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

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



(308) 665-2215 (308) 665-2341 – FAX

November 2, 2007

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 Mail Stop T7-E18 U.S. Nuclear Regulatory Commission Washington D.C. 20555-0001

Subject: 2007 Annual Pond Inspection Report Source Materials License SUA-1534<sup>°</sup> Docket Number 40-8943

Dear Mr. McConnell:

Enclosed please find a certified copy of the Crow Butte Mine 2007 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, CROW BUTTE RESOURCES, INC.

pany techon

Larry Teahon Manager of Environmental, Health and Safety

Attachments: As Stated

cc:

Dr. Steven A. Fischbein, P.G. UIC/ME Program Manager Nebraska Department of Environmental Quality PO Box 98922 Lincoln, Nebraska 68509-8922 Mr. Steve Collings – Denver Office CBR File

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

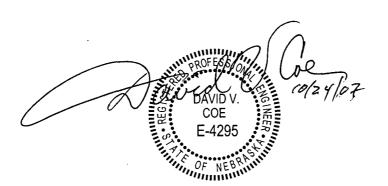
### **CROW BUTTE MINE**

# DAWES COUNTY, NEBRASKA

### 2007 POND INSPECTION REPORT

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

October 24, 2007



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#### 1.0 <u>GENERAL:</u>

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 2007 annual report covers the time period of November 2, 2006 through November 1, 2007. 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. A recent review of the recording requirements indicates the Company should be recording the existing freeboard in lieu of 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 2007 indicates all parameters have not substantially deviated from the baseline parameters.

A new sprinkler system has been installed on the commercial evaporation ponds during the last two years. 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 aeration system has been 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 has been discontinued and the large spray guns have been removed. Power requirements for the operation of the sprinkler systems is being transferred from the middle of Ponds 3 & 4 to the north end of the commercial pond area.

#### 3.0 <u>TECHNICAL EVALUATION</u>

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 December 2006 through October 2007.

The annual survey was done in October and compared with previous annual survey data. No problems were indicated from a review of the survey information. The most significant change in elevation was in a positive direction by adding gravel base course or blading the access road. The maximum differential between the two years of survey data was about 0.3'; which I consider insignificant. Results of the annual survey are included in Attachment 2.

Photos of the ponds have been taken for the last eight 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 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 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 was improved in 2005.

A review of the weekly, monthly and quarterly inspection reports indicate there were no significant shortfalls of the pond operations during the year of 2007 with the exception of no quarterly testing of the monitoring wells during the last quarter of 2006. All the required inspections, reports and record keeping were accomplished during 2006. The monitoring well analysis reports were taken on a quarterly basis. 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 nine 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 2007 at a slight lower level than in 2006. The capability of transferring one pond's storage into another pond without overfilling was maintained during the 2007 year. As of October 11, 2007 the pond system contained about 55 acrefeet (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. At the time of this inspection; Crow Butter Resources was cleaning the area between the main liner and leak detection liner at the south end of pond #4. This was necessary because of the liner rip caused from high winds in early May, 2006.

#### 4.0 <u>CONCLUSIONS:</u>

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. Vegetation was in good shape. Mowing of the embankment slopes has not been done this year. This practice reduces the slope damage on the embankments.

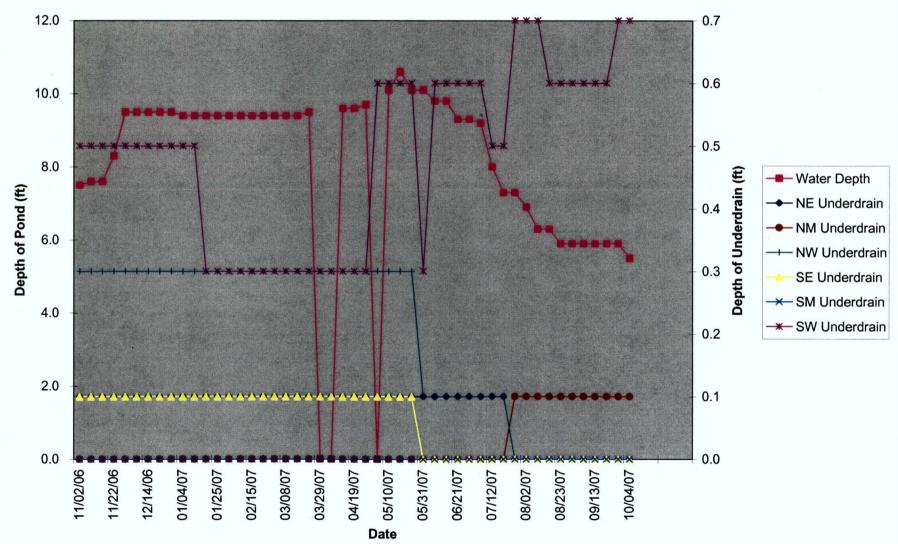
The pond system is operating within its designed storage capacity. Adequate freeboard existed in each pond throughout the year and reserve capacity was available in the system to transfer the contents of any one pond to other ponds.

