OCT 11 2007

Mr. Chris Blanchard
President
Performance Coal Company
P. O. Box 69
Naoma, WV 25140

Dear Mr. Blanchard:

Subject: Approved Gas Well Permit, Section 75.1700, 30 CFR 75,
Upper Big Branch Mine-South, I.D. No. 46-08436,
Performance Coal Company, Montcoal, Raleigh County,
West Virginia, Permit No. 17325-T10

This will acknowledge receipt and approval of the subject permit for extracting coal in the vicinity of gas well No. 955 located on the subject mine property.

The permit is based upon an evaluation of the projected mine plan as shown on Form OG-45 dated October 3, 2007, and is issued in accordance with provisions of Section 75.1700, 30 CFR.

Should you have any questions concerning this matter, please contact William L. Ross at (304) 877-3900/Ext. 142.

Sincerely,

/s/ Richard J. Kline

Robert G. Hardman
District Manager
Coal Mine Safety and Health, District 4

cc: Mt. Hope Field Office
    Inspector
    Field Office Supervisor
    Files/dac
OCT 11 2007

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President  
Performance Coal Company  
P. O. Box 69  
Naoma, WV  25140

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Sincerely,

Robert G. Hardman  
District Manager  
Coal Mine Safety and Health, District 4
STATE OF WEST VIRGINIA
OFFICE OF MINERS' HEALTH, SAFETY & TRAINING
1615 WASHINGTON ST. EAST
CHARLESTON, WV 25311-2126

PERMIT NUMBER: B00-1036
DATE: 10/09/2007

PERMIT
TO EXTEND MINE WORKINGS
WITHIN THE 200 FOOT RADIUS OF OIL OR GAS WELLS

COMPANY: PERFORMANCE COAL CO.
MINE: UBBMC MONTCOAL EAGLE
SEAM: EAGLE
DISTRICT: CROOK
COUNTY: RALEIGH
ADDRESS: PO BOX 59
CITY: NAOMA,
STATE: WV, ZIP: 25140

MINE PERMIT NUMBER: U00304292

PERMISSION IS HEREBY GIVEN:

TO MINE WITHIN A 200 FOOT RADIUS OF DOMINION
NATURAL RESOURCES WELL NO. 955 ABANDONED GAS WELL
LOCATED ON THE ALBERT H. COLE ET.AL. FARM IN THE
CROOK DISTRICT OF BOONE COUNTY AS SHOWN ON THE
APPROVED ATTACHED MAP.

CONTIGENT UPON THE FOLLOWING:

1. MINING IS TO BE PERFORMED STRICTLY IN ACCORDANCE WITH THE MAP APPROVED
   BY THE DIVISION OF MINES HEALTH, SAFETY AND TRAINING HERETO.
2. A COPY OF THE PERMIT SHALL BE KEPT AT THE MINE.
3. THE PERMIT IS VOID UPON INSPECTOR'S RECOMMENDATION.
4. THE PERMIT IS NON-TRANSFERABLE.

WELL OPERATOR: DOMINION NATURAL RESOURCES
WELL OPERATOR WELL NUMBER: 955
MINE OPERATOR WELL NUMBER: 955

________________________________________
Ronald L. Wooten
BY:
DIRECTOR - WV MINERS' HEALTH,
SAFETY AND TRAINING

________________________________________
ADMINISTRATOR - WV MINERS' HEALTH,
SAFETY AND TRAINING

CCS:
DOMINION NATURAL RESOURCES
REGION: 4
M.S.H.A. District Office
H.S. & T. File
STOCK OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF MINES AND MINERALS

COAL OPERATOR'S PETITION TO OPERATE WITHIN 200 FEET OR TO MINE THROUGH A WELL

WELL TYPE: Oil ___ / Gas ___ / Liquid Injection ___ / Waste Disposal ___ / (If Gas, Production ___ / Underground ___ / Storage ___ / Deep ___ / Shallow ___)

LOCATION: Elevation: 1944.88' Watershed: Unnamed Tributary of Big Coal River

District: Crook County: Boone Quadrangle: Whitesville

WELL OPERATOR: Dominion Natural Resources DESIGNATED AGENT: Mr. Joe Garrett
Address 445 West Main Street
Clarksburg, WV 26301
Address 445 West Main Street
Clarksburg, WV 26301

The undersigned coal operator hereby petitions for leave to do the following:
X Mine within 200 feet of said well.

X Mine through said well when the same is properly plugged.

On the reverse side hereof is a copy of the map and plan of the undersigned coal operator showing its projected mine workings within 500 feet of said well.

The undersigned coal operator hereby represents that it will file updated or new maps and plans with the Department every six months, until mining within 500 feet of the well has ceased or until the well has been mined through.

