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to: Records Center

from: Patricia Johnson, SNL Contractor PBJohnson

subject: 2005 Calculated Densities

The groundwater densities for the WIPP Culebra monitoring wells were calculated for 2005 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 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 fresh 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 *2005 Calc Dens.xlsx* spreadsheet file created in Excel. Within that spreadsheet, the worksheet *2005 Calc Dens* summarizes the resulting density values and supporting information for the calculated densities, and the worksheet *2005 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 –Well ID – Well name
- B – 2005 Avg Calc Dens (g/cm^3) – Average Calculated Density Value for 2005
- C – 2010 Avg Calc Dens (g/cm^3) – Average Calculated Density Value for 2010
- D – 2010 less 2005 value – Difference between 2010 and 2005 densities (Column C - Column B)
- E – # of Dens Averaged – number of density values averaged to get the final value
- F – Troll – Mini/Level, Vented (v)/Non-Vented (nv) – the type of Troll and cable used to collect pressure measurements

- G – Timeframe of Data – Time period for pressure data used in calculations
- H – Troll File Name(s) – File names for pressure data
- I – Troll Install Depth (ft BTOC/T) – Depth below primary measuring point at which the Troll was installed, below top of casing or tubing
- J – Troll Ideal Install Depth (ft BTOC/T) (ERMS 549564) – Mid-Culebra depth below top of casing/tubing
- K – Length Off Ideal Depth (ft) – Depth in feet that the Troll is installed below/above ideal (Column I - Column J)
- L – Date of Install – Date the Troll was installed into the well
- M – Installation Logbook Page – Reference to the logbook and page where the Troll installation was documented
- N – 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 – 2005 Calc Dens.xlsx
  - Worksheet 1 – 2005 Calc Dens (printed copy attached)
  - Worksheet 2 – 2005 Calc Dens Formulas (printed copy attached)
  - Worksheet 3 – C-2737
  - Worksheet 4 – ERDA-9
  - Worksheet 5 – H-2b2
  - Worksheet 6 – H-3b2
  - Worksheet 7 – H-4b
  - Worksheet 8 – H-5b
  - Worksheet 9 – H-6b
  - Worksheet 10 – H-7b1
  - Worksheet 11 – H-9c
  - Worksheet 12 – H-11b4
  - Worksheet 13 – H-12
  - Worksheet 14 – H-15
  - Worksheet 15 – H-17
  - Worksheet 16 – H-19b0
  - Worksheet 17 – IMC-461
  - Worksheet 18 – P-17
  - Worksheet 19 – SNL-1
  - Worksheet 20 – SNL-2
  - Worksheet 21 – SNL-3
  - Worksheet 22 – SNL-5
  - Worksheet 23 – SNL-8
  - Worksheet 24 – SNL-9
  - Worksheet 25 – SNL-12
  - Worksheet 26 – SNL-13

- Worksheet 27 – SNL-14
- Worksheet 28 – SNL-15
- Worksheet 29 – WIPP-11
- Worksheet 30 – WIPP-12
- Worksheet 31 – WIPP-13
- Worksheet 32 – WIPP-25
- Worksheet 33 – WIPP-26

3. Data Qualification for Compliance Decision Analysis:
Data sources provided in Column H (Troll File Name(s)), Column M (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):
  Troll Logbook 3 – Troll-3
  Troll Logbook 4 – Troll-4
  Troll Logbook 5 – Troll-5
  Magenta Hydrology Notebook 6 – Magenta-6
  WIPP Site Well Testing 2 – WSWT-2
  WIPP Site Well Testing 7 – WSWT-7
  WIPP 30-Day Pumping Test #1 – SNL-9
  WIPP 30-Day Pumping Test #2 – WIPP-11
  WIPP 30-Day Pumping Test #3 – SNL-14
- 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 2005 Calc Dens.xlsx
2. Printout of Excel file worksheet 2005 Calc Dens Formulas.xlsx
3. CD including the Excel file and memorandum

