



Department of Energy
 Carlsbad Field Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221
 March 23, 2011



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 March 2011

Dear Mr. Bearzi:

The purpose of this letter is to submit the Waste Isolation Pilot Plant groundwater level measurements for March 2011, as required by Part 5, Section 5.10.2.2. 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,

Edward Ziemianski, Acting 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

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 J. Kieling, NMED ED
 *ED denotes electronic distribution





SUMMARY COMMENTS FOR THE WATER LEVEL MEASUREMENTS FOR THE
MONTH OF MARCH 2011

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 the Permit, 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 2011.
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, H-09bR, H-09c and H-04c due to Sandia National Laboratories testing and instrumentation activities. Water level measurements at H-04c and H-02b1 are anticipated to resume in April 2011. Water level measurements at H-09bR and H-09c are anticipated to resume in May 2011.



TABLE 1
Groundwater level Measurements for March 2011

Well Number	Zone	Top of Surveyed Casing Elevation (ft amsl)	Date	Time	Depth to Water 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	3/1/2011	08:52	612.56	0.00	612.56	186.71	3044.50	927.96	3064.77	2784.60	1.078	259.90	NA
C-2737 (PIP)	CUL	3400.76	3/3/2011	13:07	386.14	-0.60	386.74	117.88	3014.02	918.67	3022.24	2709.70	1.027	304.32	NA
ERDA-9	CUL	3410.17	3/2/2011	14:37	398.88	-0.03	398.91	121.59	3011.26	917.83	3034.17	2693.00	1.072	318.26	NA
H-02b2	CUL	3378.36	3/3/2011	11:47	335.38	0.00	335.38	102.22	3042.98	927.50	3046.88	2742.80	1.013	300.18	NA
H-03b2	CUL	3389.91	3/3/2011	12:48	387.70	0.00	387.70	118.17	3002.21	915.07	3015.11	2702.20	1.043	300.01	NA
H-04bR	CUL	3334.64	3/1/2011	13:23	330.40	0.00	330.40	100.71	3004.24	915.69	3007.43	2826.76	1.018	177.48	NA
H-05b	CUL	3506.78	3/1/2011	09:22	467.09	0.00	467.09	142.37	3039.69	926.50	3080.91	2596.50	1.093	443.19	NA
H-06bR	CUL	3349.22	3/2/2011	10:13	289.12	0.00	289.12	88.12	3060.10	932.72	3072.24	2731.90	1.037	328.20	NA
H-07b1	CUL	3163.72	3/2/2011	11:42	165.89	0.00	165.89	50.56	2997.83	913.74	2998.45	2893.80	1.006	104.03	NA
H-10c	CUL	3688.40	3/1/2011	10:56	719.89	0.00	719.89	219.42	2968.51	904.80	3027.86	2316.30	1.091	652.21	NA
H-11b4	CUL	3410.79	3/1/2011	14:59	422.98	0.00	422.98	128.92	2987.81	910.68	3003.78	2674.60	1.051	313.21	NA
H-12	CUL	3427.33	3/1/2011	10:13	456.60	0.00	456.60	139.17	2970.73	905.48	3011.59	2588.90	1.107	381.83	NA
H-15R	CUL	3482.02	3/2/2011	09:32	507.11	0.00	507.11	154.57	2974.91	906.75	3018.42	2609.30	1.119	365.61	NA
H-16	CUL	3410.06	3/3/2011	14:44	375.77	0.00	375.77	114.53	3034.29	924.85	3046.82	2695.63	1.037	338.66	NA
H-17	CUL	3385.24	3/1/2011	14:43	417.98	0.00	417.98	127.40	2967.26	904.42	3008.39	2664.80	1.136	302.46	NA
H-19b0	CUL	3418.33	3/2/2011	08:31	425.41	0.00	425.41	129.66	2992.92	912.24	3015.26	2664.40	1.068	328.52	NA
H-19b2	CUL	3418.93	3/1/2011	15:23	426.71	0.00	426.71	130.06	2992.22	912.03	2993.87	2662.90	1.070	329.32	NA
H-19b3	CUL	3419.02	3/2/2011	08:35	427.00	0.00	427.00	130.15	2992.02	911.97	3001.19	2664.40	1.071	327.62	NA
H-19b4	CUL	3418.98	3/2/2011	08:24	426.25	0.00	426.25	129.92	2992.73	912.18	2995.68	2664.40	1.065	328.33	NA
H-19b5	CUL	3418.58	3/1/2011	15:28	426.27	0.00	426.27	129.93	2992.31	912.06	3001.49	2664.40	1.068	327.91	NA
