FORM WW-3 (A)
10/07

1) Date: **April 21, 2008**
2) Operator's Well No. **Cabot #100**
3) API Well No.: **47** - **079** - **01452**
State County Permit
4) UIC Permit No. _____

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OF WASTE DISPOSAL WELL WORK PERMIT APPLICATION FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS,

5) Surface Owner(S) To Be Served
(a) Name **Drema Woods - Amherst Ind., Inc.**
Address **2 Port Amherst Drive**
Charleston, WV 25306
(b) Name _____
Address _____
(c) Name _____
Address _____

6) Inspector **Jamie Stevens**
Address **P O Box 1186**
Scott Depot, WV 25560
Telephone _____

7) (a) Coal Operator
Name **Drema Woods – Amherst Ind., Inc.**
Address **2 Port Amherst Drive**
Charleston, WV 25306
7) (b) Coal Owner(S) With Declaration Of Record
Name _____
Address _____
Name _____
Address _____
7) (c) Coal Lessee with Declaration Of Record
Name _____
Address _____

RECEIVED
Office of Oil & Gas
OCT 30 2008
WV Department of
Environmental Protection

TO THE PERSONS NAMED ABOVE: You should have received this form and the following documents

(1) The Application For A Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work;
(2) The plat (surveyor's map) showing the well location on Form WW-6; and
(3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is **November 1,** 20 **08** .

THE REASON YOU HAVE RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION [(FORM WW-3(B)] DESIGNATED TO YOU. HOWEVER YOU ARE NOT REQUIRED TO TAKE ACTION AT ALL.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of the mailing or delivery to the Chief.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator **Cabot Oil and Gas Corp**
Address **900 Lee Street, E – Suite 500**
Charleston, WV 25301
By: Thomas S. Liberatore
Its: Vice President
Signature: Thomas S Liberatore

347-1600

FORM WW-3 (A)
10/07

1) Date: **September 22, 2008**
2) Operator's Well No. **Cabot #100**
3) API Well No.: **47** State **79** County **01452** Permit
4) UIC Permit No. _____

STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

5) WELL TYPE: Liquid Injection ____ / Gas Injection (not storage) ____ / Waste Disposal **X** /
6) LOCATION: Elevation: **641.52** Watershed: **Guano Creek of Kanawha River**
District: **Pocatalico** County **Putnam** Quadrangle **Bancroft**
7) WELL OPERATOR: **Cabot Oil and Gas Corp** 8) DESIGNATED AGENT **Thomas Liberatore**
Address **900 Lee Street, E – Ste. 500** Address **900 Lee Street, E – Ste. 500**
Charleston, WV 25301 **Charleston, WV 25301**
9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name **Jamie Stevens** Name _____
Address **P O Box 1186** Address _____
Scott Depot, WV 25560 _____
11) PROPOSED WELL WORK Drill ____ / Drill deeper ____ / Redrill ____ / Stimulate ____
Plug off old formation ____ / Perforate new formation ____ Convert **X**
Other physical change in well (specify) _____
12) GEOLOGIC TARGET FORMATION **Big Injun** Depth **1710** Feet (top) to **1756** Feet (bottom)
13) Estimated Depth of Completed Well, (or actual depth of existing well): **3000** Feet
14) Approximate water strata depths: Fresh **86** Feet Salt **1202** Feet
15) Approximate coal seam depths: **None reported in offset wells**
16) Is coal being mined in the area? Yes ____ No **X**
17) Virgin reservoir pressure in target formation ____ psig Source _____
18) Estimated reservoir fracture pressure ____ psig (BHFP)
19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 300 BBls/hr. Bottom hole pressure 2482 psi
20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES **15% HCL, acid may be used periodically to clean formation and perforations to re-establish injection rates.** Produced Fluids. Pipeline Fluids
21) FILTERS (IF ANY) _____
22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL _____

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL –UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor									Kinds **Baker AL-2**
Fresh Water	**13 3/8'**	**LS**	**37**			**40**	**40**	**GFS**	
Coal	**9 5/8'**	**LS**	**26**			**190**	**190**	**112 ft3 CTS**	Sizes **4 ½ x 7**
Intermediate	**7'**	**LS**	**19**			**1912**	**1912**	**CTS**	
Production	**4 ½'**	**M-60**	**10.5**			**1657**	**1657**	**On packer**	Depths set **1657**
Tubing									
Liners									Perforations
									Top **1715** Bottom **1745**

24) APPLICANT'S OPERATING RIGHTS were acquired from Amherst Industries, Inc.
by deed ____ / lease ✓ / other contract ____ / dated 4-18-2007 of record in the
Putnam County Clerk's office in Lease Book 62 Page(s) 839 - 841

ADDITIONAL ITEMS REQUIRED AS PART OF ALL CLASS II AND III UIC PERMIT APPLICATIONS

It is essential that all information requested on Forms WW-3(A) and WW-3(B) be completely and accurately addressed. Estimates and proposals must be based upon valid sources of information. In addition to WW-3(A) and WW-3(B) the following thirteen (13) items must be addressed individually through a narrative and any supporting data be referenced as an exhibit.

1. A 7.5 minute topographic map or section showing one mile around the well or facility. Within this one mile area the map must show the location of the well or facility, all known drinking wells, springs and surface water bodies.

   Attached as Exhibit #1 is a 7.5 minute topographic map showing a one mile radius of well. No known water wells within a one mile radius of this well, other water bodies are depicted on the topo.

2. Submit analyses from all water wells within a ¼ mile radius of the proposed well or facility. The parameters for analysis shall include but are not limited to: pH, TDS, Iron, Manganese, Chlorides, Sodium and Barium. Indicate on the map or section in Item No. 1 the locations and label all water wells for which an analysis was submitted. If there are no water wells within the ¼ mile radius then strategically select and sample enough water wells to accurately describe the groundwater quality in the vicinity of the proposed well or facility.

   N/A

3. A detailed analysis of the fluids to be injected including specific gravity.

   Attached as Exhibit #2 is a detailed analysis.

4. A detailed description of all additives to be injected including concentrations.

   15% HCL, acid may be used periodically to clean formation and perforations to reestablish injection rates.

5. If available, any lithologic logs and coring program information derived from the immediate area.

   No lithologic or coring information was gathered during drilling; therefore is not available at this time.

6. If available, any geophysical logs derived from the immediate area. Identify the injection zone and confining zone on any logs submitted.

   Attached as Exhibit #3.

7. A detailed description of the proposed injection zone including thickness, permeability and porosity.

The Big Injun sandstone is from 1710' to 1748' and is perforated in the Big Injun section from 1710' to 1745'. The average porosity of the Big Injun and the disposal interval is 22% with the maximum porosity of 28%. See Exhibit #3.

8. Describe the confining layer which would prevent the upward migration of injected fluid out of the proposed injection zone.

Immediately above the Big Injun sandstone lies the Big Lime formation which is approximately 194' in thickness with low porosity and permeability. This interval shown on Exhibit #3 is from 1485' to 1668'. This limestone interval with its low porosity and sufficient thickness will provide an adequate confining layer for prevention of upward migration.

9. Structural contour map of the top or bottom of the proposed injection formation. Indicate the location of the proposed well or facility.

Attached as Exhibit #4 is the structural contour map.

10. Isopach map of the injection formation. Indicate the location of the proposed well or facility.

Attached as Exhibit #5 is the Isopach map

11. To fulfill the requirements of an Area of Review (AOR) submit well records and/or plugging affidavits for all wells within a ¼ mile radius of the proposed well or facility. Locate and label these wells on a topo map or section (preferably with Item No. 1).

