NM2 - 7

GENERAL CORRESPONDENCE YEAR(S):

1998-2007

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

2007 FEB 13 AM 10 17

February 9, 2007

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Annual Report: Permit NM-02-0007
BP Cahn Waste Management Facility
NW/4 Sec. 33 - T32N - R10W, San Juan County, NM

Dear Mr. Martin:

On behalf of BP America Production Co., Blagg Engineering, Inc. (BEI) is submitting this 2006 calendar year annual report for the Cahn Waste Management Facility, Permit NM-02-0007. Attached are spread sheets that summarize the weekly evaporation pond and monthly sump monitoring test results.

General Pond Monitoring

Produced water inflow to the Cahn Evaporation Pond is through a pipeline from the Schneider Waste Management Facility. No other pipelines discharge water to the facility. Weekly monitoring has not indicated the generation of dissolved sulfide or hydrogen sulfide gas during any inspections. Tested pH levels have had measured values ranging between 8.8 - 9.9 units. Minimum freeboard was measured at 1.6 feet beginning on November 27, 2006 and remained at this level to year end monitoring on December 27, 2006

Landfarm Treatment Zone Monitoring

No landfarm cells were constructed during the 2006 calendar year and no treatment zone monitoring was required or performed.

Evaporation Pond Sludge Thickness

All sludge/sediment was removed from the pond in 2003 during installation of a new liner. Since that time no sludge or sediment has accumulated in the pond. Beginning in May 2006 no produced water was added to the facility and summer month evaporation resulted in salt accumulations in the pond base with thicknesses up to 6-inches. Precipitation beginning in October 2006 resulted in dissolving the salt back into solution. Water transfer into the facility from the Schneider pond resumed in late October 2006.

Leak Detection System Monitoring

The top liner leak detection system remained dry for the entire 2006 monitoring year. An older, deep leak detection system has remained in place since the facility was relined in 2003. This system continues to capture fluids at a very low rate (< 0.1 gallons/week) from prior liquids trapped within the deep, abandon liner system.

Questions or comments concerning this transmittal may be directed to myself at (505)632-1199 or to Kevin Hansford with BP at (505)326-9200.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.,
President

Attachments: Monitoring Spread Sheets

cc: Brandon Powell, NMOCD Aztec District Office
Kevin Hansford, BP SJ Operations Center

BP - America Production Company
Cahn Waste Management Facility
Field Data Summary

SW / 4, Section 28, T 32 N, R 10 W, N.M.P.M
San Juan County, New Mexico

REVISED DATE: JANUARY 02, 2007 (KAG)

BLAGG ENGINEERING, INC.

INITIAL DATE	WIND SPEED mph	WIND DIRECTION bearing	H2S ppm	DISSOLVED SULFIDE ppm	DISSOLVED OXYGEN ppm	TEMP. celcius	pH	FREE-BOARD ft.	LINER / BERM INTEGRITY	COMMENTS
01/02/06	4-8	FROM 30	ND	0.0	1.61	2.5	8.9	2.20	Y	
01/09/06	2-4	FROM 120	ND	0.0	1.62	1.6	8.8	2.30	Y	
01/19/06	2-6	FROM 270	ND	0.0	1.65	3.2	8.9	2.30	Y	
01/26/06	2-10	FROM 180	ND	0.0	2.74	3.6	8.9	2.30	Y	
02/01/06	15-28	FROM 270	ND	0.0	4.91	7.0	9.1	2.30	Y	
02/08/06	0-4	FROM 130	ND	0.0	4.88	3.1	9.0	2.30	Y	
02/14/06	0-4	FROM 90	ND	0.0	0.88	3.9	9.1	2.30	Y	
02/28/06	4-8	FROM 0	ND	0.0	3.62	5.0	9.2	2.30	Y	
03/08/06	10-15	FROM 260	ND	0.0	1.45	8.6	9.0	2.50	Y	
03/13/06	4-9	FROM 280	ND	0.0	1.26	5.4	9.0	2.40	Y	
03/21/06	4-12	FROM 70	ND	0.0	2.10	10.0	9.2	2.50	Y	
02/22/06	CALM	0	ND	0.0	4.50	5.5	9.1	2.40	Y	
03/29/06	0-3	FROM 90	ND	0.0	1.43	9.6	9.0	2.50	Y	
04/03/06	0-4	FROM 90	ND	0.0	1.08	11.2	9.0	2.50	Y	
04/11/06	0-8	FROM 225	ND	0.0	2.90	18.0	9.0	2.60	Y	
04/17/06	5-10	FROM 160	ND	0.0	0.90	16.8	9.1	2.70	Y	
04/28/06	CALM	0	ND	0.0	1.86	15.6	9.1	2.90	Y	
05/01/06	5-8	FROM 180	ND	0.0	0.71	21.3	9.0	2.80	Y	
05/08/06	8-14	FROM WEST	ND	0.0	1.18	24.0	9.1	2.50	Y	
05/15/06	8-12	FROM 90	ND	0.0	0.83	17.6	9.1	2.50	Y	
05/23/06	5-10	FROM 210	ND	0.0	1.84	19.1	9.1	2.60	Y	
06/02/06	CALM	0	ND	0.0	0.69	29.0	9.0	3.00	Y	NEW FLAGGING UP
06/07/06	5-8	FROM 20	ND	0.0	0.80	18.6	9.2	3.00	Y	
06/12/06	5-15	FROM 185	ND	0.0	0.37	31.5	9.2	3.20	Y	
06/20/06	0-5	FROM 180	ND	0.0	0.52	24.1	9.1	3.40	Y	SALT CRYSTALS FORMING ON POND SURFACE
06/26/06	0-4	VARIABLE	ND	0.0	1.02	34.2	9.2	3.5+	Y	
07/05/06	CALM	0	ND	0.0	0.68	31.5	9.2	3.5+	Y	ONLY 4"-6" H2O IN POND

BP - America Production Company
Cahn Waste Management Facility
Field Data Summary

SW / 4, Section 28, T 32 N, R 10 W, N.M.P.M
San Juan County, New Mexico

REVISED DATE: JANUARY 02, 2007 (KAG)

BLAGG ENGINEERING, INC.