H-19b6	CUL	3419.02	3/2/2011	08:39	426.91	0.00	426.91	130.12	2992.11	912.00	2994.73	2664.40	1.075	327.71	NA
H-19b7	CUL	3418.94	3/1/2011	15:33	426.94	0.00	426.94	130.13	2992.00	911.96	3068.33	2664.40	1.073	327.60	NA
I-461	CUL	3283.61	3/3/2011	07:44	239.19	0.00	239.19	72.91	3044.42	927.94	3057.33	2907.10	1.005	137.32	NA
SNL-01	CUL	3512.84	3/3/2011	09:32	431.95	0.00	431.95	131.66	3080.89	939.06	3084.15	2900.00	1.028	180.89	NA
SNL-02	CUL	3323.06	3/3/2011	08:34	252.18	0.00	252.18	76.86	3070.88	936.00	3072.85	2852.30	1.009	218.58	NA
SNL-03	CUL	3490.35	3/3/2011	09:52	417.02	0.00	417.02	127.11	3073.33	936.75	3075.08	2723.80	1.028	349.53	NA
SNL-05	CUL	3379.98	3/3/2011	08:50	306.40	0.00	306.40	93.39	3073.58	936.83	3081.46	2731.00	1.008	342.58	NA
SNL-06	CUL	3646.11	3/1/2011	08:18	695.74	0.00	695.74	212.06	2950.37	899.27	2979.92	2307.90	1.233	642.47	1
SNL-08	CUL	3555.73	3/1/2011	09:40	543.62	0.00	543.62	165.70	3012.11	918.09	3109.26	2586.00	1.094	426.11	NA
SNL-09	CUL	3360.96	3/3/2011	07:32	310.56	0.00	310.56	94.66	3050.40	929.76	3052.71	2793.80	1.018	256.60	NA
SNL-10	CUL	3377.59	3/2/2011	10:52	325.58	0.00	325.58	99.24	3052.01	930.25	3053.16	2764.10	1.009	287.91	NA
SNL-12	CUL	3339.46	3/1/2011	11:51	337.90	0.00	337.90	102.99	3001.56	914.88	3002.96	2768.60	1.005	232.96	NA
SNL-13	CUL	3294.22	3/2/2011	11:10	280.30	0.00	280.30	85.44	3013.92	918.64	3014.64	2893.10	1.023	120.82	NA
SNL-14	CUL	3368.41	3/1/2011	14:24	376.82	0.00	376.82	114.85	2991.59	911.84	3002.42	2698.90	1.046	292.69	NA
SNL-15	CUL	3479.93	3/1/2011	09:53	575.82	0.00	575.82	175.51	2904.11	885.17	2919.38	2557.10	1.228	347.01	2
SNL-16	CUL	3133.00	3/2/2011	11:26	124.21	0.00	124.21	37.86	3008.79	917.08	3012.98	2926.70	1.009	82.09	NA
SNL-17	CUL	3238.06	3/1/2011	13:06	232.71	0.00	232.71	70.93	3005.35	916.03	3011.08	2888.50	1.004	116.85	NA
SNL-18	CUL	3375.44	3/3/2011	09:13	300.50	0.00	300.50	91.59	3074.94	937.24	3086.72	2824.20	1.006	250.74	NA
SNL-19	CUL	3222.65	3/3/2011	08:16	150.81	0.00	150.81	45.97	3071.84	936.30	3101.86	2867.60	1.006	204.24	NA
WIPP-11	CUL	3427.78	3/3/2011	10:07	362.04	0.00	362.04	110.35	3065.74	934.44	3104.41	2570.00	1.037	495.74	NA
WIPP-13	CUL	3405.67	3/2/2011	13:50	342.51	0.00	342.51	104.40	3063.16	933.65	3073.60	2690.30	1.044	372.86	NA
WIPP-19	CUL	3435.11	3/3/2011	13:43	389.45	0.00	389.45	118.70	3045.66	928.32	3051.75	2665.00	1.051	380.66	NA
WQSP-1	CUL	3419.25	3/2/2011	09:55	358.60	0.18	358.42	109.25	3060.83	932.94	3078.24	2705.60	1.049	355.23	NA
WQSP-2	CUL	3463.87	3/3/2011	14:20	398.22	0.20	398.02	121.32	3065.85	934.47	3085.92	2638.80	1.047	427.05	NA
WQSP-3	CUL	3480.14	3/3/2011	14:09	462.70	0.19	462.51	140.97	3017.63	919.77	3076.04	2620.30	1.147	397.33	NA
WQSP-4	CUL	3433.09	3/2/2011	08:48	442.90	0.18	442.72	134.94	2990.37	911.46	3016.75	2652.20	1.078	338.17	NA
WQSP-5	CUL	3384.38	3/3/2011	12:34	378.28	0.20	378.08	115.24	3006.30	916.32	3014.16	2725.70	1.028	280.60	NA
WQSP-6	CUL	3364.72	3/3/2011	12:07	343.42	0.19	343.23	104.62	3021.49	920.95	3025.55	2767.60	1.016	253.89	NA
C-2737 (ANNULUS)	MAG	3400.76	3/3/2011	13:10	256.58	0.00	256.58	78.21	3144.18	958.35	NA	NA	NA	NA	NA
H-03b1	MAG	3390.72	3/3/2011	12:53	244.33	0.00	244.33	74.47	3146.39	959.02	NA	NA	NA	NA	NA
H-06c	MAG	3348.69	3/2/2011	10:18	278.00	0.00	278.00	84.73	3070.69	935.95	NA	NA	NA	NA	NA
H-08a	MAG	3433.28	3/1/2011	12:36	410.39	0.00	410.39	125.09	3022.89	921.38	NA	NA	NA	NA	NA
H-10a	MAG	3688.45	3/1/2011	10:48	575.95	0.00	575.95	175.55	3112.50	948.69	NA	NA	NA	NA	NA
H-11b2	MAG	3411.86	3/1/2011	15:04	272.18	0.00	272.18	82.96	3139.68	956.97	NA	NA	NA	NA	NA