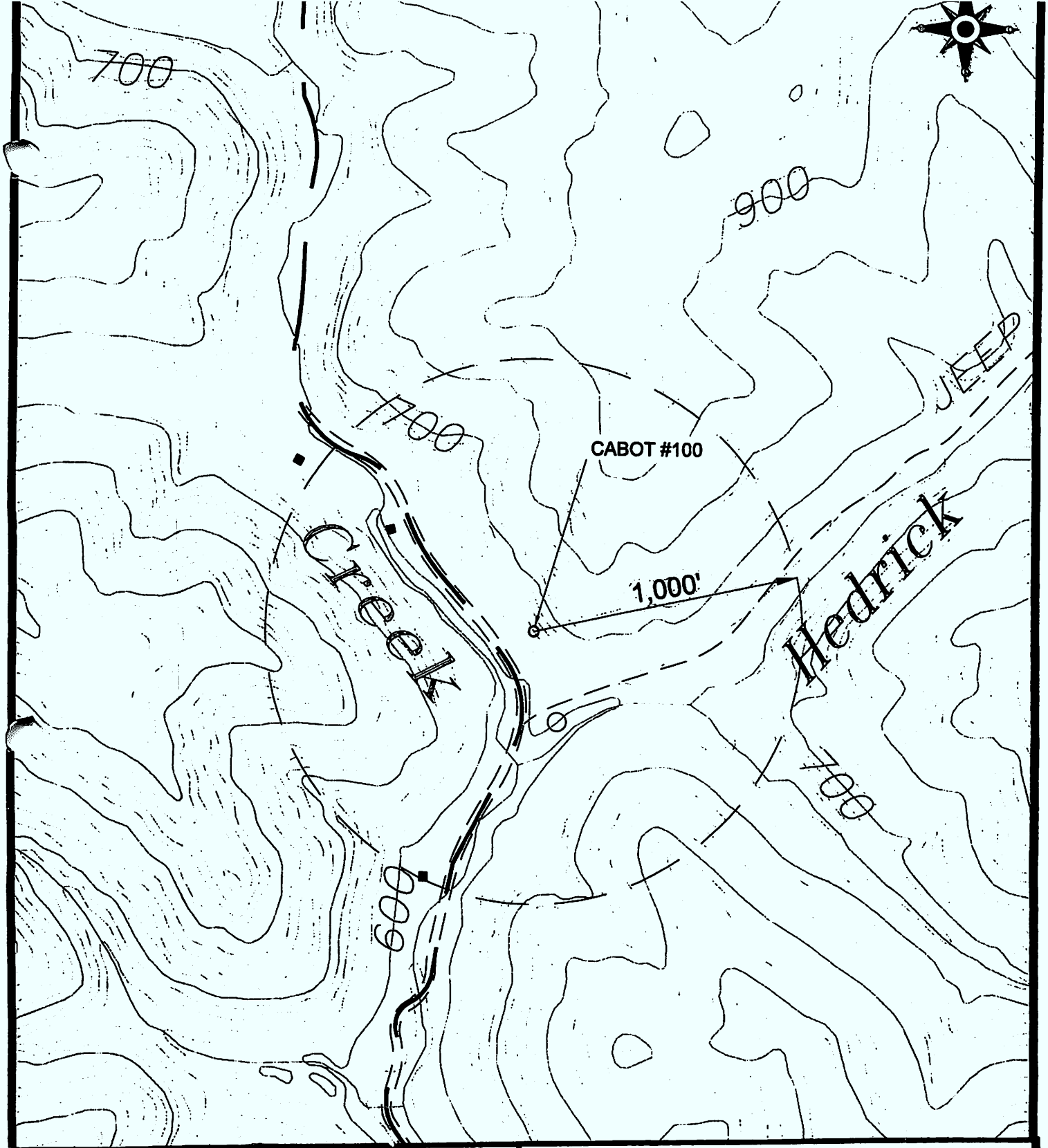
Attached as Exhibit #6, is the Area of Review showing all wells within a ¼ mile of proposed well or facility.

12. A list of the API well numbers for all wells to be serviced by a brine disposal well or wells enhanced for pressure maintenance or secondary recovery purposes as applicable. This list shall include the producing formation.

Attached as Exhibit #7.

13. Well schematic including cement tops for each well being proposed for waste disposal. If an area UIC permit is being proposed then submit a representative schematic for each different type of well construction within the waterflood.

Attached as Exhibit #8, is the schematic.



Cabot Oil & Gas Corporation

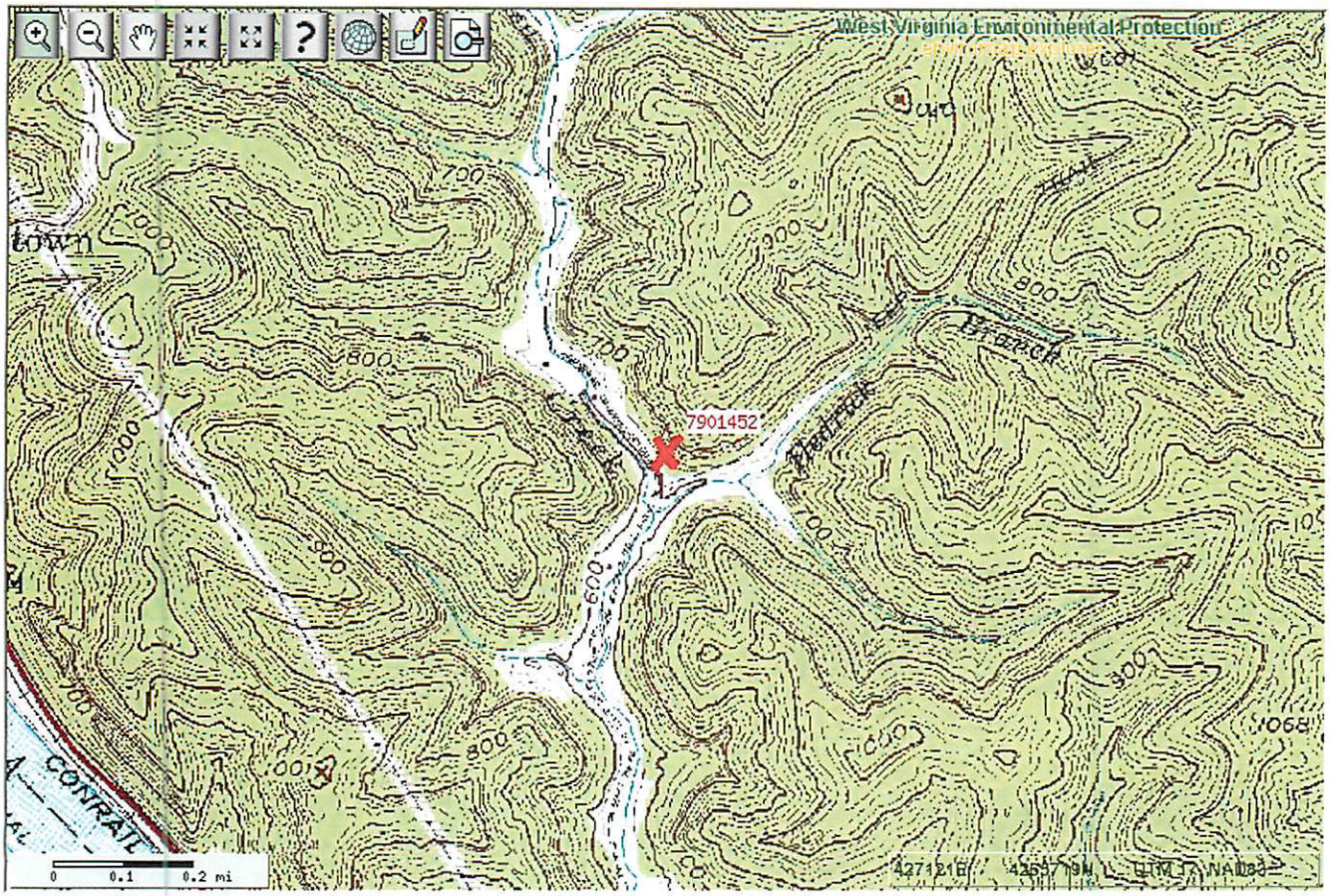
CABOT #100

WATER SAMPLE LOCATION MAP

LOCATED ON THE WATERS OF GUANO CREEK
OF KANAWHA RIVER
POCATALICO DISTRICT, PUTNAM COUNTY, W.VA
BANCROFT QUADRANGLE

CUNNINGHAM
LAND SURVEYING & MAPPING SERVICES, LLC
• 5213 STEPHEN WAY •
• CROSS LANES, WEST VIRGINIA 25313 •
• VOICE (304) 561-4129 • FAX (304) 776-0703 •
• E-MAIL ADDRESS • DKCUNNINGHAM@SUDDENLINK.NET •

