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**ENVIRONMENT DEPARTMENT**

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ENTERED



**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

May 13, 2002

Dr. Inés Triay, Manager  
Carlsbad Field Office  
Department of Energy  
P. O. Box 3090  
Carlsbad, New Mexico 88221-3090

Mr. John Lee, General Manager  
Westinghouse TRU Solutions LLC  
P.O. Box 2078  
Carlsbad, New Mexico 88221-5608

**RE: WATER LEVEL MONITORING PROGRAM  
WIPP HAZARDOUS WASTE FACILITY PERMIT  
EPA I.D. NUMBER NM4890139088**

Dear Dr. Triay and Mr. Lee:

The New Mexico Environment Department (NMED) regularly reviews the monthly groundwater level data reports submitted by the Department of Energy Carlsbad Field Office and Westinghouse TRU Solutions LLC (**the Permittees**) for the Waste Isolation Pilot Plant (**WIPP**). These monthly groundwater level data reports are part of the groundwater level monitoring program (**WLMP**) being implemented at WIPP as required by Permit Condition V.G.2 of the Hazardous Waste Facility Permit (**HWFP**). As specified in this condition of the permit [and Attachment L, Section L-4c(1)], the Permittees are required to determine the groundwater surface elevation from different water-bearing zones beneath the facility and report the measurements to the NMED on a monthly basis. NMED has reviewed the monthly groundwater level data reports starting with the report dated January 2000 to the most current report, March 2002. Based on these monthly reports, NMED has the attached comments for your consideration and response.

NMED commends the Permittees for their prompt submittal of the WLMP reports and for the consistency and level of detail contained in each of the reports. Addressing NMED's comments will help close some informational gaps and will help educate the public on the importance of the WLMP when it comes to understanding the hydrogeology beneath the WIPP facility.

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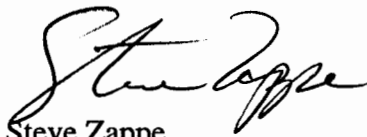


Dr. Inés Triay  
Mr. John Lee  
May 13, 2002  
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NMED requests a response to the attached comments within thirty (30) calendar days from the date this letter is received. NMED may consider a petition for a deadline extension, provided that a written justification and the expected submittal date are given.

Should you have any questions or require additional explanation on any of the items discussed in this letter, please contact William Fetner of my staff at (505) 428-2520 or me at (505) 428-2517.

Sincerely,



Steve Zappe  
WIPP Project Leader  
Permits Management Program

cc: James Bearzi, Chief, HWB  
John Kieling, Manager, Permits Management Program, HWB  
Will Fetner, HWB  
Laurie King, EPA Region 6  
Betsy Forinash, EPA ORIA  
Connie Walker, TechLaw, Inc.  
WIPP File - Red '02

## ATTACHMENT

### **NMED Comments on WIPP's Groundwater Level Data Monthly Monitoring Reports, January 2000 Through March 2002**

It should be noted that NMED's comments on the WLMP were not only made for NMED's benefit but also with the general public in mind. NMED believes that the Permittees' goal should not only be to produce a documents that meet the requirements of the HWFP but also to create documents that are detailed enough to satisfy the needs of interested stakeholders and the general public.

1. WLMP report dated February 3, 2000 - Wells H-02b2 and H-06c were "scaled" (the scale was removed). Does the "scale" refer to the instrument used to determine the density of the groundwater? Please explain. Also, why were the "scales" removed (repairs, maintenance, no longer needed?) and were they re-introduced in the wells at a later date? How many wells in the WLMP contain scales? Please identify applicable wells.
2. Explain why Well WIPP-12 was tested for hydrogen sulfide the months of December 1999 and January and February 2000. Were any other wells also tested for this compound? Explain how were the tests conducted and provide any conclusions that may have been derived from the tests.
3. WLMP report dated March 16, 2000 - Apparently an obstruction was found in the annulus of Well WIPP-25 that prevented any water level measurements for the Magenta from February to August, 2000. Since water level measurements resumed in September 2000, was the obstruction removed in August or September 2000? If so, what was the obstruction and how was it removed? No explanation is given in the WLMP report covering September 2000 (nor does it mention that the well was back in service for Magenta measurements).
4. WLMP reports dated April 3 and May 18, 2000 - Explain further how water levels in Wells H-04b and H-04c were affected by the removal of a bridge plug and cleaning activities at Well H-04a (re-circulation of fresh water). Was the bridge plug successfully removed at the end of the activities?
5. WLMP report dated September 12, 2000 - Well H-16 was removed from the WLMP because of "the down-hole packer string configuration and precipitation influence". Explain further the meaning of the first part of the quotation. This is the same well that during the previous month exhibited a water level increase of approximately 83 feet due to the erosion of an earthen berm near the wellhead.