2005 Calculated Densities

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Well ID	2005 Avg Calc Dens (g/cm^3)	2010 Avg Calc Dens	2010 less 2005 value	# of Dens Averaged	Troll - Mini/Level, Vented (v)/Non-Vented (nv)	Timeframe of Data	Troll File Name(s)	Troll Install Depth (ft BTOC/T)	Troll Ideal Install Depth (ft BTOC/T) (ERMS 549564)	Length Off Ideal Depth (ft)	Date of Install	Installation Logbook Page	Comments/Explanations
AEC-7							No Troll Data						
C-2737	1.019	1.025	0.006	8	mini(v)	Jan - Nov	SN12807 2004-12-16 104734 C-2737(C7).bin, SN17333 2005-06-28 140000 C-2737(C8).bin, SN17333 2005-07-27 120000 C-2737(C9).bin, SN17333 2005-11-14 150000 C-2737(C10).bin	701.0	691.0	10.00	3/23/2004	WSWT-2 (141)	
								701.5	691.0	10.50	6/28/2005	Troll LB-4 (104)	
ERDA-9	1.066	1.070	0.004	6	mini(v)	Apr - Nov	SN04580 2005-11-15 110000 ERDA-9(C3).bin, SN12473 2004-10-11 130909 ERDA-9(C1).bin, SN04580 2006-02-23 130000 ERDA-9(C4).bin, SN04580 2005-03-22 150000 ERDA-9(C2).bin	475.0	716.8	-241.78	3/22/2005	Troll LB-4 (49)	
								475.8	716.8	-240.98	11/15/2005	Troll LB-5 (12)	
H-2b2	1.020	1.011	-0.009	7	mini(v)	Jan - Apr	SN07861 2004-07-19 125701 H-2b2(C2).bin	450.0	635.5	-185.50	7/19/2004	Magenta-6 (99)	
H-3b2	1.053	1.041	-0.012	11	mini(v)	Jan - Dec	SN17386 2005-01-17 143150 H-3b2(C3).bin, SN17386 2005-07-11 150000 H-3b2(C4).bin	500.0	687.7	-187.70	1/17/2005	Troll LB-4 (2)	
H-4b	1.015	1.016	0.001	3	mini(v)	Jan, Jul	SN17716 2004-11-10 144039 H-4b (C1).bin, SN17334 2005-07-01 100000 H-4b(C1).bin	445.0	504.1	-59.10	11/10/2004	Troll LB-3 (127)	2010 density and ideal depth for H-4bR
								500.0	504.1	-4.10	7/1/2005	WSWT-7 (65)	
H-5b	1.097	1.091	-0.006	9	mini(v)	Apr - Dec	SN08276 2005-04-06 160000 H-5b(C1).bin, SN08276 2005-10-21 130000 H-5b(C2).bin	600.0	910.3	-310.30	4/6/2005	Troll LB-4 (61)	
H-6b	1.040	1.035	-0.005	12	mini(v)	Jan - Dec	SN17353 2004-10-14 112016 H-6b(C3).bin, SN17353 2005-10-04 130000 H-6b(C4).bin	450.8	617.5	-166.70	10/14/2004, 10/4/2005	Troll LB-3 (111-2) Troll LB-4 (146)	
H-7b1	1.008	1.004	-0.004	11	mini(v)	Feb - Dec	SN17716 2005-01-19 132045 H-7b1(C3).bin, SN17716 2005-11-22 150000 H-7b1(C4).bin	275.0	269.9	5.10	1/19/2005	Troll LB-4 (9)	
								275.8	269.9	5.90	11/22/2005	Troll LB-5 (23)	
H-9c	1.028	1.004	-0.024	11	mini(v)	Jan - Nov	SN11025 2005-01-18 153659 H-9c(C7).bin, SN11025 2005-11-23 100000 H-9c(C8).bin	500.0	663.5	-163.50	1/18/2005	Troll LB-4 (6-7)	