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. There were very few dirt mounds in the fenced area of the ponds. It would be a good improvement to the commercial pond area to work on the vegetation of the west 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.

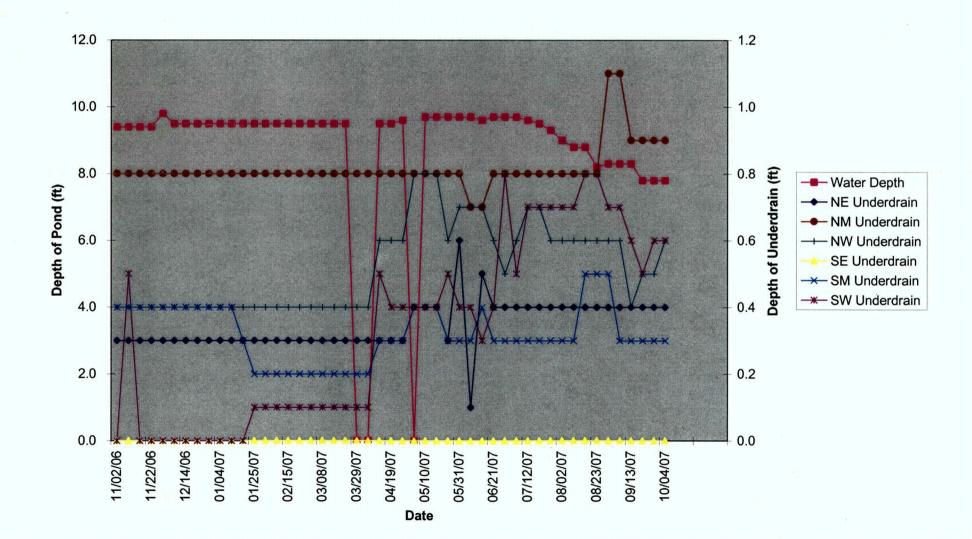
The R & D ponds have new signs on the main entrance gate, which is a good improvement.