Prior to the actual mining through of said well, the undersigned coal operator will submit the Form WR-35, Well Operator’s Report of Drilling, Fracturing and/or Stimulating, or Physical Change, Affidavit of Plugging and Filling Well, and the Form WR-3B, to show that the well has been properly plugged in a manner to permit the safe mining through the well.

Copies of this petition and enclosed maps and plans have been sent by registered mail to the well operator, as required by Code 22A-2-75.

performance Coal Company

By George M. Sau

Its Mining Engineer

STATE OF West Virginia
COUNTY OF Raleigh, TO WIT:
I hereby state, being first duly sworn, deposes and says that he is Mining Engineer of the coal operator named above; that he is familiar with the facts set out both in the petition and on the accompanying maps and plans; and that the same are true.

Subscribed and sworn to before me this September 17, 2007.

My commission expires December 13, 2010

Notary Public
NOTICE BY COAL OPERATOR OF INTENTION 
TO EXTEND MINE WORKING WITHIN 200 FEET OF WELL

COAL OPERATOR

Performance Coal Company
Address: P.O. Box 69, Neoms, WV 25140

MINE: Upper Bp Branch
SECTION: Unit 2
OVERBURDEN: SS/Shale
COAL SEAM: Eagle

ROOF: Shale
BOTTOM: Shale

WELL TYPE: Oil X Gas / Liquid Injection / Waste Disposal
(If "Gas", Production / Underground storage / Deep / Shallow)

LOCATION: Elevation: 1944.88'
Watershed: Unnamed Tributary of Elk Run
District: Crook County: Boone Quadrangle: Whitesville
Farm: Albert H. Cole ET. AL. Tract: 3149 acres (Lease No. 68059)

STATUS: Active X Abandoned / Drilling /
Date completed or abandoned: August 1, 1963

AMOUNT OF CASING IN WELL: 13-3/8" (22), 9-5/8" (383), 7" (1782)
September 17, 2007

Mr. Robert G. Hardman  
District Manager  
Mine Safety and Health Administration  
100 Bluestone Road  
Mt. Hope, WV 25880-1000

Mr. Terry Farley  
WVMHS&T  
1615 Washington Street East  
Charleston, WV 25311-2126

Mr. Joe Garrett  
Dominion Natural Resources  
445 West Main Street  
Clarksburg, WV 26301

RE: Performance Coal Company – Mine Within 200’ of Gas Well 10485  
Upper Big Branch Mine-South  
Federal I.D. 46-08436  
State I.D. U-3042-92

Dear Sirs:

Please find enclosed the necessary forms to mine in proximity of Gas well no. 47-005-00955.

If you have any questions, or require further information, please call me at (304) 854-1761.

Respectfully Submitted

[Signature]

Performance Coal Co.  
George T. Levo  
Mining Engineer
Fax

To: George Livo

From: [Redacted]

Fax No.: 854-3529

No. of Pages: 2

Phone No. [Blank]

Date: 10/17/07

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

Comments:

☐ ☐ ☐ ☐

MSHA
Ensuring Worker Safety and Health in the Nation's Mines
### WELL RECORD

**Quadrangle**: Bald Knob  
**Permit No.**: NO-255

**Company**: West Virginia Natural Gas Company  
**Address**: Clarksburg, W. Va.

<table>
<thead>
<tr>
<th>Well No.</th>
<th>Acres</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>108.85</td>
<td>2,149</td>
<td>112.8</td>
</tr>
</tbody>
</table>

**District**: Oceana, County: Pocahontas

**The surface of the tract is owned in fee by**:  
**Address**

**Mineral rights are owned by**:  
**Address**

**Drilling commenced**: 3-15-63  
**Drilling completed**: 3-27-63

**Date Shot**:  
**From**  
**To**

**Open Flow**  
10ths Water In.  
10ths Mere. In.  
Inch

**Volume**:  
**Cu. Ft.**

**Rock Pressure**:  
**l.b.**  
**Cuu. brr.**

**Oil**:  
**None**

**WELL ACIDIZED**:  
**No**

**WELL PRACTICED**:  
7-12-63

**RESULT AFTER TREATMENT**:  
16 H

**ROCK PRESSURE AFTER TREATMENT**:  
**Net Saline**

**Formation**:  
**Color**:  
**Hard or Soft**:  
**Top**:  
**Bottom**:  
**Oil, Gas or Water**:  
**Depth**:  
**Remarks**

