WATTENBERG
DISPOSAL, LLC

SUCKLA FARMS #1 UNDERGROUND INJECTION WELL

SENW Sec.10-T1N-R67W
Weld County

PERMIT RENEWAL APPLICATION

Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, Colorado 80202

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September 17, 2012

DEC 04 2012

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SENW Sec.10-T1N-R67W
Weld County

PERMIT RENEWAL APPLICATION

Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, Colorado 80202
December 4, 2012

K.P. KAUFFMAN COMPANY, INC.
WORLD TRADE CENTER
1675 BROADWAY, 28TH FLOOR
DENVER, COLORADO 80202-4628

TELEPHONE (303) 825-4822
FACSIMILE (303) 825-4825
www.kpk.com

September 17, 2012

Ms. Linda Bowling
ENVIRONMENTAL PROTECTION AGENCY – REGION 8
Office of Partnerships and Regulatory Assistance
United States EPA Region 8
8OC-EISC
1595 Wynkoop Street
Denver, CO 80202-1129

Subject: UNDERGROUND INJECTION CONTROL (UIC)
Suckla Farms #1 – Permit Renewal Application
Permit No. CO10938-02115
Sec 10 T1N R67W 6th PM Weld County, Colorado

Dear Ms. Bowling,
Wattenberg Disposal, LLC is submitting the Class I non-hazardous injection well Suckla Farms #1 Underground Injection Control Permit renewal application for your review. The existing permit was issued on January 22, 2003 and expires on January 21, 2013.

Enclosed please is EPA Form 7520-6 and all attachments requested with such form.

Should you have any questions or need any additional information, please contact me at (303) 825-4822 or slaramesa@kpk.com

Sincerely,

Susana Lara-Mesa
Engineering Project Manager

OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency

EPA

Underground Injection Control Permit Application

(Collected under the authority of the Safe Drinking Water Act. Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number

		T/A	C
U			

Read Attached Instructions Before Starting

For Official Use Only

Application approved mo day year	Date received mo day year	Permit Number	Well ID	FINDS Number

II. Owner Name and Address

Owner Name: Wattenberg Disposal, LLC

Street Address: 1675 Broadway, Suite 2800 | Phone Number: (303) 825-4822

City: Denver | State: CO | ZIP CODE: 80202

III. Operator Name and Address

Owner Name: Kauffman Well Services, Inc

Street Address: 1675 Broadway, Suite 2800 | Phone Number: (303) 825-4822

City: Denver | State: CO | ZIP CODE: 80202

IV. Commercial Facility

- [x] Yes
- [ ] No

V. Ownership

- [x] Private
- [ ] Federal
- [ ] Other

VI. Legal Contact

- [ ] Owner
- [x] Operator

VII. SIC Codes

4953

VIII. Well Status *(Mark "x")*

- [x] A. Operating — Date Started mo day year: 07/21/1992
- [ ] B. Modification/Conversion
- [ ] C. Proposed

IX. Type of Permit Requested *(Mark "x" and specify if required)*

- [x] A. Individual
- [ ] B. Area

Number of Existing Wells	Number of Proposed Wells	Name(s) of field(s) or project(s)
1	0	Field: Wattenberg

X. Class and Type of Well *(see reverse)*

A. Class(es) (enter code(s))	B. Type(s) (enter code(s))	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
Class I, Class II	I, D	N/A	1

XI. Location of Well(s) or Approximate Center of Field or Project

Latitude Deg	Latitude Min	Latitude Sec	Longitude Deg	Longitude Min	Longitude Sec	Township and Range Sec	Twp	Range	1/4 Sec	Feet From	Line	Feet From	Line
40	4	.695	-104	52	44.6	10	1N	67W	NW	500	S	2020	W

XII. Indian Lands (Mark 'x')

- [ ] Yes
- [x] No

XIII. Attachments

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.

XIV. Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

A. Name and Title *(Type or Print)*: Susana Lara-Mesa, Engineering Project Manager

B. Phone No. *(Area Code and No.)*: (303) 825-4822

C. Signature: [signature]

D. Date Signed: 12/03/2012

EPA Form 7520-6 (Rev. 12-11)

PERMIT RENEWAL APPLICATION ATTACHMENTS

A. AREA OF REVIEW METHODS

The area of review shall be a fixed radius of *1/4* mile from the well bore. Given well pressures in the monitoring wells and annual pressure fall-off test (please see Appendix 1), it is assumed that this area has not changed since well was initially completed. Wattenberg Disposal acquired this well on October 1, 2003 from Wright's Disposal. Please refer to Appendix 1: PRESSURE FALL-OFF TEST
Appendix 2.

B. MAPS OF WELLS/AREA AND AREA OF REVIEW

Please refer to the information on file with previous permit at the EPA and Appendix 3.

C. CORRECTIVE ACTION PLAN AND WELL DATA

There are no existing injection wells within a five mile radius of the existing injection well that penetrate the Lyons formation. Please refer to Appendix 4 for water well information within a one mile radius.

D. MAPS AND CROSS SECTIONS OF USDW's

Please refer to Appendix 5.

E. NAME AND DEPTH OF USDW's (Class II)

The main aquifers are the Arapahoe formation at 350' and Fox Hills formation at 650'. The following aquifer and confining formations are identified in the area.

Formation	Top (ft)	USDW?
Arapahoe	350	Y
Fox Hills	650	Y
Upper Pierre Sand	885	N
Pierre Shale	1033	N
Upper Pierre Sand	1430	N
Pierre Shale	1850	N
Parkman	3353	N
Pierre Shale	3440	N
Sussex Sandstone	4710	N
Pierre Shale	4790	N
Shannon Sandstone	5190	N
Pierre Shale	5250	N
Niobrara Shale	7362	N
Codell Sandstone	7690	N
Carlile Shale	7715	N
Huntsman	8000	N
Dakota Group Sandstone	8130	N
Lakota	8368	N
Morrison Shale	8430	N
Entrada Sandstone	8620	N
Opeche Shale	8760	N
Lykias Shale	9010	N
Forell	9069	N
Blaine Salts	9140	N
Lyons Sandstone	9290	N
Satanka Shale	9430	N

F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA

Please refer to Appendix 5.

G. GEOLOGICAL DATA ON INJECTION AND CONFINING ZONES (Class II)

The Lyons formation (the strata into which we inject) is a massive Permian Sandstone, white to pink in color, and is a cross bedded sandstone with fine to coarse grains. The top of the Lyons is at 9139' KB to 9424' KB with a frac gradient of 0.70. The top of the formation is covered by the Harriman Shale which is a medium hard to hard red shale. The base of the Lyons is the Satanka Shale, similar in deposition as the Harriman Shale.

Please refer to **Error! Reference source not found.Error! Reference source not found.**Appendix 5.

H. OPERATING DATA

The Suckla Farms injection well currently injects between 500 and 1000 bbls per day of Class II non-hazardous produced water from oil and gas wells in Weld County, Colorado. The

injection rate is held constant at 55 gal/min. The main source of injection fluid is produced and flow-back water from oil and gas operations in the Denver-Julesburg Basin. Currently, no industrial waste is being injected. The annulus fluid between the tubing and the casing is fresh water treated with a corrosion inhibitor. Ethylene Glycol, Isopropyl Alcohol, Methanol and Potassium Hydroxide are used are corrosion inhibitors and are further described on Appendix 6. The average injection pressure in 2012 is 443 psi, the minimum has been 280 psi and maximum injection rate is 500 psi. Annular pressure is kept constant at 130 psi.

The most recent Fluid Analysis Report should be in the Wattenberg files at the EPA, and can be found under Appendix 7.

I. FORMATION TESTING PROGRAM

The following items have been attached to this application for well integrity purposes:

- A copy of the latest Fall-off test has been attached to Appendix 1.
- A Cement Bond Log is attached to Appendix 8
- A copy if the semi-annual Monitoring Well Testing Report is attached to Appendix 9.
- A copy of the Pressure Fall-off test raw data has been attached in a CD to this application.

J. STIMULATION PROGRAM

There are no stimulation treatments associated with the operation of this well.

K. INJECTION PROCEDURES

Disposal water is trucked into the Wattenberg Disposal Facility and discharged into a 200 bbl horizontal tank via 2 Gorman Rupp pumps. The water and solids settle by gravity in this tank and is pumped to 6-400 bbl and 1-500 bbl cylindrical tanks via one Gorman Rupp pump. The lighter weight fluids are transferred by gravity to 1-300 bbl tank. The water from the cylindrical tanks is pumped via 1 Summit pump and 1 Gould pump to three filter canisters. The water is then filtered from 10 microns down to 5 microns. Water is then injected into the Suckla Farms #1 Disposal Well with 2 National Oilwell Varco triplex pumps. Average injection pressure is 400 psi using 1 pump and 600 psi using 2 pumps.

A plant flow diagram with equipment specifications has been included in Appendix 10.

L. CONSTRUCTION PROCEDURES

This is a permit renewal application. The well and disposal facilities have already been built. A copy of the well completion report has been attached to Appendix 11.

M. CONSTRUCTION DETAILS

This is a permit renewal application for an existing well. A wellbore diagram and disposal facility schematics have been attached to Appendix 12.

N. CHANGES IN INJECTED FLUIDS

There are no current expected changes in the injected fluids. In the event where a new source of produced water is to be injected, a New Source Application will be submitted to the EPA for review.

O. PLANS FOR WELL FAILURES

The backside pressure of the Suckla Farms #1 is constantly monitored and recorded. In case the pressure falls, the facility is immediately shut down and no further fluid is injected into the well. Monthly charts are recorded and submitted to the EPA on a quarterly basis along with the laboratory analysis report for filtered water and pre-treatment fluid samples. The latest injection records submitted for the Third Quarter of 2012 are attached to Appendix 13.

In order to contain a potential leak or spill, there is a concrete berm around the tanks that can hold up to 3,350 ft^3, which is 120% of the largest tank on location (500 bbl). A tertiary containment system in the form of an earthen berm is installed downhill of the facility covering an approximate of 15,400 ft^2. Secondary and tertiary containment are shown on Appendix 10.

P. MONITORING PROGRAM

There are three monitoring wells that were installed in July of 1994 in accordance with a groundwater monitoring system requested by the Solid Waste Section of the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and Environment. The monitoring system is in the periphery of the site and consists of three monitoring wells (OW-1, OW-2, and OW-3), one of which is an upgradient well (OW-1). These wells were located based on an exploratory well used to evaluate the stratigraphy of the zone (EXP-1) with piezometers to monitor the capacity of the aquifer. Water samples of these wells are taken semi-annually and lab analysis is run. The latest Groundwater Monitoring Report is attached to Appendix 9.

Q. PLUGGING AND ABANDONMENT PLAN

Please find Closure plan under Appendix 14.

R. NECESSARY RESOURCES

A letter of credit has been attached to this application under Appendix 15.

S. AQUIFER EXEMPTION

Wattenberg Disposal, LLC is not requesting an aquifer exemption. The top of the injection zone is 8386 ft below the bottom of the fresh water aquifer (Fox Hills) formation. Please refer to the geological information under Appendix 5.

T. EXISTING EPA PERMITS

The existing permit to operate this underground injection well facility at Suckla Farms expires at Midnight, January 10, 2013. This is a permit renewal application to replace the current one, number CO 10938-02115. A copy of the previous permit has been included in Appendix 16.

U. DESCRIPTION OF BUSINESS

Wattenberg Disposal, LLC is in the business of collecting, treating, and disposing of Class I and Class II non-hazardous produced water from oil and gas wells and industrial waste water by injecting said fluids into the Lyons formation at 9276' to 9418' of depth.

APPENDIX 1

PETERSON ENERGY
MANAGEMENT INC.

STAY AHEAD OF THE CURVE.

Suckla Farms Injection Well # 1
EPA Falloff Test

EPA Permit No. CO10938-02115

Project Date:	**March 16, 2012 to March 26, 2012**
Well:	**SUCKLA FARMS INJ WELL (EPA) #1** API #: 05-123-14291 Operator: K P KAUFFMAN COMPANY, INC **SHL:** 2140' FNL, 2020' FEL Section 10 --T1N -- R67W Weld County, Colorado
Prepared For:	**Wattenberg Disposal, LLC** *1675 Broadway, Suite #2800* *Denver, Colorado 80202*
Author(s):	Clayton Doke, Petroleum Engineer
Copies:	Wattenberg Disposal, LLC (2 copies), Peterson Energy Management (1 copy), Electronic File (1 file)

1) **Company Name & Address**

Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, Colorado 80202

2) **Test Well Name & Location**

Suckla Farms Injection Well #1
NW/4 Section 10-T1N-R67W
Weld County, Colorado

3) **Facility Contact Person**

Kent Gilbert 303-825-4822

Report Prepared by:
Clayton Doke, 970-669-7411
Peterson Energy Management, Inc.
2154 W. Eisenhower Blvd., Loveland CO 80537

4) **Openhole Log**

See attached Dual Induction Log run 07/02/89
Lyons Sandstone injection zone

5) **Well Schematic**

See attached well schematic diagram

Wellbore radius:	0.328'
Completed interval depths:	Lyons, 9276'-9418'
Type of completion:	Cased & cemented, injection under a packer set at 9040' via 2-7/8" fiber-lined tubing

6) **Date of Fill Depth**

Current fill depth is 9476', recorded in March, 2003.

7) **Offset well information**

The nearest well completed in the Lyons formation is the Wattenberg SWD #1, NWSW Section 19-2N-66W, operated by Anadarko. This well is approximately 4½ miles to the north-east. No interference between these two wells is assumed to occur for purposes of this analysis.

8) **Chronological Listing of Daily Testing Activities**

Company has been injecting water into the subject well during daylight hours for five to six days per week for the past year. Injection averaged 471 bbls per day since the last test.

03/16/12	14:47:48	Intermittent daylight injection stopped, well shut in
03/19/12	08:54:02	Tandem gauges installed at 9020' WLM
03/20/12	07:01:42	Injection began at 43.7 BWPH

03/21/12	07:00:42	Injection stopped, 1047.6 BW injected
03/26/12	07:49:02	Gauges off bottom (total SI= 120.8 hrs)

9) Electronic Submission of Raw Data

Attached CD contains a file of raw time-pressure-temperature data (at packer depth) for both gauges.

10) Tabular Summary of Injection Rates

Tabular summary of injection rates for the three months preceding the falloff test is attached, as is a rate vs. time plot for the previous three months. This rate-time data is also included in a .csv file on the attached CD.

11) Offset Well Rate Information

As discussed above, no offset well rate information is considered to be useful in this test analysis.

12) Hard Copy of Time and Pressure Data

A tabular summary of raw time, pressure & temperature data (filtered) is attached.

13) Pressure Gauge Information

Bottom Gauge:
10,000 psi, PPS25 electronic memory strain gauge
SN3684

Installed at:	9020.0' WLM
Pressure accuracy:	0.03% FS (+/-3.0 psi)
Pressure resolution:	0.0003% FS (+/- 0.03 psi).
Last calibration:	11/07/11

Top Gauge:
10,000 psi, PPS25 electronic memory strain gauge
SN4051

Installed at:	9019.0' WLM
Pressure accuracy:	0.03% FS (+/-3.0 psi)
Pressure resolution:	0.0003% FS (+/- 0.03 psi).
Last calibration:	11/07/11

Calibration certificates for both gauges are attached.

Gauges supplied by Lightning Wireline (970-785-2670)

14) General Test Information

Date of test: Injection commenced March 20, 2012, ceased March 21, 2012.
Bottom hole pressure monitored from March 19, 2012 to March 26, 2012.
Rate/Time information plotted from January 1, 2012 to March 31, 2012.

Time synchronization: see attached data files.

Location of shut-in valve: well was shut in at the wellhead

15) Reservoir Parameters

Water viscosity (μ):	0.2313 cp	(correlation)
Porosity (ø):	6%	(measured- density log porosity)
Total Compressibility (ct):	9.36e-06	(correlation)
Formation Volume Factor:	1.055 rb/stb	(correlation)

Initial formation reservoir pressure: From the attached semi-log Diagnostic Analysis Radial diagnostic plot, p* is approximately 3828 psia at perforation midpoint. This is 26 psi below the 3854 p* estimated from the semi-log (radial) Diagnostic Analysis plot on the last pressure falloff test run in March, 2011.

Final injection pressure is approximately 4496 psi, 48 psi above the 24-hour injection pressure on the March, 2011 pressure falloff test.

A summary of historical estimated Initial Formation Reservoir Pressure (p*) values at 9347' perforation mid-point using a 0.442 psi/ft hydrostatic gradient follows:

July, 1993	4417 psia, unreliable (23 hour shut in, surface gauges, no radial flow)
November, 1997	3590 psia
October, 2001	3760 psia
February, 2003	3830 psia
April, 2004	3859 psia (radial plot, multi-layer synthesis)
April, 2005	3647 psia (radial plot, multi-layer synthesis)
April, 2006	3656 psia (radial plot, multi-layer synthesis)
April, 2007	3816 psia (radial plot, radial flow portion of radial test analysis)
March, 2008	3694 psia (radial plot, single layer)
March, 2009	3912 psia (radial plot, single layer)
March, 2010	3931 psia (radial plot, single layer)
March, 2011	3854 psia (radial plot, single layer)
March, 2012	3828 psia (radial plot, single layer)

Date Reservoir Pressure was last stabilized: Stabilization likely occurred during a workover in March, 2003, 108 months prior to this test. The 88.2 hour shut in period preceding the current test may have been long enough to see stabilization, as pressure was fairly steady at the start of injection.

Justified Interval Thickness: Tracer survey run 7/12/93 & temperature logs run 11/01/01 indicate entire 142' perforated interval is taking fluid. Wireline 1/8/03 & during 3/03 workover shows all perforations open.

16) Waste Plume

Cumulative injection volume into completed interval: 5,547,819 bbls as of March 21, 2012 at 07:00 hrs (post-test volume, includes the 1047.6 bbls injected on the current test). These figures were determined by using injection volumes supplied by the Colorado Oil & Gas Conservation Commission through December, 1997, and injection volumes supplied by the operator from January, 1998, through March, 2012.

There were 170,972 bbls water injected into this well in the year since the last test.

Calculated radial distance to the waste front: We are unable to empirically calculate a distance to

the waste front from this type of test as there is no contrast between historic waste plume viscosity and formation fluid viscosity.

Average historical waste fluid viscosity: To our knowledge, no direct viscosity measurements have been taken. Waste plume viscosity is assumed to be the same as formation fluid viscosity. Essentially all of the waste fluid injected into the Suckla Farms #1 has been oilfield produced water, which does not have a significant contrast to the Lyons formation water.

17) Injection Period

Time: 07:01:42 AM 3/20/2012 to 07:00:42 AM 3/21/2012, 23.98 hours, 1047.6 bbls

Type fluid: oilfield brine/produced water

Pump Type: Water plant injection pump

Rate Meter: Halliburton digital turbine meter. SWD tanks were strapped before & after to confirm volume.

Final injection pressure, surface:	unknown
Final injection pressure at 9347' mid-perf:	4495.5 psia
Final injection temperature at 9020' gauge depth:	151.2° F

18) Falloff Period

Total shut-in time: 07:00:42 AM 3/21/11 to 07:49:02 AM 3/26/11, 120.8 hours

Final shut-in pressure at 9347' mid-perf:	4037.5 psia
Final shut-in temperature at 9020' gauge depth:	242.6°F

Time well went on vacuum: well surface pressure went to 0 psi 88.0 hours before the end of the test.

19) Pressure Gradient

A static gradient was run at the conclusion of this test. No fluid level was noted as the fluid level appeared to be at surface.

20-21) Calculated Test Data and Corresponding Graphs

Please see attached graphs of the current test:

Data Chart	(Rate & Pressure vs Time)
Diagnostic Analysis	(Log-Log Typecurve)
Diagnostic Analysis	(Radial Semi-Log Analysis)
Two Layer Reservoir Model	(Radial and Typecurve)

The Rate vs. Time plot shows bottomhole injection pressure had essentially stabilized after the 24 hour injection period at 4496 psi. Injection pressure was rising at the rate of +/-0.3 psi/hr for the last six hours prior to shut in. No pressure anomalies due to gauge temperature de-stabilization are evident during the test. Data quality appears good. Pressure change during later test times is 0.4 psi per time step. Gauge resolution (+/-0.03 psi) is adequate for the observed pressure change.

The Diagnostic Analysis (Typecurve) shows that a short radial flow period was reached approximately 59.1 hours into the falloff portion of the test. Analysis of this region gives a system permeability of 0.8576 md, with a skin factor of -5.470.

Using the permeability value calculated from the falloff period, we can calculate a radius of investigation from the falloff test as follows for t = 120.8 hrs, with other parameters as defined above:

$$r_{inv} = \sqrt{\frac{kt}{948\phi\mu c_t}} = \sqrt{\frac{0.8576 \cdot 120.8}{948 \cdot .06 \cdot 0.2313 \cdot 9.36 \times 10^{-6}}} = 917'$$

Radius of investigation = 917'

The test was also successfully modeled using a Two-Layer Reservoir Model. A good history match is obtained by assuming a 78' layer with a permeability of 2.571 md and skin of -5.082, and a 64' layer with a 1.555 md permeability and -3.067 skin.

Due to the variable rate conditions reported prior to this test, the plots in this report use a superposition time function. EPA Region VI guidelines recommend using a rate history of at least twice the length of the falloff test. Rate information for 81 days preceding the falloff test was used to generate the superposition. This is sixteen times the duration of the falloff test.

Plots were generated using the F.A.S.T. WellTest software package available from Fekete Associates, Inc., Calgary, Alberta, Canada. A .fkt data file is included on the attached CD.

22) **Comparison with Petition Demonstration**

Condition #5 on Page 12 in Permit # CO10938-02115 stipulates an upper limit of 8,300,000 barrels of injected waste. This corresponds with a waste front of 1,320', assuming piston displacement. The current volume of 5,547,819 barrels injected corresponds to a waste front of 1,108', assuming an injection interval of 142'. While the effective injection interval may be less than 142', the additional fracture porosity postulated in this, and previous reports makes 1,108' a conservative estimate of the radial front of the waste plume. If fractures exist, then the reservoir must contain additional storage in the fracture system, in addition to the 6% matrix porosity. This will have the result of increasing the effective porosity, which decreases the distance to the waste front for any assumed injection volume or effective zone height.

The injection front has progressed 17' since the March 2011 test. There are 212 feet remaining for the front to advance before the 1320' permit limit is reached. This represents approximately 16 years and 1 month at current conditions.

Equation:

$$r_{inj} = \sqrt{\frac{5.615 \cdot V \cdot B_w}{\pi \cdot h \cdot \phi}} = \sqrt{\frac{5.615 \cdot 5{,}547{,}819 \cdot 1.055}{142 \cdot 0.06 \cdot \pi}} = 1{,}108'$$

where V = 5,547,819 bbls, B_w = 1.055 rb/stb, h = 142', ø = 0.06

It is our opinion that the current test design is adequate to investigate this reservoir, given the constraints of daylight-only injection operations and available water storage. We recommend that subsequent tests follow this same design, which has now been used for seven consecutive annual

tests.

23) Radioactive Tracer Survey

A radioactive tracer was not run during this test. The last radioactive tracer survey run in the Suckla Farms #1 was done in July, 1993.

24) Unusual Permit Approval Conditions

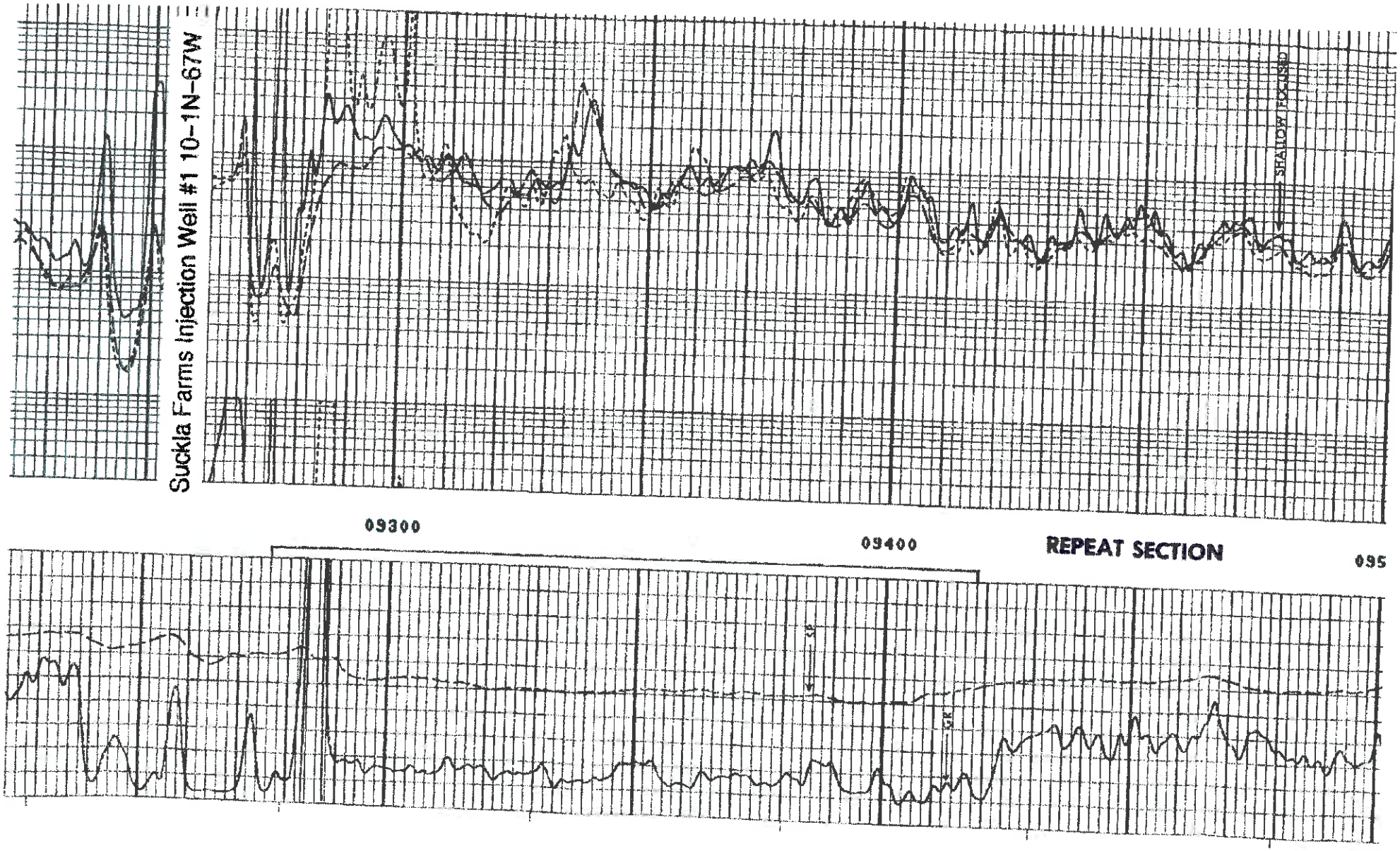
We are not aware of any unusual permit approval conditions.

