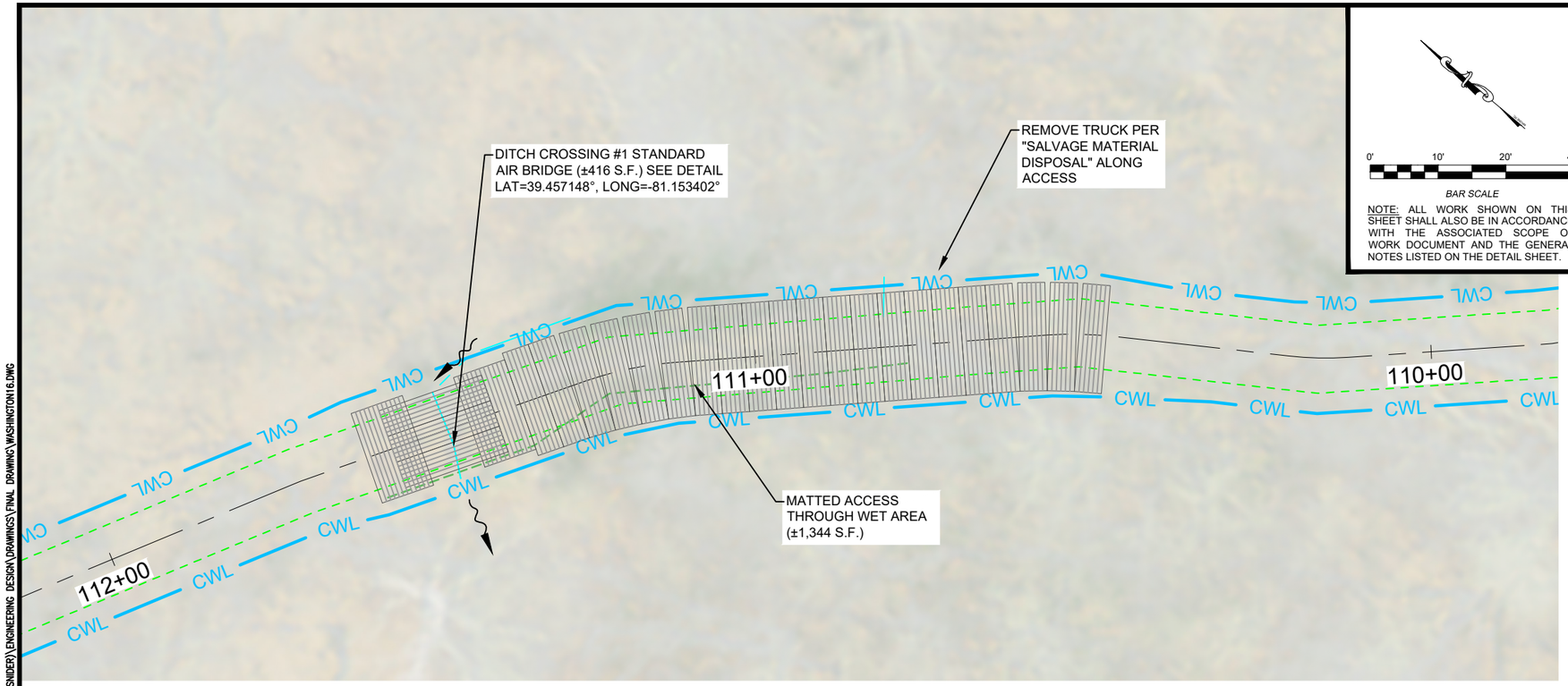
8 OF 13



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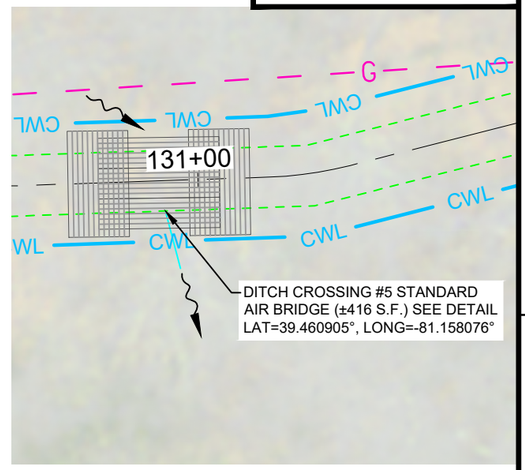
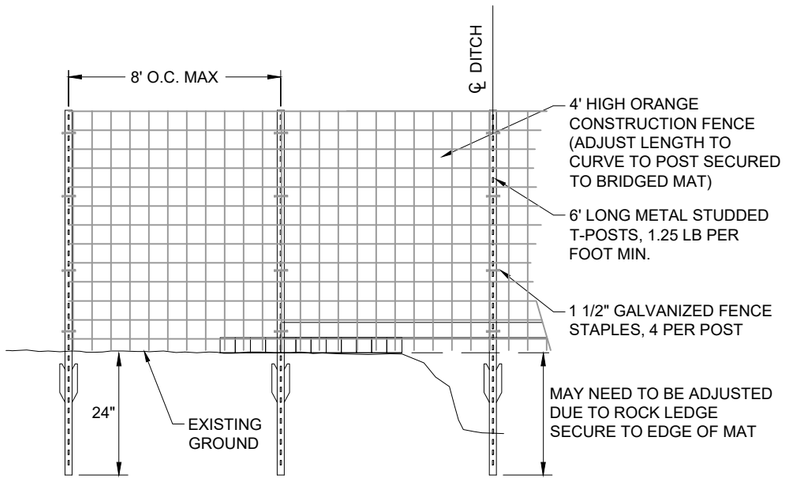
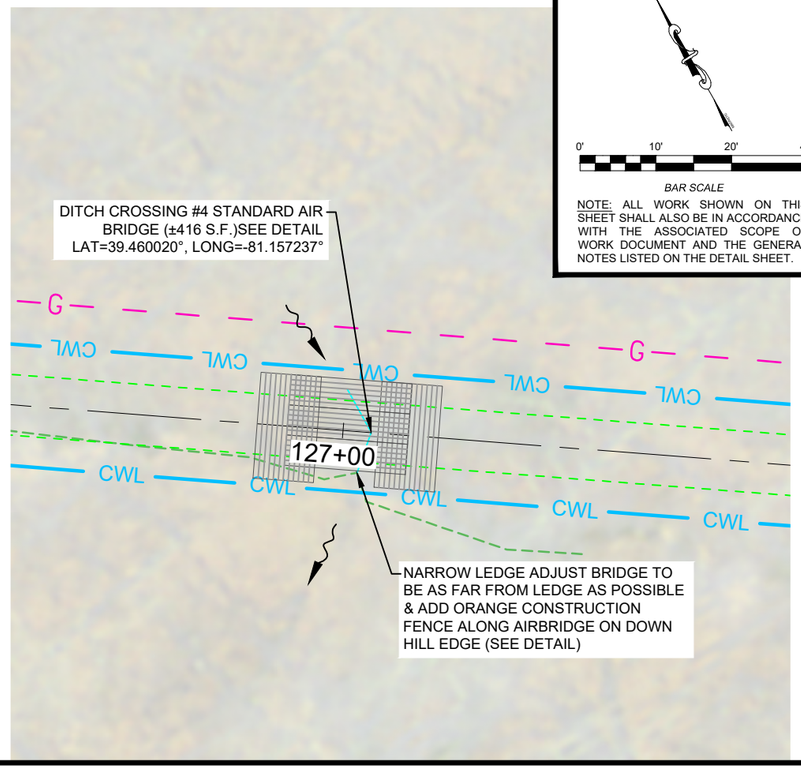




CONSTRUCTION FENCE ALONG AIRBRIDGE DETAIL

NOT TO SCALE



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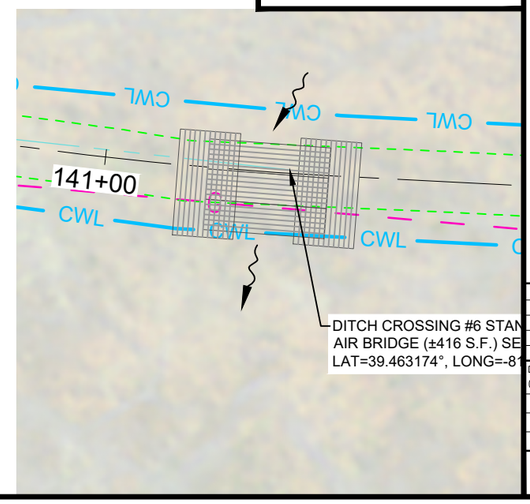

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
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SITE PLAN
