### CROW BUTTE RESOURCES, INC.

86 Crow Butte Road P.O. Box 169 Crawford, Nebraska 69339-0169



October 30, 2009

Mr. Keith I. McConnell, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Mail Stop T8-F5
Washington D.C. 20555-0001

Subject:

2009 Annual Pond Inspection Report

Source Materials License SUA-1534

Docket Number 40-8943

Dear Mr. McConnell:

Enclosed please find a certified copy of the Crow Butte Mine 2009 Annual Pond Inspection Report. This report is required under License Condition 11.4 of Source Materials License SUA-1534 in accordance with the latest revision of the Evaporation Pond Inspection Program dated February 5, 1996. Mr. David Coe, an independent contractor and a registered Professional Engineer in the State of Nebraska, performed the pond inspection and the technical evaluation, and wrote the final report. Civil surveys were performed by Pine Ridge Land Surveys of Chadron, Nebraska.

If you have any questions, please feel free to contact me at (308) 665-2215 ext 114.

Sincerely, CAMECO RESOURCES CROW BUTTE OPERATION

Larry Teahon

Manager of Health, Safety and Environmental Affairs

Attachments: As Stated

cc: Jenny Abrahamson - NDEQ

Tom Young - Denver Office

CBO - File



## **CROW BUTTE RESOURCES, INC.**

# CROW BUTTE MINE DAWES COUNTY, NEBRASKA

#### 2009 POND INSPECTION REPORT

By: David V. Coe, PE Nebraska Registration No. E - 4295

October 23, 2009

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#### 1.0 **GENERAL**:

An annual inspection of the Crow Butte ISL Mine pond system is required by the Evaporation Pond Onsite Inspection Program dated December 1992 (Revised February 26, 1993, August 30, 1993 and February 5, 1996) and by reference under license condition number 11.4 of SUA-1534. The inspection program provides for systematic inspections and an annual technical evaluation and inspection report, which compares field inspection data with engineering design reports to assess structural stability and hydraulic and hydrologic capacities.

The 2009 annual report covers the time period of October 21, 2008 through September 29, 2009. During that period five evaporation ponds were in use, two R&D ponds (Cells 1 & 2) and three commercial ponds (Ponds 1, 3 and 4).

The R&D pond design report was prepared by Klohn Leonoff Consulting Engineers in 1983 and construction of R&D cells 1 and 2 was completed in 1985. The R&D ponds have two horizontal to one vertical interior and exterior embankment slopes with a 34-mil interior hypalon liner placed on top of six inches of sand. The underdrain leak detection system piping is located beneath the pond liner and reports to two six-inch monitor stand pipes. The overall depth of the R&D ponds is 15 feet and the maximum operating level is 12 feet. This provides three feet of freeboard.

The commercial evaporation pond design report was prepared by Western Water Consultants, Inc. in 1988. Construction of ponds 3 and 4 was completed in 1990 and construction of pond 1 was completed in 1992. The exterior slopes of these ponds are 2.5 horizontal to 1 vertical. The interior slopes are 2:1. Ponds 3 and 4 have a 20-mil PVC bottom liner, an intermediate geonet and a 60-mil high-density polyethylene (HDPE) top liner. In pond 1, a 30-mil very low-density polyethylene (VLDPE) bottom liner was installed with an intermediate geonet and 60 mil HDPE top liner. Each pond has a leak detection system consisting of six separate perforated four-inch pipes, which report to leak detection standpipes located on the interior slopes.

The overall depth of Pond 1 is 17 feet from crest to pond bottom and the maximum operating level is 12 feet. The 12 feet provides five feet of freeboard. The overall depth of Ponds 3 and 4 is 17.5 feet with a maximum operating level of 12.5 feet, which equates to a five-foot freeboard.

#### 2.0 REVIEW OF INSPECTION DATA:

The Evaporation Pond Onsite Inspection Program dated December 1992 as amended calls for systematic inspections on a daily, weekly, monthly and quarterly basis. Data from the inspection reports are shown on Charts 1 through 4 including pond depths and underdrain measurements. Zero pond depths are shown on the charts as a result of frozen pond conditions. Recording requirements indicates the Company should be recording the existing freeboard in conjunction with the depth of the pond water.

Two groundwater monitor wells are installed in the uppermost aquifer (Brule) in the commercial pond area and one groundwater monitor well in the R&D pond area. The wells are sampled quarterly for indications of leaks in the ponds. The wells provide backup leak detection for the underdrain leak detection system. The analysis of the quarterly samples tracks alkalinity, chloride, sulfate, sodium and conductivity. The concentration of the above chemicals is compared to baseline data established in 1990 and 1991. A review of the quarterly analysis reports for 2009 indicates all parameters have not substantially deviated from the baseline parameters.

A new sprinkler system was installed on the commercial evaporation ponds during 2006 & 2007. The new sprinkler systems have a large influence on the reduction or likelihood of leaks caused by abrasive action of the sprinkler system. The sprinkler system function is to increase the rate of evaporation from the three commercial ponds. The old aeration system was blamed for the principle cause of the leaks. At the time of this inspection pond all ponds had the new sprinkler system. The single, large spray guns were tried for a couple of years. Their use was discontinued and the large spray guns have been removed. Power requirements for the operation of the sprinkler systems were transferred from the middle of Ponds 3 & 4 to the north end of the commercial pond area. Power requirements for the south end of pond 4 have to be supplied through small generators.

#### 3.0 TECHNICAL EVALUATION

The technical evaluation of the Crow Butte Mine ponds utilizes data from the systematic inspection reports, results of the annual survey and a visual inspection of the ponds to assess the hydraulic capacities and structural stability of the ponds.

