

CROW BUTTE RESOURCES, INC.

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P.O. Box 169
Crawford, Nebraska 69339-0169



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September 25, 2000

U.S. Nuclear Regulatory Commission
Attention: Mr. Philip Ting, Chief
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety and Safeguards
Mail Stop T8A-33
Washington, D.C. 20555-0001

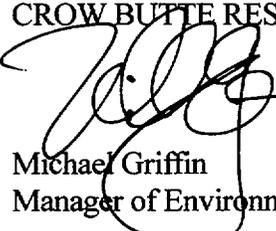
Re: Source Materials License SUA-1534
Docket No. 40-8943
Evaporation Pond 4 Liner Leak

Dear Mr. Ting:

On May 19, 2000 during routine evaporation pond monitoring of Crow Butte Resources, Inc. (CBR) Evaporation Pond 4, conductivity readings from the northwest underdrain indicated a potential pond liner leak. CBR has completed repairs to the primary liner on Pond 4 and has flushed the underdrains to ensure that any future liner leaks can be detected. Attached is a report describing the mitigative actions taken by CBR. Based upon the results of these actions, CBR believes that the leaks have been repaired and that Pond 4 may be returned to normal operational status.

If you have any questions or require any further information, please do not hesitate to call me at (308) 665-2215.

Sincerely,
CROW BUTTE RESOURCES, INC.


Michael Griffin
Manager of Environmental and Regulatory Affairs

Attachments: As Stated

cc: Mr. Steve Collings - CBR, Denver, Colorado
Mr. William Ford – USNRC, Uranium Recovery Branch

MISSOURI PUBLIC

CROW BUTTE RESOURCES, INC.



Crow Butte Mine
Evaporation Pond 4
Liner Leak Final Report



Introduction

On May 19, 2000 during routine evaporation pond monitoring of Crow Butte Resources, Inc. (CBR) Evaporation Pond 4, conductivity readings from the northwest underdrain indicated a potential pond liner leak. As required by License Condition 11.4 of SUA-1534, a sample was collected and analyzed for chloride, alkalinity, conductivity, sodium, and sulfate. The results of this sample indicated that the concentration of the parameters in the underdrain were similar to the pond contents. A second sample confirmed these results. Based upon these results, it was determined that a liner leak potentially existed in the northwest corner of Pond 4. As required by License Condition 12.3, a 30-day report was submitted on June 16, 2000 that discussed analytical data, immediate mitigative actions, and the results of those actions. This report provides the final results of actions taken by CBR that indicate that the leak in the pond liner has been repaired and the underdrains are returned to a condition that will allow the detection of any future liner leaks.

Liner Repairs

Upon confirmation of the liner leak on May 19, CBR began to lower the level of Pond 4 by pumping water to Pond 3. The initial water level in the pond at the time that the leak was discovered was 6 feet 11 inches. Concurrently, an immediate visual inspection of the liner in the northwest quadrant of the pond was performed. During the inspection, a patch was located that had a poor weld at one corner. The patch was located approximately one foot above the water level in the pond at the time the leak was detected. On June 7, 2000, Serrot International performed repairs on the patch.

As noted in the 30-Day Report, water was transferred from Pond 1 to increase the Pond 4 water level following completion of repairs. The sample of the underdrain taken on June 14 indicated concentrations well above those noted during the previous weekly monitoring. In addition, the conductivity in the northeast underdrain increased in the sample taken on June 21. Based upon these results, CBR determined that additional liner leaks might have been present near the north end of Pond 4. The water level in Pond 4 was again reduced to allow inspection for additional sources of leaks.

On July 31 and August 1, 2000, Serrot International returned to Crow Butte to perform a complete visual inspection of Pond 4. The pond level in Pond 4 at the time of the inspection and repairs had been lowered to 5 feet 11 inches. The Serrot inspection of the Pond 4 liner identified locations where additional repairs were required. The following actions were performed in the areas noted:

- A four-inch cut in the liner was located and patched in the southwest corner of the pond.
- Eight separate fatigue cracks were located in the liner in the center of the northwest side of the pond. The fatigue cracks were located from two to four feet above the pond water level. The fatigue cracks were patched.



- Two fatigue cracks were located in the liner on top of the northeast underdrain. The fatigue cracks were located from two to four feet above the pond water level. The fatigue cracks were patched.
- Eight new patches were placed over older patches on the center of the northeast side.

All patches were 60-mil high-density polyethylene (HDPE) liner material that was welded in place and vacuum tested for integrity.

Pond Monitoring

Following discovery of the leak, CBR began weekly sampling of the northwest underdrain with analysis for alkalinity, chloride, sodium, conductivity, and sulfate as required in License Condition 11.4. On June 21, CBR also began weekly sampling of the northeast underdrain based upon the observed increase in conductivity. Attachment 1 contains copies of the Weekly Evaporation Pond Underdrain Analysis forms and the analytical results from the CBR laboratory for the weekly samples from June 21 through September 20, 2000. Charts are also included for the northwest and northeast underdrains that plot the trends of the weekly analysis for the five indicator parameters.

In addition to the required weekly analysis for the underdrains, CBR obtained non-routine samples from pond monitor well CPM-1 and CPM-2. The pond monitors are completed in the first aquifer and are located downgradient of Pond 4 at the fenced restricted area boundary. Samples were obtained and analyzed for the indicator parameters on May 24, June 19, July 14, August 10, and August 28, 2000 to ensure that there was no indication of leakage in the secondary liner. Analytical results were consistent with historical sampling results and are contained in Attachment 2.

Attachment 3 contains copies of the Commercial Pond Inspection Forms for the period of June 11 to September 16, 2000. Water levels in the underdrains were constant during this period with the exception of the northwest and northeast underdrains during flushing and pumping activities. There was no indication of level changes in the northeast or northwest underdrains that were not directly related to underdrain cleanup activities.

Results of Mitigative Actions

Based upon the monitoring data, CBR believes that the apparent liner leaks that were detected in the northwest and northeast underdrains have been successfully repaired. Serrot International performed the repairs and vacuum testing on June 7 and July 31 to August 1, 2000. The ponds have been inspected several times to ensure there are no other sources of leaks that were not previously identified.

CBR has flushed and pumped the northwest and northeast underdrains since repairs were completed in early August to ensure that the conductivity is low enough to allow CBR to detect any future liner



leaks. Attachment 4 contains charts for the northwest and northeast underdrains that compares pond level with underdrain level and conductivity. The charts cover the period from January 6, 2000 through September 20 and clearly show the affect of the liner leaks of the underdrains and that the efforts to flush the underdrains have been success. The conductivity in the northeast and northwest underdrains on September 20 was 3,320 and 17,580 $\mu\text{mho/cm}$, respectively and is comparatively stable. In contrast, the conductivity of the Pond 4 contents on the same date was 141,400 $\mu\text{mho/cm}$. With an action level set at a conductivity of 50 percent of the pond contents, CBR can reliably detect an increase from the current conductivity levels in either underdrain should a liner leak develop in the future.