David 6e 10/24/07

Commercial Pond 1 - 2007 CHART 1



Commercial Pond 3 - 2007 CHART 2



Commercial Pond 4 - 2007

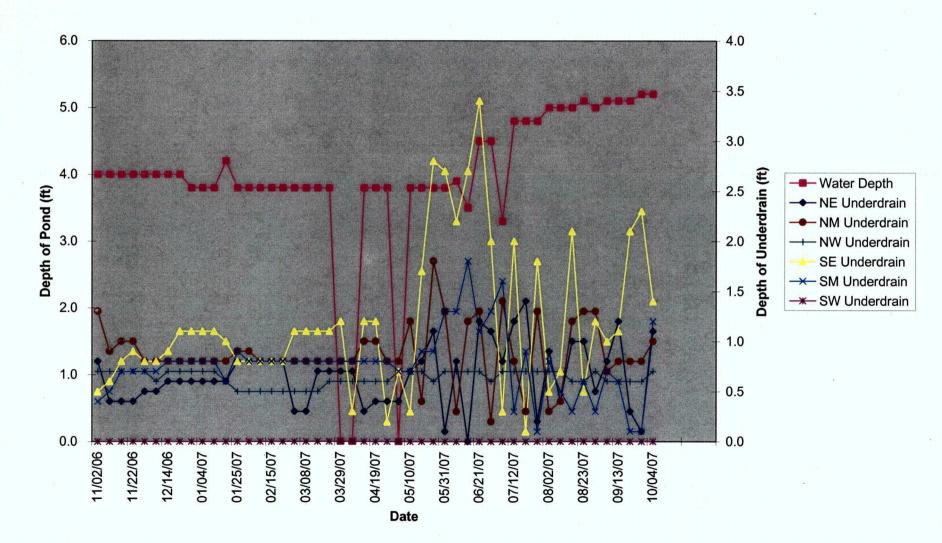
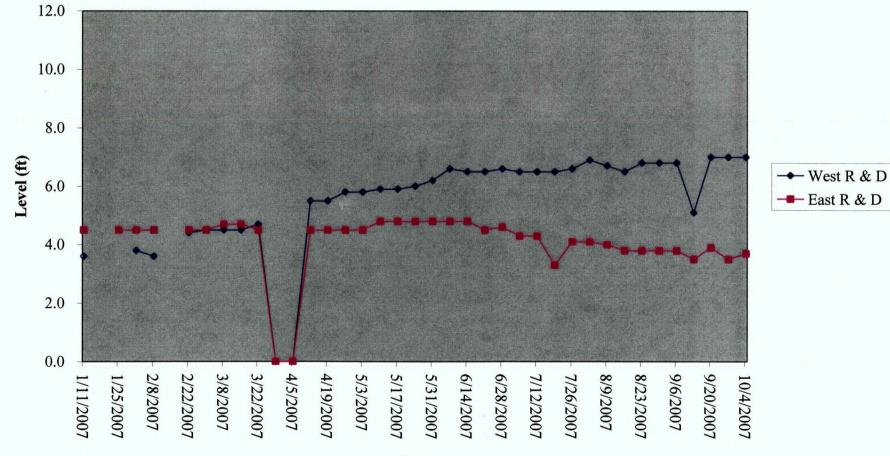


CHART 3

R & D Pond Levels - 2007 CHART 4



Date

8 7 6 5 4 3 2 1 --FENCE POND 3 OUTLINE OF POND 1 POND 1 - Ministry (Ramade Cuanto, Racio under Theory and a Ministry for the an a ministry for a large by contrast with a schedul route DRAINAGE THIS BRAINAGE CHANNEL IS RECOMMENDED FOR REPA FROM STA. 0-30 TO 3-60 POND 4 EVAPORATION PONDS  $\bigcirc$ Ť 7 3 4 8 6 5 2 1

FIGURE -

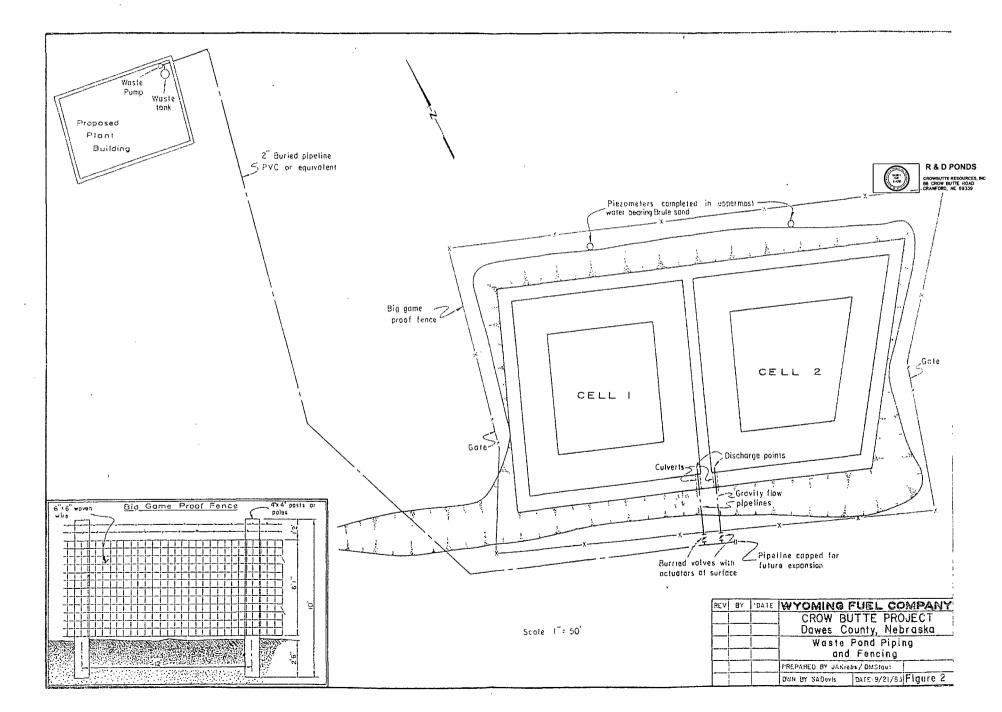


FIGURE - 2

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

Evaporation Holding Ponds Inspection by David V. Coe, P.E.