Diary notes of the annual inspection are attached to this report as Attachment 1. The notes cover the visual inspection of the five ponds and the review of the reports and records for the review period of October 2008 through September 22, 2009.

The annual survey (elevations of base four base lines) was completed in October and compared with previous annual survey data. No problems were indicated from a review of the survey information. The maximum differential between the two years of survey data was considered insignificant. Results of the annual survey are included as Attachment 2.

Photos of the ponds have been taken for the last ten years. There has been significant improvement in the vegetative cover of the pond embankment slopes over the course of those years. The gravel surfacing of the embankment berms improves the stability of the dam embankments. The mixture of vegetation and gravel surfacing gives the impression of a sparse vegetative cover. The gravel surfacing of the top of the berms prevents erosion near the top shoulder of the embankments and provides additional stability of the berm when vehicles travel on the berm during inclement weather. There are remaining sections of the pond's berms that could be surfaced with a limestone base course.

No problems in the existing embankment alignment or sloughing were detected during the visual inspection of the ponds, diversion ditches and embankments. There were no signs of seepage in the embankments or at the toe of the embankment slopes. The drainage channel between ponds 3 & 4 has significantly improved since 2005 and it was in good shape in 2009.

A review of the weekly, monthly and quarterly inspection reports indicate there were no significant shortfalls of the pond operations during the year of 2009. All the required inspections, reports and record keeping were accomplished during 2009. The monitoring well analysis reports were taken on a quarterly basis with the exception of the winter quarter (January to March). No significant deviation from baseline data was reported.

Calculations of diversion ditches were not included in this report, but are referenced in the previous annual reports. There have been no changes in the capacity of the diversion ditches over the last eleven years. The existing ditch calculation of ditch flow can be found in Attachment 2 of the 2001 annual inspection report. These ditch calculations are also permanent records on file in the office of Crow Butte Mine. The installed ditches are capable of containing the design storm (USBR one-hour thunderstorm, zone 3) with an adequate freeboard.

The ponds were operated in 2009 at a slight lower level than in 2008. The capability of transferring one pond's storage into another pond without overfilling was maintained during the 2008 year. As of September 29, 2009 the pond system contained about 38 acre-feet (AF) of stored water. The allowable storage capacity of the five ponds is 122.4 AF, which provides for transfer of any one pond's storage to another pond in the system in the event of an emergency.

#### 4.0 **CONCLUSIONS:**

The visual inspection of the five evaporation ponds and diversion ditches along with the review of the available inspection reports and data indicate the ponds are operating in the constraints of the engineering design.

The new aeration system reduces the chances of liner damage and leaks. The new system enhances the rate of evaporation. The salt build-up on the pond liner was not significant during this year's inspection. Vegetation was in good shape. Mowing of the embankment slopes has not been done this year. Mowing of the berm top might enhance the appearance of the graveled surfaces versus vegetative cover mixed in with the gravel surfacing. Absence of mowing reduces the slope damage on the embankments. There was an abundant presence of sweet clover on most of the slopes this year.

The pond system is operating within its designed storage capacity. Adequate freeboard existed in each pond throughout the year and reserve capacity was available in the system to transfer the contents of any one pond to other ponds.

The addition of gravel surfacing on the top of the embankment berms helps stabilize the embankments. Continuation of this practice would enhance the areas without gravel surfacing. Gopher and rodent maintenance has shown a good improvement over the last few years. During 2009, the injection of gopher repellent or poison was not accomplished with mechanical trenching machines. Poison was injected manually by hand. It would be a good improvement to the commercial pond area to work on the vegetation of the west and east embankment of pond #4 and maybe try to improve the vegetative cover on the east cut bank of pond #1. The erosion of the cut bank on pond #1 has little effect on the safety of the pond itself. Drainage or runoff channels improvement along the northeast end of Pond #1 is planned for the month of October.

The R & D ponds have excellent vegetative cover. The safety of the R & D ponds is sound.