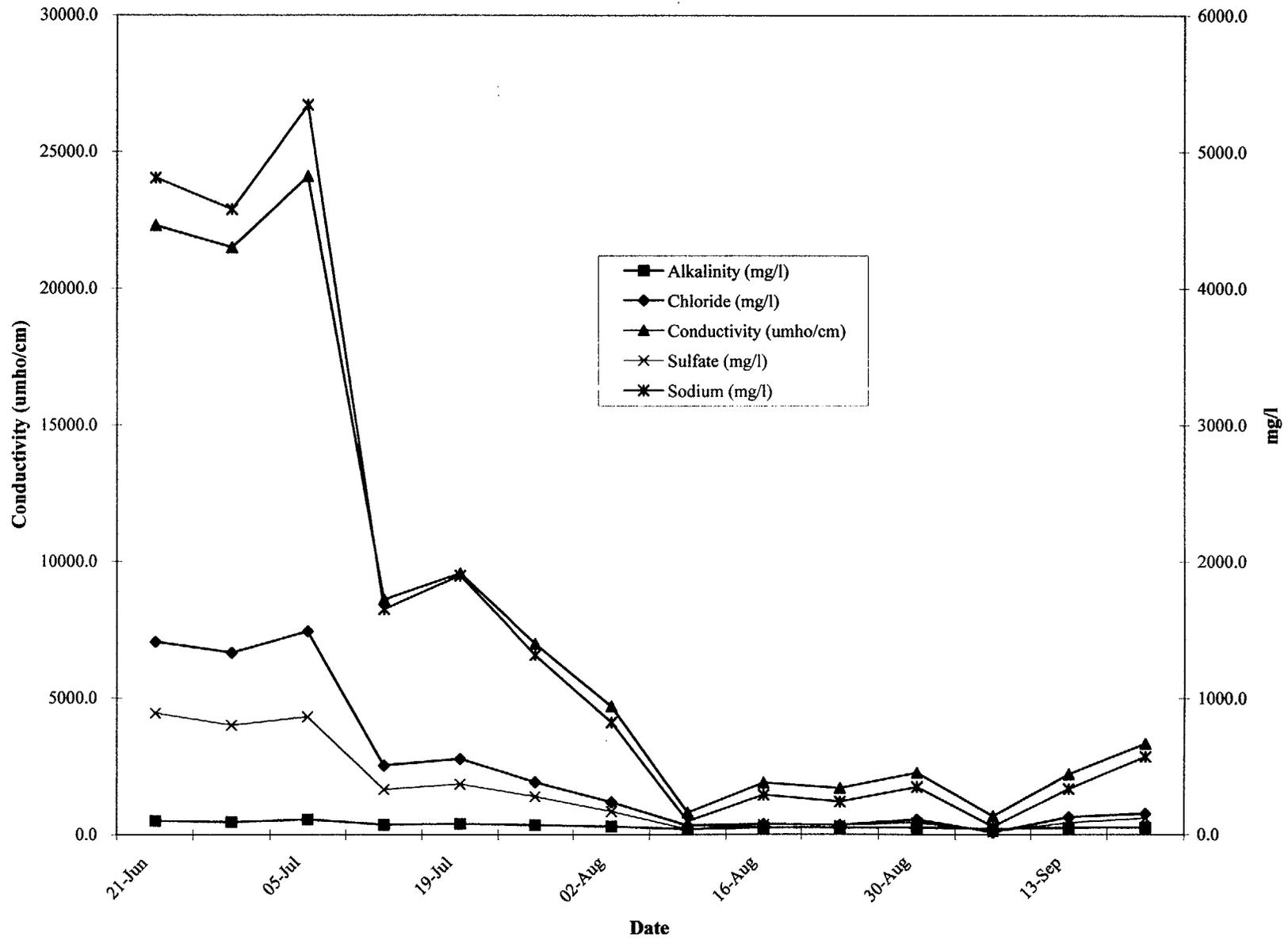
Based upon these results, CBR believes that the liner leak in Pond 4 has been successfully repaired and the underdrains returned to operational status. Weekly monitoring has been performed a minimum of 14 days following liner repairs as required in License Condition 11.4. CBR has met the license criteria as well as that set by NRC by letter dated July 18, 2000 concerning the Pond 4 liner leak. Therefore, CBR is returning Pond 4 to routine operational status and will discontinue the weekly underdrain sampling and analysis.



