MINIMAL WASTEWATER DISCHARGES FROM INDUSTRIAL FACILITIES

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

AGENCY USE ONLY		
PERMIT NUMBER		
C O G	6 0	
DATE RECEIVED		
YEAR	MONTH	DAY

Please print or type. Do not attempt to complete this form before reading the instructions.

RENEWAL

New [ ] or Renewal [X] If renewal, existing permit number: CO- 600403 .

1. Is application for a short term certification (certification will only be effective for 90 days after issuance) ? [ ]
   OR
   Is application for a regular term certification (certification will be effective for 5 years from issuance of General Permit) ? [XX]

2. What type of activity is this associated with? See Appendix C for examples.
   Please describe briefly. J. Produced water from oil well

3. Will discharges occur in multiple locations (Well Tests, for example)? Yes [ ] No [X]

4. **Name and address of permit applicant:**

   Company Name: Diamond Operating, Inc.

   Federal Taxpayer (or Employer) ID#: 84-1542152

   Mailing Address : 6680 Gunpark Drive, Suite 100

   City, State and Zip Code : Boulder, CO 80301

   Phone Number : (303) 494-4420 Who is applying for the permit? Owner [ ] Operator [x] e-mail davep@flatironenergy.com

   Local Contact (familiar with facility): Dave Peterson

   Title: President Fax Number: (303) 494-3931 Phone Number: (303) 494-4420

5. **Name and address of property owner if operator is applying for the permit:**

   Name: Heartland Oil and Gas Company

   Mailing Address : 6680 Gunpark Drive, Suite 100

   City, State and Zip Code : Boulder, CO 80301

   Phone Number : (303) 494-4420 Fax No.: : (303) 494-3931

6. **Location of the facility:**

   Street Address: Not applicable

   City, State and Zip Code: 5.5 miles north of Lindon, CO

   County: Washington Name of facility: Ward Unit

   Legal Location (Township, Range, Section, ¼ Section): SE SE Section 3-T2S-R54W 6th P.M.

   Latitude and Longitude: Lat: 39°53'28" Lat: 103°23'43"

7. **Standard Industrial Classification (SIC) Co** for this facility. (Include up to four, in order of import

a) 1311 b) _____ _____.

8. **Industrial activity:** Describe the primary industrial activities, which take place on site. Include the type of facility (car lot, gas station parking lot, potato processing plant, etc.) plus a brief description of the nature of the business and the industrial processes used. (The applicant may want to submit a process flow sheet.) If this is a seasonal operation, list the months of operation. Indicate the number of hours per day or weeks of operation.

See attached Exhibit A

If the discharge is from a hydrostatic test, are the pipes or vessels being tested new [ ] used [X] If used, what materials were being stored or transported by the pipes or vessels in question? fresh water

9. **Production:** List the principal product(s) produced (if any) and maximum production rate.

Fresh water at 5 gpm to 12 gpm per day

10. **Intermittent discharges:** Except for storm runoff, are any of the discharges intermittent or seasonal? No [X] Yes [ ]

Is this a one-time discharge? No [X] Yes [ ]

Describe the frequency, duration and flow rate of each discharge occurrence. _____

11. **Other Environmental Permits:** Does this facility **currently** have any environmental permits, or is it subject to regulation, under any of the following programs?

Permit Name	Yes	No	Date Applied For	Permit No.
a.) Colorado Division of Minerals and Geology (formerly MLRD)		X		
b.) Underground Injection Control		X		
c.) Dredge or fill permit, Section 404, (Army Corps of Engineers)		X		
e.) Resource Conservation and Recovery Act (RCRA)		X		
f.) CDPS Stormwater		X		
g.) Colorado State Air Pollution Program		X		
h.) Other COGCC Earthern Pit Permit	X		1974	104604

NOTE: If a construction-dewatering permit is needed along with the minimal discharge permit for work on the same facility (such as a construction dewatering permit for the trench dewatering, and minimal discharge permit for the hydrostatic test), **one permit may be issued for both.** Another example would be: the construction dewatering permit for the construction of an underground parking structure and the minimal discharge permit for the sump to dewater the facility once construction is complete. If both permits are needed, list the construction dewatering discharge as discharge point 001 in items 20 and 21. List the other discharge (minimal discharge) as discharge point 002 in items 20 and 21.

12. **Location map:** A location map designating the ... property, intake points, discharge points, each of its haz... aste treatment storage or disposal facilities, each well where fluids from the facility are injected unde... d, those wells, springs, other surface water bodies and dr... water wells listed in public records or otherwise known to the applicant and the receiving waters sha... be submitted.
The map shall extend one mile beyond the property boundaries. The map shall be from a 72 or 15 minute USGS quad sheet, or a map of comparable scale. A north arrow shall be shown. **The map must be on paper 8 ½ x 11 inches or processing of your permit will be delayed.** See exhibit B

13. **Site sketch:** A legible general sketch of the site shall be submitted, showing appurtenant facilities (buildings, ponds, diversion ditches, stockpiles, etc.), stream location, numbered discharge points, sampling and flow monitoring points. The outfalls shall be labeled to correspond with the numbers listed in items 20 and 21. **The map must be on paper 8 ½ x 11 inches or processing of your permit will be delayed.**
See Exhibit C

14. **Site-specific conditions:**

a) Does this facility have bulk storage of diesel fuel, gasoline, solvents, fertilizers, hazardous, or toxic materials on site? No [X] Yes [ ]

b) Is this operation located within one mile of a landfill, or any mine or mill tailings? No [X] Yes [ ]

c) Does the dewatering area have or possibly have groundwater contamination, such as plumes from leaking underground storage tanks, etc.? No [X] Yes [ ]

If YES for any of these, please show location of the landfill, tailings or possible groundwater contamination on the location map in item 12 or in the site sketch in item 13. Please explain the location, extent of contamination, possible effect on the discharges from this facility.

15. **Chemical treatment:** Will any chemical additives or other materials be used in the water or to treat water before discharge?
No [ ] Yes [X] If YES, list here and include the Material Safety Data Sheet (MSDS) with the application.

Chemical Name *	Manufacturer	Purpose	In Which Waste Stream?
WT-902	ProTreat Technology	oil-water emulsion breaker	crude oil

* If the chemical formula is unknown or confidential, provide the manufacturer's name, contact person, address and phone number or a copy of the manufacturer's brochure, product label information or materials handling data sheet for each product used. Please list the major constituents or active ingredient(s), if known. **see attached MSDS for WT-902

16. **Used or manufactured toxics:** The applicant must provide a list of any toxic products, which the applicant currently uses or manufactures as an intermediate or final product or by product.

17. **Flow measurement:** What method of flow measurement will be used for each discharge point (e.g., v notch weir, pump capacity, parshall flume, etc.)? Designate whether currently installed or proposed. Identify the minimum and maximum flow measurement capability.

Flow rate is measured by a barrel test. Flow at the discharge point goes into a 55 gallon barreland a daily rate is extrapolated.

18. **Improvements:** Please provide a description of any construction, upgrading or operation of waste treatment equipment. Also include here a description of any changes to the facility since the previous permit renewal.

19. Is or will land application of any wastewater be practiced? No [X] Yes [ ] Briefly describe the process:

20. **Average flows and treatment:** Please provid[illegible] arrative identification of each type of process, operation [illegible]roduction area which contributes wastewater to the effluent for each outfall including process wastew[illegible] [illegible]oling waters, domestic wastewater and storm-water r[illegible] average, maximum and design flow which [illegible] process contributes; and a description of the treat[illegible] he wastewater receives including the ultimate disposal [illegible]y solid or fluid wastes other than by discharge. Processes, operations or production areas may be [illegible] [illegible]bed in general terms. The average flow of point sources [illegible]posed of stormwater may be estimated.

Use additional pages as needed.

OUTFALL NUMBER	WASTEWATER SOURCE	TREATMENT USED	AVERAGE FLOW gpm *	DESIGN FLOW gpm **	DAILY MAXIMUM FLOW gpm
001	Produced water ~~and rain/snow~~ runoff	See Exhibit A	10 gpm		12 gpm
002					
003					
004					
005					

*gpm - gallons/minute

**If sediment pond, indicate approximate volume of water.

21. For each outfall provide the latitude, longitude and receiving water.

OUTFALL	LATITUDE			LONGITUDE			RECEIVING WATERS See instructions
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS	
001	39	53	28	103	23	43	Antelope Creeksystem
002							
003							
004							
005							

22. Will the discharge enter a ditch or storm sewer before entering the receiving waters? No [X] Yes [ ] See item 32.

30. Please include any other information, which you feel Division should be aware of in drafting this permit.

31. **Signature of Applicant**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

12/16/05

Signature of Owner — Date Signed

David C. Peterson — President - Heartland Oil and Gas Co.