**CAVING CEMENTED**:  
**Size**:  
**No. Ft.**:  
**Date**:  
9-5/7  
9-5/7 cements to surface

**COAL WAS ENCOUNTERED AT**:  
1.6 Feet  
24.6 Inches

**179 Feet**:  
6 Inches  
FEET  
INCHES

**Remarks**

(over)
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<th>1945</th>
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<td>Sand &amp; Shale</td>
<td>335</td>
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<td>445</td>
<td>445</td>
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<tr>
<td>Sand &amp; Shale</td>
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<tr>
<td>Sand &amp; Shale</td>
<td>775</td>
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<tr>
<td>Sand</td>
<td>885</td>
<td>885</td>
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<tr>
<td>Shale</td>
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<td>Liney Shale</td>
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<tr>
<td>Sand</td>
<td>2655</td>
<td>2655</td>
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</tr>
<tr>
<td>Shale</td>
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<tr>
<td>Red Rock</td>
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<td>2985</td>
<td>2985</td>
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<tr>
<td>Sand &amp; Shale</td>
<td>3095</td>
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<td>3095</td>
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<td>3205</td>
<td>3205</td>
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<td>BIG LIME</td>
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<td>3315</td>
<td>3315</td>
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<tr>
<td>Sand</td>
<td>3425</td>
<td>3425</td>
<td>3425</td>
</tr>
<tr>
<td>Heir Shells</td>
<td>3535</td>
<td>3535</td>
<td>3535</td>
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<tr>
<td>VEIR SAND</td>
<td>3645</td>
<td>3645</td>
<td>3645</td>
</tr>
<tr>
<td>Sand &amp; Shale</td>
<td>3755</td>
<td>3755</td>
<td>3755</td>
</tr>
</tbody>
</table>

**TOTAL DEPTH K.B.** 3875

---

**Quit Dusting - Small Amount H2O**

**Test at 2590 0/10 W**

**Test at 2620 0/10 W**

**Test at 2655 70/50/10 W**

**FM Test at 2675 30-10 W 1" FM 1/2X & 1/2X**

**Test at 2700 30-35/10**

1" FM - 1/2X & 1/2X

**Test at 2910 10/10 W**

**FM 30X**

**Test at 3100 10/10 W**

**FM 30X**

**Test at 3310 0+14/1**

1" FM 136X

**Test at 3310 0+14/1**

1" FM 10X

**Test at 3310 7/10**

1/4" FM 28X

**Test at 3410 17/10**

1/4" FM 26X

**Test at 3515 12-14**

1/4" FM 21/2X & 26X

---

Plugged - 8/9/1943

---

[Signature]
STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION  

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE MADE IN TRIPlicate, ONE COPY MAILED TO THE DEPARTMENT, ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD COPY AND RATA OF THE RECTOR I.F OF REQUIRED SHOULD BE MAILED TO THEIR CORRESPONDING ADDRESSES.

Hugora Coal Company  
COAL OPERATOR OR OWNER  
Rhea, 7.73  
ADDRESS  

Kope Natural Gas Company  
WELL OPERATOR  
Mccandless, 7.73  
ADDRESS  

Cagle  
COAL OPERATOR OR OWNER  
19  
WELL AND LOCATION  
Droop  
District  
County  

Cole & Crane Real Estate Trust  
STATE OF PROPERTY OWNER  
Deese, 7.73  
ADDRESS  

First National Bank Hvy.  
Well No. 19-15  
ADDRESS  
Huntington, 7.73  
ALBERT H. Cole  
Farm  

STATE INSPECTOR SUPERVISING PLUGGING

STATE OF WEST VIRGINIA.
County of 300?...  

BE IT KNOWN and CERTIFIED, that the undersigned
being first duly sworn according to law depose and say that they are experienced in the work of
plugging and filling oil and gas wells and were employed by Albert H. Cole, as
well operator, and participated in the work of plugging and filling the above well, that said work
was commenced on the 3rd day of August, 1963, and that the well was plugged
and filled in the following manner:

<table>
<thead>
<tr>
<th>BAND OR ZONE</th>
<th>RECORDED</th>
<th>FILLING MATERIAL</th>
<th>PLUGS USED</th>
<th>CAUSING</th>
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</thead>
<tbody>
<tr>
<td>Aquigale</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
</tr>
<tr>
<td>Stone</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
</tr>
<tr>
<td>Senet</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
</tr>
<tr>
<td>Permo-Sand</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
</tr>
<tr>
<td>Acme</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
</tr>
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<td>Harl</td>
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<td>21-0</td>
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<tr>
<td>Senet</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
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<tr>
<td>Aquigale</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
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<td>21-0</td>
<td>12-6/24</td>
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<td>21-0</td>
<td>12-6/24</td>
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<tr>
<td>Surface</td>
<td>29/0</td>
<td>21-0</td>
<td>12-6/24</td>
<td></td>
</tr>
</tbody>
</table>

and that the work of plugging and filling said well was completed on the 8th day of
August, 1963.

And further deponents saith not.

Sworn to and subscribed before me.

My commission expires:

...  

Notary Public.