TABLE 1
Groundwater level Measurements for March 2011

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
H-14	MAG	3347.08	3/2/2011	13:35	211.99	0.00	211.99	64.61	3135.09	955.58	NA	NA	NA	NA	NA
H-15	MAG	3483.50	3/2/2011	09:25	343.03	0.00	343.03	104.56	3140.47	957.22	NA	NA	NA	NA	NA
H-18	MAG	3414.21	3/2/2011	10:34	260.71	0.00	260.71	79.46	3153.50	961.19	NA	NA	NA	NA	NA
WIIPP-18	MAG	3457.57	3/3/2011	13:53	308.08	0.00	308.08	93.90	3149.49	959.96	NA	NA	NA	NA	3
WQSP-6a	DL	3364.05	3/3/2011	12:13	167.49	0.25	167.24	50.97	3196.81	974.39	NA	NA	NA	NA	NA
CB-1	B/C	3329.12	3/1/2011	14:08	315.07	0.00	315.07	96.03	3014.05	918.68	NA	NA	NA	NA	NA
DOE-2	B/C	3419.18	3/3/2011	10:21	352.35	0.00	352.35	107.40	3066.83	934.77	NA	NA	NA	NA	NA
C-2505	SR/D	3412.93	3/2/2011	15:27	45.30	0.00	45.30	13.81	3367.63	1026.45	NA	NA	NA	NA	NA
C-2506	SR/D	3412.84	3/2/2011	15:31	44.66	0.00	44.66	13.61	3368.18	1026.62	NA	NA	NA	NA	NA
C-2507	SR/D	3409.91	3/2/2011	15:21	45.18	0.00	45.18	13.77	3364.73	1025.57	NA	NA	NA	NA	NA
C-2811	SR/D	3398.84	3/3/2011	13:16	51.99	0.00	51.99	15.85	3346.85	1020.12	NA	NA	NA	NA	NA
PZ-01	SR/D	3413.28	3/2/2011	15:41	41.68	0.00	41.68	12.70	3371.60	1027.66	NA	NA	NA	NA	NA
PZ-02	SR/D	3413.36	3/2/2011	15:36	42.32	0.00	42.32	12.90	3371.04	1027.49	NA	NA	NA	NA	NA
PZ-03	SR/D	3416.12	3/3/2011	15:00	43.83	0.00	43.83	13.36	3372.29	1027.87	NA	NA	NA	NA	NA
PZ-04	SR/D	3412.01	3/2/2011	15:44	45.95	0.00	45.95	14.01	3366.06	1025.98	NA	NA	NA	NA	NA
PZ-05	SR/D	3415.24	3/3/2011	14:58	42.45	0.00	42.45	12.94	3372.79	1028.03	NA	NA	NA	NA	NA
PZ-06	SR/D	3413.33	3/3/2011	14:52	43.10	0.00	43.10	13.14	3370.23	1027.25	NA	NA	NA	NA	NA
PZ-07	SR/D	3413.84	3/2/2011	14:12	36.93	0.00	36.93	11.26	3376.91	1029.28	NA	NA	NA	NA	NA
PZ-08	SR/D	3418.19	3/3/2011	13:29	62.58	0.00	62.58	19.07	3355.61	1022.79	NA	NA	NA	NA	NA
PZ-09	SR/D	3421.09	3/3/2011	13:37	57.35	0.00	57.35	17.48	3363.74	1025.27	NA	NA	NA	NA	NA
PZ-10	SR/D	3405.73	3/2/2011	14:19	38.11	0.00	38.11	11.62	3367.62	1026.45	NA	NA	NA	NA	NA
PZ-11	SR/D	3418.78	3/2/2011	14:05	44.30	0.00	44.30	13.50	3374.48	1028.54	NA	NA	NA	NA	NA
PZ-12	SR/D	3408.92	3/2/2011	14:28	51.65	0.00	51.65	15.74	3357.27	1023.29	NA	NA	NA	NA	NA
PZ-13	SR/D	3422.24	3/2/2011	14:54	65.96	0.00	65.96	20.10	3356.28	1022.99	NA	NA	NA	NA	NA
PZ-14	SR/D	3420.58	3/2/2011	14:44	67.36	0.00	67.36	20.53	3353.22	1022.06	NA	NA	NA	NA	NA
PZ-15	SR/D	3430.86	3/2/2011	14:50	47.53	0.00	47.53	14.49	3383.33	1031.24	NA	NA	NA	NA	NA

Notes

1. Recovering from development 09/2005 and bailing 01/2007.
2. Recovering from pumping 04/2007.
3. Water level depressed from SNL testing ending on March 2010; recovering.

NA = Not applicable