Name (printed) — Title

12/16/05

Signature of Operator — Date Signed

David C. Peterson — President - Diamond Operating, Inc.

Name (printed) — Title

32. In the case of facilities that **intend to discharge to storm sewers, permission to discharge into stormwater systems must be obtained from the owners or owners agents of each system into which the permittee intends to discharge.**

"I certify that I have read and understand the preceding paragraph and will comply with it by obtaining permission to discharge into the stormwater systems from the owners or owners agents of each system into which I intend to discharge".

12/16/05

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Name (printed) — Title

Appendix A - Priority Pollutants

Organic Toxic Pollutants in Each of Three Fractions in Analysis by Gas Chromatography/Mass Spectroscopy(GC/MS).

Volatiles	Base/Neutral	Acid
Acrolein	Acenaphthene	2-Chlorophenol
Acrylonitrile Acenaphthylene	2,4-Dichlorophenol	2,4-Dimethylphenol
Benzene	Anthracene	2,4-Dinitrophenol
Bromoform Benzidine	4,6-Dinitro-o-cresol	2-Nitrophenol
Carbon Tetrachloride	Benzo(a)anthracene	4-Nitrophenol
Chlorobenzene	Benzo(a)pyrene	Pentachlorophenol
Chlorodibromomethane	3,4-Benzofluoranthene	2,4,6-Trichlorophenol
Chloroethane Benzo(ghi)perylene	P-chloro-m-cresol	
2-Chloroethylvinyl Ether	Benzo(k)fluoranthene	
Chloroform Bis(2-chloroethoxy)methane	Phenol	
Dichlorobromomethane	Bis(2-chloroethyl) ether	
1,1-Dichloroethane	Bis(2-chloroisopropyl) ether	
1,2-Dichloroethane	Bis(2-ethylhexyl)phthalate	
1,1-Dichloroethylene	4-Bromophenyl phenyl ether	
1,2-Dichloropropane	Butylbenzyl phthalate	
1,3-Dichloropropylene	2-Chloronaphthalene	
Ethylbenzene 4-Chlorophenyl phenyl ether	Chrysene	
Methyl Bromide	Dibenzo (a,h) anthracene	
Methyl Chloride	1,2-Dichlorobenzene	
Methylene Chloride	1,3-Dichlorobenzene	
1,1,2,2-Tetrachloroethane	1,4-Dichlorobenzene	
Tetrachloroethylene	3,3-Dichlorobenzidine	
Toluene	Diethyl phthalate	
1,2-Trans-dichloroethylene	Dimethyl phthalate	
1,1,1-Trichloroethane	Di-n-butyl phthalate	
1,1,2-Trichloroethane	2,4-Dinitrotoluene	
Trichloroethylene	2,6-Dinitrotoluene	
Vinyl Chloride	Di-n-octyl phthalate	
	1,2-Diphenylhydrazine (as azobenzene)	
	Fluorene	
	Fluoroanthene	
	Hexachlorobenzene	
	Hexachlorobutadiene	
	Hexachlorcyclopentadiene	
	Hexachloroethane	
	Indeno(1,2,3-cd) pyrene	
	Naphthalene	
	Nitrobenzene	
	N-Nitrosodimethylamine	
	N-Nitrosodi-n-propylamine	
	N-Nitrosodiphenylamine	
	Phenanthrene	
	Pyrene	
	1,2,4-Trichlorobenzene)	

Hazardous Substances

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlorphyrifos
Coumaphos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D (2,4-Dichlorophenoxy acetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone
2,2-Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethly amine
Dinitrobenzene
Diquat
Disulfoton
Epichlorohydrin
Ethylene diamine
Isopropanolamine
Dodecylbenzenesulfonic acid
Malathion
Methyl parathion
Monomethyl amine
Naled
Naphthenic acid
Nitrotoluene
Diuron
Phenolsulfanate
Ethion
Propargite
Ethylene dibromide
Formaldehyde
Furfural
Guthion
Isoprene
Strychnine
Styrene
Kelthane
Kepone
TDE (Tetrachlorodiphenyl ethane)
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Triethylamine
Mevinphos
Mexacarbate
Monoethyl amine
Vinyl acetate
Parathion
Phosgene
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid
Trichlorofan
Triethanolamine dodecylbenzenesulfonate
Trimethylamine
Uranium
Vanadium
Xylene
Xylenol
Zirconium

Appendix C - Discharge Categories Covered in this Permit

A	Facilities discharging wastewater from washing the exteriors of trucks, cars, airplanes, boats (in dry dock), driveways, parking lots, and roads.	G	Facilities discharging hydrostatic test water from the testing of new or used pipes, tanks, or other similar vessels.
B	Facilities discharging wastewater from the washing of bleachers, elevated seating, and grandstands, such as those found at outdoor sporting or entertainment events.	H	Discharges from facilities that employ the super chlorination (50-500 mg/□) of potable water lines for the disinfection of these lines in a routine or planned situation and wish to discharge the effluent.
C	Facilities discharging wastewater from the draining, cleaning, and filter backwash of swimming pools, spas, hot tubs, and similar structures including water slides, and water theme amusements.	I	Facilities discharging wastewater from the washing of root crops such as potatoes, onions, sugar beets, or other fruit/vegetable agricultural produce or any other facility that discharges wash water associated with vegetative wastes.
D	Facilities discharging wastewater from the washing of temporary stables, traveling petting zoos, or any other facility that discharges wash water associated with animal wastes.	J	Facilities discharging wastewaters other than the types listed above when negligible pollution concerns are present.
E	Facilities discharging groundwater from foundation, basement, or underground structure dewatering.	K	Facilities discharging wastewater from any of the above listed sources AND from construction related activities (ie trench or excavation dewatering) that are associated with the same job. See note on question # 11 of the application.
F	Facilities discharging non-contact cooling or heating water.	L	

EXHIBIT A

The Ward Unit crude oil production facility is the central gathering point for fluids (crude oil and water) produced from three Ward Unit wells. The primary purpose of the facility is to separate the crude oil from the water using primarily heat and gravity processes. After the oil and water are separated, the crude oil is piped into above-ground, steel, storage tanks from which it is regularly removed and transported to market via tanker trucks. The produced water is disposed of on-site into a series of evaporation/percolation pits.

The facility is operational 24 hours per day during the entire year and is checked daily by field personnel. The Ward Unit facility has been in operation at this location since the initial discovery of the Abbott oil field in 1954.

Process Flow Sheet

Produced oil and water is piped from the Ward Unit wells to the production facility; the temperature of the fluids at the mouth of the well is approximately 150 degrees F; emulsion breaker chemical which is used to assist the oil/water separation process is injected into the produced fluid stream at the wellhead of each well (approximately 1 quart per day).

↓

The produced fluids first go into a free water knock out vessel; this is a 12' x 36", pressurized, insulated vessel that keeps the fluid warm and allows the natural separation by virtue of the difference in the specific gravity of the crude oil and water to begin to take place.

↓

Free water from the bottom of the water knock vessel is piped directly to the top of a water disposal tank and an oil-water emulsion (approx. 96% oil and 4% water) is piped off the top of the vessel into a heater treater.

↓

The heater treater is a 6' x 20' vertical, pressurized vessel which is heated to roughly 160 degrees F using propane; when heated the oil-water emulsion completely separates into free oil and free water; the free oil is piped into nearby storage tanks and the free water is piped into the top of a series of two water disposal tanks.

↓

These water disposal tanks consist of two 400 barrel vessels plumbed in series; the purpose of these tanks is to serve as a buffer between the oil-water separation equipment and the percolation/evaporation pits into which the produced water is disposed; in the event of a malfunction of the separation equipment, these tanks serve as an effective buffer to prevent any crude oil from entering the water pits; water from the bottom of the 2nd tank flows into a 300 barrel buried skim tank with an open top covered by a wire screen.

↓

The skim tank serves as an additional buffer between the oil-water separation equipment and the water pits; in the event of any unexpected crude oil carryover via the water disposal tank, the skim tank is an additional point of collection; water from the bottom of the skim tank is piped into water disposal pit #1.

↓

Water pit #1 is the first of a series of four water disposal pits; Water pit #1 is a 12' x 12' x 5' unlined earthen pit; water placed into this pit a) evaporates into the atmosphere, b) percolates into the underlying soil, or c) flows into water pit #2.