H-11b4	1.088	1.049	-0.039	6	mini(v)	Jul - Dec	SN11231 2005-07-15 150000 H-11b4 (C2).bin	500.0	736.2	-236.20	7/15/2005	Troll LB-4 (107)	
H-12	1.106	1.105	-0.001	9	mini(v)	May - Dec	SN04558 2005-04-29 110000 H-12(C2).bin, SN04558 2005-12-22 150000 H-12(C3).bin	550.0	838.4	-288.40	4/29/2005	Troll LB-4 (87)	
								550.8	838.4	-287.60	12/22/2005	Troll LB-5 (47)	
H-15	1.082	1.117	0.035	6	mini(v)	Jul - Dec	SN07861 2005-07-18 100000 H-15(C14).bin, SN07861 2005-11-14 120000 H-15(C15).bin	600.0	872.5	-272.54	7/18/2005	WSWT-7 (89)	2010 density and ideal depth for H-15R
								600.8	872.5	-271.74	11/14/2005	Troll LB-5 (9)	
H-17	1.168	1.134	-0.034	8	mini(v)	May - Dec	SN18758 2005-04-28 120000 H-17(C1).bin	500.0	720.4	-220.40	4/28/2005	Troll LB-5 (85)	
H-19b0	1.067	1.066	-0.001	1	mini(v)	Dec	SN13475 2005-11-15 120000 H-19b0(C1).bin	500.8	754.0	-253.20	11/15/2005	Troll LB-5 (15)	
IMC-461	1.015	1.003	-0.012	9	mini(v)	Feb - Oct	SN08268 2005-01-26 135912 IMC-461 (C7).bin	375.8	376.5	-0.70	1/26/2005, 10/4/2005	WSWT-5 (139-140) Troll LB-4 (145)	
P-17	1.201			7	mini(v)	Jan - Jul	SN17400 2004-10-12 150549 P-17(C2).bin, SN17400 2005-06-15 100000 P-17(C3).bin, SN17400 2005-06-21 140000 P-17(C4).bin, SN17400 2005-06-29 170000 P-17(C5).bin	550.0	570.5	-20.50	10/12/2004	Troll LB-3 (107)	Ideal depth is BGS
										0.00	4/19/2005	Troll LB-4 (80)	
SNL-1	1.032	1.026	-0.006	6	mini(v)	Mar - Aug	SN13590 2005-03-21 130000 SNL-1(C7).bin	601.2	612.9	-11.67	3/21/2005	Troll LB-4 (47)	
SNL-2	1.003	1.007	0.004	9	mini(v)	Mar - Dec	SN13562 2005-01-19 121756 SNL-2(C12pump).bin, SN13562 2005-01-25 093319 SNL-2(C13).bin, SN13562 2005-02-28 140000 SNL-2(C14).bin, SN12807 2005-07-27 090000 SNL-2(C15).bin, SN13590 2005-11-22 110000 SNL-2(C16).bin	475.1	470.7	4.40	9/24/2004	Troll LB-3 (97)	
								473.8	470.7	3.10	7/27/2005	WSWT-7 (101-2)	
								474.6	470.7	3.90	11/22/2005	Troll LB-5 (18)	
SNL-3	1.029	1.026	-0.003	12	mini(v)	Jan - Dec	SN11028 2004-05-03 111511 SNL-3(C2).bin, SN11028 2005-04-13 140000 SNL-3(C3).bin	600.0	766.5	-166.50	5/3/2004	WSWT-3 (42)	
											4/13/2005	Troll LB-4 (77)	
SNL-5	1.008	1.006	-0.002	12	mini(v)	Jan - Dec	SN04558 2004-09-10 134143 SNL-5(C3).bin, SN11306 2005-04-01 140000 SNL-5(C4).bin	450.0	649.0	-199.00	8/18/04, 4/1/05	Troll LB-3 (72), Troll LB-4 (57)	
SNL-6							No Water Level Data Available in Hydrograph						
