



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER

DNRB12071

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF

FRANK WHITTAKER
304-558-2316

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Negley's Well Drilling, Inc.
16199 Cumberland Hwy
Newburg, PA 17240

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DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
ROUTE 1, BOX 320
DAVIS, WV
26260 866-4111

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
12/15/2011				

BID OPENING DATE: 01/26/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		962-96	see unit price sheet	\$ 71,595.00
WELL DRILLING SERVICES						
THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES, IS SOLICITING BIDS FOR WELL DRILLER SERVICES TO ASSIST WITH CLEANING OF TWO (2) WATER SUPPLY WELLS AT CANAAN VALLEY RESORT STATE PARK.						
A NON-MANDATORY PRE-BID MEETING WILL BE HELD ON 12/29/2011 AT 1:00 PM AT THE CANAAN VALLEY RESORT LODGE. ALL INTERESTED PARTIES ARE ENCOURAGED TO ATTEND.						
ALL TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO FRANK WHITTAKER IN THE WV PURCHASING DIVISION VIA EMAIL AT FRANK.M.WHITTAKER@WV.GOV OR VIA FAX AT 304-558-4115. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 01/05/2012 AT 4:00 PM. ALL TECHNICAL QUESTIONS WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.						
THIS IS AN EAST BOND FUNDED CAPITAL IMPROVEMENT PROJECT. PAYMENTS TO VENDORS WILL BE MADE BY THE BANK OF NEW YORK MELLON.						
BIDDING DOCUMENTS CONSIST OF REQUEST FOR QUOTATION PLANS AND SPECIFICATIONS.						
REQUEST FOR QUOTATION MAY BE OBTAINED BY CONTACTING:						
FRANK WHITTAKER, SENIOR BUYER 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305						

RECEIVED

2012 FEB 21 AM 11:13

WV PURCHASING
DIVISION

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	717-532-9190	2/17/12
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	25-1877587	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the **West Virginia Code**.
7. Vendor preference will be granted upon written request in accordance with the **West Virginia Code**.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the **Legislative Rules** of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.html and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER

DNRB12071

PAGE

2

ADDRESS CORRESPONDENCE TO ATTENTION OF:

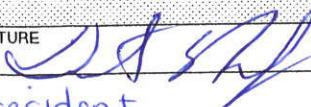
FRANK WHITTAKER
304-558-2316

RFQ COPY

TYPE NAME/ADDRESS HERE

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DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
ROUTE 1, BOX 320
DAVIS, WV
26260 866-4111

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS		
12/15/2011						
BID OPENING DATE: 01/26/2012		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
TELEPHONE: 304-558-2316						
PLANS AND SPECIFICATIONS MAY BE OBTAINED BY CONTACTING:						
SHERRI GOFF PARKS AND RECREATION, PEM GROUP 324 4TH AVENUE SOUTH CHARLESTON, WV 25303 TELEPHONE: 304-558-2764						
REV. 09/21/2009 NOTICE TO PROCEED: THIS CONTRACT IS TO BE PERFORMED WITHIN 60 CALENDAR DAYS AFTER THE NOTICE TO PROCEED IS RECEIVED. UNLESS OTHERWISE SPECIFIED, THE FULLY EXECUTED PURCHASE ORDER WILL BE CONSIDERED NOTICE TO PROCEED.						
CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE MATERIALS OR WORKMANSHIP SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM WITH THE SPECIFICATIONS OF THE BID AND CONTRACT HERE IN.						
WAGE RATES: THE CONTRACTOR OR SUBCONTRACTOR SHALL PAY THE HIGHER OF THE U.S. DEPARTMENT OF LABOR MINIMUM WAGE RATES AS ESTABLISHED FOR TUCKER COUNTY, PURSUANT TO WEST VIRGINIA CODE 21-5A, ET, SEQ. (PREVAILING WAGE RATES APPLY TO THIS PROJECT)						
ARBITRATION: ANY REFERENCES MADE TO ARBITRATION OR INTEREST FOR PAYMENTS DUE (EXCEPT FOR ANY INTEREST REQUIRED BY STATE LAW) CONTAINED IN THIS CONTRACT OR IN ANY AMERICAN INSTITUTE OF ARCHITECTS DOCUMENTS						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS.						
SIGNATURE 				TELEPHONE		DATE
TITLE President				FEIN 25-1877587		717-532-9190 2/17/12
ADDRESS CHANGES TO BE NOTED ABOVE						

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER

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PAGE

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ADDRESS CORRESPONDENCE TO ATTENTION OF:

FRANK WHITTAKER

804-558-2316

RFQ COPY

TYPE NAME/ADDRESS HERE

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DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
ROUTE 1, BOX 320
DAVIS, WV
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
12/15/2011				

BID OPENING DATE: 01/26/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
PERTAINING TO THIS CONTRACT ARE HEREBY DELETED.						
WORKERS' COMPENSATION: VENDOR IS REQUIRED TO PROVIDE A CERTIFICATE FROM WORKERS' COMPENSATION IF SUCCESSFUL.						
THE WEST VIRGINIA STATE CODE, PURCHASING DIVISION RULES AND REGULATIONS, AND THE INFORMATION PROVIDED IN THE "REQUEST FOR QUOTATION" ISSUED BY THE PURCHASING DIVISION IS THE SOLE AUTHORITY GOVERNING THIS PROCUREMENT.						
ANY INFORMATION PROVIDED IN SPECIFICATION MANUALS, OR ANY OTHER SOURCE, VERBAL OR WRITTEN, WHICH CONTRADICTS OR ALTERS THE INFORMATION PROVIDED FROM THE SOURCES AS DESCRIBED IN THE ABOVE PARAGRAPH IS VOID AND OF NO EFFECT.						
BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.						
REV. 5/2009						
NOTICE						
A SIGNED BID MUST BE SUBMITTED TO:						
DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	717-532-9190	2/17/12
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	25-1877587	

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State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

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DNRB12071

PAGE

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FRANK WHITTAKER
304-558-2316

RFQ COPY

TYPE NAME/ADDRESS HERE

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DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
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DAVIS, WV
26260 866-4111

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
12/15/2011				

BID OPENING DATE: 01/26/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:						
SEALED BID						
BUYER:				44		
REQ. NO.:				DNRB12071		
BID OPENING DATE:				01/26/2012		
BID OPENING TIME:				1:30 PM		
PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:						
-----Dustin Negley @ 717-532-2073-----						
PLEASE PRINT OR TYPE NAME OF PERSON TO CONTACT CONCERNING THIS QUOTE:						
-----Dustin Negley-----						
***** THIS IS THE END OF RFQ DNRB12071 ***** TOTAL: \$71,595.00						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	717-532-9190	2/17/12
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	25-1877587	

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State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER

DNRB12071

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF:

FRANK WHITTAKER
304-558-2316

*823131106 717-532-9190

NEGLEYS WELL DRILLING INC
16199 CUMBERLAND HWY

NEWBURG PA 17240

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DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
ROUTE 1, BOX 320
DAVIS, WV
26260 866-4111

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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/19/2012				

BID OPENING DATE: 02/16/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
***** ADDENDUM NO. 2 *****						
THIS ADDENDUM IS ISSUED TO:						
1) PROVIDE A COPY OF THE NON-MANDATORY PRE-BID SIGN IN SHEET.						
2) EXTEND THE DEADLINE FOR TECHNICAL QUESTIONS TO: 02/02/2012 AT 4:00 PM.						
3) TO EXTEND THE BID OPENING DATE AND TIME TO: 02/16/2012 AT 1:30 PM						
4) ADD THE FOLLOWING REQUIREMENT FOR GENERAL LIABILITY INSURANCE.						
(XX) INSURANCE: SUCCESSFUL VENDOR SHALL FURNISH PROOF OF COMMERCIAL GENERAL LIABILITY INSURANCE PRIOR TO ISSUANCE OF CONTRACT. UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS, THE MINIMUM AMOUNT OF INSURANCE COVERAGE REQUIRED IS \$250,000.						
5) PROVIDE THE ATTACHED PRE-BID MEETING MINUTES.						
6) PROVIDE THE ATTACHED REVISED PROCEEDURE DOCUMENTS.						
7) PRIVIDE THE ATTACHED REVISED PRICING PAGE.						
***** END ADDENDUM NO. 2 *****						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	717-532-9190	2/17/12
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	25-1877587	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

Wd 7:30 PM 2/9/12	PAGE 1
DNRB12071	
ADDRESS CORRESPONDENCE TO ATTENTION OF:	
FRANK WHITTAKER	
304-558-2316	

*823131106 717-532-9190

NEGLEYS WELL DRILLING INC
16199 CUMBERLAND HWY

NEWBURG PA 17240

DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
ROUTE 1, BOX 320
DAVIS, WV 26260 866-4111

DATE PRINTED		TERMS OF SALE		SHIP VIA		F.O.B		FREIGHT TERMS	
02/09/2012									
BID OPENING DATE:		02/16/2012		BID OPENING TIME		01:30PM			
LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT			
***** ADDENDUM NO. 3 *****									
THIS ADDENDUM IS ISSUED TO PROVIDE THE ATTACHED TECHNICAL QUESTIONS AND ANSWERS.									
***** END ADDENDUM NO. 3 *****									
0001	1	LS		962-96					
WELL DRILLING SERVICES									

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	717-532-9190	2/17/12
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	25-1877587	

NO. 2776 P. 1 REQUESTING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELLED 'VENDOR'

FEB. 9. 2012 3:33PM WV DIV OF PURCH



State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

Received Time Feb. 14. 2:27 PM

DNRB12071

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF

FRANK WHITTAKER
304-558-2316

RFQ COPY

TYPE NAME/ADDRESS HERE

DIVISION OF NATURAL RESOURCES
CANAAN VALLEY RESORT
ATTN: PARK SUPERINTENDENT
ROUTE 1, BOX 320
DAVIS, WV
26260 866-4111

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
02/14/2012				
BID OPENING DATE: 02/21/2012		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
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***** ADDENDUM NO. 4 *****

THIS ADDENDUM IS ISSUED TO EXTEND THE BID OPENING DATE
AND TIME TO: 02/21/2012 AT 1:30 PM.

***** END ADDENDUM NO. 4 *****

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962-96

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WELL DRILLING SERVICES

***** THIS IS THE END OF RFQ DNRB12071 ***** TOTAL: \$71,595.00

SIGNATURE		SEE REVERSE SIDE FOR TERMS AND CONDITIONS	
President		TELEPHONE	DATE
25-1877587		717-532-9190	2/17/12
ADDRESS CHANGES TO BE NOTED ABOVE			

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABEL

NO. 2788 P. 1/1

WV DIV OF PURCH FEB. 14. 2012 2:33 PM

Name of Bidder:

Negley's Well Drilling, Inc.

Address of Bidder:

16199 Cumberland Hwy.
Newburg, PA 17240

Phone Number of
Bidder:

717-532-9190

WV Contractors License
No.

WV 036410

We, the undersigned, having examined the site and being familiar with the local conditions affecting the cost of the work and also being familiar with the general conditions to bidders, drawings, and specifications, hereby proposes to furnish all materials, equipment, and labor to complete all work in a workmanlike manner, as described in the Bidding documents.

*** Notice to Bidder:** This will be a Unit Price Contract based on your Unit Prices submitted on this Uniform Unit Price Bid Schedule. Your Unit Prices will be the basis for payment for work performed. The total of all Unit Prices will represent the Base Bid and will be the basis for awarding the contract. Hourly wages must conform to Prevailing Wage Rate requirements.

The contract award shall be based on the lowest Base Bid.

ADDENDUM ACKNOWLEDGEMENT

I hereby acknowledge receipt of the following checked addendum and have made the necessary revisions to my bid or proposal.

Addendum No.	Date
2	1/19/12
3	2/9/12
4	2/14/12

I understand that failure to confirm the receipt of the Addendum is cause for rejection of my bid or proposal.

Respectfully submitted:

Date:

2/17/12

WV Vendor
Registration Number:

1023-7356

By: (signature in ink)

Title:

President

Firm Name:

Negley's Well Drilling, Inc.