PROJECT NO. CABOT	DWG. FILE: CABOT 100 WS.DWG	
DATE: 09-08-07	SCALE: 1" = 500'	CHK'D BY: D.K.C.
DRAWN BY: G. PERKINS	FILE: C:\PROJECT FOLDER\CABOT	



map layers overview map locate query results help about

on	query	layer	legend
☐	☐	County Boundaries	county
☐	☐	2007 Aerial Photography	
☑	☐	USGS Topographic Map	
☐	☐	hillshade	
☐	☐	FEMA Q3 Floodplain	100 Year 500 Year
☐	☐	Mining Permit Boundaries	Not Started Inactive Active Reclamation Reclaimed, water treatment Bond Forfeit

BJ SERVICES
BJ SERVICES
Water Analysis Report

Project # 19-09-293

Customer/Well Information

Company:	Cabot	**Date:**	9/19/2008
Well Name:	B-93	**Prepared for:**	Roger Crawford
Location:		**Submitted by:**	Roger Crawford
State:	WV	**Prepared by:**	Mike Stone
Formation:		**Water Type:**	
Depth:	-		

Background Information

Reason for Testing:	Customer Request
Completion type:	Full Water Analysis
Well History:	
Special Considerations:	

Sample Characteristics

Sample Temp:	70 (°F)	**Viscosity:**	0 cP
pH:	5.00	**Color:**	Orange
Specific Gravity:	1.260	**Odor:**	None
S.G. (Corrected):	@ 60 °F	**Turbidity:**	Slight
Resistivity (Calc):	0.03 Ω-m	**Filtrates:**	Lt Orange

Sample Composition

CATIONS

	mg/l	me/l	ppm
Sodium (calc.)	156572	6810.4	124263
Calcium	10025	500.2	7956
Magnesium	5103	419.8	4050
Barium	0	0.0	0
Potassium	0	0.0	0
Iron	730.00	26.1	579.37

ANIONS

Chloride	274815	7752.2	218107
Sulfate	1500	31.2	1190
Hydroxide	0	0.0	0
Carbonate	< 1	----	----
Bicarbonate	< 1	----	----

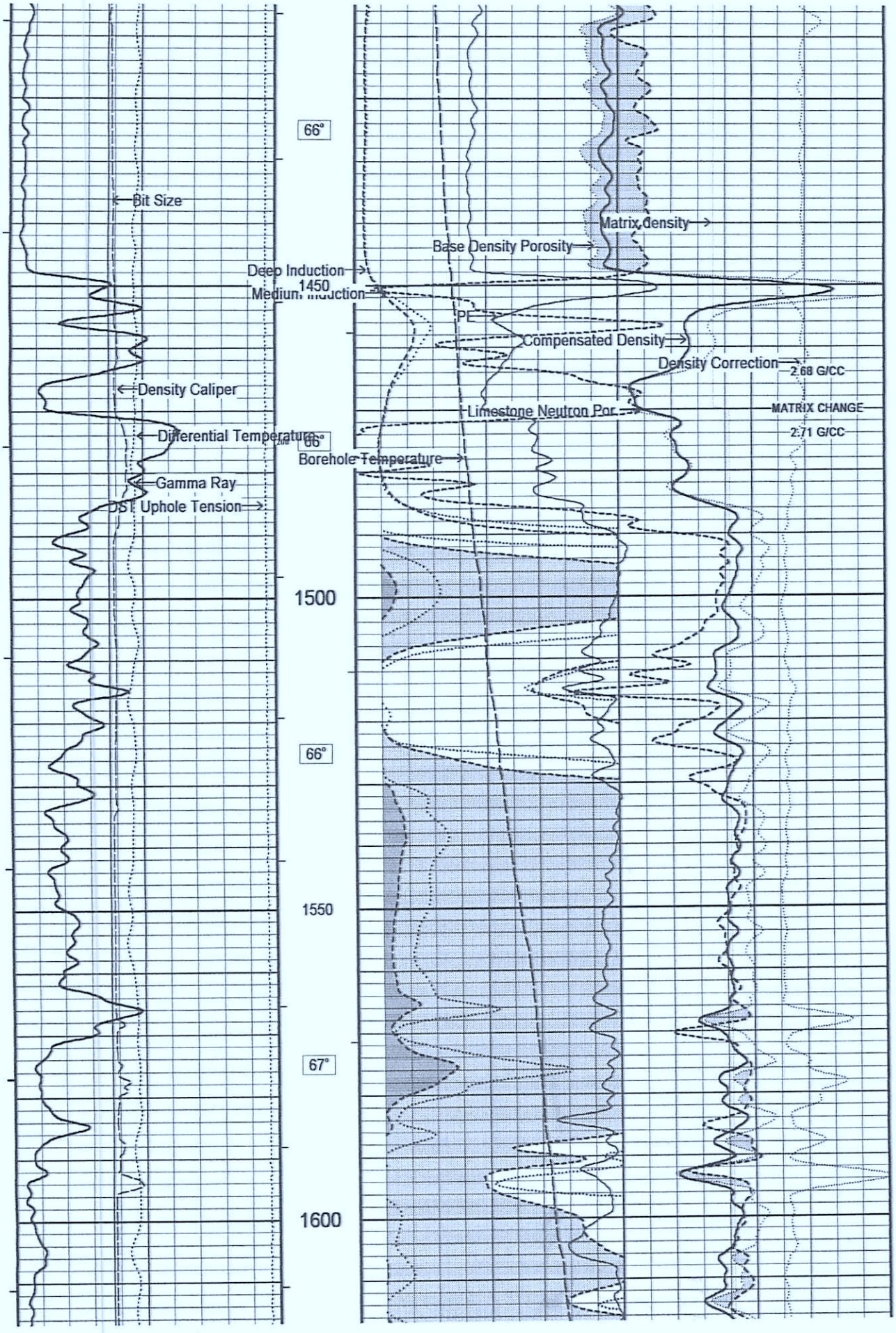
SUMMARY

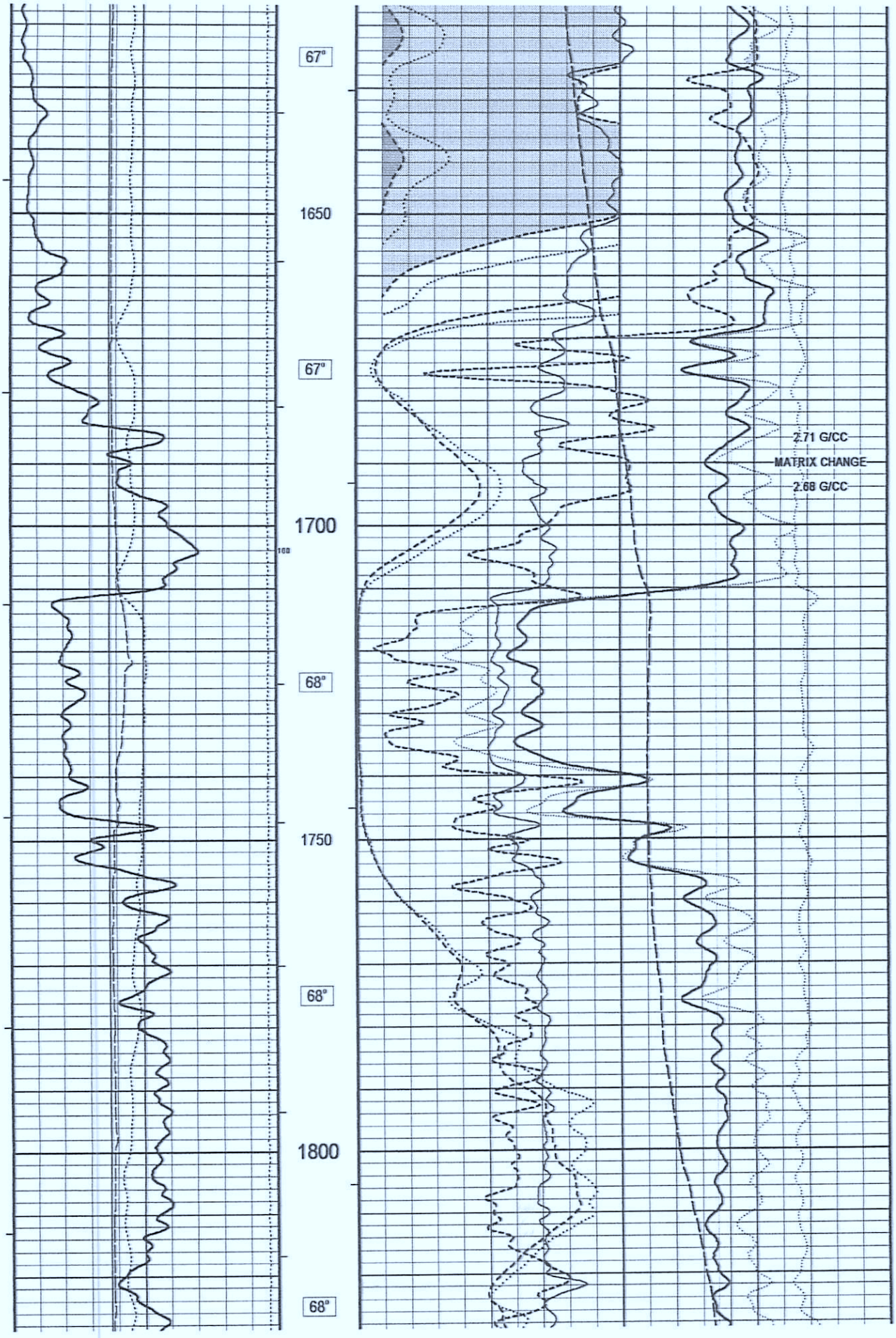
Total Dissolved Solids(calc.)	448745		356147
Total Hardness as CaCO3	46045	920.1	36544