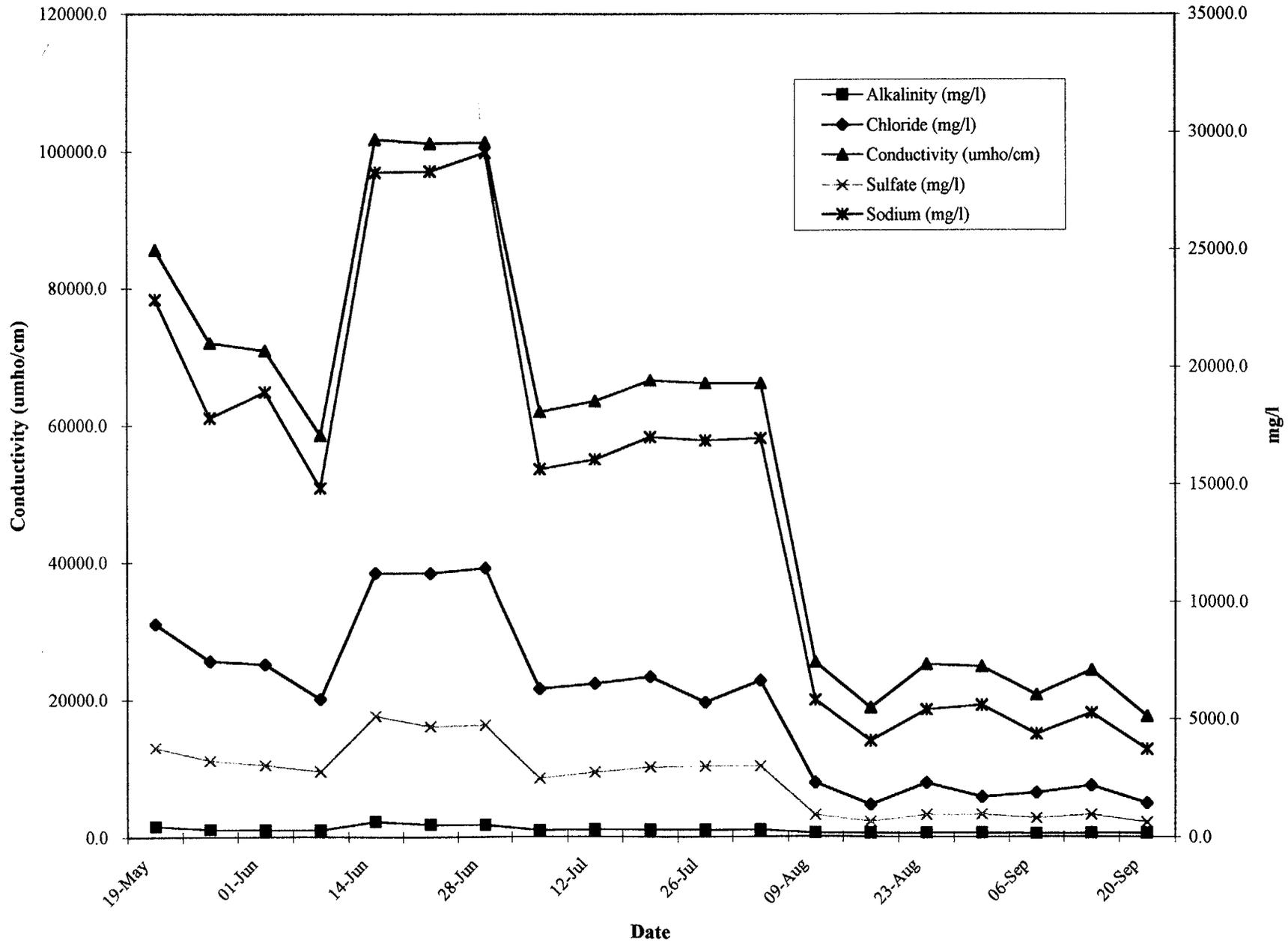
Attachment 1

Pond 4 Underdrain Analysis

Northeast Underdrain Analytical Results



Northwest Underdrain Analytical Results



**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8' 6"	/	/	/	/	89700
	N.E. UNDERDRAIN	3"	/	}	}	}	
	N.M. UNDERDRAIN	1"	/	}	}	}	
	N.W. UNDERDRAIN	4"	/	}	}	}	
	S.E. UNDERDRAIN	1"	/	}	}	}	
	S.M. UNDERDRAIN	0"	/	}	}	}	
	S.W. UNDERDRAIN	3"	/	}	}	}	763200
SOUTH POND 3	POND CONTENTS	9'	/	/	/	/	57100
	N.E. UNDERDRAIN	5"	/	}	}	}	
	N.M. UNDERDRAIN	9"	700	16°	1.21	847	
	N.W. UNDERDRAIN	3"	/	/	/	/	
	S.E. UNDERDRAIN	0"	/	}	}	}	
	S.M. UNDERDRAIN	5"	/	}	}	}	
	S.W. UNDERDRAIN	9"	700	18°	1.15	805	
POND NUMBER 4	POND CONTENTS	7' 5"	/	/	/	/	101900
	N.E. UNDERDRAIN	10"	-	17°	1.18	2	22300
	N.M. UNDERDRAIN	14"	2,100	16°	1.21	25411	
	N.W. UNDERDRAIN	17"	-	18°	1.15		101200
	S.E. UNDERDRAIN	16"	12,000	15°	1.21	14880	
	S.M. UNDERDRAIN	8"	1,800	16°	1.21	2178	
	S.W. UNDERDRAIN	5"	/	/	/	/	

DATE: 6 21 00
 ACTION LIMIT EXCEEDED? _____
 SAMPLER/ANALYST: OK

REMARKS: Water level too low to measure

21-Jun-00
LG/HD

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/l.	μmhos	mg/L	mg/L
Pond Underdrain # 4 NE	506	7,051	22,300	889	4,809

21-Jun-00
LG/HD

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>	<u>U₃O₈</u>
	mg/L	mg/L	μmhos	mg/L	mg/L	ppm
Pond Underdrain #4 NW	1,800	38,391	101,200	4,697	28,341	93.6

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8'5"					89000
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	2"					
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	2"					
	S.M. UNDERDRAIN	0"					
	S.W. UNDERDRAIN	2"					47000
SOUTH POND 3	POND CONTENTS	9'6"					90800
	N.E. UNDERDRAIN	5"					
	N.M. UNDERDRAIN	10"	700	16°	1.21	845	
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	5"					
	S.W. UNDERDRAIN	9"	6000	16°	1.21	726	
POND NUMBER 4	POND CONTENTS	6'9"					164500
	N.E. UNDERDRAIN	16"					21500
	N.M. UNDERDRAIN	14"	2000	17°	1.18	2360	
	N.W. UNDERDRAIN	12"					101400
	S.E. UNDERDRAIN	16"	12000	16°	1.20	14520	
	S.M. UNDERDRAIN	8"	1800	17°	1.18	2124	
	S.W. UNDERDRAIN	6"	2000	18°	1.15	2300	

DATE: 6-28-00

REMARKS: water level too low to measure

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: BL

28-Jun-00
LG/HD

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
POND #4 NW UNDERDRAIN	1,775	39,175	101,400	4774	29,145

28-Jun-00
LG/HD

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
POND #4 NE UNDERDRAIN	465	6660	21,500	801	4,578

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8'7"	}	}	}	}	
	N.E. UNDERDRAIN	0"	}	}	}	}	
	N.M. UNDERDRAIN	1"	}	}	}	}	
	N.W. UNDERDRAIN	4"	}	}	}	}	
	S.E. UNDERDRAIN	0"	}	}	}	}	
	S.M. UNDERDRAIN	0"	}	}	}	}	
	S.W. UNDERDRAIN	3"	47800	16.5°	1.21	57,838	
SOUTH POND 3	POND CONTENTS	9'6"	—	—	—	—	
	N.E. UNDERDRAIN	7"	445	15°	1.24	552	
	N.M. UNDERDRAIN	9"	730	17.5°	1.16	847	
	N.W. UNDERDRAIN	3"	}	}	}	}	
	S.E. UNDERDRAIN	0"	}	}	}	}	
	S.M. UNDERDRAIN	7"	2900	17°	1.18	3422	
	S.W. UNDERDRAIN	11"	650	23°	1.04	676	
POND NUMBER 4	POND CONTENTS	6'3"	—	—	—	—	
	N.E. UNDERDRAIN	10"	24000	19°	1.13	27,120	
	N.M. UNDERDRAIN	15"	2140	18°	1.15	2,461	
	N.W. UNDERDRAIN	9"	47400	19°	1.13	53,562	
	S.E. UNDERDRAIN	16"	12,800	17°	1.18	15,104	
	S.M. UNDERDRAIN	11"	1820	17.5°	1.16	2111	
	S.W. UNDERDRAIN	11"	2650	19°	1.13	2,995	

DATE: 5 July '00

REMARKS:

ACTION LIMIT EXCEEDED?

SAMPLER/ANALYST: von

05-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4 NW Underdrain	938	21,546	62,000	2,490	15,655

05-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	μ mhos	mg/L	mg/L
Pond #4	550	7,443	24,100	863	5,341
NE Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8' 6"					88600
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	2"					
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	0"					
	S.W. UNDERDRAIN	2"					61600
SOUTH POND 3	POND CONTENTS	9' 6"					91400
	N.E. UNDERDRAIN	5"					
	N.M. UNDERDRAIN	9"	700	18°	1.15	805	
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	6"	2800	18°	1.15	3220	
	S.W. UNDERDRAIN	9"	700	17°	1.18	826	
POND NUMBER 4	POND CONTENTS	6' 5"					106700
	N.E. UNDERDRAIN	7"					8610
	N.M. UNDERDRAIN	14"	2200	19°	1.13	2486	
	N.W. UNDERDRAIN	6"					63600
	S.E. UNDERDRAIN	13"	13500	20°	1.11	14985	
	S.M. UNDERDRAIN	8"	1900	19°	1.13	2147	
	S.W. UNDERDRAIN	6"	3400	18°	1.15	3910	

DATE: 7-12-00

REMARKS: \ water level too low to measure

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: BL

12-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4	1,025	22,330	63,600	2,753	16,059
NW Underdrain					

12-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4	357	2,524	8,610	331	1,652
NE Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8"9"					89200
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	1"					
	N.W. UNDERDRAIN	2"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	0"					
	S.W. UNDERDRAIN	3"					61500
SOUTH POND 3	POND CONTENTS	9"5"					93300
	N.E. UNDERDRAIN	5"					
	N.M. UNDERDRAIN	9"	800	20°	1.11	888	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	0"					
	S.M. UNDERDRAIN	6"	3000	20°	1.11	3330	
	S.W. UNDERDRAIN	9"	700	18°	1.15	805	
POND NUMBER 4	POND CONTENTS	6"1"					102900
	N.E. UNDERDRAIN	7"	9000	21°	1.08	9720	9570
	N.M. UNDERDRAIN	13"	2300	20°	1.11	2553	
	N.W. UNDERDRAIN	10"	—	—	—	—	66600
	S.E. UNDERDRAIN	16"	13600	18°	1.15	14950	
	S.M. UNDERDRAIN	8"	1900	20°	1.11	2109	
	S.W. UNDERDRAIN	5"					

DATE: 7-19-00

REMARKS: Water level too low to measure

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: BJ

19-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg L	µmhos	mg/L	mg/L
Pond #4	400	2,770	9,570	370	1,898
NE Underdrain					

19-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4	1,075	23,309	66,600	2,977	17,018
NW Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
N O R T H P O N D 1	POND CONTENTS	8' 8"					90,000
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	1"					
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	0"					
	S.W. UNDERDRAIN	3"					60,900
S O U T H P O N D 3	POND CONTENTS	9' 3"					94,700
	N.E. UNDERDRAIN	7"	500	17°	1.18	590	
	N.M. UNDERDRAIN	9"	700	20°	1.11	888	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	0"					
	S.M. UNDERDRAIN	5"					
	S.W. UNDERDRAIN	9"	700	19°	1.13	791	
P O N D N U M B E R 4	POND CONTENTS	5' 11"					112,400
	N.E. UNDERDRAIN	8"	8,000	20°	1.11	8,880	6,990
	N.M. UNDERDRAIN	13"	2,200	19°	1.13	2,486	
	N.W. UNDERDRAIN	9"		21°	1.08		66,200
	S.E. UNDERDRAIN	16"	13,000	18°	1.15	14,950	
	S.M. UNDERDRAIN	7"	2,000	20°	1.11	2,220	
	S.W. UNDERDRAIN	5"					

DATE: 7/26/00

REMARKS:

ACTION LIMIT EXCEEDED?