Firm Address:

16199 Cumberland Hwy.
Newburg, PA 17240

Canaan Valley Resort State Park
DIVISION OF NATURAL RESOURCES

Contract 2A - Well Rehabilitation
REVISED FORM OF PROPOSAL-1

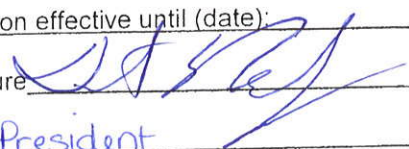
Uniform Unit Price Bid Schedule

Item	Unit Price	Estimated Units	Price
Mobilization	\$ 4,500.00	Lump Sum (LS)	\$ 4,500.00
A. Pull 2 well pumps (pumps at 200 ft), discharge line and wire and lay out, pull 2 x 250 ft of 4-in. PVC liner, prep pitless			
Pump hoist/crane truck	\$ 60.00 / hr.	16	\$ 960.00
Crew labor	\$ 170.00 / hr.	16	\$ 2720.00
Poly sheeting	\$ 150.00 / LS	LS	\$ 150.00
B. Well Cleaning			
1. Brushing 2 x 250-ft 6-in. wells, airlift (Task B.1)			
Pump hoist/crane truck	\$ 60.00 / hr.	8	\$ 480.00
Crew labor	\$ 170.00 / hr.	8	\$ 1360.00
2. Chemical Treatment: Vol. depend on treatment alternative chosen			
a.1. Aqua-Clear AE (vol For 2 wells) or	\$ 3900.00 / LS	60 gal.	\$ 3900.00
a.2. Soda ash or equivalent	\$.75 / lb	100 pounds	\$ 75.00
b. Mixing and dosing with chemical solution (Task B.2.d and e)	\$ 170.00 / hr.	6	\$ 1020.00
3. Redevelopment: Possible Electronic Hoist Spudding Action w/ Sand Line			
Tasks B.3.a to c Mark whether using <input checked="" type="checkbox"/> Cable tool or <input checked="" type="checkbox"/> Conventional airlift surging			
Surging rig or hoist (include tank costs)	\$ 200.00 / hr.	42	\$ 8400.00
Crew labor	\$ 225.00 / hr.	42	\$ 9450.00
Air compressor (if needed) generator (including fuel)	\$ 1650.0 / week	2	\$ 3300.00
Generator (if needed) (including fuel) for Task D	\$ 850.00 / day	2	\$ 1700.00
Tank truck for hauling spent fluid	\$ 4200.00/ week	2	\$ 8400.00
C. (also A.4) TV Surveys - Vertical and Horizontal (camera & labor)	\$ 425.00 / hr.	8	\$ 3400.00
D. Install and remove test pumps (Tasks D.1-2 for 2 wells)			
Crane/hoist truck (include standby)	\$ 60.00 / hr.	14	\$ 840.00
Crew labor (include standby)	\$ 200.00 / hr.	14	\$ 2800.00
D. Supply test pumps (well 1 up to 100 gpm and well 2 up to 185 gpm)	\$ 2200.00 / LS	LS	\$ 2200.00
E. Repair/upgrade pitless units (Tasks E.1 and E.2)	\$ 11500.00 / LS	LS	\$ 11500.00
	Baker Industrial/Municipal Type		
F. Re-install Existing Pumps (Tasks F.1-4 for 2 wells)			
Crane/hoist truck	\$ 60.00 / hr.	8	\$ 480.00
Crew labor	\$ 170.00 / hr.	8	\$ 1360.00
Disinfection (all Task F.3)	\$ 350.00 / LS	LS	\$ 350.00
G. Sealing for 2 Abandoned Wells	\$ 4.50 / ft	500	\$ 2250.00

TOTAL FOR TWO WELLS (REHABILITATION) AND WELL ABANDONMENT \$ 71,595.00

* Notice to Bidder: This will be a Unit Price Contract based on your Unit Prices submitted on the included Uniform Unit Price Bid Schedule. Your Unit Prices will be the basis for payment for work performed. The Estimated Project Cost will be the basis for awarding the contract. Hourly wages must conform to Prevailing Wage Rates.

Quotation effective until (date):

Signature  Date 2/17/12

Title President

Canaan Valley Resort State Park
Ski Area Improvements Project
Tucker County, West Virginia

Contract 2A – Well Rehabilitation

for the
West Virginia Division of Natural Resources
Parks and Recreation

Project Manual

Set No. _____

**Canaan Valley Resort State Park
Ski Area Improvements Project
Contract 2A - Well Rehabilitation
Tucker County, West Virginia**

GENERAL INDEX TO PROJECT MANUAL

Description	Page No.
Invitation to Bid	IB-1 to IB-2
Information for Bidders	B-1 to B-2
Form of Proposal	FP-1 to FP-4
Well Location Map	C-1

Detail Specifications

Section 02525 - Well Rehabilitation

**Canaan Valley Resort State Park
Contract 2A - Well Rehabilitation
DIVISION OF NATURAL RESOURCES**

INVITATION TO BID-1

The Division of Natural Resources, Parks and Recreation, requests bids for the rehabilitation of two wells at the Canaan Valley Resort State Park in Tucker County, West Virginia.

Sealed bids will be received until a time and date indicated on the Request for Quotations issued by the West Virginia State Purchasing Division, at the West Virginia State Purchasing Division, 2019 Washington Street, East, Capitol Complex, Charleston, West Virginia.

A non-mandatory Pre-Bid Conference will be held at a time and date indicated on the Request for Quotations, at the project site at the Main Lodge at Canaan Valley Resort State Park.

The bidding documents consist of the Request for Quotations, plans and specifications.

Request for quotations may be obtained by contacting:

Frank Whittaker, Senior Buyer
Finance and Administration, Purchasing Division
2019 Washington Street, East
Charleston, WV 25305
Telephone: 304-558-2316 Ext. 218

Project Manuals may be obtained by contacting:

Sherri Goff
Parks and Recreation, PEM Group
324 4th Avenue
South Charleston, WV 25303
Telephone: 304-558-2764

The bidder understands that to the extent allowed by the West Virginia Code, the Owner reserves the right to waive any informality or irregularity in any Bid, or Bids, and to reject any or all Bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the Bidding Documents; to reject any condition of the bid by the Bidder that is in any way inconsistent with the requirements, terms and conditions of the Bidding Documents; or to reject a bid that is in any way incomplete or irregular.

The Bidder, if successful and awarded the contract, agrees that all work is to be complete within **60** consecutive calendar days following receipt of the Owner's written Notice to Proceed. For each calendar day of delay in achieving completion, the Contractor shall be liable for, and shall pay the Owner liquidated damages in the amount of \$250 per day.

Any work performed or any materials contracted for prior to the receipt of the Owner's written Notice to Proceed, shall be at the Bidder's risk.

**Canaan Valley Resort State Park
Contract 2A - Well Rehabilitation
DIVISION OF NATURAL RESOURCES**

INVITATION TO BID-2

PROGRESS PAYMENTS - The CONTRACTOR will make current estimates in writing once each month on AIA Forms G702 and G703 on or before the date set by the OWNER at the time of starting the WORK. The progress payments shall be a true estimate of the materials complete in place and the amount of WORK performed in accordance with the CONTRACT during the preceding month and the value thereof figured at the CONTRACT unit prices or based on the approved schedule of value. Should there be any doubt of the OWNER as to the integrity of any part of the COMPLETED work, the estimates for that portion will not be allowed modified by the CONTRACTOR accordingly. CONTRACTOR shall submit evidence to document the extent of progress payments as required by the OWNER.

Progress payments will not be made when the total value of the WORK done since the last estimate amounts to less than Five Hundred Dollars (\$500.00). From the total of the amounts ascertained as payable, an amount equivalent to and in accordance with Article 9 of A201-2007 Supplementary Conditions of the State of West Virginia will be deducted and retained by the OWNER until completion of the entire CONTRACT in an acceptable manner. The balance, less all previous payments, will be certified for payment by the OWNER.

When the WORK under contract has been completed and its acceptance is recommended by the OWNER, the retainage shall be released and paid to the CONTRACTOR.

INFORMATION FOR BIDDERS

1. Examination of Contract Documents and Site

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. The bidder is required to examine carefully the Contract Documents and the site of the work contemplated. The submission of a bid shall be considered prima facie evidence that the bidder has made such examination and has judged for and satisfied himself as to the character, quality, and quantity of work to be performed and material required to be furnished under the Contract.

2. Addenda and Interpretations

No interpretation of the meaning of the plans, specifications, or other pre-bid documents will be made to any bidder orally.

Every request for such interpretations should be in writing addressed to the Engineer, Division of Natural Resources, Parks and Recreation Section, c/o Frank Whittaker, Senior Buyer, Purchasing Division, 2019 Washington Street, East, Charleston, West Virginia, 25305 and to be given consideration must be received at least fourteen (14) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed to all prospective bidders (at the respective addresses furnished for such purposes), not later than ten (10) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

3. Substitutions

Requests for approval of substitutions must be addressed to and received by the Engineer, Division of Natural Resources, Parks and Recreation Section, c/o Frank Whittaker, Senior Buyer, Purchasing Division, 2019 Washington Street, East, Charleston, WV 25305, and to be given consideration must be received at least fourteen (14) days prior to the date fixed for the opening of bids.

Submission shall be made by prime Bidders; no consideration will be given to items submitted directly by manufacturers, suppliers, distributors or subcontractors. Substitutions of materials, products or equipment for those items specified will be considered only when a written request, on Bidder's company letterhead, is accompanied by suitable documentation to demonstrate that the product is equal and appropriate for use in this particular installation. Suitable documentation shall include the following as well as other information:

- Detailed comparison of significant qualities of proposed substitution with those of the work specified. This comparison shall be specific to each feature of the original product. Submission of product literature alone,

without a written item by item comparison of the significant qualities of each product will not be considered a complete submission.

- Product Data, including drawings and descriptions of products of and fabrication and installation procedures. All furnished data must be manufactures original product data information, no faxes or copies will be accepted.
- Samples, where applicable or requested.
- Lists of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.
- Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- Research /evaluation reports evidencing compliance with building code in effect for Project, from model code organization acceptable to authorities having jurisdiction if applicable.
- Bidder's certification that proposed substitution complies with requirements in the bidding documents and is appropriate for the applications indicated.
- Written request for approval of the substitution on company letter head transmitting the aforementioned information and addressing any item not included.

Burden of proof of merit of requested substitution is upon the submitter. Any request not including all of the required information will be considered incomplete. Incomplete requests shall be rejected. The Engineer has no obligation to request additional information in order to consider the request. Approved requests will be set forth in Addenda issued in accordance with these Instructions to Bidders. All addenda so issued shall become part of the Contract Documents.

4. Contractor's Personnel Requirements

The official title of person signing the bid should be shown.

If a firm is a partnership, the full partnership name should be shown, and the bid should be signed by a partner. If a firm is a single proprietorship, the full name should be shown and the bid should be signed by the sole OWNER. If the bid of a partnership or single proprietorship is signed by a person other than the partners and OWNERS, there should be attached a written, duly acknowledged power of attorney clearly giving and showing that the signer has power sufficient to bind the partners and OWNERS of the firm to the bid.

If the firm is a corporation, and the person signing the bid is neither the president nor vice president of the corporation, there should be attached a written, duly acknowledged power of attorney or corporate resolution giving and showing that the signer has sufficient power to bind the corporation to the bid.

Sufficient evidence that the person signing the bid has the power to bind the offering company should be received by the Purchasing Division prior to the issuance of a contract.

Name of Bidder:

Negley's Well Drilling, Inc.

Address of Bidder:

16199 Cumberland Hwy.
Newburg, PA 17240

Phone Number of
Bidder:

717-532-9190

WV Contractors License
No.

WV 036410

We, the undersigned, having examined the site and being familiar with the local conditions affecting the cost of the work and also being familiar with the general conditions to bidders, drawings, and specifications, hereby proposes to furnish all materials, equipment, and labor to complete all work in a workmanlike manner, as described in the Bidding documents.

