559277

Sandia National Laboratories

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by

Sandia Corporation

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to: Records Center

from: Patricia Johnson, SNL Contractor

subject: 2012 Calculated Densities

The groundwater densities for the WIPP Culebra monitoring wells were calculated for 2012 as described in the Activity/Project Specific Procedure (SP) 9-11 *Calculation of Densities for Groundwater in WIPP Wells*. The derivation of the data is explained in the following sections and the supporting data are attached.

1. Calculation Process:

As stated in SP 9-11, for each calculation the observed water pressure is divided by the height of the water column. Specifically, the measured pressure value minus the closest corresponding barometric pressure was divided by the Troll depth minus the closest corresponding depth to water (from or adjusted to the same measurement point elevation), and that result was then divided by 0.4335 (psi to feet of water conversion at 4°C, at which temperature the density of pure water is 1.000 g/cm^3). The individual calculated density results for each well were then averaged for a final density value.

The density data are included in the *2012 Calc Densities.xlsx* spreadsheet file created in Excel. Within that spreadsheet, the worksheet *2012 Calc Dens* summarizes the resulting density values and supporting information for the calculated densities, and the worksheet *2012 Calc Dens Formulas* provides the formulas in the worksheet. In addition, the Excel file contains individual well worksheets that include the data used for the calculations and plots of the Troll pressure data. The columns in the worksheets and their contents are described below:

- A – Monitor Well – Well name
- B – 2012 Avg Calc Dens (g/cm^3) – Average Calculated Density Value for 2012
- C – 2011 Avg Calc Dens (g/cm^3) – Average Calculated Density Value for 2011
- D – 2012 - 2011 Diff (g/cm^3) – Difference between 2012 and 2011 densities (Column B - Column C)
- E – # of Dens Averaged – number of density values averaged to get the final value
- F – 2012 Timeframe of Data – Time period for pressure data used in calculations

- G – Troll File Name(s) – File names for pressure data
- H – Troll Install Depth (ft BTOC/BTEC/BTOT) – Depth below primary measuring point at which the Troll was installed
- I – Troll Ideal Install Depth (ft BTOC/BTEC/BTOT) (ERMS 553781) – Mid-Culebra depth below top of referenced casing
- J – Length Off Ideal Depth (ft) – Depth in feet that the Troll is installed below or above the ideal (Column I - Column H)
- K – Date of Install – Date the Troll was installed or reinstalled into the well
- L – Installation Logbook Page – Reference to the logbook and page where the Troll installation was documented
- M – Comments/Explanations – Comments and/or explanations regarding data

The spreadsheet entries were verified by Dale O. Bowman II, Organization 6212.

2. Identification/Listing of Input, Input sources, and Output:

- Excel spreadsheet including the data – 2012 Calc Densities.xls
  - Worksheet 1 – 2012 Calc Dens (printed copy attached)
  - Worksheet 2 – 2012 Calc Dens Formulas (printed copy attached)
  - Worksheet 3 – Baro Data
  - Worksheet 4 – AEC-7
  - Worksheet 5 – C-2737
  - Worksheet 6 – ERDA-9
  - Worksheet 7 – H-2b2
  - Worksheet 8 – H-3b2
  - Worksheet 9 – H-4bR
  - Worksheet 10 – H-5b
  - Worksheet 11 – H-6bR
  - Worksheet 12 – H-7b1
  - Worksheet 13 – H-9bR
  - Worksheet 14 – H-10c
  - Worksheet 15 – H-11b4R
  - Worksheet 16 – H-12
  - Worksheet 17 – H-15R
  - Worksheet 18 – H-16
  - Worksheet 19 – H-17
  - Worksheet 20 – H-19b0
  - Worksheet 21 – IMC-461
  - Worksheet 22 – SNL-1
  - Worksheet 23 – SNL-2
  - Worksheet 24 – SNL-3
  - Worksheet 25 – SNL-5
  - Worksheet 26 – SNL-6
  - Worksheet 27 – SNL-8

- Worksheet 28 – SNL-9
- Worksheet 29 – SNL-10
- Worksheet 30 – SNL-12
- Worksheet 31 – SNL-13
- Worksheet 32 – SNL-14
- Worksheet 33 – SNL-15
- Worksheet 34 – SNL-16
- Worksheet 35 – SNL-17A
- Worksheet 36 – SNL-18
- Worksheet 37 – SNL-19
- Worksheet 38 – WIPP-11
- Worksheet 39 – WIPP-13
- Worksheet 40 – WIPP-19

3. Data Qualification for Compliance Decision Analysis:
Data sources provided in Column G (Troll File Name(s)), Column L (Installation Logbook Page), and in the References Section.