INITIAL DATE	WIND SPEED mph	WIND DIRECTION bearing	H2S ppm	DISSOLVED SULFIDE ppm	DISSOLVED OXYGEN ppm	TEMP. celcius	pH	FREE-BOARD ft.	LINER / BERM INTEGRITY	COMMENTS
07/10/06	3-7	FROM 180	ND	0.0	0.59	25.8	9.7	3.5+	Y	
07/17/06	CALM	0	ND	0.0	0	0.0	0.0	3.5+	Y	ABOUT 4"H2O IN POND W/ 40% OF SURFACE W/ SALT PRECIP
07/24/06	3-5	FROM 45	ND	0.0	NA	NA	NA	3.5+	Y	2"-4" OF H20 DEPTH, SALT ON 75% OF SURFACE
07/28/06	5-8	FROM 200	ND	0.0	NA	NA	NA	3.5+	Y	SALT ON 60% OF SURFACE
08/05/06	3-8	FROM 180	ND	0.0	0.14	32.2	9.0	3.5+	Y	RECENT RAINS HAVE DISSOLVED SALTS IN POND
08/10/06	CALM	0	ND	NA	NA	NA	NA	3.5+	Y	SALT ON 60% OF SURFACE
08/16/06	CALM	0	ND	0.0	NA	NA	NA	3.5+	Y	SALT ON 80% OF SURFACE
08/22/06	2-5	FROM 180	ND	0.0	NA	NA	NA	3.5+	Y	SALT ON 25% OF SURFACE H20 DEPTH 1"-2"
08/29/06	1-3	FROM 180	ND	NA	NA	NA	NA	3.5+	Y	SALT ON 100% OF SURFACE
09/05/06	2-6	FROM 170	ND	0.0	NA	NA	NA	3.5+	Y	SALT ON 75% OF SURFACE < 1" H2O IN POND
09/12/06	2-4	FROM 170	ND	NA	NA	NA	NA	3.5+	Y	SALT ON ENTIRE POND
09/18/06	0-2	FROM 45	ND	NA	NA	NA	NA	3.5+	Y	SALT ON 60% OF SURFACE
09/26/06	2-6	FROM 160	ND	NA	NA	NA	NA	3.5+	Y	SALT ON 80% OF SURFACE
10/05/06	0-2	FROM 45	ND	NA	NA	NA	NA	3.5+	Y	RECENT RAINS HAVE REDUCED SALT BUILD UP
10/10/06	5-7	FROM 250	ND	0.0	1.89	21.7	9.6	3.50	Y	RECENT RAINS ADDED ABOUT 4" H2O & RE-DISSOLVED SALT
10/18/06	CALM	0	ND	0.0	3.03	9.0	9.5	3.40	Y	
10/24/06	0-1	FROM 180	ND	0.0	1.33	16.4	9.5	3.40	Y	BEGIN WATER TRANSFERE FROM SCHNEIDER POND
11/01/06	2-4	FROM 180	ND	0.0	0.78	8.3	9.8	2.70	Y	
11/09/06	5-10	FROM 45	ND	0.0	1.61	5.6	9.9	2.30	Y	
11/17/06	CALM	0	ND	0.0	1.75	3.9	9.9	2.10	Y	
11/21/06	2-4	FROM 190	ND	0.0	1.24	4.4	9.7	1.75	Y	
11/27/06	10-15	FROM 180	ND	0.0	1.63	4.0	9.9	1.60	Y	STOP WATER TRANSFERE FROM SCHNEIDER POND
12/04/06	1-3	FROM 180	ND	0.0	2.40	0.4	9.9	1.60	Y	THIN LAYER OF ICE ON ENTIRE SURFACE
12/13/06	3-5	FROM 195	ND	0.0	2.27	1.2	9.9	1.60	Y	
12/22/06	10-15	FROM 30	ND	0.0	NA	NA	NA	1.60	Y	THICK ICE ON ENTIRE SURFACE
12/27/06	5-8	FROM 45	ND	0.0	1.97	1.1	9.8	1.60	Y	THIN ICE (1/8" - 1/4") ON SURFACE

BP - America Production Company
Cahn Waste Management Facility
Leak Detection - Monthly Insepection Field Data Summary

SW / 4, Section 28, T 32 N, R 10 W, N.M.P.M
San Juan County, New Mexico

REVISED DATE: DECEMBER 05, 2006 (KAG)

BLAGG ENGINEERING, INC.

	SW SUMP				SE SUMP			
INITIAL DATE	**DISSOLVED SULFIDE ppm**	**DISSOLVED OXYGEN ppm**	**TEMP. celcius**	**pH**	**DISSOLVED SULFIDE ppm**	**DISSOLVED OXYGEN ppm**	**TEMP. celcius**	**pH**
01/02/06	0.0	0.11	8.0	9.2	0.0	0.07	8.4	9.2
02/01/06	0.0	0.28	8.4	9.2	0.0	0.86	9.0	9.2
03/08/06	0.0	0.44	6.0	9.2	0.0	0.18	6.7	9.2
04/03/06	0.0	2.70	11.0	9.2	0.0	0.66	11.2	9.2
05/01/06	0.0	1.20	12.8	9.2	0.0	0.48	13.3	9.2
06/02/06	0.0	0.43	19.8	9.2	0.0	0.18	19.2	9.2
07/05/06	0.0	1.71	21.9	9.2	0.0	0.14	22.4	9.2
08/10/06	0.0	0.08	22.2	9.1	0.0	0.68	21.9	9.1
09/05/06	0.0	0.30	21.5	9.2	0.0	0.16	20.8	9.2
10/05/06	0.0	1.19	18.7	9.2	0.0	0.62	18.0	9.2
11/01/06	0.0	0.09	10.1	9.4	0.0	0.51	10.8	9.5
12/04/06	0.0	0.56	7.4	9.2	0.0	0.93	7.8	9.2

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

February 14, 2005

Mr. Ed Martin
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Annual Report: Permit NM-02-0007
BP Cahn Waste Management Facility
NW/4 Sec. 33 - T32N - R10W, San Juan County, NM

Dear Mr. Martin:

On behalf of BP America Production Co., Blagg Engineering, Inc. (BEI) is submitting this annual report for the Cahn Waste Management Facility, Permit NM-02-0007. This report is for 2004 calendar year monitoring. Attached are spread sheets that summarize the weekly evaporation pond and monthly sump monitoring test results.

General Pond Monitoring

Weekly evaporation pond monitoring has not indicated the generation of dissolved sulfide or hydrogen sulfide gas during any inspections. Tested pH levels were stable at values ranging between 8.8 - 9.7 units. Discharges to this pond are via a pipeline from the Schneider Waste Management Facility and no water haulers or other pipelines emit water to the facility. Minimum freeboard was measured at 1.42 feet on April 8, 2004 and the year-end freeboard was measured at 2.0 feet.

Landfarm Treatment Zone Monitoring

No landfarm cells were constructed during the 2004 calendar year and no treatment zone monitoring was required or performed.

Evaporation Pond Sludge Thickness

All sludge/sediment was removed from the pond in 2003 during installation of a new liner. This facility receives water via pipeline transfer from the Schneider Waste Management Facility and little to no sediments generally enter the pond. A sediment thickness inspection/measurement on December 16, 2004 found no sediments had accumulated in the pond.

Leak Detection System Monitoring

A new leak detection system was installed during liner installation in 2003. As of December 30, 2004 this leak detection system had not accumulated any fluids, indicating that there were no leaks in the new liner. The older, deep leak detection system has remained in place and continues to capturing fluids at a low rate from prior liquids trapped between liners.

Waterfowl Diversionary Flagging

New waterfowl diversionary flagging was installed over the pond following new liner installation in November, 2003. This flagging was expanded in October, 2004 and following this no waterfowl has been observed in the facility.

Questions or comments concerning this transmittal may be directed to myself at (505)632-1199 or to Don Brooks with BP at (505)326-9200.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.,
President

Attachments: Monitoring Spread Sheets

cc: Denny Foust, NMOCD Aztec District Office
Don Brooks, BP SJ Operations Center

BP - America Production Company
Cahn Waste Management Facility
Leak Detection - Monthly Insepection Field Data Summary

SW / 4, Section 28, T 32 N, R 10 W, N.M.P.M
San Juan County, New Mexico

REVISED DATE: DECEMBER 20, 2004 (KAG)

BLAGG ENGINEERING, INC.

	SW SUMP				SE SUMP			
INITIAL DATE	DISSOLVED SULFIDE ppm	DISSOLVED OXYGEN ppm	TEMP. celcius	pH	DISSOLVED SULFIDE ppm	DISSOLVED OXYGEN ppm	TEMP. celcius	pH
01/19/04	0.0	0.36	3.9	9.6	0.0	0.44	4.4	9.7
02/17/04	0.0	0.28	5.7	9.2	0.0	0.25	6.3	9.3
03/05/04	0.0	1.55	6.8	9.4	0.0	1.16	5.8	9.3
04/01/04	TLTM	TLTM	TLTM	TLTM	TLTM	TLTM	TLTM	TLTM
04/12/04	0.0	0.68	10.4	9.3	0.0	0.49	10.6	9.3
05/03/04	0.0	0.73	12.6	9.1	0.0	1.30	14.9	9.2
06/03/04	0.0	0.63	17.4	9.3	0.0	0.24	17.0	9.4
07/20/04	0.0	0.02	24.1	8.9	0.0	0.04	23.5	8.9
08/09/04	0.0	2.92	22.3	9.1	0.0	1.94	22.5	9.1
09/02/04	0.0	0.03	21.2	9.0	0.0	0.12	22.2	9.0
10/14/04	0.0	0.06	16.8	9.2	0.0	0.04	16.2	9.3
11/10/04	0.0	0.22	11.0	9.3	0.0	0.39	10.8	9.3
12/16/04	0.0	0.08	8.2	9.2	0.0	0.03	8.0	9.2

BP - America Production Company
Cahn Waste Management Facility
Field Data Summary

SW / 4, Section 28, T 32 N, R 10 W, N.M.P.M
San Juan County, New Mexico

REVISED DATE: JANUARY 4, 2005 (KAG)

BLAGG ENGINEERING, INC.