*** Notice to Bidder:** This will be a Unit Price Contract based on your Unit Prices submitted on this Uniform Unit Price Bid Schedule. Your Unit Prices will be the basis for payment for work performed. The total of all Unit Prices will represent the Base Bid and will be the basis for awarding the contract. Hourly wages must conform to Prevailing Wage Rate requirements.

The contract award shall be based on the lowest Base Bid.

Uniform Unit Price Bid Schedule

Item	Unit Price	Estimated Units	Price
Mobilization	\$	Lump Sum (LS)	\$
A. Pull 2 well pumps (pumps at 200 ft), discharge line and wire and lay out, pull 2 x 250 ft of 4-in. PVC liner			
Pump hoist/crane truck	\$ / hr.	16	\$
Crew labor	\$ / hr.	16	\$
Poly sheeting	\$ / LS	LS	\$
B. Well Cleaning			
1. Brushing 2 x 250-ft 6-in. wells, airlift (Task B.1)			
Pump hoist/crane truck	\$ / hr.	8	\$
Crew labor	\$ / hr.	8	\$
2. Chemical Treatment: Vol. depend on treatment alternative chosen			
a.1. Aqua-Clear AE (vol for 2 wells) or	\$ / LS	60 gal.	\$
a.2. Soda ash or equivalent	\$ / lb	100 pounds	\$
b. Mixing and dosing with chemical solution (Task 2.2.B.2.d)	\$ / hr.	6	\$
3. Redevelopment: Choose Alternative 1 or Alternative 2 and quote accordingly for 2 wells. If desiring to quote on both alternatives, submit two bid sheets.			
Alternative 1 (Tasks 2.2.B.3.b. 1 to 3)			
Surging rig (factor in tank costs)	\$ / hr.	42	\$
Crew labor	\$ / hr.	42	\$
Alternative 2 (Task 2.2.B.3.c.2)	\$ /well	2	\$
Alternative 2 (Task 2.2.B.3.c.2) Include any supplier mobilization cost	\$	LS	\$
Alternative 2 (Tasks 2.2.B.3.c.3,4)			
Surging rig (with standby)	\$ / hr.	24	\$
Crew labor (with standby)	\$ / hr.	24	\$
Air compressor and generator (if needed) (including fuel)	\$ / week	2	\$
C. TV Survey – Vertical and Horizontal (camera & labor)	\$ / hr.	6	\$
D. Re-install Existing Pumps (Tasks 2.4.A-D x 2 wells)			\$
Crane/hoist truck (include standby)	\$ / hr.	14	\$
Crew labor (include standby for well tests)	\$ / hr.	14	\$
Disinfection (all Task 2.4.C)	\$ / LS	LS	\$

Total Base Bid, written in numbers.

Total Base Bid, written in words.

The bidder understands that to the extent allowed by the West Virginia Code, the Owner reserves the right to waive any informality or irregularity in any Bid, or Bids, and to reject any or all Bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the Bidding Documents; to reject any condition of the bid by the Bidder that is in any way inconsistent with the requirements, terms and conditions of the Bidding Documents; or to reject a bid that is in any way incomplete or irregular.

The Bidder, if successful and awarded the contract, agrees that all work is to be completed within **60** consecutive calendar days following receipt of the Owner's written Notice to Proceed. For each calendar day of delay in achieving completion, the Contractor shall be liable for, and shall pay the Owner liquidated damages in the amount of \$250 per day.

Any work performed or any materials contracted for prior to the receipt of the Owner's written Notice to Proceed, shall be at the Bidder's risk.

PROGRESS PAYMENTS - The bidder who is awarded the contract, hereinafter referred to as the **CONTRACTOR**, may submit an invoice in writing once each month detailing the work performed in accordance with the contract during the preceding month and the value thereof figured at the contract unit prices. The **CONTRACTOR** shall maintain evidence, such as hourly work records or time sheets, to document the work progress payments. If requested by the **OWNER**, in writing, such evidence shall be mailed, within 5 days, to the **OWNER**.

Progress payments will not be made when the total value of the work done since the last invoice amounts to less than Five Hundred Dollars (\$500.00).

Any work performed or any materials contracted for prior to the receipt of the **OWNER'S** written Notice to Proceed, shall be at the **CONTRACTOR'S** risk.

When the **WORK** under contract has been completed and its acceptance is recommended by the **OWNER**, the retainage shall be released and paid to the **CONTRACTOR**.

ADDENDUM ACKNOWLEDGEMENT

I hereby acknowledge receipt of the following checked addendum and have made the necessary revisions to my bid or proposal.

Addendum No.	Date
2	1/19/12
3	2/9/12
4	2/14/12

I understand that failure to confirm the receipt of the Addendum is cause for rejection of my bid or proposal.

Respectfully submitted:

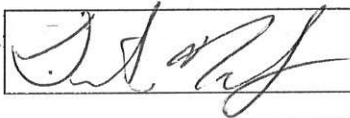
Date:

2/17/12

WV Vendor
Registration Number:

1023-7356

By: (signature in ink)



Title:

President

Firm Name:

Negley's Well Drilling, Inc.

Firm Address:

16199 Cumberland Hwy.
Newburg, PA 17240

SECTION 022525 - WELL REHABILITATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes well rehabilitation.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Submit plans to Engineer in writing at least 72 hours in advance of performing major connections to existing utilities.

1.4 QUALITY ASSURANCE

- A. Comply with requirements of utility supplying water to the project. Potable water service system materials shall conform to applicable AWWA requirements, and meet National Sanitation Foundation (NSF) approval unless noted otherwise.
- B. Qualifications: Contractor must be a licensed master water well contractor in good standing in the State of West Virginia. Candidate contractors will be required to provide license information upon request and written, verifiable evidence of experience in similar well-cleaning tasks upon request. Contractors will be required to have a written, site-specific health and safety plan available for inspection.

1.5 BACKGROUND:

Two wells are targeted for rehabilitation cleaning: Wells 1 and 2. Both are public water supply wells. Available well logs are attached.

Well	Date completed	Total depth (ft)	Casing (ft)	Static WL	Dia (in)
1	1999	250	63	19	6
2	1999	250	63	11	6

Casing is galvanized steel (Schedule 40). Available performance information are summarized as follows:

Well 1	Nov 10, 1999	June 24, 2011
Static Water Level (ft.)	19	19.45
Pumping Water Level (ft.)	72	59.54
Drawdown (ft.)	53	40.09
Pumping Rate (g.p.m.)	23	24
Specific Capacity (gpm/f)	0.4339	0.59865

Well 2	Dec 10, 1999	June 24, 2011
Static Water Level (ft.)	11	6.60
Pumping Water Level (ft.)	187	43.40
Drawdown (ft.)	176	36.80
Pumping Rate (g.p.m.)	60	74
Specific Capacity	0.34	2.01

The accuracy of the 1999 information cannot be verified. The 2011 values for Well 2 suggest that the reported flow rate, pumping water level and drawdown for Well 2 in 1999 may be in error. Well 1 is equipped with a Baker Monitor spool-type pitless unit. Well 2 is equipped with a through-the-casing pitless adapter.

Formations are combinations of shale, sandstone, and limestone (Greenbrier Group), with water being produced in fracture zones. Water quality is low in total dissolved solids, hardness, alkalinity, iron and manganese. Clogging has not been evaluated and is probably not severe, but an accumulation from 12 years of activity is expected.

PARTS 2 AND 3 - PRODUCTS AND EXECUTION

2.1 TREATMENT AND TESTING

In general, well rehabilitation will involve the following tasks 1) remove in-place well pumps (both wells); 2) remove full-length 4-inch slotted F-480 PVC liners (both wells), 2) inspect, clean, and repair pump and discharge pipe components as required; 3) brushing and surging to remove surficial material; 4) application of a well cleaning treatment program (alternatives offered, details following); 5) chlorine disinfection; 6) post-cleaning video inspection; 7) assisting with post-cleaning pumping tests and reinstallation of permanent pumps. The facility engineer's hydrogeologic consultants (Ground Water Science) have provided a list of necessary equipment for this well rehabilitation project (listed at the end of this technical task description).

2.2 SPECIFIC WORK FOR BOTH WELLS

Note to potential bidders: There are alternative methods permitted. These can be subcontracted services under a West Virginia Master Water Well Contractor license (see General Conditions). See list of necessary equipment attached. *All tasks and volumes should be repeated for each well.*

A. Preparation, pump and discharge pipe and liner removal:

1. Pull discharge pipe, wire, and pump (set at 200 ft) and lay out on clean plastic sheet or plastic tarp, or on stands off the ground. Inspect for problems including

wire grounding and bring problems to the attention of the water superintendent. Clean off visible fouling on inside and outside surfaces (air pressure and/or pressure washer - water only) and cap pipe joint ends.

2. Remove the installed 4-inch PVC liner. The liners reportedly extend from 5 feet below the well top to the total depth in each well. The liner will not be reinstalled. Removal method is at the contractor's discretion but the liner must be completely removed.

B. Well rehabilitation and disinfection:

1. Brushing: Brush the casing and open borehole to remove surface encrustations and biofouling. The recommended tool is a Cotey Chemical well brush, or equivalent cylindrical brush with fiberglass or plastic bristles set to abrade the nominal casing I.D., mounted on a drill-stem sub. Aggressive wire brushes will not be allowed. Added weight may be necessary. The hoist system used must be capable of inserting and removing the brush assembly safely.

One pass in and out is anticipated. Run the brush. Install 1-inch+ airline and airlift until clear.

2. Chemical Dosage

- a. Install a 1-in. or greater plastic tremie line (threaded rigid PVC-CPVC, flexible PE), or alternative such as frac pipe. About 240 ft of tremie should be sufficient. This may be the same as the development airline.
- b. An NSF 60-listed well cleaning chemical product that is primarily glacial (above 95 %) glycolic acid plus suspending and dispersing polymers, is specified due to the probable presence of biofilm but relative lack of mineral-heavy deposits, iron or manganese. One such product is Baroid IDP Aqua-Clear AE, supplied in 5-gal carboys as a concentrated product. Alternatives must be presented to the facility engineer's Hydrogeologist Consultant for approval. There shall be NO phosphorus of any kind (including phosphoric acid and in polymer additives) in any chemicals used. Documentation of any alternative chemical must positively rule out the presence of phosphorus in any form. The chemical may be dosed directly into the well.
- c. Volumes: The specified dosage for Aqua Clear AE or equivalent for each well is as follows:
 1. Assuming cable tool redevelopment (see following): 30 gal. of product.
 2. Assuming Airburst or Boreblast air-percussive redevelopment: 20 gal. of product.

Safety: The liquid chemical is nearly 100 percent glycolic acid. MSDS must be on site. The acid mixture is best transferred to the well using an acid-resistant transfer pump safe for the acids used and black PE hose, with secure, nonleaking hose connections. People handling the acid must have face and other splash protection, and avoid breathing fumes of concentrated chemical, or direct skin contact. Clean wash water must be available at hand in case of spills or splash.

Handling: Follow all manufacturer handling and safety instructions. The concentrated liquid chemical may begin to solidify below 50 degrees F, and so

plan accordingly as needed. Diluted organic acids will not freeze until below 32 degrees F.

d. Application:

1. Following safe practices, transfer specified chemical volume into the well.
2. Surge chemical in the well for at least one hour. Leave to soak 12 hours.

3. Mixing and redevelopment

Two alternatives for well redevelopment are specified.

a. Necessary equipment, either method:

1. Controlled, water-tight connection between tools downhole and discharge to outflow chamber.
2. Provide an outflow chamber (large baffled mud tank or equivalent) for neutralizing chemical and settling developed solids before discharge.
3. Provide a means to measure flow rate while airlift pumping (valved hose equipped with orifice weir - Alternative 2 - or horizontal tank of known volume (can be the outflow chamber if volume is known) - alternatives 1 or 2 - or other as approved by the facility engineer's Hydrogeologist Consultant.

b. Alternative 1: Double surge block with airlift or pump, operated on either a mechanical cable tool rig or pump hoist that provides equivalent reciprocal spudding action (2 ft/sec vertical motion). Pump hoists that provide this action are equipped with frame-mounted hydraulically actuated walking beam (Smeal or equivalent).