**October 11, 2007** I made an annual inspection of the ponds and record keeping files at Crow Butte Resources. I arrived at the site at 9:00 a.m. this morning. My contact at the mine site was Larry Teahon and Walter Nelson. I signed in and reviewed the current safety operational plans with Walt Nelson.

Walt Nelson and I made a physical inspection of the three commercial ponds and the two R & D ponds. I then reviewed the documentation data currently filed in their office.

Commercial ponds were inspected first. The weather was a little breezy and mild. We began the inspection about 9:35 a.m. The inspection consisted of a thorough walk around all embankments observing the vegetation and watching for any signs of current animal borrows. The bond liner was visually inspected.

We began our inspection pond #1, the far east pond. This pond seems to be the largest containment structure. We started at the northwest corner of the pond walking in a clockwise direction. I noticed some foaming of the pond water. It was probably the result of strong winds during the night. The vegetation on the north dam face looked good. The vegetation along the east cut slope was rather bare. I have not noticed any significant change in the above vegetation for the last three years. I believe the vegetation does not perform very well because of the lack of topsoil cover. The pond depth was 4.5 feet or measured in free board, not including the required five feet of safety free board would be 7.5 feet. The top of the dam embankment had limestone base course aggregate on the north half. The east half had natural soil cover. The vegetation on the south embankment was fair. I noticed a few gophers borrow on the southwest corner. Walt indicated he has been spot treating recent gopher activity.

Pond #3 was the next dam inspected. The vegetation around pond #3 is excellent. I did notice that the pond depths were currently being maintained substantially lower than normal. One could see the high water marks along the pond liner. The ponds were approximately 3 to 4 feet lower than normal pond depth. Pond # 3 depth marks are on the south side, just opposite of pond #1. The current free board for pond #3 was 5 feet, based on a pond height of 17.5 feet and a safety free board of 5 feet. There was a limestone base course cover on the top of pond #3 embankment along the north, west and south pond tops. I noticed the large aeration guns previously used along the embankment top were removed. Aeration of the ponds is accomplished with individual sprayers aligned in a north/south orientation near the middle of the ponds. A windsock is posted on a hill just east of the commercial pond area used to determine when it is appropriate to run the pond aeration sprays.

I checked the driveway between ponds #3 and #4 for noticeable standing water. Since the improvement of the driveway grade, I have not noticed any standing water. Vegetation is beginning to show signs of improvement along the driveway. The access

CBR - Annual Evaporation Pond Visual Inspections ATTACHMENT #1

road or driveway is chained off to retard the use of vehicles between the ponds. This has helped prevent erosion along the driveway.

We completed the inspection of the commercial ponds with the visual inspection of pond #4. There were two pumping systems on the north and south embankments of pond #4. They were introducing fresh water near the middle of the two pond liners and drawing out water at the two ends of the pond. The objective is to reduce the concentration of chemicals that increase the conductivity of the water between the two pond liners. Pond #4 has not been used very much during the last year or the level of the pond has been kept substantially lower than the other two ponds. The water depth had a free board of 7.1 feet

The pond liners for the commercial ponds seem to be more brittle than the pond liners for the research and development ponds. I noticed one or two cracks in the liner of pond #4 along the east slope of the pond. The water depth was about five feet below the crack. The repair of the liner performed last year was showing signs of separation. Walt Nelson indicated they have called the company to have the repair corrected. The west embankment slope of pond #4 was fair. Walt plans to install vegetative mats along the embankment to help with the vegetation improvement of the west bank slopes. The west top of the embankment had limestone base course installed. I noticed a small piece of liner floating on the top of the water on the southwest corner of pond #4. The east top of pond #4 did not have a limestone base course cover. The limestone base course stops near the alignment of the east/west fence on the south side of pond #1.

I did not notice any significant sloughing of the embankments on all the ponds. The visual inspection of the commercial ponds was completed about 10:50 a.m.