### Commercial Pond 1 - 2009

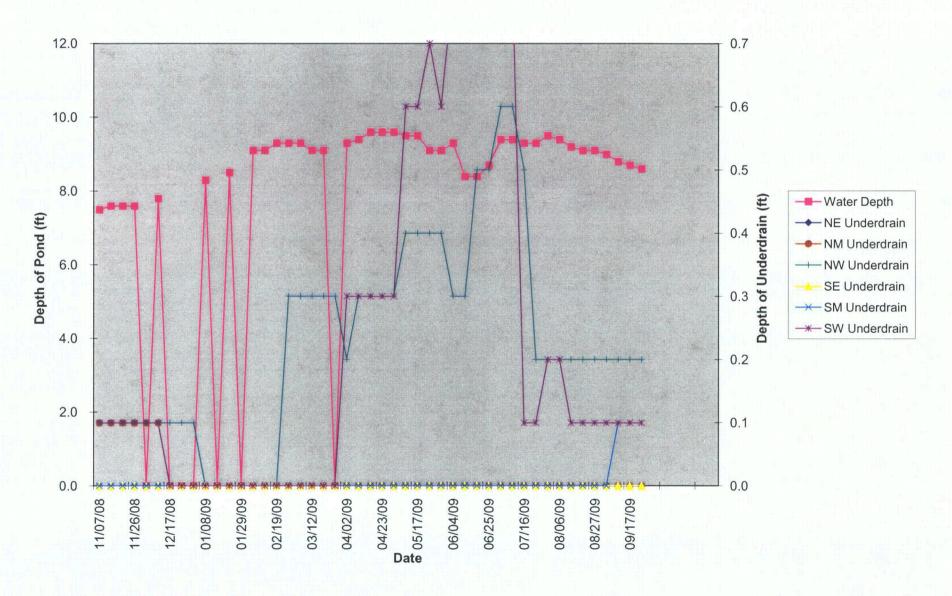


CHART 1

### Commercial Pond 3 - 2009

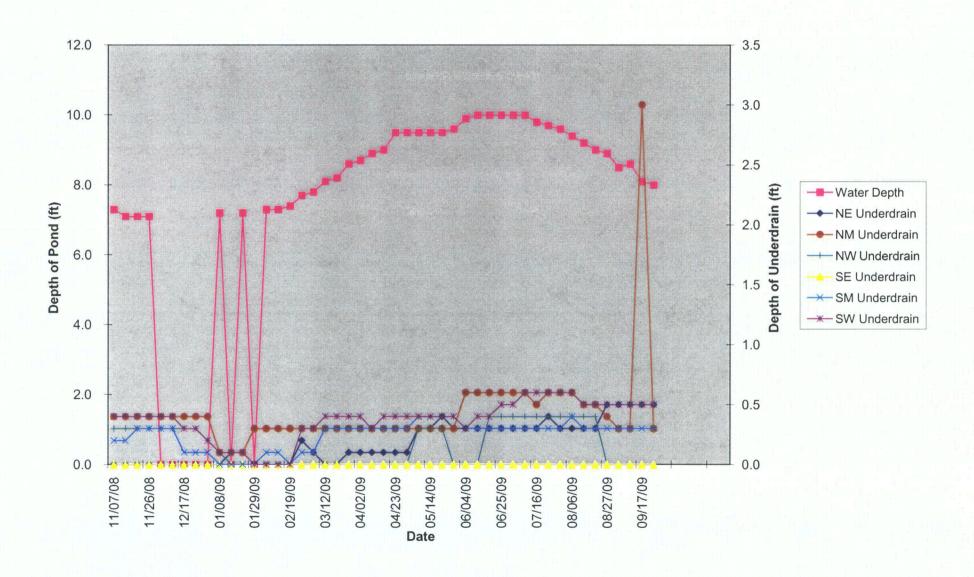
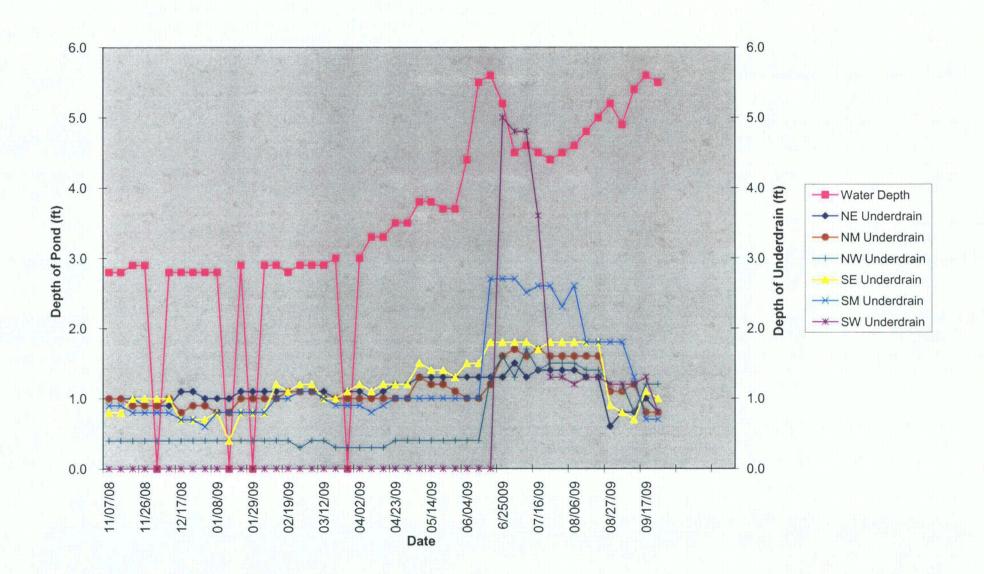