↓

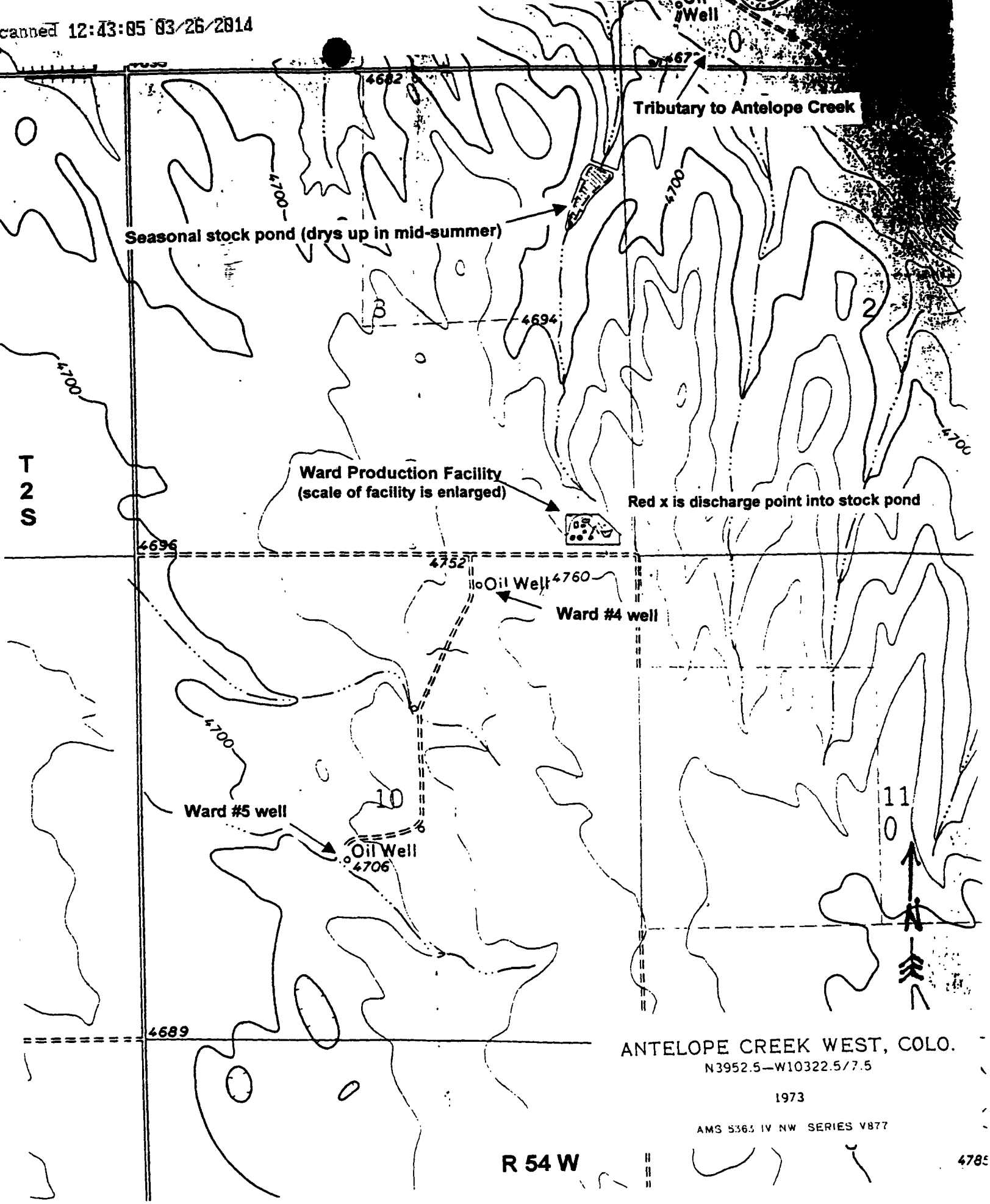
Water pit #2 is a 25' x 25' x 5' unlined earthen pit; water placed into this pit a) evaporates into the atmosphere, b) percolates into the underlying soil, or c) flows into water pit #3.

↓

Water pit #3 is a 50' x 20' x 10' unlined earthen pit; water placed into this pit a) evaporates into the atmosphere, b) percolates into the underlying soil, or c) flows into water pit #4.

↓

Water pit #4, the final water pit, is a small, one-half acre stock pond constructed in a dry (ephemeral) drainage located adjacent to the Ward facility; the produced water that makes it to this pit mixes with water from rainfall and snowfall run-off and evaporates into the atmosphere or percolates into the underlying soil.



ANTELOPE CREEK WEST, COLO.

N3952.5—W10322.5/7.5

1973

AMS 5365 IV NW SERIES V877

EXHIBIT C

Attached to MINDI Application Submitted By Diamond Operating, Inc.

Site Sketch

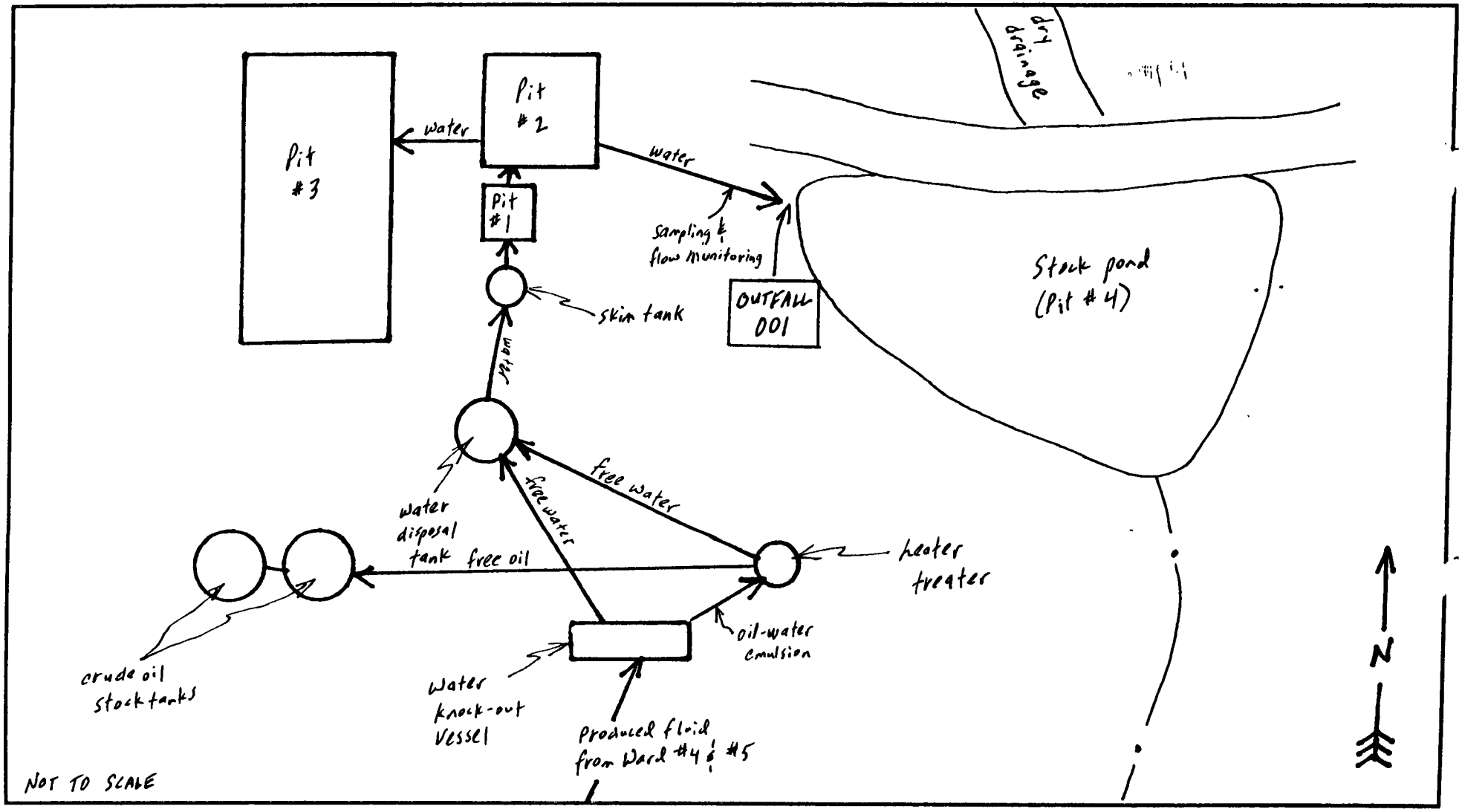


EXHIBIT D

Average Flows and Treatments

Produced water from the Ward wells is disposed of into unlined, earthen pits at the Ward Unit production facility. These pits are regulated by the Colorado Oil and Gas Conservation Commission. A discussion regarding the process and operation utilized to handle this water is included in Exhibit A of this application. The final phase of this disposal process occurs when the water flows into a one-half acre stock pond built into a drainage tributary of the Antelope Creek system. For this application, the point at which produced water flows into the stock pond located in the Antelope Creek drainage system is deemed to be outfall 001.