Attachment – NMED’s Comments on WIPP’s WLMP

6. WLMP report dated September 12, 2000 - Well WIPP-27 was scheduled for plugging and abandonment and was removed from the WLMP. However, as of the latest WLMP report (April 17, 2002), measurements are still being performed in this well. Is it still the plan to abandon this well and, if so, when and why?
  
7. Since January 2000, several wells have been reported to have undergone “maintenance”, “service”, “re-construction”, “re-completion”, “re-condition”, “work-over”, “salvage”, “scraping”, “cleaning”, “re-circulating” and “rehabilitation” activities over time. For the record, please explain in detail what each of these terms mean (NMED realizes that some may have the same or similar meaning) and how were these activities performed to the wells mentioned below. Also state the dates the work was performed if not already provided in the monthly reports.
  - Well H-01: maintenance of well casing in August 1999 (WLMP report dated 1/24/00)
  - Well CB-1: re-completion work in August 1999 (WLMP report dated 3/16/00 and 4/3/00)
  - Well H-01: considered for re-construction (WLMP report dated 3/16/00)
  - Well H-04a: well cleaning (WLMP report dated 4/3/00)
  - Well H-01: salvage activities (WLMP report dated 8/8/00)
  - Well WIPP-30: re-conditioned (WLMP report dated 10/25/00)
  - Wells H-11b2 and H-14: work-over by Sandia National Laboratory (SNL) (WLMP report dated 4/5/01)
  - Wells DOE-2, H-11b2, H-14, H-15, H-18 and WIPP-18: re-completion by SNL performed in March and April 2001 (WLMP report dated 4/26/01)
  - Well H-10a: well maintenance and re-conditioning (WLMP report dated 2/28/02)
  - Well H-9c: re-completed to Magenta well (WLMP report dated 4/17/02)
  - Well H-11b1: scraping, cleaning and re-circulating for maintenance (WLMP report dated 4/17/02)
  - Well H-9a: rehabilitation activities (WLMP report dated 4/17/02)

Attachment – NMED’s Comments on WIPP’s WLMP

8. For only the water level measurements performed in December 2001 (WLMP report dated 12/17/01), please submit a copy of the “field data sheets” for this event to NMED [see Permit Section L-4c(1)(ii) of Attachment L, records and document control]. This is just a random selection to confirm the existence of “field data sheets” per the referenced HWFP section.
9. Please explain in detail the typical well plugging and abandonment (**P&A**) procedures used by the Permittees (as in the case for Wells H-01, H-9a, H-10b, P-15 and P-18).
10. Starting in April 2001, Well C-2737 was added to the WLMP (apparently new well constructed in March 2001). The well appears to monitor the Magenta as well as the Culebra. What was the specific reason(s) for adding this well to the WLMP (replacement well, etc.)?
11. WLMP report dated April 26, 2001 - Well WIPP-13 had the “In-Situ Troll (water level monitoring instrumentation)” removed during the April 2001 measuring event. Please describe this instrument (pressure transducer) and explain why was this instrument placed in this particular well and for how long. Do any other wells currently have the In-Situ Troll?
12. WLMP report dated August 28, 2001 - Wells DOE-2, H-11b2, H-14, H-15, H-18 and WIPP-18 were temporarily removed from the WLMP in August 2001 pending well recompletion. However, the WLMP report dated 4/26/01 stated that these wells were recompleted in March and April 2001. Please explain this inconsistency. In addition, note that water level measurements do not appear to have been collected from these wells since March 2001 (significantly before August 2001). What is the current status of these wells?
13. Please explain the following significant water level irregularities that have not been addressed (or fully addressed) in the water level monitoring reports:
  - 13.a) From January 2000 to March 2002, Well AEC-8 has shown a water level increase of approximately 36 feet (see attachment). The WLMP report dated April 17, 2002, states that the WIPP Groundwater Task Force (**GWTF**) is evaluating the cause and possible corrective actions. Please keep NMED informed on any conclusions made by the GWTF.
  - 13.b) Well CB-1 monitoring the Culebra went through “re-completion work” in August 1999 (WLMP report dated 4/3/00). A review of long-term trends in this well indicates a water level decrease of approximately 19 feet from January through April 2000 and then an increase of approximately 62 feet since May 2000 to March 2002 (see attachment).

Attachment – NMED’s Comments on WIPP’s WLMP

Can the leaking packer stated in the WLMP report dated December 17, 2001, explain this first decreasing and then increasing pattern? What is the uncased portion of this well and where is the packer located? Please provide construction details on this well (refer to Comment 15.b below). Also, the WLMP report dated April 17, 2002, states that the WIPP GWTF has “identified options to address this rise”. Please explain these “options” and keep NMED informed on any corrective action(s) proposed or already implemented for this well.