Report prepared for Wattenberg Disposal, LLC. by

PETERSON ENERGY MANAGEMENT, INC

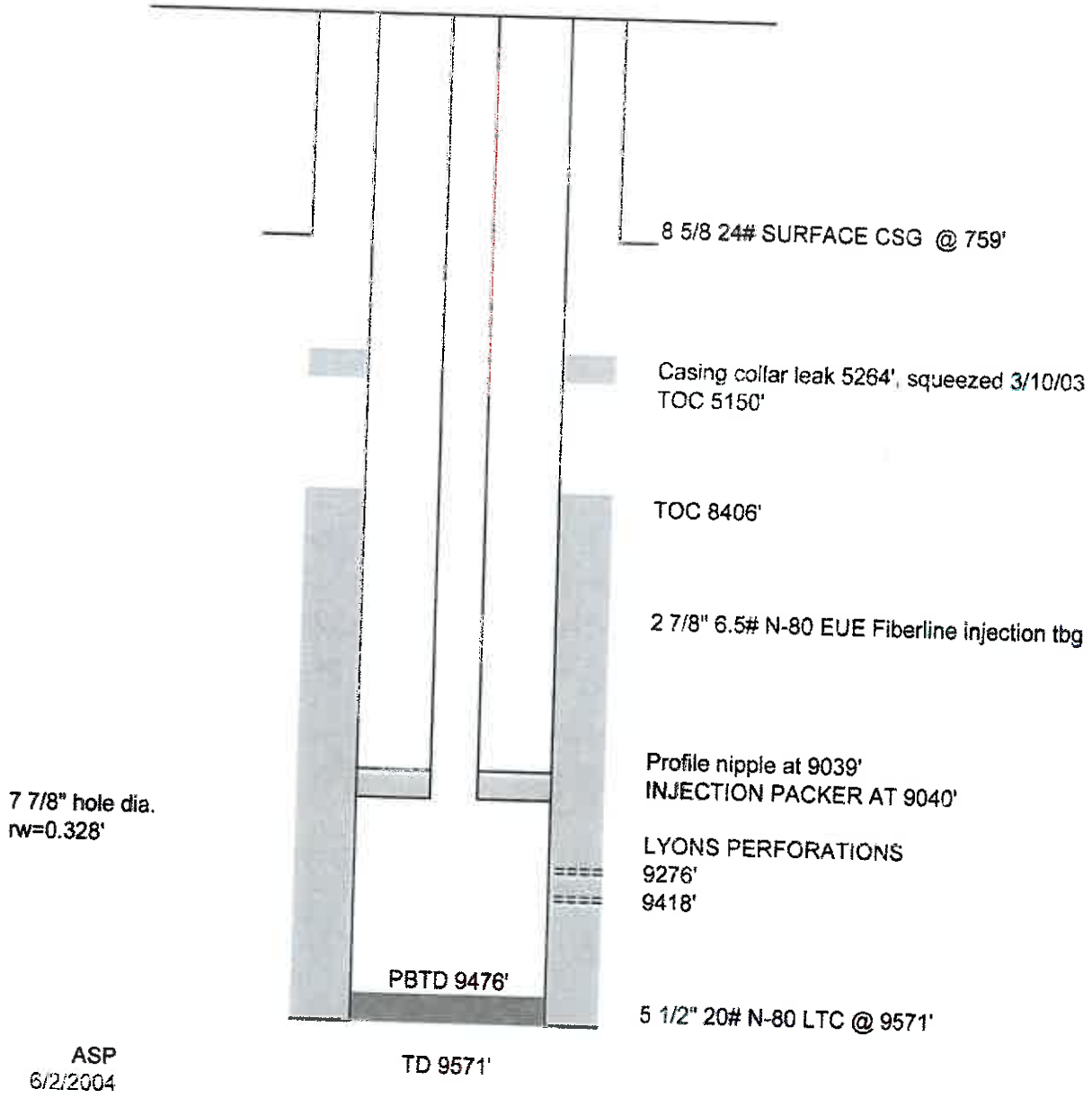
Clayton L. Doke, Petroleum Engineer
May 14, 2012

Reference: EPA Region VI UIC Pressure Falloff Testing Guideline, Third Revision, August 8, 2002


Suckla Farms Injection Well #1 10-1N-67W
SHALLOW FOCUSED
09300
09400
REPEAT SECTION
095

WELLBORE SCHEMATIC

WATTENBERG DISPOSAL
SUCKLA FARMS INJECTION WELL #1
NW/4 SECTION 10-1N-67W
WELD COUNTY, CO
05-123-14291



ASP
6/2/2004

Suckla Farms Injection Well #1
Injection History
2011 EPA Test

DETAIL INJECTION HISTORY

-1119.09

# PUMPS	RATE	BBLS	INC HRS	START TIME	END TIME	CUM HRS
0	0	0	0.00	1/1/2012 7:00	1/1/2012 7:00	0.00
	0		24.00			24.00
0	0	0	0.00	1/2/2012 7:00	1/2/2012 7:00	24.00
	0		24.00			48.00
2	-2238.18	768	8.25	1/3/2012 7:00	1/3/2012 15:14	56.25
	0		15.75			72.00
2	-2238.18	874	9.37	1/4/2012 7:00	1/4/2012 16:22	81.37
	0		14.63			96.00
2	-2238.18	862	9.55	1/5/2012 7:00	1/5/2012 16:35	105.55
	0		14.44			120.00
2	-2238.18	824	8.84	1/6/2012 7:00	1/6/2012 15:50	128.84
	0		15.16			144.00
0	0	0	0.00	1/7/2012 7:00	1/7/2012 7:00	144.00
	0		24.00			168.00
0	0	0	0.00	1/8/2012 7:00	1/8/2012 7:00	168.00
	0		24.00			192.00
2	-2238.18	826	8.85	1/9/2012 7:00	1/9/2012 15:50	200.85
	0		15.15			216.00
2	-2238.18	606	6.50	1/10/2012 7:00	1/10/2012 13:29	222.50
	0		17.50			240.00
1	-1119.09	378	8.06	1/11/2012 7:00	1/11/2012 15:03	248.06
	0		15.94			264.00
1	-1119.09	373	8.00	1/12/2012 7:00	1/12/2012 14:59	272.00
	0		16.00			288.00
1	-1119.09	174	3.73	1/13/2012 7:00	1/13/2012 10:43	291.73
	0		20.27			312.00
0	0	0	0.00	1/14/2012 7:00	1/14/2012 7:00	312.00
	0		24.00			336.00
0	0	0	0.00	1/15/2012 7:00	1/15/2012 7:00	336.00
	0		24.00			360.00
2	-2238.18	617	6.62	1/16/2012 7:00	1/16/2012 13:36	366.62
	0		17.38			384.00
1	-1119.09	462	10.34	1/17/2012 7:00	1/17/2012 17:20	394.34
	0		13.66			408.00
1	-1119.09	491	10.53	1/18/2012 7:00	1/18/2012 17:31	418.53
	0		13.47			432.00
2	-2238.18	572	6.13	1/19/2012 7:00	1/19/2012 13:08	438.13
	0		17.87			456.00
1	-1119.09	429	9.20	1/20/2012 7:00	1/20/2012 16:12	465.20
	0		14.80			480.00
0	0	0	0.00	1/21/2012 7:00	1/21/2012 7:00	480.00
	0		24.00			504.00
0	0	0	0.00	1/22/2012 7:00	1/22/2012 7:00	504.00
	0		24.00			528.00
1	-1119.09	289	6.20	1/23/2012 7:00	1/23/2012 13:11	534.20
	0		17.80			552.00
1	-1119.09	409	8.77	1/24/2012 7:00	1/24/2012 15:46	560.77
	0		15.23			576.00
2	-2238.18	392	7.31	1/25/2012 7:00	1/25/2012 14:18	583.31
	0		16.69			600.00
2	-2238.18	671	7.20	1/26/2012 7:00	1/26/2012 14:11	607.20
	0		16.80			624.00
2	-2238.18	692	7.42	1/27/2012 7:00	1/27/2012 14:25	631.42
	0		16.58			648.00
0	0	0	0.00	1/28/2012 7:00	1/28/2012 7:00	648.00
	0		24.00			672.00
0	0	0	0.00	1/29/2012 7:00	1/29/2012 7:00	672.00
	0		24.00			696.00
1	-1119.09	402	8.62	1/30/2012 7:00	1/30/2012 15:37	704.62
	0		15.38			720.00
1	-1119.09	442	9.48	1/31/2012 7:00	1/31/2012 16:28	729.48
	0		14.52			744.00
1	-1119.09	518	11.11	2/1/2012 7:00	2/1/2012 18:06	755.11
	0		12.89			768.00
2	-2238.18	577	6.19	2/2/2012 7:00	2/2/2012 13:11	774.19
	0		17.81			792.00
1	-1119.09	404	8.66	2/3/2012 7:00	2/3/2012 15:39	800.66
	0		15.34			816.00
0	0	0	0.00	2/4/2012 7:00	2/4/2012 7:00	816.00
	0		24.00			840.00
0	0	0	0.00	2/5/2012 7:00	2/5/2012 7:00	840.00
	0		24.00			864.00
2	-2238.18	585	6.39	2/6/2012 7:00	2/6/2012 13:22	870.39
	0		17.62			888.00
1	-1119.09	364	7.81	2/7/2012 7:00	2/7/2012 14:48	895.81
	0		16.19			912.00
1	-1119.09	530	11.37	2/8/2012 7:00	2/8/2012 18:21	923.37

SUMMARY INJECTION HISTORY

START	END	RATE	HRS
0.00	48.00	0	48.00
48.00	56.25	-2238.18	8.25
56.25	72.00	0	15.75
72.00	81.37	-2238.18	9.37
81.37	96.00	0	14.63
96.00	105.55	-2238.18	9.55
105.55	120.00	0	14.44
120.00	128.84	-2238.18	8.84
128.84	192.00	0	63.16
192.00	200.85	-2238.18	8.85
200.85	216.00	0	15.15
216.00	222.50	-2238.18	6.50
222.50	240.00	0	17.50
240.00	248.06	-1119.09	8.06
248.06	264.00	0	15.94
264.00	272.00	-1119.09	8.00
272.00	288.00	0	16.00
288.00	291.73	-1119.09	3.73
291.73	360.00	0	68.27
360.00	366.62	-2238.18	6.62
366.62	384.00	0	17.38
384.00	394.34	-1119.09	10.34
394.34	408.00	0	13.66
408.00	418.53	-1119.09	10.53
418.53	432.00	0	13.47
432.00	438.13	-2238.18	6.13
438.13	456.00	0	17.87
456.00	465.20	-1119.09	9.20
465.20	528.00	0	62.80
528.00	534.20	-1119.09	6.20
534.20	552.00	0	17.80
552.00	560.77	-1119.09	8.77
560.77	576.00	0	15.23
576.00	583.31	-2238.18	7.31
583.31	600.00	0	16.69
600.00	607.20	-2238.18	7.20
607.20	624.00	0	16.80
624.00	631.42	-2238.18	7.42
631.42	696.00	0	64.58
696.00	704.62	-1119.09	8.62
704.62	720.00	0	15.38
720.00	729.48	-1119.09	9.48
729.48	744.00	0	14.52
744.00	755.11	-1119.09	11.11
755.11	768.00	0	12.89
768.00	774.19	-2238.18	6.19
774.19	792.00	0	17.81
792.00	800.66	-1119.09	8.66
800.66	864.00	0	63.34
864.00	870.39	-2238.18	6.39
870.39	888.00	0	17.62
888.00	895.81	-1119.09	7.81
895.81	912.00	0	16.19
912.00	923.37	-1119.09	11.37
923.37	936.00	0	12.63
936.00	948.20	-1119.09	12.20
948.20	960.00	0	11.80
960.00	970.64	-1119.09	10.64
970.64	1032.00	0	61.36
1032.00	1041.91	-1119.09	9.91
1041.91	1056.00	0	14.09
1056.00	1066.79	-1119.09	10.79
1066.79	1080.00	0	13.21
1080.00	1091.54	-1119.09	11.54
1091.54	1104.00	0	12.46
1104.00	1111.81	-2238.18	7.81
1111.81	1128.00	0	16.39
1128.00	1134.09	-2238.18	6.09
1134.09	1200.00	0	65.91
1200.00	1206.43	-2238.18	6.43
1206.43	1224.00	0	17.57
1224.00	1231.23	-1119.09	7.23
1231.23	1248.00	0	16.77
1248.00	1254.17	-2238.18	6.17
1254.17	1272.00	0	17.83

	0		12.63			936.00
1	-1119.09	569	12.20	2/9/2012 7:00	2/9/2012 19:12	948.20
	0		11.80			960.00
1	-1119.09	496	10.64	2/10/2012 7:00	2/10/2012 17:38	970.64
	0		13.36			984.00
0	0	0	0.00	2/11/2012 7:00	2/11/2012 7:00	984.00
	0		24.00			1008.00
0	0	0	0.00	2/12/2012 7:00	2/12/2012 7:00	1008.00
	0		24.00			1032.00
1	-1119.09	462	9.91	2/13/2012 7:00	2/13/2012 16:54	1041.91
	0		14.09			1056.00
1	-1119.09	503	10.79	2/14/2012 7:00	2/14/2012 17:47	1066.79
	0		13.21			1080.00
1	-1119.09	536	11.54	2/15/2012 7:00	2/15/2012 18:32	1091.54
	0		12.46			1104.00
2	-2238.18	710	7.61	2/16/2012 7:00	2/16/2012 14:36	1111.61
	0		16.39			1128.00
2	-2238.18	566	6.09	2/17/2012 7:00	2/17/2012 13:05	1134.09
	0		17.91			1152.00
0	0	0	0.00	2/18/2012 7:00	2/18/2012 7:00	1152.00
	0		24.00			1176.00
0	0	0	0.00	2/19/2012 7:00	2/19/2012 7:00	1176.00
	0		24.00			1200.00
2	-2238.18	600	6.43	2/20/2012 7:00	2/20/2012 13:26	1206.43
	0		17.57			1224.00
1	-1119.09	337	7.23	2/21/2012 7:00	2/21/2012 14:13	1231.23
	0		16.77			1248.00
2	-2238.18	575	6.17	2/22/2012 7:00	2/22/2012 13:09	1254.17
	0		17.83			1272.00
1	-1119.09	548	11.75	2/23/2012 7:00	2/23/2012 18:45	1283.75
	0		12.25			1296.00
2	-2238.18	786	8.43	2/24/2012 7:00	2/24/2012 16:26	1304.43
	0		15.57			1320.00
2	-2238.18	651	6.98	2/25/2012 7:00	2/25/2012 13:58	1326.98
	0		17.02			1344.00
0	0	0	0.00	2/26/2012 7:00	2/26/2012 7:00	1344.00
	0		24.00			1368.00
1	-1119.09	356	7.63	2/27/2012 7:00	2/27/2012 14:36	1375.63
	0		16.37			1392.00
2	-2238.18	569	6.10	2/28/2012 7:00	2/28/2012 13:06	1398.10
	0		17.90			1416.00
1	-1119.09	531	11.39	2/29/2012 7:00	2/29/2012 18:23	1427.39
	0		12.61			1440.00
2	-2238.18	592	6.35	3/1/2012 7:00	3/1/2012 13:20	1446.35
	0		17.65			1464.00
2	-2238.18	584	6.26	3/2/2012 7:00	3/2/2012 13:15	1470.26
	0		17.74			1488.00
0	0	0	0.00	3/3/2012 7:00	3/3/2012 7:00	1488.00
	0		24.00			1512.00
0	0	0	0.00	3/4/2012 7:00	3/4/2012 7:00	1512.00
	0		24.00			1536.00
2	-2238.18	650	6.97	3/5/2012 7:00	3/5/2012 13:58	1542.97
	0		17.03			1560.00
1	-1119.09	161	3.88	3/6/2012 7:00	3/6/2012 10:52	1563.88
	0		20.12			1584.00
0	0	0	0.00	3/7/2012 7:00	3/7/2012 7:00	1584.00
	0		24.00			1608.00
1	-1119.09	145	3.11	3/8/2012 7:00	3/8/2012 10:06	1611.11
	0		20.89			1632.00
2	-2238.18	970	10.40	3/9/2012 7:00	3/9/2012 17:24	1642.40
	0		13.60			1656.00
2	-2238.18	834	8.94	3/10/2012 7:00	3/10/2012 15:56	1664.94
	0		15.06			1680.00
0	0	0	0.00	3/11/2012 7:00	3/11/2012 7:00	1680.00
	0		24.00			1704.00
1	-1119.09	274	5.88	3/12/2012 7:00	3/12/2012 12:52	1709.88
	0		18.12			1728.00
1	-1119.09	482	10.34	3/13/2012 7:00	3/13/2012 17:20	1738.34
	0		13.66			1752.00
2	-2238.18	798	8.56	3/14/2012 7:00	3/14/2012 15:33	1760.56
	0		15.44			1776.00
2	-2238.18	718	7.68	3/15/2012 7:00	3/15/2012 14:40	1783.68
	0		16.32			1800.00
2	-2238.18	726	7.78	3/16/2012 7:00	3/16/2012 14:47	1807.78
	0		16.22			1824.00
0	0	0	0.00	3/17/2012 7:00	3/17/2012 7:00	1824.00
	0		24.00			1848.00
0	0	0	0.00	3/18/2012 7:00	3/18/2012 7:00	1848.00
	0		24.00			1872.00
0	0	0	0.00	3/19/2012 7:00	3/19/2012 7:00	1872.00
	0		24.03			1896.03
1	-1046	740.6	16.99	3/20/2012 7:01	3/21/2012 0:01	1913.02
	0		-0.02			1913.00
1	-1046	306.1	7.02	3/21/2012 0:00	3/21/2012 7:01	1920.02

1272.00	1283.75	-1119.09	11.75
1283.75	1296.00	0	12.25
1296.00	1304.43	-2238.18	8.43
1304.43	1320.00	0	15.57
1320.00	1326.98	-2238.18	6.98
1326.98	1368.00	0	41.02
1368.00	1375.63	-1119.09	7.63
1375.63	1392.00	0	16.37
1392.00	1398.10	-2238.18	6.10
1398.10	1416.00	0	17.90
1416.00	1427.39	-1119.09	11.39
1427.39	1440.00	0	12.61
1440.00	1446.35	-2238.18	6.35
1446.35	1464.00	0	17.65
1464.00	1470.26	-2238.18	6.26
1470.26	1536.00	0	65.74
1536.00	1542.97	-2238.18	6.97
1542.97	1560.00	0	17.03
1560.00	1563.88	-1119.09	3.88
1563.88	1608.00	0	44.12
1608.00	1611.11	-1119.09	3.11
1611.11	1632.00	0	20.89
1632.00	1642.40	-2238.18	10.40
1642.40	1656.00	0	13.60
1656.00	1664.94	-2238.18	8.94
1664.94	1704.00	0	39.06
1704.00	1709.88	-1119.09	5.88
1709.88	1728.00	0	18.12
1728.00	1738.34	-1119.09	10.34
1738.34	1752.00	0	13.66
1752.00	1760.56	-2238.18	8.56
1760.56	1776.00	0	15.44
1776.00	1783.68	-2238.18	7.68
1783.68	1800.00	0	16.32
1800.00	1807.78	-2238.18	7.78
1807.78	1896.03	0	88.24
1896.03	1920.02	-1046.7	23.99
1920.02	2040.03	0	120.01
2040.03	2053.04	-2238.18	13.01
2053.04	2065.17	0	12.13
2065.17	2086.15	-2238.18	20.98
2086.15	2088.03	0	1.88
2088.03	2090.09	-1119.09	2.06
2090.09	2112.03	0	21.94
2112.03	2123.85	-2238.18	11.82
2123.85	2136.03	0	12.18
2136.03	2144.16	-2238.18	8.13
2144.16	2160.03	0	15.87
2160.03	2171.59	-1119.08	11.56
2171.59	2184.03		12.44
	END OF TEST	SUM-->	2184.03

	0		23.98			1944.00
0	0	0	0.00	3/22/2012 7:00	3/22/2012 7:00	1944.00
	0		24.03			1968.03
0	0	0	0.00	3/23/2012 7:01	3/23/2012 7:01	1968.03
	0		24.00			1992.03
2	0	0	0.00	3/24/2012 7:01	3/24/2012 7:01	1992.03
	0		24.00			2016.03
2	0	0	0.00	3/25/2012 7:01	3/25/2012 7:01	2016.03
	0		24.00			2040.03
2	-2236.18	1213	13.01	3/26/2012 7:01	3/26/2012 20:02	2053.04
	0		12.13			2065.17
2	-2238.18	1957	20.98	3/27/2012 8:10	3/28/2012 5:09	2086.15
	0		1.88			2088.03
1	-1119.09	96	2.06	3/28/2012 7:01	3/28/2012 9:05	2090.09
	0		21.94			2112.03
2	-2238.18	1102	11.82	3/29/2012 7:01	3/29/2012 18:50	2123.85
	0		12.18			2136.03
2	-2236.18	758	8.13	3/30/2012 7:01	3/30/2012 15:09	2144.16
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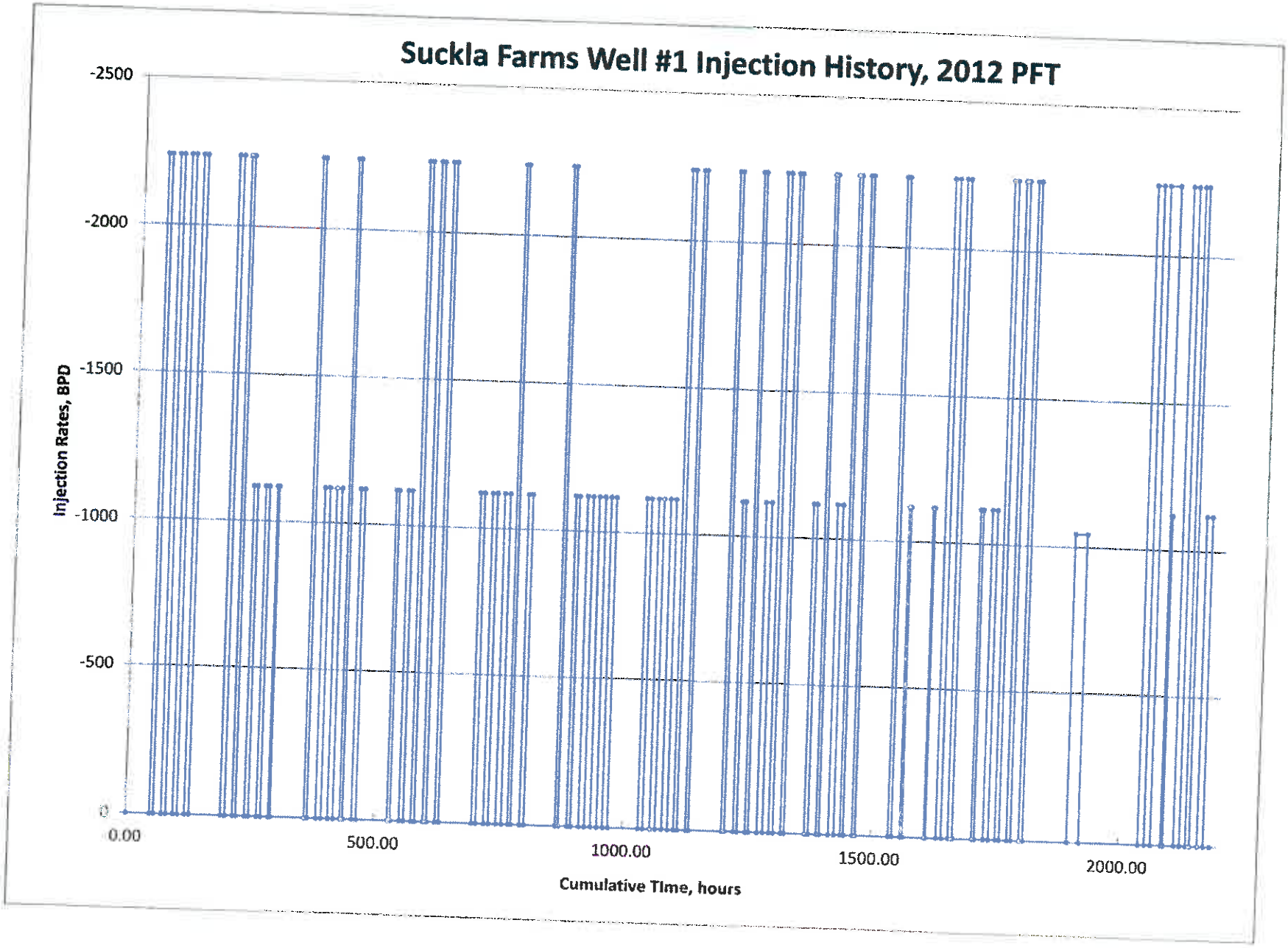
1	-1119.09	539	11.56	3/31/2012 7:01	3/31/2012 18:35	2171.59


Suckla Farms Well #1 Injection History, 2012 PFT
-2500
-2000
-1500
-1000
-500
0
Injection Rates, BPD
0.00
500.00
1000.00
1500.00
2000.00
Cumulative TIme, hours

Pioneer Petrotech Services Inc.
Unit 1, 1431- 40 Ave. NE, Calgary, AB, Canada, T2E 8N6
Tel: (403)282-7669, Fax: (403)282-0509, Email: info@pioneerps.com

Calibration Certificate

Model:	PPS25	Pressure Range:	10,000 psi
Serial Number:	3684	Calibration Date:	Nov 07 2011

Specifications

Pressure Range:	Minimum:	13 psia	Maximum:	10,000 psia
Temperature Range:	Minimum:	0 °C	Maximum:	177 °C
Pressure Accuracy:			±	0.03 %F.S.
Temperature Accuracy:			±	0.5 °C
Housing Material:				SS17-4
Housing OD:				1.25"

Calibration Summary

Calibration Pressure Range:	Minimum:	13.12psia	Maximum:	10,049psia
Calibration Temperature Range:	Minimum:	0.90°C	Maximum:	175 °C
Pressure Accuracy (Maximum Error):			±	2.13psi
Temperature Accuracy (Maximum Error):			±	0.50°C

Working Standards

Sun Systems Environmental Chamber, Model: EC12
QuartzDyne Transducer Interface and Display, Model: Series I
QuartzdDyne High Pressure Transducer, Model: QS20K-B

Trace ability Statement

All working standards are traceable to nationally or internationally recognized standards.

Ana
Pioneer Petrotech Services Inc.

Mar 26 2012
Date

Pioneer Petrotech Services Inc.
Unit 1, 1431- 40 Ave. NE, Calgary, AB, Canada, T2E 8N6
Tel: (403)282-7669, Fax: (403)282-0509, Email: info@pioneerps.com

Calibration Certificate

Model:	**PPS25**	**Pressure Range:**	**10,000 psi**
Serial Number:	**4051**	**Calibration Date:**	**Nov 07 2011**

Specifications

Pressure Range:	Minimum:	13 psia	Maximum:	10,000 psia
Temperature Range:	Minimum:	0 °C	Maximum:	177 °C
Pressure Accuracy:			±	0.03 %F.S.
Temperature Accuracy:			±	0.5 °C
Housing Material:				SS17-4
Housing OD:				1.25"

Calibration Summary

Calibration Pressure Range:	Minimum:	13.12psia	Maximum:	10,002psia
Calibration Temperature Range:	Minimum:	0.90°C	Maximum:	179 °C
Pressure Accuracy (Maximum Error):			+	2.59psi
Temperature Accuracy (Maximum Error):			+	0.49°C

Working Standards

Sun Systems Environmental Chamber, Model: EC12
QuartzDyne Transducer Interface and Display, Model: Series I
QuartzdDyne High Pressure Transducer, Model: QS20K-B

Trace ability Statement

All working standards are traceable to nationally or internationally recognized standards.

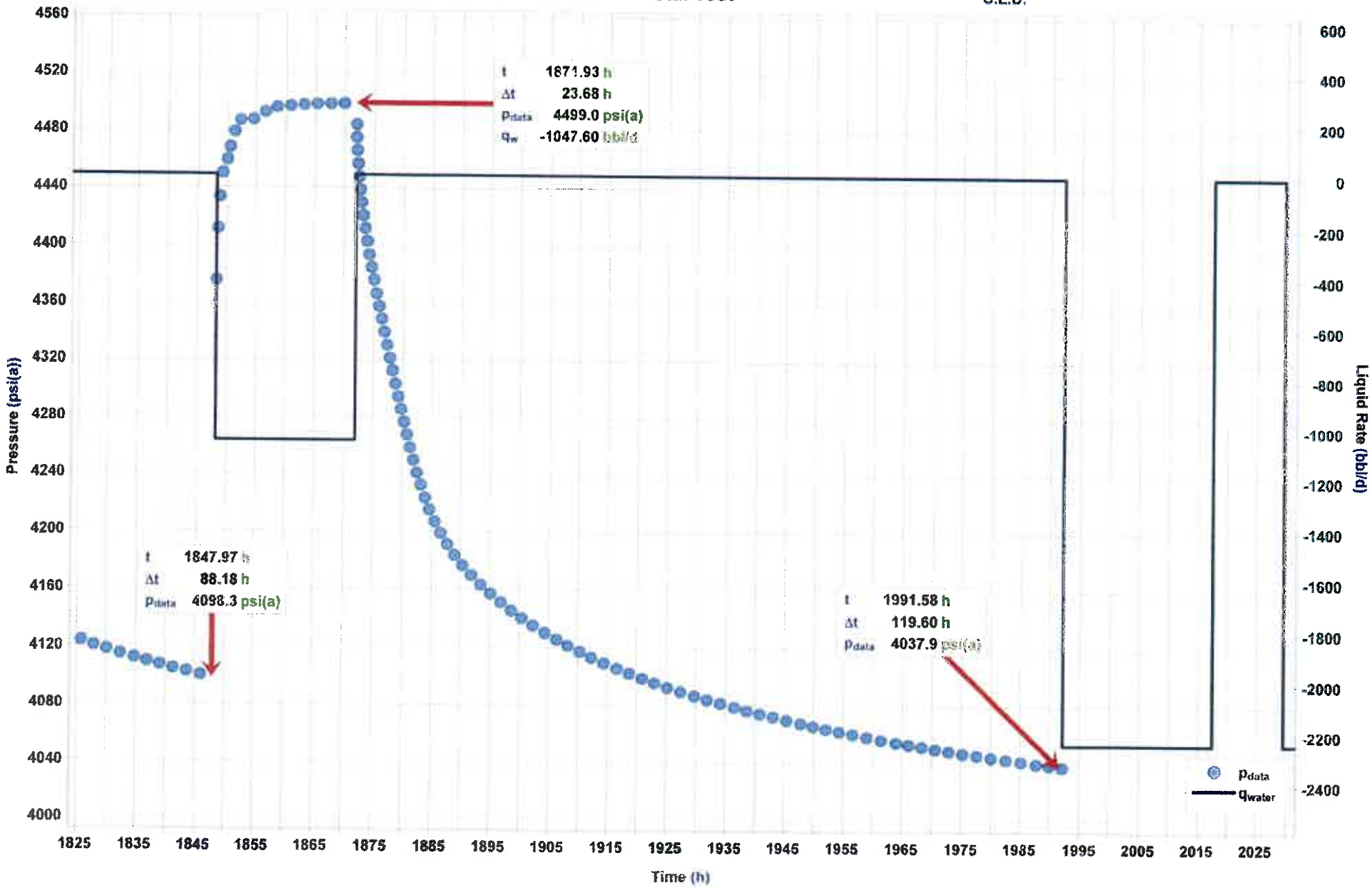
Pioneer Petrotech Services Inc.