4. Software Used:
Intel® Xeon® CPU, Microsoft Windows 7, Microsoft Office Professional Plus 2010 Excel

5. Reviews:
Technical: Dale O. Bowman II, 6212
QA: Shelly Nielsen, 6210

6. References:

- Troll installation data and SNL water level data from the following logbooks (package ERMS 543277):
  Long-Term Monitoring Notebook (LTM)-16
  Long-Term Monitoring Notebook (LTM)-17
  Long-Term Monitoring Notebook (LTM)-18
- WRES Water Level Data submitted to SNL in monthly memoranda (package ERMS 525178)
- Johnson, Patricia B., Culebra Center Depths for Use in Calculating Equivalent Freshwater Heads of the Culebra Dolomite Member of the Rustler Formation near the WIPP Site, Revision 3, June 10, 2010 (ERMS 553781)

7. List of Attachments:

1. Printout of Excel file worksheet 2012 Calc Dens.xls
2. Printout of Excel file worksheet 2012 Calc Dens Formulas.xls
3. CD including the Excel file and memorandum

2012 Calc Dens

A	B	C	D	E	F	G	H	I	J	K	L	M
Monitor Well	2012 Avg Calc Dens (g/cm^3)	2011 Avg Calc Dens (g/cm^3)	2012 - 2011 Diff (g/cm^3)	# of Dens Averaged	2012 Timeframe of Data	Troll File Name(s)	Troll Install Depth (ft BTOC/BTEC/ BTOT)	Troll Ideal Install Depth (ft BTOC/BTEC/BTOT) (ERMS 553781)	Length Off Ideal Depth (ft)	Date of Install	Installation Logbook Page	Comments/Explanations
AEC-7	1.065	1.069	-0.004	8	June - September	SN162604 052212 AEC-7 (C16) 2012-11-13 10.42.42.wsl	830.00	872.98	42.98	5/22/2012	LTM#17 pg 132	
C-2737	1.021	1.025	-0.004	7	June - September	SN126694 051712 C-2737 (C24) 2012-11-06 10.14.24.wsl	688.85	689.78	0.93	5/17/2012	LTM#17 pg 124	
ERDA-9	1.071	1.071	0.000	8	June - September	SN110390 042512 ERDA-9 (C16) 2012-11-06 09.35.58.wsl	717.20	717.81	0.61	4/25/2012	LTM#17 pg 107	
H-2b2	1.01	1.01	0.000	7	June - September	SN110383 051712 H-2b2 (C10) 2012-11-06 10.29.58.wsl	635.50	635.50	0.00	5/17/2012	LTM#17 pg 126	
H-3b2	1.034	1.039	-0.005	6	July - September	SN143794 070912 H-3b2 (C17) 2012-11-06 10.45.58.wsl	670.60	687.10	16.50	5/17/2012	LTM#17 pg 127	
H-4bR	1.015	1.015	0.000	6	July - September	SN123357 061112 H-4bR (Cobs1) 2012-07-11 13.34.03.wsl, SN123357 071112 H-4bR (C8) 2012-11-08 13.44.00.wsl	507.90	507.54	-0.36	3/8/2012	LTM#17 pg 68	
H-5b	1.093	1.095	-0.002	8	June - September	SN123356 011212 H-5b (C13) 2012-07-03 10.08.08.wsl, SN134838 070312 H-5b (C14) 2012-11-08 10.58.22.wsl	909.22	909.22	0.00	10/26/2011; 7/13/12	LTM#16 pg 156; LTM# 18 pg 25	