SAMPLER/ANALYST: Denise Kowalski

26-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg-L	mg-L	µmhos	mg-L	mg-L
Pond #4	1,075	19,587	66,200	3,007	16,867
NW Underdrain					

26-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	μmhos	mg/L	mg/L
Pond #4	350	1,921	6,990	279	1,315
NE Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8'6"					91,100
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	1"					
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	0"					
	S.W. UNDERDRAIN	3"					60,300
SOUTH POND 3	POND CONTENTS	9'1"					95,900
	N.E. UNDERDRAIN	8"					610
	N.M. UNDERDRAIN	8"	700	21°	1.07	864	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	0"					
	S.M. UNDERDRAIN	5"					
	S.W. UNDERDRAIN	9"	700	19°	1.13	1791	
POND NUMBER 4	POND CONTENTS	5'9"					116,500
	N.E. UNDERDRAIN	6"		22°	1.06		4690
	N.M. UNDERDRAIN	13"	2,300	20°	1.11	2,553	
	N.W. UNDERDRAIN	10"		22°	1.06		66,200
	S.E. UNDERDRAIN	16"	13,000	20°	1.11	14,430	
	S.M. UNDERDRAIN	9"	2,100	21°	1.08	2,268	
	S.W. UNDERDRAIN	5"					

DATE: 8-2-00

REMARKS:

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: Damon Kennedy

02-Aug-00
SM/LG

<u>Alk</u> mg/L	<u>Cl</u> mg/L	<u>Cond</u> cmhos	<u>SO₄</u> mg/L	<u>Na</u> mg/L
1,005	22,721	66,200	3,011	16,968

Pond #4
NW Underdrain

02-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Pond #4 NE Underdrain	300	1,182	4,690	170	822

03-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Pond #4	696	13,123	40,900	1,747	9,588
NW Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
N O R T H P O N D 1	POND CONTENTS	8'6"	-	-			91,000
	N.E. UNDERDRAIN	2"	-	-			
	N.M. UNDERDRAIN	0"	-	-			
	N.W. UNDERDRAIN	4"	-	-			
	S.E. UNDERDRAIN	1"	-	-			
	S.M. UNDERDRAIN	0"	-	-			
	S.W. UNDERDRAIN	3"	16000	21°	1.08	17280	26400
S O U T H P O N D 3	POND CONTENTS	9'1"	-	-			96,800
	N.E. UNDERDRAIN	8"	500	17°	1.18	590	
	N.M. UNDERDRAIN	11"	800	24°	1.02	816	
	N.W. UNDERDRAIN	3"	-	-	-		
	S.E. UNDERDRAIN	0"	-	-	-		
	S.M. UNDERDRAIN	7"	3175	20°	1.11	3524	
	S.W. UNDERDRAIN	9"	700	19°	1.13	791	
P O N D N U M B E R 4	POND CONTENTS	5'11"	-	-			117,400
	N.E. UNDERDRAIN	8"	1025	22°	1.06	1086	798
	N.M. UNDERDRAIN	13"	2275	21°	1.08	2457	
	N.W. UNDERDRAIN	9"	21000	22°	1.06	22260	25,400
	S.E. UNDERDRAIN	16"	13,500	21°	1.08	14580	
	S.M. UNDERDRAIN	11"	2000	21°	1.08	2160	
	S.W. UNDERDRAIN	11"	5000	22°	1.06	5300	

DATE: 8-9-00

REMARKS:

ACTION LIMIT EXCEEDED? NO

SAMPLER/ANALYST: P.S. / P.S.

09-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4	550	7,835	25,400	935	5,802
NW Underdrain					

09-Aug-00
SM/LG

<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
mg/L	mg/L	µmhos	mg/L	mg/L
190	320	798	37	97

Pond #4
NE Underdrain

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
N O R T H P O N D 1	POND CONTENTS	8' 5"	\	\	\		92,800
	N.E. UNDERDRAIN	2"	\	\	\		
	N.M. UNDERDRAIN	2"	\	\	\		
	N.W. UNDERDRAIN	3"	\	\	\		
	S.E. UNDERDRAIN	2"	\	\	\		
	S.M. UNDERDRAIN	0"	\	\	\		
	S.W. UNDERDRAIN	3"	17000	21°	1.08	18360	29,100
S O U T H P O N D 3	POND CONTENTS	9' 0"	\	\	\		99,400
	N.E. UNDERDRAIN	7"	500	11°	1.37	685	
	N.M. UNDERDRAIN	9"	800	21°	1.08	864	
	N.W. UNDERDRAIN	3"	\	\	\		
	S.E. UNDERDRAIN	1"	\	\	\		
	S.M. UNDERDRAIN	6"	3200	21°	1.08	2484	
	S.W. UNDERDRAIN	9"	600	24°	1.02	612	
P O N D N U M B E R 4	POND CONTENTS	5' 4"	\	\	\		123,000
	N.E. UNDERDRAIN	6"	1600	21°	1.08	1728	1888
	N.M. UNDERDRAIN	13"	2300	21°	1.08	2484	
	N.W. UNDERDRAIN	6"	12000	30°	.90	10800	18800
	S.E. UNDERDRAIN	16"	12000	21°	1.08	12960	
	S.M. UNDERDRAIN	9"	1900	22°	1.06	2014	
	S.W. UNDERDRAIN	6"	4700	23°	1.04	4888	

DATE: 8 16 00

REMARKS: Water level too low to measure

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: B

16-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	μmhos	mg/L	mg/L
Pond #4	525	4,701	18,800	659	4,074
NW Underdrain					

16-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4	250	372	1,888	71	288
NE Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8' 2"					86700
	N.E. UNDERDRAIN	1"					
	N.M. UNDERDRAIN	1"					
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	1"					
	S.W. UNDERDRAIN	2"	15900	19	1.13	16950	16610
SOUTH POND 3	POND CONTENTS	8' 9"					101200
	N.E. UNDERDRAIN	6"	550	19°	1.13	622	
	N.M. UNDERDRAIN	9"	800	19°	1.13	904	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	6"	19000	18°	1.15	21850	32500
	S.W. UNDERDRAIN	10"	800	20°	1.11	888	
POND NUMBER 4	POND CONTENTS	5' 7"					126600
	N.E. UNDERDRAIN	7"	5000 1900	21°	1.08	5400 2052	1.694
	N.M. UNDERDRAIN	14"	2300	20°	1.11	2553	
	N.W. UNDERDRAIN	7"	23000	21°	1.08	24840	25100
	S.E. UNDERDRAIN	16"	13000	20°	1.11	14430	
	S.M. UNDERDRAIN	9"	2000	20	1.11	2220	
	S.W. UNDERDRAIN	6"	4700	20°	1.11	5217	

DATE: 8 23 00

REMARKS: Water too to Measure

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: SH

23-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4 NW Underdrain	600	7,835	25,100	952	5,390