May 26 2012
Date

Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis
Total Test

EPA Permit No.: CO10938-02115
API #: 05-123-14291
Analysis: Peterson Energy Management, Inc.
C.L.D.

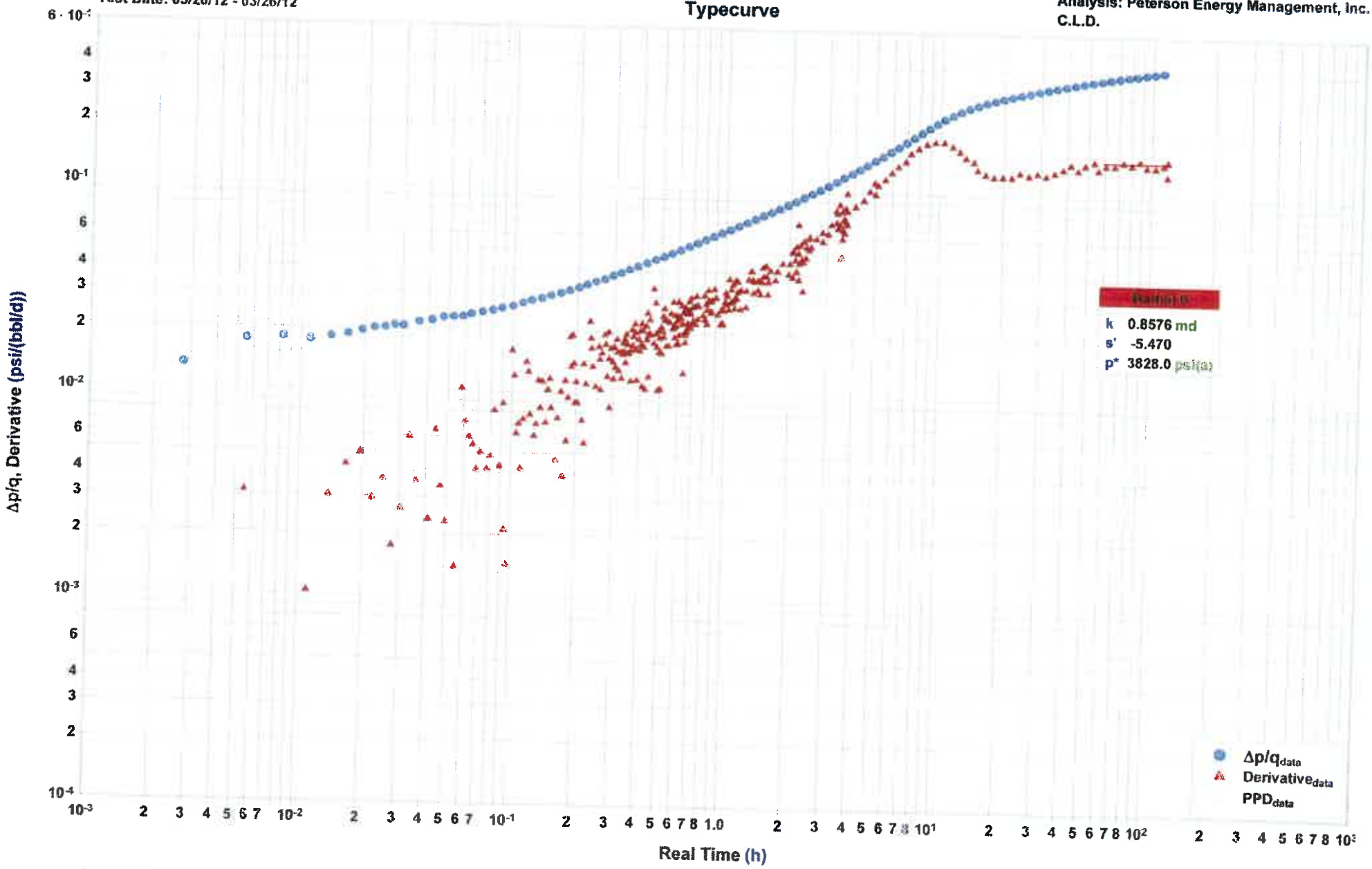


WellTest32™ Ver 7.4.3.161
W:\KP Kauffman\2012 Survey\Suckla Farms #1, PTA 2012, V.1.10 fkt 08-May-12

Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis
Typecurve

EPA Permit No.: CO10938-02115
API #: 05-123-14291
Analysis: Peterson Energy Management, Inc.
C.L.D.



WellTest32™ Ver 7.4.3.161
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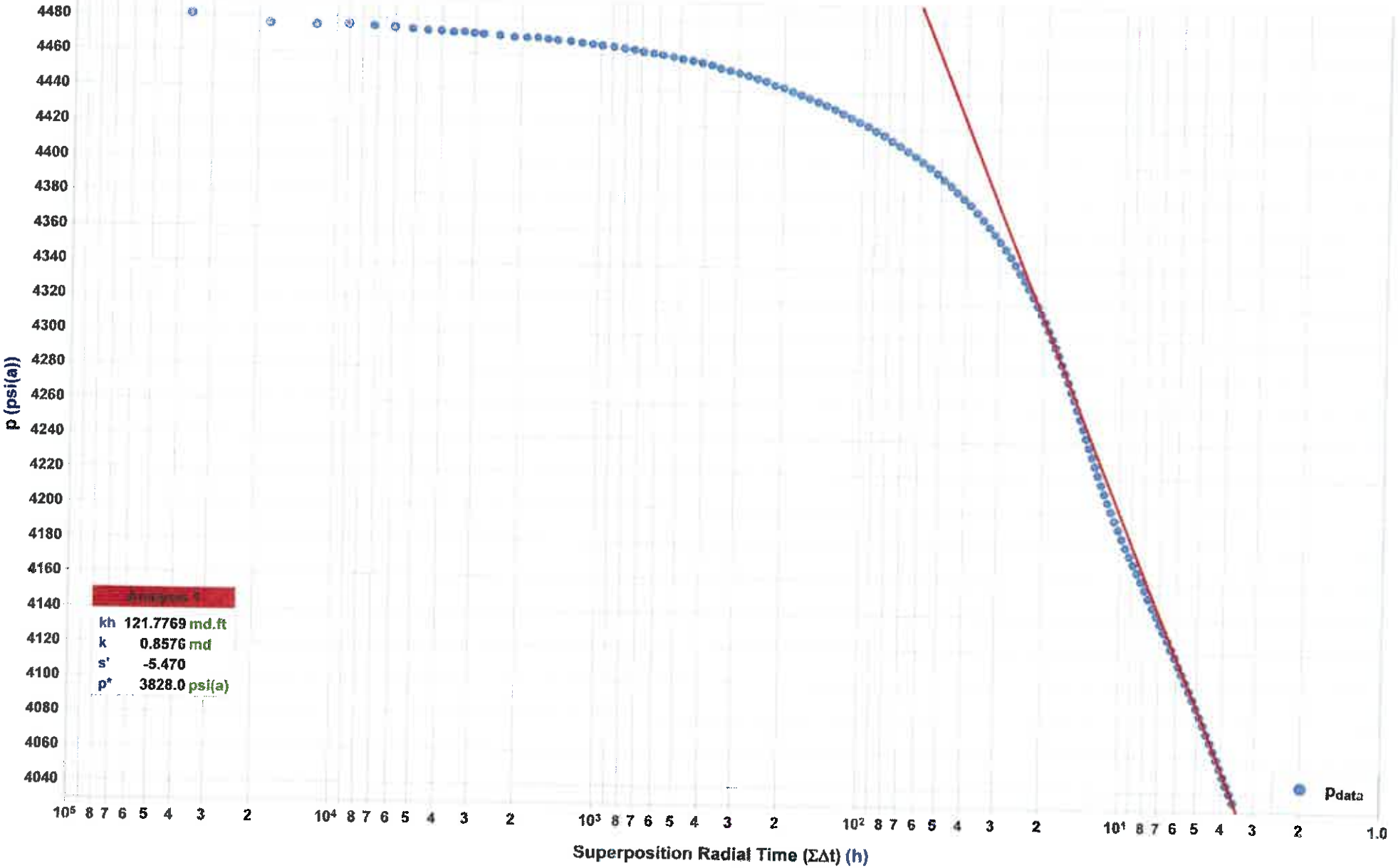
Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis
Radial

EPA Permit No.: CO10938-02115
API #: 05-123-14291
Analysis: Peterson Energy Management, Inc.
C.L.D.



Fast WellTest32™ Ver 7.4.3.161
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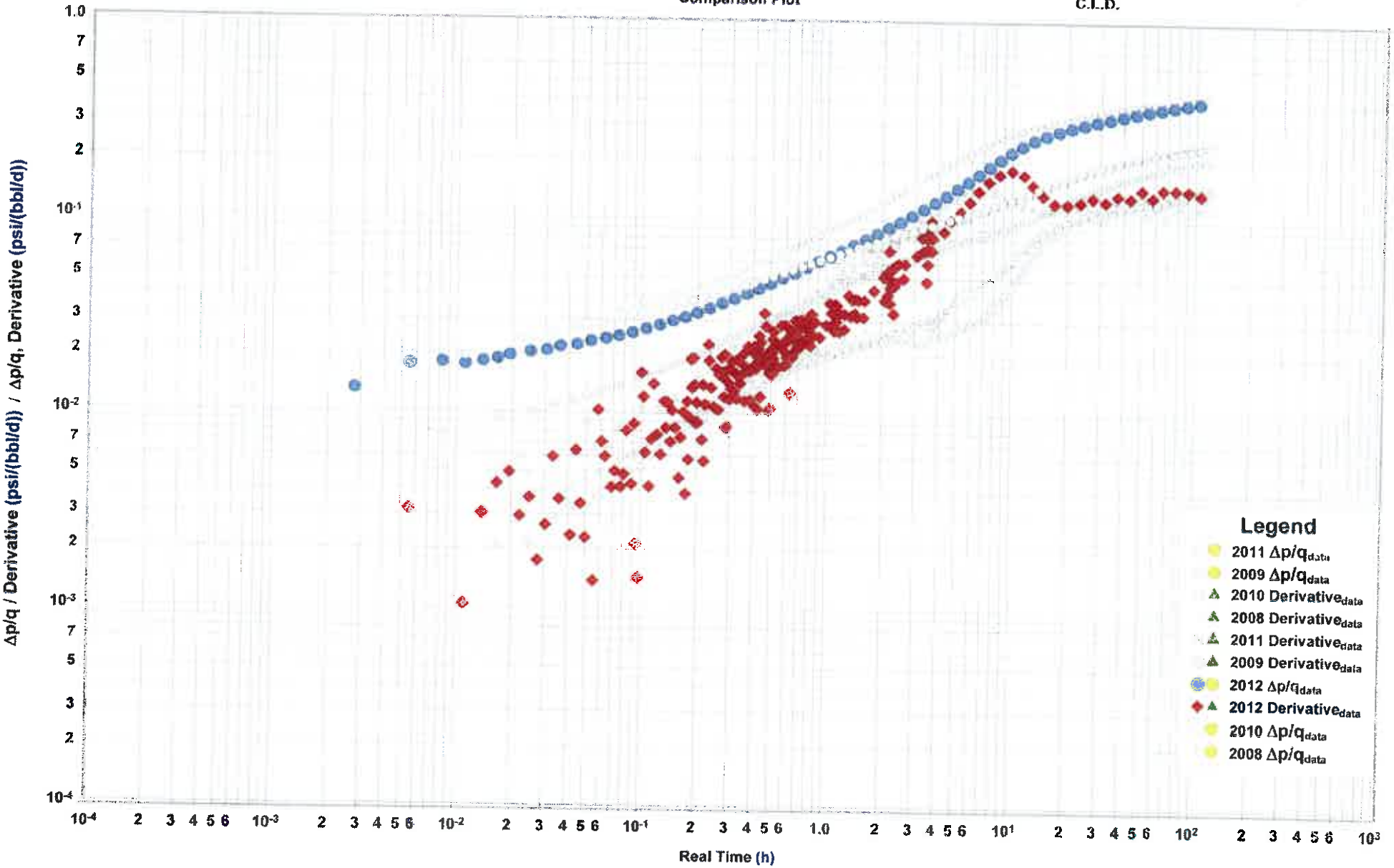
Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis

Comparison Plot

EPA Permit No.: CO10938-02115
API#: 05-123-14291
Analysis: Peterson Energy Mangement, Inc.
C.L.D.



Fast WellTest32™
03-May-12

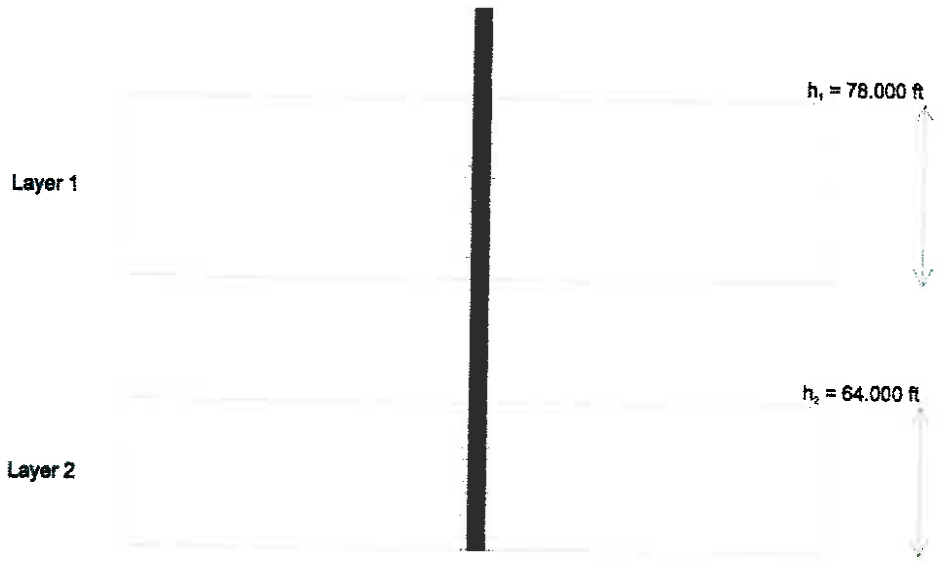
Multilayer Rect. 1

Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

k_1 = 2.5713 md
s_{d1} = -5.082
k_2 = 1.5552 md
s_{d2} = -3.067

Side View

(Not to scale)



Multilayer Rect. 1

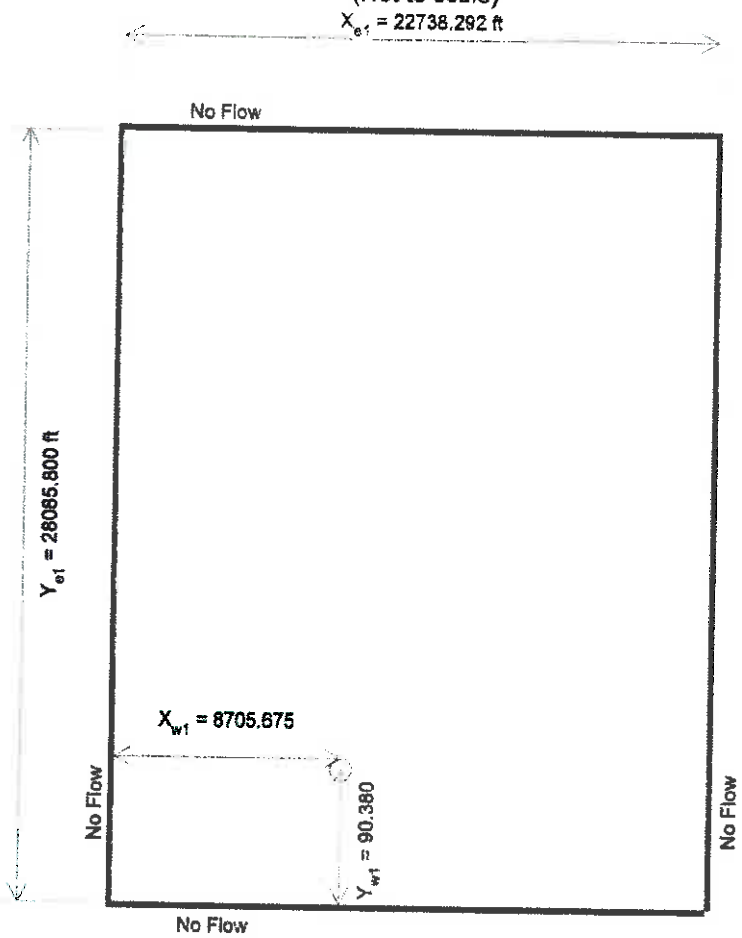
(Layer 1)

Suckla Farms Injection Well #1
SENW 10-1N-67W
Devons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

k_1 = 2.5713 md
s_{d1} = -5.082
k_2 = 1.5552 md
s_{d2} = -3.067

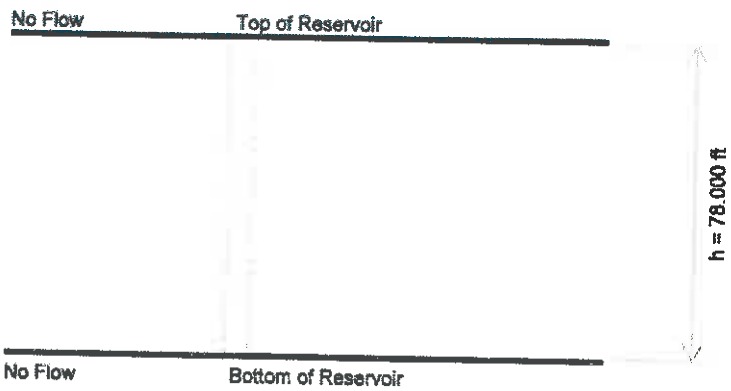
Plan View

(Not to scale)



Side View

(Not to scale)



Multilayer Rect. 1

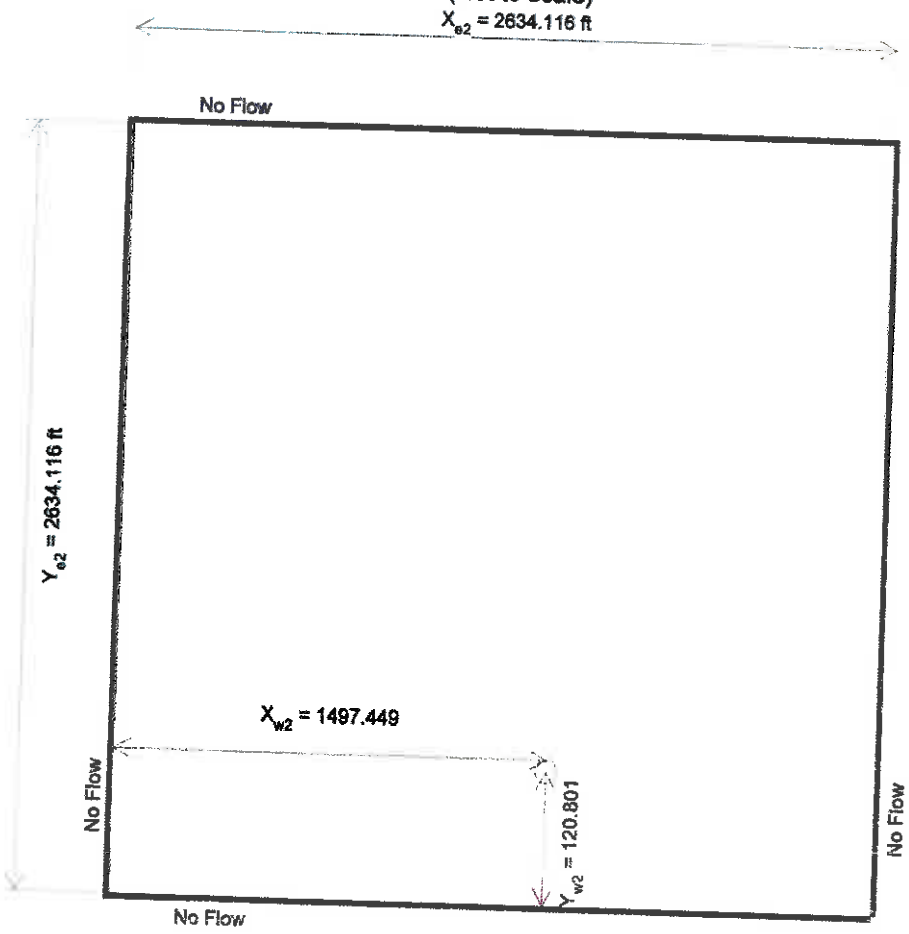
(Layer 2)

Suckla Farms Injection Well #1
NENW 10-1N-67W
Devons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

k_1 = 2.5713 md
s_{d1} = -5.082
k_2 = 1.5552 md
s_{d2} = -3.067

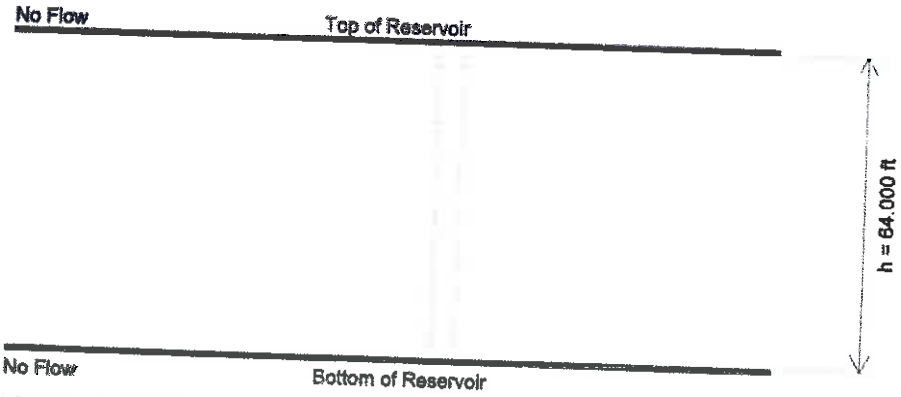
Plan View

(Not to scale)



Side View

(Not to scale)



Water Model - Multilayer Rect. 1

Analysis Results

	Layer 1	Layer 2
Total Mobility of Layer 1 ($(k/\mu)_{t1}$)	10.75 md/cP	6.50 md/cP
Effective Permeability (k_1)	2.5713 md	1.5552 md
Net Pay (h_1)	78.000 ft	64.000 ft
Total Skin (s'_1)	-5.082	-3.067
Skin Due to Damage (s_{d1})	-5.082	-3.067
Viscosity (μ_1)	0.2393 cP	0.2393 cP
Total Porosity (ϕ_{t1})	6.00 %	6.00 %
Gas Saturation (S_{g1})	0.00 %	0.00 %
Oil Saturation (S_{o1})	0.00 %	0.00 %
Water Saturation (S_{w1})	100.00 %	100.00 %
Formation Compressibility (c_{f1})	6.0105e-06 1/psi	6.0105e-06 1/psi
Total Compressibility (c_{t1})	9.3360e-06 1/psi	9.3360e-06 1/psi
Length of Reservoir (X_{e1})	22738.292 ft	2634.116 ft
Width of Reservoir (Y_{e1})	28085.800 ft	2634.116 ft
Location of Well in X direction (X_{w1})	8705.675 ft	1497.449 ft
Location of Well in Y direction (Y_{w1})	90.380 ft	120.801 ft

Wellbore Volume (V_w)	219353 bbl
Dim. Apparent Wellbore Storage Constant (C_{aD})	0.014
Dim. Wellbore Storage Constant (C_D)	76167.301
Dim. Wellbore Storage Pressure Parameter (C_{pD})	0.240

Reservoir Parameters

Wellbore Radius (r_w) 0.328 ft

Production and Pressures

Total Fluid Rate (in situ) ($(q\beta)_t$)	-1165.5 rbbl/d
Final Gas Rate ($q_{g\ final}$)	0.000 MMscfd
Final Water Rate ($q_{w\ final}$)	-1119.1 bbl/d
Total Cumulative Production Water (Cum_{water})	-47.52 Mbbl
Final Flowing Pressure (p_{wfo})	4498.9 psi(a)
Final Measured Pressure (p_{last})	psi(a)

Fluid Properties

Reservoir Temperature (T_{resv})	242.0 °F
Reservoir Pressure (p_{resv})	4037.5 psi(a)
Water Specific Gravity (γ_w)	1.000
Water Viscosity (μ_w)	0.2393 cP
Water Compressibility (c_w)	3.3254e-06 1/psi
Water Formation Volume Factor (B_w)	1.041
Solution Gas Ratio (R_{sw})	0.0 scf/bbl

Synthesis Results

Average Error (E_{avg})	0.09 %
Synthetic Initial Pressure (p_i (syn))	3808.8 psi(a)
Extrapolated Model Pressure (p^*_{model})	3846.8 psi(a)
Pressure Drop Due to Total Skin (Δp_{skin})	0.0 psi(a)
Flow Efficiency (FE)	1.000
Damage Ratio (DR)	1.000

Forecasts

Forecast Flowing Pressure (Report) (p_{flow})	4498.9 psi(a)
Forecast Rate at 3 Months and Current Skin ($q_{@\ 3\ Months}$)	-617.5 bbl/d
Forecast Rate at 6 Months and Current Skin ($q_{@\ 6\ Months}$)	-517.2 bbl/d
Constant Rate Forecast Flow Time (Report) (t_{flow})	12.00 month
Forecast Rate at Specified Time and Current Skin ($q_{@\ Current\ Skin}$)	-436.9 bbl/d
Stabilized Injectivity Index @ Current Skin (II_{Actual})	0.787 (bbl/d)/psi
Forecast Rate at Specified Time and Skin = 0 ($q_{@\ 0\ Skin}$)	-290.3 bbl/d
Stabilized Injectivity Index @ Skin = 0 (II_{Ideal})	0.524 (bbl/d)/psi
Forecast Rate at Specified Time and Skin = -4 ($q_{@\ -4\ Skin}$)	-386.1 bbl/d