- 13.c) Has an explanation yet been formulated for the 16-foot water level drop on DOE-2 in June 2000 (see attachment)? Apparently no water level measurements have been obtained from this well since March 2001 (see Comment #12 above).
- 13.d) Well WIPP-25 monitoring the Culebra showed an approximate 6 foot decrease in September 2000 (see attachment); is this decrease a result of activities associated with the removal of an obstruction in the annulus of this well monitoring the Magenta (see Comment 3 above)? If so, how is the connection to the Culebra interval?
- 13.e) Well H-01 monitoring the Magenta showed a 38 foot decrease in water level between April and June 2000 (see attachment). Water level monthly reports during that year stated erratic water levels since the well was “re-completed” in 1999. However, what could have caused such a dramatic drop from April to June 2000? Was this drop a consequence of “remediation techniques” stated in the WLMP report dated August 8, 2000? This well also showed a significant drop (approximately 8 feet) in October 2000. Well H-01 was abandoned on February 26, 2001.
- 13.f) Well WIPP-27, Culebra, has experienced a water level increase of approximately 2.5 feet since September 2001 (see attachment). Please provide a reason for this increasing trend. Note this is the same well that was scheduled for abandonment according to WLMP report dated September 12, 2000 (see Comment 6 above).
- 13.g) Based on WLMP report dated April 17, 2002, Well H-3b3 has experienced a 4.5 foot increase in water level since its previous measurement on December 5, 2001 (see attachment). Is there any known reason for this increase?

Attachment – NMED’s Comments on WIPP’s WLMP

14. Note that the WIPP 2000 Site Environmental Report (DOE/WIPP 01-2225) contained the following WLMP well information that was not reported in the monthly WLMP reports received by NMED for calendar year 2000. Why was this information excluded from the monthly reports?

- Wells DOE-2, WIPP-25 and WIPP-30 were cleaned and scraped for maintenance purposes
- The Production Injection Packers (PIP) for Wells WIPP-25 and WIPP-30 were removed, reconditioned and re-installed in addition to cleaning the casings (note that WLMP report from 10/25/00 stated that WIPP-30 was recently reconditioned causing water levels to drop in the Culebra)
- Wells H-4a and H-7a were abandoned by grouting (these wells may have not been mentioned because they were out-of-service wells?)
- Well D-268 was turned over to an area rancher after conversion to a Dewey Lake well (this well may have not been mentioned because it was an out-of-service well?)
- Well H-10c was cleaned and logged for P&A (this well may have not been mentioned because it was an out-of-service well?)

15. In order to have a better understanding of the WLMP, specifically the network of wells that constitute the WLMP, NMED requests the following information:

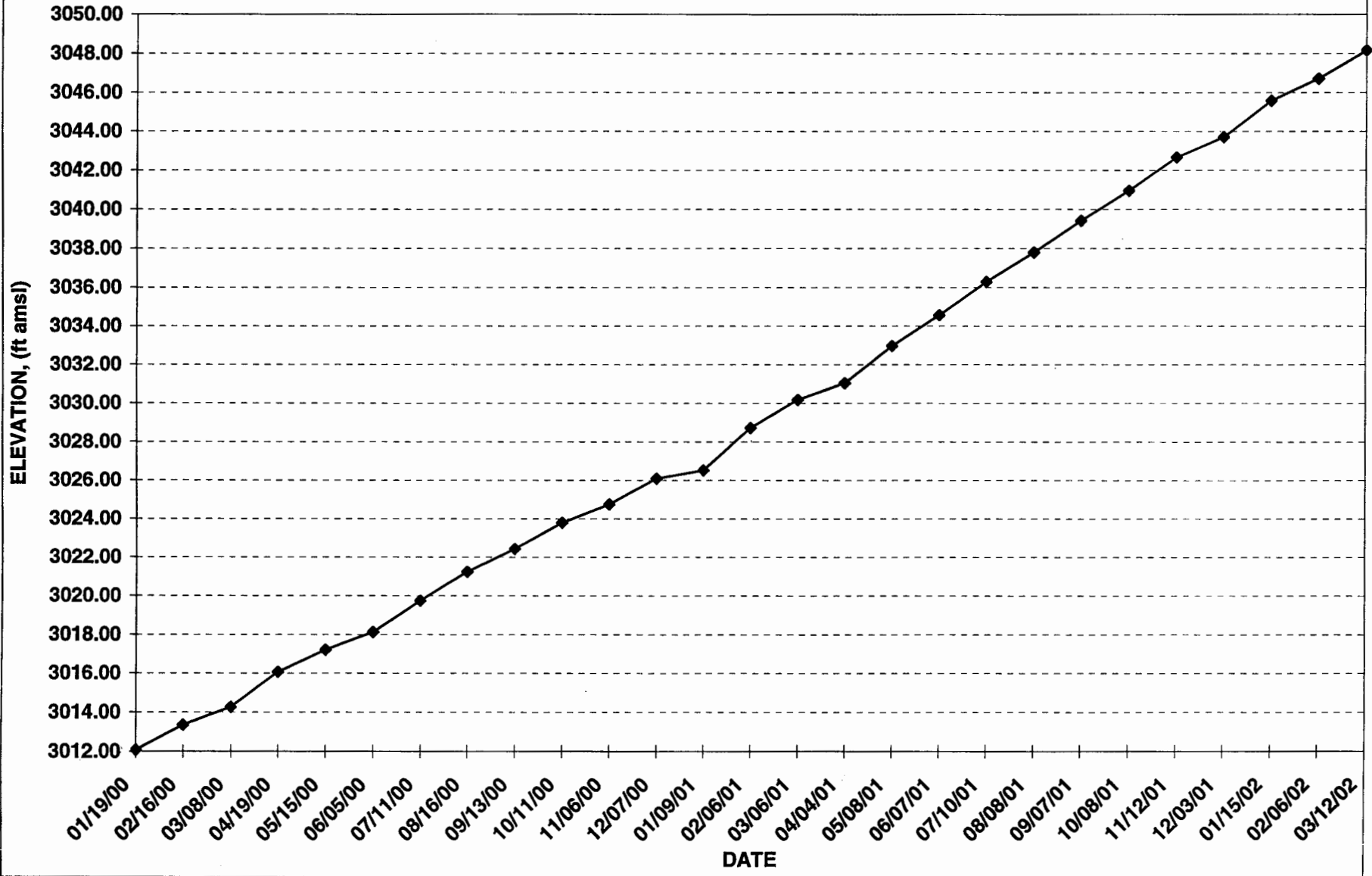
- 15.a) From November 1999 to the present, please identify all those wells that have been constructed or put in service, as well as those wells that have been put out of service or plugged/abandoned, for the WLMP. State the dates these activities were completed and give a brief explanation why each well listed above was added or removed from the program.
- 15.b) Please submit a table (and/or figures) depicting well construction details for all WLMP wells (past and present). Include details such as: well location in latitude/longitude; construction date; well casing diameter and length; screen interval and slot size (or open hole interval, if applicable); total depth of well; construction materials (casing/screen); repairs or other major work performed on the well after construction (and date); filter pack material and interval; seal and grouting details; formation/aquifer being monitored; current well use; date plugged/abandoned; etc.