1. Following a 12-hr soak, surge (not pumping) for four hours after administering dose of chemicals, moving surge tool up and down across the entire borehole.
2. Start pumping off after four hr of surging (ii) at up to the known well yield (measured): pumping, recovering and repeating, until pH recovers to about 0.5 pH units of pre-cleaning pH and water is clear. Measure flow rate on the one-half hour.
3. Airlift develop for two hours after water is clear and pH acceptable.

c. Alternative 2: Air-driven percussive redevelopment: Airburst (Frazier Technologies) or Boreblast (Layne Christensen) are the suppliers.

Note: This method has the advantage of being rapid and focusing an adjustable force of development on all parts of the borehole and is repeatable.

1. Calculate air-percussion tool air volume and pressure required for the hole dimensions and formation information.
2. Following 12-hr soak, install air-percussion tool and conduct treatment for up to four hours, focusing on formation changes as per drilling log.
3. Per tool supplier instruction, remove tool and install airline or airline with tool in place and conduct airlift development at up to the known well yield (measured): pumping, recovering and

- repeating, until pH recovers to about 0.5 pH units of pre-cleaning pH and water is clear. Measure flow rate on the one-half hour.
4. Airlift develop for two hours after water is clear and pH acceptable.

Environmental safety: The dirty discharge may be acidic. It must be discharged into containment (as described above) and neutralized with lime, soda ash, or magnesium hydroxide to at least as high as pH 6 prior to removal to safe discharge such as an RV dump or sewer. Have on hand 50 pounds of soda ash or equivalent per well. Work with park wastewater personnel to arrange appropriate discharge and provide documentation of safe disposal to the facility engineer's hydrogeologic consultants (Ground Water Science). No contaminated water may be discharged around the well, into surface drainage, or other unapproved location.

2.3 POST-CLEANING VIDEO

After clearing well, conduct a post-cleaning downhole video of the well. If necessary, employ water column-clearing methods first. The video system shall be in color and provide in-progress switching between down and side view during the inspection. The video system shall provide an image of sufficient quality to permit the facility engineer's hydrogeologic consultants to evaluate borehole condition. A record of the video shall be made on DVD and a copy provided to the ENGINEER.

2.4 PUMP AND COLUMN PIPE INSTALLATION TESTING AND WELL DISINFECTION

- A. Re-install well pump, pipe, and wire, and check function. Block at wellhead for step-drawdown test (Ground Water Science supplies data collecting instruments, collects data and controls test). If a new pump or components will be installed, do so at this time if possible.
- B. Step test standby for well crew approximately 2 hr. (or come back the next day).
- C. During or after step test mix in a 100- to 250-gal tank: a) 50 gal. clean potable water, 3 gal. 5 % white vinegar or amount of chlorine pH buffer product meant for well chlorination specified by the supplier. Discharge into well after test is completed. b) in 50 gal of clean, potable water, mix 1 gal of fresh 12 % NSF-listed Na hypochlorite and pump into the well piping to below the deepest production zone. c) Rig recirculation into the casing to permit wash down of casing. d) Turn on well pump to mix, check pH, which should be between 5.5 and 6.5. e) Allow to sit for 12 hr, pump off until clear to containment or neutralized and pumped to surface drainage (if approved by the WV DNR) until total chlorine is < 0.2 mg/L by field test.
- D. Once the post-cleaning step-drawdown test and chlorination are completed, reset in pitless unit and restore normal function.

2.5 GENERAL CONDITIONS

In case of coliform test failure: If a total coliform test is positive twice (or *E. coli* once) after the well is returned to service, repeat the chlorination procedure.

Chemical mixing equipment and tanks: Tanks and hoses shall be visibly clean and free of sand or debris from past work. Tanks shall be sufficiently large to handle chemical mixing. Circulation pumps (electrical or motor powered) are needed for mixing and pumping into the well. All equipment shall be safe, resistant to aggressive solutions, and free from leaks.

No polyphosphates or phosphoric acids are to be used due to the tendency to degrade in the formation to orthophosphate or organic-P and to stick to clays, providing phosphate nutrient for regrowth of biofouling organisms.

2.6 NECESSARY EQUIPMENT LIST

1. Pump hoist (in good mechanical condition) capable of handling the specified tools at the depths and diameters involved, and related tools. Depending on terrain, it may or may not need to be four-wheel-drive.
2. Where reciprocal well surging is specified, the optimal equipment is a cable tool drilling or workover rig in good mechanical condition and capable of handling the specified tools (typically a Bucyrus-Erie 22W or equivalent). An acceptable alternative is a pump hoist equipped with a frame-mounted spudding beam system in good hydraulic and mechanical repair. The system must be able to surge at two feet/second over a three-foot stroke.
3. Double surge block with airlift or pump (Alternative 1): Descriptions are provided in numerous references. The tool has two surge blocks with heavy rubber gaskets held between steel plates with an intervening pipe perforated to permit exchange of air and water. The rubber should be 1-in. less diameter than the casing. Rubber should be rigid and not a flap. Jointed rigid 3 or 4-in. steel pipe runs to the surface, terminating in a swivel-mounted right-angle discharge. The swivel accommodates an airline that runs through the center of the pipe. A pump may take the place of the airlift system. The swivel is attached to the work over rig's hoisting line. Joints may be added or removed to work parts of the well bore. The right angle pipe discharges to the receiving tank.
4. Air compressor in good working order and safe, capable of airlifting the well's specified flow rate, plus associated hose and fittings (safe and not leaking), Oil filter on air discharge.
5. If air-percussive treatment redevelopment (Alternative 2) is chosen, fluid-tight connection to hose to the outflow tank. Compressor is typically part of the equipment. All air-percussion downhole and surface tools and connections.
6. Outflow tank, ideally a large baffled mud tank (approximately 1000 gal) or equivalent for neutralizing chemical and settling developed solids before discharge.
7. A means to measure flow rate while airlift pumping (valved hose equipped with orifice weir or horizontal tank of known volume (can be the outflow chamber if volume is known)).
8. A 100- to 250-gal. clean tank for disinfectant mixing.
9. Pressure washer for cleaning pipe and equipment.
10. Transfer pump for chemical feed, typically a plastic or stainless steel centrifugal pump such as a shallow-well jet pump (along with fluid-tight and safe hose and fittings).
11. Downhole video camera (as specified): color, on-the-fly down and side view and providing a DVD record.
12. Generator capable of running contractor's electrical equipment. Optionally, as needed, a generator capable of operating the test pump.
13. Specification instructions, read by personnel conducting the work.

END OF SECTION 02525

**Canaan Valley Resort State Park
Ski Area Improvements Project
Contract 2A - Well Rehabilitation
Requisition DNRB12071
Addendum No. 3**

1. Bidder Questions and Answers:

Question: Will state brush-hog area around well site #2 or will contractor be Responsible?

Answer: The Owner will take care of the necessary clearing to make the wells accessible.

Question: Can Kwikconnect pitless unit be substituted for weld-on unit? Weld-on unit will be difficult to line up with existing plumbing from well to plant. Threads are welded to existing casing & unit is threaded to welded threads. After tightening, discharge may not line-up with existing plumbing. Do you want check valves in spool? Do you want air test block on case pitless? Well #1 has both.

Answer: We have reviewed the Baker Monitor product selection (website and catalog). There are two options for pitless units, the weld-on or flange-mount industrial-municipal type (Typical Order Number 3PS67WBWE23T3S) and the DQ series referred to above (kwikconnect) that can be mounted to the casing without welding. We have no objection to the DQ style (requires adding a casing piece and cap (vented and vermin-proof) in lieu of the full industrial pitless unit, as long as it meets state requirements. The problem is the 2-inch discharge of the DQ unit. If we do certify a well at much above 100 gpm, a 3-in. discharge is needed. The industrial unit has a 3-in. discharge for a 3-in. discharge line. The existing 2-in. lines to the water plant are not scheduled to be replaced in this work phase, but we do not wish to install a 2-in. discharge now only to switch to a 3-in. line later. Baker-Monitor has provisions in its product selection for adjustable unit-pipe connections. As these are not artesian settings, check valves in the spools are not needed. We want the access ports open. An alteration of the existing pumps (including their discharge pipe and check valves) is not part of this work. We do not want the airlines reinstalled. These are inaccurate and hard to maintain. We would recommend permanent installation of a 1-inch plastic drawdown tube to permit manual measurements with a water level probe.

Question: What depth do you want test pumps set at? How do you want to measure draw-down? Drop-pipe for test pump will probably be 3" diameter minimum plus wire for 185 gpm pump. 185 gpm pump will be six inch pump. This is a tight fit & does not allow much space between motor & well for water flow. Water flow cools motor.

**Requisition DNRB12071
Addendum No. 3**

- Answer:** The pump settings would be similar to those in place (a 200-ft setting allows room for a test pumping drawdown). Provision for measuring drawdown is clearly stated in the specification. We ask for a 1-in. drawdown tube for access for our water level probes, which we will supply as we will be taking the measurements. There is room for the drawdown tube, which should be taped to the discharge pipe. As these are short-term tests, nominal 6-in (typically 5.5 in. diameter) pumps and motors will function properly. If there is a problem with some pump models or the well situation, we will adjust accordingly. We will make these decisions based on a) well-cleaning airlift pumping results and b) the downhole video inspection.
- Question:** Pumping tests were run on the existing wells with 4" liners in place. Liners could reduce flow to the existing pumps. Removal of liners could increase flow to pumps, but will increase possibility of caving & possible lodging of test pump.
- Answer:** We will be conducting downhole video before and after well cleaning. If the borehole appears unsafe for pump insertion, we will adjust by change order (add liners or use 4-in. test pumps - limits us to ~ 90 gpm) at that point. All well rehabilitation requires adjustment based on the real situation encountered.
- Question:** I had asked about using modern air-rotary drill and diverter to clean existing wells with air. This will not provide surging action, but is a common well cleaning method in this area.
- Answer:** It is acceptable to use a single-pipe air rotary drill pipe and diverter set up. In fact, this has the advantage of easier pipe handling to permit withdrawal of pipe joints to surge the full borehole length. Note that it will be REQUIRED that the system (compressor controls and air delivery system) be able to deliver air at a low rate to permit gentle surging during the chemical treatment step without overtopping the well (pumping). In our experience, this is routinely done (for example with IR TH 55-60 850+ cfm air rig configuration). *If the potential bidder does not think they can safely and effectively surge in this configuration, they should not propose to use it.* We illustrated the dual pipe system as erosion of the borehole wall can be avoided and such systems pump more efficiently than a singleline system. A disadvantage of the use of a full-scale drill rig is weight at the well 2 location on soft soil.

**Requisition DNRB12071
Addendum No. 3**

Question: I was told approximately 15 years ago that the two wells to be abandoned were 8" diameter wells. One well is visible (behind old wooden building). The second well was searched for by the state during construction of two existing wells. There was talk of plugging it at that time, but it was not located. Does the state know the exact location of second abandoned well; if not will they locate it?

Answer: The well locations will be identified by the Owner.

2. Bidders should indicate receipt of this addendum in the space provided on the Request for Quotation.

- end of addendum -

**Canaan Valley Resort State Park
Contract 2A – Well Rehabilitation
DIVISION OF NATURAL RESOURCES**

INVITATION TO BID-1

RFQ Contact:

Frank Whittaker, Senior Buyer
Finance and Admin., Purchasing Div.
2019 Washington Street, East
Charleston, WV 25305
Telephone: 304-558-2316 Ext. 218

Project Manual Contact:

Sherri Goff
Parks and Recreation, PEM
324 4th Ave
South Charleston, WV 25303
Telephone: 304-558-2764

The Division of Natural Resources, Parks and Recreation, requests bids for the rehabilitation of two wells at the Canaan Valley Resort State Park in Tucker County, West Virginia.

Sealed bids will be received until a time and date indicated on the Request for Quotations issued by the West Virginia State Purchasing Division, at the West Virginia State Purchasing Division, 2019 Washington Street, East, Capitol Complex, Charleston, West Virginia.