INITIAL DATE	WIND SPEED mph	WIND DIRECTION bearing	H2S ppm	DISSOLVED SULFIDE ppm	DISSOLVED OXYGEN ppm	TEMP. celcius	pH	FREE-BOARD ft.	LINER / BERM INTEGRITY	COMMENTS
01/06/03	CALM	0	ND	0.0	9.2	-1.4	9.6	1.63	Y	POND SURFACE 100% ICE COVERED CAL INSTS TO STANDARDS NO H20 XFER
01/13/04	5-8	70	ND	0.0	4.3	-1.2	9.6	1.75	Y	100% COVERED W/ICE CAL INSTS TO STANDARDS
01/19/04	6-11	260	ND	0.0	0.88	5.9	9.7	1.75	Y	CAL INSTS TO STANDARDS SW (DEEP) SUMP REPLACED 01/15/04
01/27/04	5-8	15	ND	0.0	1.96	-1.0	9.7	1.58	Y	100% ICE COVERED PUMP SUMPS. CAL INSTS @ SCHNEIDER
02/04/04	CALM	0	ND	0.0	1.18	0.2	9.6	1.54	Y	ICE ON 80% OF SURFACE H20 XFER OFF CAL INST TO STAND ATTACH LOCKS
02/09/04	0-2	180	ND	0.0	1.33	1.8	9.6	1.54	Y	CAL INSTS TO STANDARDS NO H20 XFER FROM SCHNEIDER
02/17/04	0-2	NORTH	ND	0.0	1.32	1.7	9.5	1.50	Y	H20 XFER FROM SCHNEIDER ON CAL INST TO STANDARDS
02/26/04	7-11	90	ND	0.0	0.12	12.0	9.6	1.50	Y	CAL INSTS TO STANDARDS @ OFFICE H20 XFER OFF
03/05/04	10-20	270	ND	0.0	0.79	6.5	9.5	1.33	Y	CAL INSTS TO STANDS @ OFFICE
03/11/04	0-1	90	ND	0.0	0.75	14.5	9.4	1.45	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
03/18/04	0-6	245	ND	0.0	0	12.6	9.4	1.50	Y	NO H20 XFER FROM SCHNEIDER CAL INSTS TO STANDARDS @ OFFICE
03/26/04	0-4	210	ND	0.0	0	12.9	9.6	1.50	Y	NO H20 XFER FROM SCHNEIDER CAL INSTS TO STANDARDS @ OFFICE
04/01/04	CALM	0	ND	0.0	0.3	15.3	9.3	1.67	Y	CAL INSTS TO STANDARDS H20 LEVEL IN DEEP SUMPS TLTM H20 XFER OFF
04/08/04	1-3	135	ND	0.0	1.95	11.8	9.4	1.42	Y	PRESENTLT RAINING CAL INSTS TO STAND H20 XFER OFF
04/12/04	5-10	180	ND	0.0	0.2	12.2	9.4	1.45	Y	CAL INST TO STAND H2O XFER OFF H20 IN PONDS REDDISH COLOR
04/22/04	8-12	180	ND	0.0	0.33	15.1	9.4	1.60	Y	CAL INST TO STAND H2O XFER OFF
04/29/04	5-10	180	ND	0.0	1.02	14.9	9.4	1.60	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
05/03/04	5-10	255	ND	0.0	0.28	12.7	9.4	1.60	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
05/13/04	10-20	270	ND	0.0	4.35	16.3	9.2	1.80	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
05/19/04	5-8	180	ND	0.0	0.23	25.7	9.2	1.80	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
05/27/04	5-14	230	ND	0.0	0.23	18.2	9.2	1.90	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
06/03/04	0-2	90	ND	0.0	0.2	21.9	9.2	2.10	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
06/10/04	2-10	190	ND	0.0	0.11	15.5	9.2	2.30	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
06/14/04	0-5	190	ND	0.0	0.36	29.9	9.1	2.30	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
06/24/04	0-4	190	ND	0.0	0.01	27.0	9.1	2.70	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
06/30/04	4-8	180	ND	0.0	0.02	23.5	9	2.75	Y	'CAL INSTS TO STANDARDS H20 XFER OFF

BP - America Production Company
Cahn Waste Management Facility
Field Data Summary

SW / 4, Section 28, T 32 N, R 10 W, N.M.P.M
San Juan County, New Mexico

REVISED DATE: JANUARY 4, 2005 (KAG)

BLAGG ENGINEERING, INC.

INITIAL DATE	WIND SPEED mph	WIND DIRECTION bearing	H2S ppm	DISSOLVED SULFIDE ppm	DISSOLVED OXYGEN ppm	TEMP. celcius	pH	FREE-BOARD ft.	LINER / BERM INTEGRITY	COMMENTS
07/09/04	2-7	20	ND	0.0	0.08	15.1	8.9	2.95	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
07/15/04	3-9	170	ND	0.0	0.08	27.4	9	3.10	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
07/20/04	8-14	290	ND	0.0	0.03	26.3	8.8	3.10	Y	'CAL INSTS TO STANDARDS H20 XFER OFF H2O LEVEL LOW
07/28/04	8-13	180	ND	0.0	0.06	33.3	8.8	3.20	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
08/09/04	0-1	90	ND	0.0	0.95	23.4	9.1	3.30	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
08/16/04	0-4	225	ND	0.0	1.14	26.9	9	3.40	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
08/27/04	5-7	0	ND	0.0	0.34	16.5	8.9	3.45	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
09/02/04	4-8	370	ND	0.0	0.01	27.1	8.9	3.40	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
09/08/04	4-8	180	ND	0.0	0.1	24.6	8.9	3.60	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
09/16/04	2-10	20	ND	0.0	0.58	16.2	8.9	3.30	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
09/20/04	10-20	180	ND	0.0	0.17	18.3	9.3	3.30	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
09/28/04	CALM	0	ND	0.0	0.08	15.9	8.9	2.90	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
10/06/04	3-8	180	NA	0.0	0.04	12.7	9	2.70	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
10/14/06	0-5	180	NA	0.0	0.13	11.2	9.1	2.80	Y	'CAL INSTS TO STANDARDS H20 XFER OFF
10/22/04	5-15	180	NA	0.0	0.25	11.6	9.1	2.60	Y	'CAL INSTS TO STANDARDS H20 XFER ON
10/28/04	10-14	170	NA	0.0	0.12	11.2	9.2	2.45	Y	'CAL INSTS TO STANDARDS H20 XFER OFF CROSS FLAGGING IN PLACE
11/04/04	5-10	120	NA	0.0	0.51	12.5	9.1	2.40	Y	INSTALLING ADDITIONAL FLAGGING CAL INSTS TO STANDARDS H20 XFER OFF
11/10/04	0-2	355	NA	0.0	0.29	6.2	9.4	2.40	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
11/19/04	5-12	195	NA	0.0	0.07	11.1	9.2	2.30	Y	'CAL INSTS TO STANDARDS H20 XFER ON
11/22/04	4-10	350	ND	0.0	1.26	7.8	9.1	2.15	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
12/01/04	5-8	180	ND	0.0	1.28	3.1	9.1	2.00	Y	'CAL INSTS TO STANDARDS H20 XFER ON
12/10/04	0-1	135	ND	0.0	1.36	3.5	9.2	2.00	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER
12/16/04	5-8	180	ND	0.0	0.38	4.4	9.4	2.00	Y	'CAL INSTS TO STANDARDS H20 XFER OFF CONDUCT ANN SLUDGE MEAS.
12/22/04	CALM	0	ND	0.0	3.3	2.0	9.2	2.00	Y	'CAL INSTS TO STANDARDS H20 XFER ON
12/30/04	CALM	0	ND	0.0	1.62	5.5	9.2	2.00	Y	'CAL INSTS TO STANDARDS H20 XFER FROM SCHNEIDER

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

September 20, 2004

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

Mr. Buddy Shaw
BP Amoco Production Co.
200 Amoco Court
Farmington, NM 87401

Dear Mr. Shaw:

Since the New Mexico Oil Conservation Division (NMOCD) promulgated Rule 50 covering pits and below-grade tanks, there has arisen a need, in certain circumstances, for operators to transport their drill cuttings off-site and dispose of them.