Attachment – NMED’s Comments on WIPP’s WLMP

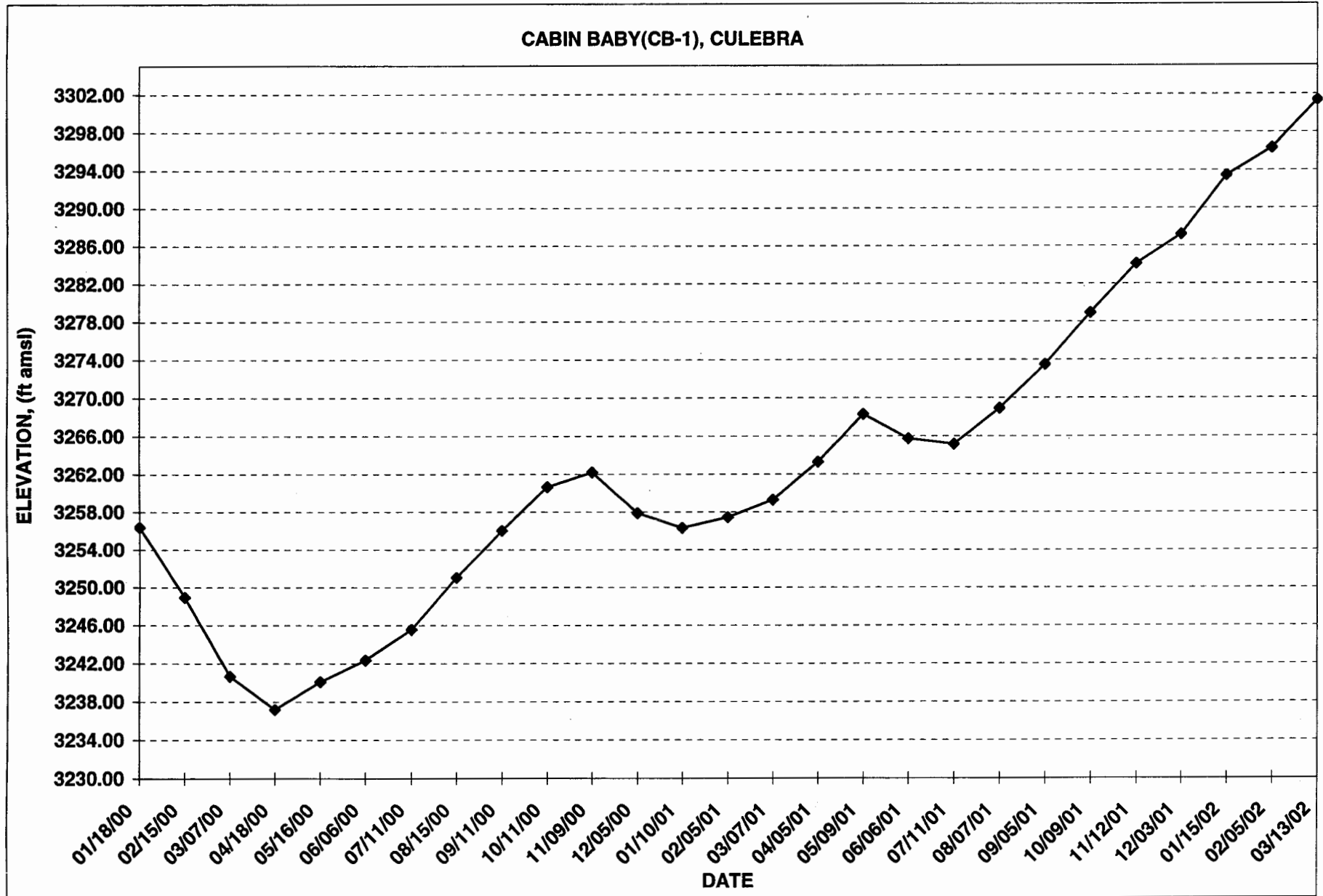
- 15.c) Provide a detailed map(s) that shows the location of all WLMP wells, past and present [the maps contained in Attachment L of the HWFP (i.e., Figure L-18) do not show enough details]. Please provide a map(s) that has an appropriate and workable scale, preferably with a 1:24,000 scale (7.5 minute map).
  - 15.d) Please explain the significance, if any, of the well ID designation protocol: “P-“ wells vs. “H-“ wells vs. “AEC-“ wells, etc. Also identify those wells that monitor multiple zones within the same borehole (i.e., WIPP-25 PIP vs. WIPP-25 ANNULUS).
  - 15.e) Please identify other state and/or federal agencies that have been notified by the Permittees of new well constructions, well repairs/modifications and/or well abandonments (i.e., New Mexico State Engineers Office, Bureau of Land Management, Oil Conservation Division, etc.). Also provide a contact person for each entity including their phone number and mailing address. If the Permittees are aware that any of these agencies use a different identification for any of the WLMP wells, please provide a cross-reference table identifying the applicable wells.
16. Please explain in detail the function and the goals of the WIPP GWTF. State when the GWTF was formed and list the key members and their responsibilities. NMED would appreciate to be kept informed of past and on-going investigations undertaken by the GWTF and any conclusions that may be derived by the same (i.e., water level head changes in the Culebra).
  17. General comment - NMED would appreciate any additional information that the Permittees may have regarding groundwater flow patterns that have not already been reported in the HWFP or WIPP’s Annual Site Environmental Reports [i.e., any groundwater contour (potentiometric) maps that may have been generated over time from the different water-bearing units, etc.].