H-6bR	1.036	1.036	0.000	8	June - September	SN148779 042512 H-6bR (C6) 2012-11-08 12.14.01.wsl	616.60	616.58	-0.02	4/25/2012	LTM#17 pg 108	
H-7b1	1.005	1.004	0.001	7	June - September	SN149715 060612 H-7b1 (C17) 2012-12-05 11.56.52.wsl	269.90	269.13	-0.77	4/19/2012	LTM#17 pg 103	
H-9bR	0.996	0.994	0.002	9	March - June	SN133569 010412 H-9bR (C3) 2012-06-26 12.08.47.wsl	660.54	660.54	0.00	1/4/2012	LTM#17 pg 20	
H-10c	1.092	1.092	0.000	8	June - September	SN174038 112911 H-10c (C13) 2012-08-29 09.39.48.wsl, SN129649 082912 H-10c (C14) 2012-12-04 15.00.16.wsl	1372.10	1371.90	-0.20	11/29/11; 8/29/12	LTM#16 pg 176; LTM#18 pg 82	
H-11b4R	1.074	New well - 2011 NA		5	July - September	SN134842 062812 H-11b4R (C4) 2012-12-04 13.38.14.wsl	735.85	735.85	0.00	6/28/2012	LTM#18 pg 21	
H-12	1.111	1.105	0.006	7	June - September	SN162757 060512 H-12 (C23) 2012-12-04 14.31.23.wsl	822.00	837.67	15.67	4/19/2012	LTM#17 pg 101; LTM-19 pg 18, 20	Attempted to install Troll at 837.67' BTOC on 4/19/12, but the Troll was hung up in well and was actually at ~822.0' BTOC, this was documented and verified on 1/13/2013
H-15R	1.116	1.117	-0.001	6	July - September	SN149044 070312 H-15R (C10) 2012-12-04 11.11.43.wsl	872.50	872.57	0.07	8/25/11; 7/3/12	LTM#16 pg 119; LTM#18 pg 25	
H-16	1.035	1.035	0.000	8	June - September	SN116305 042512 H-16 (C5) 2012-12-04 10.17.36.wsl	715.10	715.10	0.00	4/25/2012	LTM#17 pg 106	
H-17	1.131	1.134	-0.003	6	July - September	SN116450 070912 H-17 (C11) 2012-12-04 12.50.20.wsl	719.93	719.93	0.00	5/30/2012	LTM#17 pg 134	
H-19b0	1.064	1.064	0.000	4	August - September	SN123363 080812 H-19b0 (C17) 2012-12-04 12.18.20.wsl	754.00	753.49	-0.51	5/30/2012	LTM#17 pg 135	
IMC-461	0.994	0.995	-0.001	7	June - September	SN121882 060712 IMC-461 (C23) 2012-11-08 12.34.19.wsl	376.50	376.10	-0.40	4/19/2012	LTM#17 pg 102	
SNL-1	1.027	1.029	-0.002	7	June - September	SN126697 060712 SNL-1 (C21) 2012-12-06 09.41.38.wsl	612.90	612.23	-0.67	4/18/2012	LTM#17 pg 96	
SNL-2	1.007	1.007	0.000	8	June - September	SN121360 032712 SNL-2 (C29) 2012-12-05 13.23.14.wsl	470.69	470.69	0.00	3/27/2012	LTM#17 pg 73	
SNL-3	1.026	1.026	0.000	8	June - September	SN170831 051712 SNL-3 (C15) 2012-12-06 09.20.05.wsl	766.50	766.19	-0.31	5/17/2012	LTM#17 pg 127	