Permit No. 800-955-P

...
PROPOSED MANNER OF PLUGGING AND FILLING WELL

WEST VIRGINIA DEPARTMENT OF MINES
OIL AND GAS DIVISION
WORK ORDER

Well to be plugged and filled as follows:

Fill to surface with capping
Cut and remove 7th casing
Cement solid from 2756' to 2760'
Spot plugs of cement at the following depths:
2520', 2750' and 3121' - 10' below bottom of 9-5/8" casing
which is cemented to surface and must be left in.
Cement solid from 2151' to surface account of coal beds and
suitable marker in accordance with Rule 1' revised.

To the Department of Mines
Coal Owner or Operator,
Lessor or Property Owner,

Gentlemen:

This "work order" is submitted for your approval and concurrence and unless notified of your
disapproval or non-concurrence the undersigned will proceed with the plugging and filling of said
well in the above described manner on the date inspector is notified after permit is issued.

Very truly yours,

[Signature]
Well Operator

No objections have been filed by the coal owner or coal operator, or any available adjacent lease
or property owners or intervenors for the Department of Mines to the manner herein described for
the plugging and filling of the well above mentioned. Therefore, the same is hereby approved this
26th day of July, 1943.

DEPARTMENT OF MINES
Oil and Gas Division

[Signature]

NOTE: This work order shall be transmitted, together with the copy of the work order, to the Department of Mines, and, if to be approved or rejected, returned to the well operator at this office for pluging and filling, and note for
the well inspector.
NOTICE OF INTENTION TO PLUG AND ABANDON WELL

To THE DEPARTMENT OF MINES,
Charleston, W. Va.

Horton Coal Co.

Coal Operator

Applicant, A. R. A. Co.
Address

Date:

For

WELL TO BE ABANDONED

Street

City

County

District

State

Surfaces

Date

Deeded

Foreman

Power or Property Owner

Address

Inspector to be notified

Mr. Glen Jones

Cody, Cook, et al

City, Paytona, W. Va.

Telephone 836-5549 (Brashard)

Gentlemen—

24 HOURS IN ADVANCE OF PLUGGING

The undersigned well operator is about to abandon the above-described well and will commence the work of plug and abandonment of said well on the date specified in this notice. Such date shall not be less than five days after the day on which this notice is received or, if such notice should be returned to the undersigned, the date of such return shall be the date of receipt.

This notice is being given in order that your protective representatives may be present at the plugging and abandonment. You are further notified that whether you are represented or not, the undersigned well operator will proceed with the abandonment on time and according to this notice and will be subject to the penalties provided for in Section 14 Chapter 22 of the "Oil and Gas on Overtakes a" the notice in "Work Orders."

This notice is being mailed to registered mail to each of you at the above addresses on the above date.

Very truly yours,

[Signature]

[Title]

[Name]

[Address]

[Phone Number]

NOTE: Upon abandonment of any well drilled prior to June 1, 1929, a plot prepared by a properly qualified well driller in two copies of APPLICATION, 106a of "WELL ORDER" and two copies of the well record, 106b. This map must show the district and county in which the tract of land is located, the name and description of the owner or owner's name of the owner or owner's name of the tract and the date and time of the well to be abandoned. Determined by survey with the courses and distances of each well from two permanent points or landmarks on said tract.

NOTE: In case plugging is not commenced within four months from the date of permit, same shall expire and be of no further force or effect.

NOTE: PERMIT IS NOT TRANSFERABLE
Process No Adjust Results 9/17/2007 12:38
Raw file> G:\Engineering\PCC Engineering\MASON\Data\rw5\GW-10485-955 09-17-2007.Rw
CRD file> G:\Engineering\CRD's\PCC\Upper Big Branch/GW 10485 955 9-17-2007.crd

Scale Factor: 1.00000000  
Correct for Earth Curvature: OFF

Starting Point 1: N 344458.995 E 1832308.551 Z 2125.294  
Back Sight Point 2: N 344362.160 E 1832466.962 Z 2156.018

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Horizontal Angle</th>
<th>Zenith Angle</th>
<th>Slope Dist</th>
<th>Inst HT</th>
<th>Rod HT</th>
<th>Northing</th>
<th>Easting</th>
<th>Elev</th>
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<td>97.1844</td>
<td>259.020</td>
<td>5.480</td>
<td>4.880</td>
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<td>5.120</td>
<td>4.880</td>
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<td>99.0430</td>
<td>251.020</td>
<td>5.120</td>
<td>4.880</td>
<td>344094.863</td>
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Closure Results

Starting Point 1: N 344458.995 E 1832308.551 Z 2125.294  
Ending Point 14: N 344459.011 E 1832308.563 Z 2125.119  
Azimuth Of Error: +3'25"14"  
North Error : 0.01601  
East Error : 0.01225  
Vertical Error : -0.17460  
Hz Dist Error : 0.02016  
Sl Dist Error : 0.17576  
Traverse Lines> 12  
SideShots> 12  
Horiz Dist Traversed: 2469.595  
Slope Dist Traversed: 2502.610  
Closure Precision: 1 in 122483
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<td>2</td>
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Note
Data Collector Serial Number: FS69A53256