DITCH CROSSING #1, 4-6

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

DESIGN UNIT
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DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
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SHEET NO.
9 OF 13

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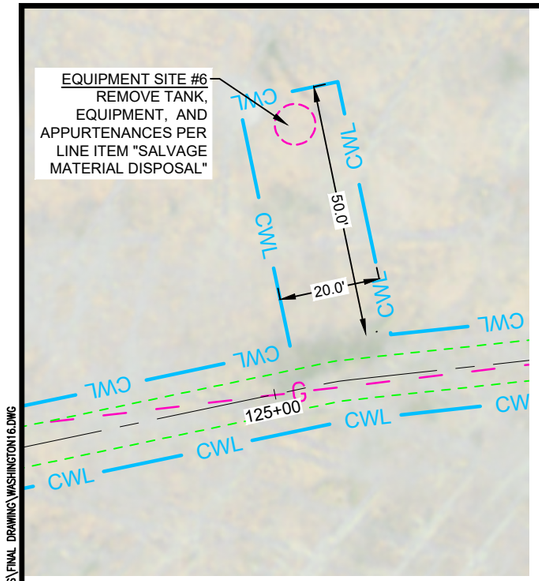
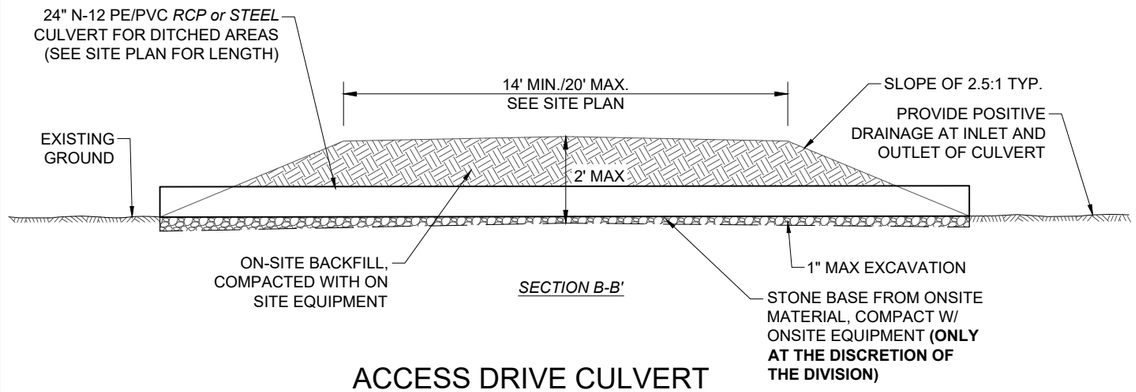
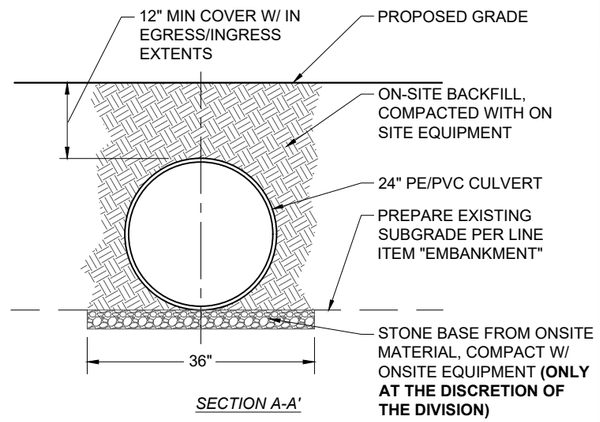
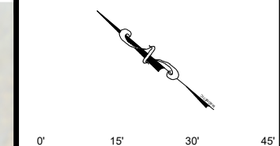