NMOCD Rule 711, as it pertains to landfarms, does not specifically address the issue of exempt oilfield wastes that may be contaminated with salts. Your landfarm application and permit were written with only hydrocarbon-contaminated soils in mind. Salt-contaminated wastes cause the following problems:

1. Lessening the effectiveness of the biodegradation capacity of your landfarm
2. Rapid leachability causing adverse effects on groundwater

If you want to accept salt-contaminated cuttings or any other salt-contaminated wastes, your 711 permit must be modified to ensure that your acceptance of those wastes will not adversely affect public health or the environment.

Please check one of the following:

☐ I have accepted or intend to accept salt-contaminated wastes in my landfarm. An OCD form C-137, applying for a modification to my 711 permit is attached. Included, as an attachment, is a demonstration that the accepted salt-contaminated soils will not adversely affect groundwater in the foreseeable future. (Closure requirements will also require modification to ensure the protection of groundwater. Should your acceptance of salt-contaminated wastes prove detrimental to groundwater, future liability for such damage rests with the landfarm operator).

☐ I do not intend to accept salt-contaminated wastes in my landfarm. Should this condition change, I will submit an OCD Form C-137 for a modification to my 711 permit at that time.

New Mexico Oil Conservation Division
Attn: Ed Martin
1220 S. St. Francis
Santa Fe, NM 87505

This letter must be returned to the above address no later than October 31, 2004. An extension of time may be granted if you contact this office no later than that date.

If you have any questions, contact Ed Martin (505) 476-3492 or emartin@state.nm.us

Signed _____ Date _____

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time 2:45 Date 8-18-03

Originating Party: Jeff Bragg
For BP Kahn Evaporation Pond

Other Parties: Marlyn Kieling

Subject Leak 1/4 barrel per day leak Increased to 4 bbls per day Notified Denny He Told them to Start Draining Pond & Find leak.

Discussion The Pond is Almost Completly Drained The Inspector Came out to Find leak and determine what the Patch Job would take. The liner is 20 years old and it was determinde that they Should JUST Replace the Liner. To do the replacement they Need to Dry & Clean the Pond of the Residual muck & Salts. Jeff is Proposing to do a Full TCLP & RCI on it and Request Special Authorization Under Rule 712 and to then take it to Santon County Land Fill operated by Waste Management.

Conclusions or Agreements They will Prepare and Submit to Santa Fe & Copy Denny on the request.

Distribution

Signed Marlyn Kieling

Kieling, Martyne

From: Foust, Denny
Sent: Monday, June 02, 2003 12:46 PM
To: Anderson, Roger; Kieling, Martyne
Cc: Chavez, Frank; Perrin, Charlie
Subject: BP America Cahn and Schneider Ponds

At 08:30 received complaint from Chet Bell #18 CR 2343 behind Cedar Hill Fire Station of consistent oppressive odors at night over the past week. Notified Brittany Benko of BP America, She had Blagg Engineering investigate the complaints with me. The ponds are both black and have an stale sour water smell. The Cahn Pond had three ducks positively identified floating in the pond. The Schneider Pond also had a distinct H2S odor but did not register on either Blagg's or our meters. One duck was tentatively identified in the Schneider Pond. I notified Brittany Benko about the ducks and to start treating the pond with some kind of oxidizer immediately.

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

February 9, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. P-326-936-394

Mr. Buddy Shaw
AMOCO Production Company
200 Amoco Court
Farmington, New Mexico 87401

RE: 711 Centralized Waste Management Facility Inspection
AMOCO Production Company, Cahn Evaporation Pond
NW/4, Section 33, Township 32 North, Range 10 West, NMPM,
San Juan County, New Mexico

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD), inspected AMOCO Production Company, Cahn (Cahn) waste management facility on June 11, 1997. The Cahn evaporation pond is located in the NW/4, Section 33, Township 32 North, Range 10 West, NMPM, San Juan County, New Mexico.

Overall the OCD found Cahn to be a well maintained facility. The OCD inspection and current file review of Cahn indicates some permit deficiencies. Attachment 1 lists the permit deficiencies found at Cahn during the inspection and the new Rule 711 requirements that are not on file. Attachment 2 contains photographs taken during the inspection. Cahn shall provide the OCD with a detailed description of how the corrections will be made and a time table of when each of the corrections will be completed. A response is required by Cahn to these deficiencies by April 10, 1998.

Pursuant to Order R-10411-B the OCD General Rule 711 has been revised. The OCD is currently in the process of re-permitting all surface waste management facilities under the new Rule 711. Cahn's waste management facility is included under the new Rule 711. A copy of Order R-10411-B along with the new bond forms is included with this report. A permit application, Form C-137 (Attachment 3), shall be filed with the OCD according to the instructions in Attachment 1, Section 19.

Please be advised that the bonding requirements have changed under the new Rule 711. The bonded amount will be $25,000 for centralized surface waste management facilities (see Rule 711.B.1.i and 711.B.3). Cahn must have a new bond in place for the approved estimated closure

amount prior to receiving a new waste management facility permit.

If you have any questions please do not hesitate to contact me at (505) 827-7153.

Sincerely,

Martyne J. Kieling
Environmental Geologist

Attachments
xc: Aztec OCD Office

ATTACHMENT 1
INSPECTION REPORT
JUNE 11, 1997
AMOCO PRODUCTION COMPANY, CAHN
(NW/4, Section 33, Township 32 North, Range 10 West, NMPM,)
SAN JUAN COUNTY, NEW MEXICO

1. Pond Freeboard: Liner markings or some other device shall be installed to accurately measure freeboard. Pond freeboard shall be a minimum one and a half (1 ½) feet below the top of the lowest point on the levee. The pond must be maintained below freeboard level at all times.

   The evaporation pond is lacking freeboard markers that accurately measure the one and a half (1 ½) foot freeboard height (see pictures 3 and 4). Water level was well below freeboard at the time of inspection.

2. Pond Levee: The top of the levee shall be level, ponding of water should not occur, and the outside grade of the levee should be maintained to minimize erosion and maintain proper levee width.

   The levee top and sides were in excellent condition.

3. Leak Detection System: The top of the leak detection monitor well must be above the top of the levee. The monitor well should be covered. In addition, the leak detection monitor well shall be inspected no less than two times per month.

   The top of the leak detection monitor well was above the levee . The appearance of any fluids within the monitor well should be sampled and comparison analysis made to the contents within the pond.

4. Sludge Build-up: Any sludge build-up in the bottom of the pond in excess of twelve inches (12") will be removed and disposed of at an OCD approved disposal facility.

   Sludge thickness at the bottom of the pond should be routinely measured. At the time of the inspection the center portion of the pond could be seen and there was no sludge in the bottom (see picture 3 and 4).

5. Security: The facility shall be secured when no attendant is present, to prevent any unauthorized dumping. Securing the facility may include locks on tank valves, a perimeter fence and locked gate or other similar security measures.

Facility has a perimeter fence and locking gate.

6. Signs: The facility shall have a sign in a conspicuous place at the facility. The sign shall be maintained in legible condition and shall be legible from at least fifty (50) feet and contain the following information: a) name of facility, b) location by quarter-quarter section, township and range, and c) emergency phone number.

The facility is lacking clearly labeled sign posted within view.

7. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums should be stored on their sides with the bungs in and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets should also be stored on an impermeable pad and curb type containment.

There were no drums or containers stored on site.

All drums and chemical containers should be clearly labeled to identify their contents and other emergency information necessary if they were to rupture, spill or ignite.