A mandatory Pre-Bid Conference will be held at a time and date indicated on the Request for Quotations, at the Canaan Valley Resort State Park lodge.

No bids will be considered from other than those present at the Pre-Bid Conference.

The bidding documents consist of the Request for Quotations, plans and specifications.

Request for quotations may be obtained by contacting:

Frank Whittaker, Senior Buyer
Finance and Administration, Purchasing Division
2019 Washington Street, East
Charleston, WV 25305
Telephone: 304-558-2316 Ext. 218

Project Manuals may be obtained by contacting:

Sherri Goff
Parks and Recreation, PEM Group
324 4th AV
South Charleston, WV 25303
Telephone: 204-558-2764

The bidder understands that to the extent allowed by the West Virginia Code, the Owner reserves the right to waive any informality or irregularity in any Bid, or Bids, and to reject any or all Bids in whole or in part; to reject a bid not accompanied by the required bid security or by other data required by the Bidding Documents; to reject any condition of the bid by the Bidder that is in any way inconsistent with the requirements, terms and conditions of the Bidding Documents; or to reject a bid that is in any way incomplete or irregular.

The Bidder, if successful and awarded the contract, agrees that all work is to be complete within **60** consecutive calendar days following receipt of the Owner's written

**Canaan Valley Resort State Park
Contract 2A - Well Rehabilitation
DIVISION OF NATURAL RESOURCES**

INVITATION TO BID-2

Notice to Proceed. For each calendar day of delay in achieving completion, the Contractor shall be liable for, and shall pay the Owner liquidated damages in the amount of \$250 per day.

Any work performed or any materials contracted for prior to the receipt of the Owner's written Notice to Proceed, shall be at the Bidder's risk.

PROGRESS PAYMENTS - The bidder who is awarded the contract, hereinafter referred to as the CONTRACTOR, may submit an invoice in writing once each month detailing the work performed in accordance with the contract during the preceding month and the value thereof figured at the contract unit prices. The CONTRACTOR shall maintain evidence, such as hourly work records or time sheets, to document the work progress payments. If requested by the OWNER, in writing, such evidence shall be mailed, within 5 days, to the OWNER.

Progress payments will not be made when the total value of the work done since the last invoice amounts to less than Five Hundred Dollars (\$500.00).

Any work performed or any materials contracted for prior to the receipt of the OWNER'S written Notice to Proceed, shall be at the CONTRACTOR'S risk.

When the WORK under contract has been completed and its acceptance is recommended by the OWNER, the retainage shall be released and paid to the CONTRACTOR.

PRE-BID CONFERENCE
SIGN IN SHEET

Request for Quotation Number DNRB12071 Well Rehab Date 12/29/2011 Park Canaan Valley Resort

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEE IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

<p>Firm Name: <u>Frame Drilling Co., Inc</u></p> <p>Firm Address: <u>P.O. Box 1907</u> <u>Elk Mts, W.Va. 26241</u></p> <p>Representative Attending: <u>Jack R. Frame II</u></p> <p>Phone Number: <u>304-636-6025</u></p> <p>Fax Number: <u>304-636-0231</u></p> <p>Email Address: <u>Frame Drilling & Reintrod: CERN</u></p>	<p>Firm Name: <u>Wayne's Water & Well</u></p> <p>Firm Address: <u>19139 Garrett Hwy</u> <u>Oakland Md 21550</u></p> <p>Representative Attending: <u>Wayne Bolden</u></p> <p>Phone Number: <u>301-387-7181</u></p> <p>Fax Number:</p> <p>Email Address:</p>
<p>Firm Name: <u>Wayne's Well Drilling</u></p> <p>Firm Address: <u>16199 Conestoga Highway</u> <u>Newburg PA 17246</u></p> <p>Representative Attending: <u>Bob Davidson</u></p> <p>Phone Number: <u>717-532-9190</u></p> <p>Fax Number: <u>717-532-2073</u></p> <p>Email Address: <u>bdavidson@wayneys.net</u></p>	<p>Firm Name:</p> <p>Firm Address:</p> <p>Representative Attending:</p> <p>Phone Number:</p> <p>Fax Number:</p> <p>Email Address:</p>
<p>Firm Name: <u>Ground Water Science</u></p> <p>Firm Address: <u>22 Edgewater Dr.</u> <u>Poland OH 44514</u></p> <p>Representative Attending: <u>Stuart Smith</u></p> <p>Phone Number: <u>330.787.0496</u></p> <p>Fax Number: <u>419.358.0538</u></p> <p>Email Address: <u>Stuart@groundwaterscience.com</u></p>	<p>Firm Name:</p> <p>Firm Address:</p> <p>Representative Attending:</p> <p>Phone Number:</p> <p>Fax Number:</p> <p>Email Address:</p>

RFQ Addendum #2

1. A copy of the Pre-Bid Meeting Sign-In Sheet is attached.
2. The deadline for submitting technical questions shall be changed to ^{Feb. 2} January 25, 2012, 4:00 pm. Response to technical questions will be issued not later than February 3, 2012. The Bid Opening shall be changed to February 17, 2012.
3. The successful vendor shall furnish proof of commercial general liability insurance prior to issuance of a contract. The minimum amount of insurance coverage required is \$250,000.00.
4. Pre-Bid Meeting Minutes - A Pre-Bid Meeting was held for the above noted project on Dec 29, 2011, at 1:00 at Canaan Valley Lodge. After the meeting a site inspection for field observations was conducted. The lettered items listed below are a synopsis of the meeting discussion and field observations.
 - a. James Schotsch, WVDNR discussed administrative items related to the project RFQ documents and as noted on the Pre-Bid Meeting Checklist. Significant discussion items include:
 - RFQ documents may be obtained from the Division of Purchasing.
 - Plans and Specifications may be obtained from Parks and Recreation, Engineering Group.
 - Technical questions must be submitted to the Division of Purchasing.
 - Bid packages must be submitted to the Division of Purchasing.
 - Pre-Bid meeting is a non-mandatory meeting.
 - Bid Bonds will not be required.
 - b. Stuart Smith of Ground Water Sciences discussed the scope of the project and other technical details.
 - Review of well logs: The available well logs are included with this addendum.
 - Well location: The two production wells are located on a project map. Based on discussion and field observation it was determined that the location of Well No. 1 on the map is incorrect. The correct location of Well No. 1 is approximately 150 feet SE of the Water Plant Building. The location is accessible.
 - The Existing Pitless units: Based on discussion and field observation the existing pitless units must be modified or replaced as noted in the attached Revised Specifications.
 - Discussion of Well Liner: Based on discussion and subsequent investigation and review the existing well liners are to be removed and not re-installed. Please refer to the attached Revised Specifications.
 - Discussion of existing/abandoned wells: Based on discussion and field observation there are two abandoned well on the site that have not been properly plugged. The scope of work has been revised to include a task item for plugging both wells. The locations are known, nearby and accessible.
 - Stuart noted that he or Allen will perform the pumping tests. A pay item for providing test pumps has been included in the Revised Bid Documents.
 - c. Other Discussion Items
 - Well Permits, as necessary, will be provided after a contract is executed.
 - Disposal of well cleaning fluids is discussed in the Revised Bid Documents.
 - Well cleaning fluids that are hauled offsite may be discharged to a sanitary manhole near the golf clubhouse.

General Instructions: Well Cleaning and Disinfection, Canaan Valley State Park Wells – As Amended 1/9/2012

Background:

Two wells are targeted for rehabilitation cleaning: Wells 1 and 2. Both are public water supply wells. Available well logs are attached. Two abandoned wells are targeted for abandonment sealing. One is a 1960s-era water well. The second is an abandoned borehole with tools reportedly stuck in the hole. We have no records on these two at the present time.

Well	Date completed	Total depth (ft)	Casing (ft)	Static WL	Dia (in)
1	1999	250	63	19	6
2	1999	250	63	11	6

Wells slated for rehabilitation: Casing is galvanized steel (Schedule 40). Available performance information are summarized as follows:

Well 1	Nov 10, 1999	June 24, 2011
Static Water Level (ft.)	19	19.45
Pumping Water Level (ft.)	72	59.54
Drawdown (ft.)	53	40.09
Pumping Rate (g.p.m.)	23	24
Specific Capacity (gpm/f)	0.4339	0.59865

Well 2	Dec 10, 1999	June 24, 2011
Static Water Level (ft.)	11	6.60
Pumping Water Level (ft.)	187	43.40
Drawdown (ft.)	176	36.80
Pumping Rate (g.p.m.)	60	74
Specific Capacity	0.34	2.01

The accuracy of the 1999 information cannot be verified. The 2011 values for Well 2 suggest that the reported flow rate, pumping water level and drawdown for Well 2 in 1999 may be in error. Well 1 is equipped with a Baker Monitor spool-type pitless unit. Well 2 is equipped with a through-the-casing pitless adapter.

Formations are combinations of shale, sandstone, and limestone (Greenbrier Group), with water being produced in fracture zones. Water quality is low in total dissolved solids, hardness, alkalinity, iron and manganese. Clogging has not been evaluated and is probably not severe, but an accumulation from 12 years of activity is expected.

Treatment and Testing:

In general, well rehabilitation will involve the following tasks 1) remove in-place well pumps (both wells); 2) remove full-length 4-inch slotted F-480 PVC liners (both wells), 2) inspect, clean, and repair pump and discharge pipe components as required; 3) brushing and surging to remove surficial material; 4) application of a well cleaning treatment program (details following); 5) chlorine disinfection; 6) post-cleaning video inspection; 7) assisting with post-cleaning pumping tests, **8) repairs and upgrades to pitless units and adapters, and 9) reinstallation of permanent pumps.** The facility engineer's hydrogeologic consultants (Ground Water Science) have provided a list of necessary equipment for this well rehabilitation project (listed at the end of this technical task description).

Specific Rehabilitation Work Tasks for both Well 1 and Well 2

Note to potential bidders: There are **two** alternative methods for redevelopment permitted **but for the purpose of bidding (unit basis) they can be considered the same procedure for bidding time and materials.** See list of necessary equipment attached. *All tasks and volumes should be repeated for each well.*

(A) Preparation, pump and discharge pipe, liner removal, and initial video inspection:

(1) Pull discharge pipe, wire, and pump (set at 200 ft) and lay out on clean plastic sheet or plastic tarp, or on stands off the ground. Inspect for problems including wire grounding and bring problems to the attention of the water superintendent. Clean off visible fouling on inside and outside surfaces (air pressure and/or pressure washer – water only) and cap pipe joint ends.

(2) In well 1 (spool-type pitless unit) plug off the discharge line and close the well's valve into the water plant during cleaning. The pitless unit will be repaired (see below). In well 2 (a through-the-casing pitless adapter), dig to the discharge line, remove the pitless adapter completely, plug the discharge line, and plan to replace the pitless adapter (see below).

(3) Remove the installed 4-inch PVC liner. The liners reportedly extend from 5 feet below the well top to the total depth in each well. The liner will not be reinstalled **under this work package.** Removal method is at the contractor's discretion but the liner must be completely removed.

(4) After clearing well, conduct a pre-cleaning downhole video of the well. If necessary, employ water column-clearing methods first. The video system shall be in color and provide in-progress switching between down and side view during the inspection. The video system shall provide an image of sufficient quality to permit the facility engineer's hydrogeologic consultants to evaluate borehole condition. A record of the video shall be made on DVD and a copy provided to the facility engineer's hydrogeologic consultants.

(B) Well rehabilitation and disinfection: The following program is planned:

(1) Brushing: Brush the casing and open borehole to remove surface encrustations and biofouling. The recommended tool is a Cotey Chemical well brush, or equivalent cylindrical brush with fiberglass or plastic bristles set to abrade the nominal casing I.D., mounted on a drill-

stem sub. Aggressive wire brushes will not be allowed. Added weight may be necessary. The hoist system used must be capable of inserting and removing the brush assembly safely.

One pass in and out is anticipated. Run the brush. Install 1-inch+ airline and airlift until clear.