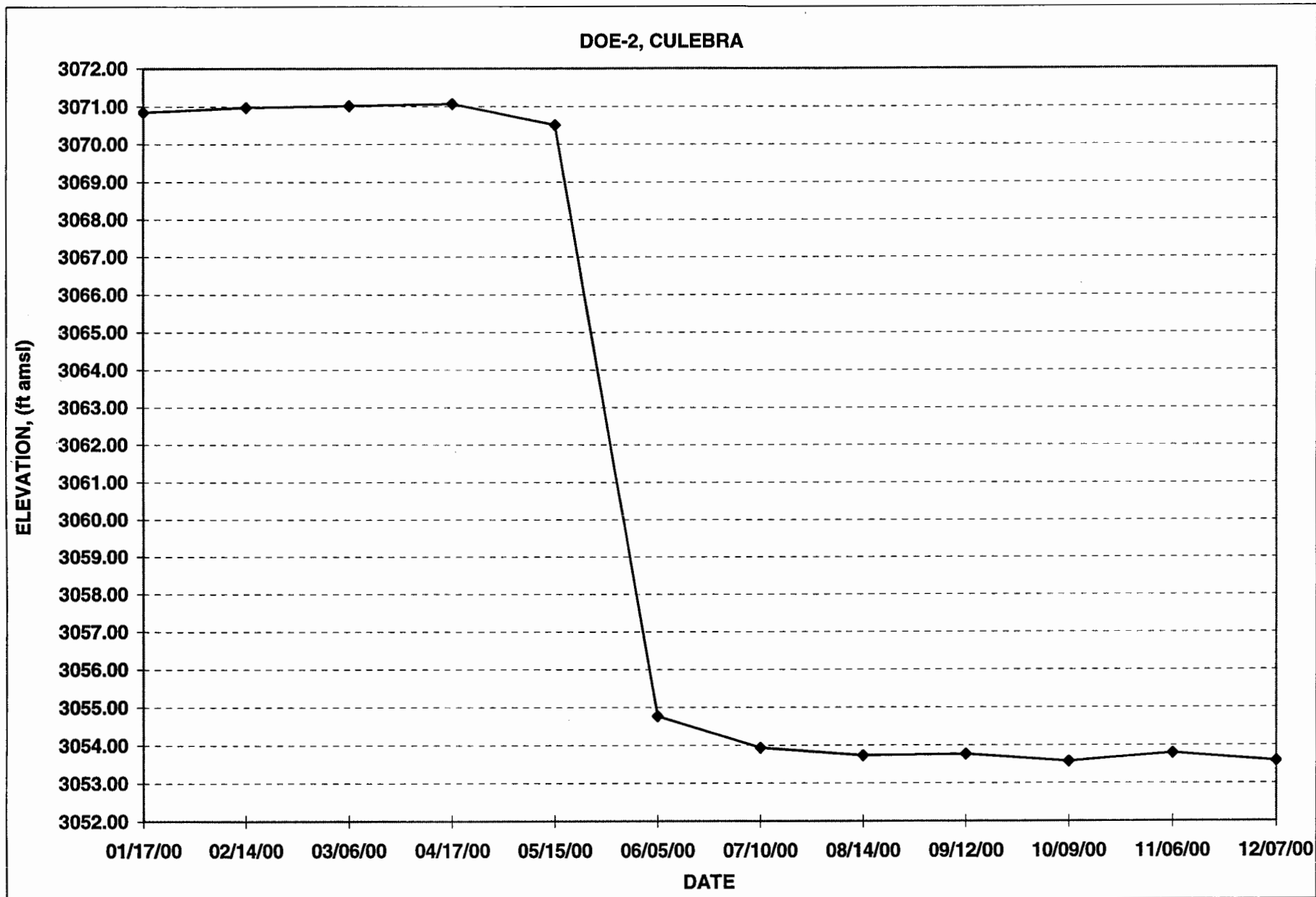
AEC-8, BELL CANYON



- 3/01 report: water level increase twice normal
- 4/02 report = " " " continues: WIPP groundwater Task Force evaluating.

