STATE OF COLORADO

Simmons - DNR, Leigh <leigh.simmons@state.co.us>

2016 MVB Completions

Welt, Kathy <KWelt@archcoal.com> Tue, Oct 4, 2016 at 2:49 PM
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FYI – Attached is the completion information for the two E6 Panel MVBs drilled this year.

Kathy Welt,

Environmental Engineer III

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4 attachments

E6-13 MVB CASING TALLYS-ALL.xlsx
39K

E6-14 MVB CASING TALLYS-ALL.xlsx
39K

MVB-E6-13 As-Built-11X8.pdf
47K

MVB-E6-14 As-Built-11X8.pdf
48K

E6-13

INTERMEDIATE CASING CEMENT CALCULATIONS (9 5/8" O.D. casing)

used cement with 2% bentonite (by weight)

Data input: MJP 08/09/16

TYPE OF CEMENT	WATER VOLUME (gal./sack)	SLURRY 6.56667E+18 (lbs./gal.)	SLURRY VOLUME (ft^3/sack)	DESIRED EXCESS
G	6.3	14.8	1.34	1

HOLE VOLUME CALCULATIONS							
HOLE SECTION BY DIA.	HOLE DIA. (ID) (inches)	CASING DIA. (OD) (inches)	HOLE SECTION LENGTH (ft)	HOLE VOL. (ft^3/ft)	CASING VOL. (ft^3/ft)	ANNULAR VOL. (ft^3/ft)	HOLE SECTION VOLUME (ft^3)
1	16.000	14.000	20.00	1.40	1.07	0.33	6.54
2	12.250	9.625	746.00	0.82	0.51	0.31	233.64
3							
4							
5							
TOTALS			766.00				240.18

CALCULATED CEMENT VOLUMES REQUIRED				
HOLE VOL (ft^3)	WATER VOL REQ'D (gal.)	NUMBER OF SACKS	NUMBER OF SACKS W/ EXCESS	NUMBER OF S.S.'s W/ EXCESS
240.18	1129.22	179.24	179.24	6.74

Note: A 2500 LB SUPER SACK CONTAINS THE EQUIVALENT OF 26.6 SACKS TYPE G

ACTUAL CEMENT USED FOR JOB	
# OF CEMENT S.S.'s PUMPED FROM BOTTOM:	8
# OF CEMENT S.S. 's PUMPED FROM TOP:	2
TOTAL NUMBER OF TOTES USED:	10
% OF ACTUAL CEMENT USED vs. CALCULATED:	148.4

ADDITIONAL MATERIALS INCORPORATED IN CASING SEAL				
BENTONITE GROUT (gal.)	BENTONITE GROUT (ft^3)	GRANULAR BENTONITE (sacks)	GRANULAR BENTONITE (ft^3)	TOTAL (ft^3)
0	0.00	0	0	0.00

% OF ALL SEALING MATERIALS USED FOR INTERMEDIATE CASING Vs. HOLE VOLUME
148

E6-14

INTERMEDIATE CASING CEMENT CALCULATIONS (9 5/8" O.D. casing)

used cement with 2% bentonite (by weight)

Data input: MJP 08/03/16

TYPE OF CEMENT	WATER VOLUME (gal./sack)	SLURRY 6.56667E+18 (lbs./gal.)	SLURRY VOLUME (ft^3/sack)	DESIRED EXCESS
G	6.3	14.8	1.34	1

HOLE VOLUME CALCULATIONS							
HOLE SECTION BY DIA.	HOLE DIA. (ID) (inches)	CASING DIA. (OD) (inches)	HOLE SECTION LENGTH (ft)	HOLE VOL. (ft^3/ft)	CASING VOL. (ft^3/ft)	ANNULAR VOL. (ft^3/ft)	HOLE SECTION VOLUME (ft^3)
1	16.000	14.000	20.00	1.40	1.07	0.33	6.54
2	12.250	9.625	620.00	0.82	0.51	0.31	194.18
3							
4							
5							
TOTALS			640.00				200.72

CALCULATED CEMENT VOLUMES REQUIRED				
HOLE VOL (ft^3)	WATER VOL REQ'D (gal.)	NUMBER OF SACKS	NUMBER OF SACKS W/ EXCESS	NUMBER OF S.S.'s W/ EXCESS
200.72	943.69	149.79	149.79	5.63