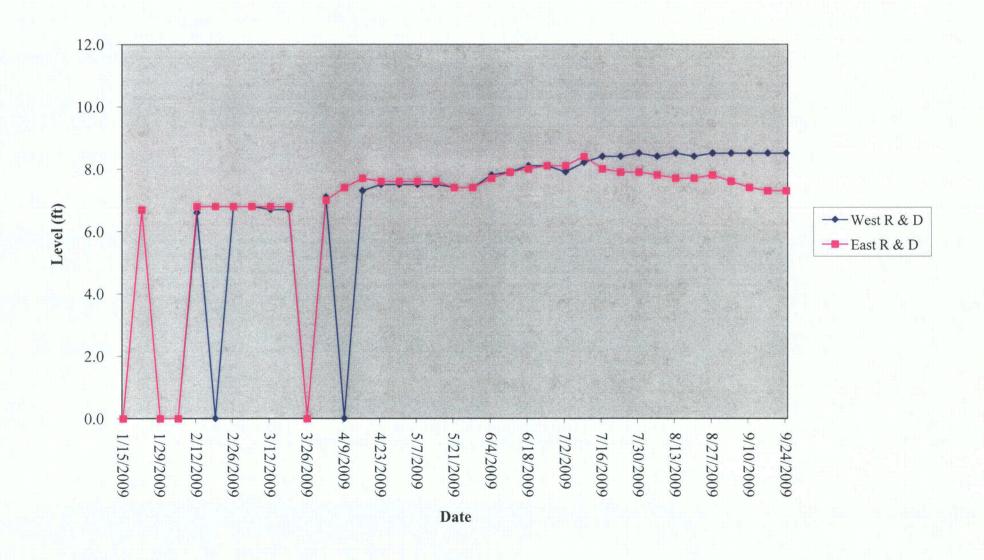
CHART 2

## Commercial Pond 4 - 2009

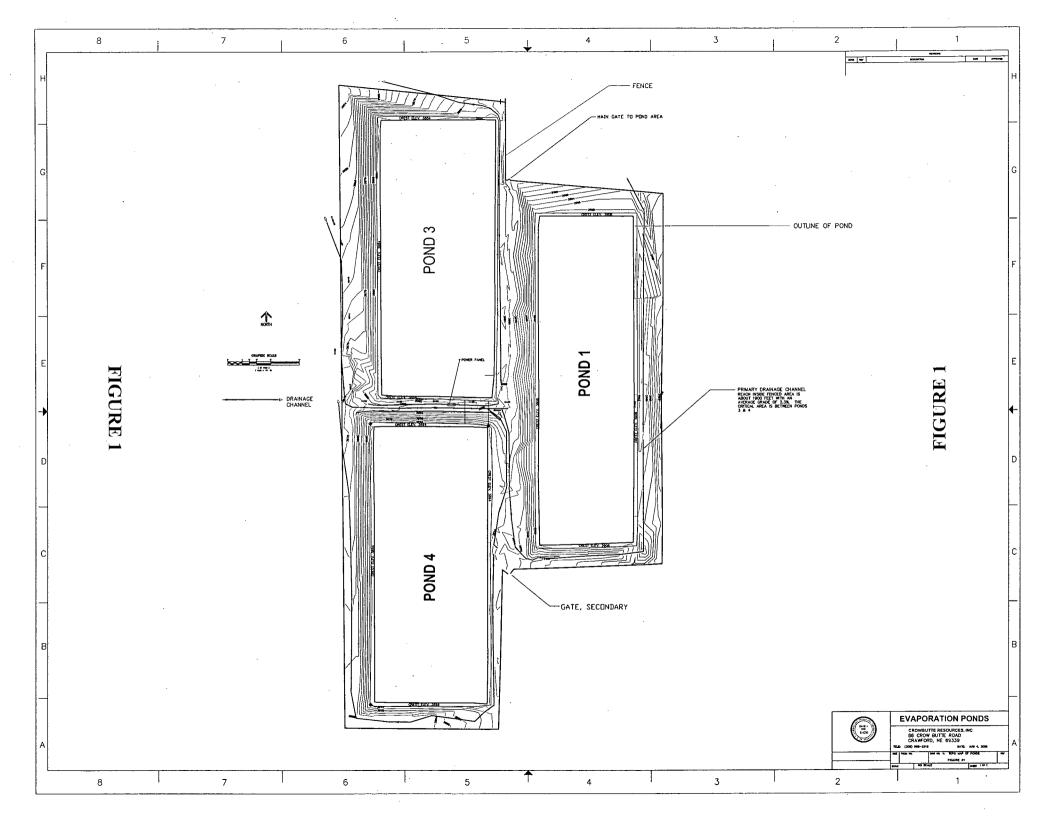


**CHART 3** 

R & D Pond Levels - 2009



**CHART 4** 



#### CBR POND INSPECTION, September 29, 2009 by David V. Coe, PE

I arrived at Crow Butte Resources mining operation about 9:10 this morning. I met with Walt Nelson. We discussed the safety requirements for performing work at Crow Butte Resources. There was a crew removing a pump for the evaporation system in Pond #3/ Walt thought he might have to help the crew, but later he accompanied me for the entire inspection of the commercial ponds and the R & D ponds. The annual survey of the elevation points had not been accomplished. Walt will send me the survey information after it is completed. Walt indicated they had experienced a couple of liner leaks in commercial ponds #1 & #4 this summer. They are still working on cleaning the monitoring drains for pond #4.

Walt Nelson and I began our inspection of the commercial retention ponds about 9:50 this morning. We started on the northwest corner of pond #1. Below are my visual comments as I walked around the top of the berms and the toe of the slopes of the three retention ponds. Pond #1 depth was 9.5' or about 5.5 feet of freeboard remaining.

On the west berm of pond #1 there is vegetation mixed with a limestone gravel surface. The vegetation showed improvement over last year and it was well established on the limestone surface. The vegetation mixed in with the gravel surfacing does not have any detrimental affect on the safety of the pond embankment. It would be nice to have all the berm tops of the ponds gravel surfaced with limestone base course material. The vegetation along outside slope of the pond is good and well established. I did not see any evidence of a longitudinal cracking along the embankment of pond number 1. The gopher control is currently accomplished by hand and Crow Butte employees. They manually inject poison in the holes of the gophers. I did notice one dead gopher. The gopher activity seemed to be more prevalent this year as compared to the last few inspections.

Walt and I discussed some grading work that is planned for the north east area of Pond #1. Walt would like me to stake an even grade for about 500 feet of drainage along the toe of the slope on pond #1. This could be improved by re-grading. To obtain an even grade might require some additional borrow dirt to be hauled into the pond area. There was some erosion along the access road to pond #1 on the north. The erosion was about 6" deep and on the north edge of the access road. Grading a crown on the road; then directing the surface runoff to the vegetation directly on the north side of the access road could reduce this erosion. Walt will call me sometime in October for slope staking the surface of the planned grading.