8. Process Area: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

Overall yard maintenance practices at the facility were good. However, some tanks have overtopping stains (see picture 1). Stained soil around some tank valves is evidence that leaks have occurred. Spill collection sumps at tank valves should be pumped out regularly and inspected for leaks.

9. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new facilities or modifications to existing facilities must place the tank on an impermeable type pad within the berm so that leaks can be identified.

The berms around the above ground tanks need to be repaired (see picture 1) and modified to hold the appropriate volume. There is no berm requirement for the 8 (eight) green tanks that are designed to hold freshwater from the Freeze -Thaw Evaporation operation (see picture 2). If the operation changes and the tanks are used to hold fluids other than fresh water a berm must be constructed to hold the appropriate volume.

10. Open Top Tanks and Pits: To protect migratory birds, all tanks exceeding 16 feet in diameter, and exposed pits and ponds shall be screened, netted, covered or otherwise rendered nonhazardous to migratory birds. In addition, OCD Rule 310 prohibits oil from being stored or retained in earthen reservoir, or in open receptacles.

The evaporation pond was free of oil (see pictures 3 and 4). Netting is not required on the evaporation pond as long as it is kept oil free.

11. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

There were no saddle tanks at this facility.

12. Tank Labeling: All tanks, drums and containers should be clearly labeled to identify their contents and other emergency information necessary if the tank were to rupture, spill or ignite.

The above ground tanks are not appropriately labeled as to their contents or the hazards of the contents (see picture 1). Hazard placards are required on all above ground tanks not containing fresh water.

13. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design. All pre-existing sumps and below grade tanks must demonstrate integrity on an annual basis. Integrity tests include pressure testing and/or visual inspection of cleaned out tanks or sumps, or other OCD approved methods.

The below grade sumps located at valves must have annual integrity testing. Testing might include cleaning and visually inspecting the bottom of the sumps.

14. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity at present and then every 5 years thereafter. Companies may propose various methods for testing such as pressure testing or other OCD approved methods.

Any underground process/wastewater lines must have a mechanical integrity testing proposal.

15. Housekeeping: All systems designed for spill collection/prevention should be inspected frequently to ensure proper operation and to prevent overtopping or system failure.

The facility tanks had some overtopping stains (see picture 1). Overall yard maintenance and spill prevention/cleanup was good.

16. Trash and Potentially Hazardous Materials: All trash and potentially hazardous materials should be properly disposed of.

There was very little trash at the facility.

17. Spill Reporting: All spills/releases shall be reported pursuant to OCD Rule 116 and WQCC 1203 to the appropriate OCD District Office.

There were no spills evident at this facility.

18. Naturally Occurring Radioactive Material (NORM): All generators submitting waste to a New Mexico Oil Conservation Division Permitted Commercial or Centralized 711 Waste Management Facility must include a Naturally Occurring Radioactive Material status declaration. The generator must declare that the waste was tested for Naturally Occurring Radioactive Material (NORM) and does not contain NORM at regulated levels pursuant to 20 NMAC 3.1 Subpart 1403.C and D.

Under the new 711 Waste Management Facility Permit waste must be accompanied with a signed NORM declaration from the waste generator.

19. Application Requirements for Permit Under the New Rule 711: An application, Form C-137, for a permit renewal shall be filed in DUPLICATE with the Santa Fe Office of the Division and ONE COPY with the appropriate OCD district office. The application shall comply with Division guidelines and shall include:

(a) The names and addresses of the applicant and all principal officers of the business if different from the applicant;

Please submit with C-137 application.

(b) A plat and topographic map showing the location of the facility in relation to governmental surveys (1/4 1/4 section , township, and range), highways or roads giving access to the facility site, watercourses, water sources, and dwellings within one (1) mile of the site;

Please submit with C-137 application.

(c) The names and addresses of the surface owners of the real property on which the management facility is sited and surface owners of the real property of record

within one mile of the site;

Please submit with C-137 application.

(d) A description of the facility with a diagram indicating location of fences and cattle guards, and detailed construction/installation diagrams of any pits, liner, dikes, piping, sprayers, and tanks on the facility;

Please submit an updated map of the processing and evaporation pond facility including all above ground tanks, berms, piping, fences and any buildings.

(e) A plan for management of approved wastes;

Part of this is already on file with the OCD, however, several changes have been made to the facility over the years and an updated description of how Cahn handles its waste streams is required.

(f) A contingency plan for reporting a cleanup of spills or releases;

Please submit an updated contingency plan that incorporates both the evaporation pond system and the Freeze -Thaw Evaporation processing system.

(g) A routine inspection and maintenance plan to ensure permit compliance;

Please submit an updated inspection and maintenance plan that incorporates the evaporation pond and Freeze -Thaw Evaporation system.

(h) A Hydrogen Sulfide (H_2S) Prevention and Contingency Plan to protect public health;

Please submit with C-137 application.

(i) A closure Plan including a cost estimate sufficient to close the facility to protect public health and the environment; said estimate to be based upon the use of equipment normally available to a third party contractor;

Please submit with C-137 application.

(j) Geological/hydrological evidence, including depth to and quality of groundwater beneath the site, demonstrating that disposal of oil field wastes will not adversely impact fresh water;

Please submit with C-137 application.

(l) Certification by an authorized representative of the applicant that information submitted in the application is true, accurate and complete to the best of the applicant's knowledge.

Please submit with C-137 application.

AMOCO CHAN 711 FACILITY INSPECTION (PHOTOS BY OCD)

PHOTO NO. 1 DATE:06/11/97

PHOTO NO. 2 DATE:06/11/97

AMOCO CHAN 711 FACILITY INSPECTION (PHOTOS BY OCD)

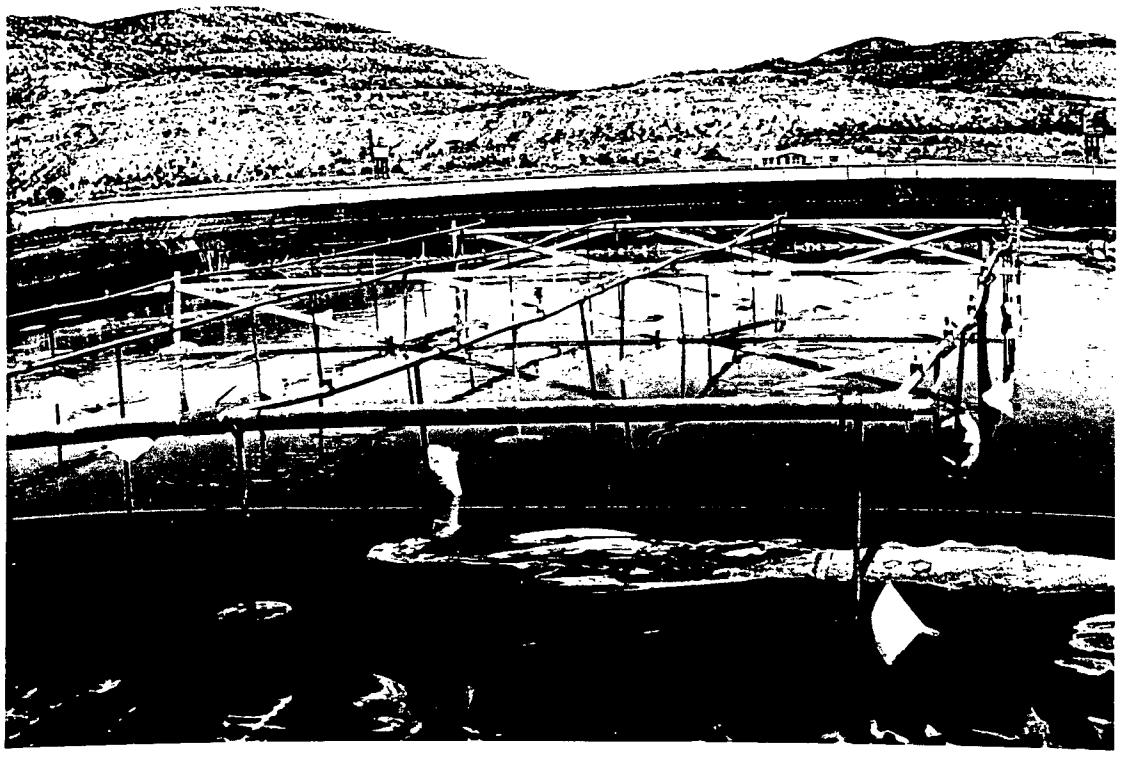
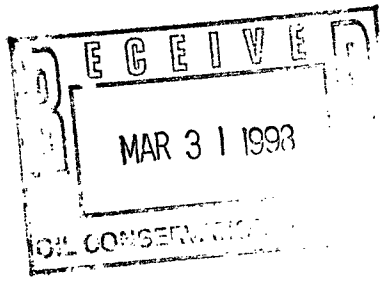