ACCESS DRIVE CULVERT
NOT TO SCALE



24" CULVERT OUTLET FOR POND
NOT TO SCALE



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DIVISION OF OIL & GAS RESOURCES MANAGEMENT
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SITE PLAN -ACCESS DRIVE RECONSTRUCTION, EQUIPMENT SITE #6-7, & DITCH CROSSING #2-3

WASHINGTON #16 MULTIPLE ORPHAN WELL SITES

REVISION	

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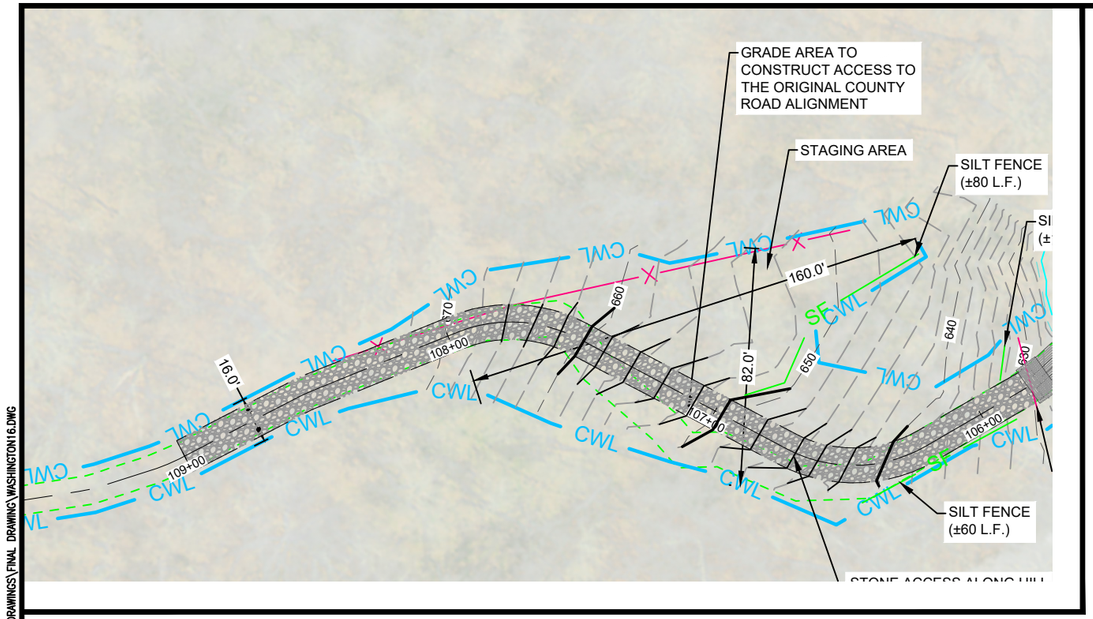
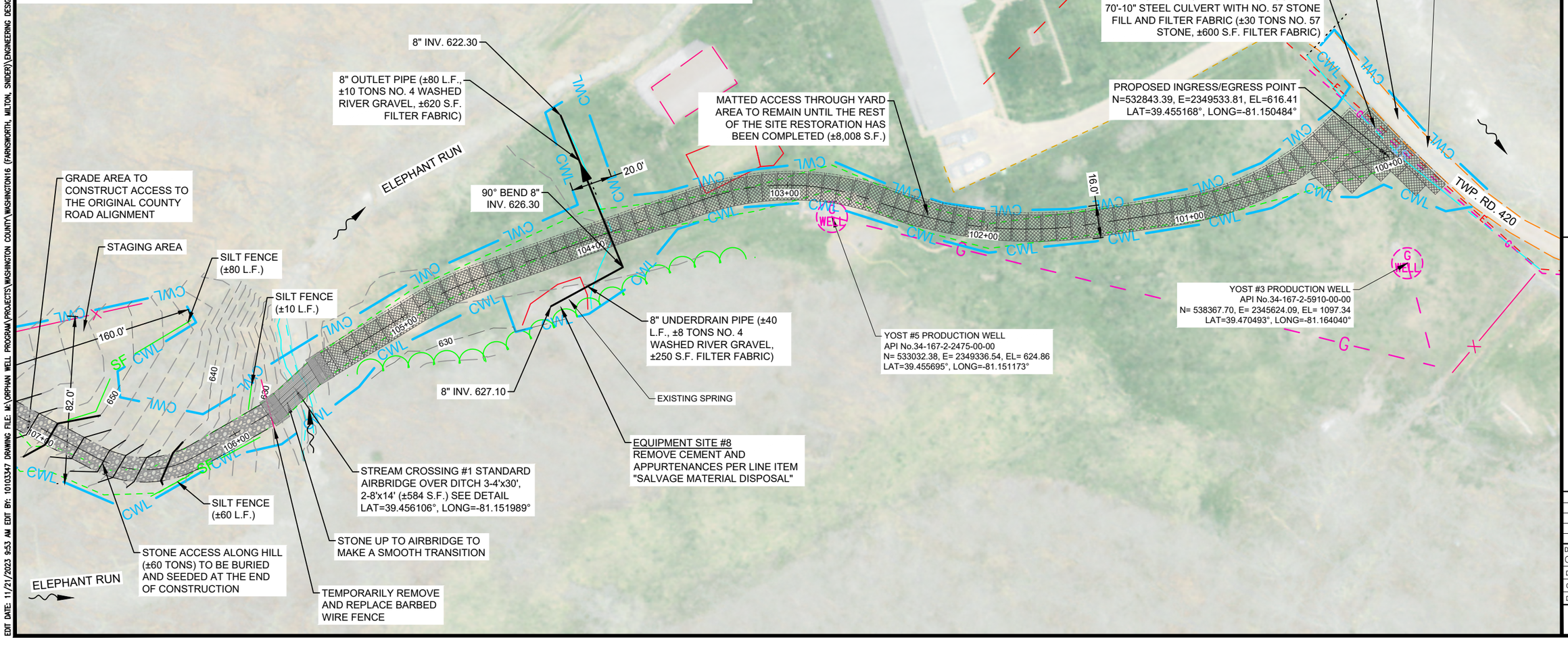
DATE: 09/12/2022
SHEET NO. 10 OF 13