SNL-8	1.039	1.092	0.053	5	mini(v)	Jul - Dec	SN14199 2005-07-19 110000 SNL-8(C).bin, SN14199 2005-10-11 094500 SNL-8(C1).bin, SN14199 2005-10-11 165601 SNL-8(C2).bin, SN14199 2005-10-18 080000 SNL-8(C3).bin, SN14199 2005-11-16 091500 SNL-8(C4).bin, SN14199 2005-11-16 145416 SNL-8(C5).bin, SN18778 2005-11-18 140000 SNL-8(C6).bin, SN18778 2005-11-23 120000 SNL-8(C7).bin	650.0	969.7	-319.70	7/19/2005	WSWT-7 (94)	
								650.2	969.7	-319.55	11/18/2005	Troll LB-5 (15)	
SNL-9	1.025	1.016	-0.009	12	mini(v)	Jan - Dec	SN17621 2004-12-21 130313 SNL-9(C10).bin	521.7	567.2	-45.50	12/21/2004	SNL-9 (133)	
SNL-12	1.000	1.003	0.003	12	mini(v)	Jan - Dec	SN11358 2004-12-15 142301 SNL-12(C5).bin, SN16771 2005-01-31 115614 SNL-12(C6).bin	575.0	570.9	4.10	10/1/2004	Troll LB-3 (104)	
											1/31/2005	Troll LB-4 (17)	
SNL-13	1.035	1.021	-0.014	7	mini(v)	Jun - Dec	SN18823 2005-06-15 150000 SNL-13(C1).bin	400.0	401.2	-1.16	6/15/2005	WSWT-7 (52)	
SNL-14	1.042	1.044	0.002	6	mini(v)	Jun - Dec	SN12473 2005-06-15 110000 SNL-14(C1).bin, SN17337 2005-07-15 140000 SNL-14(C2).bin, SN17337 2005-07-26 110000 SNL-14(C4).bin, SN17337 2005-10-25 130000 SNL-14(C7).bin	450.0	669.5	-219.50	6/15/2005	WSWT-7 (51)	
								642.5	669.5	-27.00	10/25/2005	SNL-14 (152)	
SNL-15	1.233	1.226	-0.007	2	mini(v)	Jun - Jul	SN18778 2005-06-23 140000 SNL-15(C).bin, SN18778 2005-07-07 150000 SNL-15(C1).bin, SN18778 2005-07-14 110000 SNL-15(C2).bin	931.0	922.8	8.20	6/23/2005	WSWT-7 (63)	
SNL-16							Not drilled yet						
SNL-17A							Not drilled yet						
SNL-18							Not drilled yet						
SNL-19							Not drilled yet						
WIPP-11	1.042	1.035	-0.007	9	mini(v)	Apr - Dec	SN17399 2005-04-04 140000 WIPP-11(C11).bin, SN17399 2005-04-13 130000 WIPP-11(C12).bin	603	857.8	-254.80	1/27/2005	WIPP-11 (13)	
WIPP-12	1.104			5	mini(v)	Jan - May	SN17333 2005-01-26 110831 WIPP-12(C).bin	600.0			1/26/2005	Troll LB-4 (16)	
WIPP-13	1.038	1.042	0.004	12	mini(v)	Jan - Dec	SN17310 2004-10-14 145956 WIPP-13(C2).bin, SN17310 2005-07-19 100000 WIPP-13(C3).bin	650	715.3	-65.30	10/14/2004	Troll LB-3 (113)	
								500	715.3	-215.30	7/19/2005	WSWT-7 (93)	
WIPP-19							No Troll Data						
WIPP-25	1.004			10	mini(v)	Jan - Oct	SN17457 2004-10-19 143756 WIPP-25(C6).bin	445.0	459.5	-14.50	10/19/2004	WSWT-4 (149)	Ideal depth is BGS
WIPP-26	1.033			10	mini(v)	Mar - Dec	SN11336 2005-02-23 104117 WIPP-26(C3).bin, SN11336 2005-03-28 160000 WIPP-26(C4).bin	170.0	197.5	-27.50	2/23/2005	Troll LB-4 (37)	Ideal depth is BGS