One could observe the white salt build-up of about 3 feet in width around the pond liner. This deposit was directly above the water line of pond #3. This salt deposit on pond #3 was more prevalent on this pond than pond #1 or pond #4. The NRC inspection recommended investigation of the potential harmful reaction on the pond liner resulting from the salty deposit.

The vegetation along the west embankment of pond #1 looks very good.

This completed the visual inspection of pond #1. We then began inspection of pond #3 at the northeast corner and walking to the west and along the west embankment of pond #3. The vegetation along the north and west embankments is very well established. The pond depth of pond #3 was 8.3 feet (this is to the water surface; which would leave about 6.7 feet of additional storage). The color of the water in all the evaporation ponds had a blue tint. Walt indicated they dye the water to enhance the evaporation. I walked along the west embankment. The vegetation was great. I then reviewed the vegetation establishment and drainage between ponds #3 & #4. This has been graded to drain and is now performing very well. The riprap embankment of the slope below the two ponds is in good shape and there was no evidence of new erosion.

There was some sloughing of the pond embankment along the west outer side. Filling in the slough areas and stabilizing the area with netting until the vegetation is established could improve this. The sloughing was not significant, about 6 to 10 inches lower than the main elevation of the pond berm. There were two locations along the west embankments of ponds #3 & #4 that had minor sloughing. This could be improved by adding good top soil in the deficient areas. The added top soil should be seeded, mulched and covered with a disposable landscape fabric. I will provide some specific information to Walt for this vegetation reestablishment.

I then inspected the embankment of pond #4. The pond depth of #4 was 5.7 feet leaving about 9.3 feet of additional storage. Walt indicated they are still having problems with leaking in Pond #4 when they raise the level of the pond beyond the 7 or 8 foot elevation. At this present time they are cleaning the water between the two pond liners. They have not been charging pond #4 from the plant operation water.

There were several patches to the pond liner material along the top portion of all the ponds. Walt indicated they were installing the patches themselves in lieu of hiring a firm from the Denver area. Significant pond liner damage is repaired via contract with a firm regularly involved in pond liner repair.

There was also a small section of pond #4, east berm, with barren soil and no vegetation. About the only way to correct this section is to add some deceit top soil to the barren soil and seed the area.

I completed the inspection of the commercial ponds by walking the east berm of pond #3. The top of the berm did not have gravel surfacing. The vegetation on the berm was rather sparse.

The inspection of the commercial ponds was completed by 11:00 this morning. Walt Nelson and I went to the Research & Development Ponds to inspect their condition.

The R & D ponds consist of two ponds about 15 feet deep with a filling allowable depth of 11.5 feet. The personnel adding water to the R & D ponds assume the free board

height of 11.5 feet. This marked elevation was noted on both pond liners. I noticed CBR was storing water in these ponds between 4 & 5 feet deep. The two ponds have a cutoff dike on their south side.

There has been no change in the cutoff dike. The dike still has a good growth of vegetation in the bottom of the channel. There was no standing water in the bottom of the cutoff dike.

CBR add a blue dye to the water to enhance the evaporation characteristics of the pond's water. The blue color was noticeable.

The depth of water on the east pond was 5.0 feet. The pond depth on the west pond was 5.0 feet. The ponds have had as much as 10 feet of water in them during the summer.

I walked around the berms of both R &D ponds. The vegetation is excellent. There is native gravel surfacing around the berms of these ponds. I completed my field inspection of the evaporation ponds about 11:40 this morning.

We went back to the office area and screened out clothing and skin for traces of radioactive material. Everything checked out okay.

I went into the office area and reviewed the daily and weekly pond inspection reports. I also reviewed the quarterly safety reports completed by Walt Nelson. The reports seemed to be in order and are being accomplished as outlined in their operational procedures or directives. There was corrective action taken by Walt Nelson to address this shortcoming. The records I reviewed were from October 6, 2008 to September 2009.

I reviewed Walt Nelson's quarterly reports.

I reviewed the ground water sampling of the commercial ponds and the R. & D ponds. There are two wells on the west side of the commercial ponds and one adjacent to and north of the R & D ponds. These wells have a benchmark analysis taken in 1991, and then the water is sampled on a quarterly basis to determine if any contamination of the ground water is evident. Below are reading of the last four years samplings:

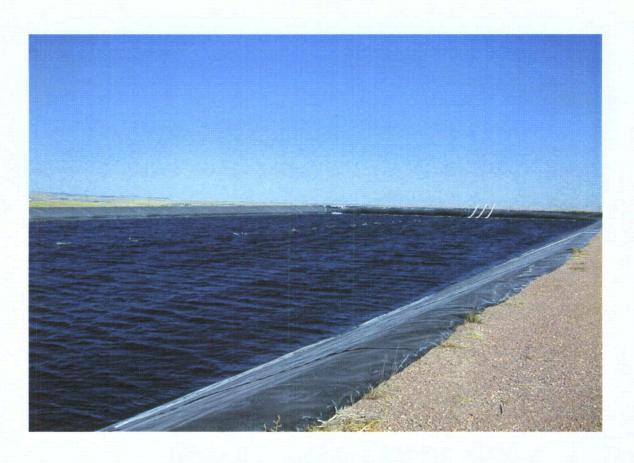
My opinion of the evaporation ponds is they are being administered in a safe and prudent manner. The monitoring for leaks and serious pond erosion is in compliance with the approved monitoring plan. Records of monitoring reports are being maintained in compliance with the monitoring plan.