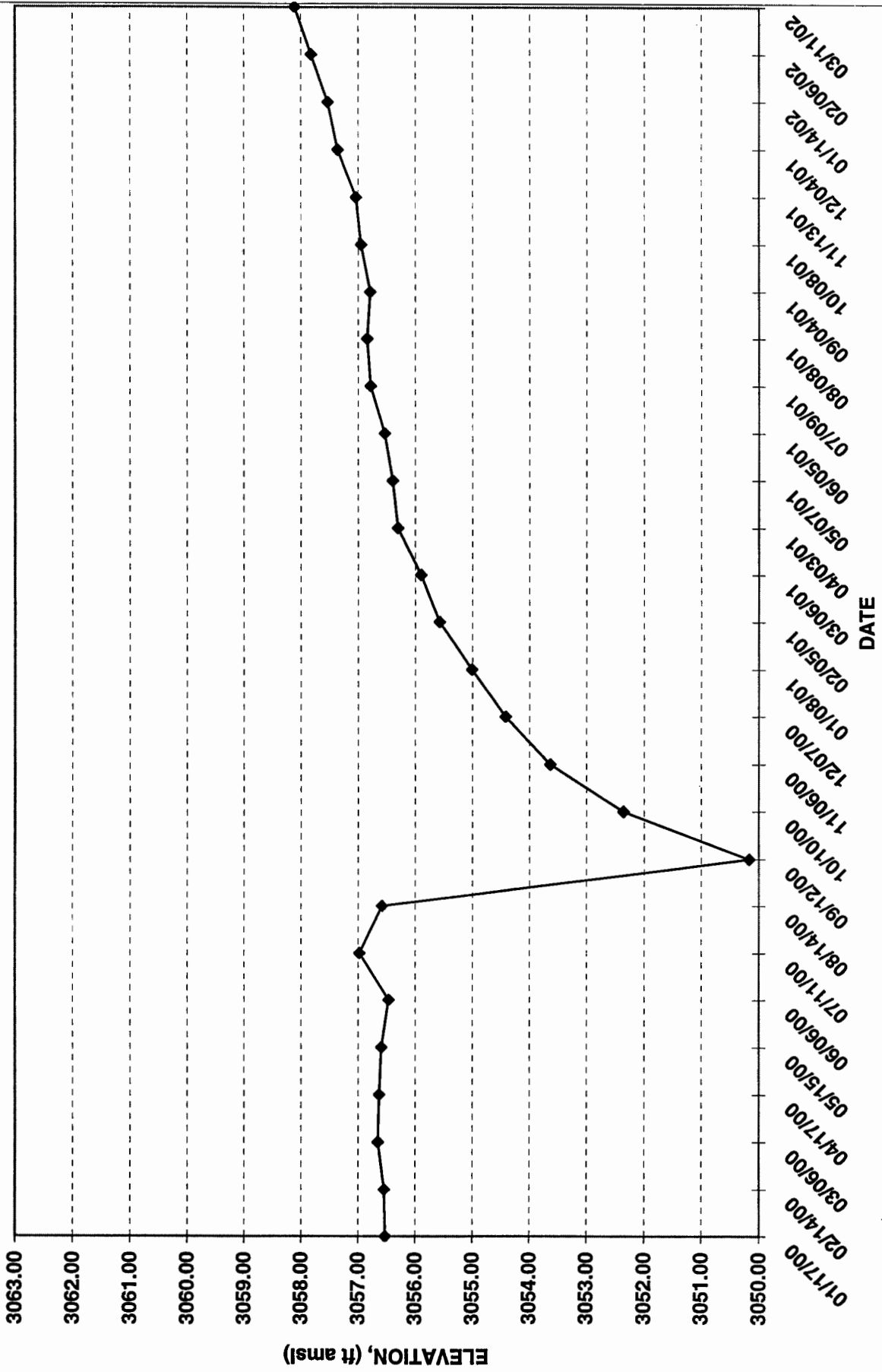


- 4/00 report: re-completion in 8/99 (stabilization of water levels)
- 12/01 report } rise in water level due to leaking packer separating Culebra from Salado and Castile.