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DIVISION OF OIL & GAS RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
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SITE PLAN - ENTRANCE, STREAM CROSSING #1, & EQUIPMENT SITE #8

WASHINGTON #16 MULTIPLE ORPHAN WELL SITES

REVISION

DESIGN UNIT: O&G ENGINEERING
DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
DATE: 09/12/2022
SHEET NO. 11 OF 13

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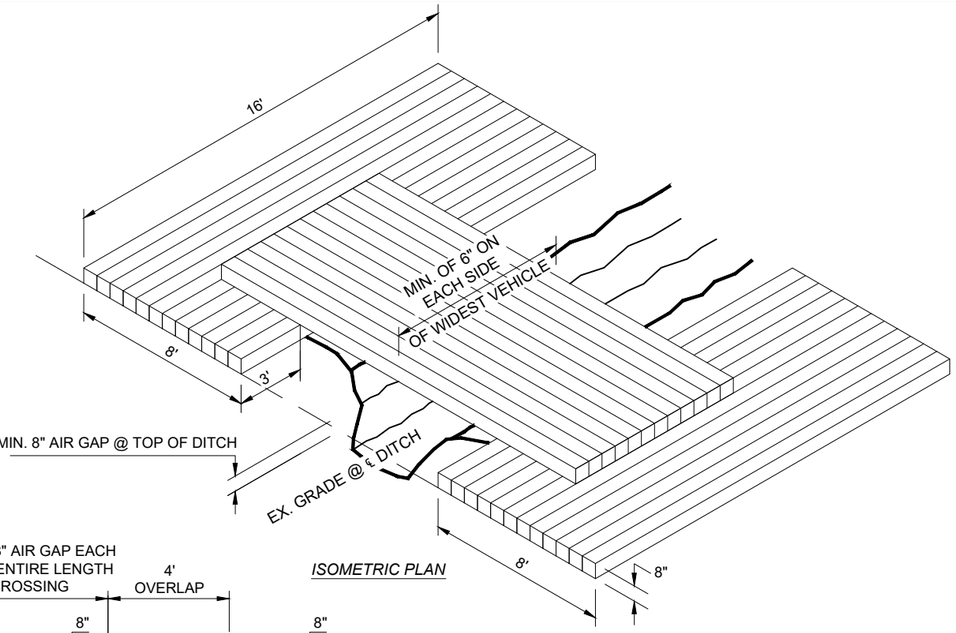
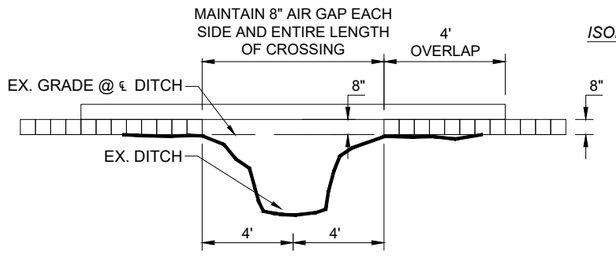
GENERAL NOTES:

1. UTILITY LINES AND APPURTENANCES ARE SHOWN AS LOCATED IN THE FIELD AND/OR AS REPORTED BY THE RESPECTIVE OWNERS. NEITHER THE NUMBER, TYPE, SIZE, OR LOCATION CAN BE GUARANTEED, AND IT IS THEREFORE, THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS.
2. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY PROTECTING THE EXISTING BURIED UTILITIES DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO LINE ITEM "MOBILIZATION".**
3. THE HORIZONTAL DATUM IS BASED ON NAD83 (2011) OHIO STATE PLANE SOUTH 3402, AND THE VERTICAL DATUM IS BASED ON NAVD88 GEOID 12A CORS DERIVED.
4. PHOTO IMAGE DATE OBTAINED FROM OHIO GEOGRAPHICALLY REFERENCED INFORMATION PROGRAM (OGRIP) FROM THE OHIO STATEWIDE IMAGERY PROGRAM (OSIP III).
5. THE CONTRACTOR SHALL WORK WITHIN THE WORK LIMITS AT ALL TIMES DURING CONSTRUCTION.
6. A FLAGGER IN EACH DIRECTION SHALL BE USED WHEN MATERIALS ARE BEING UNLOADED WITHIN THE ROAD RIGHT OF WAY.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PHOTO/VIDEO DOCUMENTING THE CONDITION OF THE EXISTING ASPHALT DRIVE PRIOR TO BEGINNING CONSTRUCTION.
8. TREE AND OVERHANGING LIMB REMOVAL SHALL BE AS DESIGNATED BY THE DIVISION. REMOVALS SHALL PROVIDE THE CONTRACTOR WITH ADEQUATE SPACE REQUIRED TO COMPLETE THE PROJECT. TRIMMING OF TREES SHALL BE CONSIDERED INCIDENTAL TO LINE ITEMS AS SPECIFIED.
9. THE DIVISION MUST BE PRESENT DURING ALL CLEARING OPERATIONS. NO TREES ARE TO BE REMOVED UNLESS DESIGNATED BY THE DIVISION.
10. ANY REMOVED TREES AND VEGETATION SHALL BE PLACED INTO BRUSH PILES AT THE DISCRETION OF THE DIVISION.
11. ALL "CUT" MATERIAL SHALL BE STOCKPILED ON LOCATION FOR REUSE. STOCKPILES SHALL BE STABILIZED PER LINE ITEM "SITE RESTORATION" UPON ESTABLISHMENT OF TEMPORARY GRADE IF AREAS ARE TO REMAIN OPEN FOR 14 DAYS OR LONGER.
12. ALL STONE PLACED USING SIX (6) INCH MAXIMUM LIFTS, SHALL BE COMPACTED WITH A MINIMUM OF THREE (3) PASSES PER LIFT USING ONSITE EQUIPMENT.
13. AT THE DISCRETION OF THE DIVISION, ALL STONE, FABRIC AND/OR GEOGRID SHOWN ON THE SITE PLAN SHEET(S) AS TEMPORARY SHALL BE REMOVED UPON COMPLETION OF THE PROJECT AND RESTORED PER LINE ITEM "SITE RESTORATION".
14. TIMBER MATS SHALL BE USED FOR TEMPORARY CONSTRUCTION ACCESS TO TRAVERSE WET AREAS AND/OR DRAINAGE COURSES.
15. **THE CONTRACTOR SHALL COORDINATE ALL WORK ASSOCIATED WITH WORKING AROUND THE GAS LINE(S) SHOWN ON THIS SHEET WITH THE UTILITY OWNER PRIOR TO MOBILIZING EQUIPMENT. A QUANTITY OF TIMBER MATS HAS BEEN LISTED ON THE QUAINTLY SHEET FOR THESE PURPOSES. TIMBER MATS SHALL BE PLACED AT THE DISCRETION OF THE UTILITY OWNER. WHETHER MATS ARE REQUIRED TO BE PLACED DIRECTLY OVERTOP OF THE UTILITY AND/OR PLACED AS AN AIR BRIDGE, PAYMENT WILL BE MADE PER LINE ITEM "TIMBER MATS".**
16. ALL COMPOSITE MATTING INSTALLED SHALL BE INTERLOCKED PER THE MANUFACTURER'S REQUIREMENTS. IN AREAS WHERE POOR SUBGRADE IS ENCOUNTERED MATS CAN BE STACKED OVER TOP OF ONE ANOTHER AT THE DISCRETION OF THE DIVISION.
17. THE WORK LIMITS AND CORRESPONDING SEDIMENT CONTROLS ALONG THE CREEK WILL BE DETERMINED IN THE FIELD BY THE DIVISION THROUGHOUT CONSTRUCTION.
18. SEDIMENT CONTROLS SHALL BE PLACED AT THE DISCRETION OF THE DIVISION.
19. NO WORK INSIDE THE BOUNDS OF THE ORDINARY HIGH WATER MARK SHALL TAKE PLACE BETWEEN MARCH 15TH AND JUNE 15TH UNLESS OTHERWISE SPECIFIED BY THE DIVISION. (NOTE: THIS IS TO MINIMIZE IMPACT ON SPAWNING/MIGRATING FISH SPECIES)
20. INSTREAM REQUIREMENTS SHALL BE CONSTRUCTED IN SUCH A TIMEFRAME WHERE THE CONTRACTOR IS PREPARED TO BEGIN PLUGGING OPERATIONS IMMEDIATELY FOLLOWING THE STREAM CONSTRUCTION WORK.
21. AT NO POINT SHALL EQUIPMENT ENTER THE BANKS OF THE STREAM CHANNEL PRIOR TO THE CONSTRUCTION OF THE CROSSING.
22. THE ONLY FILL PERMITTED IN THE STREAM CHANNEL SHOULD BE CLEAN AGGREGATE, STONE OR ROCK. NO SOIL OR OTHER FINE ERODIBLE MATERIAL SHALL BE PLACED IN THE CHANNEL.
23. ALL DISTURBED AREAS ALONG THE STREAM CHANNEL SHALL BE IMMEDIATELY STABILIZED UPON INSTALLATION/REMOVAL OF THE STREAM CROSSING.
24. UPON REMOVAL OF THE STREAM CROSSING, THE STREAM BANK SHALL BE RESTORED TO ITS' ORIGINAL ALIGNMENT AND GRADE. RESTORATION SHALL NOT RESULT IN A NARROWER CHANNEL OR FLOW RESTRICTION.



