



west virginia department of environmental protection

Office of Oil and Gas
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Charleston, WV 25304
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(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL

May 30, 2014

APPALACHIAN POWER CO DBA AEP
US RT. 33, MOUNTAINEER PLANT
NEW HAVEN, WV 25265

Re: Permit Modification Approval for API Number 5300423 , Well #: AEP 1
SQUEEZE 9 5/8" ANNULUS & CEMENT 4 1/2 " (2512' TO SURFACE)

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Gene Smith".

Gene Smith *James*
Regulatory/Compliance Manager
Office of Oil and Gas

Remaining Plugging Summary

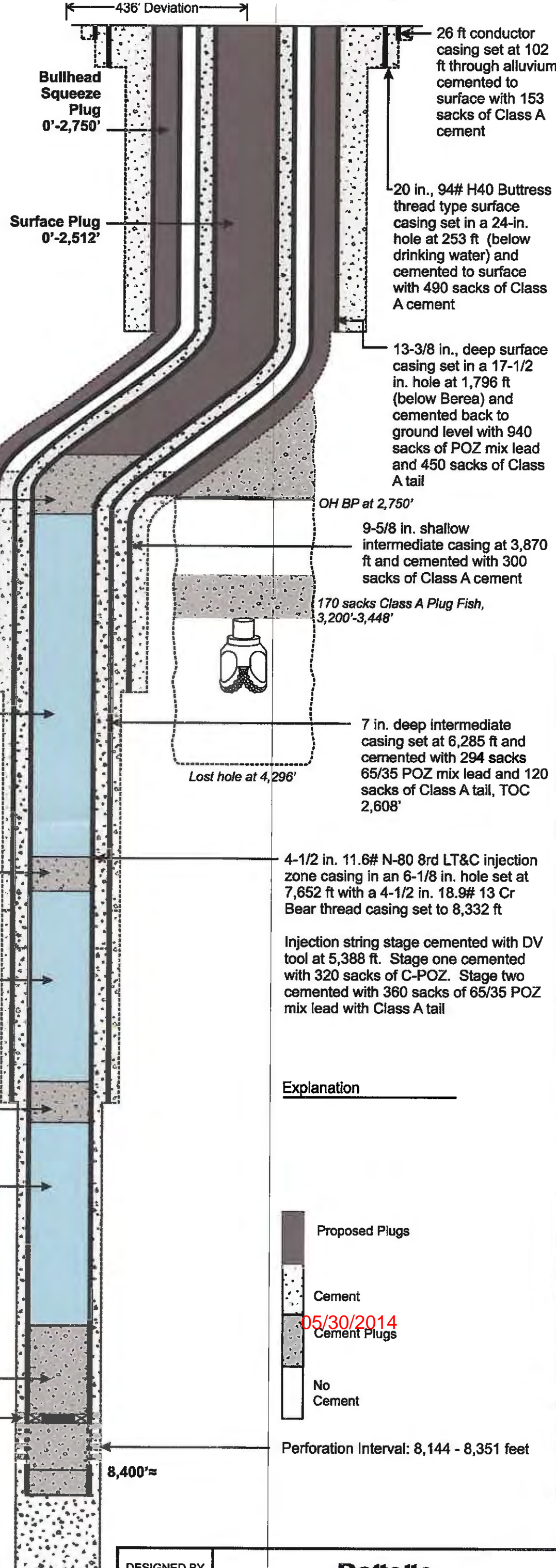
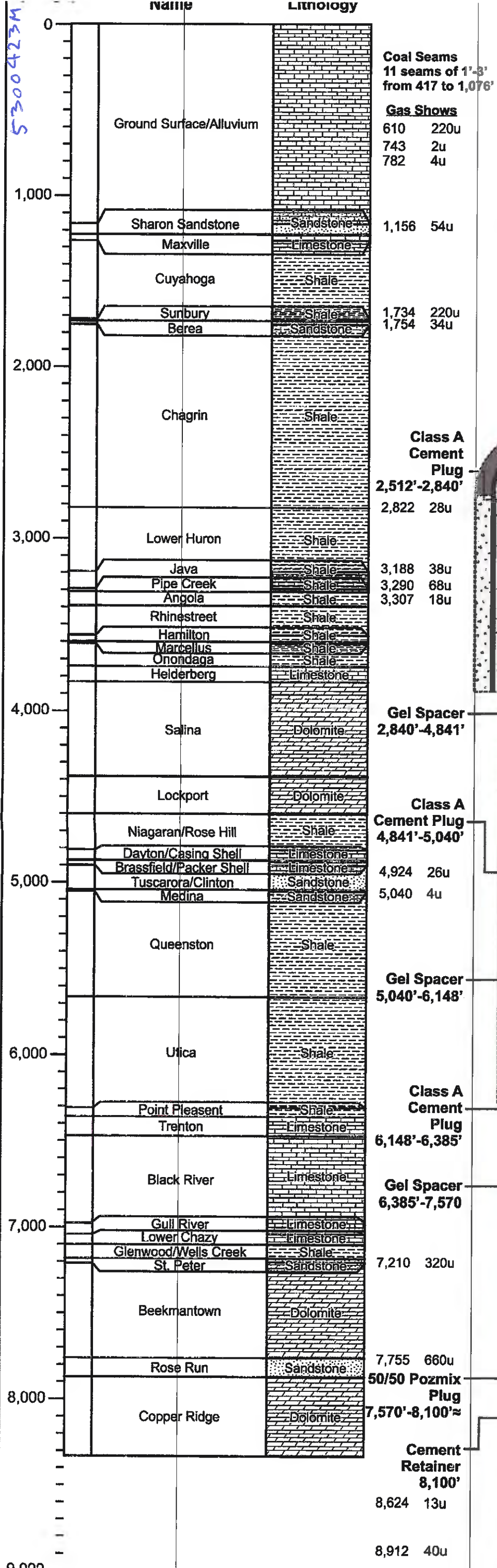
AEP-1 (API 47-053-00423)