PHOTO NO. 3 DATE:06/11/97

PHOTO NO. 4 DATE:06/11/97

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

March 25, 1998



Ms. Martyne J. Kieling
New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: Amoco Production Company
Cahn Waste Management Facility, SE/4 SW/4 Sec. 28 - T32N - R10W
NMOCD Rule 711 Application

Dear Ms. Kieling:

On behalf of Amoco Production Company, Blagg Engineering, Inc. (BEI) is responding to your correspondence dated February 9, 1998 with respect to the Cahn Waste Management Facility. This is a pre-existing produced water evaporation unit installed and operated prior to adoption of NMOCD Rule 711. Attached, please find a completed Form C-137 with associated documentation. Bonding requirements per Rule 711.B.l.i and 711.B.3 will be addressed separately by Amoco Production Company. Amoco is evaluating its bonding options for this and other waste management facilities located in New Mexico.

Addressed below is a response to your comments and concerns presented in Attachment 1 of your February 9, 1998 correspondence:

1. Pond Freeboard: A pond freeboard marking device will be installed prior to June 1, 1998. Presently, freeboard is well below the 1.5 foot minimum requirement. This level is not expected to be approached prior to June 1, 1998.

3. Leak Detection System: The leak detection system will be inspected quarterly and sampled annually for comparison with fluids in the pond.

4. Sludge Build-up: Sludge thickness in the base of the pond will be measured annually.

6. Signs: A clearly labelled sign is in view within 50 feet of the facility.

8. Process Area: The process tanks at the facility have been taken out of service and are scheduled to be removed from the site prior to December 31, 1998.

9. Above Ground Tanks: As indicated above, the process tanks have been taken out of service and are scheduled to be removed from the site prior to December 31, 1998. Therefore, no berm repair

around these tanks is necessary.

10. Open Top Tanks & Pits: Netting will not be required on the evaporation pond as long as it is kept oil free. Oil entering the pond will be minimized.

12. Tank Labeling: As indicated above, the process tanks have been taken out of service and are scheduled to be removed from the site prior to December 31, 1998. Therefore, no tank labelling is necessary.

13. Below Grade Tanks/Sumps: Below grade sumps will be cleaned and visually inspected annually.

14. Underground Process/Wastewater Lines: There are no underground process lines at the facility.

15. Housekeeping: As indicated above, the process tanks have been taken out of service and are scheduled to be removed from the site prior to December 31, 1998. Therefore, no tank overtopping can occur.

18. Naturally Occurring Radioactive Material (NORM): Pursuant to discussions with the NMOCD, NORM testing will not be required for this facility.

19. Application Requirements for Permit Under New Rule 711: A Form C-137 application is attached.

Questions or comments concerning the this transmittal may be directed to Jeff Blagg of Blagg Engineering at (505)632-1199 or to Buddy Shaw with Amoco at (505)326-9200.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

Attachment: Form C-137 Application

cc: Denny Foust, NMOCD Aztec District Office
B.D. Shaw, Amoco San Juan Operations Center

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Form C-137
Originated 8/8/95
Revised 6/25/97

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to appropriate
District Office

APPLICATION FOR WASTE MANAGEMENT FACILITY

(Refer to the OCD Guidelines for assistance in completing the application)

☐ Commercial ☒ Centralized

1. Type: ☒ Evaporation ☐ Injection ☐ Other _____
   ☐ Solids/Landfarm ☐ Treating Plant
2. Operator: Amoco Production Company
   Address: 200 Amoco Ct., Farmington, NM 87401
   Contact Person: Buddy Shaw Phone: (505)326-9200
3. Location: SE /4 SW /4 Section 28 Township 32N Range 10W
   Submit large scale topographic map showing exact location
4. Is this a modification of an existing facility? ☐ Yes ☒ No APPLICATION PER NEW 711
5. Attach the name and address of the landowner of the facility site and landowners of record within one mile of the site.
6. Attach description of the facility with a diagram indicating location of fences, pits, dikes, and tanks on the facility.
7. Attach designs prepared in accordance with Division guidelines for the construction/installation of the following: pits or ponds, leak-detection systems, aerations systems, enhanced evaporation (spray) systems, waste treating systems, security systems, and landfarm facilities.
8. Attach a contingency plan for reporting and clean-up for spills or releases.
9. Attach a routine inspection and maintenance plan to ensure permit compliance.
10. Attach a closure plan.
11. Attach geological/hydrological evidence demonstrating that disposal of oil field wastes will not adversely impact groundwater. Depth to and quality of ground water must be included.
12. Attach proof that the notice requirements of OCD Rule 711 have been met.
13. Attach a contingency plan in the event of a release of H_2S.
14. Attach such other information as necessary to demonstrate compliance with any other OCD rules, regulations and orders.
15. CERTIFICATION

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Jeffrey C. Blagg Title: Consulting Engineer

Signature: Jeffrey C. Blagg Date: 3/25/98

AMOCO PRODUCTION COMPANY
WASTE MANAGEMENT FACILITY PERMIT
CAHN FACILITY, SW/4 SEC 28 - T32N - R10W NMPM

Pursuant to NMOCD Order R-10411-B, Exhibit "A" (Rule 711), Amoco Production Company is submitting a Form C-137 for the pre-existing Cahn Waste Management Facility. Section E. (1) of Order R-10411-B outlines the information required for a facility permitted prior to adoption of this Order to include only sections B.1.a, h, i and l. However, Amoco is responding to all sections B.1.a through B.1.l pursuant to the request of NMOCD as outlined in their letter dated February 9, 1998. The Cahn Waste Management Facility is a pre-existing facility permitted by NMOCD prior to adoption of Order R-10411-B.

B.1.a Name and Address of Facility Applicant:

Amoco Production Company
200 Amoco Ct.
Farmington, NM 87401

B.1.b Topographic Map Indicating Facility Location

A copy of the relevant section of U.S.G.S. Topographic Map Cedar Hill, N Mex - Colo (provisional edition 1985) is attached as Figure A.

B.1.c Names & Addresses of Surface Owners Adjacent to Facility

Based on a records review at the San Juan County, New Mexico Assessors Office numerous surface land owners are of record within a 1 mile radius of the facility. The residential community of Cedar Hill, New Mexico is located approximately 1/2 mile from the facility and many small private residences are found in this village. Large property owners of record with the County Assessors Office adjacent to or near the site are listed as follows:

U.S. Bureau of Land Management
1235 La Plata Highway
Farmington, New Mexico 87401

N.M. State Land Office
4601 College Blvd.
Farmington, New Mexico 87401

Virginia Uhden, et al
4012 Via Opata
Palos Verdes Est, CA 90274

Shirley Mae Holmberg, et al
2459 Hwy 550
Aztec, NM 87410

Ruby Leeper, trustee
1083 Rd 2900
Aztec, NM 87410

Orbesen Family Trust
324 Amherst Dr. SE
Albuquerque, NM 87106

Randy Orbesen
6813 Edith Blvd. NE
Albuquerque, NM 87113

Harry J. Valentine Jr., trustee
3736 William Way
Sacramento, CA 95821

Kennon A. Decker
141 CR 2300
Aztec, NM 87410

B.1.d Facility Description

The existing facility is a 2.1± acre non-commercial centralized waste management site. Non RCRA oilfield generated wastes resulting from oil and gas production operations are transported to the site for treatment. Wastes include produced water. Produced water (free of floating hydrocarbons) is placed into the lined pond for evaporation. The existing evaporation pond is a doubled lined lagoon of approximate dimensions 250' x 250' x 5' deep. A third liner has been added to the pond with the installation of a 100' x 150' x 2' deep inner evaporation unit. Prior improvements at the facility included storage tanks and freeze/thaw evaporation enhancement. These improvements have been or are being removed from the facility and will no longer be used. Site schematics of the pond facility are attached as Figure 1.