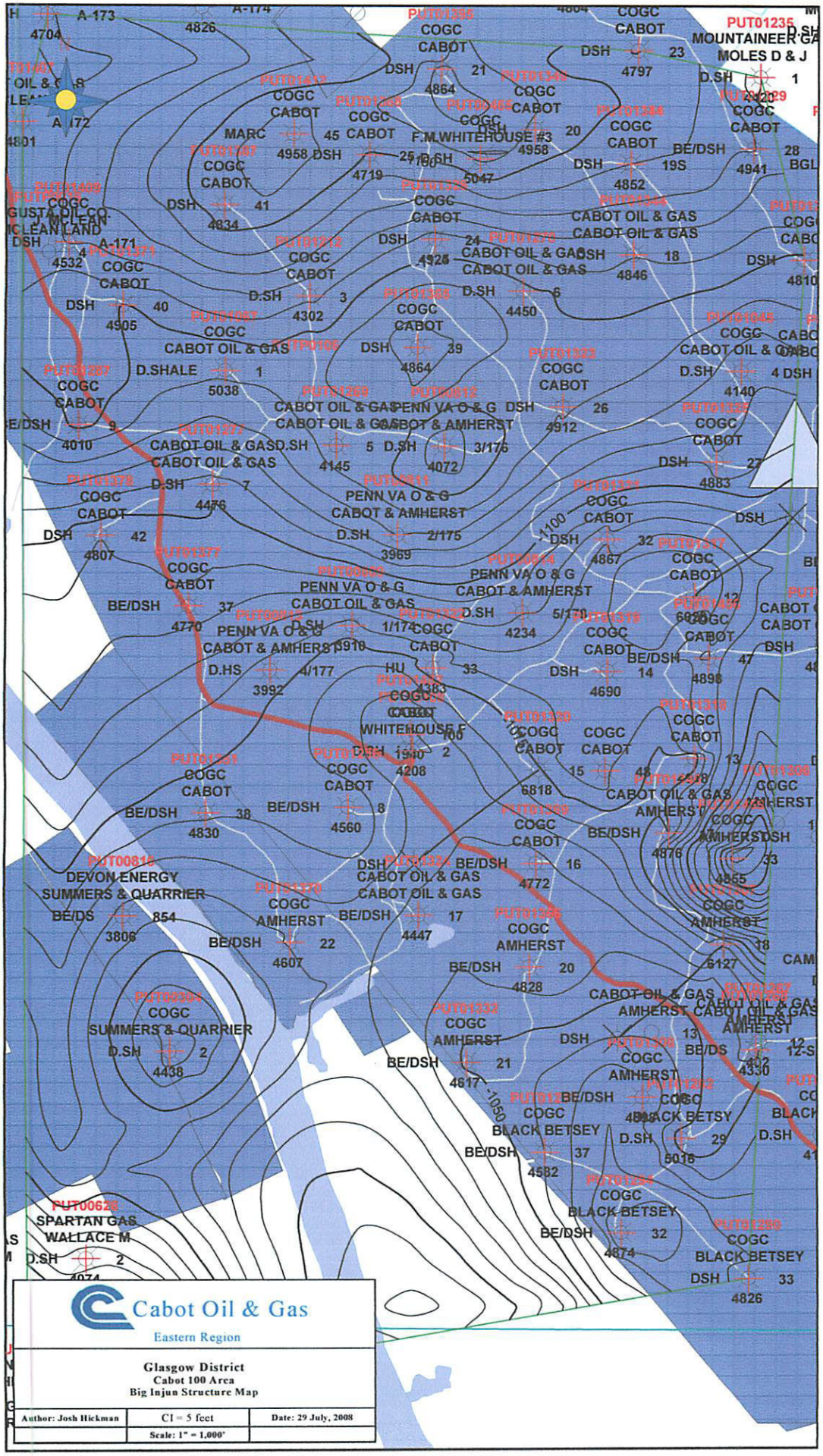
Scaling Tendencies

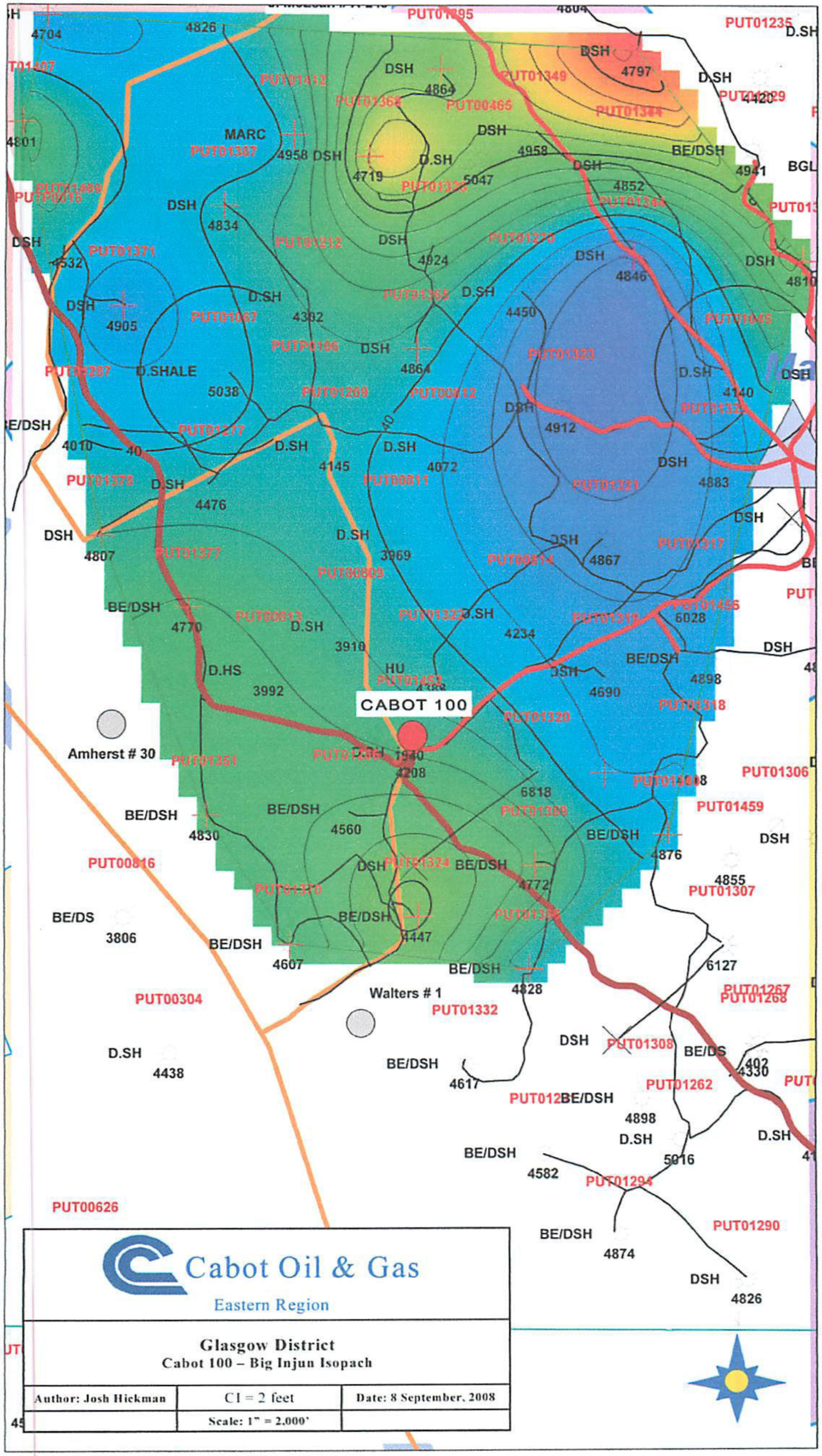
CaCO3 Factor	0	Calcium Carbonate Scale Probability --> REMOTE
CaSO4 Factor	15037500	Calcium Sulfate Scale Probability -------> PROBABLE