SNL-5	1.007	1.007	0.000	7	June - September	SN164456 053112 SNL-5 (C19) 2012-12-05 13.38.36.wsl	649.00	648.84	-0.16	5/31/2012	LTM#17 pg 138	
SNL-6	1.241	1.239	0.002	7	June - September	SN131837 060712 SNL-6 (C14) 2012-12-06 10.17.25.wsl	1338.20	1338.03	-0.17	4/18/2012	LTM#17 pg 97	
SNL-8	1.092	1.092	0.000	6	July - September	SN153537 071112 SNL-8 (C32) 2012-12-06 11.15.53.wsl	969.70	969.70	0.00	4/18/2012	LTM#17 pg 98	
SNL-9	1.016	1.016	0.000	8	June - September	SN121361 032812 SNL-9 (C24) 2012-12-06 13.46.06.wsl	567.20	567.20	0.00	3/28/2012	LTM#17 pg 75	
SNL-10	1.007	1.007	0.000	8	June - September	SN139810 032812 SNL-10 (C14) 2012-11-14 11.56.42.wsl	613.50	613.46	-0.04	3/28/2012	LTM#17 pg 76	
SNL-12	1.004	1.003	0.001	7	June - September	SN128518 053012 SNL-12 (C17) 2012-12-05 09.32.24.wsl	570.90	570.68	-0.22	5/30/2012	LTM#17 pg 135	
SNL-13	1.016	1.023	-0.007	7	June - August	SN121044 032712 SNL-13 (C18) 2012-08-29 13.37.22.wsl	401.00	400.62	-0.38	3/27/2012	LTM#17 pg 74	
SNL-14	1.044	1.045	-0.001	6	July - September	SN146411 070912 SNL-14 (C26) 2012-11-13 13.05.36.wsl	670.08	668.95	-1.13	5/31/2012	LTM#17 pg 140	
SNL-15	1.227	1.23	-0.003	7	June - September	SN162609 053112 SNL-15 (C20) 2012-12-04 14.06.34.wsl	922.18	922.18	0.00	5/31/2012	LTM#17 pg 139	
SNL-16	1.007	1.006	0.001	7	June - September	SN121033 060612 SNL-16 (C15) 2012-11-13 14.39.12.wsl	206.30	207.86	1.56	4/18/2012	LTM#17 pg 99	
SNL-17A	1.003	1.004	-0.001	8	June - September	SN122632 042612 SNL-17 (C18) 2012-12-05 11.30.02.wsl	349.60	349.93	0.33	4/26/2012	LTM#17 pg 109	
SNL-18	1.003	1.005	-0.002	8	June - September	SN121786 022212 SNL-18 (C18) 2012-11-13 11.56.44.wsl	551.30	549.30	-2.00	2/22/2012	LTM#17 pg 57	
SNL-19	1.005	1.004	0.001	8	June - September	SN116300 032812 SNL-19 (C15) 2012-12-05 13.03.07.wsl	355.10	354.19	-0.91	3/28/2012	LTM#17 pg 77	
WIPP-11	1.036	1.036	0.000	8	June - September	SN123367 032812 WIPP-11 (C24) 2012-12-05 14.23.54.wsl	857.80	857.41	-0.39	3/28/2012	LTM#17 pg 76	
WIPP-13	1.039	1.041	-0.002	8	June - September	SN116451 102611 WIPP-13 (C17) 2012-07-02 10.56.32.wsl, SN123361 070212 WIPP-13 (C18) 2012-12-06 12.24.01.wsl	715.30	714.88	-0.42	10/26/11; 7/2/12	LTM#16 pg 157; LTM#18 pg 23	
WIPP-19	1.05	1.05	0.000	7	June - September	SN146412 053112 WIPP-19 (C9) 2012-12-06 11.56.48.wsl	770.20	769.50	-0.70	5/31/2012	LTM#17 pg 137	