The Ward wells produce approximately 450 barrels of water per day (13 gpm). The average flow rate of water at outfall 001 is less than the total volume of water produced from the Ward wells. The reason for this is that some portion of the produced water from the Ward wells is lost via evaporation and percolation as it moves through three earthen pits prior to the time it can reach outfall 001. The estimated average flow rate at outfall 001 is 10.5 gpm. During the winter months this rate is likely to increase due to a general decrease in evaporation rates, and in summer months the rate is likely to decrease due to an increase in evaporation.

Produced water that flows into the stock pond at outfall 001 will combine with water sourced from rainfall and snowfall run-off from higher elevations on the drainage system. The drainage area above the stock pond is relatively small. It is estimated that the flow into the stock pond that is contributed by run-off will vary from 15 gpm to 0 gpm depending on the season and the timing of rainfall or snowfall in the area.

JUNE 2010

Mountain States ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

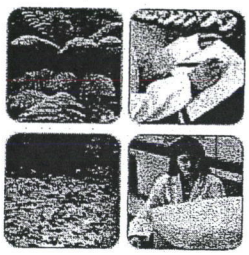
06/24/10

COPY

Technical Report for

Diamond Operating Inc.

Ward Discharge



Accutest Job Number: D14053

Sampling Date: 06/07/10

Report to:

Diamond Operating Inc.
6680 Gunpark Drive
Suite 100
Boulder, CO 80301

ATTN: Dave Peterson

Attachment 2
Copy of water quality analyses

Total number of pages in report: 17

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Jesse L. Smith
Laboratory Director

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Client Service contact: Amanda Kissell 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5

Table of Contents

Accutest Laboratories

Sample Summary

Diamond Operating Inc.

Job No: D14053

Ward Discharge

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
D14053-1	06/07/10	06:30	EG	06/09/10	AQ	Water	WARD LEASE

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	WARD LEASE		
Lab Sample ID:	D14053-1	**Date Sampled:**	06/07/10
Matrix:	AQ - Water	**Date Received:**	06/09/10
Method:	SW846 8021B	**Percent Solids:**	n/a
Project:	Ward Discharge		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA6910.D	1	06/14/10	DG	n/a	n/a	GTA405
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	1.0	ug/l	
108-88-3	Toluene	ND	2.0	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	2.0	ug/l	
	m,p-Xylene	ND	2.0	2.0	ug/l	
95-47-6	o-Xylene	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	102%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	WARD LEASE		
Lab Sample ID:	D14053-1	**Date Sampled:**	06/07/10
Matrix:	AQ - Water	**Date Received:**	06/09/10
		Percent Solids:	n/a
Project:	Ward Discharge		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	< 5.0	5.0	mg/l	1	06/23/10	SWT	EPA 1664A
Solids, Total Dissolved	1690	10	mg/l	1	06/14/10	CJ	SM20 2540C
Solids, Total Suspended [a]	22.7	5.0	mg/l	1	06/14/10	JK	SM20 2540D
pH	8.91		su	1	06/10/10 09:00	CJ	SM20 4500H

(a) Sample reanalyzed beyond hold time with acceptable QC. The results were similar. 20.0 mg/L.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST Laboratories

CHAIN OF CUSTODY

D14053 PAGE 1 OF 1

4036 Youngfield Street, Wheat Ridge, Colorado 80033
TEL. 303-425-6021; 877-737-4521 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job #

Client / Reporting Information

Company Name: DIAMOND OPERATING INC
Street Address: 6666 GUNPARK DR. suite 200
City: BOULDER State: CO Zip: 80301
Project Contact: DAVE PETERSON E-mail:
Phone #: 303-494-4420 Fax #: 303-494-3931
Sampler(s) Name(s): RICK GIBSON Phone #: 970-768-5980

Project Information

Project Name: WARD DISCHARGE
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB - Equipment Blank; RB - Rinse Blank; TB - Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	TDS	TSS	PH	TRPH	BTEX	LAB USE ONLY
	WARD LEASE		6-7-10	6:30	RG	Discharge water	1									X	X	X			01
	WARD LEASE		6-7-10	8:30	RG		1												X		↓
	WARD LEASE		6-7-10	6:30	RG		3													X	↓

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] UST Analysis 3-5 Days
- [ ] 6 - 8 Day RUSH
- [ ] 3 - 5 Day RUSH
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM) / Date:

Data Deliverable Information

- [ ] Level 1
- [ ] Level 2
- [ ] Level 3
- [ ] Level 4
- [ ] PDF
- [ ] EDD Format ______
- [ ] Other ______

Level 1 = Results Only
Level 2 = Results + QC Summary + Case Narrative
Level 3 = Results + QC Summary + Partial Raw data
Level 4 = Full Deliverable

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]		1	2		2 [signature] 6-9-10 1000
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #: ☑ Intact ☐ Not intact	Preserved where applicable: NO	On Ice: N/A Cooler Temp.: 20.9

D14053: Chain of Custody
Page 1 of 2

ACCUTEST

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D14053 **Client:** DIAMOND OPERATINS INC. **Immediate Client Services Action Required:** No

Date / Time Received: 6/9/2010 10:00:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: WARD DISCHARGE **Airbill #'s:** ups

Cooler Security

	Y	N
1. Custody Seals Present:	☑	☐
2. Custody Seals Intact:	☑	☐
3. COC Present:	☑	☐
4. Smpl Dates/Time OK	☑	☐

Cooler Temperature

	Y	N
1. Temp criteria achieved:	☐	☑
2. Cooler temp verification:	Infared gun	
3. Cooler media:	No Ice	

Quality Control Preservation

	Y	N	N/A
1. Trip Blank present / cooler:	☐	☐	
2. Trip Blank listed on COC:	☐	☐	
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☑	☐	☐

Sample Integrity - Documentation

	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition

	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions

	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume rec'd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

Accutest Laboratories V:(303) 425-6021 4036 Youngfield Street F: (303) 425-6854 Wheat Ridge, CO www.accutest.com

3.1

3

D14053: Chain of Custody

Page 2 of 2

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D14053
Account: DIAMOCOB Diamond Operating Inc.
Project: Ward Discharge

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA405-MB	TA6908.D	1	06/14/10	DG	n/a	n/a	GTA405

The QC reported here applies to the following samples: **Method:** SW846 8021B

D14053-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	2.0	ug/l	
108-88-3	Toluene	ND	2.0	2.0	ug/l	
95-47-6	o-Xylene	ND	2.0	2.0	ug/l	
	m,p-Xylene	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	104%	60-140%

Blank Spike Summary

Job Number: D14053
Account: DIAMOCOB Diamond Operating Inc.
Project: Ward Discharge

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA405-BS	TA6909.D	1	06/14/10	DG	n/a	n/a	GTA405

The QC reported here applies to the following samples: **Method:** SW846 8021B

D14053-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	27.1	100	70-130
100-41-4	Ethylbenzene	45.6	45.7	100	70-130
108-88-3	Toluene	212	196	93	70-130
95-47-6	o-Xylene	65.9	66.8	101	70-130
	m,p-Xylene	150	151	101	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	118%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D14053
Account: DIAMOCOB Diamond Operating Inc.
Project: Ward Discharge

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D14053-1MS	TA6911.D	1	06/14/10	DG	n/a	n/a	GTA405
D14053-1MSD	TA6912.D	1	06/14/10	DG	n/a	n/a	GTA405
D14053-1	TA6910.D	1	06/14/10	DG	n/a	n/a	GTA405

The QC reported here applies to the following samples: **Method:** SW846 8021B

D14053-1

CAS No.	Compound	D14053-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		27.2	27.5	101	27.6	101	0	70-130/30
100-41-4	Ethylbenzene	ND		45.6	45.6	100	45.7	100	0	62-130/30
108-88-3	Toluene	ND		212	196	93	196	93	0	70-130/30
95-47-6	o-Xylene	ND		65.9	66.3	101	66.3	101	0	63-130/30
	m,p-Xylene	ND		150	151	101	151	101	0	70-134/30

CAS No.	Surrogate Recoveries	MS	MSD	D14053-1	Limits
120-82-1	1,2,4-Trichlorobenzene	118%	116%	102%	60-140%

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14053
Account: DIAMOCOB - Diamond Operating Inc.
Project: Ward Discharge

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
HEM Petroleum Hydrocarbons	GP2203/GN4995	5.0	0.0	mg/l	20	16.3	81.5	64-132%
Solids, Total Dissolved	GN4820	10	5.0	mg/l	400	402	100.5	90-110%
Solids, Total Suspended	GN4821	5.0	0.0	mg/l	300	0.0	0.0*(a)	90-110%
pH	GN4775			su	8.00	8.02	100.3	99.3-100

Associated Samples:
Batch GN4775: D14053-1
Batch GN4820: D14053-1
Batch GN4821: D14053-1
Batch GP2203: D14053-1
(*) Outside of QC limits
(a) LCS sample was dropped at the final stage, other QC acceptable.