Buffer Zone: The existing waste management facility is currently permitted by OCD and the site was constructed prior to OCD buffer zone requirements. Therefore, no buffer zone stipulations apply to this site.

Facility Berming: The existing treatment pond is constructed with a lined berm. The National Weather Service was consulted with respect to precipitation during a 100 year storm in this area and the maximum rainfall expected is approximately 2.8-inches during a 24 hour period. The treatment pond will be maintained with sufficient freeboard to accept a precipitation event of this magnitude.

Wave Calculations: Wind setup (increase in water level at downwind side of pond) from maximum predicted sustained winds is calculated for the 250' x 250' x 5.0' deep pond to be (from Water Resources Engineering, McGraw-Hill, 1972):

$$Z_s = V_w^2 F/1400d$$

where Z_s = rise in feet above still water level
V_w^2 = maximum sustained windspeed in miles per hour = 38 mph per Farmington FAA
F = fetch in miles = 353/5280 = 0.067 miles
d = maximum pond depth in feet = 5.0 feet

Therefore $Z_s = (38^2)(0.067)/(1400)(5.0) = 0.014$ feet

Wave-height is calculated to be (from Water Resources Engineering, McGraw-Hill, 1972):

$$z_w = 0.034 V_w^{1.06} F^{0.47}$$

where z_w = average maximum height of waves (significant wave height) in feet
V_w = maximum wind velocity in mph
F = fetch in miles

Therefore $z_w = (0.034)(38^{1.06})(0.067^{0.47}) = 0.45$ feet.

Given these conditions and calculations, the maximum downwind increase in water level is approximately 0.46 feet. Average annual rainfall for the region is 0.72 feet (per U.S. Weather Service, Albuquerque District Office). Therefore, a total required freeboard for the pond is calculated to be approximately 1.18 feet. For safety considerations, a minimum freeboard of 1.5 feet is proposed.

Freeboard Measurement: A marking device shall be installed in the pond to accurately measure freeboard.

B.1.e Waste Management Plan

Products deposited at the Cahn Waste Management Facility include produced water and associated minimal sludge material. The volume and origination of this liquid waste material is recorded by Amoco authorized transport drivers using manifests that follow each deposit. Deliveries are pumped from transport vehicles directly into the pond.

Accumulated sludge is periodically cleaned out from pond and landfarmed on site.

B.1.f Contingence Plan for Spills & Releases

Spills and releases will be treated on site if possible. If a spill or release cannot be treated on site, the impacted media will be transported to a NMOCD approved facility for treatment. If an off site release occurs the impacted soils will be excavated and transported to a NMOCD approved facility for treatment.

Pursuant to Rule 116, major spills of 25 barrels or more of liquid will be reported to the NMOCD district office and to the Environmental Bureau Chief by telephone or personal communication within 24 hours of the release. A subsequent written notification of the spill on Form C-141 will be submitted in duplicate to the district office and to the Environmental Bureau Chief within 15 days of the spill or incident.

Minor spills of between 5 and 25 barrels of liquid will be reported to the district office and the Environmental Bureau Chief with a subsequent written notification on Form C-141 within 15 days of the spill or incident.

B.1.g Routine Inspection & Maintenance

Inspection and maintenance will be conducted on a weekly basis or immediately following consequential rainstorms or windstorms. This inspection will include determination of facility integrity and security. Repairs to facility defects will be made as soon as possible. If a defect will jeopardize the integrity of a treatment unit, additional wastes will not be placed into the treatment unit until repairs have been completed.

B.1.h Contingence Plan in the Event of H_2S Release

A. H_2S Contingency Plan: A single produced water evaporative pond is operated at the facility. Tests of ambient H_2S gas at the pond will be conducted on a weekly basis and test results will be recorded and retained. The tests will be conducted at four (4) locations around the pond. Wind speed and direction will be recorded with each test.

If an H_2S reading of 0.1 ppm or greater is detected, a second reading will be taken on the downwind berm within one hour of the first test. Dissolved oxygen and dissolved sulfide levels of the pond will also be measured and appropriate treatments, if any, will be initiated. Additionally, the H_2S level at the down wind fence line of the facility will then be measured.

If two (2) consecutive H_2S readings of 0.1 ppm or greater are obtained, the NMOCD Aztec district office will be immediately notified. Hourly monitoring of H_2S levels will then be initiated and maintained on a 24-hour basis. Dissolved sulfides in the pond will then be measured daily.

If an H_2S measurement of 10.0 ppm or greater at the facility fence line is obtained, the NMOCD Aztec district office will be notified immediately. Additionally, the New Mexico State Police, San Juan County Sheriff and San Juan County Fire Marshall will also be immediately notified. All persons residing within ½ mile of the fence line will be notified and public safety officials will be

assisted with any evacuations that may be required.

Harmful levels of H_2S will be prevented from developing by initiation of the following procedures:

a) Water hauler truck drivers are familiar with H_2S identification by odor. Drivers are instructed to not transport water with possible H_2S content to the facility, and such water is to be transported to an alternate licensed facility with the capacity to accept and treat such water.

b) A continuously operating aeration system is to be installed in the evaporation pond to minimize the possibility of H_2S development.

c) Weekly tests of pond pH will be conducted and recorded. If pH falls below 7.0, remedial steps will be taken to raise the pH to above 7.0.

d) Monthly tests of pond dissolved sulfide will be conducted and recorded.

e) Monthly tests of pond dissolved oxygen are conducted and recorded. This sampling will be conducted at a depth of 1 foot from the bottom of the pond. The test location will vary between tests. If testing indicates dissolved oxygen levels of less than 0.5 ppm, steps will be taken to raise the dissolved oxygen level to greater than 0.5 ppm.

In the event that the pond is temporarily taken out of service, no daily, weekly or monthly measurements of conditions will be taken until the pond is placed back into service and produced fluids are deposited into the pond for evaporation.

B.1.i Closure plan:

At closure all piping will be removed from the facility and the evaporation pond will be filled and recontoured to fit existing grades. Site fences will be removed and berms will be recontoured to fit existing grades. Alternatively, if the landowner desires to keep the fences and berms in place for use as a facility not requiring NMOCD permitting, no alterations to these structures will be made.

Five (5) point composite samples will be collected from below the tank area and from below the pond area. These samples will be submitted to a qualified laboratory for determination of TPH and BTEX content. If TPH or BTEX are found to exceed existing NMOCD closure standards for the site, a site specific remediation plan will be developed and submitted to NMOCD for acceptance. Otherwise, the site will be permanently closed.

The estimated cost to complete site closure and abandonment, including surface soil sampling and testing, is $15,000.

B.1.j Groundwater Depth, Quality and Resistance to Impacts

Groundwater at the site is believed to be in excess of 155 feet below ground surface. The site is located on Bushelberger Mesa at an elevation of 6,035 feet. Approximately 1 mile south of the

facility several domestic water wells are located on the Leeper property. Groundwater in these wells is found at an elevation of approximately 5,880 feet. The Animas River is located approximately 1/3 mile due east of the site, also at an elevation of approximately 5,880 feet.

The surface geology at the site is comprised of the San Jose Formation. This is a massive sandstone ranging in thickness from 1,100 to 2,500 feet. The San Jose sandstone is anticipated to form a sufficient barrier to prevent seepage of surface waters from the lined evaporation pond. Inspection of road cuts and exposed outcrops surrounding the site indicates the presence of competent sandstone and shalestone beginning approximately 20 feet below the ground surface.