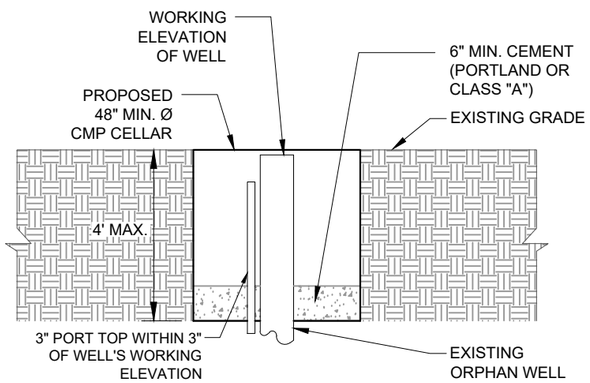
ISOMETRIC PLAN



CROSSING SECTION

STANDARD AIRBRIDGE OVER DITCH

NOT TO SCALE



NOTES:
ALL WORK & MATERIAL ASSOCIATED WITH THE INSTALLATION & REMOVAL OF THE CELLAR SHALL BE CONSIDERED INCIDENTAL TO LINE ITEM "WELL HEAD CONTROL".

TEMPORARY CELLAR

NOT TO SCALE

W21-1
(500' FROM W20-7, BOTH SIDES OF THE ENTRANCE)

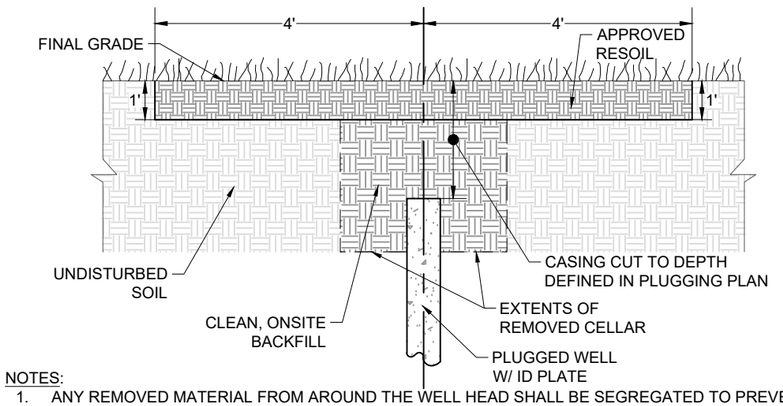
W20-7
COVER OR TURN DURING EVENINGS OR WHEN BOTH LANES ARE OPEN (500' FROM FLAGGER, BOTH SIDES OF ENTRANCE)

NOTES:

1. THIS WORK SHALL BE PER THE GENERAL SPECIFICATIONS, PART 7: MAINTENANCE OF TRAFFIC AND SHALL BE INCIDENTAL TO LINE ITEM "MOBILIZATION" FOR EACH SITE, UNLESS OTHERWISE NOTED. **THIS WORK SHALL INCLUDE ALL REQUIRED PERMITS FROM THE LOCAL ROAD AUTHORITIES.**
2. ALL SIGNS MAY BE MOUNTED PORTABLE MOUNTS.
3. CONTRACTOR SHALL FOLLOW THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FIGURE 6H-1, IN BOTH DIRECTIONS ALONG THE ROADWAY. W21-1 SHALL BE IN PLACE AS SOON AS THE CONTRACTOR ARIES TO THE SITE EACH DAY.
4. CONTRACTOR SHALL FOLLOW THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FIGURE 6H-13, LANE CLOSURE ON A TWO-LANE ROAD USING FLAGGERS (TA-13).
5. FLAGGERS SHALL HAVE PROPER COMMUNICATION DEVICES AND SHALL BE POSITIONED 20' FROM EACH EDGE OF THE CONSTRUCTION WORK LIMITS. ANY VARIATION MUST BE APPROVED PER LOCATION. **TEMPORARY CLOSURES SHALL NOT BE COMPLETED WITHOUT A FLAGGER.**
6. TEMPORARY CLOSURES SHALL BE MINIMIZED TO LESS THAN 20 MINUTES AND THEN THE ROAD SHALL BE FULLY REOPENED TO TRAFFIC.
7. ANY WORK IN THE ROADWAY THAT IS REQUIRING MORE THAN 20 MINUTES SHALL BE COMPLETED PER GENERAL SPECIFICATIONS, PART 7: MAINTENANCE OF TRAFFIC WITH THE PROPER PERMITS FROM THE LOCAL ROAD AUTHORITIES AND APPROVAL FROM THE DIVISION.