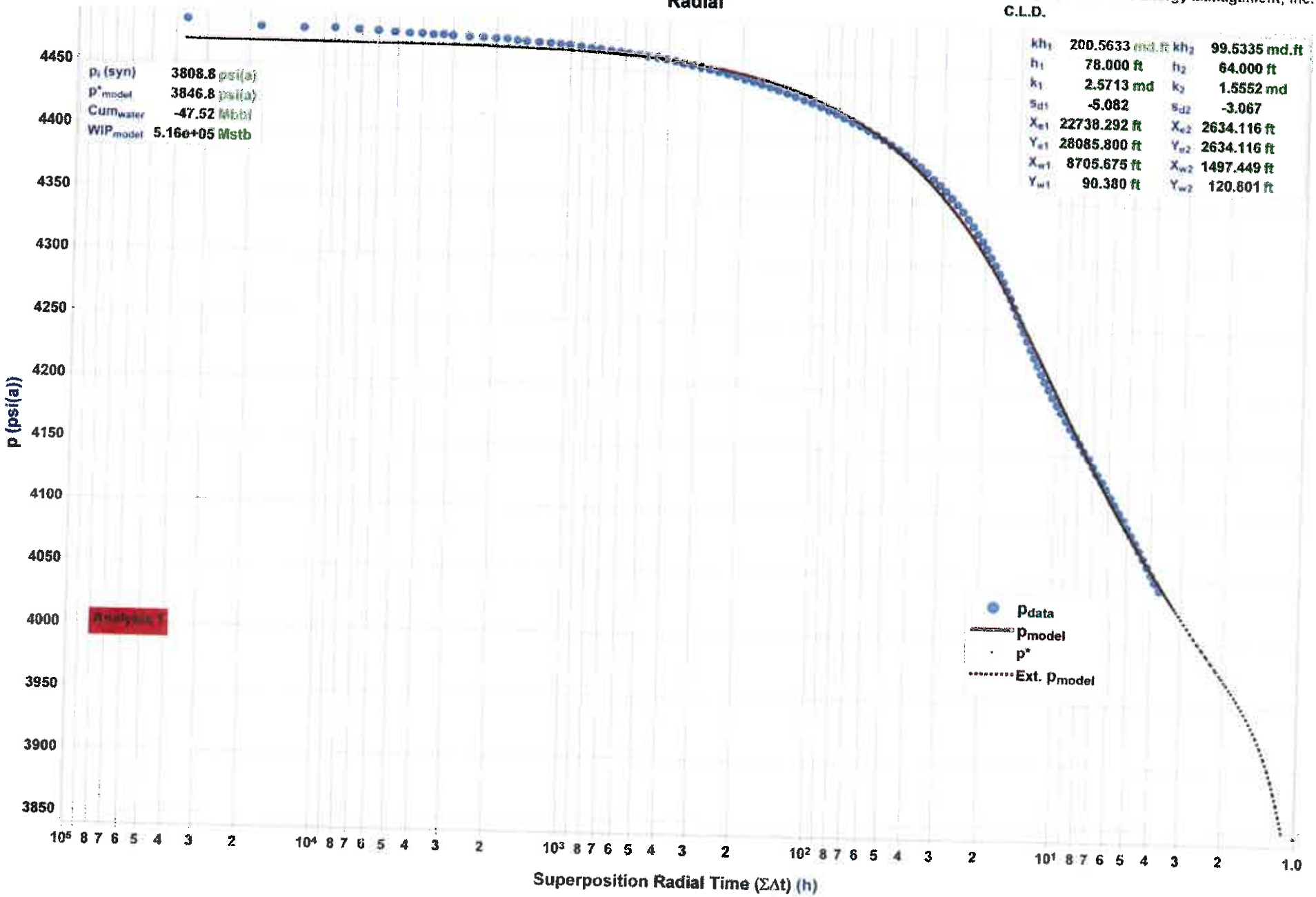
.a Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis
Radial

EPA Permit No.: CO10938-02115
API #: 05-123-14291
Analysis: Peterson Energy Management, Inc.
C.L.D.

kh_1	200.5633 md.ft	kh_2	99.5335 md.ft
h_1	78.000 ft	h_2	64.000 ft
k_1	2.5713 md	k_2	1.5552 md
s_{d1}	-5.082	s_{d2}	-3.067
X_{e1}	22738.292 ft	X_{e2}	2634.116 ft
Y_{e1}	28085.800 ft	Y_{e2}	2634.116 ft
X_{w1}	8705.675 ft	X_{w2}	1497.449 ft
Y_{w1}	90.380 ft	Y_{w2}	120.801 ft

p_i (syn)	3808.8	psi(a)
p^*_{model}	3846.8	psi(a)
Cum_{water}	-47.52	Mbbl
WIP_{model}	5.16e+05	Mstb



Fast WellTest32.™ Ver 7.4.3.161 120033
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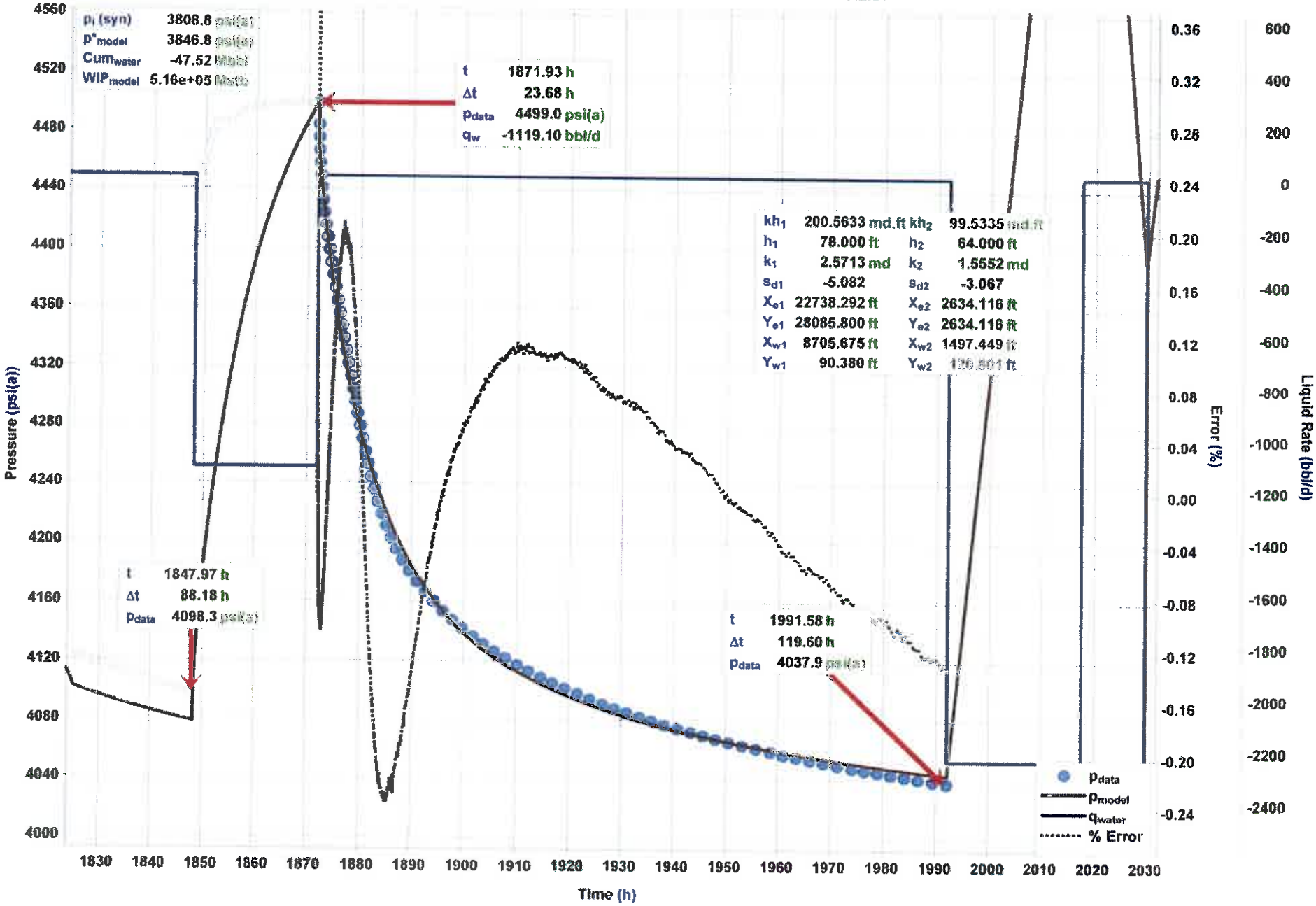
Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis
Total Test

EPA Permit No.: CO10938-02115
API #: 05-123-14291
Analysis: Peterson Energy Management, Inc.
C.L.D.



WellTest32™ Ver 7 4.3.161 120033
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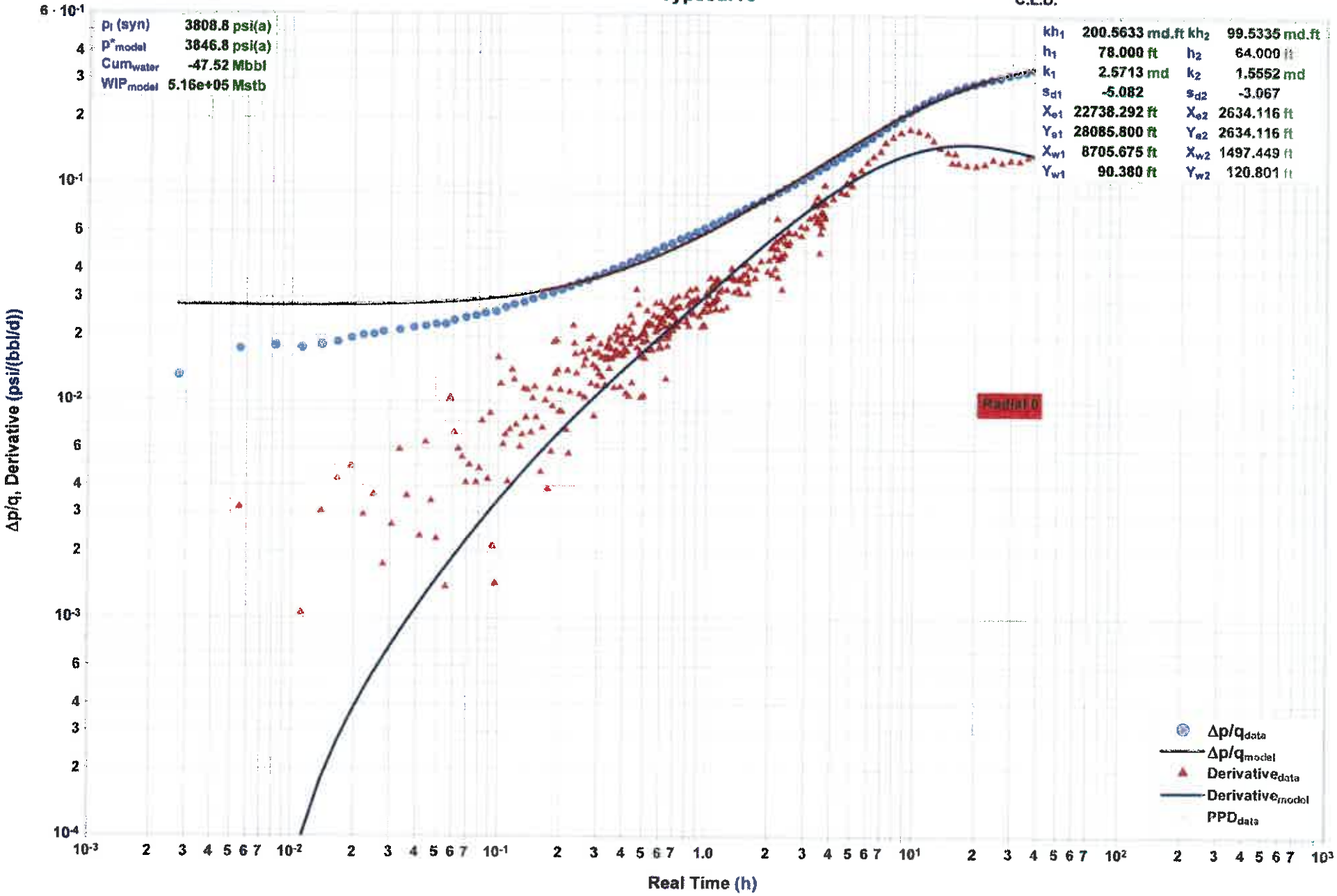
Suckla Farms Injection Well #1
SENW 10-1N-67W
Lyons Sandstone: 9276'-9418'
Test Date: 03/20/12 - 03/26/12

Diagnostic Analysis
Typecurve

EPA Permit No.: CO10938-02115
API #: 05-123-14291
Analysis: Peterson Energy Management, Inc.
C.L.D.



Injection-Static Gradient Top Gauge

Client: **Wattenburg Disposal**

Well Name: **Suckla Farms Injection Well #1**

Location: **SENW Sec 10 T1N R67W**

Field/Pool: **Wattenburg**

Formation Name: **Lyons**

Test/Prod. Interval [ft KB Log]: **-**

Test Date: **2012/03/19 - 2012/03/26**

Test/job Number:

Service Company: **Lightning Wireline a Schlumberger Company**

SUMMARY

Well Information:

Client Name:	Wattenburg Disposal		
Client Address:	c/o Lightning Wireline	Packer:	Yes
	103 N. Main Street	Tubing in Well:	Yes
	Platteville, CO 80651	Flow Path:	
		Well Fluid Type at Test Date:	
Well Name:	Suckla Farms Injection Well #1	Well Type:	Vertical
Well Location:	SENW Sec 10 T1N R67W		
Pool:	Wattenburg	KB Elevation [ft]:	10.00
Reservoir:		CF Elevation [ft]:	
Well ID:		Ground Elevation [ft]:	
License Number:		Inside Diameter of Production Tubing [in]:	2.1
Drilling Leg:		Inside Diameter of Production Casing [in]:	n/a
Formation Name:	Lyons	Outside Diameter of Production Tubing [in]:	2.9

Test Information:

Test Name:	Injection-Static Gradient Top Gauge		
Test/job Number:		Gauge Run Depth [ft KB (TVD)]:	9019.00000
Test Purpose:	Other	H2S:	No
Test/Prod. Interval Top [ft KB (Log)]:		Test/Prod. Interval Top [ft KB (TVD)]:	
Test/Prod. Interval Base [ft KB (Log)]:		Test/Prod. Interval Base [ft KB (TVD)]:	
Time/Date Well Shut-In:	2012/03/26 14:47:48	Final Test Date/Time:	2012/03/26 07:50:32
Initial Tubing Pressure [psig]:	Vac	Initial Casing Pressure [psig]:	0.00
Final Tubing Pressure [psig]:		Final Casing Pressure [psig]:	0.00
Final Flowing WH Pressure [psig]:		Surface Temperature [degF].	

Gauge Information:

Gauge Serial Number:	3684		
Maximum Recorder Range [psig]:	9986	Date Of Last Calibration:	2011/11/07
Resolution [% Of Full-Scale]:	0.0003	Accuracy [% Of Full-Scale]:	0.03
Date/Time Gauge On Bottom:	2012/03/19 08:52:52	Date/Time Gauge Off Bottom:	2012/03/01 07:56:00

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

EVENTS TABLE

Calendar (yyyy/mm/dd hh:mm:ss)	Elapsed time (hours)	Pressure (psig)	Temperature (degF)	Comment
2012/03/19 08:52:52	0.71444	3961.950	226.775	On Bottom
2012/03/20 07:01:42	22.86167	3945.156	237.100	Start Pumping
2012/03/21 06:59:32	46.82556	4341.430	149.756	Stop Pump and shut in
2012/03/26 07:50:32	167.67556	3894.556	242.735	D = 9019 feet P = 3894.56 psig T = 242.73 degF
2012/03/26 07:59:32	167.82556	3029.389	194.782	D = 7000 feet P = 3029.39 psig T = 194.78 degF
2012/03/26 08:08:02	167.96722	2166.517	148.361	D = 5000 feet P = 2166.52 psig T = 148.36 degF
2012/03/26 08:16:02	168.10056	1293.842	109.566	D = 3000 feet P = 1293.84 psig T = 109.57 degF
2012/03/26 08:22:32	168.20889	855.219	89.857	D = 2000 feet P = 855.22 psig T = 89.86 degF
2012/03/26 08:29:32	168.32556	414.812	74.982	D = 1000 feet P = 414.81 psig T = 74.98 degF
2012/03/26 08:37:32	168.45889	0.836	61.105	D = 0 feet P = 0.84 psig T = 61.11 degF

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

GRADIENTS TABLE

Calendar time (yyyy/mm/dd hh:mm:ss)	Elapsed time (hours)	Stop type	Meas. depth (ft)	TV depth (ft)	Pressure (psig)	Temperature (degF)	Pressure gradient (psig/ft)	Temperature gradient (degF/ft)
2012/03/26 07:50:32	167.67556	Static	9019.00	9019.00	3894.556	242.735		
2012/03/26 07:59:32	167.82556	Static	7000.00	7000.00	3029.369	194.782	0.428	0.024
2012/03/26 08:08:02	167.96722	Static	5000.00	5000.00	2166.517	148.361	0.431	0.023
2012/03/26 08:16:02	168.10056	Static	3000.00	3000.00	1293.842	109.566	0.436	0.019
2012/03/26 08:22:32	168.20889	Static	2000.00	2000.00	855.219	89.857	0.439	0.02
2012/03/26 08:29:32	168.32556	Static	1000.00	1000.00	414.812	74.982	0.44	0.015
2012/03/26 08:37:32	168.45889	Static	0.00	0.00	0.836	61.105	0.414	0.014

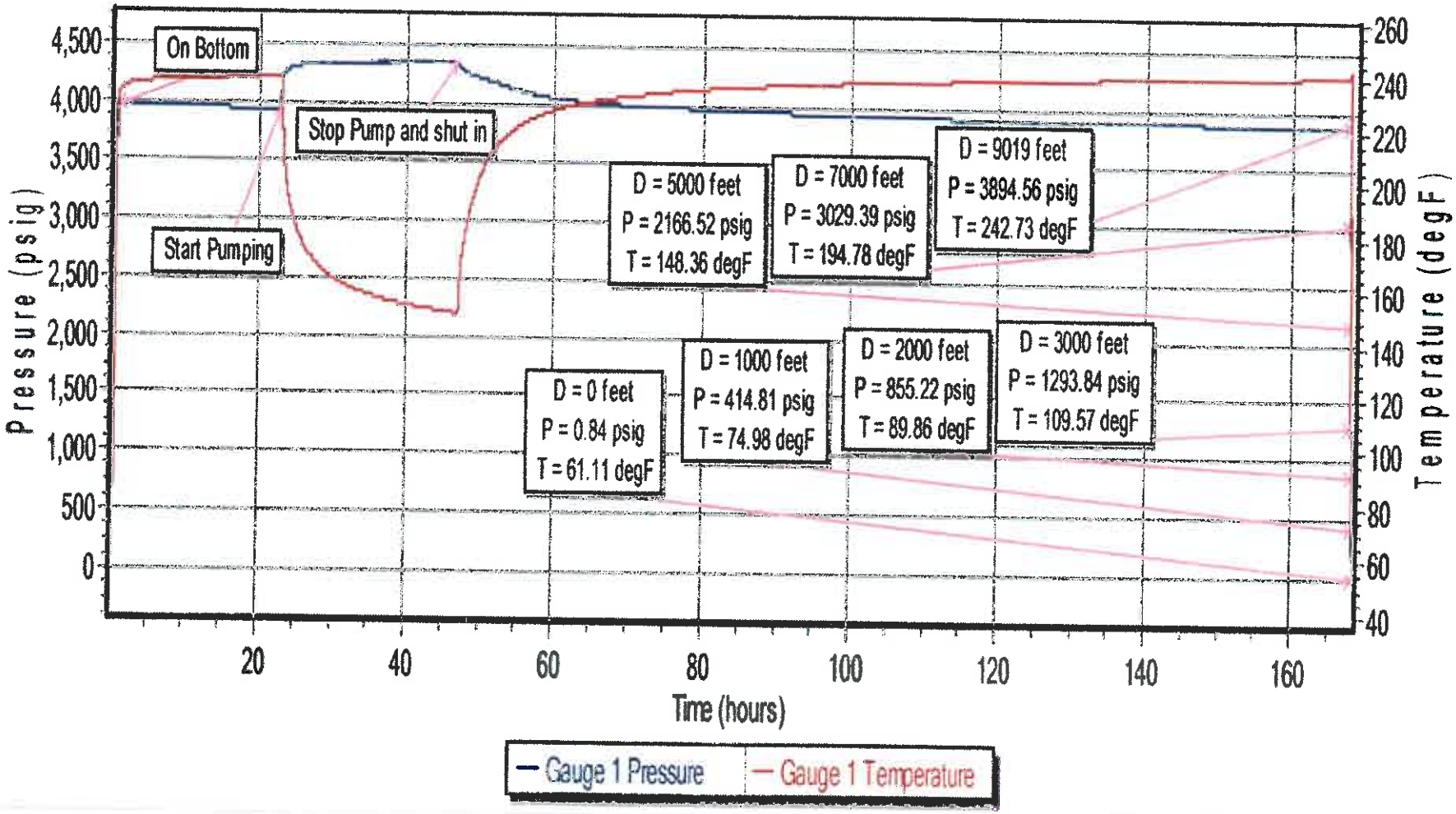
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Injection-Static Gradient Top Gauge

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9019.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

DATA PLOT



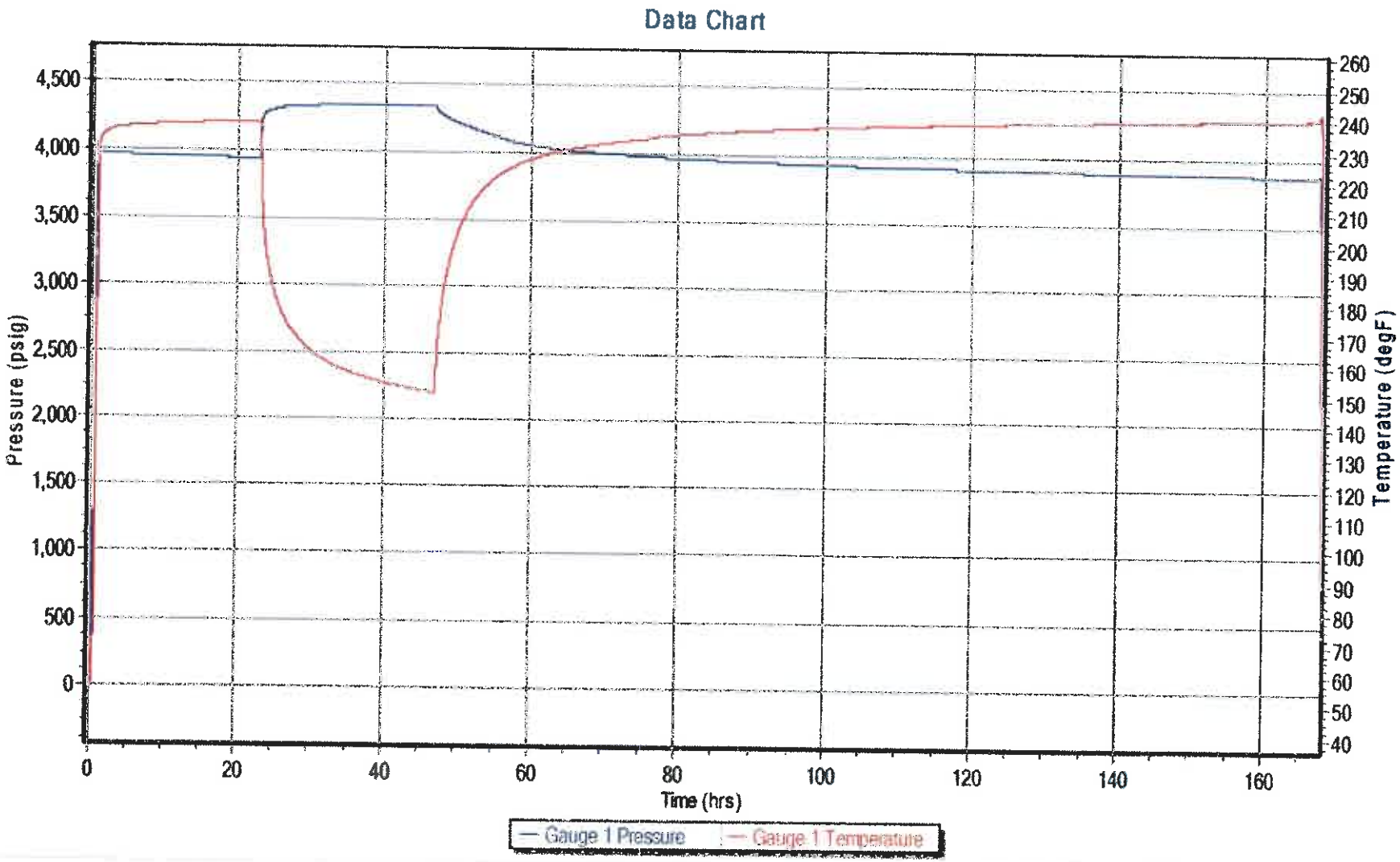
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9019.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

Injection-Static Gradient Top Gauge

SAVED GRAPH #1



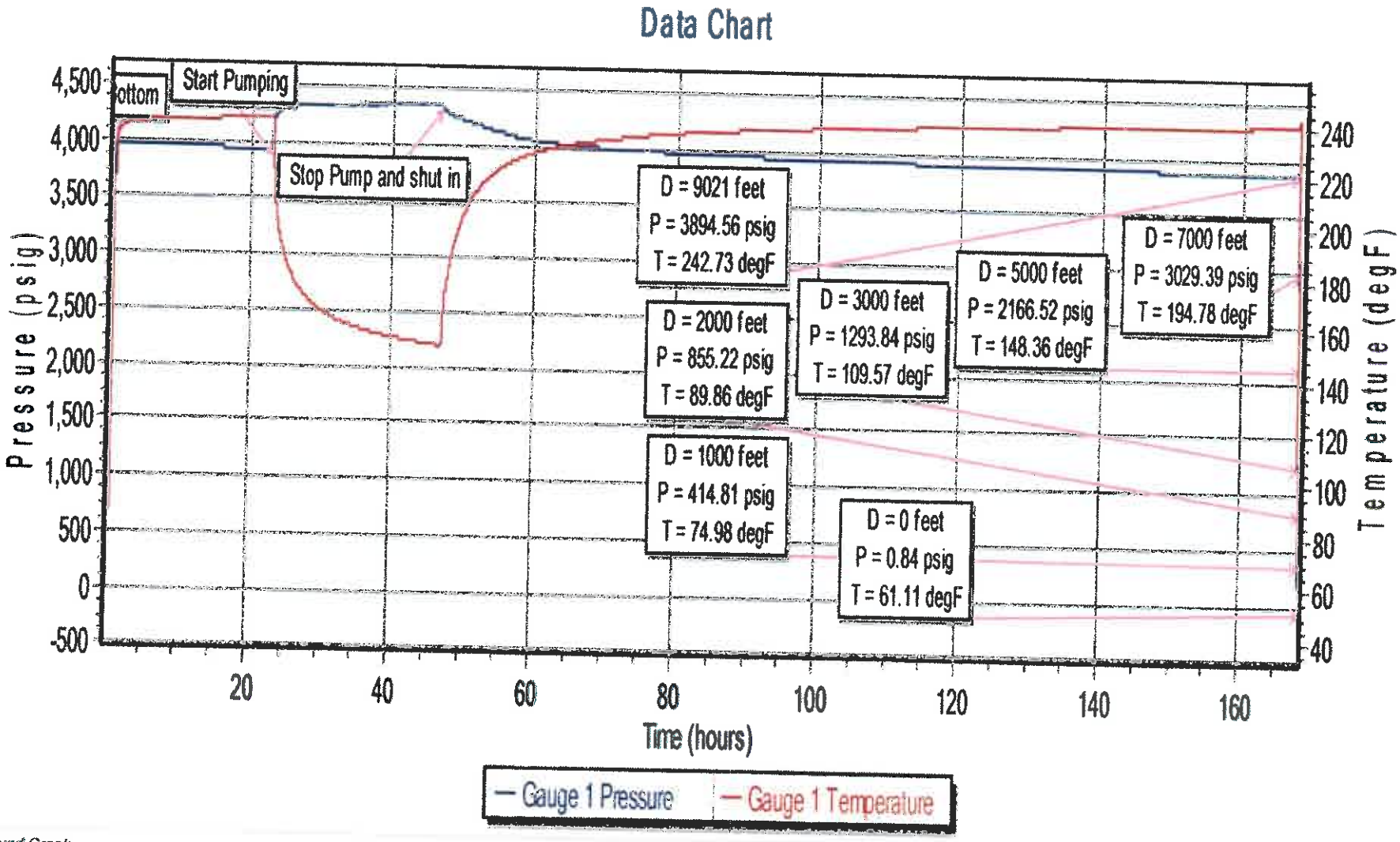
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Injection-Static Gradient Top Gauge

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9019.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

