



**Department of Energy**  
 Carlsbad Field Office  
 P. O. Box 3090  
 Carlsbad, New Mexico 88221  
 October 07, 2010



Mr. James Bearzi, Chief  
 Hazardous Waste Bureau  
 New Mexico Environment Department  
 2905 Rodeo Park Drive East, Building 1  
 Santa Fe, New Mexico 87505-6303

**Subject: Transmittal of the Waste Isolation Pilot Plant Groundwater Level Measurements for September 2010**

Dear Mr. Bearzi:

The purpose of this letter is to submit the Waste Isolation Pilot Plant groundwater level measurements for September 2010, as required by Condition V.J.2.b of the Hazardous Waste Facility Permit No. NM4890139088-TSDF.

We certify under penalty of law that this document and all enclosures were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Please feel free to contact Daniel J. Ferguson at (575) 234-7018, if you have any questions regarding this data transmittal.

Sincerely,

David C. Moody, Manager  
 Carlsbad Field Office

M. F. Sharif, General Manager  
 Washington TRU Solutions LLC

Enclosure

cc: w/enclosure  
 S. Zappe, NMED \*ED  
 C. Walker, Trinity Engineering ED  
 CBFO M&RC

cc: w/o enclosure  
 J. Kieling, NMED ED  
 \*ED denotes electronic distribution



SUMMARY COMMENTS FOR THE WATER LEVEL MEASUREMENTS FOR THE  
MONTH OF September 2010

1. The WIPP Hazardous Waste Facility Permit (Permit), Attachment L, Section L-4c (1) requires reporting of cumulative fluctuations noted in the Detection Monitoring Program (DMP) wells of more than two feet in the course of one year which are not attributable to site tests and subsequent stabilization. The Calendar Year 2009 Annual Site Environmental Report (ASER), was submitted to the New Mexico Environment Department in compliance with Permit Condition V.J.2.c, and summarizes and discusses DMP water level changes greater than two feet for calendar year 2009. Changes in DMP well water levels greater than two feet for the current year, if any, are reported in the data sheet and will be discussed in the ASER for calendar year 2010.
2. Calculations used to derive water level and fresh water head elevations in Table 1:
  - $\text{Adjusted Depth to Water(ft)} = \text{Depth to Water from Measuring Point(ft)} - \text{Adjustment(ft)}$
  - $\text{Water Level(ft amsl)} = \text{Top of Surveyed Casing Elevation(ft amsl)} - \text{Adjusted Depth to Water(ft)}$
  - $\text{Column Height(ft)} = \text{Water Level(ft amsl)} - \text{Culebra Midpoint Elevation(ft amsl)}$
  - $\text{Fresh-water Head(ft amsl)} = \text{Specific Gravity} \times \text{Column Height(ft)} + \text{Culebra Midpoint Elevation(ft amsl)}$
3. For production-injection packers (PIPs) installed on tubing or Water Quality Sampling Program wells with tubing access ports, an adjustment is necessary to reference the water level to the surveyed fixed permanent casing [Top of Casing(TOC)]. If the measuring point is above the TOC, the depth to water relative to TOC is less. If the measuring point is below the TOC, the depth to water relative to TOC is greater (ref: WP 02-EM1014, Rev 5).
4. Groundwater level measurements were not taken at wells H-02b1 and H-04c due to Sandia National Laboratories testing and instrumentation activities. A Groundwater measurement was not taken at PZ-1 due to construction. Water level measurements at H-04c, H-02b1 and PZ-1 are anticipated to resume in December 2010.
5. Testing equipment (pump and tubing) removed from wells H-6c and H-8a resulted in non-equilibrium water levels.