Notes:
ft BTOC = feet below top of casing
ft BTOT = feet below top of tubing
BGS = below ground surface
Note - All Troll depths are presented as documented in the SN, universal compensation for Troll depth to sensor have not been made

NA = not applicable/available
LTM = Long-Term Monitoring
WSWT = WIPP Well Site Testing

2005 Calculated Densities

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Well ID	2005 Avg Calc Dens (g/cm^3)	2010 Avg Calc Dens	2010 less 2005 value	# of Dens Averaged	Troll - Mini/Level, Vented (v)/Non-Vented (nv)	Timeframe of Data	Troll File Name(s)	Troll Install Depth (ft BTOC/T)	Troll Ideal Install Depth (ft BTOC/T) (ERMS 549564)	Length Off Ideal Depth (ft)	Date of Install	Installation Logbook Page	Comments/Explanations
AEC-7	No Troll Data												
C-2737	1.019	1.025	=C5-B5	8	mini(v)	Jan - Nov	SN12807 2004-12-16 104734 C-2737(C7).bin, SN17333 2005-06-28 140000 C-2737(C8).bin, SN17333 2005-07-27 120000 C-2737(C9).bin, SN17333 2005-11-14	701 701.5	691 691	=I5-J5 =I6-J6	38069 38531	WSWT-2 (141) Troll LB-4 (104)	
ERDA-9	1.066	1.07	=C7-B7	6	mini(v)	Apr - Nov	SN04580 2005-11-15 110000 ERDA-9(C3).bin, SN12473 2004-10-11 130909 ERDA-9(C1).bin, SN04580 2006-02-23 130000 ERDA-9(C4).bin, SN04580 2005-03-22	475 475.8	716.78 716.78	=I7-J7 =I8-J8	38433 38671	Troll LB-4 (49) Troll LB-5 (12)	
H-2b2	1.02	1.011	=C9-B9	7	mini(v)	Jan - Apr	SN07861 2004-07-19 125701 H-2b2(C2).bin	450	635.5	=I9-J9	38187	Magenta-6 (99)	
H-3b2	1.053	1.041	=C10-B10	11	mini(v)	Jan - Dec	SN17386 2005-01-17 143150 H-3b2(C3).bin, SN17386 2005-07-11 150000 H-3b2(C4).bin	500	687.7	=I10-J10	38369	Troll LB-4 (2)	
H-4b	1.015	1.016	=C11-B11	3	mini(v)	Jan, Jul	SN17716 2004-11-10 144039 H-4b (C1).bin, SN17334 2005-07-01 100000 H-4b(C1).bin	445 500	504.1 504.1	=I11-J11 =I12-J12	38301 38534	Troll LB-3 (127) WSWT-7 (65)	2010 density and ideal depth for H-4bR
H-5b	1.097	1.091	=C13-B13	9	mini(v)	Apr - Dec	SN08276 2005-04-06 160000 H-5b(C1).bin, SN08276 2005-10-21 130000 H-5b(C2).bin	600	910.3	=I13-J13	38448	Troll LB-4 (61)	
H-6b	1.04	1.035	=C14-B14	12	mini(v)	Jan - Dec	SN17353 2004-10-14 112016 H-6b(C3).bin, SN17353 2005-10-04 130000 H-6b(C4).bin	450.8	617.5	=I14-J14	10/14/2004, 10/4/2005	Troll LB-3 (111-2) Troll LB-4 (146)	
H-7b1	1.008	1.004	=C15-B15	11	mini(v)	Feb - Dec	SN17716 2005-01-19 132045 H-7b1(C3).bin, SN17716 2005-11-22 150000 H-7b1(C4).bin	275 275.8	269.9 269.9	=I15-J15 =I16-J16	38371 38678	Troll LB-4 (9) Troll LB-5 (23)	