SAVED GRAPH #2



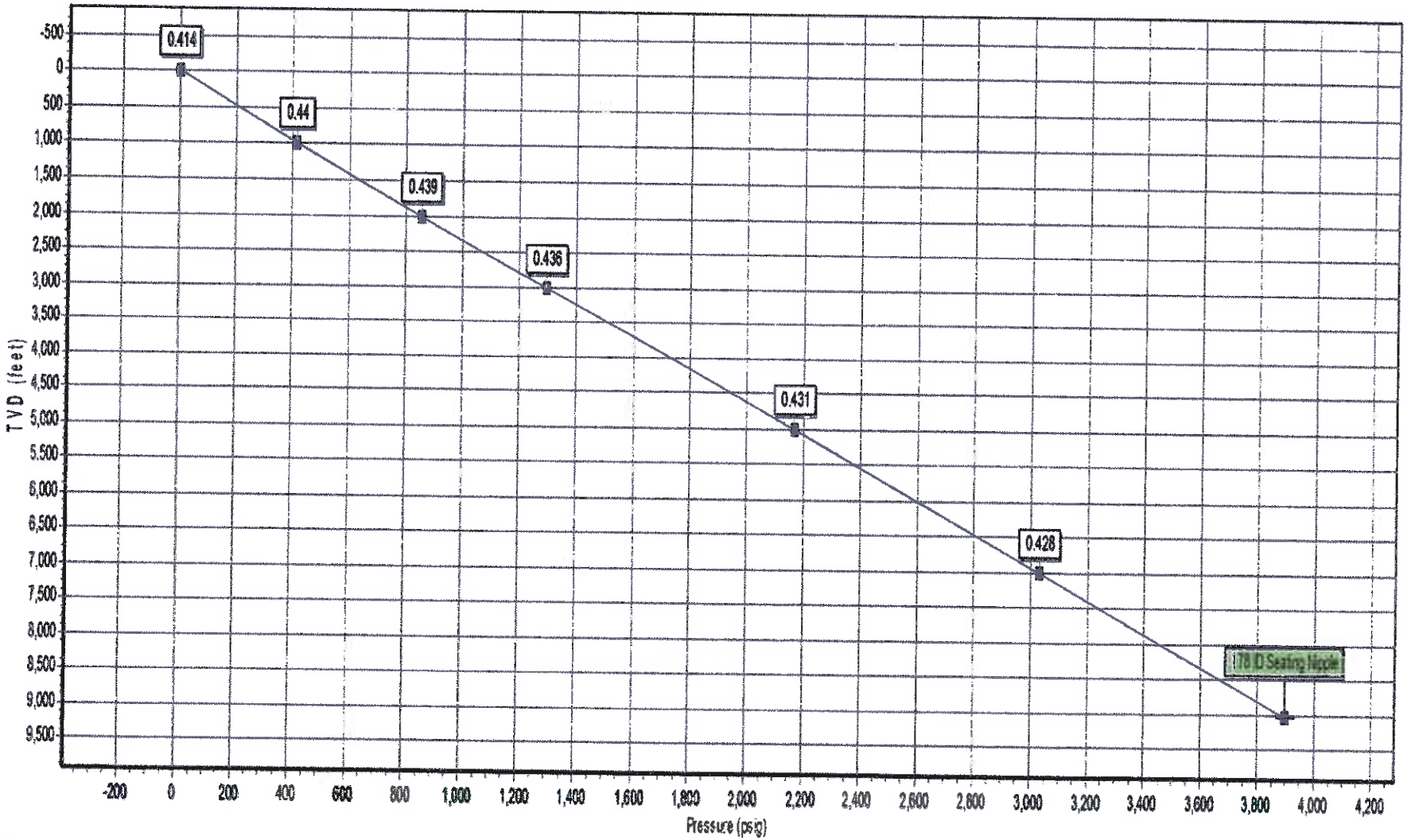
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9013.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

Injection-Static Gradient Top Gauge

PRESSURE GRADIENT PLOT



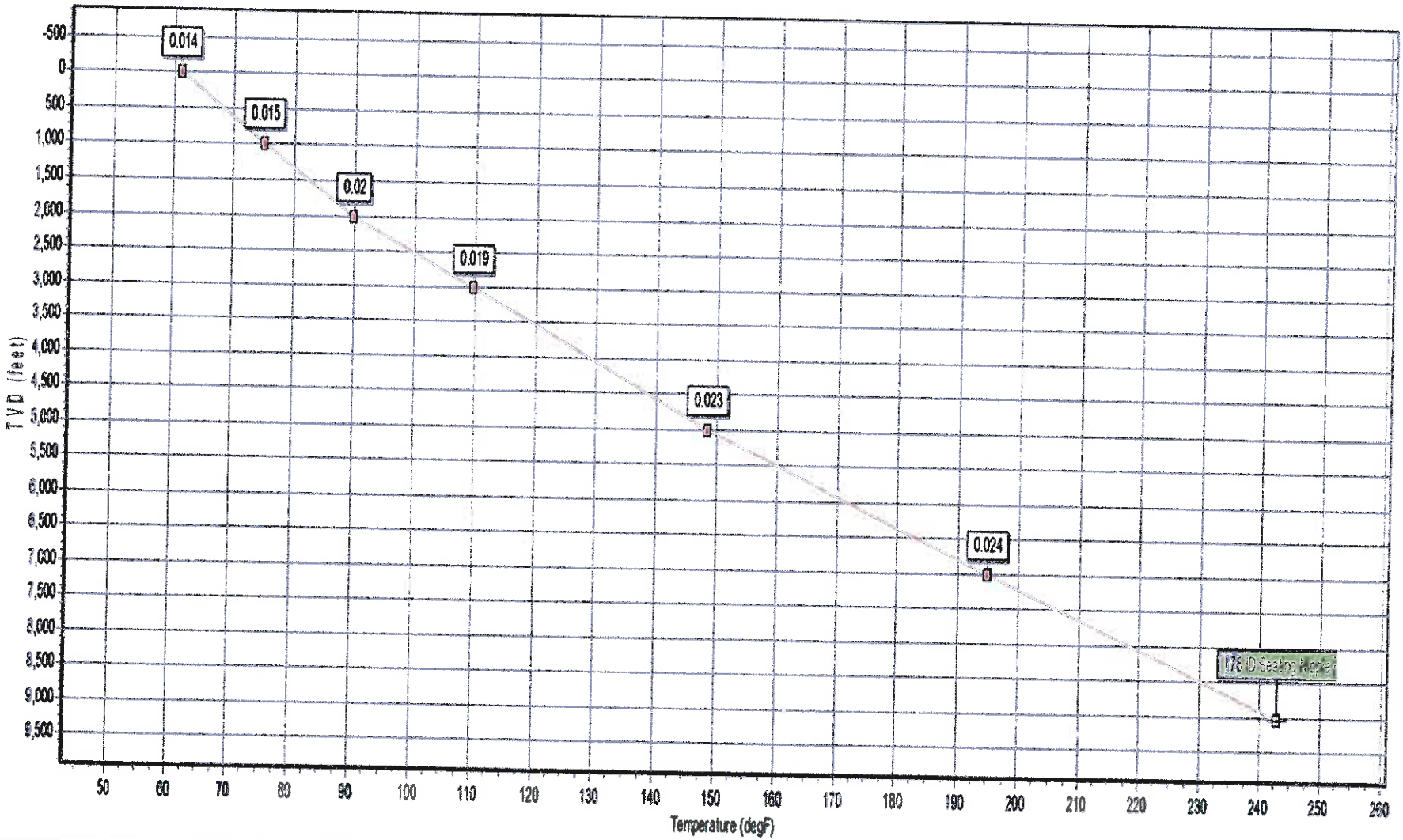
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Injection-Static Gradient Top Gauge

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9019.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

TEMPERATURE GRADIENT PLOT



Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/19 08:10:01	0.00028	0.129	60.588
2012/03/19 08:10:29	0.00806	0.104	61.647
2012/03/19 08:14:32	0.07556	0.104	58.997
2012/03/19 08:19:02	0.15056	0.122	57.446
2012/03/19 08:23:32	0.22556	89.720	54.721
2012/03/19 08:28:02	0.30056	840.987	62.129
2012/03/19 08:32:32	0.37556	1761.194	83.113
2012/03/19 08:37:02	0.45056	2666.661	119.613
2012/03/19 08:41:42	0.52833	3548.144	159.860
2012/03/19 08:46:12	0.60333	3966.112	203.596
2012/03/19 08:50:42	0.67833	3962.634	222.973
2012/03/19 08:52:52 On Bottom	0.71444	3961.950	226.775
2012/03/19 08:55:12	0.75333	3960.976	229.015
2012/03/19 08:59:42	0.82833	3960.621	230.729
2012/03/19 09:04:12	0.90333	3959.400	231.481
2012/03/19 09:08:42	0.97833	3960.825	231.731
2012/03/19 09:13:22	1.05611	3961.712	231.879
2012/03/19 09:17:52	1.13111	3962.085	232.110
2012/03/19 09:22:22	1.20611	3962.141	232.332
2012/03/19 09:26:52	1.28111	3962.165	232.523
2012/03/19 09:31:22	1.35611	3962.115	232.686
2012/03/19 09:35:52	1.43111	3962.064	232.821
2012/03/19 09:40:22	1.50611	3962.039	232.945
2012/03/19 09:45:02	1.58389	3961.964	233.051
2012/03/19 09:49:32	1.65889	3961.871	233.154
2012/03/19 09:54:02	1.73389	3961.889	233.273
2012/03/19 09:58:32	1.80889	3961.742	233.393
2012/03/19 10:03:02	1.88389	3961.637	233.508
2012/03/19 10:07:32	1.95889	3961.555	233.617
2012/03/19 10:12:02	2.03389	3961.460	233.719
2012/03/19 10:16:42	2.11167	3961.403	233.820
2012/03/19 10:21:12	2.18667	3961.308	233.910
2012/03/19 10:25:42	2.26167	3961.117	233.996
2012/03/19 10:30:12	2.33667	3961.092	234.068
2012/03/19 10:34:42	2.41167	3961.053	234.146
2012/03/19 10:39:12	2.48667	3960.949	234.212
2012/03/19 10:43:42	2.56167	3960.849	234.275
2012/03/19 10:48:12	2.63667	3960.765	234.333
2012/03/19 10:52:52	2.71444	3960.693	234.390
2012/03/19 10:57:22	2.78944	3960.551	234.439
2012/03/19 11:01:52	2.86444	3960.502	234.489
2012/03/19 11:06:22	2.93944	3960.347	234.533
2012/03/19 11:10:52	3.01444	3960.414	234.580
2012/03/19 11:15:22	3.08944	3960.169	234.618
2012/03/19 11:19:52	3.16444	3960.054	234.656
2012/03/19 11:24:32	3.24222	3960.046	234.695
2012/03/19 11:29:02	3.31722	3959.898	234.729
2012/03/19 11:33:32	3.39222	3959.810	234.768
2012/03/19 11:38:02	3.46722	3959.698	234.797
2012/03/19 11:42:32	3.54222	3959.634	234.829
2012/03/19 11:47:02	3.61722	3959.505	234.855
2012/03/19 11:51:32	3.69222	3959.580	234.884
2012/03/19 11:56:12	3.77000	3959.301	234.912
2012/03/19 12:00:42	3.84500	3959.361	234.938
2012/03/19 12:05:12	3.92000	3959.159	234.966
2012/03/19 12:09:42	3.99500	3959.102	234.991
2012/03/19 12:14:12	4.07000	3959.014	235.013
2012/03/19 12:18:42	4.14500	3958.941	235.037
2012/03/19 12:23:12	4.22000	3958.835	235.061
2012/03/19 12:27:52	4.29778	3958.740	235.085
2012/03/19 12:32:22	4.37278	3958.687	235.108
2012/03/19 12:36:52	4.44778	3958.567	235.127
2012/03/19 12:41:22	4.52278	3958.524	235.149
2012/03/19 12:45:52	4.59778	3958.478	235.170
2012/03/19 12:50:22	4.67278	3958.352	235.189
2012/03/19 12:54:52	4.74778	3958.304	235.212
2012/03/19 12:59:32	4.82556	3958.262	235.231
2012/03/19 13:04:02	4.90056	3958.103	235.248
2012/03/19 13:08:32	4.97556	3957.926	235.268
2012/03/19 13:13:02	5.05056	3957.812	235.280
2012/03/19 13:17:32	5.12556	3957.828	235.294
2012/03/19 13:22:02	5.20056	3957.715	235.314
2012/03/19 13:26:32	5.27556	3957.564	235.333
2012/03/19 13:31:02	5.35056	3957.489	235.346
2012/03/19 13:35:42	5.42833	3957.402	235.362
2012/03/19 13:40:12	5.50333	3957.277	235.379
2012/03/19 13:44:42	5.57833	3957.258	235.395
2012/03/19 13:49:12	5.65333	3957.145	235.412
2012/03/19 13:53:42	5.72833	3956.989	235.422
2012/03/19 13:58:12	5.80333	3956.946	235.437
2012/03/19 14:02:42	5.87833	3956.880	235.453
2012/03/19 14:07:22	5.95611	3956.791	235.468
2012/03/19 14:11:52	6.03111	3956.803	235.482
2012/03/19 14:16:22	6.10611	3956.568	235.495
2012/03/19 14:20:52	6.18111	3956.488	235.509
2012/03/19 14:25:22	6.25611	3956.336	235.520
2012/03/19 14:29:52	6.33111	3956.373	235.535
2012/03/19 14:34:22	6.40611	3956.309	235.549
2012/03/19 14:39:02	6.48389	3956.162	235.558
2012/03/19 14:43:32	6.55889	3956.033	235.573
2012/03/19 14:48:02	6.63389	3955.960	235.585
2012/03/19 14:52:32	6.70889	3955.920	235.602
2012/03/19 14:57:02	6.78389	3955.738	235.608
2012/03/19 15:01:32	6.85889	3955.651	235.618
2012/03/19 15:06:02	6.93389	3955.562	235.633
2012/03/19 15:10:42	7.01167	3955.550	235.644
2012/03/19 15:15:12	7.08667	3955.431	235.656
2012/03/19 15:19:42	7.16167	3955.352	235.670
2012/03/19 15:24:12	7.23667	3955.111	235.678
2012/03/19 15:28:42	7.31167	3955.123	235.688
2012/03/19 15:33:12	7.38667	3954.945	235.700
2012/03/19 15:37:42	7.46167	3954.875	235.712
2012/03/19 15:42:12	7.53667	3954.847	235.724
2012/03/19 15:46:52	7.61444	3954.643	235.734
2012/03/19 15:51:22	7.68944	3954.612	235.739
2012/03/19 15:55:52	7.76444	3954.549	235.753
2012/03/19 16:00:22	7.83944	3954.434	235.764
2012/03/19 16:04:52	7.91444	3954.286	235.771
2012/03/19 16:09:22	7.98944	3954.331	235.784
2012/03/19 16:13:52	8.06444	3954.193	235.791
2012/03/19 16:18:32	8.14222	3954.065	235.805
2012/03/19 16:23:02	8.21722	3953.969	235.812
2012/03/19 16:27:32	8.29222	3953.918	235.824
2012/03/19 16:32:02	8.36722	3953.812	235.835
2012/03/19 16:36:32	8.44222	3953.739	235.843
2012/03/19 16:41:02	8.51722	3953.636	235.853
2012/03/19 16:45:32	8.59222	3953.636	235.860

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/19 16:50:12	8.67000	3953.449	235.873
2012/03/19 16:54:42	8.74500	3953.400	235.879
2012/03/19 16:59:12	8.82000	3953.317	235.889
2012/03/19 17:03:42	8.89500	3953.229	235.898
2012/03/19 17:08:12	8.97000	3953.179	235.905
2012/03/19 17:12:42	9.04500	3953.229	235.918
2012/03/19 17:17:12	9.12000	3952.999	235.924
2012/03/19 17:21:52	9.19778	3952.911	235.933
2012/03/19 17:26:22	9.27278	3952.788	235.942
2012/03/19 17:30:52	9.34778	3952.713	235.950
2012/03/19 17:35:22	9.42278	3952.618	235.961
2012/03/19 17:39:52	9.49778	3952.597	235.968
2012/03/19 17:44:22	9.57278	3952.555	235.979
2012/03/19 17:48:52	9.64778	3952.435	235.998
2012/03/19 17:53:32	9.72556	3952.272	236.005
2012/03/19 17:58:02	9.80056	3952.230	236.017
2012/03/19 18:02:32	9.87556	3952.172	236.020
2012/03/19 18:07:02	9.95056	3951.967	236.031
2012/03/19 18:11:32	10.02556	3952.045	236.039
2012/03/19 18:16:02	10.10056	3952.001	236.050
2012/03/19 18:20:32	10.17556	3951.747	236.055
2012/03/19 18:25:02	10.25056	3951.643	236.064
2012/03/19 18:29:42	10.32833	3951.581	236.073
2012/03/19 18:34:12	10.40333	3951.505	236.081
2012/03/19 18:38:42	10.47833	3951.419	236.088
2012/03/19 18:43:12	10.55333	3951.275	236.095
2012/03/19 18:47:42	10.62833	3951.187	236.104
2012/03/19 18:52:12	10.70333	3951.148	236.115
2012/03/19 18:56:42	10.77833	3950.983	236.119
2012/03/19 19:01:22	10.85611	3950.917	236.125
2012/03/19 19:05:52	10.93111	3950.938	236.136
2012/03/19 19:10:22	11.00611	3950.691	236.140
2012/03/19 19:14:52	11.08111	3950.691	236.153
2012/03/19 19:19:22	11.15611	3950.653	236.159
2012/03/19 19:23:52	11.23111	3950.567	236.167
2012/03/19 19:28:22	11.30611	3950.510	236.174
2012/03/19 19:33:02	11.38389	3950.344	236.182
2012/03/19 19:37:32	11.45889	3950.322	236.186
2012/03/19 19:42:02	11.53389	3950.134	236.197
2012/03/19 19:46:32	11.60889	3950.125	236.201
2012/03/19 19:51:02	11.68389	3949.973	236.211
2012/03/19 19:55:32	11.75889	3949.981	236.218
2012/03/19 20:00:02	11.83389	3949.850	236.224
2012/03/19 20:04:42	11.91167	3949.762	236.231
2012/03/19 20:09:12	11.98667	3949.600	236.240
2012/03/19 20:13:42	12.06167	3949.571	236.247
2012/03/19 20:18:12	12.13667	3949.530	236.254
2012/03/19 20:22:42	12.21167	3949.411	236.262
2012/03/19 20:27:12	12.28667	3949.297	236.265
2012/03/19 20:31:42	12.36167	3949.234	236.271
2012/03/19 20:36:12	12.43667	3949.053	236.278
2012/03/19 20:40:52	12.51444	3949.127	236.284
2012/03/19 20:45:22	12.58944	3948.960	236.293
2012/03/19 20:49:52	12.66444	3948.853	236.301
2012/03/19 20:54:22	12.73944	3948.750	236.307
2012/03/19 20:58:52	12.81444	3948.689	236.313
2012/03/19 21:03:22	12.88944	3948.639	236.318
2012/03/19 21:07:52	12.96444	3948.531	236.327
2012/03/19 21:12:32	13.04222	3948.369	236.332
2012/03/19 21:17:02	13.11722	3948.350	236.342
2012/03/19 21:21:32	13.19222	3948.293	236.346
2012/03/19 21:26:02	13.26722	3948.204	236.352
2012/03/19 21:30:32	13.34222	3948.020	236.360
2012/03/19 21:35:02	13.41722	3948.042	236.364
2012/03/19 21:39:32	13.49222	3947.918	236.375
2012/03/19 21:44:12	13.57000	3947.853	236.380
2012/03/19 21:48:42	13.64500	3947.757	236.388
2012/03/19 21:53:12	13.72000	3947.853	236.394
2012/03/19 21:57:42	13.79500	3947.628	236.402
2012/03/19 22:02:12	13.87000	3947.590	236.410
2012/03/19 22:06:42	13.94500	3947.437	236.413
2012/03/19 22:11:12	14.02000	3947.320	236.423
2012/03/19 22:15:52	14.09778	3947.255	236.432
2012/03/19 22:20:22	14.17278	3947.254	236.437
2012/03/19 22:24:52	14.24778	3947.120	236.444
2012/03/19 22:29:22	14.32278	3947.011	236.450
2012/03/19 22:33:52	14.39778	3946.886	236.458
2012/03/19 22:38:22	14.47278	3946.725	236.465
2012/03/19 22:42:52	14.54778	3946.724	236.469
2012/03/19 22:47:32	14.62556	3946.703	236.481
2012/03/19 22:52:02	14.70056	3946.488	236.484
2012/03/19 22:56:32	14.77556	3946.421	236.490
2012/03/19 23:01:02	14.85056	3946.445	236.496
2012/03/19 23:05:32	14.92556	3946.317	236.503
2012/03/19 23:10:02	15.00056	3946.229	236.512
2012/03/19 23:14:32	15.07556	3946.191	236.521
2012/03/19 23:19:02	15.15056	3946.099	236.525
2012/03/19 23:23:42	15.22833	3945.996	236.533
2012/03/19 23:28:12	15.30333	3945.947	236.534
2012/03/19 23:32:42	15.37833	3945.855	236.543
2012/03/19 23:37:12	15.45333	3945.821	236.545
2012/03/19 23:41:42	15.52833	3945.619	236.550
2012/03/19 23:46:12	15.60333	3945.646	236.558
2012/03/19 23:50:42	15.67833	3945.482	236.565
2012/03/19 23:55:22	15.75611	3945.466	236.568
2012/03/19 23:59:52	15.83111	3945.437	236.577
2012/03/20 00:04:22	15.90611	3945.171	236.582
2012/03/20 00:08:52	15.98111	3945.172	236.587
2012/03/20 00:13:22	16.05611	3945.075	236.593
2012/03/20 00:17:52	16.13111	3945.002	236.601
2012/03/20 00:22:22	16.20611	3944.994	236.607
2012/03/20 00:27:02	16.28389	3944.826	236.614
2012/03/20 00:31:32	16.35889	3944.724	236.619
2012/03/20 00:36:02	16.43389	3944.747	236.626
2012/03/20 00:40:32	16.50889	3944.606	236.630
2012/03/20 00:45:02	16.58389	3944.526	236.635
2012/03/20 00:49:32	16.65889	3944.535	236.642
2012/03/20 00:54:02	16.73389	3944.510	236.648
2012/03/20 00:58:42	16.81167	3944.347	236.655
2012/03/20 01:03:12	16.88667	3944.264	236.663
2012/03/20 01:07:42	16.96167	3944.075	236.670
2012/03/20 01:12:12	17.03667	3944.069	236.674
2012/03/20 01:16:42	17.11167	3944.038	236.680
2012/03/20 01:21:12	17.18667	3943.902	236.685
2012/03/20 01:25:42	17.26167	3943.795	236.687
2012/03/20 01:30:12	17.33667	3943.809	236.697
2012/03/20 01:34:52	17.41444	3943.650	236.700
2012/03/20 01:39:22	17.48944	3943.664	236.709

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/20 01:43:52	17.56444	3943.523	236.711
2012/03/20 01:48:22	17.63944	3943.407	236.716
2012/03/20 01:52:52	17.71444	3943.387	236.726
2012/03/20 01:57:22	17.78944	3943.359	236.731
2012/03/20 02:01:52	17.86444	3943.271	236.738
2012/03/20 02:06:32	17.94222	3943.141	236.742
2012/03/20 02:11:02	18.01722	3943.076	236.746
2012/03/20 02:15:32	18.09222	3942.996	236.753
2012/03/20 02:20:02	18.16722	3943.009	236.759
2012/03/20 02:24:32	18.24222	3942.918	236.764
2012/03/20 02:29:02	18.31722	3942.843	236.770
2012/03/20 02:33:32	18.39222	3942.778	236.775
2012/03/20 02:38:12	18.47000	3942.644	236.777
2012/03/20 02:42:42	18.54500	3942.621	236.787
2012/03/20 02:47:12	18.62000	3942.522	236.794
2012/03/20 02:51:42	18.69500	3942.446	236.795
2012/03/20 02:56:12	18.77000	3942.322	236.802
2012/03/20 03:00:42	18.84500	3942.311	236.806
2012/03/20 03:05:12	18.92000	3942.189	236.813
2012/03/20 03:09:52	18.99778	3942.137	236.818
2012/03/20 03:14:22	19.07278	3942.171	236.823
2012/03/20 03:18:52	19.14778	3942.096	236.827
2012/03/20 03:23:22	19.22278	3941.933	236.832
2012/03/20 03:27:52	19.29778	3941.985	236.839
2012/03/20 03:32:22	19.37278	3941.845	236.846
2012/03/20 03:36:52	19.44778	3941.758	236.846
2012/03/20 03:41:32	19.52556	3941.662	236.855
2012/03/20 03:46:02	19.60056	3941.420	236.860
2012/03/20 03:50:32	19.67556	3941.572	236.865
2012/03/20 03:55:02	19.75056	3941.433	236.871
2012/03/20 03:59:32	19.82556	3941.221	236.879
2012/03/20 04:04:02	19.90056	3941.241	236.882
2012/03/20 04:08:32	19.97556	3941.221	236.890
2012/03/20 04:13:02	20.05056	3941.163	236.895
2012/03/20 04:17:42	20.12833	3941.032	236.901
2012/03/20 04:22:12	20.20333	3940.945	236.907
2012/03/20 04:26:42	20.27833	3940.984	236.914
2012/03/20 04:31:12	20.35333	3940.709	236.918
2012/03/20 04:35:42	20.42833	3940.792	236.922
2012/03/20 04:40:12	20.50333	3940.665	236.927
2012/03/20 04:44:42	20.57833	3940.711	236.932
2012/03/20 04:49:22	20.65611	3940.547	236.937
2012/03/20 04:53:52	20.73111	3940.501	236.943
2012/03/20 04:58:22	20.80611	3940.289	236.947
2012/03/20 05:02:52	20.88111	3940.331	236.953
2012/03/20 05:07:22	20.95611	3940.188	236.959
2012/03/20 05:11:52	21.03111	3940.185	236.965
2012/03/20 05:16:22	21.10611	3940.226	236.968
2012/03/20 05:21:02	21.18389	3939.969	236.976
2012/03/20 05:25:32	21.25889	3939.942	236.979
2012/03/20 05:30:02	21.33389	3939.943	236.984
2012/03/20 05:34:32	21.40889	3939.837	236.990
2012/03/20 05:39:02	21.48389	3939.792	236.995
2012/03/20 05:43:32	21.55889	3939.706	237.000
2012/03/20 05:48:02	21.63389	3939.642	237.004
2012/03/20 05:52:42	21.71167	3939.651	237.009
2012/03/20 05:57:12	21.78667	3939.478	237.014
2012/03/20 06:01:42	21.86167	3939.415	237.017
2012/03/20 06:06:12	21.93667	3939.438	237.025
2012/03/20 06:10:42	22.01167	3939.186	237.029
2012/03/20 06:15:12	22.08667	3939.138	237.033
2012/03/20 06:19:42	22.16167	3939.127	237.039
2012/03/20 06:24:12	22.23667	3939.020	237.047
2012/03/20 06:28:52	22.31444	3939.024	237.051
2012/03/20 06:33:22	22.38944	3938.774	237.055
2012/03/20 06:37:52	22.46444	3938.872	237.059
2012/03/20 06:42:22	22.53944	3938.749	237.067
2012/03/20 06:46:52	22.61444	3938.619	237.070
2012/03/20 06:51:22	22.68944	3938.642	237.077
2012/03/20 06:55:52	22.76444	3938.605	237.080
2012/03/20 07:00:32	22.84222	3938.508	237.084
2012/03/20 07:01:42	22.86167	3945.156	237.100
Start Pumping			
2012/03/20 07:05:02	22.91722	4177.893	236.240
2012/03/20 07:09:32	22.99222	4215.489	229.238
2012/03/20 07:14:02	23.06722	4205.325	221.811
2012/03/20 07:18:32	23.14222	4227.386	216.357
2012/03/20 07:23:02	23.21722	4238.117	211.929
2012/03/20 07:27:32	23.29222	4245.840	207.110
2012/03/20 07:32:12	23.37000	4254.975	204.508
2012/03/20 07:36:42	23.44500	4263.272	202.494
2012/03/20 07:41:12	23.52000	4269.567	200.698
2012/03/20 07:45:42	23.59500	4274.570	199.024
2012/03/20 07:50:12	23.67000	4276.188	197.487
2012/03/20 07:54:42	23.74500	4277.580	196.046
2012/03/20 07:59:12	23.82000	4280.192	194.757
2012/03/20 08:03:52	23.89778	4282.575	193.453
2012/03/20 08:08:22	23.97278	4285.467	192.290
2012/03/20 08:12:52	24.04778	4289.344	191.192
2012/03/20 08:17:22	24.12278	4290.856	190.157
2012/03/20 08:21:52	24.19778	4292.127	189.184
2012/03/20 08:26:22	24.27278	4292.844	188.252
2012/03/20 08:30:52	24.34778	4294.047	187.374
2012/03/20 08:35:32	24.42556	4295.771	186.504
2012/03/20 08:40:02	24.50056	4296.983	185.706
2012/03/20 08:44:32	24.57556	4297.859	184.938
2012/03/20 08:49:02	24.65056	4299.579	184.215
2012/03/20 08:53:32	24.72556	4300.479	183.517
2012/03/20 08:58:02	24.80056	4301.903	182.852
2012/03/20 09:02:32	24.87556	4301.231	182.207
2012/03/20 09:07:02	24.95056	4303.080	181.589
2012/03/20 09:11:42	25.02833	4304.231	180.978
2012/03/20 09:16:12	25.10333	4304.926	180.414
2012/03/20 09:20:42	25.17833	4306.215	179.869
2012/03/20 09:25:12	25.25333	4307.557	179.336
2012/03/20 09:29:42	25.32833	4308.310	178.824
2012/03/20 09:34:12	25.40333	4309.864	178.323
2012/03/20 09:38:42	25.47833	4311.125	177.839
2012/03/20 09:43:22	25.55611	4312.971	177.357
2012/03/20 09:47:52	25.63111	4314.061	176.904
2012/03/20 09:52:22	25.70611	4315.326	176.470
2012/03/20 09:56:52	25.78111	4316.385	176.044
2012/03/20 10:01:22	25.85611	4317.364	175.638
2012/03/20 10:05:52	25.93111	4317.997	175.238
2012/03/20 10:10:22	26.00611	4318.963	174.854
2012/03/20 10:15:02	26.08389	4319.852	174.468
2012/03/20 10:19:32	26.15889	4321.107	174.111
2012/03/20 10:24:02	26.23389	4321.567	173.748