23-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Pond #4 NE Underdrain	230	332	1,694	65	239

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
N O R T H P O N D 1	POND CONTENTS	8' 2"					95,600
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	2"					
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	0"					
	S.M. UNDERDRAIN	0"					
	S.W. UNDERDRAIN	3"	12000	21°	1.08	12960	19360
S O U T H P O N D 3	POND CONTENTS	8' 7"					91,700
	N.E. UNDERDRAIN	7"	500	18°	1.15	575	
	N.M. UNDERDRAIN	9"	800	20°	1.11	888	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	5"	14000	20°	1.11	15540	27900
	S.W. UNDERDRAIN	9"	700	21°	1.08	756	
P O N D N U M B E R 4	POND CONTENTS	5' 5"					132,400
	N.E. UNDERDRAIN	6"	3100	21°	1.08	3348	2260
	N.M. UNDERDRAIN	15"	2300	22°	1.06	2438	
	N.W. UNDERDRAIN	9"	22000	21°	1.08	23760	24800
	S.E. UNDERDRAIN	17"	13000	19°	1.13	14690	
	S.M. UNDERDRAIN	9"	2100	21°	1.08	2268	
	S.W. UNDERDRAIN	6"	4900	21°	1.08	5292	

DATE: 8-30-10

REMARKS: Water level too low to measure

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: SL MB

30-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond #4	570	5,778	24,800	970	5,584
NW Underdrain					

30-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Pond #4	260	542	2,260	88	347
NE Underdrain					

R3P W-72"
E-8'5"

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8'2"	\	\	\	\	94700
	N.E. UNDERDRAIN	1"	\	\	\	\	\
	N.M. UNDERDRAIN	1"	\	\	\	\	\
	N.W. UNDERDRAIN	3"	\	\	\	\	\
	S.E. UNDERDRAIN	1"	\	\	\	\	\
	S.M. UNDERDRAIN	0"	\	\	\	\	\
	S.W. UNDERDRAIN	4"	3300	45°	*	*	12130
SOUTH POND 3	POND CONTENTS	8'6"	\	\	\	\	101600
	N.E. UNDERDRAIN	5"	\	\	\	\	\
	N.M. UNDERDRAIN	9"	700	20°	1.11	777	\
	N.W. UNDERDRAIN	3"	\	\	\	\	\
	S.E. UNDERDRAIN	0"	\	\	\	\	\
	S.M. UNDERDRAIN	5"	11000	20°	1.11	12210	25300
	S.W. UNDERDRAIN	10"	700	20°	1.11	777	\
POND NUMBER 4	POND CONTENTS	4'11"	\	\	\	\	131400
	N.E. UNDERDRAIN	10"	370	45°	*	*	671
	N.M. UNDERDRAIN	14"	2300	21°	1.08	2484	\
	N.W. UNDERDRAIN	10"	2100	21°	1.08	2268	20700
	S.E. UNDERDRAIN	16"	12000	19°	1.13	13560	\
	S.M. UNDERDRAIN	8"	2100	20°	1.11	2331	\
	S.W. UNDERDRAIN	5"	4800	20°	1.11	5328	\

DATE: 9/6/00
 ACTION LIMIT EXCEEDED? _____
 SAMPLER/ANALYST: MB-BL

REMARKS: | Water level too low to measure
 * pumped fresh water out of Mit
 Tank water real warm

06-Sep-00
SM/LG

	<u>Alk</u> mg/L	<u>Cl</u> mg/L	<u>Cond</u> µmhos	<u>SO₄</u> mg/L	<u>Na</u> mg/L
Pond #4 NE Underdrain	200	68	671	21	58

06-Sep-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	μmhos	mg/L	mg/L
Pond #4 NW Underdrain	490	6,412	20,700	804	4,360

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8'5"					94600
	N.E. UNDERDRAIN	2"					
	N.M. UNDERDRAIN	2"					
	N.W. UNDERDRAIN	4"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	0"				10,620	
	S.W. UNDERDRAIN	3"	750-9000	17°	1.18	805	13310
SOUTH POND 3	POND CONTENTS	8'6"					105200
	N.E. UNDERDRAIN	5"					
	N.M. UNDERDRAIN	9"	800	21°	1.08	864	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	5"	12000	18°	1.15	13800	21950
	S.W. UNDERDRAIN	10"	700	19°	1.13	791	
POND NUMBER 4	POND CONTENTS	5'					137000
	N.E. UNDERDRAIN	10"	1200	18°	1.15	1380	2200
	N.M. UNDERDRAIN	14"	2200	19°	1.13	2486	
	N.W. UNDERDRAIN	9"	20000	19°	1.13	22600	24300
	S.E. UNDERDRAIN	15"	12000	23°	1.04	12480	
	S.M. UNDERDRAIN	9"	2000	21°	1.08	2160	
	S.W. UNDERDRAIN	5"					

DATE: 9/13/00

REMARKS:

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: Mat JBL

13-Sep-00
SM/LG

	<u>Alk</u> mg/L	<u>Cl</u> mg/L	<u>Cond</u> umhos	<u>SO₄</u> mg/L	<u>Na</u> mg/L
Pond #4	240	628	2,200	85	332
NE Underdrain					

13-Sep-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	cmhos	mg/L	mg/L
Pond #4	530	7,449	24,300	964	5,260
NW Underdrain					

**CROW BUTTE PROJECT
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS**

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH-INCHES	INSTRUMENT READING	TEMPERATURE °C	TEMPERATURE CORRECTION	CONDUCTIVITY umhos/cm	LAB MEASUREMENT
NORTH POND 1	POND CONTENTS	8'2"					94,800
	N.E. UNDERDRAIN	0"					
	N.M. UNDERDRAIN	1"					
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	1"					
	S.M. UNDERDRAIN	0"					14,790 (u)
	S.W. UNDERDRAIN	3"	8000	19°	1.13	9040	3004
SOUTH POND 3	POND CONTENTS	8'4"					96,400
	N.E. UNDERDRAIN	6"	500	22°	1.06	530	
	N.M. UNDERDRAIN	8"	800	21°	1.08	864	
	N.W. UNDERDRAIN	3"					
	S.E. UNDERDRAIN	0"					
	S.M. UNDERDRAIN	5"	13000	17°	1.18	15340	27700
	S.W. UNDERDRAIN	9"	700	17°	1.18	826	
POND NUMBER 4	POND CONTENTS	5'3"					141400
	N.E. UNDERDRAIN	8"	1000	18°	1.15	1150	3320
	N.M. UNDERDRAIN	14"	2200	19°	1.13	2486	
	N.W. UNDERDRAIN	8"	13000	19°	1.13	14690	17580
	S.E. UNDERDRAIN	16"	13000	24°	1.02	13260	
	S.M. UNDERDRAIN	9"	2100	23°	1.04	2184	
	S.W. UNDERDRAIN	5"	5000	22°	1.06	5300	

DATE: 9/20/00

REMARKS:

ACTION LIMIT EXCEEDED? _____

SAMPLER/ANALYST: Max 106

20-Sep-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	μmhos	mg/L	mg/L
Pond #4	245	757	3,320	119	569
NE Underdrain					

20-Sep-00
SM/LG

Pond #4
NW Underdrain

<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
mg-L	mg-L	µmhos	mg-L	mg-L
520	4,903	17,580	631	3,717



Attachment 2

Pond Monitor Well CPM-1 and CPM-2 Analysis

WELL SAMPLING SHEET

Date: 6-19-00 Water Level (TOC): 46.09
 Sample ID No.: _____ Casing Height: 1.8
 Well Number: CPM 1 (South Monitor well) Water Level (TOC - CH): 44.29
 Aquifer: Brule Measuring Point: at wellhead
 Sample Method: pumpjack/submersible Casing Volume: 28 35
 Sampling Technician: P.P. Time Start Pumping: 1:13