(2) Chemical dosage

(a) Install a 1-in. or greater plastic tremie line (threaded rigid PVC-CPVC, flexible PE), or alternative such as frac pipe. About 240 ft of tremie should be sufficient. This may be the same as the development airline.

(b) An NSF 60-listed well cleaning chemical product that is primarily glacial (above 95 %) glycolic acid plus suspending and dispersing polymers, is specified due to the probable presence of biofilm but relative lack of mineral-heavy deposits, iron or manganese. One such product is Baroid IDP Aqua-Clear AE, supplied in 5-gal carboys as a concentrated product. Alternatives must be presented to the facility engineer's Hydrogeologist Consultant for approval. There shall be NO phosphorus of any kind (including phosphoric acid and in polymer additives) in any chemicals used. Documentation of any alternative chemical must positively rule out the presence of phosphorus in any form. The chemical may be dosed directly into the well.

(c) Volumes: The specified dosage for Aqua Clear AE or equivalent for each well is 30 gal. of product.

Safety: The liquid chemical is nearly 100 percent glycolic acid. MSDS must be on site. The acid mixture is best transferred to the well using an acid-resistant transfer pump safe for the acids used and black PE hose, with secure, nonleaking hose connections. People handling the acid must have face and other splash protection, and avoid breathing fumes of concentrated chemical, or direct skin contact. Clean wash water must be available at hand in case of spills or splash.

Handling: Follow all manufacturer handling and safety instructions. The concentrated liquid chemical may begin to solidify below 50 degrees F, and so plan accordingly as needed. Diluted organic acids will not freeze until below 32 F.

(d) Although wells 1 and 2 are some distance apart, prior to dosing chemical, assure that the available storage is full and both wells are locked out and tagged during the chemical application and soak period (Steps 2.e and 3.c.i). The other well can be restarted as chemical is being pumped off (step 3.c.ii). It can be restarted before with regular check of pH and appearance.

(e) Application:

- i) Following safe practices, transfer specified chemical volume into the well.
- ii) Surge chemical in the well for at least one hour. Leave to soak 12 hr.

(3) Mixing and redevelopment

Two alternatives for well redevelopment are specified. See "necessary equipment" list. Necessary equipment, either method:

- 1) Controlled, water-tight connection between tools downhole and discharge to outflow chamber.

- 2) Provide an outflow chamber (large baffled mud tank or equivalent) for neutralizing chemical and settling developed solids before discharge.
- 3) Provide a means to measure flow rate while airlift pumping **such as a** horizontal tank of known volume (can be the outflow chamber if volume is known) or other as approved by the facility engineer's Hydrogeologist Consultant).

(a) **Mixing alternative 1:** Double surge block with airlift or pump, operated on either a mechanical cable tool rig or pump hoist that provides equivalent reciprocal spudding action (2 ft/sec vertical motion). Pump hoists that provide this action are equipped with frame-mounted hydraulically actuated walking beam (Smeal or equivalent).

(b) **Mixing alternative 2: Convention airlift surging. The two-line method (with a 4-inch educator pipe and 1-inch airline – see example diagram) will improve the ability to pump debris off the well bottom and reduce turbulent abrasion of shales.**

(c) Mixing procedure:

- i) Following a 12-hr soak, surge (not pumping) for four hours after administering dose of chemicals, moving surge tool up and down across the entire borehole.
- ii) Start pumping off after four hr of surging (ii) at up to the known well yield (measured): pumping, recovering and repeating, until pH recovers to about 0.5 pH units of pre-cleaning pH and water is clear. Measure flow rate on the one-half hour.
- iii) Airlift develop for two hours after water is clear and pH acceptable.

Note: Air-driven percussive redevelopment (Airburst (Frazier Technologies) or Boreblast (Layne Christensen)), specified in the earlier document (former Alternative 2), is deleted as an alternative.

Environmental safety: The dirty discharge may be acidic. It must be discharged into containment (as described above) and neutralized with lime, soda ash, or magnesium hydroxide to at least as high as pH 6 prior to removal to safe discharge such as an RV dump or sewer. Have on hand 50 pounds of soda ash or equivalent per well. Work with park wastewater personnel to arrange appropriate discharge and provide documentation of safe disposal to the facility engineer's hydrogeologic consultants (Ground Water Science). No contaminated water may be discharged around the well, into surface drainage, or other unapproved location.

(C) Conduct post-cleaning well video

After clearing well, conduct a post-cleaning downhole video of the well. If necessary, employ water column-clearing methods first. The video system shall be in color and provide in-progress switching between down and side view during the inspection. The video system shall provide an image of sufficient quality to permit the facility engineer's hydrogeologic consultants to evaluate borehole condition. A record of the video shall be made on DVD and a copy provided to the facility engineer's hydrogeologic consultants.

(D) Test pumping pump and column pipe installation and testing:

(1) Install test pump sized based on yield estimate from well development airlifting, and its wire and discharge pipe. Connect to an external source of power (generator if needed or line power if correct for pump motor function) and run briefly to check proper function. Block at wellhead for step-drawdown test (Ground Water Science supplies data collecting instruments, collects data and controls test).

(2) Step test standby for well crew approximately 2 hr. (or come back the next day).

(E) Pitless adapter or unit repair and upgrade:

(1) Well 1: After well testing, repair and upgrade pitless unit

- (a) Set a plug or packer below the pitless unit.
- (b) Dig out pitless unit, detach, and inspect.
- (c) If it is suitable for use, clean the junctions and weld pitless unit to casing, water-tight.
- (d) Fit top of pitless unit with mount for vermin-proof and vented cap meeting current state and industry (for example, Water Systems Council) standards.
- (e) Inspect and make any necessary repairs to spool and seal.

(2) Well 2: After well testing, install improved pitless adapter (weld-on type providing an unobstructed path into the well casing) and well cap meeting current state and industry standards.

(F) Install or reinstall permanent well pump:

(1) If no change is to be made in well pump at present, reinstall current well pump if functional, with inspected power wire, pump discharge pipe, and necessary check valves. Wire into power, assuring watertight conduit-cap-box junctions and check function.

(2) Alternatively, if a new well pump is to be installed based on the well tests, install with new pump discharge pipe, check valve(s), wire, and controls. The specifications and purchase of this new pump are separate from this well rehabilitation specification.

(3) During or permanent pump installation, mix in a 100- to 250-gal tank: a) 50 gal. clean potable water, 3 gal. 5 % white vinegar or amount of chlorine pH buffer product meant for well chlorination specified by the supplier. Discharge into well after test is completed. b) in 50 gal of clean, potable water, mix 1 gal of fresh 12 % NSF-listed Na hypochlorite and pump into the well piping to below the deepest production zone. c) Rig recirculation into the casing to permit wash down of casing. d) Turn on well pump to mix, check pH, which should be between 5.5 and 6.5. e) Allow to sit for 12 hr, pump off until clear to containment or neutralized and pumped to surface drainage (if approved by the WV DNR) until total chlorine is < 0.2 mg/L by field test.

(4) Once the post-cleaning step-drawdown test and chlorination are completed, reset in pitless unit and restore normal function.

(G) Abandonment Sealing of an Abandoned Water Well and Abandoned Borehole

An abandoned formerly used water well and a borehole that was abandoned while drilling was in progress (reportedly with tools lodged in place) are found in the vicinity of the in-use Wells 1 and 2. At present time, no records of this well and borehole are available. These will be supplied if unearthed. It is assumed that old Well 1 (1960s era) is cased, 6-in. diameter and is similar in depth to wells 1 and 2 (~ 250 ft). The open hole depth of the abandoned borehole is unknown. The State wishes to have these sealed as part of this project scope.

(1) Standards: All well sealing will be conducted in conformance with the requirements of the State of West Virginia for sealing (decommissioning) abandoned wells and boreholes. In the case of the abandoned borehole, tools will be abandoned in place as they are considered irretrievably stuck.

- (2) Well and borehole shall be sealed using high solids granular bentonite pumped in under pressure. Grout bentonite shall be a product meeting state standards for a bentonite sealing product, mixed per state requirements and supplier recommendations. A mixing and pumping polymer meeting state requirements and as recommended by the supplier may be used to facilitate mixing and pumping.
- (3) The well and borehole shall be accessed, and a path opened into the well bore. Sound the open borehole to obtain a total current depth to estimate necessary sealing bentonite volume.
- (4) Mix bentonite slurry and insert rigid tremie pipe.
- (5) Using positive displacement pumping, fill the borehole and well space, keeping the tremie pipe submerged and withdrawing as the hole fills.
- (6) Pump until bentonite completely fills the borehole to the surface.
- (7) Prepare and submit a well abandonment record to the appropriate authorities, copying the Park Engineer's Hydrogeology Consultant.

General Conditions:

Qualifications: Contractor must be a licensed master water well contractor in good standing in the State of West Virginia. Candidate contractors will be required to provide license information upon request and written, verifiable evidence of experience in similar well-cleaning tasks upon request. Contractors will be required to have a written, site-specific health and safety plan available for inspection.

In case of coliform test failure: If a total coliform test is positive twice (or *E. coli* once) after the well is returned to service, repeat the chlorination procedure (Task **F.3**).

Chemical mixing equipment and tanks: Tanks and hoses shall be visibly clean and free of sand or debris from past work. Tanks shall be sufficiently large to handle chemical mixing. Circulation pumps (electrical or motor powered) are needed for mixing and pumping into the well. All equipment shall be safe, resistant to aggressive solutions, and free from leaks.

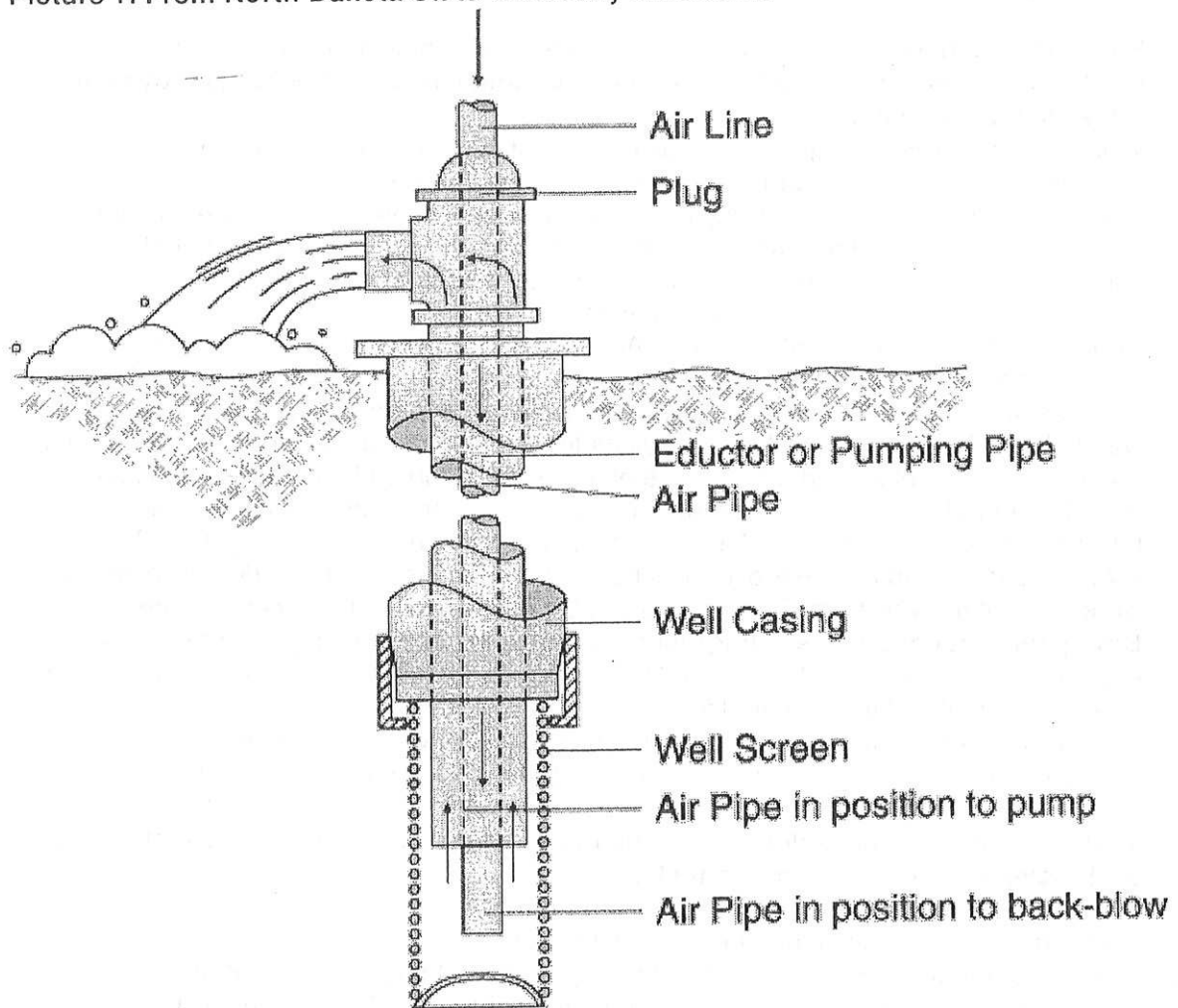
No polyphosphates or phosphoric acids are to be used due to the tendency to degrade in the formation to orthophosphate or organic-P and to stick to clays, providing phosphate nutrient for regrowth of biofouling organisms.