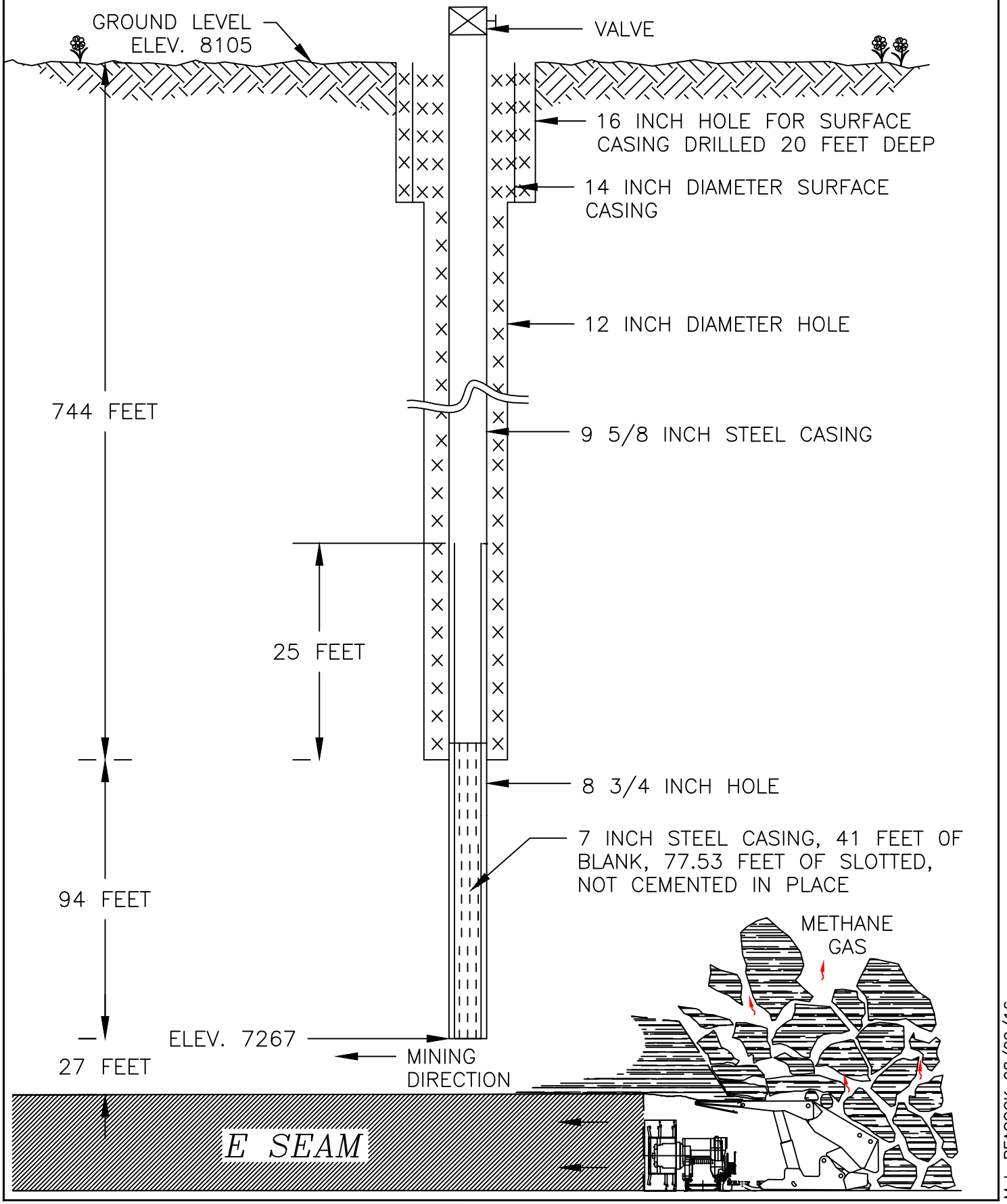
Note: A 2500 LB SUPER SACK CONTAINS THE EQUIVALENT OF 26.6 SACKS TYPE G

ACTUAL CEMENT USED FOR JOB	
# OF CEMENT S.S.'s PUMPED FROM BOTTOM:	7
# OF CEMENT S.S. 's PUMPED FROM TOP:	3
TOTAL NUMBER OF TOTES USED:	10
% OF ACTUAL CEMENT USED vs. CALCULATED:	177.6