Below the San Jose is the Nacimiento Formation, a shale/mudstone/sandstone that is a main water bearing strata for the region. The groundwater from the Nacimiento is not of high quality. A water sample collected from one of the Leeper wells, which is believed to be completed in the Nacimiento, was tested for general water chemistry in May, 1997. High total dissolved solids (675 mg/L) and sulfate (309 mg/L) was reported by the testing laboratory. A copy of the laboratory report is attached.

B.1.k Notice Requirements

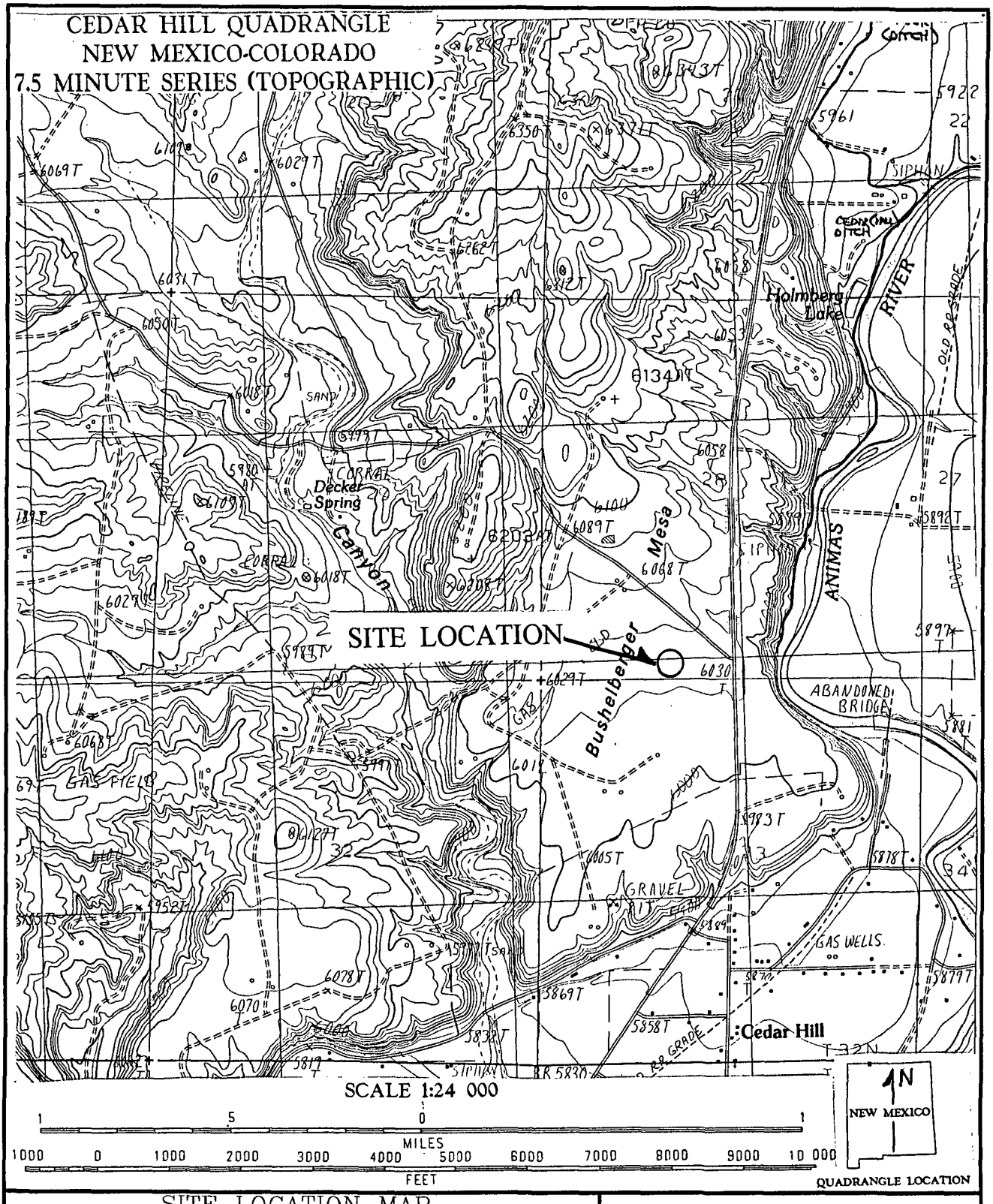
The Cahn Waste Management Facility is an existing facility previously permitted by the NMOCD. As such, it is grandfathered in as an approved facility and notice requirements are not applicable.

B.1.l Certification by Authorized Representative

An authorized representative has signed an original Form C-137 included with this application.

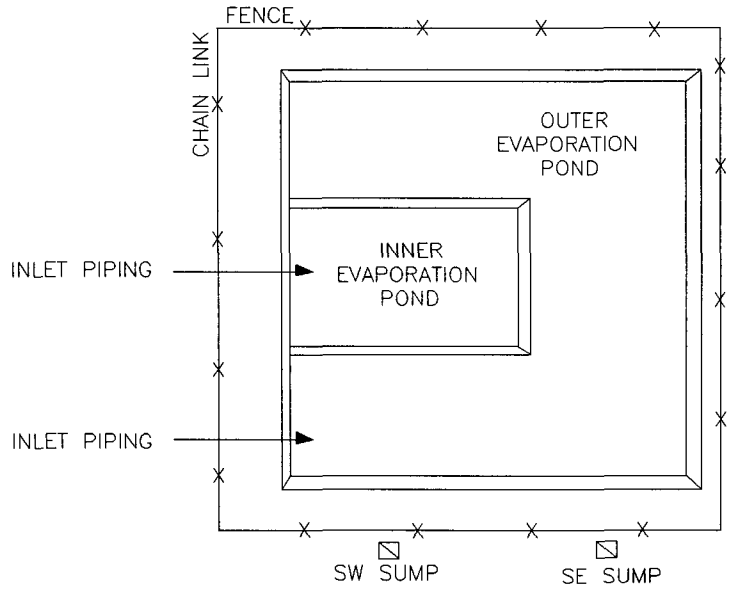
AMOCO PRODUCTION COMPANY
CAHN WASTE MANAGEMENT FACILITY
NMOCD RULE 711 APPLICATION

FIGURES



SITE LOCATION MAP AMOCO CAHN WASTE MANAGEMENT FACILITY SW/4 SEC 28 – T32N – R10W NMPM			*BLAGG ENGINEERING, INC.*
DATE: 3/98	FIGURE A	BY: JCB	*P.O. BOX 87, BLOOMFIELD, NM* *PHONE: (505)632-1199*

PLAN VIEW



SIDE VIEW

LEGEND

N

0 200 400 FEET

AMOCO PRODUCTION CO.
CAHN WASTE MGMT. FAC.
SAN JUAN CO., NEW MEXICO

MARCH 1998

BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

EVAP. POND SCHEMATIC

FIGURE 1	DRWN BY: JCB
CAHN2	PROJ MGR: JCB

AMOCO PRODUCTION COMPANY
CAHN WASTE MANAGEMENT FACILITY
NMOCD RULE 711 APPLICATION

LABORATORY REPORTS
(Section B.1.j - Groundwater Quality)

ANAITAS ENVIRONMENTAL LABS

PURGEABLE AROMATICS

Blagg Engineering, Inc.

Project ID:	Leeper	Report Date:	06/12/97
Sample ID:	Well #1	Date Sampled:	05/29/97
Lab ID:	6968	Date Received:	05/29/97
Sample Matrix:	Water	Date Analyzed:	06/11/97
Preservative:	Cool, HgCl2		
Condition:	Intact		

Target Analyte	Concentration (ug/L)	Detection Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	1.00
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	1.00
o-Xylene	ND	0.50
Total BTEX	**ND**	

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Trifluorotoluene	97	88 - 110%
Bromofluorobenzene	93	86 - 115%

Reference: Method 602.2, Purgeable Aromatics; Federal Register, Vol. 49, No. 209, Oct. 1984.

Comments:

Analyst

Review