FLAGGER & CONSTRUCTION SIGNAGE NOTES

NOT TO SCALE



NOTES:

1. ANY REMOVED MATERIAL FROM AROUND THE WELL HEAD SHALL BE SEGREGATED TO PREVENT ADDITIONAL CONTAMINATION.
2. ONCE THE WELL IS CUT BELOW GRADE, AN EIGHT (8) FOOT BY EIGHT (8) FOOT AREA, ONE (1) FOOT DEEP SHALL BE EXCAVATED AROUND THE WELL HEAD & REPLACED WITH "APPROVED RESOIL".
3. REMOVED MATERIAL SHALL BE DISPOSED OF PER LINE ITEM "CONTAMINATED MATERIAL DISPOSAL".
4. PRIOR TO DELIVERY TO THE SITE OF "APPROVED RESOIL", ON SITE TOPSOIL MAY BE UTILIZED AT THE APPROVAL OF THE DIVISION
5. ALL WORK NOT INCLUDED IN "APPROVED RESOIL" OF "CONTAMINATED MATERIAL DISPOSAL" SHALL BE INCIDENTAL TO LINE ITEM 'SITE RESTORATION".

WELL RESTORATION SECTION

NOT TO SCALE

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
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DETAILS

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

DESIGN UNIT O&G ENGINEERING
DRAWN BY: J.R.J.
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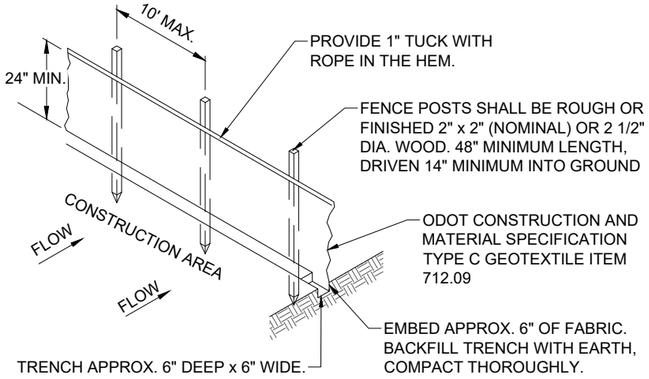
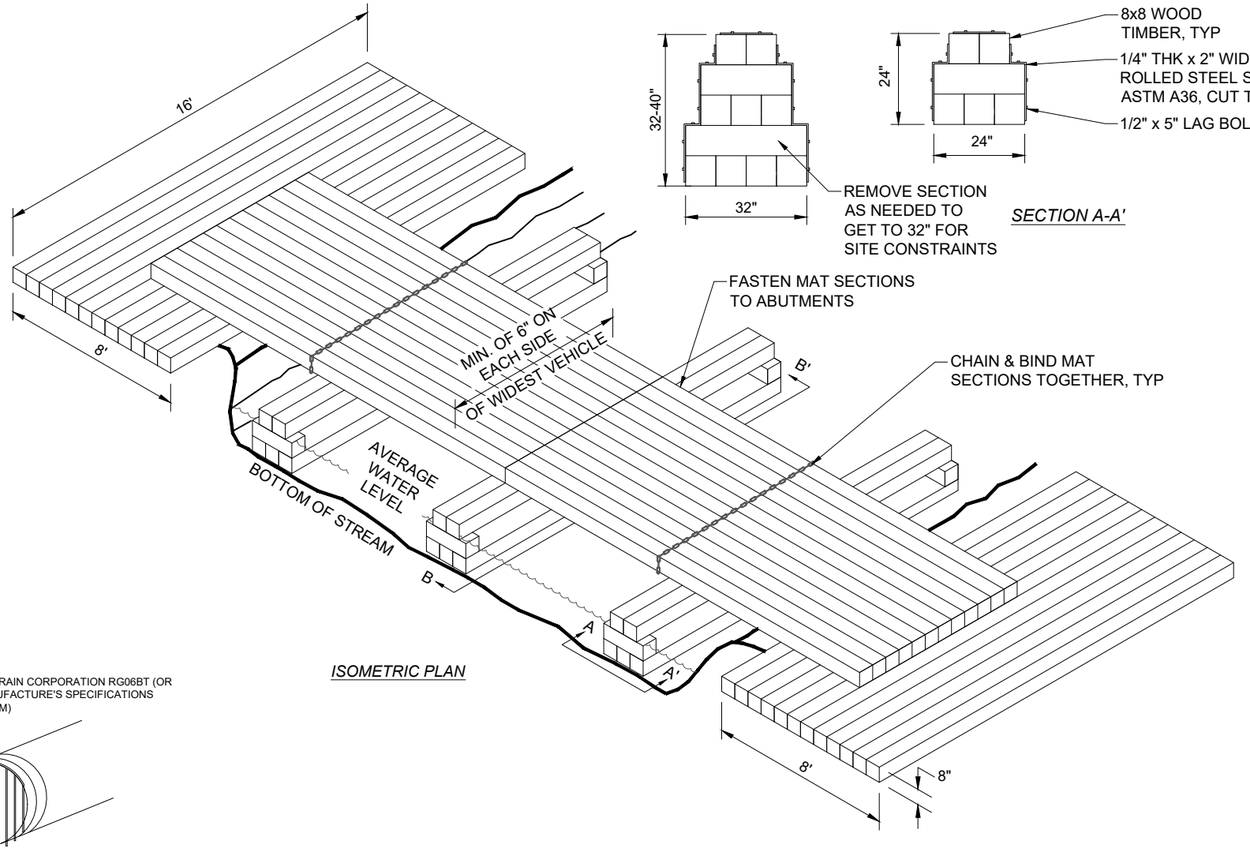
DATE: 09/12/2022
SHEET NO. 12 OF 13