The visual inspection of the R & D ponds was completed next. I noticed new warning signs on the entrance gate to the pond area. This is an improvement of the weathered signs previously used on the gate. The diversion ditch on the south side of the two R & D ponds has not changed much since the last inspection. The only difference is the lack of standing water in the bottom of the diversion ditch. It has been so dry lately that the ditch water has evaporated. The vegetation along the pond embankments is in excellent condition. The tops of the embankments have native aggregate base course. This provides adequate protection against surface erosion except for the inward slope of the top. Gravel particles have a tendency to fall into the pond. The east cell had a collection of dries around the edge of the pond water. This may be the result of low use of this pond. I noticed during our inspection that wastewater from drilling operations was discharged into the west cell. The free board on the east cell was 8.5 feet based on an embankment top of 12.0 feet and safety free board of 3 feet. The free board on the west cell was 5.0 feet. The west cell was very clean looking compared to the east cell. The pond liner for the R & D ponds seems to be less brittle than the liner for the commercial ponds. The inspection of the R & D ponds was completed about 11:30 a.m.

We then checked back at the office. We checked our selves and clothing for traces of radioactivity. Nothing substantial noticed during the check out. I then went into the

CBR - Annual Evaporation Pond Visual Inspections ATTACHMENT #1

conference room to review the files maintained for the day-to-day operations and the weekly checks of the monitoring wells.

The first file check was the pond leak detection analysis. The period covered was January 4, 2007 to August 2, 2007. Since my physical inspection, Walt Nelson has sent me the results of the third quarter inspection; which took place during the third week of October. The company changed their method of reporting the pond depths this year. Previous reports logged in the water depth of the ponds. Current reporting logs in the existing free board less the safety free board. This change took place during the month of August of this year.

The next file I reviewed was the ground water sampling of the commercial ponds and the R & D ponds. The company reported a violation of monitoring. Testing of the ground water monitoring wells did not take place during the fourth quarter of 2006. Later reports indicated no significant changes in the chemical makeup of the ground water between the old reports and current chemical results of the ground water.

	Evaporation						
	Pond						
	Monitor						
	Wells	4 11	<u></u>				•
	-	<u>Alk</u>	Cl	<u>Cond</u>	<u>SO4</u>	<u>Na</u>	
	Date	mg/L	mg/L	<u>µmhos</u>	mg/L	<u>mg/L</u>	
Commercial Pond Monitor #1	18-Nov-05	205	2.7	430	14	16	
	7-Mar-06	198	3.2	430	14	15	
	8-May-06	195	3.1	430	12	14	
	15-May-06	195	2.7	430	13	15	
	23-May-06	198	3.8	430	14	14	
	6-Jun-06	200	3.1	430	14	15	
	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	
	5-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	430	12	18	
	20-Aug-07	199	4.8	440	13	17	
	16-Oct-07	198	4.5	440	14	15	
Base Line - Comm #1	02/07/91	197	2.9	423	20.43	17.67	
Commercial Pond Monitor #2	18-Nov-05	180	5.1	420	14	14	
	7-Mar-06	185	5.2	420	14	14	
· · · · · · · · · · · · · · · · · · ·	8-May-06	188	5.2	420	13	13	
	15-May-06	180	4.4	420	14	11	
	23-May-06	180	5.4	420	15	14	
	6-Jun-06	190	5.0	430	16	14	

Samples of the monitoring well reports for wells 1 & 2 and R&D well are shown below:

	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
	5-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	420	12	16
	20-Aug-07	186	5.6	420	13	16
	16-Oct-07	184	5.7	420	15	13
Base Line - Comm #2	02/07/91	190	3.47	412	11.33	13.37
Pond Monitor Well R&D	18-Nov-05	168	1.6	390	8.1	17
	8-Mar-06	170	1.6	390	7.7	15
	8-May-06	170	1.5	390 <sup>.</sup>	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	400	7.0	16
	16-Oct-07	170	2.2	400	9.2	14
Base Line - R&D Mon. Well	01/15/91	175	1.7	409	10.8	14.5