Groundwater level Measurements for September 2010

Well Number	Zone	Top of Surveyed Casing Elevation (ft amsl)	Date	Time	Depth to Water from Measuring Point (feet)	Adjustment (feet)	Adjusted Depth to Water (feet)	Adjusted Depth to Water (m)	Water Level (ft amsl)	Water Level (m amsl)	Fresh-water Head (ft amsl)	Culebra Midpoint Elevation (ft amsl)	Specific Gravity	Column Height (feet)	Notes
AEC-7	CUL	3657.06	09/13/10	12.07	612.76	0.00	612.76	186.77	3044.30	927.90	3065.08	2784.60	1.080	259.70	
C-2737 (PIP)	CUL	3400.76	09/14/10	09.02	386.07	-0.60	386.67	117.86	3014.09	918.69	3022.31	2709.70	1.027	304.39	
ERDA-9	CUL	3410.17	09/14/10	07.34	398.24	-0.03	398.27	121.39	3011.90	918.03	3034.22	2893.00	1.070	318.90	
H-02b2	CUL	3378.36	09/13/10	15.09	335.76	0.00	335.76	102.34	3042.60	927.38	3045.90	2742.80	1.011	299.80	
H-03b2	CUL	3389.91	09/14/10	07.43	387.78	0.00	387.78	118.20	3002.13	915.05	3014.73	2702.20	1.042	299.93	
H-04bR	CUL	3334.64	09/10/10	11.12	330.33	0.00	330.33	100.68	3004.31	915.71	3007.51	2826.76	1.018	177.55	
H-05b	CUL	3506.78	09/10/10	13.34	467.41	0.00	467.41	142.47	3039.37	926.40	3081.89	2596.50	1.096	442.87	
H-06bR	CUL	3349.22	09/10/10	12.42	288.78	0.00	288.78	88.02	3060.44	932.82	3072.60	2731.90	1.037	328.54	
H-07b1	CUL	3163.72	09/10/10	13.30	165.7	0.00	165.70	50.51	2998.02	913.80	2998.65	2893.80	1.006	104.22	
H-09c (PIP)	CUL	3407.05	09/13/10	08.48	411.23	0.07	411.16	125.32	2995.89	913.15	2997.40	2743.50	1.006	252.39	
H-10c	CUL	3688.40	09/13/10	10.47	719.83	0.00	719.83	219.40	2968.57	904.82	3027.93	2316.30	1.091	652.27	
H-11b4	CUL	3410.79	09/13/10	13.50	423.18	0.00	423.18	128.99	2987.61	910.62	3006.39	2674.60	1.060	313.01	
H-12	CUL	3427.33	09/13/10	11.17	456.35	0.00	456.35	139.10	2970.98	905.55	3008.04	2588.90	1.097	382.08	
H-15R	CUL	3482.02	09/14/10	07.23	507.25	0.00	507.25	154.61	2974.77	906.71	3018.63	2609.30	1.120	365.47	
H-16	CUL	3410.06	09/14/10	09.55	373.75	0.00	373.75	113.92	3036.31	925.47	3049.60	2695.63	1.039	340.68	
H-17	CUL	3385.24	09/13/10	13.30	417.94	0.00	417.94	127.39	2967.30	904.43	3008.14	2664.80	1.135	302.50	
H-19b0	CUL	3418.33	09/14/10	08.37	426.48	0.00	426.48	129.69	2992.85	912.22	3014.86	2664.40	1.067	328.45	
H-19b2	CUL	3418.93	09/14/10	08.26	426.84	0.00	426.84	130.10	2992.09	911.99	3013.82	2662.90	1.066	329.19	
H-19b3	CUL	3419.02	09/14/10	08.45	427.05	0.00	427.05	130.16	2991.97	911.95	3012.93	2664.40	1.064	327.57	
H-19b4	CUL	3418.88	09/14/10	08.40	426.3	0.00	426.30	129.94	2992.68	912.17	3012.38	2664.40	1.060	328.28	
H-19b5	CUL	3418.58	09/14/10	08.20	426.3	0.00	426.30	129.94	2992.28	912.05	3013.26	2664.40	1.064	327.88	
H-19b6	CUL	3419.02	09/14/10	08.50	426.98	0.00	426.98	130.14	2992.04	911.97	3013.01	2664.40	1.064	327.64	
H-19b7	CUL	3418.94	09/14/10	08.31	426.98	0.00	426.98	130.14	2991.96	911.95	3014.23	2664.40	1.068	327.56	