•	Evaporation Pond Monitor Wells					
	•	<u>Alk</u>	<u>Cl</u>	Cond	<u>SO4</u>	Na
	<u>Date</u>	mg/L	mg/L	<u>µmhos</u>	mg/L	mg/L
Commercial Pond Monitor #1		•				
	12-Jun-06	200	2.7	430	13	15
	20-Jun-06	195	2.7	430	14	19
	26-Jun-06	188	5.0	430	15	16
	05-Jul-06	200	3.3	430	15	17
	10-Jul-06	195	2.7	430	14	16
	23-Feb-07	200	2.6	440	13	16
	21-May-07	200	3.0	430	12	18
	20-Aug-07	199	4.8	440	13	17
	16-Oct-07	198	4.5	440	14	15
	19-Feb-08	199	4.7	440	13	16
	30-Jun-08	198	4.8	440	14	16
	25-Aug-08	202	4.8	44	14	16
	10-Dec-08	202	4.9	440	13	14
	02-Apr-09	200	4.6	440	13	14
	11-Jun-09	200	5.0	440	15	16
	18-Jun-09	201	5.4	440	14	15
	26-Jun-09	200	5.1	440	14	16
	02-Jul-09	201	5.5	440	13	14
Base Line - Comm #1	02/07/91	197	2.9	423	20.43	17.67
Commercial Pond Monitor #2						
	12-Jun-06	190	5.4	430	14	14
	20-Jun-06	185	5.4	430	15	17
	26-Jun-06	188	5.0	430	15	16
	05-Jul-06	185	5.2	420	14	16
	10-Jul-06	190	5.4	430	14	15
	23-Feb-07	180	5.3	420	14	14
	21-May-07	185	4.0	420	12	16
	20-Aug-07	186	5.6	420	13	16
	16-Oct-07	184	5.7	420	15	13
	19-Feb-08	185	5.7	420	15	15
	30-Jun-08	184	5.6	430	15	14
	25-Aug-08	186	5.6	420	15	15
	10-Dec-08	183	5.6	420	15	13
	02-Apr-09	185	7.1	420	13	12
	11-Jun-09	180	5.7	420	15	15
	18-Jun-09	186	5.3	420	15	13
	26-Jun-09	185	5.5	420	13	14
	02-Jul-09	186	5.6	420	15	14
	10 <b>-Jul-</b> 09	185	5.8	420	14	12
Base Line - Comm #2	02/07/91	190	3.47	412	11.33	13.37

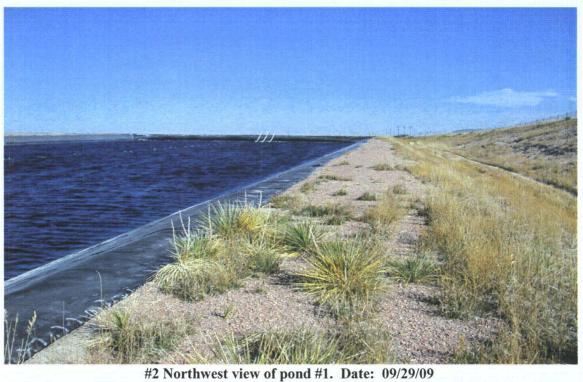
Pond Monitor Well R&D						
	08-Mar-06	170	1.6	390	7.7	15
	08-May-06	170	1.5	390	7.8	14
	28-Sep-06	160	1.5	400	9.0	16
	23-Feb-07	170	1.2	390	8.3	17
	21-May-07	170	1.3	400	6.6	17
	20-Aug-07	171	2.0	400	7.0	16
	16-Oct-07	170	2.2	400	9.2	14
	19-Feb-08	170	2.3	390	7.0	16
	30-Jun-08	170	2.2	400	10.0	16
	25-Aug-08	171	2.1	400	7.7	16
	10-Dec-08	169	2.2	390	7.6	14
	02-Apr-09	170	2.6	400	6.9	14
	18-Jun-09	172	2.3	400	9.4	15
	26-Sep-09	170	1.1	400	14.0	15
Base Line - R&D Mon. Well	01/15/91	175	1.7	409	10.8	14.5

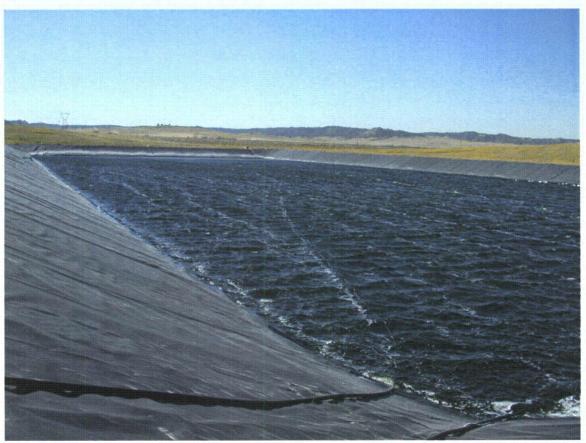
Photos of my inspection follow on the next six pages of this report.