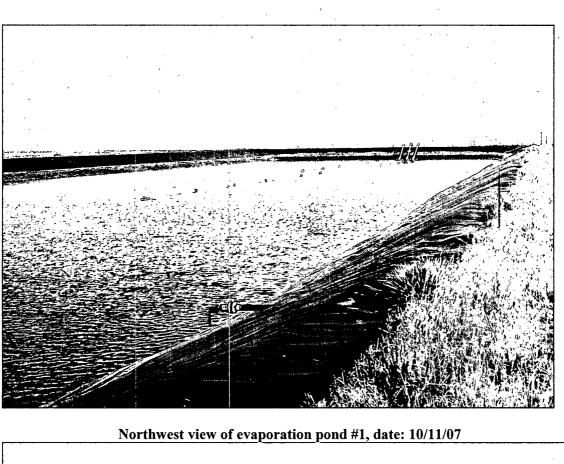
My opinion of the evaporation ponds is they are being administered in a safe and prudent manner. The monitoring for leaks and serious pond erosion is in compliance with the approved monitoring plan. Records of monitoring reports are in being maintained in compliance with the monitoring plan.

I surveyed myself for radioactive residue, signed out and left the site at 13:30 hours.

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

DAVID V. COE, PE

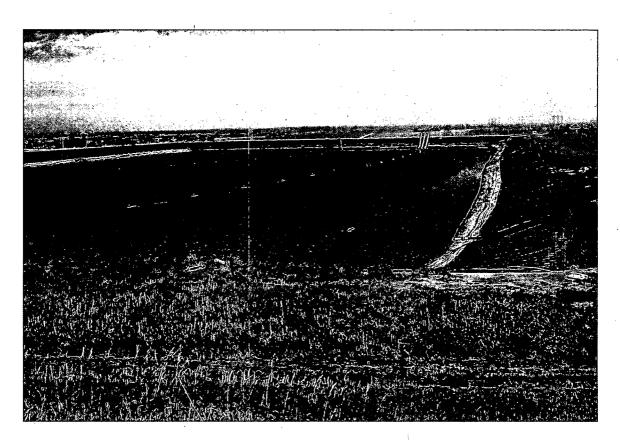
Nebraska Registration No. 4295





Northwest view of pond #3. Date: 10/11/07

CBR – Annual Evaporation Pond Visual Inspections ATTACHMENT #1



North view of west embankment of pond #3. Date: 10/11/07



Northeast view of pond #4. Date: 10/11/07

CBR – Annual Evaporation Pond Visual Inspections ATTACHMENT #1

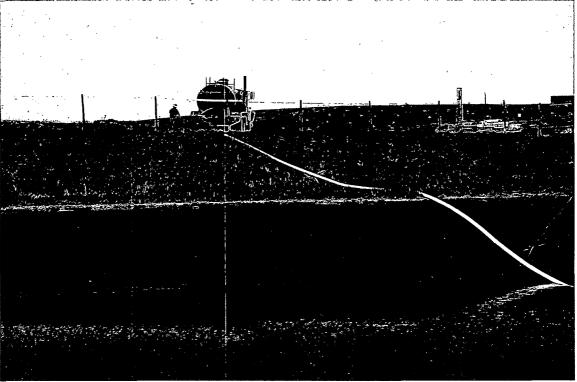


West embankment of Pond #4, dated: 10/20/06



CBR - Annual Evaporation Pond Visual Inspections ATTACHMENT #1

Channel improvement between ponds #3 & #4. No damp or wet areas noticed this year. Date: 10/11/07