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/20 10:28:32	26.30889	4322.096	173.379
2012/03/20 10:33:02	26.38389	4322.778	173.032
2012/03/20 10:37:32	26.45889	4323.646	172.703
2012/03/20 10:42:02	26.53389	4324.655	172.383
2012/03/20 10:46:42	26.61167	4325.139	172.065
2012/03/20 10:51:12	26.68667	4325.939	171.763
2012/03/20 10:55:42	26.76167	4326.632	171.465
2012/03/20 11:00:12	26.83667	4327.278	171.176
2012/03/20 11:04:42	26.91167	4327.786	170.893
2012/03/20 11:09:12	26.98667	4328.262	170.612
2012/03/20 11:13:42	27.06167	4328.970	170.338
2012/03/20 11:18:12	27.13667	4328.810	170.107
2012/03/20 11:22:52	27.21444	4328.573	169.871
2012/03/20 11:27:22	27.28944	4328.416	169.631
2012/03/20 11:31:52	27.36444	4328.319	169.394
2012/03/20 11:36:22	27.43944	4328.318	169.175
2012/03/20 11:40:52	27.51444	4328.355	168.935
2012/03/20 11:45:22	27.58944	4328.527	168.688
2012/03/20 11:49:52	27.66444	4328.277	168.445
2012/03/20 11:54:32	27.74222	4328.569	168.197
2012/03/20 11:59:02	27.81722	4328.315	167.965
2012/03/20 12:03:32	27.89222	4328.462	167.736
2012/03/20 12:08:02	27.96722	4328.657	167.511
2012/03/20 12:12:32	28.04222	4328.709	167.295
2012/03/20 12:17:02	28.11722	4328.279	167.076
2012/03/20 12:21:32	28.19222	4327.530	166.860
2012/03/20 12:26:12	28.27000	4327.641	166.640
2012/03/20 12:30:42	28.34500	4327.746	166.437
2012/03/20 12:35:12	28.42000	4327.625	166.237
2012/03/20 12:39:42	28.49500	4327.550	166.039
2012/03/20 12:44:12	28.57000	4327.859	165.847
2012/03/20 12:48:42	28.64500	4327.899	165.657
2012/03/20 12:53:12	28.72000	4328.080	165.473
2012/03/20 12:57:52	28.79778	4328.166	165.289
2012/03/20 13:02:22	28.87278	4328.344	165.112
2012/03/20 13:06:52	28.94778	4328.389	164.938
2012/03/20 13:11:22	29.02278	4328.597	164.770
2012/03/20 13:15:52	29.09778	4328.654	164.590
2012/03/20 13:20:22	29.17278	4328.740	164.416
2012/03/20 13:24:52	29.24778	4328.914	164.252
2012/03/20 13:29:32	29.32556	4329.115	164.083
2012/03/20 13:34:02	29.40056	4329.266	163.918
2012/03/20 13:38:32	29.47556	4329.746	163.765
2012/03/20 13:43:02	29.55056	4329.599	163.612
2012/03/20 13:47:32	29.62556	4329.817	163.457
2012/03/20 13:52:02	29.70056	4330.099	163.308
2012/03/20 13:56:32	29.77556	4330.160	163.156
2012/03/20 14:01:02	29.85056	4330.325	163.008
2012/03/20 14:05:42	29.92833	4330.416	162.858
2012/03/20 14:10:12	30.00333	4330.981	162.715
2012/03/20 14:14:42	30.07833	4330.734	162.574
2012/03/20 14:19:12	30.15333	4331.127	162.433
2012/03/20 14:23:42	30.22833	4331.089	162.296
2012/03/20 14:28:12	30.30333	4331.330	162.161
2012/03/20 14:32:42	30.37833	4331.653	162.026
2012/03/20 14:37:22	30.45611	4332.219	161.888
2012/03/20 14:41:52	30.53111	4332.428	161.757
2012/03/20 14:46:22	30.60611	4332.652	161.631
2012/03/20 14:50:52	30.68111	4333.116	161.507
2012/03/20 14:55:22	30.75611	4333.190	161.384
2012/03/20 14:59:52	30.83111	4333.359	161.266
2012/03/20 15:04:22	30.90611	4333.457	161.143
2012/03/20 15:09:02	30.98389	4334.100	161.024
2012/03/20 15:13:32	31.05889	4334.068	160.905
2012/03/20 15:18:02	31.13389	4334.135	160.790
2012/03/20 15:22:32	31.20889	4334.259	160.680
2012/03/20 15:27:02	31.28389	4334.455	160.572
2012/03/20 15:31:32	31.35889	4334.597	160.458
2012/03/20 15:36:02	31.43389	4335.121	160.349
2012/03/20 15:40:42	31.51167	4335.114	160.241
2012/03/20 15:45:12	31.58667	4335.275	160.132
2012/03/20 15:49:42	31.66167	4335.426	160.025
2012/03/20 15:54:12	31.73667	4335.425	159.923
2012/03/20 15:58:42	31.81167	4335.620	159.819
2012/03/20 16:03:12	31.88667	4335.924	159.713
2012/03/20 16:07:42	31.96167	4336.124	159.611
2012/03/20 16:12:12	32.03667	4335.993	159.516
2012/03/20 16:16:52	32.11444	4336.377	159.415
2012/03/20 16:21:22	32.18944	4336.240	159.319
2012/03/20 16:25:52	32.26444	4336.372	159.223
2012/03/20 16:30:22	32.33944	4336.444	159.128
2012/03/20 16:34:52	32.41444	4337.070	159.032
2012/03/20 16:39:22	32.48944	4336.863	158.934
2012/03/20 16:43:52	32.56444	4337.060	158.837
2012/03/20 16:48:32	32.64222	4336.946	158.727
2012/03/20 16:53:02	32.71722	4337.170	158.638
2012/03/20 16:57:32	32.79222	4337.156	158.546
2012/03/20 17:02:02	32.86722	4337.311	158.455
2012/03/20 17:06:32	32.94222	4337.332	158.372
2012/03/20 17:11:02	33.01722	4337.562	158.285
2012/03/20 17:15:32	33.09222	4337.718	158.202
2012/03/20 17:20:12	33.17000	4337.884	158.109
2012/03/20 17:24:42	33.24500	4338.128	158.025
2012/03/20 17:29:12	33.32000	4338.207	157.947
2012/03/20 17:33:42	33.39500	4338.244	157.865
2012/03/20 17:38:12	33.47000	4338.479	157.778
2012/03/20 17:42:42	33.54500	4338.309	157.706
2012/03/20 17:47:12	33.62000	4338.504	157.627
2012/03/20 17:51:52	33.69778	4338.345	157.552
2012/03/20 17:56:22	33.77278	4338.566	157.484
2012/03/20 18:00:52	33.84778	4338.612	157.416
2012/03/20 18:05:22	33.92278	4338.556	157.336
2012/03/20 18:09:52	33.99778	4338.605	157.262
2012/03/20 18:14:22	34.07278	4338.833	157.187
2012/03/20 18:18:52	34.14778	4338.693	157.113
2012/03/20 18:23:32	34.22556	4338.789	157.032
2012/03/20 18:28:02	34.30056	4338.830	156.956
2012/03/20 18:32:32	34.37556	4338.796	156.881
2012/03/20 18:37:02	34.45056	4338.781	156.815
2012/03/20 18:41:32	34.52556	4338.772	156.735
2012/03/20 18:46:02	34.60056	4338.970	156.661
2012/03/20 18:50:32	34.67556	4338.875	156.586
2012/03/20 18:55:02	34.75056	4339.131	156.517
2012/03/20 18:59:42	34.82833	4339.146	156.444
2012/03/20 19:04:12	34.90333	4339.158	156.371
2012/03/20 19:08:42	34.97833	4339.248	156.305
2012/03/20 19:13:12	35.05333	4339.209	156.237
2012/03/20 19:17:42	35.12833	4339.167	156.173

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/20 19:22:12	35.20333	4339.289	156.106
2012/03/20 19:26:42	35.27833	4339.370	156.042
2012/03/20 19:31:22	35.35611	4339.250	155.976
2012/03/20 19:35:52	35.43111	4339.217	155.918
2012/03/20 19:40:22	35.50611	4339.299	155.861
2012/03/20 19:44:52	35.58111	4339.007	155.802
2012/03/20 19:49:22	35.65611	4339.314	155.747
2012/03/20 19:53:52	35.73111	4339.250	155.682
2012/03/20 19:58:22	35.80611	4339.215	155.615
2012/03/20 20:03:02	35.88389	4339.153	155.547
2012/03/20 20:07:32	35.95889	4339.370	155.483
2012/03/20 20:12:02	36.03389	4339.519	155.423
2012/03/20 20:16:32	36.10889	4339.339	155.370
2012/03/20 20:21:02	36.18389	4339.350	155.311
2012/03/20 20:25:32	36.25889	4339.319	155.257
2012/03/20 20:30:02	36.33389	4339.473	155.202
2012/03/20 20:34:42	36.41167	4339.542	155.138
2012/03/20 20:39:12	36.48667	4339.557	155.076
2012/03/20 20:43:42	36.56167	4339.529	155.019
2012/03/20 20:48:12	36.63667	4339.597	154.966
2012/03/20 20:52:42	36.71167	4339.616	154.913
2012/03/20 20:57:12	36.78667	4339.814	154.858
2012/03/20 21:01:42	36.86167	4339.742	154.803
2012/03/20 21:06:22	36.93944	4339.641	154.750
2012/03/20 21:10:52	37.01444	4339.674	154.699
2012/03/20 21:15:22	37.08944	4339.985	154.647
2012/03/20 21:19:52	37.16444	4339.605	154.598
2012/03/20 21:24:22	37.23944	4339.918	154.544
2012/03/20 21:28:52	37.31444	4339.882	154.492
2012/03/20 21:33:22	37.38944	4339.715	154.429
2012/03/20 21:37:52	37.46444	4339.928	154.380
2012/03/20 21:42:32	37.54222	4339.867	154.327
2012/03/20 21:47:02	37.61722	4339.965	154.277
2012/03/20 21:51:32	37.69222	4339.993	154.228
2012/03/20 21:56:02	37.76722	4339.988	154.175
2012/03/20 22:00:32	37.84222	4340.033	154.127
2012/03/20 22:05:02	37.91722	4339.829	154.079
2012/03/20 22:09:32	37.99222	4339.943	154.035
2012/03/20 22:14:12	38.07000	4340.016	153.983
2012/03/20 22:18:42	38.14500	4340.001	153.933
2012/03/20 22:23:12	38.22000	4340.326	153.884
2012/03/20 22:27:42	38.29500	4340.017	153.835
2012/03/20 22:32:12	38.37000	4340.258	153.788
2012/03/20 22:36:42	38.44500	4339.783	153.740
2012/03/20 22:41:12	38.52000	4340.297	153.692
2012/03/20 22:45:52	38.59778	4340.521	153.640
2012/03/20 22:50:22	38.67278	4340.022	153.593
2012/03/20 22:54:52	38.74778	4340.108	153.548
2012/03/20 22:59:22	38.82278	4339.861	153.507
2012/03/20 23:03:52	38.89778	4340.092	153.461
2012/03/20 23:08:22	38.97278	4339.758	153.420
2012/03/20 23:12:52	39.04778	4340.413	153.372
2012/03/20 23:17:32	39.12556	4340.164	153.322
2012/03/20 23:22:02	39.20056	4340.189	153.274
2012/03/20 23:26:32	39.27556	4340.317	153.231
2012/03/20 23:31:02	39.35056	4340.260	153.183
2012/03/20 23:35:32	39.42556	4340.224	153.142
2012/03/20 23:40:02	39.50056	4340.284	153.104
2012/03/20 23:44:32	39.57556	4340.283	153.059
2012/03/20 23:49:02	39.65056	4340.373	153.018
2012/03/20 23:53:42	39.72833	4340.292	152.977
2012/03/20 23:58:12	39.80333	4340.241	152.931
2012/03/21 00:02:42	39.87833	4340.435	152.890
2012/03/21 00:07:12	39.95333	4340.734	152.846
2012/03/21 00:11:42	40.02833	4340.363	152.802
2012/03/21 00:16:12	40.10333	4340.565	152.762
2012/03/21 00:20:42	40.17833	4340.589	152.724
2012/03/21 00:25:22	40.25611	4340.358	152.683
2012/03/21 00:29:52	40.33111	4340.553	152.640
2012/03/21 00:34:22	40.40611	4341.092	152.600
2012/03/21 00:38:52	40.48111	4340.645	152.558
2012/03/21 00:43:22	40.55611	4340.626	152.519
2012/03/21 00:47:52	40.63111	4340.723	152.480
2012/03/21 00:52:22	40.70611	4340.574	152.440
2012/03/21 00:57:02	40.78389	4340.620	152.408
2012/03/21 01:01:32	40.85889	4340.699	152.368
2012/03/21 01:06:02	40.93389	4340.669	152.332
2012/03/21 01:10:32	41.00889	4340.412	152.301
2012/03/21 01:15:02	41.08389	4340.648	152.263
2012/03/21 01:19:32	41.15889	4340.672	152.226
2012/03/21 01:24:02	41.23389	4340.641	152.189
2012/03/21 01:28:42	41.31167	4340.766	152.150
2012/03/21 01:33:12	41.38667	4340.736	152.107
2012/03/21 01:37:42	41.46167	4340.791	152.072
2012/03/21 01:42:12	41.53667	4340.908	152.031
2012/03/21 01:46:42	41.61167	4341.046	151.996
2012/03/21 01:51:12	41.68667	4340.880	151.956
2012/03/21 01:55:42	41.76167	4340.835	151.919
2012/03/21 02:00:22	41.83944	4340.989	151.879
2012/03/21 02:04:52	41.91444	4341.004	151.840
2012/03/21 02:09:22	41.98944	4340.922	151.798
2012/03/21 02:13:52	42.06444	4341.345	151.758
2012/03/21 02:18:22	42.13944	4340.904	151.720
2012/03/21 02:22:52	42.21444	4341.252	151.681
2012/03/21 02:27:22	42.28944	4341.032	151.647
2012/03/21 02:31:52	42.36444	4341.154	151.608
2012/03/21 02:36:32	42.44222	4341.221	151.571
2012/03/21 02:41:02	42.51722	4341.125	151.537
2012/03/21 02:45:32	42.59222	4341.097	151.504
2012/03/21 02:50:02	42.66722	4341.296	151.477
2012/03/21 02:54:32	42.74222	4341.036	151.440
2012/03/21 02:59:02	42.81722	4341.108	151.405
2012/03/21 03:03:32	42.89222	4341.157	151.366
2012/03/21 03:08:12	42.97000	4340.772	151.333
2012/03/21 03:12:42	43.04500	4341.064	151.295
2012/03/21 03:17:12	43.12000	4340.945	151.265
2012/03/21 03:21:42	43.19500	4341.168	151.227
2012/03/21 03:26:12	43.27000	4340.913	151.194
2012/03/21 03:30:42	43.34500	4340.941	151.160
2012/03/21 03:35:12	43.42000	4341.296	151.128
2012/03/21 03:39:52	43.49778	4340.991	151.095
2012/03/21 03:44:22	43.57278	4341.098	151.061
2012/03/21 03:48:52	43.64778	4341.291	151.024
2012/03/21 03:53:22	43.72278	4341.069	150.990
2012/03/21 03:57:52	43.79778	4341.174	150.954
2012/03/21 04:02:22	43.87278	4340.890	150.923
2012/03/21 04:06:52	43.94778	4341.020	150.890
2012/03/21 04:11:32	44.02556	4341.093	150.858

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/21 04:16:02	44.10056	4340.900	150.818
2012/03/21 04:20:32	44.17556	4341.153	150.789
2012/03/21 04:25:02	44.25056	4340.584	150.747
2012/03/21 04:29:32	44.32556	4341.035	150.725
2012/03/21 04:34:02	44.40056	4341.013	150.696
2012/03/21 04:38:32	44.47556	4340.910	150.667
2012/03/21 04:43:02	44.55056	4341.514	150.630
2012/03/21 04:47:42	44.62833	4341.004	150.593
2012/03/21 04:52:12	44.70333	4341.106	150.562
2012/03/21 04:56:42	44.77833	4341.038	150.533
2012/03/21 05:01:12	44.85333	4341.203	150.497
2012/03/21 05:05:42	44.92833	4341.025	150.463
2012/03/21 05:10:12	45.00333	4340.950	150.432
2012/03/21 05:14:42	45.07833	4341.171	150.402
2012/03/21 05:19:22	45.15611	4341.201	150.373
2012/03/21 05:23:52	45.23111	4340.988	150.345
2012/03/21 05:28:22	45.30611	4340.801	150.320
2012/03/21 05:32:52	45.38111	4340.932	150.294
2012/03/21 05:37:22	45.45611	4340.927	150.271
2012/03/21 05:41:52	45.53111	4341.216	150.249
2012/03/21 05:46:22	45.60611	4340.731	150.220
2012/03/21 05:51:02	45.68389	4341.197	150.188
2012/03/21 05:55:32	45.75889	4341.157	150.161
2012/03/21 06:00:02	45.83389	4341.371	150.127
2012/03/21 06:04:32	45.90889	4341.310	150.093
2012/03/21 06:09:02	45.98389	4341.347	150.060
2012/03/21 06:13:32	46.05889	4341.184	150.032
2012/03/21 06:18:02	46.13389	4341.231	150.005
2012/03/21 06:22:42	46.21167	4340.998	149.976
2012/03/21 06:27:12	46.28667	4341.330	149.949
2012/03/21 06:31:42	46.36167	4341.526	149.921
2012/03/21 06:36:12	46.43667	4341.609	149.893
2012/03/21 06:40:42	46.51167	4341.576	149.870
2012/03/21 06:45:12	46.58667	4341.573	149.843
2012/03/21 06:49:42	46.66167	4341.580	149.817
2012/03/21 06:54:22	46.73944	4341.727	149.789
2012/03/21 06:58:52	46.81444	4341.423	149.759
2012/03/21 06:59:32	46.82556	4341.430	149.756
Stop Pump and shut in			
2012/03/21 07:03:22	46.88944	4314.661	151.556
2012/03/21 07:07:52	46.96444	4308.425	155.384
2012/03/21 07:12:22	47.03944	4303.685	159.168
2012/03/21 07:16:52	47.11444	4298.914	162.507
2012/03/21 07:21:22	47.18944	4294.322	165.383
2012/03/21 07:25:52	47.26444	4290.934	167.877
2012/03/21 07:30:32	47.34222	4287.224	170.149
2012/03/21 07:35:02	47.41722	4283.981	172.101
2012/03/21 07:39:32	47.49222	4280.874	173.882
2012/03/21 07:44:02	47.56722	4277.926	175.537
2012/03/21 07:48:32	47.64222	4275.016	177.047
2012/03/21 07:53:02	47.71722	4272.421	178.473
2012/03/21 07:57:32	47.79222	4269.959	179.813
2012/03/21 08:02:12	47.87000	4267.237	181.136
2012/03/21 08:06:42	47.94500	4264.989	182.337
2012/03/21 08:11:12	48.02000	4262.719	183.479
2012/03/21 08:15:42	48.09500	4260.993	184.571
2012/03/21 08:20:12	48.17000	4258.289	185.615
2012/03/21 08:24:42	48.24500	4256.197	186.609
2012/03/21 08:29:12	48.32000	4254.211	187.557
2012/03/21 08:33:52	48.39778	4252.164	188.533
2012/03/21 08:38:22	48.47278	4250.246	189.428
2012/03/21 08:42:52	48.54778	4248.423	190.262
2012/03/21 08:47:22	48.62278	4246.458	191.118
2012/03/21 08:51:52	48.69778	4244.556	191.924
2012/03/21 08:56:22	48.77278	4243.146	192.696
2012/03/21 09:00:52	48.84778	4240.999	193.437
2012/03/21 09:05:32	48.92556	4239.128	194.176
2012/03/21 09:10:02	49.00056	4237.296	194.879
2012/03/21 09:14:32	49.07556	4235.559	195.561
2012/03/21 09:19:02	49.15056	4233.846	196.233
2012/03/21 09:23:32	49.22556	4232.123	196.877
2012/03/21 09:28:02	49.30056	4230.437	197.514
2012/03/21 09:32:32	49.37556	4228.774	198.110
2012/03/21 09:37:02	49.45056	4227.158	198.688
2012/03/21 09:41:42	49.52833	4225.425	199.254
2012/03/21 09:46:12	49.60333	4223.746	199.826
2012/03/21 09:50:42	49.67833	4222.148	200.363
2012/03/21 09:55:12	49.75333	4220.412	200.915
2012/03/21 09:59:42	49.82833	4218.823	201.411
2012/03/21 10:04:12	49.90333	4217.142	201.895
2012/03/21 10:08:42	49.97833	4215.625	202.382
2012/03/21 10:13:22	50.05611	4214.070	202.874
2012/03/21 10:17:52	50.13111	4212.448	203.343
2012/03/21 10:22:22	50.20611	4210.886	203.788
2012/03/21 10:26:52	50.28111	4209.337	204.228
2012/03/21 10:31:22	50.35611	4207.671	204.670
2012/03/21 10:35:52	50.43111	4206.108	205.087
2012/03/21 10:40:22	50.50611	4204.542	205.490
2012/03/21 10:45:02	50.58389	4202.747	205.901
2012/03/21 10:49:32	50.65889	4201.441	206.300
2012/03/21 10:54:02	50.73389	4200.051	206.679
2012/03/21 10:58:32	50.80889	4198.378	207.062
2012/03/21 11:03:02	50.88389	4196.987	207.425
2012/03/21 11:07:32	50.95889	4195.460	207.784
2012/03/21 11:12:02	51.03389	4193.898	208.131
2012/03/21 11:16:42	51.11167	4192.431	208.486
2012/03/21 11:21:12	51.18667	4191.093	208.819
2012/03/21 11:25:42	51.26167	4189.528	209.144
2012/03/21 11:30:12	51.33667	4187.963	209.466
2012/03/21 11:34:42	51.41167	4186.416	209.784
2012/03/21 11:39:12	51.48667	4184.985	210.092
2012/03/21 11:43:42	51.56167	4183.349	210.386
2012/03/21 11:48:22	51.63944	4181.767	210.701
2012/03/21 11:52:52	51.71444	4180.346	211.002
2012/03/21 11:57:22	51.78944	4178.927	211.269
2012/03/21 12:01:52	51.86444	4177.352	211.544
2012/03/21 12:06:22	51.93944	4175.841	211.820
2012/03/21 12:10:52	52.01444	4174.368	212.084
2012/03/21 12:15:22	52.08944	4172.931	212.344
2012/03/21 12:19:52	52.16444	4171.441	212.591
2012/03/21 12:24:32	52.24222	4170.000	212.855
2012/03/21 12:29:02	52.31722	4168.477	213.135
2012/03/21 12:33:32	52.39222	4166.917	213.381
2012/03/21 12:38:02	52.46722	4165.462	213.618
2012/03/21 12:42:32	52.54222	4164.123	213.842
2012/03/21 12:47:02	52.61722	4162.613	214.076
2012/03/21 12:51:32	52.69222	4161.195	214.301
2012/03/21 12:56:12	52.77000	4159.628	214.513

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/21 13:00:42	52.84500	4158.220	214.717
2012/03/21 13:05:12	52.92000	4156.656	214.957
2012/03/21 13:09:42	52.99500	4155.265	215.158
2012/03/21 13:14:12	53.07000	4153.931	215.356
2012/03/21 13:18:42	53.14500	4152.399	215.568
2012/03/21 13:23:12	53.22000	4151.005	215.783
2012/03/21 13:27:52	53.29778	4149.432	215.962
2012/03/21 13:32:22	53.37278	4148.393	216.157
2012/03/21 13:36:52	53.44778	4146.634	216.343
2012/03/21 13:41:22	53.52278	4145.379	216.549
2012/03/21 13:45:52	53.59778	4143.884	216.715
2012/03/21 13:50:22	53.67278	4141.636	216.930
2012/03/21 13:54:52	53.74778	4141.091	217.138
2012/03/21 13:59:32	53.82556	4139.372	217.325
2012/03/21 14:04:02	53.90056	4138.036	217.447
2012/03/21 14:08:32	53.97556	4136.654	217.613
2012/03/21 14:13:02	54.05056	4135.119	217.805
2012/03/21 14:17:32	54.12556	4133.848	217.984
2012/03/21 14:22:02	54.20056	4132.526	218.155
2012/03/21 14:26:32	54.27556	4131.114	218.325
2012/03/21 14:31:02	54.35056	4129.658	218.475
2012/03/21 14:35:42	54.42833	4128.340	218.638
2012/03/21 14:40:12	54.50333	4126.992	218.785
2012/03/21 14:44:42	54.57833	4125.738	218.935
2012/03/21 14:49:12	54.65333	4124.304	219.096
2012/03/21 14:53:42	54.72833	4122.893	219.244
2012/03/21 14:58:12	54.80333	4121.550	219.363
2012/03/21 15:02:42	54.87833	4120.185	219.491
2012/03/21 15:07:22	54.95611	4118.868	219.617
2012/03/21 15:11:52	55.03111	4117.352	219.771
2012/03/21 15:16:22	55.10611	4116.188	219.892
2012/03/21 15:20:52	55.18111	4114.763	220.042
2012/03/21 15:25:22	55.25611	4113.514	220.201
2012/03/21 15:29:52	55.33111	4112.215	220.306
2012/03/21 15:34:22	55.40611	4110.969	220.436
2012/03/21 15:39:02	55.48389	4109.708	220.587
2012/03/21 15:43:32	55.55889	4108.324	220.728
2012/03/21 15:48:02	55.63389	4107.018	220.845
2012/03/21 15:52:32	55.70889	4105.730	220.972
2012/03/21 15:57:02	55.78389	4104.322	221.068
2012/03/21 16:01:32	55.85889	4103.032	221.210
2012/03/21 16:06:02	55.93389	4101.754	221.309
2012/03/21 16:10:42	56.01167	4100.574	221.417
2012/03/21 16:15:12	56.08667	4099.564	221.536
2012/03/21 16:19:42	56.16167	4098.275	221.636
2012/03/21 16:24:12	56.23667	4097.107	221.742
2012/03/21 16:28:42	56.31167	4095.734	221.843
2012/03/21 16:33:12	56.38667	4094.591	221.974
2012/03/21 16:37:42	56.46167	4093.406	222.094
2012/03/21 16:42:22	56.53944	4092.037	222.201
2012/03/21 16:46:52	56.61444	4091.118	222.306
2012/03/21 16:51:22	56.68944	4089.907	222.415
2012/03/21 16:55:52	56.76444	4089.090	222.516
2012/03/21 17:00:22	56.83944	4087.577	222.591
2012/03/21 17:04:52	56.91444	4086.761	222.703
2012/03/21 17:09:22	56.98944	4085.543	222.781
2012/03/21 17:13:52	57.06444	4084.393	222.877
2012/03/21 17:18:32	57.14222	4083.115	222.991
2012/03/21 17:23:02	57.21722	4082.229	223.072
2012/03/21 17:27:32	57.29222	4081.219	223.152
2012/03/21 17:32:02	57.36722	4080.524	223.234
2012/03/21 17:36:32	57.44222	4079.079	223.329
2012/03/21 17:41:02	57.51722	4077.949	223.420
2012/03/21 17:45:32	57.59222	4077.027	223.525
2012/03/21 17:50:12	57.67000	4075.927	223.636
2012/03/21 17:54:42	57.74500	4074.938	223.696
2012/03/21 17:59:12	57.82000	4073.947	223.787
2012/03/21 18:03:42	57.89500	4073.012	223.882
2012/03/21 18:08:12	57.97000	4071.972	223.960
2012/03/21 18:12:42	58.04500	4071.197	224.025
2012/03/21 18:17:12	58.12000	4070.203	224.117
2012/03/21 18:21:52	58.19778	4069.187	224.197
2012/03/21 18:26:22	58.27278	4068.330	224.307
2012/03/21 18:30:52	58.34778	4067.419	224.389
2012/03/21 18:35:22	58.42278	4066.500	224.466
2012/03/21 18:39:52	58.49778	4065.692	224.531
2012/03/21 18:44:22	58.57278	4064.778	224.623
2012/03/21 18:48:52	58.64778	4063.957	224.705
2012/03/21 18:53:32	58.72556	4063.055	224.781
2012/03/21 18:58:02	58.80056	4062.253	224.852
2012/03/21 19:02:32	58.87556	4061.270	224.914
2012/03/21 19:07:02	58.95056	4060.596	224.991
2012/03/21 19:11:32	59.02556	4059.777	225.059
2012/03/21 19:16:02	59.10056	4059.115	225.126
2012/03/21 19:20:32	59.17556	4058.250	225.162
2012/03/21 19:25:02	59.25056	4057.334	225.245
2012/03/21 19:29:42	59.32833	4056.484	225.325
2012/03/21 19:34:12	59.40333	4055.843	225.395
2012/03/21 19:38:42	59.47833	4055.098	225.440
2012/03/21 19:43:12	59.55333	4054.400	225.502
2012/03/21 19:47:42	59.62833	4053.621	225.573
2012/03/21 19:52:12	59.70333	4053.043	225.622
2012/03/21 19:56:42	59.77833	4052.315	225.688
2012/03/21 20:01:22	59.85611	4051.571	225.742
2012/03/21 20:05:52	59.93111	4050.849	225.811
2012/03/21 20:10:22	60.00611	4050.120	225.881
2012/03/21 20:23:32	60.22556	4048.148	226.068
2012/03/21 20:37:02	60.45056	4046.375	226.241
2012/03/21 20:50:32	60.67556	4044.432	226.409
2012/03/21 21:04:02	60.90056	4042.690	226.593
2012/03/21 21:18:02	61.13389	4040.988	226.777
2012/03/21 21:31:32	61.35889	4039.259	226.938
2012/03/21 21:45:02	61.58389	4037.732	227.087
2012/03/21 21:58:32	61.80889	4036.223	227.263
2012/03/21 22:12:02	62.03389	4034.667	227.391
2012/03/21 22:25:32	62.25889	4033.176	227.543
2012/03/21 22:39:02	62.48389	4031.803	227.706
2012/03/21 22:53:02	62.71722	4030.178	227.838
2012/03/21 23:06:32	62.94222	4028.835	227.983
2012/03/21 23:20:02	63.16722	4027.509	228.089
2012/03/21 23:33:32	63.39222	4026.223	228.240
2012/03/21 23:47:02	63.61722	4024.977	228.354
2012/03/22 00:00:32	63.84222	4023.711	228.507
2012/03/22 00:14:02	64.06722	4022.436	228.625
2012/03/22 00:28:02	64.30056	4021.197	228.709
2012/03/22 00:41:32	64.52556	4020.190	228.846
2012/03/22 00:55:02	64.75056	4018.897	228.938
2012/03/22 01:08:32	64.97556	4017.805	229.051