I-461	CUL	3283.61	09/10/10	10.00	237.87	0.00	237.87	72.50	3045.74	928.34	3046.71	2907.10	1.007	138.64	
SNL-01	CUL	3512.84	09/10/10	08.17	433.39	0.00	433.39	132.10	3079.45	938.62	3094.83	2900.00	1.030	179.45	
SNL-02	CUL	3323.06	09/10/10	09.16	250.78	0.00	250.78	76.44	3072.28	936.43	3074.04	2852.30	1.008	219.98	
SNL-03	CUL	3490.35	09/10/10	13.11	417.82	0.00	417.82	127.35	3072.53	936.51	3083.69	2723.80	1.032	348.73	
SNL-05	CUL	3379.98	09/10/10	09.05	306.29	0.00	306.29	93.36	3073.69	936.86	3076.77	2731.00	1.009	342.69	
SNL-06	CUL	3646.11	09/13/10	12.30	722.73	0.00	722.73	220.29	2923.38	891.05	3066.17	2307.90	1.232	615.48	1
SNL-08	CUL	3556.73	09/13/10	11.60	543.51	0.00	543.51	165.66	3012.22	918.12	3051.86	2586.00	1.093	426.22	
SNL-09	CUL	3360.96	09/10/10	12.19	309.84	0.00	309.84	94.44	3051.12	929.98	3055.75	2793.80	1.018	257.32	
SNL-10	CUL	3377.59	09/10/10	10.44	325.35	0.00	325.35	99.17	3052.24	930.32	3054.83	2764.10	1.009	288.14	
SNL-12	CUL	3339.46	09/13/10	10.00	337.99	0.00	337.99	103.02	3001.47	914.85	3002.40	2768.60	1.004	232.87	
SNL-13	CUL	3294.22	09/10/10	11.00	278.71	0.00	278.71	85.26	3014.51	918.82	3017.55	2893.10	1.025	121.41	2
SNL-14	CUL	3368.41	09/13/10	13.40	376.97	0.00	376.97	114.90	2991.44	911.79	3004.90	2698.90	1.046	292.54	
SNL-15	CUL	3479.93	09/13/10	12.57	584.7	0.00	584.70	178.22	2895.23	882.47	2971.31	2557.10	1.225	338.13	3
SNL-16	CUL	3133.00	09/10/10	10.25	123.53	0.00	123.53	37.65	3009.47	917.29	3010.71	2926.70	1.015	82.77	
SNL-17	CUL	3238.06	09/13/10	13.50	232.52	0.00	232.52	70.87	3005.54	916.09	3006.13	2888.50	1.005	117.04	
SNL-18	CUL	3375.44	09/10/10	08.35	299.94	0.00	299.94	91.42	3075.50	937.41	3076.76	2824.20	1.005	251.30	
SNL-19	CUL	3222.65	09/10/10	09.30	149.29	0.00	149.29	45.50	3073.36	936.76	3074.80	2867.60	1.007	205.76	
WIPP-11	CUL	3427.78	09/09/10	15.40	362.54	0.00	362.54	110.50	3065.24	934.29	3083.56	2570.00	1.037	495.24	
WIPP-13	CUL	3405.67	09/10/10	14.00	343.49	0.00	343.49	104.70	3062.18	933.35	3078.91	2690.30	1.045	371.88	
WIPP-19	CUL	3435.11	09/09/10	14.47	389.96	0.00	389.96	118.86	3045.15	928.16	3064.54	2665.00	1.051	380.15	
WQSP-1	CUL	3419.25	09/10/10	14.12	359.1	0.18	358.92	109.40	3060.33	932.79	3076.65	2705.60	1.046	354.73	
WQSP-2	CUL	3463.87	09/09/10	15.13	398.83	0.20	398.63	121.50	3065.24	934.29	3084.43	2638.80	1.045	426.44	
WQSP-3	CUL	3480.14	09/09/10	15.06	463.49	0.19	463.30	141.21	3016.84	919.53	3073.94	2620.30	1.144	396.54	
WQSP-4	CUL	3433.09	09/14/10	08.10	442.94	0.18	442.76	134.95	2990.33	911.45	3015.35	2652.20	1.074	338.13	
WQSP-5	CUL	3384.38	09/14/10	07.56	378.37	0.20	378.17	115.27	3006.21	916.29	3013.22	2725.70	1.025	280.51	
WQSP-6	CUL	3364.72	09/10/10	11.36	343.42	0.19	343.23	104.62	3021.49	920.95	3025.04	2767.60	1.014	253.89	