Comments


66°
Bit Size
Matrix density
Base Density Porosity
Deep Induction
1450
Medium Induction
PE
Compensated Density
Density Correction
2.68 G/CC
Density Caliper
Limestone Neutron Por
MATRIX CHANGE
2.71 G/CC
Differential Temperature
66°
Borehole Temperature
Gamma Ray
DST Uphole Tension
1500
66°
1550
67°
1600


67°
1650
67°
1700
68°
1750
68°
1800
68°
2.71 G/CC
MATRIX CHANGE
2.68 G/CC


Cabot Oil & Gas
Eastern Region
Glasgow District
Cabot 100 Area
Big Injun Structure Map
Author: Josh Hickman
CI = 5 feet
Date: 29 July, 2008
Scale: 1" = 1,000'



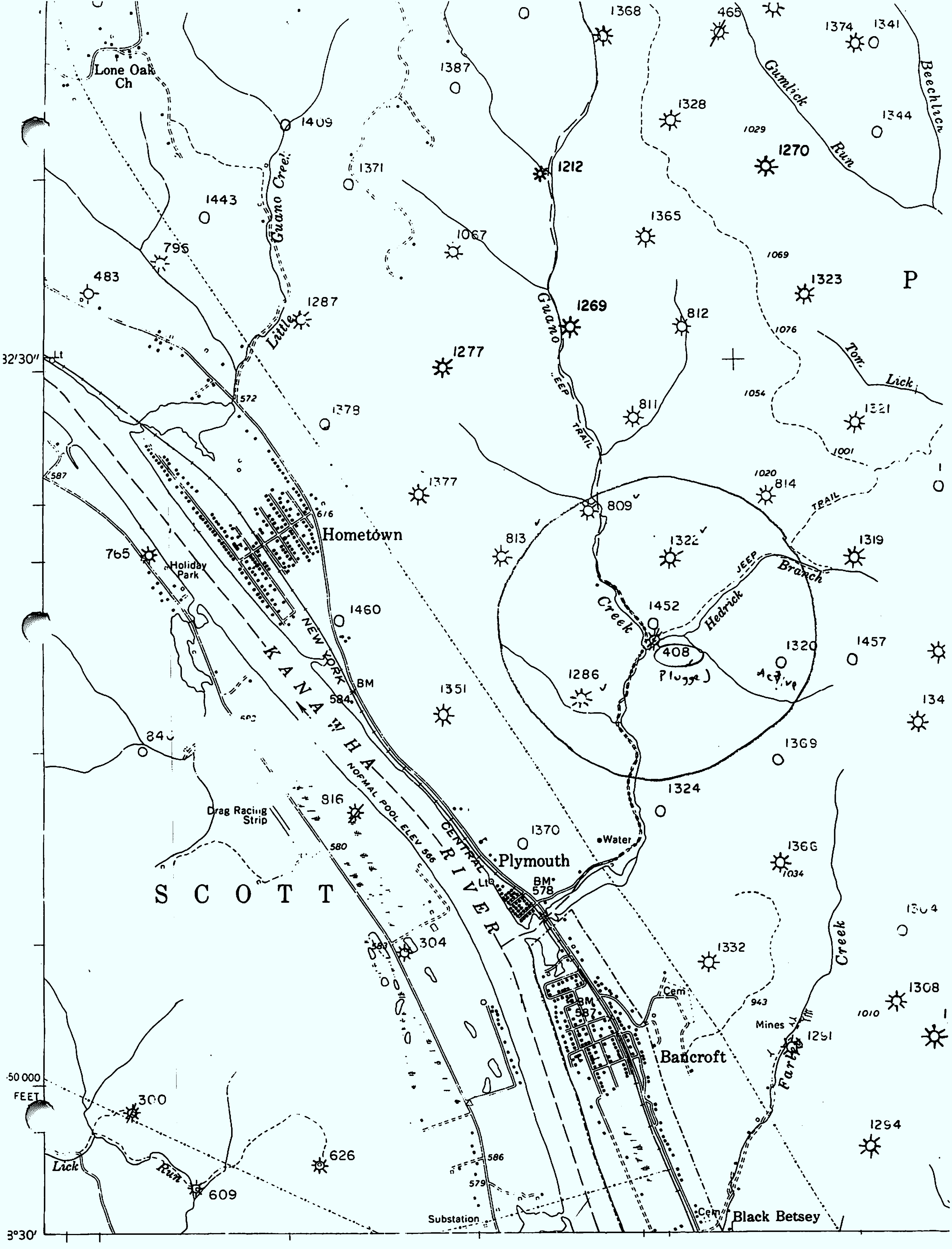
Cabot Oil & Gas

Eastern Region

Glasgow District

Cabot 100 – Big Injun Isopach

Author: Josh Hickman	CI = 2 feet	Date: 8 September, 2008
	Scale: 1" = 2,000'	


Lone Oak Ch
1409
Guano Creek
1371
1387
1368
465
1374
1341
Gumlick Run
Beechlick
1328
1029
1344
1270
1212
1443
1365
1067
795
1069
483
1287
Little
Guano
1269
812
1323
P
1076
32'30"
1277
Tom Lick
JEEP
TRAIL
1054
572
1378
811
1321
1001
587
1377
1020
814
809
TRAIL
616
Hometown
813
1322
1319
765
Holiday Park
JEEP
Branch
Hedrick
Creek
1452
1460
408
Plugged
1320
Active
1457
KANAWHA
NEW YORK
BM
584
1286
1351
134
840
1369
NORMAL POOL ELEV 566
1324
Drag Racing Strip
816
CENTRAL
1370
Water
Plymouth
1366
1034
580
RIVER
BM
578
SCOTT
304
1332
Creek
Cem
BM
587
943
1308
Mines
1010
1291
Bancroft
Farley
50 000 FEET
300
1294
626
Lick
Run
586
609
579
Substation
Cem
Black Betsey
3°30'

OG-10
Rev. - 9-71

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED
SEP 24 1976
OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division
WELL RECORD

Quadrangle Winfield
Permit No. PUT-813

Rotary X Oil ____
Cable ____ Gas X
Recycling ____ Comb. ____
Water Flood ____ Storage ____
Disposal ____ ____ (Kind)

Company Spartan Gas Company
Address P.O. Box 766, Charleston, WV
Farm Cabot-Amherst Acres 3,200
Location (waters) Guano Creek
Well No. 4-S-177 Elev. 732 KB
District Union County Putnam
The surface of tract is owned in fee by
Amherst Coal Company
Address Charleston, WV
Mineral rights are owned by Cabot Corporation
Address Charleston, WV
Drilling Commenced 4/3/76
Drilling Completed 4/9/76
Initial open flow 73M cu. ft. ____ bbls.
Final production ____ cu. ft. per day ____ bbls.
Well open ____ hrs. before test 700 RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16 Cond.			
13-10" 10"	237	237	70 SKS
9 5/8			
8 5/8			
7	1,996	1,996	100 SKS
5 1/2			
4 1/2			
3			
2			
Liners Used 5"		584	

Attach copy of cementing record.