SAMPLE TIME	pH	TEMP	SPECIFIC CONDUCTIVITY (umhos)	FLOW RATE (gpm)	TOTAL GALLONS PUMPED
1:19	8.27	116.9	x = 396	2	35
			x =		
			x =		
			x =		
			x =		
			x =	Total gallons pumped	41

Quantity of Sample Taken @ 4°UF : 1 liter

Sample Taken @ 4°F: _____

Acidified-HNO₃ F: _____

Acidified-H₂SO₄ F: _____

LABORATORIES	TYPE OF ANALYSIS	DATE SHIPPED
CBR	Na, Cl, SO ₄ , Cond, Alk	

REMARKS: Sampled after leak was discovered
in pond E1-SW underdrain.

sampled 6/19/00

20-Jun-00

LG/HD

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	μ mhos	mg/L	mg/L
Commercial Pond Monitor #1	198	3.1	424	12	16
Commercial Pond Monitor #2	185	5.4	421	13	15

WELL SAMPLING SHEET

Date: 6-19-00 Water Level (TOC): 39.33
 Sample ID No.: _____ Casing Height: 1.5
 Well Number: CPM2 (Brule well) Water Level (TOC - CH): 37.83
 Aquifer: Brule Measuring Point: at wellhead
 Sample Method: pumpjack/submersible Casing Volume: 31 39
 Sampling Technician: R.M. Time Start Pumping: 1:25

SAMPLE TIME	pH	TEMP	SPECIFIC CONDUCTIVITY (umhos)	FLOW RATE (gpm)	TOTAL GALLONS PUMPED
1:28	8.22	16.2	x = 396	16	39
			x =		
			x =		
			x =		
			x =		
			x =	Total Gallons Pumped	56

Quantity of Sample Taken @ 4°F : 1 liter

Sample Taken @ 4°F: _____

Acidified-HNO₃ F: _____

Acidified-H₂SO₄ F: _____

LABORATORIES	TYPE OF ANALYSIS	DATE SHIPPED
CBR	Na, Cl, SO ₄ , Cond, Alk	

REMARKS: SAMPLED AFTER LEAK WAS DISCOVERED IN
POND #1 - SW UNDERDRAIN.

Sampled 6/19/00
20-Jun-00
LG/ID

	<u>Alk</u> mg/l	<u>Cl</u> mg/l	<u>Cond</u> centhos	<u>SO₄</u> mg/l	<u>Na</u> mg/l
Commercial Pond Monitor #1	198	3.1	424	12	16
Commercial Pond Monitor #2	185	5.4	421	13	15

14-Jul-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	200	3.1	425	12	16
Commercial Pond Monitor #2	185	4.2	420	13	15

10-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	195	1.5	420	12	17
Commercial Pond Monitor #2	190	3.0	420	12	16
R & D Pond	150	0.7	400	7.6	17

WELL SAMPLING SHEET

Date: 8-28-00 Water Level (TOC): 46.18
 Sample ID No.: South Pond Monitor Casing Height: 1.8
 Well Number: CPM 1 Water Level (TOC - CH): 44.38
 Aquifer: Brule Measuring Point: at wellhead
 Sample Method: pumpjack (submersible) Casing Volume: 28 35
 Sampling Technician: RB Time Start Pumping: 1:43

SAMPLE TIME	pH	TEMP	SPECIFIC CONDUCTIVITY (umhos)	FLOW RATE (gpm)	TOTAL GALLONS PUMPED
2:20	7.78	16.8	x = 408	1.6	35
			x =		
			x =		
			x =		
			x =		
			x =	Total Gallons Pumped	36

Quantity of Sample Taken @ 4°F : 1 liter
 Sample Taken @ 4°F: _____
 Acidified-HNO₃ F: _____
 Acidified-H₂SO₄ F: _____

LABORATORIES	TYPE OF ANALYSIS	DATE SHIPPED
CBR	Na, Cl, SO ₄ , Cond, Alk	

REMARKS: _____

28-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg L	mg/L
Commercial Pond Monitor #1	200	2.8	426	12	15
Commercial Pond Monitor #2	190	4.2	420	12	13

WELL SAMPLING SHEET

Date: 8-28-60 Water Level (TOC): 39.63
 Sample ID No.: North Pond Monitor Casing Height: 1.5
 Well Number: CPM 2 Water Level (TOC - CH): 38.13
 Aquifer: Brule Measuring Point: at wellhead
 Sample Method: pumpjack/submersible Casing Volume: 31 39
 Sampling Technician: Boo Time Start Pumping: 1:54

SAMPLE TIME	pH	TEMP	SPECIFIC CONDUCTIVITY (umhos)		FLOW RATE (gpm)	TOTAL GALLONS PUMPED
1:57	7.82	16.1	x	= 396	14	39
			x	=		
			x	=		
			x	=		
			x	=		
			x	=	Total Gallons Pumped	57

Quantity of Sample Taken @ 4°UF : 1 liter
 Sample Taken @ 4°F: _____
 Acidified-HNO₃ F: _____
 Acidified-H₂SO₄ F: _____

LABORATORIES	TYPE OF ANALYSIS	DATE SHIPPED
CBR	Na, Cl, SO ₄ , Cond, Alk	

REMARKS: _____

28-Aug-00
SM/LG

	<u>Alk</u>	<u>Cl</u>	<u>Cond</u>	<u>SO₄</u>	<u>Na</u>
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	200	2.8	426	12	15
Commercial Pond Monitor #2	190	4.2	420	12	13



Attachment 3

Commercial Pond Inspection Forms

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 11 Jun '00 through 17 Jun '00

CHECK ACCORDINGLY: -OK -NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	9'6"	9'3"	9'	8'11"	8'6"	8'6"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				3"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Daily	8"	5	3.5	3"	3"	3"	3"
POND 3-DEPTH	Daily	9'5"	9'5"	9'5"	9'5"	9'3"	9'3"	9'3"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				5"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				5"			
S.W. UNDERDRAIN	Weekly				7"			
POND 4-DEPTH	Daily	6'7"	6'9"	7'	7'	7'5"	7'5"	7'5"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				9"			
N.M. UNDERDRAIN	Weekly				19"			
N.W. UNDERDRAIN	Weekly	11"	7.5	9	9"	14"	14"	14"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				6"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		VM	PK	PK	BZ	DK	DK	SH

COMMENTS: 6-12-00 Finished pumping 1" flush of Pond #4 NW underdrain (normal), added note fresh water. Sampled
 6-12-00 Pumped Pond #1 SW underdrain ~ 90 min @ 19ppm, dry. Sampled for conductivity while pumping
 6-13-00 Pumped Pond #1 SW underdrain ~ 16 min @ 19ppm, dry. Starting level ~ 3 1/2". Cond 59.7k.
 6-13-00 Pumped Pond #4 NW underdrain ~ 100 min @ 19ppm, dry. Start Cond 75.6k, End 38.7k.
 6-14-00 " " #4 NW " " 100 min @ " " "

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 6-18-00 through 6-24-00

CHECK ACCORDINGLY: | -OK X-NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'6"	8'6"	8'6"	8'6"	8'6"	8'5"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				3"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	3"	3"	3"	3"	3"	3"	2"
POND 3-DEPTH	Daily	9'1"	9'2"	9'2"	9'0"	9'	9'1"	9'2"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				5"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				5"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	7'5"	7'5"	7'5"	7'5"	7'4"	7'2"	7'0"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				10"	10"	10"	11"
N.M. UNDERDRAIN	Weekly				14"			
N.W. UNDERDRAIN	Weekly	14"	14"	17"	17"	17"	17"	15"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				5"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		SH	DK	SH	DK	DK	DK	FE