Groundwater level Measurements for September 2010

Well Number	Zone	Top of Surveyed Casing Elevation (ft amsl)	Date	Time	Depth to Water from Measuring Point (feet)	Adjustment (feet)	Adjusted Depth to Water (feet)	Adjusted Depth to Water (m)	Water Level (ft amsl)	Water Level (m amsl)	Fresh-water Head (ft amsl)	Culebra Midpoint Elevation (ft amsl)	Specific Gravity	Column Height (feet)	Notes
C-2737 (ANNULUS)	MAG	3400.76	09/14/10	09.07	257.05	0.00	257.05	78.35	3143.71	958.20					
H-03b1	MAG	3390.72	09/14/10	07.50	244.7	0.00	244.70	74.58	3146.02	958.91					
H-06c	MAG	3348.69	09/10/10	12.35	278.19	0.00	278.19	84.79	3070.50	935.89					
H-08a	MAG	3433.28	09/13/10	09.17	419.92	0.00	419.92	127.99	3013.36	918.47					
H-09c (ANNULUS)	MAG	3407.05	09/13/10	08.52	268.26	0.00	268.26	81.77	3138.79	956.70					
H-10a	MAG	3688.45	09/13/10	10.40	576.93	0.00	576.93	175.85	3111.52	948.39					
H-11b2	MAG	3411.86	09/13/10	13.55	272.89	0.00	272.89	83.18	3138.97	956.76					
H-14	MAG	3347.08	09/10/10	11.24	216.2	0.00	216.20	65.90	3130.88	954.29					
H-15	MAG	3483.50	09/14/10	07.18	349.09	0.00	349.09	106.40	3134.41	955.37					
H-18	MAG	3414.21	09/09/10	15.52	261.6	0.00	261.60	79.74	3152.61	960.92					
WIPP-18	MAG	3457.57	09/09/10	14.55	308.59	0.00	308.59	94.06	3148.98	959.81					4
WQSP-8a	DL	3364.05	09/10/10	11.45	167.49	0.25	167.24	50.97	3196.81	974.39					
CB-1	B/C	3329.12	09/13/10	13.16	316.82	0.00	316.82	96.57	3012.30	918.15					
DOE-2	B/C	3419.18	09/09/10	15.27	352.45	0.00	352.45	107.43	3066.73	934.74					
C-2505	SR/D	3412.93	09/14/10	09.40	45.8	0.00	45.80	13.96	3367.13	1026.30					
C-2506	SR/D	3412.84	09/14/10	09.37	45.19	0.00	45.19	13.77	3367.65	1026.46					
C-2507	SR/D	3409.91	09/14/10	09.42	45.53	0.00	45.53	13.88	3364.38	1025.46					
C-2811	SR/D	3398.84	09/14/10	09.12	53.14	0.00	53.14	16.20	3345.70	1019.77					
PZ-02	SR/D	3413.36	09/14/10	09.33	42.97	0.00	42.97	13.10	3370.39	1027.29					
PZ-03	SR/D	3416.12	09/14/10	09.30	43.19	0.00	43.19	13.16	3372.93	1028.07					
PZ-04	SR/D	3412.01	09/14/10	09.47	46.49	0.00	46.49	14.17	3365.52	1025.81					
PZ-05	SR/D	3415.24	09/14/10	09.25	42.9	0.00	42.90	13.08	3372.34	1027.89					
PZ-06	SR/D	3413.33	09/14/10	09.22	43.36	0.00	43.36	13.22	3369.97	1027.17					
PZ-07	SR/D	3413.84	09/09/10	14.04	37.02	0.00	37.02	11.28	3376.82	1029.25					
PZ-08	SR/D	3418.19	09/09/10	14.09	62.3	0.00	62.30	18.99	3355.89	1022.88					
PZ-09	SR/D	3421.09	09/09/10	14.32	57.13	0.00	57.13	17.41	3363.96	1025.33					
PZ-10	SR/D	3405.73	09/09/10	14.21	37.74	0.00	37.74	11.50	3367.99	1026.56					
PZ-11	SR/D	3418.78	09/09/10	14.37	44.47	0.00	44.47	13.55	3374.31	1028.49					
PZ-12	SR/D	3408.92	09/09/10	14.14	51.63	0.00	51.63	15.74	3357.29	1023.30					
PZ-13	SR/D	3422.24	09/09/10	13.52	65.6	0.00	65.60	19.99	3356.64	1023.10					
PZ-14	SR/D	3420.58	09/09/10	14.01	67.16	0.00	67.16	20.47	3353.42	1022.12					
PZ-15	SR/D	3430.86	09/09/10	13.57	47.18	0.00	47.18	14.38	3383.68	1031.35					

Notes

1. Recovering from development 09/2005 and bailing 01/2007.
2. Water level elevation rise due to local oil drilling activity, starting to decline back to equilibrium.
3. Recovering from pumping 04/2007.
4. Water level depressed from SNL testing ending on March 2010; recovering.

NA = Not applicable