5.1

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BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14053
Account: DIAMOCOB - Diamond Operating Inc.
Project: Ward Discharge

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Petroleum Hydrocarbons	GP2203/GN4995	mg/l	20	18.5	12.6	30%

Associated Samples:
Batch GP2203: D14053-1
(*) Outside of QC limits

5.2

5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D14053
Account: DIAMOCOB - Diamond Operating Inc.
Project: Ward Discharge

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN4820	D13946-3	mg/l	146	158	7.9	0-25%

Associated Samples:
Batch GN4820: D14053-1
Batch GN4821: D14053-1
(*) Outside of QC limits

001

WORK ORDER Summary — Evergreen Analytical, Inc. — 09-295(

Rpt To: Dave Peterson
Diamond Operating
6680 Gunpark Drive, Suite 100
Boulder, CO 80301
(303) 494-4420

Fax To: Dave Peterson **FX:** (303) 494-3931

Pachner lease (6 miles SE of Ward)
NE/4 Section 31-T2S-R53W

4/30/2009 4:00:55 P

Client Project ID: Diamond GW- Pachner

QC Level: LEVEL I

Comments:

Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Test Code	Test Name	Hold	MS	Date Due	Hold Time
09-2950-01A	PACHNER	Water	4/29/09 1100	4/29/09	TOC_DW	Total Organic Carbon	☐	☐	5/13/09	5/27/09
09-2950-01B	PACHNER	Water	4/29/09 1100	4/29/09	COLOR	Color Units	☐	☐	5/13/09	5/01/09
09-2950-01C	PACHNER	Water	4/29/09 1100	4/29/09	200.7_D *	200.7: Dissolved Metals	☐	☐	5/13/09	10/26/09
09-2950-01C	PACHNER	Water	4/29/09 1100	4/29/09	Total Hardness	Total Hardness (calc)	☐	☐	5/13/09	
09-2950-01D	PACHNER	Water	4/29/09 1100	4/29/09	200.7_D *	200.7: Dissolved Metals	☐	☐	5/13/09	10/26/09
09-2950-01D	PACHNER	Water	4/29/09 1100	4/29/09	FE2+_W	Dissolved Ferrous Iron	☐	☐	5/13/09	5/01/09
09-2950-01D	PACHNER	Water	4/29/09 1100	4/29/09	FE3+_W	Ferric Iron, Dissolved, Calculated	☐	☐	5/13/09	10/26/09
09-2950-01E	PACHNER	Water	4/29/09 1100	4/29/09	COND_W	Specific Conductance @ 25°C	☐	☐	5/13/09	5/27/09
09-2950-01F	PACHNER	Water	4/29/09 1100	4/29/09	TURB_W	Turbidity	☐	☐	5/13/09	5/01/09
09-2950-01G	PACHNER	Water	4/29/09 1100	4/29/09	ANIONS_NonDW *	300.0: Anions by IC	☐	☐	5/13/09	5/01/09
09-2950-01H	PACHNER	Water	4/29/09 1100	4/29/09	200.7_T *	200.7: Total Metals	☐	☐	5/13/09	10/26/09
09-2950-01I	PACHNER	Water	4/29/09 1100	4/29/09	200.8_D *	200.8: Dissolved Metals	☐	☐	5/13/09	10/26/09
09-2950-01J	PACHNER	Water	4/29/09 1100	4/29/09	ALK_WGRP *	Alkalinity	☐	☐	5/13/09	5/13/09
09-2950-01J	PACHNER	Water	4/29/09 1100	4/29/09	PH_DW	E150.1 pH	☐	☐	5/13/09	4/30/09
09-2950-01J	PACHNER	Water	4/29/09 1100	4/29/09	TDS_W	Total Dissolved Solids (TDS)	☐	☐	5/13/09	5/06/09
09-2950-01J	PACHNER	Water	4/29/09 1100	4/29/09	TSS	Total Suspended Solids (TSS)	☐	☐	5/13/09	5/06/09

Definitions: * - Test Code has a Select List

Attachment 3
Copy of Pachner water quality anal.

CHAIN OF CUSTODY RECORD / ANALYTICAL SERVICES AGREEMENT **

Page 1 of 1

0027 IENT INFORI

Evergreen Analytical Laboratory Inc.

Mail Original Re: **Diamond Operating, Inc.**
Attn ____ **6680 Gunpark Drive, Suite 100**
Address ____ **Boulder, CO 80301**
City ____
Tel # 303 494-4420 Fax # 303 494 3931 E-mail davye flotiron energy. com
REPORT ALSO BY ☒ FAX ☐ PDF ☐ EDD
REPORT CHROMATOGRAMS ☐ YES
Mail Invoice to: Same as above
Attn Dave Peterson
Address ____
City ____ State ____ Zip ____
Tel # ____ Fax # ____
Project ID# DIAMOND GW - PACHNER
P.O. ____ Quote 11432
Sampler Scott Gibson

4036 Youngfield St.
Wheat Ridge, Colorado 80033
(303) 425-6021
FAX (303) 425-6854
(877) 737-4521
e-mail info@evergreenanalytical.com

Report Results by: ____ (Date)*
Standard 2 working weeks ☒
UST Analyses per Fee Schedule ☐
* Rush: ☐ less than 24 hrs, 150% ☐ 1 - 2 work days, 100%
☐ 3 - 5 work days, 50% ☐ 6 - 9 work days, 25%
*Subject to surcharge & exceptions noted in fee schedule.

NOTE: *Identify Known Hazards Below*

SAMPLE IDENTIFICATION	DATE SAMPLED	TIME	No. of Containers	MATRIX: 1) Drinking Water or 2) Discharge Water or 3) Ground Water (circle one)	Soil / Solid / Air / Gas	Oil / Sludge / Wipe	TOC_DW	COLOR	200.7_D	FE 2+ _W	FE 3+ _W	COD_W	TURB_W	ANIONS_NOW	Total Hard. - 200.7 D	200.7_T	200.8_D	TDS_W	TSS_	PH_DW	ALK WKP	For Laboratory Use Only
PACHNER-1	4/29/09	10AM	1				X															G1
PACHNER-2	"	"	1					X														
PACHNER-3	"	"	1						X	X	X											
" -4	"	"	1									X										
" -5	"	"	1										X									
" -6	"	"	1											X			X					
" -7	"	"	1												X							
" -8	"	"	1													X						
~~" -9~~	~~"~~	~~"~~	~~1~~																			
" -9	"	"	1															X	X	X	X	

Does this analysis involve property transfer? ☐ Yes or ☒ No

Sample Fraction: A B C D E F G H I J

Instructions:

pkg 2

** Important Note: See reverse side hereof for terms and conditions.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Scott Gibson	4-29-09 11Am		4/29/09 11:30Am		4/29/09 4pm		4/29/9 350p

Evergreen Analytical, Inc. **Date:** *15-May-09*

Lab Order: 09-2950
Client Project ID Diamond GW- Pachner

CASE NARRATIVE

SAMPLE RECEIVING

Sample(s) were hand delivered to the laboratory by the client.
Custody seals were present and intact.
The temperature of the sample(s) upon arrival was 2.3°C.
Sample(s) were received in good condition, in the proper container, and within holding times.
Sample(s) were preserved properly. JD

QUALITY ASSURANCE (QA)

Analyses performed on samples in this work order by EAL meet the requirements of the EAL Quality Assurance Program unless otherwise explained. Analyses of discharge samples meet the requirements of 40 CFR Part 136 unless otherwise explained. JE

CLIENT SERVICES

The metal, anion, and alkalinity analytes were selected per the quotation. EKH

GENERAL CHEMISTRY

Method E300.0: Sample PANCHNER (09-2950-01G) has a high conductivity level and a high Chloride level, which required dilution of the sample to avoid saturating the detector and to separate the Nitrite-N peak from the Chloride peak. This raised the reporting limit for Nitrate-N, Nitrite-N, and Sulfate. There are no other anomalies to report. BNP/MM/JE

Method HACH 8146: The matrix spike (MS; on the client's sample) recovery for Ferrous Iron is below the QC limit. The Ferrous Iron recovery for the laboratory control spike (LCS) is within QC limits, proving the analysis is in control. There are no anomalies to report. CJ/MM/JE

METALS ANALYSIS

Method 200.7 Dissolved: The matrix spike (MS; on the client's sample) recovery for Sodium is below the QC limits due to the high concentration of Sodium in the sample versus the low concentration of the spike. The laboratory control spike (LCS) and the matrix spike duplicate (MSD) recoveries of Sodium are within QC limits, proving the analysis is in control. There are no other anomalies to report. WKH/JE

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Project ID Diamond GW- Pachner
Collection Date: 4/29/09

Lab Order: 09-2950
Date Received: 4/29/09
Units: mg/L

Total Organic Carbon (TOC)
Total Organic Carbon

Method: SM 5310 B **Prep Method:**

Lab ID	Client ID	Matrix	Date Prepared	Date Analyzed	Results	LQL	DF
09-2950-01A	PACHNER	Water	5/6/09	5/6/09	4.6	1.0	1