Authority: At the pleasure of the State of West Virginia and the consulting engineers to which it is contracted, Smith-Comeskey Ground Water Science's onsite advisor will advise on and assist with chemical treatment and have final say on solutions, application, site management, and safety issues.

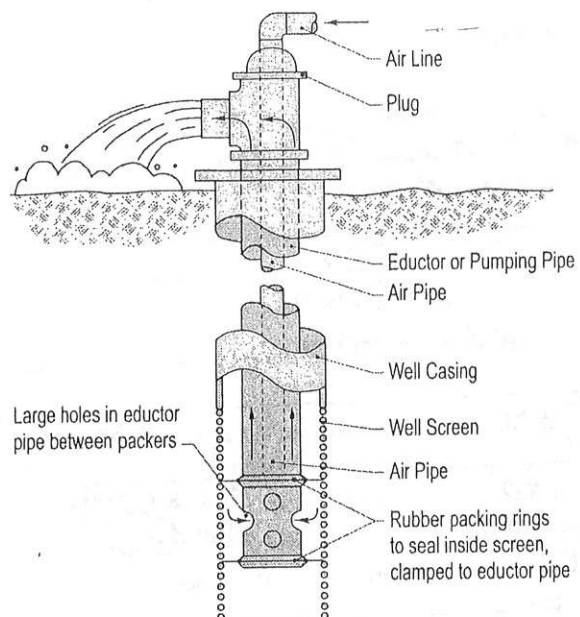
Necessary equipment list, well rehabilitation project

1. Pump hoist (in good mechanical condition) capable of handling the specified tools at the depths and diameters involved, and related tools, **and capable of being deployed at the well sites in question.**
2. Where reciprocal well surging is specified (Alternative 1), the optimal equipment is a cable tool drilling or workover rig in good mechanical condition and capable of handling the specified tools (typically a Bucyrus-Erie 22W or equivalent). Can double as pump hoist. An acceptable alternative is a pump hoist equipped with a frame-mounted spudding beam system in good hydraulic and mechanical repair. The system must be able to surge at two feet/second over a three-foot stroke.
3. Double surge block with airlift or pump (Alternative 1): Descriptions are provided in numerous references. The tool has two surge blocks with heavy rubber gaskets held between steel plates with an intervening pipe perforated to permit exchange of air and water. The rubber should be 1-in. less diameter than the casing. Rubber should be rigid and not a flap. Jointed rigid 3 or 4-in. steel pipe runs to the surface, terminating in a swivel-mounted right-angle discharge. The swivel accommodates an airline that runs through the center of the pipe. A pump may take the place of the airlift system. The swivel is attached to the work over rig's hoisting line. Joints may be added or removed to work parts of the well bore. The right angle pipe discharges to the receiving tank.
4. **Both cable-tool or airlift surging:** Air compressor in good working order and safe, capable of airlifting the well's specified flow rate, plus associated hose and fittings (safe and not leaking), Oil filter on air discharge.
5. Outflow tank, ideally a large baffled mud tank **of known volume of about 1000 gal)** or equivalent for neutralizing chemical and settling developed solids before discharge.
6. A means to measure flow rate while airlift pumping (can be the outflow chamber).
7. **Test pump in working order (motor and pump end) and sized to achieve the goals of the step-drawdown pumping tests.**
8. A 100- to 250-gal. clean tank for disinfectant mixing.
9. Pressure washer for cleaning pipe and equipment.
10. Transfer pump for chemical feed, typically a plastic or stainless steel centrifugal pump such as a shallow-well jet pump (along with fluid-tight and safe hose and fittings).
11. Downhole video camera (as specified): color, on-the-fly down and side view and providing a DVD record.
12. Generator capable of running contractor's electrical equipment. Optionally, as needed, a generator capable of operating the test pump. **This pump-scale generator must produce consistent volt, amp, and phase output.**
13. **All necessary safety equipment and fresh wash water – available at the water treatment plant.**
14. **Tank or tanker truck for removing rehabilitation discharge fluid off site for disposal as needed**
15. **For well abandonment sealing: grouting bentonite mixer and positive displacement pump in good working order, rigid tremie pipe and attachments.**
16. Specification instructions, read by personnel conducting the work.

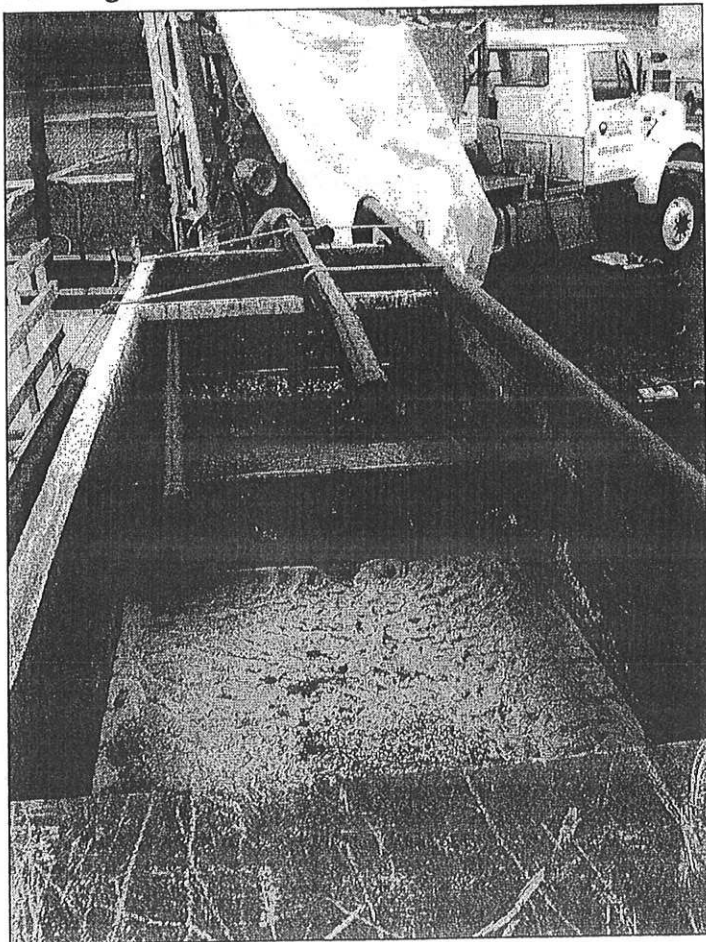
Picture 1: From North Dakota State University Extension:



Picture 2: Double surge-block system diagram (North Dakota State University Extension):



Picture 3: Large surge-neutralizing/settling tank. Airline discharge enters tank and discharges at the back. Outflow flows out through baffled tank through neutralizing chemical as needed and to surface or tank for hauling away. There are various ways to do this, but a tank this size readily treats well cleaning discharge. Hauling should be limited to outflow from the first hour.



05/25/83

10:32

3045582981
SOURCE WATER → 913844575571

NO. 640

P01

WV STATE DEPARTMENT OF HEALTH
Office of Environmental Health Services
ENVIRONMENTAL ENGINEERING DIVISION

Well #1

SW250

WELL COMPLETION REPORT

Date(s) _____ County Tucker Permit # 13,640
 Town: _____ Area Name/Location Carroll Valley State Park - Well #1
 Well Owner: W.V. Div. of Natural Resources Address: 1200 Harrison Ave.
 Telephone Number: 606-6300 Elkins, W. Va. 26241
 Well Driller: Frame Drilling Co. Address: P.O. Box 1907
 Telephone Number: 6036-6025 Elkins, WV 26241

WELL LOG

DEPTH IN FEET	FORMATIONS: KIND, THICKNESS, AND IF WATER BEARING	REMARKS:
0-12	Unconsolidated	Type of Well: <u>Rock</u> Drilling Method: <u>Hammer Rotary</u>
12-40	Gray Sh. - cement 22' with brown mud	Well Diameter: <u>10"</u> Casing O.D.: <u>6 5/8"</u>
40-46	Red Shale	Well Depth: <u>250'</u> Date Completed: <u>Oct. 31, 1979</u>
46-47	Gray S.S.	CASING: Length <u>63</u> feet Sch 40 Galv. <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Plastic <input type="checkbox"/> Cast Iron
47-58	Red Sh. layer with Red Sandy Sh	Height above ground <u>15</u> feet
58-60	Gray S.S.	Other _____ Type _____
60-74	Red Sandy Shale	SCREEN: <u>Well Zone</u>
74-78	Red Sh. H ₂ O	<input type="checkbox"/> None installed 4" PVC - F-480 from bottom well to app. 5' below surface
78-78.5	Gray Sh.	Type _____ Diameter _____
78.5-81	Red Shale	Slot/Gauge _____ Length _____
81-81.5	Gray Sh.	Set Between _____ Ft. and _____ Ft.
81.5-84	Red Shale	

PUMPING OR BAILING TEST

DETAILS	#1	#2	#3
Static Water Level (Ft. Below Grade)	14		
Pumping Rate (GPM)	23		
Pumping Level (Ft. Below Grade)	72'		
Duration of Test (in Hours)	36		
Recovery Time to Static Level (in Hours)	1/4		

84-89 Gray Sh. 120

I hereby certify that this well was drilled and constructed under my supervision, in compliance with all requirements of the referenced permit, and that this record is true to the best of my knowledge and belief.