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/22 01:22:02	65.20056	4016.773	229.183
2012/03/22 01:35:32	65.42556	4015.573	229.271
2012/03/22 01:49:02	65.65056	4014.557	229.375
2012/03/22 02:02:32	65.87556	4013.667	229.482
2012/03/22 02:16:32	66.10889	4012.594	229.563
2012/03/22 02:30:02	66.33389	4011.605	229.673
2012/03/22 02:43:32	66.55889	4010.691	229.780
2012/03/22 02:57:02	66.78389	4009.664	229.867
2012/03/22 03:10:32	67.00889	4008.702	229.948
2012/03/22 03:24:02	67.23389	4007.729	230.053
2012/03/22 03:37:32	67.45889	4006.865	230.152
2012/03/22 03:51:32	67.69222	4005.848	230.230
2012/03/22 04:05:02	67.91722	4005.020	230.332
2012/03/22 04:18:32	68.14222	4004.032	230.407
2012/03/22 04:32:02	68.36722	4003.225	230.489
2012/03/22 04:45:32	68.59222	4002.313	230.583
2012/03/22 04:59:02	68.81722	4001.520	230.639
2012/03/22 05:12:32	69.04222	4000.696	230.735
2012/03/22 05:26:32	69.27556	3999.800	230.804
2012/03/22 05:40:02	69.50056	3999.048	230.862
2012/03/22 05:53:32	69.72556	3998.155	230.938
2012/03/22 06:07:02	69.95056	3997.336	231.019
2012/03/22 06:20:32	70.17556	3996.449	231.132
2012/03/22 06:34:02	70.40056	3995.816	231.163
2012/03/22 06:47:32	70.62556	3994.952	231.228
2012/03/22 07:01:32	70.85889	3994.210	231.313
2012/03/22 07:15:02	71.08389	3993.430	231.369
2012/03/22 07:28:32	71.30889	3992.754	231.424
2012/03/22 07:42:02	71.53389	3991.943	231.498
2012/03/22 07:55:32	71.75889	3991.175	231.571
2012/03/22 08:09:02	71.98389	3990.465	231.650
2012/03/22 08:22:32	72.20889	3989.725	231.737
2012/03/22 08:36:32	72.44222	3988.993	231.789
2012/03/22 08:50:02	72.66722	3988.349	231.844
2012/03/22 09:03:32	72.89222	3987.547	231.913
2012/03/22 09:17:02	73.11722	3986.893	231.946
2012/03/22 09:30:32	73.34222	3986.107	232.019
2012/03/22 09:44:02	73.56722	3985.512	232.066
2012/03/22 09:57:32	73.79222	3984.747	232.119
2012/03/22 10:11:02	74.01722	3984.097	232.194
2012/03/22 10:25:02	74.25056	3983.348	232.238
2012/03/22 10:38:32	74.47556	3982.743	232.300
2012/03/22 10:52:02	74.70056	3982.087	232.363
2012/03/22 11:05:32	74.92556	3981.348	232.415
2012/03/22 11:19:02	75.15056	3980.806	232.460
2012/03/22 11:32:32	75.37556	3980.174	232.546
2012/03/22 11:46:02	75.60056	3979.604	232.642
2012/03/22 12:00:02	75.83389	3978.948	232.837
2012/03/22 12:13:32	76.05889	3978.323	232.979
2012/03/22 12:27:02	76.28389	3977.678	233.054
2012/03/22 12:40:32	76.50889	3977.178	233.127
2012/03/22 12:54:02	76.73389	3976.561	233.176
2012/03/22 13:07:32	76.95889	3975.957	233.248
2012/03/22 13:21:02	77.18389	3975.352	233.302
2012/03/22 13:35:02	77.41722	3974.783	233.346
2012/03/22 13:48:32	77.64222	3974.176	233.405
2012/03/22 14:02:02	77.86722	3973.678	233.464
2012/03/22 14:15:32	78.09222	3972.994	233.512
2012/03/22 14:29:02	78.31722	3972.544	233.570
2012/03/22 14:42:32	78.54222	3971.912	233.631
2012/03/22 14:56:02	78.76722	3971.387	233.683
2012/03/22 15:10:02	79.00056	3970.817	233.732
2012/03/22 15:23:32	79.22556	3970.342	233.748
2012/03/22 15:37:02	79.45056	3969.811	233.828
2012/03/22 15:50:32	79.67556	3969.345	233.870
2012/03/22 16:04:02	79.90056	3968.718	233.912
2012/03/22 16:17:32	80.12556	3968.216	233.983
2012/03/22 16:31:02	80.35056	3967.700	234.021
2012/03/22 16:44:32	80.57556	3967.236	234.052
2012/03/22 16:58:32	80.80889	3966.692	234.097
2012/03/22 17:12:02	81.03389	3966.164	234.145
2012/03/22 17:25:32	81.25889	3965.601	234.201
2012/03/22 17:39:02	81.48389	3965.185	234.229
2012/03/22 17:52:32	81.70889	3964.738	234.282
2012/03/22 18:06:02	81.93389	3964.197	234.290
2012/03/22 18:19:32	82.15889	3963.753	234.340
2012/03/22 18:33:32	82.39222	3963.327	234.385
2012/03/22 18:47:02	82.61722	3962.748	234.420
2012/03/22 19:00:32	82.84222	3962.274	234.460
2012/03/22 19:14:02	83.06722	3961.810	234.507
2012/03/22 19:27:32	83.29222	3961.449	234.527
2012/03/22 19:41:02	83.51722	3960.887	234.575
2012/03/22 19:54:32	83.74222	3960.425	234.605
2012/03/22 20:08:32	83.97556	3959.883	234.671
2012/03/22 20:22:02	84.20056	3959.461	234.691
2012/03/22 20:35:32	84.42556	3959.093	234.724
2012/03/22 20:49:02	84.65056	3958.551	234.754
2012/03/22 21:02:32	84.87556	3958.146	234.804
2012/03/22 21:16:02	85.10056	3957.549	234.816
2012/03/22 21:29:32	85.32556	3957.219	234.865
2012/03/22 21:43:32	85.55889	3956.819	234.900
2012/03/22 21:57:02	85.78389	3956.307	234.944
2012/03/22 22:10:32	86.00889	3955.773	234.965
2012/03/22 22:24:02	86.23389	3955.344	235.005
2012/03/22 22:37:32	86.45889	3954.971	235.028
2012/03/22 22:51:02	86.68389	3954.515	235.053
2012/03/22 23:04:32	86.90889	3954.087	235.093
2012/03/22 23:18:32	87.14222	3953.706	235.135
2012/03/22 23:32:02	87.36722	3953.267	235.176
2012/03/22 23:45:32	87.59222	3952.684	235.197
2012/03/22 23:59:02	87.81722	3952.251	235.218
2012/03/23 00:12:32	88.04222	3951.860	235.275
2012/03/23 00:26:02	88.26722	3951.515	235.305
2012/03/23 00:39:32	88.49222	3951.138	235.315
2012/03/23 00:53:02	88.71722	3950.716	235.360
2012/03/23 01:07:02	88.95056	3950.201	235.402
2012/03/23 01:20:32	89.17556	3949.772	235.411
2012/03/23 01:34:02	89.40056	3949.430	235.458
2012/03/23 01:47:32	89.62556	3948.943	235.493
2012/03/23 02:01:02	89.85056	3948.655	235.540
2012/03/23 02:14:32	90.07556	3948.216	235.529
2012/03/23 02:28:02	90.30056	3947.830	235.551
2012/03/23 02:42:02	90.53389	3947.432	235.596
2012/03/23 02:55:32	90.75889	3947.073	235.627
2012/03/23 03:09:02	90.98389	3946.789	235.663
2012/03/23 03:22:32	91.20889	3946.388	235.681
2012/03/23 03:36:02	91.43389	3945.950	235.720
2012/03/23 03:49:32	91.65889	3945.673	235.755

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/23 04:03:02	91.88389	3945.264	235.771
2012/03/23 04:17:02	92.11722	3944.800	235.798
2012/03/23 04:30:32	92.34222	3944.598	235.812
2012/03/23 04:44:02	92.56722	3944.242	235.849
2012/03/23 04:57:32	92.79222	3943.761	235.869
2012/03/23 05:11:02	93.01722	3943.509	235.914
2012/03/23 05:24:32	93.24222	3943.160	235.922
2012/03/23 05:38:02	93.46722	3942.731	235.930
2012/03/23 05:52:02	93.70056	3942.485	235.952
2012/03/23 06:05:32	93.92556	3941.982	236.000
2012/03/23 06:19:02	94.15056	3941.564	236.032
2012/03/23 06:32:32	94.37556	3941.449	236.049
2012/03/23 06:46:02	94.60056	3941.101	236.069
2012/03/23 06:59:32	94.82556	3940.691	236.110
2012/03/23 07:13:02	95.05056	3940.416	236.124
2012/03/23 07:26:32	95.27556	3940.060	236.148
2012/03/23 07:40:32	95.50889	3939.668	236.202
2012/03/23 07:54:02	95.73389	3939.338	236.223
2012/03/23 08:07:32	95.95889	3939.082	236.243
2012/03/23 08:21:02	96.18389	3938.559	236.254
2012/03/23 08:34:32	96.40889	3938.253	236.294
2012/03/23 08:48:02	96.63389	3937.995	236.298
2012/03/23 09:01:32	96.85889	3937.692	236.337
2012/03/23 09:15:32	97.09222	3937.135	236.364
2012/03/23 09:29:02	97.31722	3936.962	236.371
2012/03/23 09:42:32	97.54222	3936.641	236.419
2012/03/23 09:56:02	97.76722	3936.213	236.445
2012/03/23 10:09:32	97.99222	3935.850	236.468
2012/03/23 10:23:02	98.21722	3935.594	236.493
2012/03/23 10:36:32	98.44222	3935.300	236.509
2012/03/23 10:50:32	98.67556	3934.894	236.509
2012/03/23 11:04:02	98.90056	3934.487	236.540
2012/03/23 11:17:32	99.12556	3934.273	236.574
2012/03/23 11:31:02	99.35056	3933.894	236.593
2012/03/23 11:44:32	99.57556	3933.577	236.624
2012/03/23 11:58:02	99.80056	3933.297	236.644
2012/03/23 12:11:32	100.02556	3932.990	236.665
2012/03/23 12:25:32	100.25889	3932.670	236.670
2012/03/23 12:39:02	100.48389	3932.436	236.709
2012/03/23 12:52:32	100.70889	3932.110	236.756
2012/03/23 13:06:02	100.93389	3931.717	236.749
2012/03/23 13:19:32	101.15889	3931.359	236.791
2012/03/23 13:33:02	101.38389	3931.027	236.814
2012/03/23 13:46:32	101.60889	3930.685	236.827
2012/03/23 14:00:32	101.84222	3930.459	236.849
2012/03/23 14:14:02	102.06722	3930.164	236.883
2012/03/23 14:27:32	102.29222	3929.990	236.881
2012/03/23 14:41:02	102.51722	3929.628	236.897
2012/03/23 14:54:32	102.74222	3929.316	236.925
2012/03/23 15:08:02	102.96722	3928.958	236.945
2012/03/23 15:21:32	103.19222	3928.788	236.961
2012/03/23 15:35:02	103.41722	3928.462	236.973
2012/03/23 15:49:02	103.65056	3928.302	236.992
2012/03/23 16:02:32	103.87556	3927.976	237.012
2012/03/23 16:16:02	104.10056	3927.817	237.051
2012/03/23 16:29:32	104.32556	3927.423	237.062
2012/03/23 16:43:02	104.55056	3927.210	237.078
2012/03/23 16:56:32	104.77556	3926.903	237.115
2012/03/23 17:10:02	105.00056	3926.581	237.122
2012/03/23 17:24:02	105.23389	3926.310	237.151
2012/03/23 17:37:32	105.45889	3926.047	237.164
2012/03/23 17:51:02	105.68389	3925.883	237.172
2012/03/23 18:04:32	105.90889	3925.662	237.181
2012/03/23 18:18:02	106.13389	3925.384	237.195
2012/03/23 18:31:32	106.35889	3925.136	237.232
2012/03/23 18:45:02	106.58389	3924.827	237.243
2012/03/23 18:59:02	106.81722	3924.569	237.246
2012/03/23 19:12:32	107.04222	3924.278	237.289
2012/03/23 19:26:02	107.26722	3924.063	237.292
2012/03/23 19:39:32	107.49222	3923.805	237.323
2012/03/23 19:53:02	107.71722	3923.630	237.329
2012/03/23 20:06:32	107.94222	3923.320	237.338
2012/03/23 20:20:02	108.16722	3923.071	237.347
2012/03/23 20:34:02	108.40056	3922.722	237.377
2012/03/23 20:47:32	108.62556	3922.518	237.388
2012/03/23 21:01:02	108.85056	3922.281	237.401
2012/03/23 21:14:32	109.07556	3921.946	237.426
2012/03/23 21:28:02	109.30056	3921.674	237.456
2012/03/23 21:41:32	109.52556	3921.435	237.478
2012/03/23 21:55:02	109.75056	3921.169	237.494
2012/03/23 22:08:32	109.97556	3920.868	237.531
2012/03/23 22:22:32	110.20889	3920.806	237.556
2012/03/23 22:36:02	110.43389	3920.363	237.553
2012/03/23 22:49:32	110.65889	3920.040	237.568
2012/03/23 23:03:02	110.88389	3919.848	237.612
2012/03/23 23:16:32	111.10889	3919.583	237.604
2012/03/23 23:30:02	111.33389	3919.367	237.627
2012/03/23 23:43:32	111.55889	3919.085	237.625
2012/03/23 23:57:32	111.79222	3918.796	237.634
2012/03/24 00:11:02	112.01722	3918.644	237.656
2012/03/24 00:24:32	112.24222	3918.395	237.657
2012/03/24 00:38:02	112.46722	3918.139	237.672
2012/03/24 00:51:32	112.69222	3917.876	237.687
2012/03/24 01:05:02	112.91722	3917.669	237.691
2012/03/24 01:18:32	113.14222	3917.419	237.726
2012/03/24 01:32:32	113.37556	3917.186	237.736
2012/03/24 01:46:02	113.60056	3916.877	237.773
2012/03/24 01:59:32	113.82556	3916.675	237.776
2012/03/24 02:13:02	114.05056	3916.373	237.797
2012/03/24 02:26:32	114.27556	3916.245	237.801
2012/03/24 02:40:02	114.50056	3916.048	237.835
2012/03/24 02:53:32	114.72556	3915.778	237.830
2012/03/24 03:07:32	114.95889	3915.518	237.879
2012/03/24 03:21:02	115.18389	3915.218	237.876
2012/03/24 03:34:32	115.40889	3915.024	237.915
2012/03/24 03:48:02	115.63389	3914.857	237.909
2012/03/24 04:01:32	115.85889	3914.661	237.915
2012/03/24 04:15:02	116.08389	3914.474	237.938
2012/03/24 04:28:32	116.30889	3914.136	237.954
2012/03/24 04:42:32	116.54222	3913.875	237.967
2012/03/24 04:56:02	116.76722	3913.709	237.994
2012/03/24 05:09:32	116.99222	3913.540	238.007
2012/03/24 05:23:02	117.21722	3913.184	238.017
2012/03/24 05:36:32	117.44222	3913.011	238.051
2012/03/24 05:50:02	117.66722	3912.952	238.046
2012/03/24 06:03:32	117.89222	3912.635	238.080
2012/03/24 06:17:02	118.11722	3912.341	238.064
2012/03/24 06:31:02	118.35056	3912.249	238.072

Data Table

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/24 06:44:32	118.57556	3912.054	238.096
2012/03/24 06:58:02	118.80056	3911.875	238.116
2012/03/24 07:11:32	119.02556	3911.534	238.116
2012/03/24 07:25:02	119.25056	3911.425	238.143
2012/03/24 07:38:32	119.47556	3911.153	238.160
2012/03/24 07:52:02	119.70056	3910.943	238.171
2012/03/24 08:06:02	119.93389	3910.774	238.187
2012/03/24 08:19:32	120.15889	3910.590	238.215
2012/03/24 08:33:02	120.38389	3910.293	238.204
2012/03/24 08:46:32	120.60889	3910.033	238.212
2012/03/24 09:00:02	120.83389	3909.815	238.249
2012/03/24 09:13:32	121.05889	3909.576	238.267
2012/03/24 09:27:02	121.28389	3909.477	238.268
2012/03/24 09:41:02	121.51722	3909.259	238.275
2012/03/24 09:54:32	121.74222	3908.984	238.307
2012/03/24 10:08:02	121.96722	3908.801	238.275
2012/03/24 10:21:32	122.19222	3908.550	238.318
2012/03/24 10:35:02	122.41722	3908.328	238.350
2012/03/24 10:48:32	122.64222	3908.080	238.366
2012/03/24 11:02:02	122.86722	3907.984	238.372
2012/03/24 11:16:02	123.10056	3907.736	238.372
2012/03/24 11:29:32	123.32556	3907.506	238.414
2012/03/24 11:43:02	123.55056	3907.302	238.433
2012/03/24 11:56:32	123.77556	3907.051	238.449
2012/03/24 12:10:02	124.00056	3906.694	238.439
2012/03/24 12:23:32	124.22556	3906.600	238.438
2012/03/24 12:37:02	124.45056	3906.445	238.453
2012/03/24 12:50:32	124.67556	3906.310	238.482
2012/03/24 13:04:32	124.90889	3905.924	238.488
2012/03/24 13:18:02	125.13389	3905.775	238.497
2012/03/24 13:31:32	125.35889	3905.554	238.523
2012/03/24 13:45:02	125.58389	3905.331	238.518
2012/03/24 13:58:32	125.80889	3905.201	238.540
2012/03/24 14:12:02	126.03389	3905.001	238.579
2012/03/24 14:25:32	126.25889	3904.965	238.565
2012/03/24 14:39:32	126.49222	3904.581	238.575
2012/03/24 14:53:02	126.71722	3904.409	238.612
2012/03/24 15:06:32	126.94222	3904.284	238.604
2012/03/24 15:20:02	127.16722	3903.988	238.609
2012/03/24 15:33:32	127.39222	3903.818	238.657
2012/03/24 15:47:02	127.61722	3903.699	238.655
2012/03/24 16:00:32	127.84222	3903.364	238.674
2012/03/24 16:14:32	128.07556	3903.403	238.679
2012/03/24 16:28:02	128.30056	3903.164	238.680
2012/03/24 16:41:32	128.52556	3903.079	238.703
2012/03/24 16:55:02	128.75056	3902.852	238.683
2012/03/24 17:08:32	128.97556	3902.609	238.744
2012/03/24 17:22:02	129.20056	3902.430	238.729
2012/03/24 17:35:32	129.42556	3902.212	238.746
2012/03/24 17:49:32	129.65889	3902.120	238.770
2012/03/24 18:03:02	129.88389	3901.993	238.759
2012/03/24 18:16:32	130.10889	3901.752	238.790
2012/03/24 18:30:02	130.33389	3901.615	238.808
2012/03/24 18:43:32	130.55889	3901.368	238.816
2012/03/24 18:57:02	130.78389	3901.272	238.828
2012/03/24 19:10:32	131.00889	3901.044	238.838
2012/03/24 19:24:32	131.24222	3900.945	238.855
2012/03/24 19:38:02	131.46722	3900.704	238.858
2012/03/24 19:51:32	131.69222	3900.620	238.891
2012/03/24 20:05:02	131.91722	3900.403	238.886
2012/03/24 20:18:32	132.14222	3900.121	238.912
2012/03/24 20:32:02	132.36722	3899.959	238.924
2012/03/24 20:45:32	132.59222	3899.736	238.931
2012/03/24 20:59:02	132.81722	3899.552	238.938
2012/03/24 21:13:02	133.05056	3899.489	238.953
2012/03/24 21:26:32	133.27556	3899.249	238.965
2012/03/24 21:40:02	133.50056	3899.047	238.980
2012/03/24 21:53:32	133.72556	3898.904	239.001
2012/03/24 22:07:02	133.95056	3898.652	238.996
2012/03/24 22:20:32	134.17556	3898.428	238.991
2012/03/24 22:34:02	134.40056	3898.292	238.997
2012/03/24 22:48:02	134.63389	3898.130	239.020
2012/03/24 23:01:32	134.85889	3897.967	239.036
2012/03/24 23:15:02	135.08389	3897.804	239.060
2012/03/24 23:28:32	135.30889	3897.580	239.045
2012/03/24 23:42:02	135.53389	3897.365	239.056
2012/03/24 23:55:32	135.75889	3897.129	239.096
2012/03/25 00:09:02	135.98389	3896.918	239.088
2012/03/25 00:23:02	136.21722	3896.885	239.073
2012/03/25 00:36:32	136.44222	3896.749	239.121
2012/03/25 00:50:02	136.66722	3896.486	239.135
2012/03/25 01:03:32	136.89222	3896.325	239.123
2012/03/25 01:17:02	137.11722	3896.158	239.176
2012/03/25 01:30:32	137.34222	3896.038	239.153
2012/03/25 01:44:02	137.56722	3895.897	239.172
2012/03/25 01:58:02	137.80056	3895.667	239.187
2012/03/25 02:11:32	138.02556	3895.531	239.183
2012/03/25 02:25:02	138.25056	3895.366	239.187
2012/03/25 02:38:32	138.47556	3895.224	239.186
2012/03/25 02:52:02	138.70056	3894.991	239.211
2012/03/25 03:05:32	138.92556	3894.839	239.232
2012/03/25 03:19:02	139.15056	3894.825	239.217
2012/03/25 03:32:32	139.37556	3894.468	239.239
2012/03/25 03:46:32	139.60889	3894.291	239.256
2012/03/25 04:00:02	139.83389	3894.182	239.256
2012/03/25 04:13:32	140.05889	3893.999	239.296
2012/03/25 04:27:02	140.28389	3893.869	239.300
2012/03/25 04:40:32	140.50889	3893.681	239.316
2012/03/25 04:54:02	140.73389	3893.673	239.309
2012/03/25 05:07:32	140.95889	3893.449	239.342
2012/03/25 05:21:32	141.19222	3893.378	239.330
2012/03/25 05:35:02	141.41722	3893.180	239.341
2012/03/25 05:48:32	141.64222	3892.963	239.363
2012/03/25 06:02:02	141.86722	3892.983	239.352
2012/03/25 06:15:32	142.09222	3892.698	239.362
2012/03/25 06:29:02	142.31722	3892.546	239.398
2012/03/25 06:42:32	142.54222	3892.419	239.398
2012/03/25 06:56:32	142.77556	3892.236	239.410
2012/03/25 07:10:02	143.00056	3892.127	239.422
2012/03/25 07:23:32	143.22556	3892.058	239.422
2012/03/25 07:37:02	143.45056	3891.871	239.425
2012/03/25 07:50:32	143.67556	3891.716	239.447
2012/03/25 08:04:02	143.90056	3891.515	239.430
2012/03/25 08:17:32	144.12556	3891.341	239.450
2012/03/25 08:31:32	144.35889	3891.250	239.482
2012/03/25 08:45:02	144.58389	3891.069	239.510
2012/03/25 08:58:32	144.80889	3890.903	239.517
2012/03/25 09:12:02	145.03389	3890.736	239.504