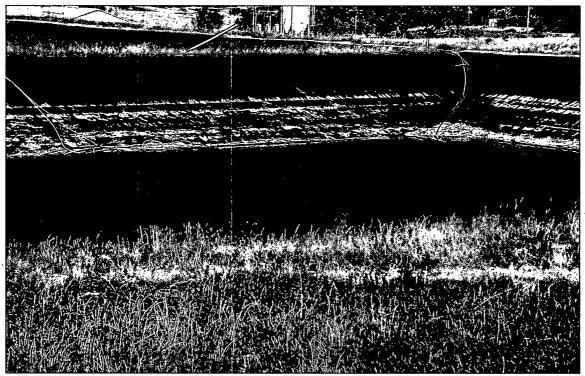


South view of Cell #1 (west) of R & D Ponds. 10/11/07

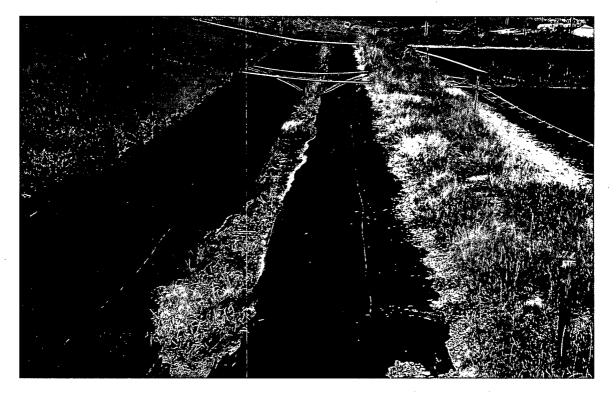


East view of north embankment of R&D ponds. Excellent vegetative cover. Date: 10/11/07

CBR – Annual Evaporation Pond Visual Inspections ATTACHMENT #1



Northwest view of Cell #2 (East): Date: 10/11/07



View of diversion ditch on the south side of the R & D ponds Photo taken 10/11/07

CBR – Annual Evaporation Pond Visual Inspections ATTACHMENT #1

#### CROW BUTTE RESOURCES, INC. RANGE ONE CROSS SECTIONS FOR PONDS STATION 0+00 October 4, 2007

LEFT OF	SEA LEVEL	DESCRIPTION	SHOT
BASELINE	ELEVATION		TAKEN ON
0.00			
0.00	3851.72	0+00 B.L.	REBAR&CAP
89.06	3850.88	FENCE	GROUND
118.04	3852.72	GROUND	HUB
131.82	3854.34	TOE OF SLOPE	TOE
163.08	3867.24	MIDPOINT SLOPE/DIRT	GROUND
195.22	3879.84	OUTSIDE OF BERM	GROUND
356.87	3880.77	MIDPOINT POND ON BERM	<b>REBAR GONE</b>
532.62	3880.94	OUTSIDE EDGE BERM	GROUND
538.27	3879.07	"V" OF DITCH	GROUND
548.32	3883.03	TOP OF SLOPE	GROUND
554.12	3883.86	FENCE	GROUND
564.10	3884.16	WEST EDGE OF ROAD	GROUND
576.67	3884.20	EAST EDGE OF ROAD	GROUND
585.27	3883.45	"V" OF DITCH	GROUND
594.82	· 3885.15	TOP OF DITCH (new 2006)	GROUND
639.73	3888.43	0+00 E.B.	REBAR&CAP

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

S/ Alten M. Curd

Alan M. Curd, LS-519

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#### CROW BUTTE RESOURCES, INC. RANGE TWO CROSS SECTIONS FOR PONDS STATION 5+00 October 4, 2007

LEFT OF BASELINE	SEA LEVEL ELEVATION	DESCRIPTION	SHOT TAKEN ON
DINGLERI			THE OT
0.00	3862.17	5+00 B.L.	REBAR&CAP
92.57	3860.90	FENCE	GROUND
144.06	3862.25	HUB	HUB
150.05	3862.87	TOE OF SLOPE	GROUND
173.10	3871.38	MIDPOINT OF SLOPE	GROUND
194.48	3880.45	OUTSIDE EDGE BERM/DIRT	GROUND
205.23	3881.39	INSIDE EDGE BERM/LINER	LINER
522,25	3880.54	INSIDE EDGE BERM/LINER	LINER
528.04	3880.39	OUTSIDE EDGE BERM/REBAR	REBAR
537.55	3878.66	"V" OF DITCH	GROUND
562.97	3882.74	WEST EDGE OF ROAD	GROUND
577.05	3883.14	EAST EDGE ROAD	GROUND
608.95	3894.18	MIDPOINT OF SLOPE	GROUND
634.37	3904.58	OUTSIDE EDGE BERM	GROUND
636.82	3904.92	PREV. OUTSIDE EDGE BERM	REBAR
646.25	3905.11	INSIDE EDGE BERM	LINER
907.05	3904.95	EDGE BERM	LINER
909.84	3905.01	INSIDE EDGE BERM	LINER
915.37	3904.85	CENTER OF BERM	REBAR
918.85	3904.91	OUTSIDE EDGE BERM	GROUND
934.28	3899.82	W. EDGE FLAT BOTTOM DITCH	GROUND
944.85	3899.02	E. EDGE FLAT BOTTOM DITCH	GROUND
970.10	3908.63	TOE OF SLOPE	GROUND
993.15	3910.03	FENCE	GROUND
998.65	3910.58	TOP OF SLOPE	GROUND
1007.08	3914.10	W. EDGE OF ROAD	GROUND
1019.30	3914.69	E.EDGE OF ROAD	GROUND
1021.90	3915.90	E. TOE OF SLOPE	GROUND
1033.50	3919.48	MIDPOINT OF SLOPE	GROUND
1077.20	3928.81	TOP OF SLOPE	GROUND
1094.51	3929.37	5+00 E.B.	REBAR&CAP

.