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Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP1, N 344458.995, E 1832308.551, EL2125.294, -- LOGAN FORK-11

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<tr>
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<td>121°26'13&quot;</td>
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<td>259.020</td>
<td>97°18'43&quot;</td>
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<tr>
<td>FR</td>
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<td>259.020</td>
<td>262°41'15&quot;</td>
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Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP3, N 344446.872491, E 1832051.923689, EL2092.92692, -- T/H
OC Pt BsPt Azi SetAzi
3 1 121°26'13"
HR: 4.88 (0.0 + 0.0 Offset)  
InstHt  RodHt  
5.120  4.880  
OcPt  BsPt  Azi  SetAzi  
3  1  87°17'44"  

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
MD: SD 1:131.32
RF, OP, FP, AR177.2623, ZE95.1242, SD131.32, HR4.88, -- T/H
RF, OP, FP, AR357.2637, ZE264.4703, SD131.32, HR4.88, -- T/H
Horizontal Angle Error: 0.0001
Zenith Angle Error: 0.0015
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

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<td>90°00'00&quot;</td>
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<tr>
<td>BR  3</td>
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<td>AR 267°17'59&quot;</td>
<td>0.000</td>
<td>270°00'00&quot;</td>
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<tr>
<td>FD  3</td>
<td>4</td>
<td>AR 177°26'23&quot;</td>
<td>131.320</td>
<td>95°12'42&quot;</td>
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<td>131.320</td>
<td>264°47'03&quot;</td>
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Note
OC, OP, N 344316.225377, E 1832057.766016, EL2081.233665, -- T/H

OcPt  BsPt  Azi  SetAzi  
4  3  357°26'22"  

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
MD: SD 1:251.02
RF, OP, FP, AR206.4431, ZE99.0427, SD251.02, HR4.88, -- T/H
RF, OP, FP, AR26.4437, ZE260.5526, SD251.02, HR4.88, -- T/H
Horizontal Angle Error: 0.0008
Zenith Angle Error: 0.0007
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

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<tr>
<th>OcPt</th>
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<th>SlopeDist</th>
<th>ZenithAng</th>
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<td>3</td>
<td>AR 357°26'22&quot;</td>
<td>0.000</td>
<td>90°00'00&quot;</td>
<td></td>
</tr>
<tr>
<td>BR  4</td>
<td>3</td>
<td>AR 177°26'20&quot;</td>
<td>0.000</td>
<td>270°00'00&quot;</td>
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<tr>
<td>RFU 4</td>
<td>5</td>
<td>AR 206°44'31&quot;</td>
<td>251.020</td>
<td>99°04'27&quot;</td>
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<td>FR  4</td>
<td>5</td>
<td>AR 26°44'37&quot;</td>
<td>251.020</td>
<td>260°55'26&quot;</td>
<td>T/H</td>
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Note
OC, OP, N 344094.863316, E 1831946.223166, EL2041.88038, -- T/H

OcPt  BsPt  Azi  SetAzi  
5  4  357°26'22"  

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
HR: 4.88 (0.0 + 0.0 Offset)  
InstHt  RodHt  
4.990  4.880  
OcPt  BsPt  Azi  SetAzi  
5  4  26°44'35"  

Page 2 of 9
Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP5, N 344094.863316, E 1831946.223166, EL2041.88038, --T/H
OcPt  BsPt  Azi  SetAzi
5     4     26°44'35"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
BS check 5 - 4: ZE81.0026, SD250.96, HD err = -0.002604, VD err = -0.015737
BS Circle check: angular err = 0.0001
MD: SD 1:334.96
RF, OP5, FP6, AR221.1243, ZE96.3914, SD334.96, HR4.88, --T/H
RF, OP5, FP6, AR41.1250, ZE263.2054, SD334.96, HR4.88, --T/H
Horizontal Angle Error: 0.0010
Zenith Angle Error: 0.0008
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0
OcPt  FsPt  HorzAngle  SlopeDist  ZenithAng  Desc
BD  5     4     AR 26°44'35"  0.000  90°00'00"
BR  5     4     AR 206°44'52"  0.000  270°00'00"
FD  5     6     AR 221°12'43"  334.960  96°39'14"  T/H
FR  5     6     AR 41°12'50"  334.960  263°20'54"  T/H