Submitted 5/29/2014

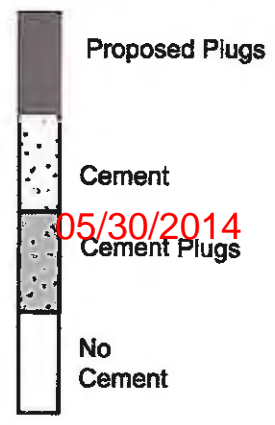
The 24-hour shut in test required by the issued permit for the plug and abandon of AEP-1 (API: 47-053-00423) has been completed and the remaining work order for this permit to complete plugging the AEP-1 well is as follows:

- Perform a bullhead squeeze cement job on the 9-5/8" annulus. Pump cement in the wellhead valve between the 9-5/8" and 13-3/8" casings. The cement pumped will be Class H cement for improved viscosity as compared with Class A cement; additives for cement retarder and friction reducer will be mixed as well. A total of 780 sacks will be set from 2,750 ft. to surface unless the pressure indicates that the annulus is squeezed off prior to pumping all sacks of cement. The goal of the squeeze job is to isolate pressure from the 9-5/8" casing annulus.
- Plug the remaining 4-1/2" casing from 2,512 ft., which is the top of the last set cement plug, to surface. The cement will be set in stages with a total of 185 sacks of Class A cement to set the plug from 2,512 ft. to surface.

Zone of Interest Description	Depth Interval, ft	Plugging Material		[C]asing / [H]ole Size	Additives	
		Type	Quantity		Type	Grade
AEP-1						
9-5/8" Bullhead Squeeze	2,750 - 0	Class H	780 sacks	[C] 9-5/8", 40 #/ft. Annulus inside: [C] 13-3/8" 68 #/ft. (1,800 ft.), [H] 17-1/2" hole (20 ft.), and [H] 12-1/2" hole (950 ft.)	0.15% Friction Reducer 1% Retarder 0.5% Water Reducer	
4-1/2" Surface Plug	2,512 - 0	Class A	185 sacks	[C] 4-1/2", 11.60 #/ft.	NA	NA



Explanation



DESIGNED BY MD	Battelle
DRAWN BY LC	
Mountaineer AEP1 - As Built Schematic with Final Plugging Summary	

Total Depth at 9,190 ft