COMMENTS:

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 6-25-60 through 7-1-60

CHECK ACCORDINGLY: =OK =NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'7"	8'6"	8'5"	8'5"	8'5"	8'5"	8'5"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				2"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				2"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	2"	2"	2"	2"	2"	2"	2"
POND 3-DEPTH	Daily	9'3"	9'3"	9'5"	9'6"	9'7"	9'7"	9'7"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				5"			
N.M. UNDERDRAIN	Weekly				10"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				5"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	6'9"	6'9"	6'10"	6'8"	6'7"	6'7"	6'7"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	11"	10"	11"	10"	10"	10"	10"
N.M. UNDERDRAIN	Weekly				14"			
N.W. UNDERDRAIN	Weekly	15"	15"	14"	12"	8"	7"	6"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				6"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly				✓			
INSPECTED WASTE PIPELINE	Monthly				✓			
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		JE	RL	DIC	BA	SH	BA	TC

COMMENTS:

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 7-2-00 through 7-8-00

CHECK ACCORDINGLY: =OK =NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'5"	8'5"	8'7"	8'7"	8'7"	8'7"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				0"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	2"	2"	2"	3"	3"	3"	2"
POND 3-DEPTH	Daily	9'7"	9'7"	9'6"	9'6"	9'6"	9'6"	9'7"
EMBANKMENTS	Daily			✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				7"			
N.M. UNDERDRAIN	Weekly				4"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				7"			
S.W. UNDERDRAIN	Weekly				11"			
POND 4-DEPTH	Daily	6'7"	6'7"	6'3"	6'3"	6'2"	6'2"	6'3"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	10"	10"	10"	10"	10"	10"	7"
N.M. UNDERDRAIN	Weekly				15"	7"		
N.W. UNDERDRAIN	Weekly	7"	8"	8"	8"	9"	9"	6'5"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				11"			
S.W. UNDERDRAIN	Weekly				11"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		TC	TC	van	van	van	van	TC

COMMENTS: N.W. corner P⁴ gopher mound, about 1/2 way down slope.

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 7-9-00 through 7-15-00

CHECK ACCORDINGLY: | -OK X-NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'5"	8'6"	8'6"	8'6"	8'6"	8'8"	8'8"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				2"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	2"	2"	2"	2"	2"	2"	2"
POND 3-DEPTH	Daily	9'7"	9'7"	9'6"	9'4"	9'6"	9'6"	9'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				5"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				6"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	6'3"	6'3"	6'5"	6'5"	6'3"	6'3"	6'4"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	7"	7"	7"	7"	7"	7"	7"
N.M. UNDERDRAIN	Weekly				14"			
N.W. UNDERDRAIN	Weekly	6 1/2"	6"	6"	6"	6"	7"	9"
S.E. UNDERDRAIN	Weekly				13"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				6"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		TC	BL	OK	BL	OK	OK	con

COMMENTS:

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 7-16-00 through 7-22-00

CHECK ACCORDINGLY: OK NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'9"	8'9"	8'8"	8'9"	8'6"	8'6"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				2"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	2"	3"	3"	3"	2"	2"	2"
POND 3-DEPTH	Daily	9'6"	9'6"	9'6"	9'5"	9'5"	9'5"	9'4"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				6"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				6"			
S.W. UNDERDRAIN	Weekly				8"			
POND 4-DEPTH	Daily	6'2"	6'3"	6'	6'1"	6'3"	6'3"	6'3"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	7"	7"	8"	7"	7"	7"	7"
N.M. UNDERDRAIN	Weekly				13"			
N.W. UNDERDRAIN	Weekly	9"	9"	10"	10"	8.5"	9"	9"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				5."			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		JE	BJ	DK	Daniel Kennedy	SH	SH	SH

COMMENTS:

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 7-23-00 through 7-29-00

CHECK ACCORDINGLY: | -OK X=NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'6"	8'6"	8'5"	8'8"	8'8"	8'6"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	2"	2"	2"	3"	3"	3"	2"
POND 3-DEPTH	Daily	9'4"	9'4"	9'3"	9'3"	9'3"	9'3"	9'3"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				7"	7"	8"	8"
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				5"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	6'8"	6'9"	6'6"	5'11"	5'10"	6'1"	6'1"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	7"	7"	7"	8"	9"	10"	10"
N.M. UNDERDRAIN	Weekly				13"			
N.W. UNDERDRAIN	Weekly	9"	9"	9"	9"	9"	9"	9"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				5"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly						✓	
INSPECTED WASTE PIPELINE	Monthly						✓	
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		SH	BR	BL	Damir Kennedy OK	SH	SH	SH

COMMENTS:

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 7-30-06 through 8-5-06

CHECK ACCORDINGLY: J=OK X=NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'6"	8'5"	8'5"	8'6"	8'7"	7'7"	8'7"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly	X	X	⊗	1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	2"	2"	3"	3"	5"	3"	3"
POND 3-DEPTH	Daily	9'3"	9'3"	9'3"	9'1"	9'0"	9'1"	9'2"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	8"	8"	8"	8"			
N.M. UNDERDRAIN	Weekly				8"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				5"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	6'1"	6'1"	5'11"	5'9"	5'9"	5'9"	8'8"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	9"	9"	9"	6"	6"	6"	5"
N.M. UNDERDRAIN	Weekly	7"	9"	7"	13"			
N.W. UNDERDRAIN	Weekly	9"	9"	10"	10"	13"	9"	8"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				9"			
S.W. UNDERDRAIN	Weekly				5"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		JK	GH	DK	DK	DK	DK	van

COMMENTS: Note: Pumped 250 gal into Pd 4 NE on 7-27-00
 Pumped 1 hour out of Pd 4 NE on 7-31-00

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 6 Aug '00 through 12 Aug '00

CHECK ACCORDINGLY: =OK =NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'7"	8'7"	8'7"	8'6"	8'6"	8'6"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓		✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	3"	3"	7"	3"	4"	4"	4"
POND 3-DEPTH	Daily	9'2"	9'2"	9'1"	9'1"	9'1"	9'1"	9'1"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				8"			
N.M. UNDERDRAIN	Weekly				11"			
N.W. UNDERDRAIN	Weekly				3'			
S.E. UNDERDRAIN	Weekly				0'			
S.M. UNDERDRAIN	Weekly				7"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	5'8"	5'8"	5'7"	5'11"	5'11"	5'11"	5'11"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	5"	5"	14"	8"	8"	9"	9"
N.M. UNDERDRAIN	Weekly				13			
N.W. UNDERDRAIN	Weekly	8"	8"	13"	9"	8"	9"	9"
S.E. UNDERDRAIN	Weekly				16			
S.M. UNDERDRAIN	Weekly				18" B.			
S.W. UNDERDRAIN	Weekly				11" B.			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		um	um	um	P.S.	TC	TE	TC
COMMENTS: 8-7-00 pumped 300 gal into each of S.W. P1, N.E., N.W. P4 under drains after pumping them out. 8-8-00 11:45 S.W. under drain in P1 pumped out 8-8-00 16:00 N.E. under drain in P4 pumped out								

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week OF 13 Aug '00 through 19 Aug '00

CHECK ACCORDINGLY: ✓=OK X=NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'6"	8'5"	8'5"	8'5"	8'5"	8'4"	8'4"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓		✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				2"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				2"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	4"	4"	3"	3"	3"	3"	3"
POND 3-DEPTH	Daily	9'1"	9'0"	9'0"	9'0"	9'0"	9'0"	9'0"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓		✓
N.E. UNDERDRAIN	Weekly				7"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				6"			
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	5'6"	5'4"	5'4"	5'4"	5'4"	5'3"	5'3"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	9"	9"	9"	6"	6"	7"	8"
N.M. UNDERDRAIN	Weekly				13			
N.W. UNDERDRAIN	Weekly	9"	10"	10"	6"	6"	7"	8"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				9"			
S.W. UNDERDRAIN	Weekly				6"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		van	van	van	SL	SL	SL	van