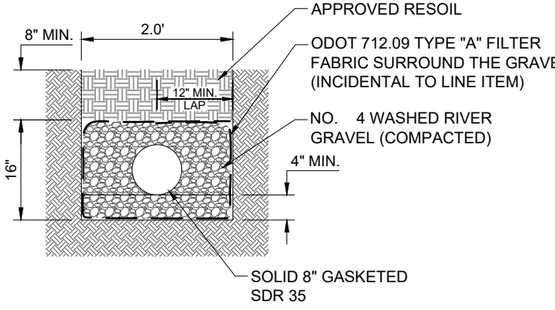
NOTES:
1. FABRIC TO BE FASTENED SECURELY TO FENCE POST AS PER MANUFACTURER'S RECOMMENDATIONS.
2. ENDS OF INDIVIDUAL ROLLS OF FABRIC SHALL BE SECURELY FASTENED TO A COMMON POST OR OVERLAPPED 3" MIN.

SILT FENCE DETAIL
NOT TO SCALE



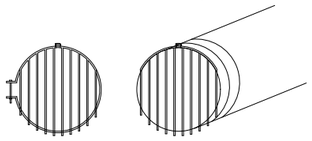
SECTION A-A'

ISOMETRIC PLAN

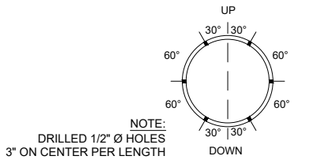


OUTLET PIPE DETAIL
NOT TO SCALE

RAT GUARD, BAND TYPE FROM AGRI DRAIN CORPORATION RG06BT (OR APPROVED EQUAL) INSTALL PER MANUFACTURE'S SPECIFICATIONS (INCIDENTAL TO OUTLET PIPE LINE ITEM)

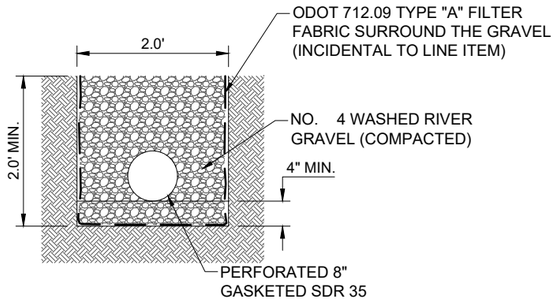


ANIMAL GUARD
NOT TO SCALE



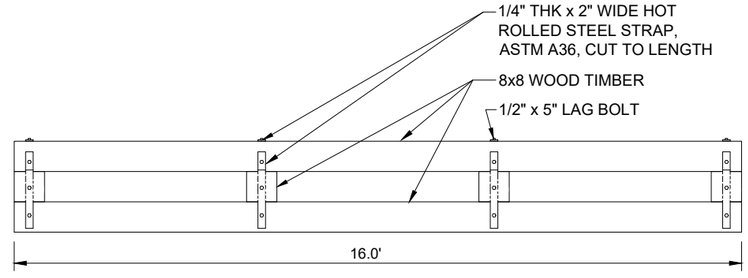
NOTE:
DRILLED 1/2" Ø HOLES 3" ON CENTER PER LENGTH

GASKETED SDR 35 UNDERDRAIN PIPE PERFORATION DETAIL
NOT TO SCALE

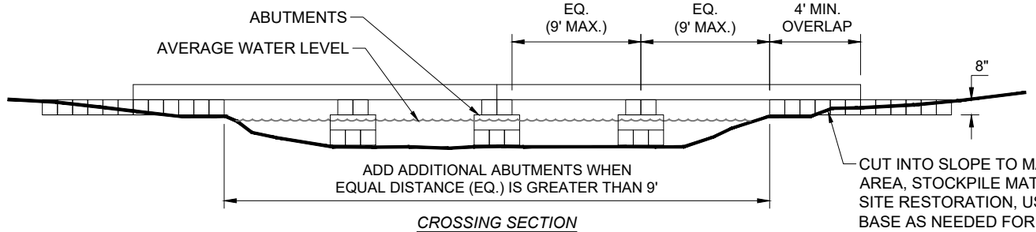


OUTLET PIPE DETAIL
NOT TO SCALE

UNDERDRAIN DETAIL
NOT TO SCALE



SECTION B-B'



CROSSING SECTION

STANDARD AIRBRIDGE W/ ABUTMENTS
NOT TO SCALE

DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM
http://oilandgas.ohiodnr.gov

DETAILS

WASHINGTON #16
MULTIPLE
ORPHAN WELL SITES

REVISION

DESIGN UNIT
O&G ENGINEERING
DRAWN BY: J.R.J.
CHECKED BY: J.J.J.
DATE: 09/12/2022
SHEET NO.
13 OF 13

EDIT DATE: 11/21/2023 9:53 AM EDIT BY: 10103347 DRAWING FILE: M:\ORPHAN WELL PROGRAM\PROJECTS\WASHINGTON COUNTY\WASHINGTON16 (FARNSWORTH, MILTON, SNIDER)\ENGINEERING DESIGN\DRAWINGS\FINAL DRAWING\WASHINGTON16.DWG