H-9c	1.028	1.004	=C17-B17	11	mini(v)	Jan - Nov	SN11025 2005-01-18 153659 H-9c(C7).bin, SN11025 2005-11-23 100000 H-9c(C8).bin	500	663.5	=I17-J17	38370	Troll LB-4 (6-7)	
H-11b4	1.088	1.049	=C18-B18	6	mini(v)	Jul - Dec	SN11231 2005-07-15 150000 H-11b4 (C2).bin	500	736.2	=I18-J18	38548	Troll LB-4 (107)	
H-12	1.106	1.105	=C19-B19	9	mini(v)	May - Dec	SN04558 2005-04-29 110000 H-12(C2).bin, SN04558 2005-12-22 150000 H-12(C3).bin	550 550.8	838.4 838.4	=I19-J19 =I20-J20	38471 38708	Troll LB-4 (87) Troll LB-5 (47)	
H-15	1.082	1.117	=C21-B21	6	mini(v)	Jul - Dec	SN07861 2005-07-18 100000 H-15(C14).bin, SN07861 2005-11-14 120000 H-15(C15).bin	600 600.8	=870.5+2.04 =870.5+2.04	=I21-J21 =I22-J22	38551 38670	WSWT-7 (89) Troll LB-5 (9)	2010 density and ideal depth for H-15R
H-17	1.168	1.134	=C23-B23	8	mini(v)	May - Dec	SN18758 2005-04-28 120000 H-17(C1).bin	500	720.4	=I23-J23	38470	Troll LB-5 (85)	
H-19b0	1.067	1.066	=C24-B24	1	mini(v)	Dec	SN13475 2005-11-15 120000 H-19b0(C1).bin	500.8	754	=I24-J24	38671	Troll LB-5 (15)	
IMC-461	1.015	1.003	=C25-B25	9	mini(v)	Feb - Oct	SN08268 2005-01-26 135912 IMC-461 (C7).bin	375.8	376.5	=I25-J25	1/26/2005, 10/4/2005	WSWT-5 (139-140) Troll LB-4 (145)	
P-17	1.201			7	mini(v)	Jan - Jul	SN17400 2004-10-12 150549 P-17(C2).bin, SN17400 2005-06-15 100000 P-17(C3).bin, SN17400 2005-06-21 140000 P-17(C4).bin, SN17400 2005-06-29	550	570.5	=I26-J26 =I27-J27	38272 38461	Troll LB-3 (107) Troll LB-4 (80)	Ideal depth is BGS
SNL-1	1.032	1.026	=C28-B28	6	mini(v)	Mar - Aug	SN13590 2005-03-21 130000 SNL-1(C7).bin	601.2	612.87	=I28-J28	38432	Troll LB-4 (47)	
SNL-2	1.003	1.007	=C29-B29	9	mini(v)	Mar - Dec	SN13562 2005-01-19 121756 SNL-2(C12pump).bin, SN13562 2005-01-25 093319 SNL-2(C13).bin, SN13562 2005-02-28 140000 SNL-2(C14).bin, SN12807 2005-07-27 090000 SNL-2(C15).bin, SN13590 2005-11-22 110000 SNL-2(C16).bin	475.1 473.8 474.6	470.7 470.7 470.7	=I29-J29 =I30-J30 =I31-J31	38254 38560 38678	Troll LB-3 (97) WSWT-7 (101-2) Troll LB-5 (18)	
SNL-3	1.029	1.026	=C32-B32	12	mini(v)	Jan - Dec	SN11028 2004-05-03 111511 SNL-3(C2).bin, SN11028 2005-04-13 140000 SNL-3(C3).bin	600	766.5	=I32-J32	38110 38455	WSWT-3 (42) Troll LB-4 (77)	
SNL-5	1.008	1.006	=C34-B34	12	mini(v)	Jan - Dec	SN04558 2004-09-10 134143 SNL-5(C3).bin, SN11306 2005-04-01 140000 SNL-5(C4).bin	450	649	=I34-J34	8/18/04, 4/1/05	Troll LB-3 (72), Troll LB-4 (57)	