84-89 Gray Sh. 120

84-89 Gray Sh. 120

84-89 Gray Sh. 120

84-89 Gray Sh. 120

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84-89 Gray Sh. 120

84-89 Gray Sh. 120

84-89 Gray Sh. 120

84-89 Gray Sh. 120

06/25/03

10:32

SOURCE WATER - 913844575571

NO. 648

082

12,640

CANADIAN Valley State Park well # 1
well #1

147.5 - 152	Red Sh with Grey L.S. streaks
152 - 156	Red Shale
156 - 158	Grey L.S.
158 - 161	Red Sh
161 - 164	Grey Sh
164 - 221	Grey L.S.
175 - 180	Alternating hard & soft layers
182 -	soft 3 inches
184 - 188	soft
192 -	soft 4 inches
221 - 222	Red Sh
222 - 223	Grey L.S.
223 - 247	Grey L.S. (harder than above)
247 - 250	Grey L.S. (softer than above)

06/25/03 11:46 DEPT. OF HEALTH, ENVIRONMENTAL ENGINEERING DIVISION
06/25/03 10:32 SOURCE WATER # 913044575574 NO. 648 087

WV STATE DEPARTMENT OF HEALTH
Office of Environmental Health Services
ENVIRONMENTAL ENGINEERING DIVISION

SW258

WELL COMPLETION REPORT

Well #2

Date(s) _____ County Tucker Permit # 13,640
Town _____ Area Name/Location Carson Valley State Park-Walton
Well Owner: W.V. Div of Natural Resources Address: 1200 HARRISON AVE.
Telephone Number: 635-0300 Elkins, W.V. 26041
Well Driller: Frame Drilling Co. Address: P.O. Box 1907
Telephone Number: 636-6025 Elkins, WV 26021

WELL LOG

DEPTH IN FEET	FORMATIONS: KIND, THICKNESS, AND IF WATER BEARING	REMARKS:
0-17	Unconsolidated	Type of Well: <u>Pack</u> Drilling Method: <u>Hammer Rotary</u>
17-50	Gray S.S.	Well Diameter: <u>6"</u> Casing O.D.: <u>6 5/8"</u>
	Fractured 2' 30"	Well Depth: <u>250'</u> Date Completed: <u>June 21, 1999</u>
	between the 2 features	CASING: Length <u>63 feet</u> Height above ground <u>220.15 feet</u>
50'-53	Red Shale	Sch 40 <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Plastic <input type="checkbox"/> Cast iron
53-56	Gray S.S.	Other _____ Type _____
56-56.5	Red Shale S.S. layers	
56.5-60.5	Gray S.S.	
60.5-69	Red Shale Sh	between well liner
69-80	Red Sh	<input type="checkbox"/> None installed 4" PVC F-480 From bottom
80-81	Gray Sh	Type <u>well to app. 5' below</u>
81-84	Red Sh	Slit/Gauge _____ Length _____
84-85	Gray Sh	Set Between _____ Ft. and _____ ft.
85-88	Red Shale	

PUMPING OR BAILING TEST

DETAILS	#1	#2	#3
Static Water Level (Ft. Below Grade)	<u>11'</u>		
Pumping Rate (GPM)	<u>60</u>		
Pumping Level (Ft. Below Grade)	<u>187</u>		
Duration of Test (In Hours)	<u>36</u>		
Recovery Time to Static Level (In Hours)	<u>5</u>		

WELL HEAD N.E.D.

Pitless Adapter: Type, Make, Etc. N.E.D.
Well Cap: Type, Make, Etc. Bay R
Well Seal: Type, Make, Etc. _____
Well Platform: N.E.D.
Length _____ Width _____ Thickness _____
Grouting: grout Entire length of casing
All Public Water Supplies must be grouted.

I hereby certify that this well was drilled and constructed under my supervision, in compliance with all requirements of the referenced permit, and that this record is true to the best of my knowledge and belief.

See Attached
Sheet For
well log to 250'

Jack B. Frame Jr.
Name _____
Frame Drilling Co.
Registered Business Name _____
Signed _____
Certification No. 181
Date June 10, 1999

06/25/03

10:32

SOURCE WATER # 913044575571

NO. 640

D004

Permit # 1369

Canaveral Valley State Park
Well # 2

Well # 2

88-91	Gray LS		
91-92	Red Sh.		
92-93	Gray S.S.		
93-94	Red Sh.		
94-100	Gray LS		
100-110	Soft Gray Sh.		
110-112	Red SS		
112-117	Alternating layers of red sh. & red SS.		
117-119	Gray SS		
119-121	Red S. sh.		
121-125	Gray SS		
125-126.5	Red sh.		
126.5-127	Red SS		
127-129	Gray SS		
129-135	Red & Gray Sh.	H ₂ O 10:40 PM	
135-137	Gray SS		
137-138	Red Sh.	H ₂ O 10:40 PM	Fractured Rock
138-145	Gray SS		
145-155	Red Sandy Sh.	H ₂ O 5:40 PM	
155-158	Red Sh.		
158-159	Red Sh.		
159-162	Gray L.S. with red sh. streaks		
162-165	Red Sh.		
165-166	Gray LS		
166-169	Red Sh.		
169-171	Gray Sh.	H ₂ O	
171-230	Gray L.S.	7:40 PM	
	Alternating layers of hard & soft		
230-234	Red sh.		
234-250	Gray LS	H ₂ O 5:40 PM	
	Drilling near Fractured Rock and bottom of hole		

Uniform Unit Price Bid Schedule

Item	Unit Price	Estimated Units	Price
Mobilization	\$ _____	Lump Sum (LS)	\$ _____
A. Pull 2 well pumps (pumps at 200 ft), discharge line and wire and lay out, pull 2 x 250 ft of 4-in. PVC liner, prep pitless			
Pump hoist/crane truck	\$ _____ / hr.	16	\$ _____
Crew labor	\$ _____ / hr.	16	\$ _____
Poly sheeting	\$ _____ / LS	LS	\$ _____
B. Well Cleaning			
1. Brushing 2 x 250-ft 6-in. wells, airlift (Task B.1)			
Pump hoist/crane truck	\$ _____ / hr.	8	\$ _____
Crew labor	\$ _____ / hr.	8	\$ _____
2. Chemical Treatment: Vol. depend on treatment alternative chosen			
a.1. Aqua-Clear AE (vol For 2 wells) or	\$ _____ / LS	60 gal.	\$ _____
a.2. Soda ash or equivalent	\$ _____ / lb	100 pounds	\$ _____
b. Mixing and dosing with chemical solution (Task B.2.d and e)	\$ _____ / hr.	6	\$ _____
3. Redevelopment:			
Tasks B.3.a to c Mark whether using <input type="checkbox"/> Cable tool or <input type="checkbox"/> Conventional airlift surging			
Surging rig or hoist (include tank costs)	\$ _____ / hr.	42	\$ _____
Crew labor	\$ _____ / hr.	42	\$ _____
Air compressor (if needed) generator (including fuel)	\$ _____ / week	2	\$ _____
Generator (if needed) (including fuel) for Task D	\$ _____ / day	2	\$ _____
Tank truck for hauling spent fluid	\$ _____ / week	2	\$ _____
C. (also A.4) TV Surveys – Vertical and Horizontal (camera & labor)	\$ _____ / hr.	8	\$ _____
D. Install and remove test pumps (Tasks D.1-2 for 2 wells)			\$ _____
Crane/hoist truck (include standby)	\$ _____ / hr.	14	\$ _____
Crew labor (include standby)	\$ _____ / hr.	14	\$ _____
D. Supply test pumps (well 1 up to 100 gpm and well 2 up to 185 gpm)	\$ _____ / LS	LS	\$ _____
E. Repair/upgrade pitless units (Tasks E.1 and E.2)	\$ _____ / LS	LS	\$ _____
F. Re-install Existing Pumps (Tasks F.1-4 for 2 wells)			\$ _____
Crane/hoist truck	\$ _____ / hr.	8	\$ _____
Crew labor	\$ _____ / hr.	8	\$ _____
Disinfection (all Task F.3)	\$ _____ / LS	LS	\$ _____
G. Sealing for 2 Abandoned Wells	\$ _____ / ft	500	\$ _____

TOTAL FOR TWO WELLS (REHABILITATION) AND WELL ABANDONMENT \$ _____

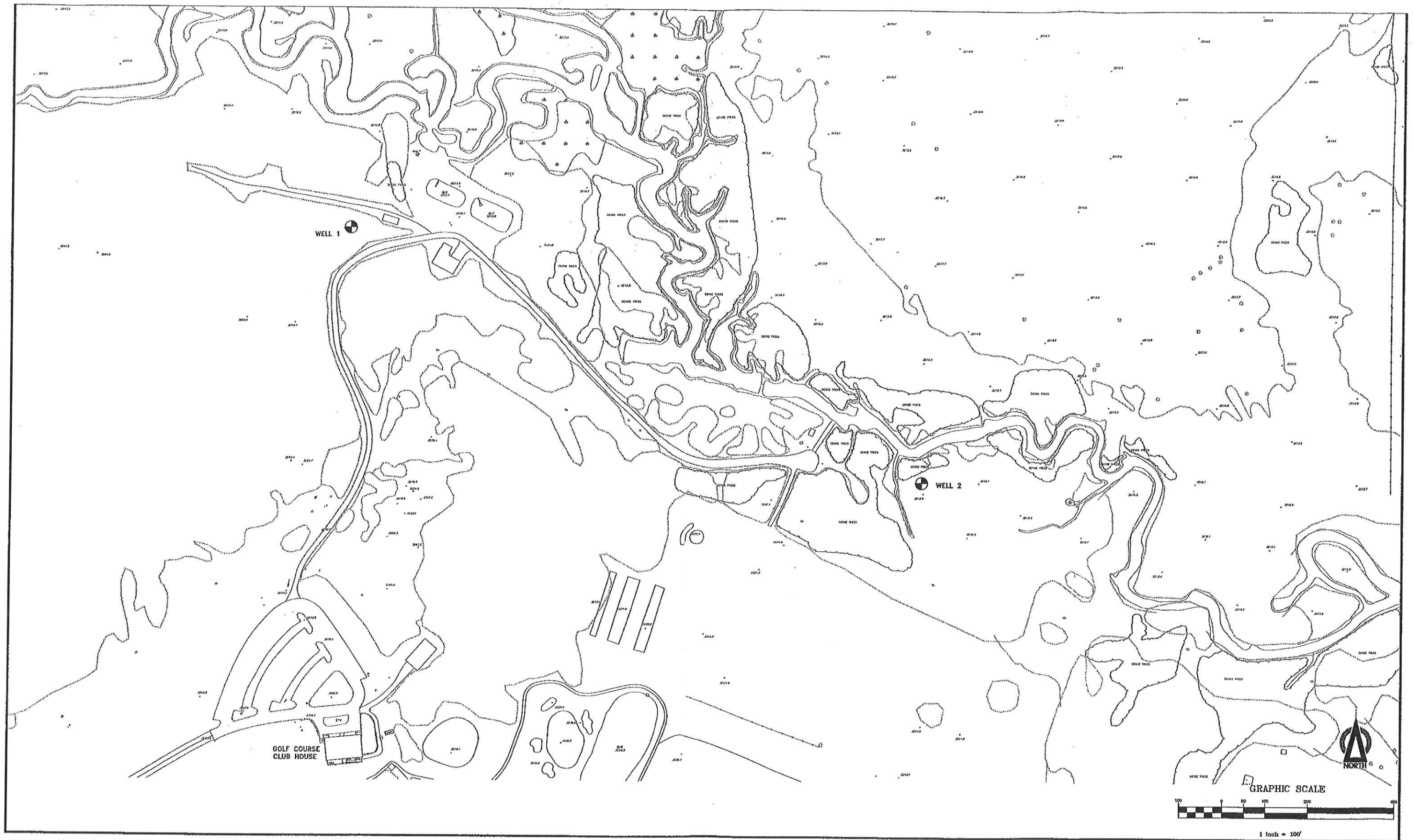
* **Notice to Bidder:** This will be a Unit Price Contract based on your Unit Prices submitted on the included Uniform Unit Price Bid Schedule. Your Unit Prices will be the basis for payment for work performed. The Estimated Project Cost will be the basis for awarding the contract. Hourly wages must conform to Prevailing Wage Rates.

Quotation effective until (date): _____


Signature _____ Date _____

Title _____

H:\Projects\11\1022\cadd\contract 2a\1022 wells.dwg, 10/13/2011 9:59:00 AM, 11b69



REVISION NUMBER	REVISIONS	DATE	BY

**Chapman
Technical
Group**

AIRPORT PLANNING / DEVELOPMENT
 ARCHITECTURE / INTERIOR DESIGN
 CIVIL ENGINEERING / SITE DEVELOPMENT
 ENVIRONMENTAL ENGINEERING
 LANDSCAPE ARCHITECTURE
 SURVEYING

St. Albans, WV
 (304) 727-5501
 Buckhannon, WV
 (304) 472-8914
 Martinsburg, WV
 (304) 260-1222
 www.chaptech.com

PROJECT INFORMATION

WV Division of Natural Resources
Parks and Recreation
Canaan Valley State Park Resort
Contract 2A - Well Rehabilitation

WELL LOCATION MAP

SEAL

- PRELIMINARY -
NOT FOR
CONSTRUCTION

JOB NUMBER:	11022
SCALE:	1" = 100'
DATE:	OCTOBER 2011
DRAWN BY:	FLB
DESIGNED BY:	RDD
CHECKED BY:	JEB
SHEET NO.	1