#### CROW BUTTE RESOURCES, INC. RANGE THREE CROSS SECTIONS FOR PONDS STATION 10+00 October 4, 2007

BASELINE ELEVATION TAKEN ON   0.00 3874.29 10+00 B.L. REBAR&CAI   95.85 3868.85 FENCE GROUND   122.15 3870.18 TOE OF SLOPE HUB	,
95.85 3868.85 FENCE GROUND	,
95.85 3868.85 FENCE GROUND	•
122.15 3870.18 TOE OF SLOPE HUB	
147.92 3879.41 MIDPOINT SLOPE GROUND	
174.17 3889.96 OUTSIDE EDGE BERM REBAR GON	E
186.123890.77INSIDE EDGE BERMLINER	
500.423890.79INSIDE EDGE BERMLINER	
509.953889.75OUTSIDE EDGE BERMREBAR	
537.31 3887.96 WEST EDGE ROAD GROUND	
545.40 3888.16 EAST EDGE ROAD GROUND	
553.20 3886.97 W. EDGE FLAT BOTTOM DITCH GROUND	
560.74 3887.00 E. EDGE FLAT BOTTOM DITCH GROUND	
570.07 3889.56 TOP OF DITCH GROUND	
598.86 3891.18 TOE OF SLOPE HUB/gone	
617.42 3898.04 MIDPOINT OF SLOPE GROUND	
634.64 3904.97 OUTSIDE EDGE BERM REBAR	
644.17 3905.34 INSIDE EDGE BERM LINER	
908.82 3905.00 INSIDE EDGE BERM LINER	
918.82 3904.91 OUTSIDE EDGE BERM REBAR	
931.97 3900.54 W. EDGE FLT. BTM. DITCH/TRAIL GROUND	
942.77 3900.35 E. EDGE FLT. BTM. DITCH/TRAIL GROUND	
974.55 3911.00 TOP OF DITCH GROUND	
989.77 3912.13 FENCE GROUND	
1014.19 3914.82 TOP OF DITCH GROUND	
1020.42 3913.46 "V" OF DITCH GROUND	
1025.04 3915.25 TOP OF DITCH GROUND	
1039.00 3917.86 MIDPOINT OF SLOPE GROUND	
1067.79 3920.61 TOP OF SLOPE GROUND	
1087.12 3919.98 LOW POINT GROUND	
1148.47 3924.82 10+00 E.B. REBAR&CAI	)

#### CROW BUTTE RESOURCES, INC. RANGE FOUR CROSS SECTIONS FOR PONDS STATION 15+00 October 4, 2007

LEFT OF	SEA LEVEL	DESCRIPTION	SHOT
BASELINE	ELEVATION		TAKEN ON
0.00	3883.67	15+00 B.L.	REBAR&CAP
99.70	3875.58	FENCE	GROUND
136.75	3876.09	TOE OF SLOPE	HUB
156.01	3883.69	MIDPOINT OF SLOPE	GROUND
173.10	3890.12	OUTSIDE EDGE BERM	GROUND
186.15	3891.03	INSIDE EDGE BERM	LINER
499.40	3890.83	INSIDE EDGE BERM	LINER
508.95	3890.94	OUTSIDE EDGE BERM	GROUND
515.05	3890.24	"V" OF DITCH	GROUND
523.90	3892.22	TOP OF DITCH	GROUND
536.19	3892.59	FENCE	GROUND
554.17	3892.97	TOE OF SLOPE	GROUND
559.25	3894.55	TOP OF SLOPE	GROUND GROUND
606 78	3903.55	HIGH POINT	
696.78 789.87	3903.33	LOW POINT	GROUND
985.56	3915.03	15+00 E.B.	REBAR&CAP

#### **ATTACHMENT #2**