Well treatment details:

Shot 3490 - 3992 With 5,200 Lbs. Gelatin

Coal was encountered at ____ Feet ____ Inches
Fresh water ____ Feet ____ Salt Water ____ Feet ____
Producing Sand Brown Shale Depth ____

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
SUB			0	8		
Rock & Shale			8	887		
Shale			887	1,319		
Salt Sand			1,319*	1,554		*Electric Log Tops From
Lime & Shale			1,554	1,578		1,319 to Total Depth
Big Lime			1,578	1,774		
Shale			1,774	1,810		
Injun			1,810	1,848		
Shale			1,848	2,278		
Berea			2,278	2,295		
Slate			2,295	3,496		
Brown Shale & Slate			3,496	3,952		
Slate			3,952	3,992		
Total Depth				3,992		

(over)

* Indicates Electric Log tops in the remarks section.

OG-10
Rev. - 9-71

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD

Rotary X Oil ____
Cable ____ Gas ____
Recycling ____ Comb. ____
Water Flood ____ Storage ____
Disposal ____ Gas (Kind)

Quadrangle WINFIELD

Permit No. PUT-809

Company Spartan Gas Company
Address P. O. Box 766, Charleston, W.Va.
Farm Cabot Corporation Acres 3,200
Location (waters) Guano Creek
Well No. 1 - S-174 Elev. 635 RKB
District Pocatalico County Putnam
The surface of tract is owned in fee by Amherst Coal Company
Address Port Amherst, W. Va.
Mineral rights are owned by Cabot Corporation
Address Charleston, W. Va.
Drilling Commenced October 24, 1975
Drilling Completed October 31, 1975
Initial open flow NA cu. ft. ____ bbls.
Final production 315 M. cu. ft. per day ____ bbls.
Well open ____ hrs. before test 785# RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size. 20-16 Cond.			
13-10" 10"	191'	191'	Cemented to Surface
9 5/8			
8 5/8			
7	1920'	1920'	50 Sks. POZ Mix 10% Salt
5 1/2			
4 1/2			
3			
2			
Liners Used		624'	

Well treatment details:
Shot with 5,500# Gelatin

Attach copy of cementing record.

Coal was encountered at ____ Feet ____ Inches
Fresh water ____ Feet ____ Salt Water ____ Feet ____
Producing Sand Brown Shale Depth ____

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Sub			0	7		
Rock & Shale			7	70		
Shale			70	756		* Electric Log Tops
Sand & Shale			756	1,230*		to Total Depth
Sand			1,230	1,465		
Slate			1,465	1,502		
Big Lime			1,502	1,692		
Slate			1,692	1,713		
Injun			1,713	1,775		
Slate			1,775	2,201		
Berea			2,201	2,217		
Shale			2,217	3,416		
BROWN SHALE			3,416	3,464		
Slate			3,464	3,596		
BROWN SHALE			3,596	3,724		
Slate			3,724	3,770		
BROWN SHALE			3,770	3,872		
Slate			3,872	3,910		
TOTAL DEPTH				3,910		

CEMENT RECORD

10 3/4" Casing - 80 Sacks
3% CaCl

7" Casing - 50 Sacks
POZ Mix
10% Salt
3% CaCl

(over)

* Indicates Electric Log tops in the remarks section.

WR-35

Date April 4, 2006
API # 47- 079 - 01322

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas
Well Operator's Report of Well Work

Farm Name: Amherst Industries, Inc. Operator Well No.: Cabot #33

LOCATION: Elevation: 995' Quadrangle: Bancroft
District: Pocatalico County: Putnam
Latitude: 3385' feet South of 38° DEG. 32' MIN. 30" SEC.
Longitude: 1039' feet West of 81° DEG. 50' MIN. 00" SEC.

Company: Cabot Oil & Gas Corporation
900 Lee Street East, Suite 500
Charleston, WV 25301

Agent: Thomas S. Liberatore
Inspector: Larry Parrish
Permit Issued: 12/14/2005
Well Work Commenced: February 22, 2006
Well Work Completed: March 22, 2006
Verbal Plugging:
Permission granted on:
Rotary X Cable
Total Depth (feet) 4383'
Fresh Water Depths (ft) 142'
Salt Water Depths (ft) 855', 1730', 1750'
Is coal being mined in area (Y / N) ? NO
Coal Depths (ft) NONE REPORTED

Casing & Tubing Size	Used in Drilling	Left In Well	Cement Fill Up Cu. Ft.
13-3/8"	38'	38'	
9-5/8"	541'	541'	252
7"	2668'	2668'	626
4-1/2"		4341'	163
2-3/8"		4170'	

OPEN FLOW DATA

Producing Formation HURON SHALE Pay Zone Depth (ft) 3771'-4230'
Gas: Initial Open Flow TSTM MCF/d Oil: Initial Open Flow 0 Bbl/d
Final Open Flow 267 (COMMINGLED) MCF/d Final Open Flow 0 Bbl/d
Time of open flow between initial and final tests 4 Hours
Static rock pressure 130 psig surface pressure after 473 Hours

Second Producing Formation _____ Pay Zone Depth (ft) _____
Gas: Initial Open Flow _____ MCF/d Oil: Initial Open Flow _____ Bbl/d
Final Open Flow _____ MCF/d Final Open Flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock pressure _____ psig surface pressure after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1.) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2.) THE WELL LOG WHICH IS SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE

For: CABOT OIL & GAS CORPORATION
By: _____ Drilling Superintendent
Date: 6/15/06

STAGE	PERFS	ACID 15% HCl	FOAM	SAND (lbs)	NITROGEN (scf)	BDP	ATP	MTP	ISIP
1-Huron Shale	4230-3771 (30)		85Q	240000	3,568,477	2295	2836	2987	1860

FORMATION	TOP	BOTTOM	REMARKS
Shale and Siltstone	Surface	783	
Sandstone	783	973	
Shale and Sandstone	973	1301	
Siltstone & Shale	1301	1424	
Shale & Sandstone	1424	1590	
Salt Sands	1590	1824	
Shale & Sandstone	1824	1859	
Little Lime	1859	1902	
Shale	1902	1905	
Big Lime	1905	2059	
Shale & Sandstone	2059	2082	
Injun	2082	2127	
Siltstone & Shale	2127	2414	
Shale	2414	2534	
Sunbury	2534	2555	
Berea	2555	2571	
Shale & Siltstone	2571	2812	
Siltstone & Shale	2812	2883	
Shale	2883	3765	
L. Huron	3765	4235	
Java	4235	4381	
Angola	4381	4383	TD

WR-35

Date March 17, 2006
API # 47- 079 - 01286

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas
Well Operator's Report of Well Work

Farm Name: Amherst Industries, Inc. Operator Well No.: Cabot #8

LOCATION: Elevation: 699' Quadrangle: Bancroft
District: Union County: Putnam
Latitude: 5860' feet South of 38° DEG. 32" MIN. 30" SEC.
Longitude: 2600' feet West of 81° DEG. 50' MIN. 00" SEC.