- 2/02 reports }
- 4/02 report: water level increase continues, WAPP groundwater Task Force evaluating.



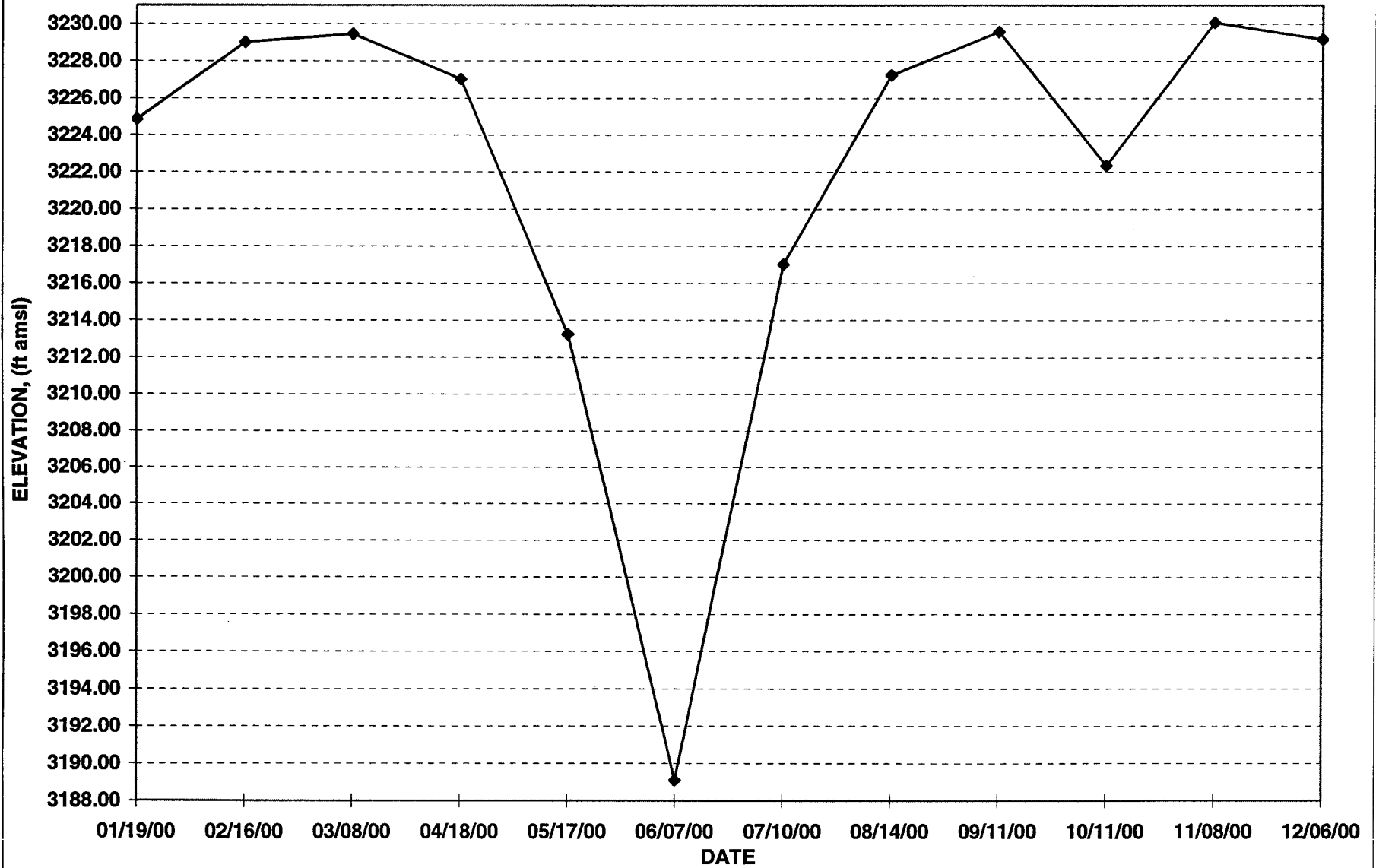
- 6/00 report = water level decrease (reason unknown)