Notes:
All Trolls are Level models and cables are all non-vented
Barometric data are from SN16053 2011-07-14 110000 P-A-C (baro9).bin
ft BTOC = feet below top of casing
ft BTEC = feet below top of environmental casing
ft BTOT = feet below top of tubing
LTM = Long-Term Monitoring
NA = Not available

2012 Calc Dens Formulas

A	B	C	D	E	F	G	H	I	J	K	L	M
Monitor Well	2012 Avg Calc Dens (g/cm^3)	2011 Avg Calc Dens (g/cm^3)	2012 - 2011 Diff (g/cm^3)	# of Dens Averaged	2012 Timeframe of Data	Troll File Name(s)	Troll Install Depth (ft BTOC/BTEC/BTOT)	Troll Ideal Install Depth (ft BTOC/BTEC/BTOT) (ERMS 553781)	Length Off Ideal Depth (ft)	Date of Install	Installation Logbook Page	Comments/Explanations
AEC-7	1.065	1.069	=B4-C4	8	June - September	SN162604 052212 AEC-7 (C16) 2012-11-13 10.42.42.wsl	830	872.98	=I4-H4	41051	LTM#17 pg 132	
C-2737	1.021	1.025	=B5-C5	7	June - September	SN126694 051712 C-2737 (C24) 2012-11-06 10.14.24.wsl	688.85	689.78	=I5-H5	41046	LTM#17 pg 124	
ERDA-9	1.071	1.071	=B6-C6	8	June - September	SN110390 042512 ERDA-9 (C16) 2012-11-06 09.35.58.wsl	717.2	717.81	=I6-H6	41024	LTM#17 pg 107	
H-2b2	1.01	1.01	=B7-C7	7	June - September	SN110383 051712 H-2b2 (C10) 2012-11-06 10.29.58.wsl	635.5	635.5	=I7-H7	41046	LTM#17 pg 126	
H-3b2	1.034	1.039	=B8-C8	6	July - September	SN143794 070912 H-3b2 (C17) 2012-11-06 10.45.58.wsl	670.6	687.1	=I8-H8	41046	LTM#17 pg 127	
H-4bR	1.015	1.015	=B9-C9	6	July - September	SN123357 061112 H-4bR (Cobs1) 2012-07-11 13.34.03.wsl, SN123357 071112 H-4bR (C8) 2012-11-08 13.44.00.wsl	507.9	507.54	=I9-H9	40976	LTM#17 pg 68	
H-5b	1.093	1.095	=B10-C10	8	June - September	SN123356 011212 H-5b (C13) 2012-07-03 10.08.08.wsl, SN134838 070312 H-5b (C14) 2012-11-08 10.58.22.wsl	909.22	909.22	=I10-H10	10/26/2011; 7/13/12	LTM#16 pg 156; LTM# 18 pg 25	
H-6bR	1.036	1.036	=B11-C11	8	June - September	SN148779 042512 H-6bR (C6) 2012-11-08 12.14.01.wsl	616.6	616.58	=I11-H11	41024	LTM#17 pg 108	
H-7b1	1.005	1.004	=B12-C12	7	June - September	SN149715 060612 H-7b1 (C17) 2012-12-05 11.56.52.wsl	269.9	269.13	=I12-H12	41018	LTM#17 pg 103	
H-9bR	0.996	0.994	=B13-C13	9	March - June	SN133569 010412 H-9bR (C3) 2012-06-26 12.08.47.wsl	660.54	660.54	=I13-H13	40912	LTM#17 pg 20	
H-10c	1.092	1.092	=B14-C14	8	June - September	SN174038 112911 H-10c (C13) 2012-08-29 09.39.48.wsl, SN129649 082912 H-10c (C14) 2012-12-04 15.00.16.wsl	1372.1	1371.9	=I14-H14	11/29/11; 8/29/12	LTM#16 pg 176; LTM#18 pg 82	
H-11b4R	1.074	New well - 2011 NA		5	July - September	SN134842 062812 H-11b4R (C4) 2012-12-04 13.38.14.wsl	735.85	735.85	=I15-H15	41088	LTM#18 pg 21	
H-12	1.111	1.105	=B16-C16	7	June - September	SN162757 060512 H-12 (C23) 2012-12-04 14.31.23.wsl	822	837.67	=I16-H16	41018	LTM#17 pg 101; LTM-19 pg 18, 20	Attempted to install Troll at 837.7' BTOC on 4/19/12, but the Troll was hung up in well and was actually at ~822.0' BTOC, this
H-15R	1.116	1.117	=B17-C17	6	July - September	SN149044 070312 H-15R (C10) 2012-12-04 11.11.43.wsl	872.5	872.57	=I17-H17	8/25/11; 7/3/12	LTM#16 pg 119; LTM#18 pg 25	
H-16	1.035	1.035	=B18-C18	8	June - September	SN116305 042512 H-16 (C5) 2012-12-04 10.17.36.wsl	715.1	715.1	=I18-H18	41024	LTM#17 pg 106	
H-17	1.131	1.134	=B19-C19	6	July - September	SN116450 070912 H-17 (C11) 2012-12-04 12.50.20.wsl	719.93	719.93	=I19-H19	41059	LTM#17 pg 134	