Company: Cabot Oil & Gas Corporation
900 Lee Street East, Suite 500
Charleston, WV 25301

Agent: Thomas S. Liberatore
Inspector: Larry Parrish
Permit Issued: 9/15/2004
Well Work Commenced: October 10, 2005
Well Work Completed: November 11, 2005
Verbal Plugging:
Permission granted on:
Rotary X Cable
Total Depth (feet) 4560
Fresh Water Depths (ft) 51'
Salt Water Depths (ft) 555', 1365', 1420'
Is coal being mined in area (Y / N)? NO
Coal Depths (ft) NONE REPORTED

Casing & Tubing Size	Used in Drilling	Left In Well	Cement Fill Up Cu. Ft.
13-3/8"	50'	50'	
9-5/8"	342'	342'	168
7"	1865'	1865'	367
4-1/2"		4518'	325
2-3/8"		4438'	

OPEN FLOW DATA

Producing Formation DEVONIAN SHALE Pay Zone Depth (ft) 4291' - 4511' / 3468' - 3926'

Gas: Initial Open Flow TSTM MCF/d Oil: Initial Open Flow 0 Bbl/d
Final Open Flow 421 (COMMINGLED) MCF/d Final Open Flow 0 Bbl/d
Time of open flow between initial and final tests 8 Hours
Static rock pressure 280 psig surface pressure after 14 Hours

Second Producing Formation BEREA Pay Zone Depth (ft) 2265' - 2270' / 2256' - 2262'

Gas: Initial Open Flow TSTM MCF/d Oil: Initial Open Flow 0 Bbl/d
Final Open Flow 421 (COMMINGLED) MCF/d Final Open Flow 0 Bbl/d
Time of open flow between initial and final tests 8 Hours
Static rock pressure 280 psig surface pressure after 14 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1.) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2.) THE WELL LOG WHICH IS SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE

For: CABOT OIL & GAS CORPORATION
By: W. A. Thomas Drilling Superintendent
Date: 3/17/06

RECEIVED
Office of Oil & Gas
Office of Chief
MAR 28 2006
WV Department of
Environmental Protection

STAGE	PERFS	ACID 15% HCl	FOAM	SAND (lbs)	NITROGEN (scf)	BDP	ATP	MTP	ISIP
1-DEVONIAN SHALE	4291-4511 (36)	250	80Q	65,000	1,017,000	3351	3540	3611	2478
2-DEVONIAN SHALE	3468-3926 (50)	500	85Q	76,300	1,294,000	2256	2622	2831	1654
3-BEREA	2256-2270 (22)	250	75Q	41,100	429,000	3970	2928	4350	2474

FORMATION	TOP	BOTTOM	REMARKS
Sandstone	Surface	69	
Shale and Siltstone	69	468	
Shale and Sandstone	468	732	
Sandstone and Shale	732	873	
Shale and Siltstone	873	938	
Sandstone	938	985	
Shale and Siltstone	985	1144	
Sandstone and Siltstone	1144	1243	
Shale	1243	1271	
Salt Sands	1271	1515	
Shale and Sandstone	1515	1552	
Big Lime	1552	1755	
Shale	1755	1784	
Injun	1784	1832	
Shale and Siltstone	1832	2092	
Shale	2092	2230	
Sunbury	2230	2252	
Berea	2252	2270	
Shale	2270	3467	
L. Huron	3467	3928	
Java	3928	4069	
Angola	4069	4290	
Rhinestreet	4290	4476	
Marcellus	4476	4540	
Onondaga	4540	4560	TD

NANCY WICKLINE

4.08

FORM IV-38
(Affidavit of Plugging)

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS WELLS DIVISION

RECEIVED
OCT 28 1985
DIVISION OF OIL & GAS
DEPT. OF ENERGY

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 extra copies if necessary) should be mailed to each coal operator at their respective addresses.

Amherst Industries, Inc.
Coal Operator or Owner

Port Amherst, Charleston, WV 25306
Address

Coal Operator or Owner

Address

Amherst Industries, Inc.
Lease or Property Owner

Port Amherst, Charleston, WV 25306
Address

Cabot Oil & Gas Corp. of WV
Name of Well Operator

P.O. Box 454, Glasgow, WV 25086
Complete Address

October 17, 19 85
WELL AND LOCATION

Pocatalico District

Putnam County

WELL NO. #2

Whitehouse Heirs Farm

STATE INSPECTOR SUPERVISING PLUGGING Carlos Hively

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Kanawha ss:

William Shreve (Shreve's Well Service) and C. E. McClure 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 Cabot Oil & Gas Corp. of WV, well operator, and participated in the work of plugging and filling the above well, that said work was commenced on the 24 day of September, 19 85, and that the well was plugged and filled in the following manner:

Sand or Zone Record Formation	Filling Material	Plugs Used Size & Kind	Casing CSG PULLED	Casing CSG LEFT IN
1960 - 1860	Class A cement	Cut 7" casing	1696	95
1860 - 1696	6% Gel			
1696 - 1596	Class A cement	Pulled 10" casing	775	
1596 - 730	6% Gel			
730 - 630	Class A cement	Cut 13" casing		141
630 - 480	6% Gel	@ 100' but could		
480 - 380	Class A cement	not pull.		
380 - 100	6% Gel			
100 to surface	Class A cement	16" casing		31
NOTE: Open hole bridged @ 1970'.		Set 6¼" Baker		
NOTE: 8-5/8" casing indicated on permit application was shown in error. (this was previously pulled).		N-1 bridge plug @ 1970'. Dumped 2 sks Cal-seal on plug.		
Squeeze cemented 13" casing and filled from 100' to surface.				

Coal Seams	Description of Monument
N/R	7" casing monument w/API number
(Name)	
(Name)	
(Name)	
(Name)	

10/25/85

and that the work of plugging and filling said well was completed on the 26 day of September, 19 85.

And further deponents saith not.

C E McClure
William A Shreve

Sworn to and subscribed before me this 17 day of October, 19 85.

Dolores Raye Gill
Notary Public

My commission expires: June 12, 1995

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
DOLORES RAYE GILL
4011 Malden Drive
Malden, West Virginia 25306
My Commission Expires June 12, 1995

Permit No. 47-079-0408 P

47-079-0408-P

WR-35

Date July 23, 2008
API # 47- 079 - 01320

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas
Well Operator's Report of Well Work

Farm Name: Amherst Industries, Inc. Operator Well No.: Cabot #15H

LOCATION: Elevation: 965' Quadrangle: Bancroft
District: Pocatalico County: Putnam
Latitude: 5195' feet South of 38° DEG. 32' MIN. 30" SEC.
Longitude: 11049' feet West of 81° DEG. 47' MIN. 30" SEC.

Company: Cabot Oil & Gas Corporation
900 Lee Street East, Suite 500
Charleston, WV 25301

Agent: Thomas S. Liberatore
Inspector: Jamie Stevens
Permit Issued: 12/14/2005
Well Work Commenced: March 4, 2006
Well Work Completed: May 3, 2006
Verbal Plugging:
Permission granted on:
Rotary X Cable
Total Depth (feet) 6818' MD / 4194' TVD
Fresh Water Depths (ft) NONE REPORTED
Salt Water Depths (ft) 800', 1545'
Is coal being mined in area (Y / N) ? NO
Coal Depths (ft) NONE REPORTED

Casing & Tubing Size	Used in Drilling	Left In Well	Cement Fill Up Cu. Ft.
20"	43'	43'	
13-3/8"	525'	525'	490
9-5/8"	2642'	2642'	1050
5-1/2"	6150'	6150'	84
5-1/2" Casing set on external packers			
2-3/8"		4760'	

OPEN FLOW DATA

Producing Formation LOWER HURON SHALE Pay Zone Depth (ft) 3799', 4561', 5340', 6077 all MD
Gas: Initial Open Flow TSTM MCF/d Oil: Initial Open Flow 0 Bbl/d
Final Open Flow 929 MCF/d Final Open Flow 0 Bbl/d
Time of open flow between initial and final tests 4 Hours
Static rock pressure 115 psig surface pressure after 16 Hours

Second Producing Formation Pay Zone Depth (ft)
Gas: Initial Open Flow MCF/d Oil: Initial Open Flow Bbl/d
Final Open Flow MCF/d Final Open Flow Bbl/d
Time of open flow between initial and final tests Hours
Static rock pressure psig surface pressure after Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1.) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2.) THE WELL LOG WHICH IS SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE

For: CABOT OIL & GAS CORPORATION
By: W. A. Lee Drilling Superintendent
Date: 7/23/08

STAGE	PERFS	ACID 15% HCl FOAM	SAND (lbs)	NITROGEN (scf)	BDP	ATP	MTP	ISIP
1-Huron Shale	6077'	80Q	175,000	2,693,000		2300	2351	
2-Huron Shale	5340'	80Q	100,000	1,364,000		2093	2123	
3-Huron Shale	4561'	80Q	90,000	1,137,000		2000	2020	
4-Huron Shale	3799'	80Q	35,000	415,000		1910	1933	