SNL-6	No Water Level Data Available in Hydrograph												
SNL-8	1.039	1.092	=C36-B36	5	mini(v)	Jul - Dec	SN14199 2005-07-19 110000 SNL-8(C).bin, SN14199 2005-10-11 094500 SNL-8(C1).bin, SN14199 2005-10-11 165601 SNL-8(C2).bin, SN14199 2005-10-18	650 650.15	969.7 969.7	=I36-J36 =I37-J37	38552 38674	WSWT-7 (94) Troll LB-5 (15)	
SNL-9	1.025	1.016	=C38-B38	12	mini(v)	Jan - Dec	SN17621 2004-12-21 130313 SNL-9(C10).bin	521.7	567.2	=I38-J38	38342	SNL-9 (133)	
SNL-12	1	1.003	=C39-B39	12	mini(v)	Jan - Dec	SN11358 2004-12-15 142301 SNL-12(C5).bin, SN16771 2005-01-31 115614 SNL-12(C6).bin	575	570.9	=I39-J39	38261 38383	Troll LB-3 (104) Troll LB-4 (17)	
SNL-13	1.035	1.021	=C41-B41	7	mini(v)	Jun - Dec	SN18823 2005-06-15 150000 SNL-13(C1).bin	400	401.16	=I41-J41	38518	WSWT-7 (52)	
SNL-14	1.042	1.044	=C42-B42	6	mini(v)	Jun - Dec	SN12473 2005-06-15 110000 SNL-14(C1).bin, SN17337 2005-07-15 140000 SNL-14(C2).bin, SN17337 2005-07-26 110000 SNL-14(C4).bin, SN17337 2005-10-25	450 642.5	669.5 669.5	=I42-J42 =I43-J43	38518 38650	WSWT-7 (51) SNL-14 (152)	
SNL-15	1.233	1.226	=C44-B44	2	mini(v)	Jun - Jul	SN18778 2005-06-23 140000 SNL-15(C).bin, SN18778 2005-07-07 150000 SNL-15(C1).bin, SN18778 2005-07-14 110000 SNL-15(C2).bin	931	922.8	=I44-J44	38526	WSWT-7 (63)	
SNL-16	Not drilled yet												
SNL-17A	Not drilled yet												
SNL-18	Not drilled yet												
SNL-19	Not drilled yet												
WIPP-11	1.042	1.035	=C49-B49	9	mini(v)	Apr - Dec	SN17399 2005-04-04 140000 WIPP-11(C11).bin, SN17399 2005-04-13 130000 WIPP	603	857.8	=I49-J49	38379	WIPP-11 (13)	
WIPP-12	1.104			5	mini(v)	Jan - May	SN17333 2005-01-26 110831 WIPP-12(C).bin	600			38378	Troll LB-4 (16)	
WIPP-13	1.038	1.042	=C51-B51	12	mini(v)	Jan - Dec	SN17310 2004-10-14 145956 WIPP-13(C2).bin, SN17310 2005-07-19 100000 WIPP-	650 500	715.3 715.3	=I51-J51 =I52-J52	38274 38552	Troll LB-3 (113) WSWT-7 (93)	
WIPP-19	No Troll Data												
WIPP-25	1.004			10	mini(v)	Jan - Oct	SN17457 2004-10-19 143756 WIPP-25(C6).bin	445	459.5	=I54-J54	38279	WSWT-4 (149)	Ideal depth is BGS
WIPP-26	1.033			10	mini(v)	Mar - Dec	SN11336 2005-02-23 104117 WIPP-26(C3).bin, SN11336 2005-03-28 160000 WIPP-26(C4).bin	170	197.5	=I55-J55	38406	Troll LB-4 (37)	Ideal depth is BGS

Notes:
ft BTOC = fe
ft BTOT = fe
BGS = below
Note - All Tr

NA = not applicabl
LTM = Long-Term
WSWT = WIPP We