COMMENTS:

8-14-00 Use the ~~underdrain~~ Probes, for pond depth, from now on instead of the liner measurement. e.d.
 8-14-00 19:45 S.W. underdrain P#1 pumped out
 8-15-00 11:25 N.E. underdrain P#4 pumped out
 8-15-00 13:40 N.W. underdrain P#4 pumped out

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 8-20-00 through 8-26-00

CHECK ACCORDINGLY: =OK =X-NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'4"	8'2"	8'2"	8'2"	8'2"	8'2"	8'3"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓		✓
N.E. UNDERDRAIN	Weekly				1"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				1"			
S.W. UNDERDRAIN	Weekly	3"	3" raised TO 9"	3" lowered TO 3"	3"	3"	4"	4"
POND 3-DEPTH	Daily	9'0"	8'9"	8'9"	8'9"	8'9"	8'5"	8'6"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓		✓
N.E. UNDERDRAIN	Weekly				6"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				7"	7" down TO 0"	5"	6"
S.W. UNDERDRAIN	Weekly				8'10"			
POND 4-DEPTH	Daily	5'3"	5'3"	5'3"	5'3"	5'3"	5'4"	5'2"
EMBANKMENTS	Daily	✓	✓	✓				
N.E. UNDERDRAIN	Weekly	7"	7"	7"	7"	7"	9"	7"
N.M. UNDERDRAIN	Weekly				14"			
N.W. UNDERDRAIN	Weekly	7"	9"	9"	8"	8"	10"	8"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				9"			
S.W. UNDERDRAIN	Weekly				6"			
INSPECTED INLET PIPING	Weekly							
PERIMETER FENCE	Weekly							
INSPECTED LINERS	Weekly							
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		JE	RH	RH	SH	SH	MB	van

COMMENTS: 8/21/00 Added 6" fresh flush water to SW underdrain of Pond #1 per log book @ 1155 hrs. CRH
 8/22 Started pumping SW underdrain of Pond #1 @ 1125 hrs per log book CRH.
 8/22 stopped pumping SW underdrain at 1504 hrs.
 8/23 pumped underdrain pond 3 S.M. starting 7", pump off at 1300 level at 0' approx 145 Gal pumped out
 8/23, 1050

8/25 Pumped out Pond #3 S.M., Pond #4 NE, NW Pond #1 SW

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week OF 8-17-00 through 9-2-00

CHECK ACCORDINGLY: =OK =NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'3"	8'3"	8'3"	8'2"	8'2"	8'2"	8'2"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				2"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	3"	3"	3"	3"	6"	8"	5"
POND 3-DEPTH	Daily	8'6"	8'6"	8'6"	8'7"	8'5"	8'5"	8'5"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				7"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly	5"	5"	5"	5"	6"	7"	7"
S.W. UNDERDRAIN	Weekly				9"			
POND 4-DEPTH	Daily	5'1"	5'0"	5'	5'5"	5'	5'	5'
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	7"	7"	7"	6"	8"	10"	10"
N.M. UNDERDRAIN	Weekly				15"			
N.W. UNDERDRAIN	Weekly	7"	7"	8"	9"	11"	10"	10"
S.E. UNDERDRAIN	Weekly				17"			
S.M. UNDERDRAIN	Weekly				9"			
S.W. UNDERDRAIN	Weekly				6"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly				✓			
INSPECTED WASTE PIPELINE	Monthly				✓			
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		JE	JE	SH	MB	MB	MB	YC

COMMENTS: *Liner vent NE corner of Pond #1 needs repair.
 *Pumped water into Pond #1 SW Underdrain & Pond #4 NE & NW Underdrains.
 *Pumped water out of underdrains Friday. (#1 SW & #4 NE & NW)

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week Of 9-3-00 through 9-9-00

CHECK ACCORDINGLY: J=OK X=NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'2"	8'2"	8'2"	8'2"	8'1"	8'1"	8'2"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				1"			
N.M. UNDERDRAIN	Weekly				1"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	5"	5"	5"	4"	4"	4"	4"
POND 3-DEPTH	Daily	8'5"	8'5"	8'5"	8'6"	8'6"	8'6"	8'5"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				5"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				0"			
S.M. UNDERDRAIN	Weekly	7"	7"	7"	5"	5"	5"	5"
S.W. UNDERDRAIN	Weekly				10"			
POND 4-DEPTH	Daily	5'	5'	4'11"	4'11"	4'11"	4'11"	4'10"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	10"	10"	11"	10"	10"	10"	9"
N.M. UNDERDRAIN	Weekly				14"			
N.W. UNDERDRAIN	Weekly	10"	10"	11"	10"	10"	10"	9"
S.E. UNDERDRAIN	Weekly				16"			
S.M. UNDERDRAIN	Weekly				8"			
S.W. UNDERDRAIN	Weekly				5"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		TC	TC	MB	B	BL	BL	JE

COMMENTS:

CROW BUTTE MINE

COMMERCIAL POND INSPECTION FORM

For The Week OF 10 Sept '00 through 16 Sept '00

CHECK ACCORDINGLY: =OK =NEEDS ATTENTION OR REPAIRS

LOCATION	FREQUENCY	SUN	MON	TUE	WED	THU	FRI	SAT
POND 1-DEPTH	Daily	8'2"	8'2"	8'2"	8'2"	8'2"	8'2"	8'1"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				2"			
N.M. UNDERDRAIN	Weekly				2"			
N.W. UNDERDRAIN	Weekly				4"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly				0"			
S.W. UNDERDRAIN	Weekly	5"	5"	5"	3"	3"	4"	5"
POND 3-DEPTH	Daily	8'5"	8'5"	8'3"	8'6"	8'2"	8'2"	8'9"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly				5"			
N.M. UNDERDRAIN	Weekly				9"			
N.W. UNDERDRAIN	Weekly				3"			
S.E. UNDERDRAIN	Weekly				1"			
S.M. UNDERDRAIN	Weekly	7"	7"	7"	5"	6"	6"	5"
S.W. UNDERDRAIN	Weekly				10"			
POND 4-DEPTH	Daily	4'9"	4'9"	4'10"	5'	4'8"	4'8"	4'8"
EMBANKMENTS	Daily	✓	✓	✓	✓	✓	✓	✓
N.E. UNDERDRAIN	Weekly	12"	12"	12"	10"	6"	6"	6"
N.M. UNDERDRAIN	Weekly				14"			
N.W. UNDERDRAIN	Weekly	10"	10"	11"	9"	3"	3"	7'
S.E. UNDERDRAIN	Weekly				15"			
S.M. UNDERDRAIN	Weekly				9"			
S.W. UNDERDRAIN	Weekly				5"			
INSPECTED INLET PIPING	Weekly				✓			
PERIMETER FENCE	Weekly				✓			
INSPECTED LINERS	Weekly				✓			
INSPECTED DIVERSION DITCHES	Monthly							
INSPECTED WASTE PIPELINE	Monthly							
OTHER (EXPLAIN BELOW)								
INSPECTOR INITIAL HERE ▶		van	BJ	van	MB	Mat	BJ	JE

COMMENTS: Wednesday: Pumped out underdrains #1 SW, #3 SM / Thursday #4 NE, NW
 Friday #4 - N.W. underdrain - erratic measurements due to pumping



Attachment 4

Underdrain Monitoring Data Charts

Pond 4 Northwest Underdrain Monitoring Data