Comments TOC as NPOC (Non-Purgable Organic Carbon)

Analyst

Approved

Qualifiers: J - Indicates an estimated value when the compound is detected, but is below the LQL
H - Sample analysis exceeded analytical holding time
U - Compound analyzed for but not detected
X - See case narrative
* - Value exceeds Maximum Contamination Level(MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions: DF - Dilution Factor
LQL - Lower Quantitation Limit

Print Date: 5/7/09

Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID PACHNER
Client Project ID Diamond GW- Pachner
Date Collected: 4/29/09 1100
Date Received: 4/29/09

Lab Work Order 09-2950
Lab Sample ID: 09-2950-01
Sample Matrix: Water

ALKALINITY

Method: SM2320B **Prep Method:**

Date Prepared: 5/1/09 **Lab File ID:** 9 **Dilution Factor:** 1
Date Analyzed: 5/1/09 **Method Blank:** MBLK 5/1/09 **Lab Fraction ID:** 09-2950-01J

Analytes	CAS Number	Result	LQL	Units
Total Alkalinity		893	5.0	mg/L CaCO3
Bicarbonate		893	5.0	mg/L CaCO3
Carbonate		U	5.0	mg/L CaCO3

COLOR UNITS

Method: SM2120 B **Prep Method:**

Date Prepared: 4/30/09 **Dilution Factor:** 1
Date Analyzed: 4/30/09 1200 **Lab Fraction ID:** 09-2950-01B

Analytes	CAS Number	Result	LQL	Units
Color		U	5	

SPECIFIC CONDUCTANCE @ 25°C

Method: SM2510 B **Prep Method:**

Date Prepared: 5/7/09 **Lab File ID:** 4 **Dilution Factor:** 1
Date Analyzed: 5/7/09 **Lab Fraction ID:** 09-2950-01E

Analytes	CAS Number	Result	LQL	Units
Specific Conductance		2030	1.00	µmhos/cm

DISSOLVED FERROUS IRON

Method: HACH 8146 **Prep Method:**

Date Prepared: 4/30/09 **Dilution Factor:** 1
Date Analyzed: 4/30/09 0910 **Lab Fraction ID:** 09-2950-01D

Analytes	CAS Number	Result	LQL	Units
Ferrous Iron		U	0.10	mg/L

Analyst

Approved

Qualifiers:
B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value.Value exceeds calibration range
H - Sample analysis exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions:
NA - Not Applicable
LQL - Lower Quantitation Limit
Surr - Surrogate

Print Date: 5/11/2009

Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID	PACHNER	**Lab Work Order**	09-2950
Client Project ID	Diamond GW- Pachner	**Lab Sample ID:**	09-2950-01
Date Collected:	4/29/09 1100	**Sample Matrix:**	Water
Date Received:	4/29/09		

E150.1 PH

Method: E150.1 **Prep Method:**

Date Prepared: 4/29/09 **Dilution Factor:** 1
Date Analyzed: 4/29/09 1629 **Lab Fraction ID:** 09-2950-01J

Analytes	CAS Number	Result	LQL	Units
pH		7.53	1.00	pH Units

TOTAL DISSOLVED SOLIDS (TDS)

Method: SM 2540C **Prep Method:**

Date Prepared: 5/4/09 **Lab File ID:** 12 **Dilution Factor:** 1
Date Analyzed: 5/4/09 **Method Blank:** MBLK 05/04/09 **Lab Fraction ID:** 09-2950-01J

Analytes	CAS Number	Result	LQL	Units
Total Dissolved Solids		1340	10.0	mg/L

TOTAL SUSPENDED SOLIDS (TSS)

Method: SM 2540 D **Prep Method:**

Date Prepared: 5/4/09 **Lab File ID:** 19 **Dilution Factor:** 1
Date Analyzed: 5/4/09 **Method Blank:** MBLK 050409 **Lab Fraction ID:** 09-2950-01J

Analytes	CAS Number	Result	LQL	Units
Total Suspended Solids		8.5	5.0	mg/L

TURBIDITY

Method: SM 2130 B **Prep Method:**

Date Prepared: 4/30/09 **Lab File ID:** 68 **Dilution Factor:** 1
Date Analyzed: 4/30/09 1030 **Method Blank:** MBLK 04/30/09 **Lab Fraction ID:** 09-2950-01F

Analytes	CAS Number	Result	LQL	Units
Turbidity		18.3	0.10	NTU

Analyst **Approved**

Qualifiers:
B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value.Value exceeds calibration range
H - Sample analysis exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions:
NA - Not Applicable
LQL - Lower Quantitation Limit
Surr - Surrogate

Print Date: 5/11/2009

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID: PACHNER
Client Project ID: Diamond GW- Pachner
Date Collected: 4/29/09
Date Received: 4/29/09

Lab Work Order: 09-2950
Lab Sample ID: 09-2950-01
Sample Matrix: Water

DISSOLVED METALS

Method: E200.7, Rev. 4.4 **Prep Method: E200.7/SW3010A**

Date Prepared: 5/6/09 **Lab File ID:** 050609PM **Dilution Factor:** 1
Date Analyzed: 5/7/09 **Method Blank:** MB-19043 **Lab Fraction ID:** 09-2950-01C

Analytes	CAS Number	Result	LQL	Units
Aluminum	7429-90-5	U	0.100	mg/L
Barium	7440-39-3	0.0487	0.00200	mg/L
Calcium	7440-70-2	0.655	0.387	mg/L
Magnesium	7439-95-4	0.223	0.150	mg/L
Manganese	7439-96-5	0.0130	0.00500	mg/L
Potassium	7440-09-7	3.07	0.340	mg/L
Sodium	7440-23-5	549	0.400	mg/L
Silicon as SiO2(Silica)	7440-21-3	35.0	0.107	mg/L

Date Prepared: 5/6/09 **Lab File ID:** 050609PM **Dilution Factor:** 1
Date Analyzed: 5/7/09 **Method Blank:** MB-19043 **Lab Fraction ID:** 09-2950-01D

Analytes	CAS Number	Result	LQL	Units
Iron	7439-89-6	0.233	0.0700	mg/L

Date Prepared: 5/6/09 **Lab File ID:** 050609PM **Dilution Factor:** 1
Date Analyzed: 5/7/09 **Method Blank:** MB-19043 **Lab Fraction ID:** 09-2950-01C

Analytes	CAS Number	Result	LQL	Units
Strontium	7440-24-6	0.0758	0.000500	mg/L

TOTAL METALS

Method: E200.7, Rev. 4.4 **Prep Method: E200.7, Rev. 4.4**

Date Prepared: 5/4/09 **Lab File ID:** 050509AM **Dilution Factor:** 1
Date Analyzed: 5/5/09 **Method Blank:** MB-19005 **Lab Fraction ID:** 09-2950-01H

Analytes	CAS Number	Result	LQL	Units
Iron	7439-89-6	10.2	0.0700	mg/L

Analyst

Approved

Qualifiers: B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value.Value exceeds calibration range
H - Sample analysis exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions: NA - Not Applicable
LQL - Lower Quantitation Limit
Surr - Surrogate

Print Date: 5/14/2009

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID: PACHNER
Client Project ID: Diamond GW- Pachner
Date Collected: 4/29/09
Date Received: 4/29/09

Lab Work Order: 09-2950
Lab Sample ID: 09-2950-01
Sample Matrix: Water

DISSOLVED METALS

Method: E200.8 **Prep Method: E200.8**

Date Prepared: 5/11/09
Date Analyzed: 5/13/09
Lab File ID: 090513A.B\044SMPL.D
Method Blank: MB-19088
Dilution Factor: 1
Lab Fraction ID: 09-2950-01I

Analytes	CAS Number	Result	LQL	Units
Arsenic	7440-38-2	U	0.00200	mg/L

DISSOLVED FERRIC IRON, CALCULATED

Method: Calculated **Prep Method:**

Date Prepared: 5/5/09
Date Analyzed: 5/5/09
Dilution Factor: 1
Lab Fraction ID: 09-2950-01D

Analytes	CAS Number	Result	LQL	Units
Ferric		0.23	0.10	mg/L

TOTAL HARDNESS (CALC)

Method: SM 2340B **Prep Method:**

Date Prepared: 5/6/09
Date Analyzed: 5/7/09
Dilution Factor: 1
Lab Fraction ID: 09-2950-01C

Analytes	CAS Number	Result	LQL	Units
Total Hardness as CaCO3/L	471-34-1	2.6	1.2	mg/L CaCO3

Analyst **Approved**

Qualifiers:
B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value.Value exceeds calibration range
H - Sample analysis exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions:
NA - Not Applicable
LQL - Lower Quantitation Limit
Surr - Surrogate