H-19b0	1.064	1.064	=B20-C20	4	August - September	SN123363 080812 H-19b0 (C17) 2012-12-04 12.18.20.wsl	754	753.49	=I20-H20	41059	LTM#17 pg 135	
IMC-461	0.994	0.995	=B21-C21	7	June - September	SN121882 060712 IMC-461 (C23) 2012-11-08 12.34.19.wsl	376.5	376.1	=I21-H21	41018	LTM#17 pg 102	
SNL-1	1.027	1.029	=B22-C22	7	June - September	SN126697 060712 SNL-1 (C21) 2012-12-06 09.41.38.wsl	612.9	612.23	=I22-H22	41017	LTM#17 pg 96	
SNL-2	1.007	1.007	=B23-C23	8	June - September	SN121360 032712 SNL-2 (C29) 2012-12-05 13.23.14.wsl	470.69	470.69	=I23-H23	40995	LTM#17 pg 73	
SNL-3	1.026	1.026	=B24-C24	8	June - September	SN170831 051712 SNL-3 (C15) 2012-12-06 09.20.05.wsl	766.5	766.19	=I24-H24	41046	LTM#17 pg 127	
SNL-5	1.007	1.007	=B25-C25	7	June - September	SN164456 053112 SNL-5 (C19) 2012-12-05 13.38.36.wsl	649	648.84	=I25-H25	41060	LTM#17 pg 138	
SNL-6	1.241	1.239	=B26-C26	7	June - September	SN131837 060712 SNL-6 (C14) 2012-12-06 10.17.25.wsl	1338.2	1338.03	=I26-H26	41017	LTM#17 pg 97	
SNL-8	1.092	1.092	=B27-C27	6	July - September	SN153537 071112 SNL-8 (C32) 2012-12-06 11.15.53.wsl	969.7	969.7	=I27-H27	41017	LTM#17 pg 98	
SNL-9	1.016	1.016	=B28-C28	8	June - September	SN121361 032812 SNL-9 (C24) 2012-12-06 13.46.06.wsl	567.2	567.2	=I28-H28	40996	LTM#17 pg 75	
SNL-10	1.007	1.007	=B29-C29	8	June - September	SN139810 032812 SNL-10 (C14) 2012-11-14 11.56.42.wsl	613.5	613.46	=I29-H29	40996	LTM#17 pg 76	
SNL-12	1.004	1.003	=B30-C30	7	June - September	SN128518 053012 SNL-12 (C17) 2012-12-05 09.32.24.wsl	570.9	570.68	=I30-H30	41059	LTM#17 pg 135	
SNL-13	1.016	1.023	=B31-C31	7	June - August	SN121044 032712 SNL-13 (C18) 2012-08-29 13.37.22.wsl	401	400.62	=I31-H31	40995	LTM#17 pg 74	
SNL-14	1.044	1.045	=B32-C32	6	July - September	SN146411 070912 SNL-14 (C26) 2012-11-13 13.05.36.wsl	670.08	668.95	=I32-H32	41060	LTM#17 pg 140	
SNL-15	1.227	1.23	=B33-C33	7	June - September	SN162609 053112 SNL-15 (C20) 2012-12-04 14.06.34.wsl	922.18	922.18	=I33-H33	41060	LTM#17 pg 139	
SNL-16	1.007	1.006	=B34-C34	7	June - September	SN121033 060612 SNL-16 (C15) 2012-11-13 14.39.12.wsl	206.3	207.86	=I34-H34	41017	LTM#17 pg 99	
SNL-17A	1.003	1.004	=B35-C35	8	June - September	SN122632 042612 SNL-17 (C18) 2012-12-05 11.30.02.wsl	349.6	349.93	=I35-H35	41025	LTM#17 pg 109	
SNL-18	1.003	1.005	=B36-C36	8	June - September	SN121786 022212 SNL-18 (C18) 2012-11-13 11.56.44.wsl	551.3	549.3	=I36-H36	40961	LTM#17 pg 57	
SNL-19	1.005	1.004	=B37-C37	8	June - September	SN116300 032812 SNL-19 (C15) 2012-12-05 13.03.07.wsl	355.1	354.19	=I37-H37	40996	LTM#17 pg 77	
WIPP-11	1.036	1.036	=B38-C38	8	June - September	SN123367 032812 WIPP-11 (C24) 2012-12-05 14.23.54.wsl	857.8	857.41	=I38-H38	40996	LTM#17 pg 76	
WIPP-13	1.039	1.041	=B39-C39	8	June - September	SN116451 102611 WIPP-13 (C17) 2012-07-02 10.56.32.wsl, SN123361 070212 WIPP-13 (C18) 2012-12-06 12.24.01.wsl	715.3	714.88	=I39-H39	10/26/11; 7/2/12	LTM#16 pg 157; LTM#18 pg 23	
WIPP-19	1.05	1.05	=B40-C40	7	June - September	SN146412 053112 WIPP-19 (C9) 2012-12-06 11.56.48.wsl	770.2	769.5	=I40-H40	41060	LTM#17 pg 137	

Notes:
All Trolls are Level models and cables are all non-vented
Barometric data are from SN16053 2011-07-14 110000 P-A-C (baro9).bin
ft BTOC = feet below top of casing
ft BTEC = feet below top of environmental casing
ft BTOT = fee
LTM = Long-Term Monitoring
NA = Not available