DAVID V. COE, PE Nebraska Registration No. 4295

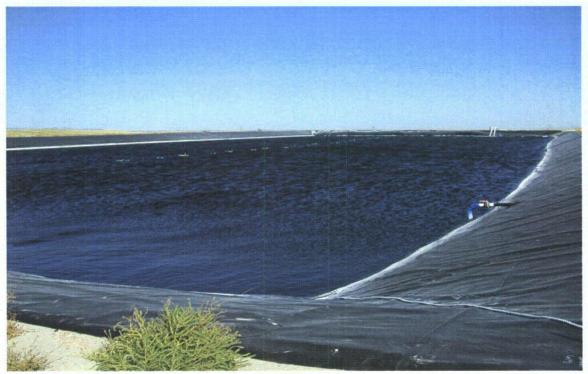


#1 Northwest view of evaporation pond #1, date: 09/29/09

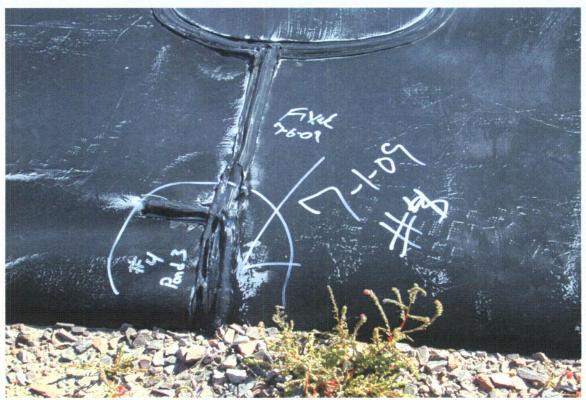




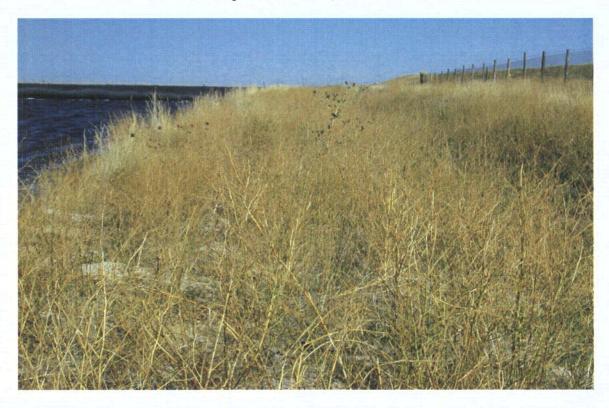
#3 Northeast view of pond #3. Date: 09/29/09



#4 Northwest view of pond #4. Date: 09/29/09



#5 liner repair on Pond #4, Date: 09/29/09



#6 View of vegetation & toe of slope of pond #4, looking to the north. Date: 09/29/09

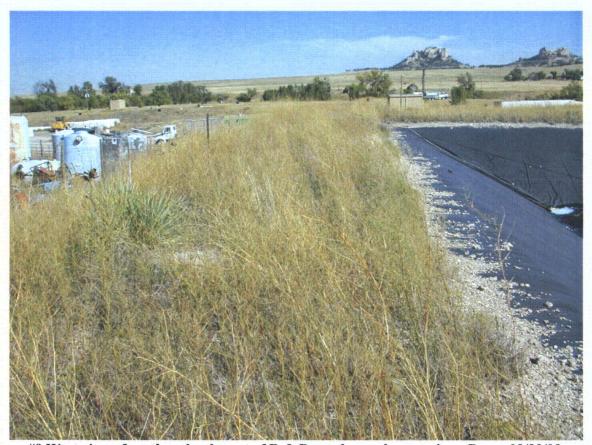


#7 East embankment of pond #4, example of poor soil condition & very little vegetative growth. 09/29/09



#8 Northeast views of R&D ponds. Cell #1 (west pond) in foreground.

Date: 09/29/09



#9 West view of south embankment of R & D ponds, good vegetation: Date: 09/29/09



Photo #10 View of diversion ditch on the south side of the R & D ponds Photo taken 09/29/09



#11 North view of west embankment & berm of pond #1, good protection against erosion of berm & protection of area adjacent to pond liner. 10/20/08



#12 North toe of pond #1 & access road showing erosion ditch on north side. 09/29/09

# CROW BUTTE RESOURCES, INC. RANGE ONE CROSS SECTIONS FOR PONDS STATION 0+00 October 21, 2009

LEFT OF BASELINE	SEA LEVEL ELEVATION	DESCRIPTION	SHOT TAKEN ON
2113221112		. •	
0.00	3851.76	0+00 B.L.	REBAR&CAP
89.05	3851.06	FENCE	GROUND
118.05	3852.66	GROUND	<b>HUB GONE</b>
132.25	3854.41	TOE OF SLOPE	TOE
162.95	3867.26	MIDPOINT SLOPE/DIRT	GROUND
195.35	3879.92	OUTSIDE OF BERM	GROUND
356.75	3880.86	MIDPOINT POND ON BERM	<b>REBAR GONE</b>
532.65	3881.0	OUTSIDE EDGE BERM	GROUND
538.45	3879.33	"V" OF DITCH	GROUND
548.55	3883.13	TOP OF SLOPE	GROUND
553.65	3883.96	FENCE	GROUND
564.25	3884.26	WEST EDGE OF ROAD	GROUND
576.65	3884.26	EAST EDGE OF ROAD	GROUND
585.15	3883.61	"V" OF DITCH	GROUND.
594.85	3885.06	TOP OF DITCH (new 2006)	GROUND
639.65	3888.59	0+00 E.B.	REBAR&CAP

Note: Elevations taken with a Topcon Total Station, with my estimated accuracy of .10 of a foot.