Print Date: 5/14/2009

600

Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID: PACHNER
Client Project ID: Diamond GW- Pachner
Date Collected: 4/29/09 1100
Date Received: 4/29/09

Lab Work Order: 09-2950
Lab Sample ID: 09-2950-01
Sample Matrix: Water

ANIONS BY IC

Method: E300.0 **Prep Method:**

Date Prepared: 4/30/09 **Lab File ID:** 10 **Dilution Factor:** 2
Date Analyzed: 4/30/09 1025 **Method Blank:** MB 04/30/09 **Lab Fraction ID:** 09-2950-01G

Analytes	CAS Number	Result	LQL	Units
Nitrate-N		U	0.090	mg/L
Sulfate	7778-80-2	U	1.0	mg/L

Date Prepared: 4/30/09 **Lab File ID:** 24 **Dilution Factor:** 10
Date Analyzed: 4/30/09 1525 **Method Blank:** MB 04/30/09 **Lab Fraction ID:** 09-2950-01G

Analytes	CAS Number	Result	LQL	Units
Chloride	7647-14-5	199	5.0	mg/L
Nitrite-N		U	0.61	mg/L

Analyst

Approved

Qualifiers: B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value.Value exceeds calibration range
H - Sample analysis exceeded analytical holding time
J - Indicates an estimated value when the compound is detected, but is below the LQL
S - Spike Recovery outside accepted limits
U - Compound analyzed for but not detected
X - See case narrative
* -Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions: NA - Not Applicable
LQL - Lower Quantitation Limit
Surr - Surrogate

Print Date: 5/1/2009

QUALITY ASSURANCE REPORTS

METHOD BLANKS (MB)

LABORATORY CONTROL SPIKES (LCS)

MATRIX SPIKES (MS/MSD)*

DUPLICATES (DUP)*

* For Metals or Wet Chemistry analyses: only included if requested.

Evergreen Analytical, Inc.

Date: *07-May-09*

Work Order: 09-2950

Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: TOC_W

Sample ID: MB 5/6/09	SampType: MBLK	TestCode: TOC_W	Run ID: TOC-WW_090506A					Prep Date: 5/6/09		Units: mg/L	
	Batch ID: R47023	TestNo: SM 5310 B	FileID:					Analysis Date: 5/6/09		SeqNo: 835581	
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	U	1.0									

Sample ID: LCS 5/6/09	SampType: LCS	TestCode: TOC_W	Run ID: TOC-WW_090506A					Prep Date: 5/6/09		Units: mg/L	
	Batch ID: R47023	TestNo: SM 5310 B	FileID:					Analysis Date: 5/6/09		SeqNo: 835582	
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	12.85	1.0	13	0	98.8	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Evergreen Analytical, Inc.

Date: *11-May-09*

Work Order: 09-2950
Client Project ID Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: ALK_WGRP

Sample ID: **MBLK 5/1/09**	SampType: **MBLK**	TestCode: **ALK_WGRP**	Run ID: **ALK_090501A**	Prep Date **5/1/2009**	Units: **mg/L CaCO3**
	Batch ID: **R46878**	TestNo: **SM2320B**	FileID: **131**	Analysis Date: **5/1/2009**	SeqNo: **832862**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Alkalinity	U	5.0									

Sample ID: **LCS**	SampType: **LCS**	TestCode: **ALK_WGRP**	Run ID: **ALK_090501A**	Prep Date: **5/1/2009**	Units: **mg/L CaCO3**
	Batch ID: **R46878**	TestNo: **SM2320B**	FileID: **132**	Analysis Date: **5/1/2009**	SeqNo: **832863**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Alkalinity	99.39	5.0	100	0	99.4	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: COND_W

Sample ID: **LCS**	SampType: **LCS**	TestCode: **COND_W**	Run ID: **COND_090507A**	Prep Date: **5/7/2009**	Units: **µmhos/cm**
	Batch ID: **R47011**	TestNo: **SM2510 B**	FileID: **189**	Analysis Date: **5/7/2009**	SeqNo: **835199**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	97	1 00	100.1	0	96.9	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Evergreen Analytical, Inc.

Date: *15-May-09*

Work Order: 09-2950

Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

BatchID: R46839

Sample ID **LCS-R46839**	SampType: **LCS**	TestCode: **FE2+_W**	Run ID: **SPEC DR2010_090430A**	Prep Date: **4/30/2009**	Units: **mg/L**
	Batch ID: **R46839**	TestNo: **HACH 8146**	FileID:	Analysis Date: **4/30/2009**	SeqNo: **832267**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.99	0.10	1	0	99	90	110	0	0		

Sample ID **09-2950-01D MS**	SampType: **MS**	TestCode: **FE2+_W**	Run ID: **SPEC DR2010_090430A**	Prep Date: **4/30/2009**	Units: **mg/L**
Client ID: **PACHNER**	Batch ID: **R46839**	TestNo: **HACH 8146**	FileID:	Analysis Date: **4/30/2009**	SeqNo: **832272**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ferrous Iron	0.56	0.10	1	0	56	80	120	0	0		S

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: PH_DW

Sample ID: LCS-R46824	SampType: LCS	TestCode: PH_DW	Run ID: PH_090429C				Prep Date: 4/29/2009		Units: pH Units	
	Batch ID: R46824	TestNo: E150.1	FileID:				Analysis Date: 4/29/2009		SeqNo: 832048	
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.97	1.00	8	0	99.6	99.3	100.7	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: TDS_W

Sample ID: MBLK 05/04/09	SampType: MBLK	TestCode: TDS_W	Run ID: ANALYTICAL BALANCE_090505A	Prep Date: 5/4/2009	Units: mg/L
	Batch ID: R46963	TestNo: SM 2540C	FileID: 1	Analysis Date: 5/4/2009	SeqNo: 834305

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	U	10.0									

Sample ID: LCS	SampType: LCS	TestCode: TDS_W	Run ID: ANALYTICAL BALANCE_090505A	Prep Date: 5/4/2009	Units: mg/L
	Batch ID: R46963	TestNo: SM 2540C	FileID: 2	Analysis Date: 5/4/2009	SeqNo: 834306

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	409	10.0	400	0	102	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: TSS

Sample ID: MBLK 050409	SampType: MBLK	TestCode: TSS	Run ID: ANALYTICAL BALANCE_090504A	Prep Date: 5/4/2009	Units: mg/L
	Batch ID: R46928	TestNo: SM 2540 D	FileID: 47	Analysis Date: 5/4/2009	SeqNo: 833745

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	U	5 0									

Sample ID: LCS	SampType: LCS	TestCode: TSS	Run ID: ANALYTICAL BALANCE_090504A	Prep Date: 5/4/2009	Units: mg/L
	Batch ID: R46928	TestNo: SM 2540 D	FileID: 48	Analysis Date: 5/4/2009	SeqNo: 833746

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Suspended Solids	290	5 0	300	0	96 7	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: TURB_W

Sample ID: MBLK 04/30/09	SampType: MBLK	TestCode: TURB_W	Run ID: TURB_090430A					Prep Date: 4/30/2009		Units: NTU	
	Batch ID: R46841	TestNo: SM 2130 B	FileID: 63					Analysis Date: 4/30/2009		SeqNo: 832277	
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	U	0.10									

Sample ID: LCS	SampType: LCS	TestCode: TURB_W	Run ID: TURB_090430A					Prep Date: 4/30/2009		Units: NTU	
	Batch ID: R46841	TestNo: SM 2130 B	FileID: 64					Analysis Date: 4/30/2009		SeqNo: 832278	
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	4.4	0.10	4.56	0	96.5	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

BatchID: 19043

Sample ID LCS-19043	SampType: LCS	TestCode: 200.7_D	Run ID: ICP-OPTIMA 5300 DV_090506C	Prep Date: 5/6/2009	Units: mg/L
	Batch ID: 19043	TestNo: E200.7, Rev.	FileID: 050609PM	Analysis Date: 5/7/2009	SeqNo: 835595

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium	0.4942	0.000500	0.5	0	98.8	85	115	0	0		

Sample ID 09-2950-01CMS	SampType: MS	TestCode: 200.7_D	Run ID: ICP-OPTIMA 5300 DV_090506B	Prep Date: 5/6/2009	Units: mg/L
Client ID: PACHNER	Batch ID: 19043	TestNo: E200.7, Rev.	FileID: 050609PM	Analysis Date: 5/7/2009	SeqNo: 835522