ADDITIONAL MATERIALS INCORPORATED IN CASING SEAL				
BENTONITE GROUT (gal.)	BENTONITE GROUT (ft^3)	GRANULAR BENTONITE (sacks)	GRANULAR BENTONITE (ft^3)	TOTAL (ft^3)
0	0.00	18	12.6	12.60

% OF ALL SEALING MATERIALS USED FOR INTERMEDIATE CASING Vs. HOLE VOLUME
184

MDW E6-13



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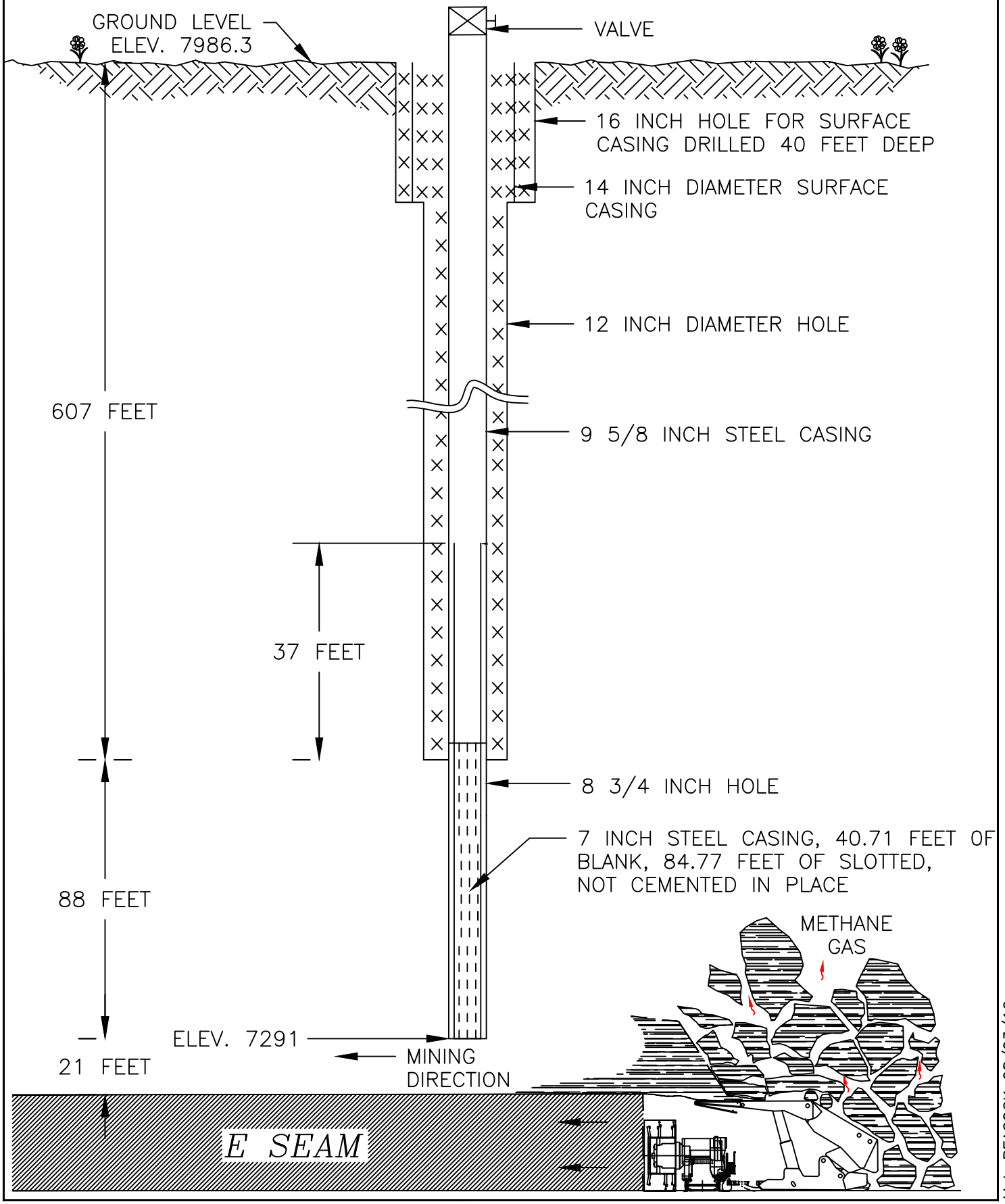
MDW E6-14



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