Note
OC, OP6, N 343844.572098, E 1831727.027786, EL2003.184546, --T/H
OcPt  BsPt  Azi  SetAzi
6     5     26°44'35"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
HR: 4.88 (0.0 + 0.0 Offset)
InstHt  RodHt
5.160  4.880
OcPt  BsPt  Azi  SetAzi
6     5     41°12'38"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
MD: SD 1:170.22
RF, OP7, FP6, AR269.1217, ZE97.5654, SD170.22, HR4.88, --PK NAIL
RF, OP7, FP6, AR89.1211, ZE262.0300, SD170.24, HR4.88, --PK NAIL
Horizontal Angle Error: 0.0016
Zenith Angle Error: 0.0006
Slope Distance Error: 0.02
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0
OcPt  FsPt  HorzAngle  SlopeDist  ZenithAng  Desc
BD  6     5     AR 41°12'38"  0.000  90°00'00"
BR  6     5     AR 221°12'48"  0.000  270°00'00"
FD  6     7     AR 269°12'17"  170.220  97°56'15"  PK NAIL
FR  6     7     AR 89°12'11"  170.240  262°03'00"  PK NAIL

Note
OC, OP7, N 343842.225708, E 1831558.449828, EL1979.922678, --PK NAIL
OcPt  BsPt  Azi  SetAzi
7     6     41°12'38"
HR: 4.88 (0.0 + 0.0 Offset)
InstHt  RodHt
5.430    4.880
OcPt    BsPt    Azi    SetAzi
7       6       89°12'09"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
MD: SD 1:110.2
RF, OP7, FP8, AR146.4847, ZE111.0814, SD110.2, HR4.88, --GW 955
RF, OP7, FP8, AR326.4857, ZE248.5134, SD110.18, HR4.88, --GW 955
Horizontal Angle Error: 0.0006
Zenith Angle Error: 0.0012
Slope Distance Error: 0.02
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

OcPt    FsPt    HorzAngle    SlopeDist    ZenithAng    Desc
BD 7     6       AR 89°12'09"
BR 7     6       AR 269°12'25"
FD 7     8       AR 146°48'47"
FR 7     8       AR 326°48'57"

Note
OC, OP8, N 343756.215018, E 1831614.707301, EL1940.734863, --GW 955
OC Pt    BsPt    Azi    SetAzi
8       7       89°12’09"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP8, N 343756.215018, E 1831614.707301, EL1940.734863, --GW 955
OC Pt    BsPt    Azi    SetAzi
8       7       89°12’09"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP8, N 343756.215018, E 1831614.707301, EL1940.734863, --GW 955
HR: 4.88 (4.88 + 0.0 Offset)
InstHt  RodHt
2.960    4.880
OcPt    BsPt    Azi    SetAzi
8       7       89°12’09"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
OC Pt    BsPt    Azi    SetAzi
8       7       326°48'44"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP8, N 343756.215018, E 1831614.707301, EL1940.734863, --GW 955
OC Pt    BsPt    Azi    SetAzi
8       7       326°48'44"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
BS check 8 - 7: ZE70.2401, SD109.1, HD err = 0.003443, VD err = -4.510547
BS Circle check: angular err = 0.0000
OC, OP6, N 343844.572098, E 1831727.027786, EL2003.184546, --T/H
OC Pt    BsPt    Azi    SetAzi
6       7       326°48'44"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
PntNo Northing Easting Elevation Desc
8 343756.2150 1831614.7073 1936.2249 GW 955

Note
OC,OP8,N 343756.215018,E 1831614.707301,EL1936.224863,—GW 955
OcPt BsPt Azi SetAzi
8 7 326°48'44"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
OC,OP8,N 343756.215018,E 1831614.707301,EL1936.224863,—GW 955
OcPt BsPt Azi SetAzi
8 7 326°48'44"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
BS check 8 - 7: ZE70.2402, SD109.1, HD err= 0.003621, VD err= -9.021045
BS Circle check : angular err= 0.0000
OC,OP6,N 343844.572098,E 1831727.027786,EL2003.184546,—T/H
OcPt BsPt Azi SetAzi
6 7 326°48'44"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
PntNo Northing Easting Elevation Desc
8 343756.2150 1831614.7073 1945.2449 GW 955

Note
OC,OP8,N 343756.215018,E 1831614.707301,EL1945.244863,—GW 955
OcPt BsPt Azi SetAzi
8 7 326°48'44"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
BS check 8 - 7: ZE70.2402, SD109.1, HD err= 0.003621, VD err= -0.001045
BS Circle check : angular err= 0.0000
MD: SD 1:108.48
RF,OP8,FP9,AR329.2137,ZE69.5750,SD108.48,HR4.88,—PK NAIL
RF,OP8,FP9,AR149.2147,ZE290.0157,SD108.48,HR4.88,—PK NAIL
Horizontal Angle Error: 0.0002
Zenith Angle Error: 0.0013
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0
OcPt FsPt HorzAngle SlopeDist ZenithAng Desc
BD 8 7 AR 326°48'44" 0.000 90°00'00"
BR 8 7 AR 146°48'56" 0.000 270°00'00"
FD 8 9 AR 329°21'37" 108.480 69°57'50" PK NAIL
FR 8 9 AR 149°21'47" 108.480 290°01'57" PK NAIL