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.389	0.125	2.5	0.01348	95.6	75	125	0	0		
Barium	5.878	0.00250	6.25	0.04868	93.3	75	125	0	0		
Calcium	12.26	0.484	12.5	0.6554	92.8	75	125	0	0		
Iron	5.958	0.0875	6.25	0.1423	93.1	75	125	0	0		
Magnesium	11.67	0.188	12.5	0.2227	91.6	75	125	0	0		
Manganese	2.174	0.00625	2.5	0.01301	86.4	75	125	0	0		
Potassium	14.84	0.425.	12.5	3.071	94.2	75	125	0	0		
Sodium	565	0.500	12.5	549.2	126	75	125	0	0		S
Silicon as SiO2(Silica)	50.26	0.134	13.38	35.04	114	75	125	0	0		

Sample ID 09-2950-01CMS	SampType: MS	TestCode: 200.7_D	Run ID: ICP-OPTIMA 5300 DV_090506C	Prep Date: 5/6/2009	Units: mg/L
Client ID: PACHNER	Batch ID: 19043	TestNo: E200.7, Rev.	FileID: 050609PM	Analysis Date: 5/7/2009	SeqNo: 835597

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium	0.6592	0.000625	0.625	0.07581	93.3	75	125	0	0		

Sample ID 09-2950-01CMSD	SampType: MSD	TestCode: 200.7_D	Run ID: ICP-OPTIMA 5300 DV_090506B	Prep Date: 5/6/2009	Units: mg/L
Client ID: PACHNER	Batch ID: 19043	TestNo: E200.7, Rev.	FileID: 050609PM	Analysis Date: 5/7/2009	SeqNo: 835523

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.397	0.125	2.5	0.01348	95.9	75	125	2.389	0.322	20	
Barium	5.927	0.00250	6.25	0.04868	94.1	75	125	5.878	0.836	20	
Calcium	12.32	0.484	12.5	0.6554	93.3	75	125	12.26	0.477	20	
Iron	6.001	0.0875	6.25	0.1423	93.7	75	125	5.958	0.727	20	

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

BatchID: 19043

Sample ID 09-2950-01CMSD	SampType: MSD	TestCode: 200.7_D	Run ID: ICP-OPTIMA 5300 DV_090506B	Prep Date: 5/6/2009	Units: mg/L
Client ID: PACHNER	Batch ID: 19043	TestNo: E200.7, Rev.	FileID: 050609PM	Analysis Date: 5/7/2009	SeqNo: 835523

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	11.75	0.188	12.5	0.2227	92.2	75	125	11.67	0.668	20	
Manganese	2.189	0.00625	2.5	0.01301	87	75	125	2.174	0.680	20	
Potassium	14.93	0.425	12.5	3.071	94.9	75	125	14.84	0.574	20	
Sodium	560.6	0.500	12.5	549.2	91	75	125	565	0.789	20	
Silicon as SiO2(Silica)	50.07	0.134	13.38	35.04	112	75	125	0	0	20	

Sample ID 09-2950-01CMSD	SampType: MSD	TestCode: 200.7_D	Run ID: ICP-OPTIMA 5300 DV_090506C	Prep Date: 5/6/2009	Units: mg/L
Client ID: PACHNER	Batch ID: 19043	TestNo: E200.7, Rev.	FileID: 050609PM	Analysis Date: 5/7/2009	SeqNo: 835598

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium	0.6649	0.000625	0.625	0.07581	94.3	75	125	0.6592	0.863	20	

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Evergreen Analytical, Inc.

Date: *14-May-09*

Work Order: 09-2950

Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

BatchID: 19005

Sample ID: MB-19005	SampType: MBLK	TestCode: 200.7_T	Run ID: ICP-OPTIMA 5300 DV_090505B	Prep Date: 5/4/2009	Units: mg/L
	Batch ID: 19005	TestNo: E200.7, Rev.	FileID: 050509AM	Analysis Date: 5/5/2009	SeqNo: 834474

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	U	0.0700									

Sample ID: LCS-19005	SampType: LCS	TestCode: 200.7_T	Run ID: ICP-OPTIMA 5300 DV_090505B	Prep Date: 5/4/2009	Units: mg/L
	Batch ID: 19005	TestNo: E200.7, Rev.	FileID: 050509AM	Analysis Date: 5/5/2009	SeqNo: 834475

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.073	0.0700	5	0	101	85	115	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-2950
Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

BatchID: 19088

Sample ID **MB-19088**	SampType: **MBLK**	TestCode: **200.8_D**	Run ID: **ICPMS_090513A**	Prep Date: **5/11/2009**	Units. **mg/L**
	Batch ID: **19088**	TestNo: **E200.8**	FileID: **090513A.B\029SMPL.D**	Analysis Date: **5/13/2009**	SeqNo: **838940**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	U	0.00200									

Sample ID: **LCS-19088**	SampType: **LCS**	TestCode: **200.8_D**	Run ID: **ICPMS_090513A**	Prep Date: **5/11/2009**	Units: **mg/L**
	Batch ID: **19088**	TestNo: **E200.8**	FileID: **090513A.B\030SMPL.D**	Analysis Date: **5/13/2009**	SeqNo: **838941**

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.2268	0.00200	0.25	0	90.7	85	115	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

Evergreen Analytical, Inc.

Date: *01-May-09*

Work Order: 09-2950

Client Project ID: Diamond GW- Pachner

ANALYTICAL QC SUMMARY REPORT

TestCode: anions_nondw

Sample ID: MB 04/30/09	SampType: MBLK	TestCode: anions_nond	Run ID: IC-2000_090430A	Prep Date: 4/30/2009	Units: mg/L
	Batch ID: R46875	TestNo: E300.0	FileID: 06	Analysis Date: 4/30/2009	SeqNo: 832792

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	U	0.50									
Nitrite-N	U	0.061									
Nitrate-N	U	0.045									
Sulfate	U	0.50									

Sample ID: LCS ALLT218076	SampType: LCS	TestCode: anions_nond	Run ID: IC-2000_090430A	Prep Date: 4/30/2009	Units: mg/L
	Batch ID: R46875	TestNo: E300.0	FileID: 05	Analysis Date: 4/30/2009	SeqNo: 832791

Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	18.64	2.5	20	0	93.2	90	110	0	0		
Nitrite-N	6.078	0.31	6.09	0	99.8	90	110	0	0		
Nitrate-N	4.367	0.23	4.518	0	96.7	90	110	0	0		
Sulfate	28.95	2.5	30	0	96.5	90	110	0	0		

Qualifiers:

U - Not detected at or above the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside acceptance limits
E - Extrapolated value, value exceeds calibration range.
R - RPD outside acceptance limits
B - Analyte detected in the associated Method Blank
H - Prep or analytical holding time exceeded
X - See case narrative

ACCUTEST Laboratories

formerly Evergreen Analytical, Inc.

May 15, 2009

Dave Peterson
Diamond Operating
6680 Gunpark Drive, Suite 100
Boulder, CO 80301

Lab Work Order: 09-2950
Client Project ID: Diamond GW- Pachner

Dear Dave Peterson:

Enclosed are the analytical results for the samples shown in the Laboratory Work Order Summary.

The invoice will be mailed from our New Jersey office under separate cover.

The enclosed data for testing performed at Accutest Laboratory (formerly Evergreen Analytical) have been reviewed for quality assurance. A case narrative is included to describe any anomalies associated with the samples or data.

Accutest will dispose of all samples 44 days from the sample receipt date. If you want samples returned, please advise us by mail or fax as soon as possible.

A copy of this project report and supporting data will be retained for a period of five years unless we are otherwise advised by you. A document retrieval charge will apply.

Thank you for using the services of Accutest Laboratories. If you have any questions concerning the analytical data, please contact me. Please direct other questions to Client Services.

Sincerely,

Joseph J Egry IV/ Tiffany Pham
Quality Assurance

Attachment 4
Ward Unit [COG-600403]
Request to Transfer Certification to Coverage under General Permit No. 840000CDPS

Additional Information

The pond directly below the discharge point (Outfall 001) covers approximately .5 acres and accepts produced water from two producing wells at the Ward property. Between the wells and the discharge point the produced fluid passes through two separate and independent treating vessels designed to remove petroleum hydrocarbons from the fluid.

The pond directly below the discharge point is surrounded on the edges by water grasses native to the area as well as cattails and some small willow trees. The pond serves as local habitat and watering hole for foxes, coyotes, antelope, rattlesnakes, and many types of birds. Approximately one-half mile down gradient from this pond is a second larger pond. This second pond has served as a stock water pond in the past but the surface owner has for roughly the last ten years used the adjoining land to grow winter wheat.

The surface owner is JFJ Farms Inc. (aka Kalcevic Farms) located at 11995 Highway 79, Bennett, Colorado 80102. JFJ Farms is large surface owner in southern Washington County and the focus of their farming operation is predominately dryland wheat. Diamond's management and field personnel make an effort to periodically discuss surface operations at the Ward property with JFJ's representatives in the area. JFJ's management is aware of the surface discharge taking place at the Ward facility and have not expressed any displeasure regarding the practice.