FORMATION	TOP	BOTTOM	REMARKS
Siltstone and Shale	Surface	520	
Shale and Siltstone	520	729	
Siltstone and Shale	729	908	
Shale and Siltstone	908	988	
Sandstone and Shale	988	1100	
Shale and Siltstone	1100	1210	
Sandstone	1210	1248	
Shale and Siltstone	1248	1417	
Sandstone	1417	1460	
Sandstone and Shale	1460	1495	
Shale	1495	1530	
Salt Sands	1530	1784	
Shale	1784	1798	
Sandstone	1798	1805	
Shale	1805	1820	
Big Liime	1820	2020	
Shale	2020	2037	
Injun	2037	2092	
Shale and Siltstone	2092	2274	
Shale	2274	2492	
Sunbury	2492	2513	
berea	2513	2529	
Shale	2529	3760	
Lower Huron	3760	4194 TVD / 6819 MD	

Measured	Inclination	Azimuth	TVD (ft)	Measured	Inclination	Azimuth	TVD (ft)
3478	1.27	181.87	3478.00	4088	47.90	235.00	4011.70
3529	5.60	228.20	3528.79	4120	50.20	235.10	4032.67
3560	8.00	231.60	3559.57	4150	52.60	235.40	4051.39
3592	10.30	233.50	3591.16	4180	55.30	235.30	4069.04
3623	12.70	233.70	3621.53	4210	58.00	235.40	4085.53
3654	15.20	234.70	3651.62	4241	59.50	236.40	4101.61
3686	17.90	235.50	3682.29	4272	61.00	236.00	4117.00
3715	20.70	236.50	3709.65	4304	62.50	236.00	4132.14
3746	23.60	237.10	3738.36	4335	64.50	236.00	4145.97
3776	26.00	237.20	3765.59	4360	66.90	233.90	4156.26
3808	28.70	236.30	3794.02	4391	69.30	232.30	4167.83
3839	31.30	237.50	3820.86	4422	72.30	232.50	4178.02
3870	33.70	237.00	3847.00	4453	74.60	232.40	4186.85
3901	35.20	234.20	3872.57	4484	77.50	232.30	4194.32
3932	37.40	234.20	3897.55	4516	80.00	232.60	4200.56
3963	39.80	234.60	3921.78	4547	82.40	232.00	4205.31
3994	42.00	234.10	3945.21	4578	83.00	230.80	4209.24
4025	44.00	234.70	3967.88	4609	83.60	230.70	4212.86
4057	45.90	234.80	3990.52	4640	85.20	232.00	4215.89

Measured	Inclination	Azimuth	TVD (ft)
4672	87.40	233.70	4217.95
4702	90.00	234.90	4218.63
4734	90.80	235.70	4218.41
4765	90.60	235.40	4218.03
4797	90.80	234.80	4217.84
4860	90.70	234.70	4216.81
4892	90.80	234.00	4216.40
4924	90.90	233.70	4215.92
4954	91.20	233.40	4215.37
4983	91.40	233.20	4214.71
5014	91.80	233.20	4213.85
5046	91.90	233.20	4212.81
5077	92.20	232.40	4211.71
5108	92.40	232.40	4210.46
5140	92.60	232.20	4209.07
5172	93.00	232.00	4207.50
5218	93.00	233.40	4205.10
5249	92.40	233.10	4203.63
5281	91.90	233.30	4202.43
5313	91.10	232.50	4201.60
5344	90.30	232.20	4201.22
5376	89.70	232.00	4201.22
5406	89.60	232.30	4201.40
5437	89.80	232.80	4201.56
5468	89.90	232.80	4201.64
5499	90.20	232.40	4201.63
5530	90.50	232.50	4201.43
5560	90.40	231.90	4201.19
5590	90.40	232.30	4200.98
5621	90.50	232.50	4200.74
5652	90.40	232.50	4200.50
5715	90.30	231.90	4200.11
5773	90.30	231.40	4199.81
5836	90.60	231.30	4199.31
5896	90.30	232.00	4198.84
5958	90.20	231.80	4198.57
6021	89.90	230.60	4198.58
6051	89.70	231.60	4198.62
6115	89.70	230.20	4198.96
6177	90.30	230.80	4198.96
6241	90.40	230.40	4198.57
6300	90.60	230.90	4198.05
6363	90.50	230.10	4197.45
6426	90.30	230.50	4197.01
6589	90.30	230.10	4196.68
6553	90.20	229.60	4196.40
6613	90.80	230.00	4195.87
6675	90.50	229.50	4195.17
6737	90.30	228.60	4194.74
6818	90.30	228.60	4194.31

Measured	Inclination	Azimuth	TVD (ft)

SERIAL NO. 1303 FARM F. M. Whitehouse Hrs. NO. 2 OPERATING DIST. TOWNSHIP PN MAP SQUARE LOT NO. M2-27 WARRANT NO.

FORMATION	COLOR	TOP	BOTTOM	STEEL LINE MEASUREMENTS	HARD OR SOFT	OIL, GAS OR WATER	DEPTH FOUND	REMARKS
Injun Sand		1668	1725			Water	1691	Hole full.
Weir Shells		1725	1739					
Sand		1739	1763					
Slate Shells		1763	2155	1791				
Berea		2155	2180					
Slate Shells		2180	3370					
Brown Shale		3370	3480	3387		Gas	3384	Show.
Slate Shells		3480	3528					
Brown Shale		3528	3552					
Slate Shells		3552	3577					
Brown Shale		3577	3708			Gas	3690	47 Mcf.
White Slate		3708	3729					
Brown Shale		3729	3848			Gas	3777-3788	- 54 Mcf.
Slate		3848	3932					
Gray Shale		3932	4074					
Slate		4074	4105					
Brown Shale		4105	4208					
Total Depth			4208					

TOTAL DEPTH

DATE

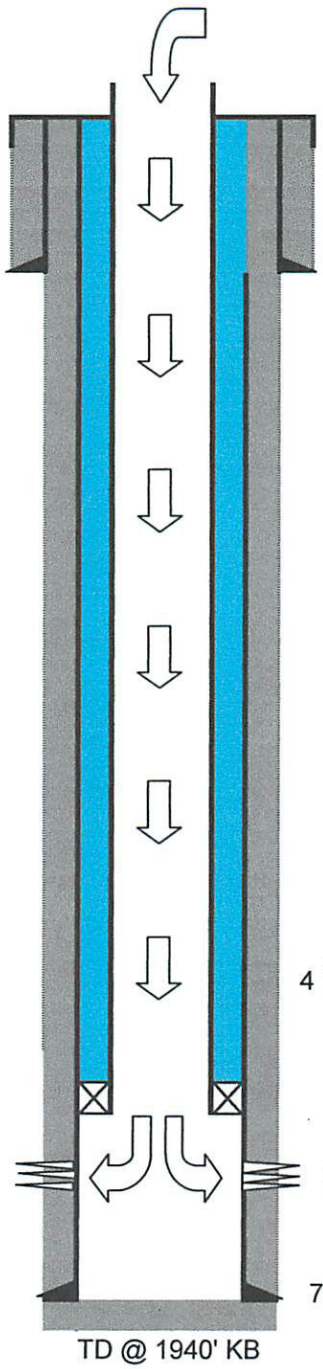
APPROVED

FOREMAN

Cabot #100
47-079-01452
Putnam County

Cabot Oil and Gas Corporation
900 Lee Street E. Suite 500
Charleston, WV 25301

Current Configuration
Elevation: 642' GL



13 3/8" 37# LS casing @ 54' KB

9 5/8" 26# LS casing @ 230' KB
Cement to surface

Deepest Coal 1096'

Big Lime 1485' - 1668'

4 1/2" 10.50# M60 casing @ 1657' KB
Set on Baker AL-2 Loc-Set Packer
with Schlumberger ConQor 303A
packer fluid on annulus

Injun 1710' - 1756'

Perforations 1715' - 1745' (120 holes)

7" 20# LS casing @ 1912' KB
Cement to surface

TD @ 1940' KB