Note
OC,OP9,N 343843.901898,E 1831562.766902,EL1980.488236,—PK NAIL
OcPt BsPt Azi SetAzi
9 8 326°48'44"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
HR: 4.88 (0.0 + 0.0 Offset)
InstHt  RodHt
5.220   4.880
OcPt   BsPt  Azi  SetAzi
9      8     149°21'36"

Note
Backsight HR:0.0 (0.0 + 0.0 Offset), Prism Const.:0.0mm
OC,Op9,N 343843.901898,E 1831562.766902,EL2002.265097,---PK NAIL
OcPt   BsPt  Azi  SetAzi
9      8     149°21'36"

Note
Backsight HR:4.88 (4.88 + 0.0 Offset), Prism Const.:0.0mm
BS check 9 - 8:Z611.2933,SD109.52,HD err= -0.011037, VD err= -4.542502
BS Circle check : angular err= 0.0000
MD:SD 1:156.96
RF,Op9,FP10,AR91.2128,ZE82.0858,SD156.96,HR4.88,---T/H
RF,Op9,FP10,AR271.2135,ZE277.5056,SD156.96,HR4.88,---T/H
Horizontal Angle Error: 0.0001
Zenith Angle Error: 0.0006
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

OcPt   FsPt  HorzAngle  SlopeDist  ZenithAng  Desc
BD 9   8   AR 149°21'36"  0.000  90°00'00"
BR 9   8   AR 329°21'44"  0.000  270°00'00"
FD 9   10  AR 91°21'28"  156.960  82°08'58"  T/H
FR 9   10  AR 271°21'35"  156.960  277°50'56"  T/H

Note
OC,Op10,N 343840.217701,E 1831718.212485,EL2002.265097,---T/H
OcPt   BsPt  Azi  SetAzi
10     9     149°21'36"

Note
Backsight HR:0.0 (0.0 + 0.0 Offset), Prism Const.:0.0mm
HR:4.88 (0.0 + 0.0 Offset)
InstHt  RodHt
4.870   4.880

Note
OC,Op10,N 343840.217701,E 1831718.212485,EL2002.265097,---T/H
OcPt   BsPt  Azi  SetAzi
10     9     149°21'36"

Note
Backsight HR:4.88 (4.88 + 0.0 Offset), Prism Const.:0.0mm
OC,Op10,N 343840.217701,E 1831718.212485,EL2002.265097,---T/H
OcPt   BsPt  Azi  SetAzi
10     9     271°21'28"

Note
Backsight HR:0.0 (0.0 + 0.0 Offset), Prism Const.:0.0mm
OC,Op10,N 343840.217701,E 1831718.212485,EL2002.265097,---T/H
OcPt   BsPt  Azi  SetAzi
10     9     271°21'28"

Note
Backsight HR:4.88 (4.88 + 0.0 Offset), Prism Const.:0.0mm
BS check 10 - 9:Z697.5826,SD157.02,HD err= 0.012599, VD err= -0.015236
BS Circle check : angular err= 0.0000
RD:BD 1:271.2129
RD:FD 1:41.3430
RD:ZD 1:83.2637
Horizontal Angle Error: 0.0011
Zenith Angle Error: 0.0032
Slope Distance Error: 0.0

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<th>SlopeDist</th>
<th>ZenithAng</th>
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<td>0.000</td>
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</tr>
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<td>343.720</td>
<td>83°26'34&quot;</td>
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Note
OC,OP11,N 344095.677978,E 1831944.789929,EL2041.488661,--T/H

OcPt | FtPt | Azi | SetAzi |
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Note
Backsight HR:0.0 (0.0 + 0.0 Offset), Prism Const.:0.0mm
HR:4.88 (0.0 + 0.0 Offset)

InstHt | RodHt |
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</thead>
<tbody>
<tr>
<td>5.020</td>
<td>4.880</td>
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</table>

OcPt | FtPt | Azi | SetAzi |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>10</td>
<td></td>
<td>221°34'16&quot;</td>
</tr>
</tbody>
</table>

Note
Backsight HR:0.0 (0.0 + 0.0 Offset), Prism Const.:0.0mm
OC,OP11,N 344095.677978,E 1831944.789929,EL2041.488661,--T/H

OcPt | FtPt | Azi | SetAzi |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>10</td>
<td></td>
<td>221°34'16&quot;</td>
</tr>
</tbody>
</table>

Note
Backsight HR:4.88 (4.88 + 0.0 Offset), Prism Const.:0.0mm
BS check 11 - 10:ZE96.3415,SD343.72,HD err= -0.001302, VD err= 0.031185
BS Circle check : angular err= 0.0000