Philip R. Curd. LS-664



# CROW BUTTE RESOURCES, INC. RANGE TWO CROSS SECTIONS FOR PONDS STATION 5+00 October 21, 2009

LEFT OF BASELINE	SEA LEVEL ELEVATION	DESCRIPTION	SHOT TAKEN ON
DASELINE	LLL VIIIOI		TIMEDIA OTA
0.00	3862.23	5+00 B.L.	REBAR&CAP
92.6	3860.93	FENCE	GROUND
144.0	3862.34	HUB	HUB
149.9	3862.83	TOE OF SLOPE	GROUND
173.1	3871.35	MIDPOINT OF SLOPE	GROUND
194.6	3880.63	OUTSIDE EDGE BERM/DIRT	GROUND
205.1	3881.51	INSIDE EDGE BERM/LINER	LINER
522.15	3880.68	INSIDE EDGE BERM/LINER	LINER
528.02	3880.55	OUTSIDE EDGE BERM/REBAR	REBAR
537.6	3878.79	"V" OF DITCH	GROUND
563.4	3883.03	WEST EDGE OF ROAD	GROUND
577.2	3883.23	EAST EDGE ROAD	GROUND
608.9	3894.38	MIDPOINT OF SLOPE	GROUND
634.45	3904.82	OUTSIDE EDGE BERM	GROUND
636.78	3905.08	PREV. OUTSIDE EDGE BERM	REBAR
646.3	3905.34	INSIDE EDGE BERM	LINER
907.0	3905.13	EDGE BERM	LINER
909. <b>7</b>	3905.28	INSIDE EDGE BERM	LINER
915.37	3905.08	CENTER OF BERM	REBAR
918.8	3905.08	OUTSIDE EDGE BERM	GROUND
934.4	3900.01	W. EDGE FLAT BOTTOM DITCH	GROUND
945.3	3900.11	E. EDGE FLAT BOTTOM DITCH	GROUND
970.1	3908.83	TOE OF SLOPE	GROUND
992.7	3909.98	FENCE	GROUND
998.8	3911.08	TOP OF SLOPE	GROUND
1007.2	3914.23	W. EDGE OF ROAD	GROUND
1019.4	3914.81	E.EDGE OF ROAD	GROUND
1022.0	3916.03	E. TOE OF SLOPE	GROUND
1033.6	3919.78	MIDPOINT OF SLOPE	GROUND
1077.2	3929.08	TOP OF SLOPE	GROUND
1094.5	3929.56	5+00 E.B.	REBAR&CAP

# CROW BUTTE RESOURCES, INC. RANGE THREE CROSS SECTIONS FOR PONDS STATION 10+00 October 21, 2009

LEFT OF	SEA LEVEL	DESCRIPTION	SHOT
BASELINE	ELEVATION		TAKEN ON
		,	
0.00	3874.33	10+00 B.L.	REBAR&CAP
95.8	3868.97	FENCE	GROUND
122.1	3870.57	TOE OF SLOPE	HUB
147.9	3879.52	MIDPOINT SLOPE	GROUND
174.3	3890:12	OUTSIDE EDGE BERM	<b>REBAR GONE</b>
186.1	3890.87	INSIDE EDGE BERM	LINER
500.5	3890.89	INSIDE EDGE BERM	LINER
509.91	3889.86	OUTSIDE EDGE BERM	REBAR
537.1	3888.07	WEST EDGE ROAD	GROUND
545.2	3888.27	EAST EDGE ROAD	GROUND
553.2	3887.07	W. EDGE FLAT BOTTOM DITCH	GROUND
560.7	3887.27	E. EDGE FLAT BOTTOM DITCH	GROUND
570.1	3889.67	TOP OF DITCH	GROUND
598.8	3891.27	TOE OF SLOPE	HUB/gone
617.3	3897.97	MIDPOINT OF SLOPE	GROUND
634.6	3905.0	OUTSIDE EDGE BERM	REBAR
644.1	3905.45	INSIDE EDGE BERM	LINER
908.9	3905.07	INSIDE EDGE BERM	LINER
918.82	3905.04	OUTSIDE EDGE BERM	REBAR
932.0	3900.55	W. EDGE FLT. BTM. DITCH/TRAIL	GROUND
943.0	3900.65	E. EDGE FLT. BTM. DITCH/TRAIL	GROUND
974.6	3911.07	TOP OF DITCH	GROUND
989.6	3912.14	FENCE	GROUND
1014.4	3914.87	TOP OF DITCH	GROUND
1020.6	3913.67	"V" OF DITCH	GROUND
1024.6	3915.17	TOP OF DITCH	GROUND
1039.1	3918.02	MIDPOINT OF SLOPE	GROUND
1067.2	3920.72	TOP OF SLOPE	GROUND
1086.7	3920.05	LOW POINT	GROUND
1148.45	3924.97	10+00 E.B.	REBAR&CAP

# CROW BUTTE RESOURCES, INC. RANGE FOUR CROSS SECTIONS FOR PONDS STATION 15+00 October 21, 2009

LEFT OF BASELINE	SEA LEVEL ELEVATION	DESCRIPTION	SHOT TAKEN ON
0.00 99.67 136.77 155.97 173.17	3883.68 3875.56 3876.11 3883.59 3890.26	15+00 B.L. FENCE TOE OF SLOPE MIDPOINT OF SLOPE OUTSIDE EDGE BERM	REBAR&CAP GROUND HUB GROUND GROUND
173.17 185.97 499.37 508.87 514.97	3890.20 3891.11 3890.91 3891.11 3889.61	INSIDE EDGE BERM INSIDE EDGE BERM OUTSIDE EDGE BERM "V" OF DITCH	LINER LINER GROUND GROUND
523.47 535.77 554.47 559.47 696.47 789.47	3892.21 3892.58 3893.06 3894.66 3903.66 3905.01	TOP OF DITCH FENCE TOE OF SLOPE TOP OF SLOPE HIGH POINT LOW POINT	GROUND GROUND GROUND GROUND GROUND GROUND
985.62	3915.28	15+00 E.B.	REBAR&CAP