WIPP-25, CULEBRA



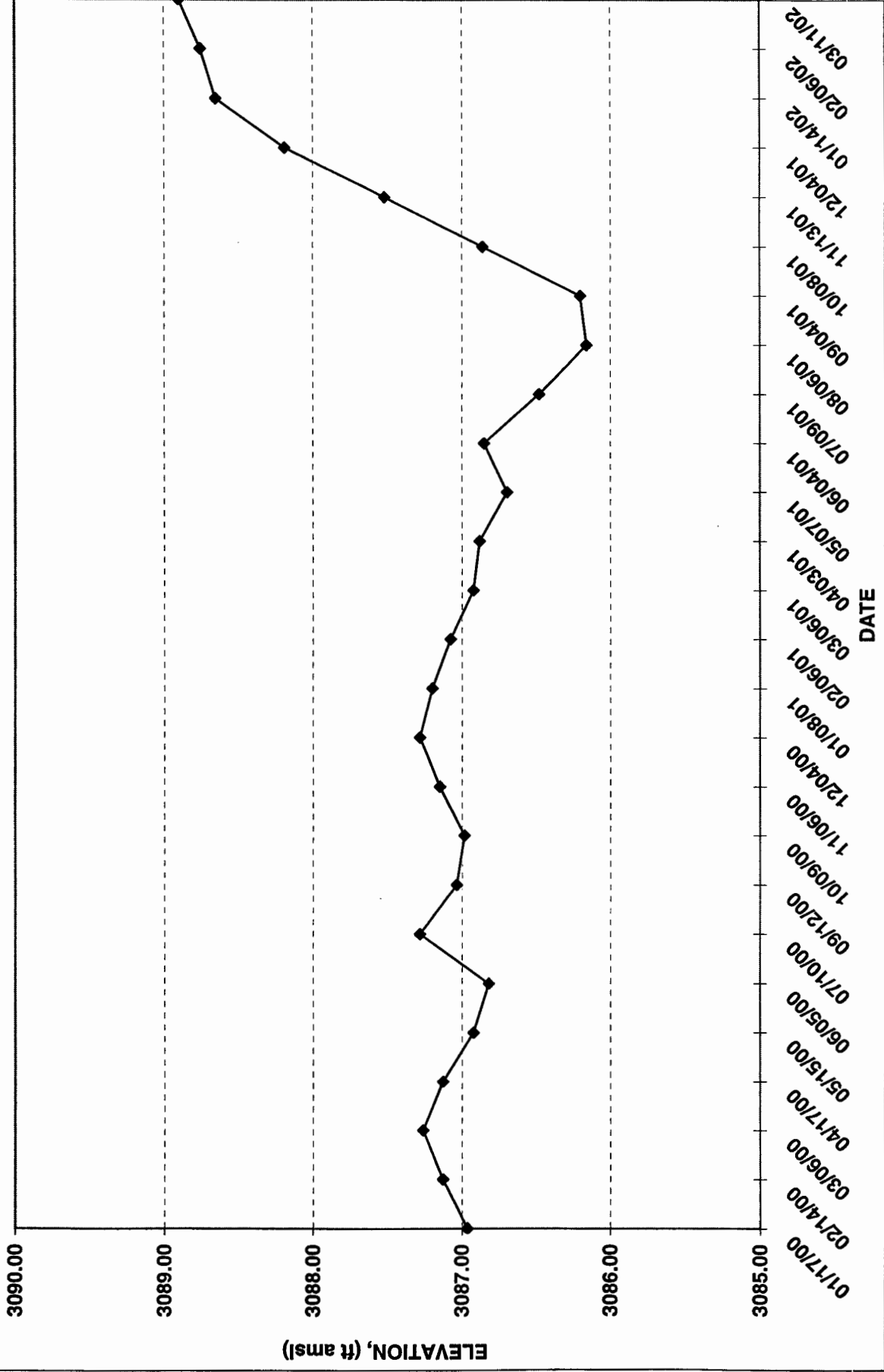
-3/00 report = obstruction in Pegasus @ 154'.  
 Obstruction removed in Sept 00? Not reported.  
 Page 1

### H-1, MAGENTA



- 2/00 report: fluctuating water levels (maintenance/recompletion in 1999)
- 3/00 report: salvage of this well with remediation techniques have proven unsuccessful

WIPP-27, CULEBRA



-9/00 reports: well scheduled for plugging and abandonment, removed from WTRP  
-10/00

H-3b3, CULEBRA