MD:SD 1:246.36

RF,OP11,FP12,AR27.2521,ZE81.0056,SD246.36,HR4.88,--T/H
RF,OP11,FP12,AR207.2530,ZE278.5858,SD246.36,HR4.88,--T/H

Horizontal Angle Error: 0.0009
Zenith Angle Error: 0.0006
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

<table>
<thead>
<tr>
<th>OcPt</th>
<th>FtPt</th>
<th>HorzAngle</th>
<th>SlopeDist</th>
<th>ZenithAng</th>
<th>Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD</td>
<td>11</td>
<td>AR 221°34'16&quot;</td>
<td>0.000</td>
<td>90°00'00&quot;</td>
<td></td>
</tr>
<tr>
<td>BR</td>
<td>11</td>
<td>AR 41°34'16&quot;</td>
<td>0.000</td>
<td>270°00'00&quot;</td>
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</tbody>
</table>
FD 11 12 AR 27°25'21" 246.360 81°00'56" T/H
FR 11 12 AR 207°25'30" 246.360 278°58'58" T/H

Note
OC, OP12, N 344311.670824, E 1832056.863257, EL2080.098253, --T/H
OcPt BsPt Azi SetAzi
12 11 221°34'16"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
HR: 4.88 (0.0 + 0.0 Offset)
InstHt RodHt
4.780 4.880
OcPt BsPt Azi SetAzi
12 11 207°25'25"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
MD: SD 1:135.8
RF, OP12, FP13, AR359.4502, ZE84.2621, SD135.8, HR4.88, --T/H
RF, OP12, FP13, AR179.4518, ZE275.3319, SD135.8, HR4.88, --T/H
Horizontal Angle Error: 0.0009
Zenith Angle Error: 0.0020
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

OcPt FsPt HorzAngle SlopeDist ZenithAng Desc
BD 12 11 AR 207°25'25" 0.000 90°00'00"
BR 12 11 AR 27°25'50" 0.000 270°00'00"
FD 12 13 AR 359°45'02" 135.800 84°26'21" T/H
FR 12 13 AR 179°45'18" 135.800 275°33'19" T/H

Note
OC, OP13, N 344446.831077, E 1832056.272026, EL2093.151067, --T/H
OcPt BsPt Azi SetAzi
13 12 207°25'25"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
HR: 4.88 (0.0 + 0.0 Offset)
InstHt RodHt
5.200 4.880
OcPt BsPt Azi SetAzi
13 12 179°44'58"

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
OC, OP13, N 344446.831077, E 1832056.272026, EL2093.151067, --T/H
OcPt BsPt Azi SetAzi
13 12 179°44'58"

Note
Backsight HR: 4.88 (4.88 + 0.0 Offset), Prism Const.: 0.0mm
BS check 13 - 12: ZB95.3916, SD135.82, HD err= -0.002416, VD err= -0.009335
BS Circle check : angular err= 0.0000
MD: SD 1:254.56
RF, OP13, FP14, AR87.1402, ZE82.5124, SD254.56, HR4.88, --P.O.B.
RF, OP13, FP14, AR267.1419, ZE277.0825, SD254.56, HR4.88, --P.O.B.
Horizontal Angle Error: 0.0016
Zenith Angle Error: 0.0011
Slope Distance Error: 0.0
Horizontal Angle Error compares to the average: 0.0000
Zenith Angle Error compares to the average: 0.0000
Slope Distance Error compares to the average: 0.0

<table>
<thead>
<tr>
<th>OcPt</th>
<th>FsPt</th>
<th>HorzAngle</th>
<th>SlopeDist</th>
<th>ZenithAng</th>
<th>Desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>BD</td>
<td>13</td>
<td>AR 179°44'58&quot;</td>
<td>0.000</td>
<td>90°00'00&quot;</td>
<td></td>
</tr>
<tr>
<td>BR</td>
<td>13</td>
<td>AR 359°44'59&quot;</td>
<td>0.000</td>
<td>270°00'00&quot;</td>
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<tr>
<td>FD</td>
<td>14</td>
<td>AR 87°14'02&quot;</td>
<td>254.560</td>
<td>82°51'24&quot;</td>
<td>P.O.B.</td>
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<tr>
<td>FR</td>
<td>13</td>
<td>AR 267°14'19&quot;</td>
<td>254.560</td>
<td>277°08'25&quot;</td>
<td>P.O.B.</td>
</tr>
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</table>

Note
OC, OP14, N 344459.011105, E 1832308.563179, EL2125.119365, --P.O.B.

Note
Backsight HR: 0.0 (0.0 + 0.0 Offset), Prism Const.: 0.0mm
Set local time from 00:42:31 to 00:43:00 Difference: +00:00:29
Set local time from 00:43:42 to 12:43:00 Difference: +11:59:18