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 3684

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Top Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/25 09:25:32	145.25889	3890.563	239.496
2012/03/25 09:39:02	145.48389	3890.469	239.524
2012/03/25 09:52:32	145.70889	3890.297	239.536
2012/03/25 10:06:32	145.94222	3890.115	239.546
2012/03/25 10:20:02	146.16722	3890.041	239.576
2012/03/25 10:33:32	146.39222	3889.869	239.593
2012/03/25 10:47:02	146.61722	3889.584	239.585
2012/03/25 11:00:32	146.84222	3889.540	239.583
2012/03/25 11:14:02	147.06722	3889.340	239.577
2012/03/25 11:27:32	147.29222	3889.184	239.576
2012/03/25 11:41:02	147.51722	3889.078	239.595
2012/03/25 11:55:02	147.75056	3888.949	239.615
2012/03/25 12:08:32	147.97556	3888.792	239.611
2012/03/25 12:22:02	148.20056	3888.673	239.627
2012/03/25 12:35:32	148.42556	3888.444	239.642
2012/03/25 12:49:02	148.65056	3888.335	239.646
2012/03/25 13:02:32	148.87556	3888.176	239.647
2012/03/25 13:16:02	149.10056	3887.987	239.677
2012/03/25 13:30:02	149.33389	3887.900	239.688
2012/03/25 13:43:32	149.55889	3887.716	239.700
2012/03/25 13:57:02	149.78389	3887.639	239.703
2012/03/25 14:10:32	150.00889	3887.468	239.720
2012/03/25 14:24:02	150.23389	3887.322	239.720
2012/03/25 14:37:32	150.45889	3887.096	239.714
2012/03/25 14:51:02	150.68389	3887.043	239.734
2012/03/25 15:05:02	150.91722	3886.958	239.757
2012/03/25 15:18:32	151.14222	3886.792	239.763
2012/03/25 15:32:02	151.36722	3886.624	239.757
2012/03/25 15:45:32	151.59222	3886.545	239.804
2012/03/25 15:59:02	151.81722	3886.480	239.802
2012/03/25 16:12:32	152.04222	3886.265	239.796
2012/03/25 16:26:02	152.26722	3886.172	239.806
2012/03/25 16:40:02	152.50056	3885.928	239.820
2012/03/25 16:53:32	152.72556	3885.841	239.827
2012/03/25 17:07:02	152.95056	3885.752	239.847
2012/03/25 17:20:32	153.17556	3885.563	239.853
2012/03/25 17:34:02	153.40056	3885.362	239.867
2012/03/25 17:47:32	153.62556	3885.366	239.864
2012/03/25 18:01:02	153.85056	3885.163	239.873
2012/03/25 18:14:32	154.07556	3884.988	239.898
2012/03/25 18:28:32	154.30889	3884.929	239.912
2012/03/25 18:42:02	154.53389	3884.745	239.919
2012/03/25 18:55:32	154.75889	3884.707	239.948
2012/03/25 19:09:02	154.98389	3884.667	239.939
2012/03/25 19:22:32	155.20889	3884.465	239.946
2012/03/25 19:36:02	155.43389	3884.283	239.934
2012/03/25 19:48:32	155.65889	3884.154	239.949
2012/03/25 20:03:32	155.89222	3884.064	239.981
2012/03/25 20:17:02	156.11722	3883.897	239.981
2012/03/25 20:30:32	156.34222	3883.760	239.982
2012/03/25 20:44:02	156.56722	3883.705	240.003
2012/03/25 20:57:32	156.79222	3883.592	240.050
2012/03/25 21:11:02	157.01722	3883.425	240.027
2012/03/25 21:24:32	157.24222	3883.294	240.041
2012/03/25 21:38:32	157.47556	3883.121	240.060
2012/03/25 21:52:02	157.70056	3882.884	240.054
2012/03/25 22:05:32	157.92556	3882.891	240.065
2012/03/25 22:19:02	158.15056	3882.681	240.096
2012/03/25 22:32:32	158.37556	3882.598	240.094
2012/03/25 22:46:02	158.60056	3882.500	240.094
2012/03/25 22:59:32	158.82556	3882.397	240.119
2012/03/25 23:13:32	159.05889	3882.222	240.111
2012/03/25 23:27:02	159.28389	3881.971	240.114
2012/03/25 23:40:32	159.50889	3881.901	240.133
2012/03/25 23:54:02	159.73389	3881.781	240.150
2012/03/26 00:07:32	159.95889	3881.566	240.148
2012/03/26 00:21:02	160.18389	3881.451	240.173
2012/03/26 00:34:32	160.40889	3881.319	240.161
2012/03/26 00:48:32	160.64222	3881.145	240.178
2012/03/26 01:02:02	160.86722	3881.107	240.182
2012/03/26 01:15:32	161.09222	3880.877	240.211
2012/03/26 01:29:02	161.31722	3880.778	240.216
2012/03/26 01:42:32	161.54222	3880.645	240.223
2012/03/26 01:56:02	161.76722	3880.492	240.257
2012/03/26 02:09:32	161.99222	3880.324	240.256
2012/03/26 02:23:02	162.21722	3880.217	240.266
2012/03/26 02:37:02	162.45056	3880.135	240.289
2012/03/26 02:50:32	162.67556	3880.032	240.292
2012/03/26 03:04:02	162.90056	3879.815	240.304
2012/03/26 03:17:32	163.12556	3879.731	240.311
2012/03/26 03:31:02	163.35056	3879.731	240.330
2012/03/26 03:44:32	163.57556	3879.520	240.312
2012/03/26 03:58:02	163.80056	3879.334	240.336
2012/03/26 04:12:02	164.03389	3879.277	240.323
2012/03/26 04:25:32	164.25889	3879.176	240.352
2012/03/26 04:39:02	164.48389	3879.122	240.361
2012/03/26 04:52:32	164.70889	3878.983	240.371
2012/03/26 05:06:02	164.93389	3878.791	240.382
2012/03/26 05:19:32	165.15889	3878.694	240.382
2012/03/26 05:33:02	165.38389	3878.627	240.397
2012/03/26 05:47:02	165.61722	3878.539	240.412
2012/03/26 06:00:32	165.84222	3878.400	240.414
2012/03/26 06:14:02	166.06722	3878.282	240.409
2012/03/26 06:27:32	166.29222	3878.121	240.421
2012/03/26 06:41:02	166.51722	3878.066	240.424
2012/03/26 06:54:32	166.74222	3877.862	240.459
2012/03/26 07:08:02	166.96722	3877.847	240.457
2012/03/26 07:22:02	167.20056	3877.623	240.459
2012/03/26 07:35:32	167.42556	3881.390	241.621
2012/03/26 07:49:02	167.65056	3894.550	242.727
2012/03/26 07:50:32	167.67556	3894.556	242.735
D = 9019 feet P = 3894.56 psig T = 242.73 degF			
2012/03/26 07:59:32	167.82556	3029.389	194.782
D = 7000 feet P = 3029.39 psig T = 194.78 degF			
2012/03/26 08:02:32	167.87556	2939.996	190.818
2012/03/26 08:08:02	167.96722	2166.517	148.361
D = 5000 feet P = 2166.52 psig T = 148.36 degF			
2012/03/26 08:16:02	168.10056	1293.842	109.566
D = 3000 feet P = 1293.84 psig T = 109.57 degF			
2012/03/26 08:22:32	168.20889	855.219	89.857
D = 2000 feet P = 855.22 psig T = 89.86 degF			
2012/03/26 08:29:32	168.32556	414.812	74.982
D = 1000 feet P = 414.81 psig T = 74.98 degF			
2012/03/26 08:37:32	168.45889	0.836	61.105
D = 0 feet P = 0.84 psig T = 61.11 degF			
2012/03/26 08:43:02	168.55056	0.550	59.607

Injection-Static Gradient Bottom Gauge

Client: **Wattenburg Disposal**

Well Name: **Suckla Farms Injection Well #1**

Location: **SENW Sec 10 T1N R67W**

Field/Pool: **Wattenburg**

Formation Name: **Lyons**

Test/Prod. Interval [ft KB Log]: **-**

Test Date: **2012/03/19 - 2012/03/26**

Test/job Number:

Service Company: **Lightning Wireline a Schlumberger Company**

SUMMARY

Well Information:

Client Name:	Wattenburg Disposal		
Client Address:	c/o Lightning Wireline 103 N. Main Street Platteville, CO 80651	Packer:	Yes
		Tubing in Well:	Yes
		Flow Path:	
		Well Fluid Type at Test Date:	
Well Name:	Suckla Farms Injection Well #1	Well Type:	Vertical
Well Location:	SENW Sec 10 T1N R67W		
Pool:	Wattenburg	KB Elevation [ft]:	10.00
Reservoir:		CF Elevation [ft]:	
Well ID:		Ground Elevation [ft]:	
License Number:		Inside Diameter of Production Tubing [in]:	2.1
Drilling Leg:		Inside Diameter of Production Casing [in]:	n/a
Formation Name:	Lyons	Outside Diameter of Production Tubing [in]:	2.9

Test Information:

Test Name:	Injection-Static Gradient Bottom Gauge		
Test/Job Number:		Gauge Run Depth [ft KB (TVD)]:	9020.00000
Test Purpose:	Other	H2S:	No
Test/Prod. Interval Top [ft KB (Log)]:		Test/Prod. Interval Top [ft KB (TVD)]:	
Test/Prod. Interval Base [ft KB (Log)]:		Test/Prod. Interval Base [ft KB (TVD)]:	
Time/Date Well Shut-In:	2012/03/16 14:47:48	Final Test Date/Time:	2012/03/26 07:50:32
Initial Tubing Pressure [psig]:	Vac	Initial Casing Pressure [psig]:	0.00
Final Tubing Pressure [psig]:		Final Casing Pressure [psig]:	0.00
Final Flowing WH Pressure [psig]:		Surface Temperature [degF]:	

Gauge Information:

Gauge Serial Number:	4051		
Maximum Recorder Range [psig]:	9986	Date Of Last Calibration:	2011/11/07
Resolution [% Of Full-Scale]:	0.0003	Accuracy [% Of Full-Scale]:	0.03
Date/Time Gauge On Bottom:	2012/03/19 08:54:02	Date/Time Gauge Off Bottom:	2012/03/01 07:56:00

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

EVENTS TABLE

Calendar (yyyy/mm/dd hh:mm:ss)	Elapsed time (hours)	Pressure (psig)	Temperature (degF)	Comment
2012/03/19 08:54:02	0.73389	3962.424	228.347	On Bottom
2012/03/20 07:01:42	22.86167	3939.220	239.153	Start Pumping
2012/03/21 07:00:42	46.84500	4319.818	151.316	Stop Pumping
2012/03/26 07:49:02	167.65056	3896.147	245.101	D = 9020 feet P = 3896.15 psig T = 245.1 degF
2012/03/26 08:00:32	167.84222	3029.547	195.432	D = 7000 feet P = 3029.55 psig T = 195.43 degF
2012/03/26 08:08:02	167.96722	2168.082	150.883	D = 5000 feet P = 2168.08 psig T = 150.88 degF
2012/03/26 08:17:02	168.11722	1293.556	110.533	D = 3000 feet P = 1293.56 psig T = 110.53 degF
2012/03/26 08:24:32	168.24222	854.583	89.285	D = 2000 feet P = 854.58 psig T = 89.29 degF
2012/03/26 08:31:32	168.35889	414.374	74.566	D = 1000 feet P = 414.37 psig T = 74.57 degF
2012/03/26 08:37:02	168.45056	1.769	62.454	D = 0 feet P = 1.77 psig T = 62.45 degF

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

GRADIENTS TABLE

Calendar time (yyyy/mm/dd hh:mm:ss)	Elapsed time (hours)	Stop type	Meas. depth (ft)	TV depth (ft)	Pressure (psig)	Temperature (degF)	Pressure gradient (psig/ft)	Temperature gradient (degF/ft)
2012/03/26 07:49:02	167.65056	Static	9020.00	9020.00	3896.147	245.101		
2012/03/26 08:00:32	167.84222	Static	7000.00	7000.00	3029.547	195.432	0.429	0.025
2012/03/26 08:08:02	167.96722	Static	5000.00	5000.00	2168.082	150.883	0.431	0.022
2012/03/26 08:17:02	168.11722	Static	3000.00	3000.00	1293.556	110.533	0.437	0.02
2012/03/26 08:24:32	168.24222	Static	2000.00	2000.00	854.583	89.285	0.439	0.021
2012/03/26 08:31:32	168.35889	Static	1000.00	1000.00	414.374	74.566	0.44	0.015
2012/03/26 08:37:02	168.45056	Static	0.00	0.00	1.769	62.454	0.413	0.012

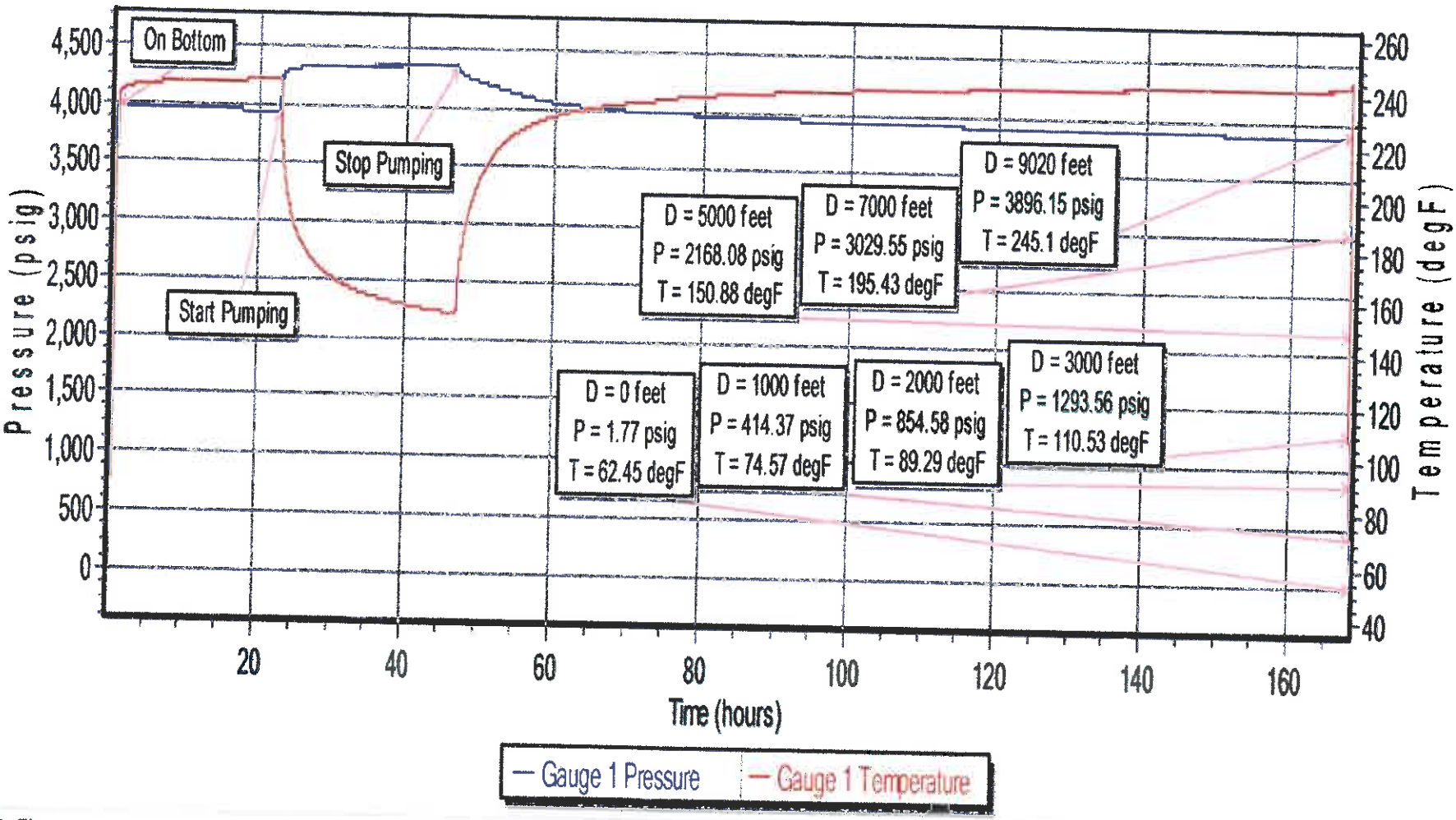
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9020.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

Injection-Static Gradient Bottom Gauge

DATA PLOT



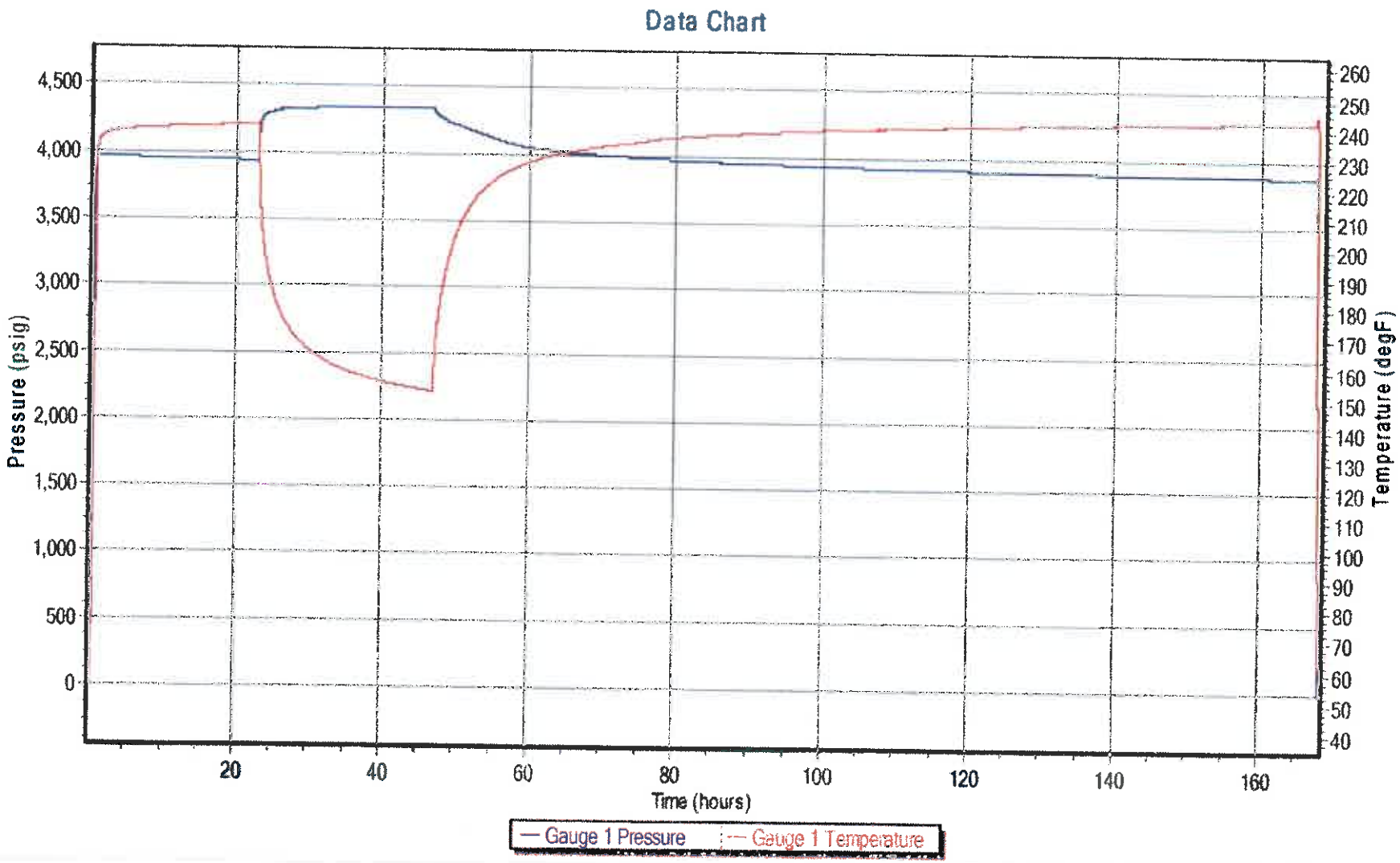
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Injection-Static Gradient Bottom Gauge

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9020.00000
Test/Prod. Interval Top [ft KB (TVD)]
Test/Prod. Interval Base [ft KB (TVD)]

SAVED GRAPH #1



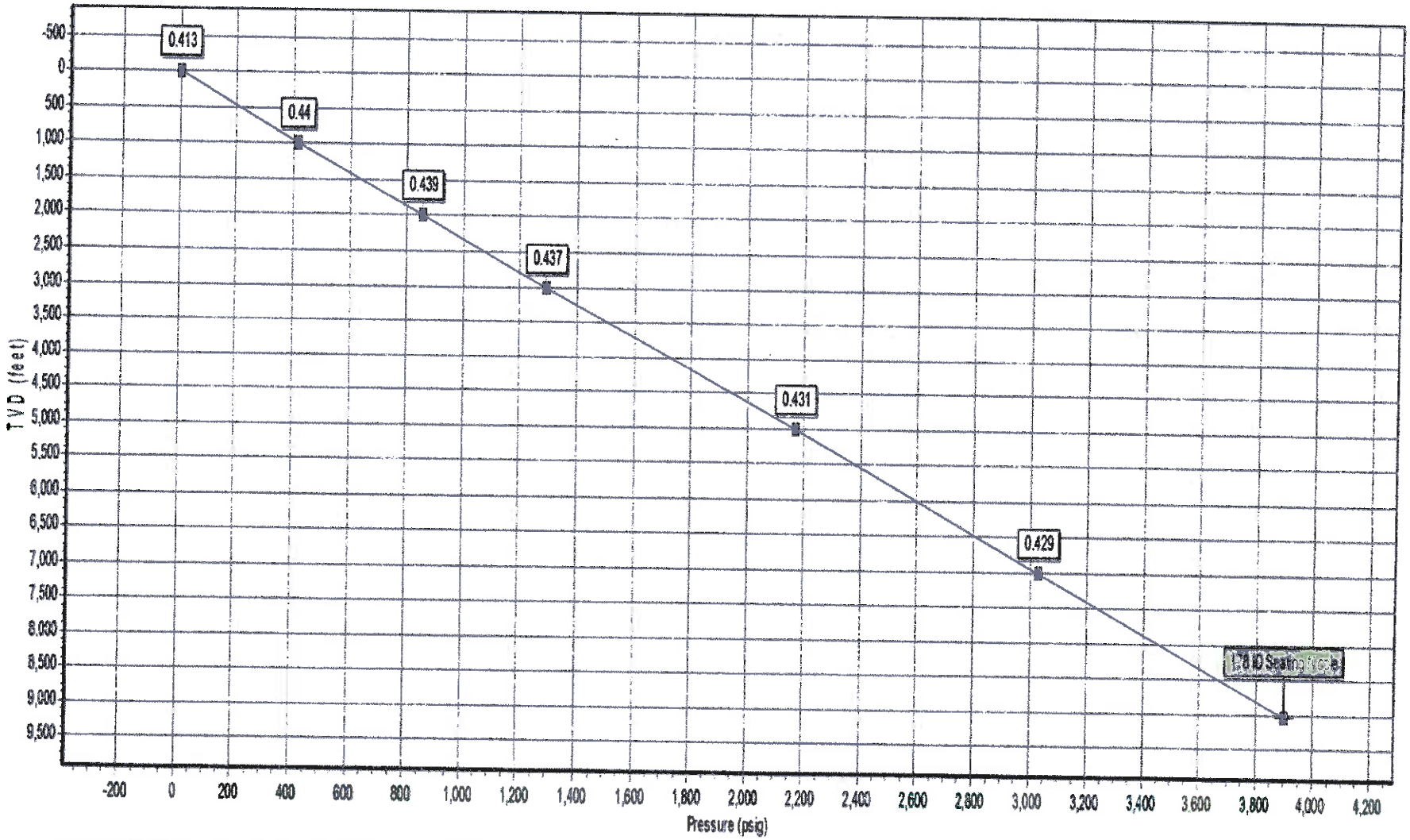
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)]: 9020.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

Injection-Static Gradient Bottom Gauge

PRESSURE GRADIENT PLOT



Pressure Gradient Plot

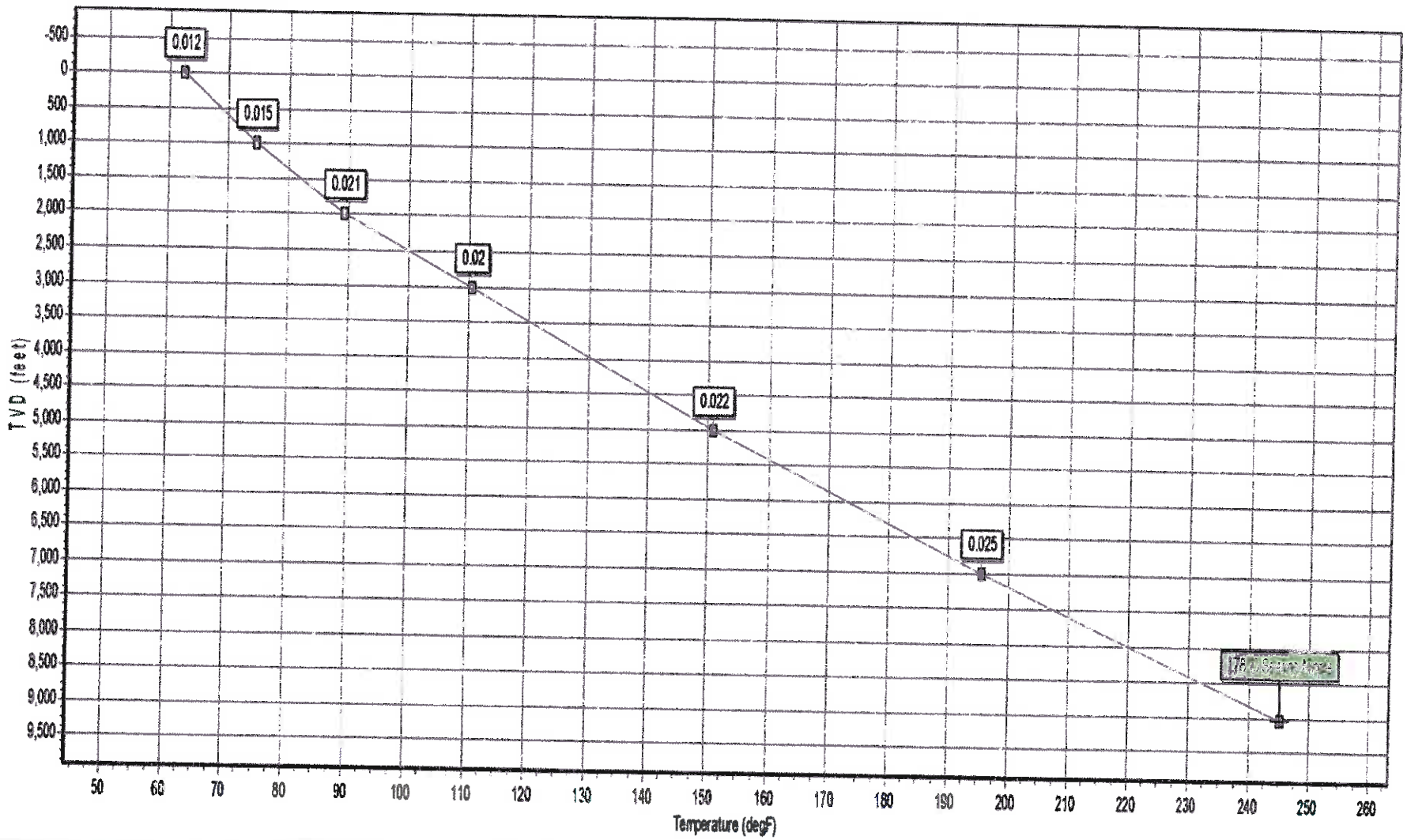
Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Formation Name: Lyons
Gauge Run Depth [ft KB (TVD)] 9020.00000
Test/Prod. Interval Top [ft KB (TVD)]:
Test/Prod. Interval Base [ft KB (TVD)]:

Injection-Static Gradient Bottom Gauge

TEMPERATURE GRADIENT PLOT



Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/19 08:10:01	0.00028	0.854	61.188
2012/03/19 08:10:29	0.00806	0.840	61.981
2012/03/19 08:14:32	0.07556	0.979	57.503
2012/03/19 08:19:02	0.15056	0.973	56.311
2012/03/19 08:23:32	0.22556	89.091	53.703
2012/03/19 08:28:02	0.30056	837.701	63.295
2012/03/19 08:32:32	0.37556	1757.686	86.178
2012/03/19 08:37:02	0.45056	2661.841	118.300
2012/03/19 08:41:42	0.52833	3544.001	159.031
2012/03/19 08:46:12	0.60333	3966.003	203.942
2012/03/19 08:50:42	0.67833	3963.477	222.402
2012/03/19 08:54:02	0.73389	3962.424	228.347
On Bottom			
2012/03/19 08:55:12	0.75333	3962.242	229.577
2012/03/19 08:59:42	0.82833	3962.103	232.123
2012/03/19 09:04:12	0.90333	3961.666	233.251
2012/03/19 09:08:42	0.97833	3962.616	233.698
2012/03/19 09:13:22	1.05611	3963.279	233.933
2012/03/19 09:17:52	1.13111	3963.816	234.204
2012/03/19 09:22:22	1.20611	3963.887	234.444
2012/03/19 09:26:52	1.28111	3964.021	234.649
2012/03/19 09:31:22	1.35611	3963.961	234.816
2012/03/19 09:35:52	1.43111	3963.965	234.966
2012/03/19 09:40:22	1.50611	3963.940	235.094
2012/03/19 09:45:02	1.58389	3963.862	235.213
2012/03/19 09:49:32	1.65889	3963.890	235.307
2012/03/19 09:54:02	1.73389	3963.762	235.398
2012/03/19 09:58:32	1.80889	3963.600	235.470
2012/03/19 10:03:02	1.88389	3963.471	235.531
2012/03/19 10:07:32	1.95889	3963.464	235.598
2012/03/19 10:12:02	2.03389	3963.447	235.684
2012/03/19 10:16:42	2.11167	3963.352	235.773
2012/03/19 10:21:12	2.18667	3963.156	235.862
2012/03/19 10:25:42	2.26167	3963.116	235.945
2012/03/19 10:30:12	2.33667	3963.045	236.025
2012/03/19 10:34:42	2.41167	3962.925	236.098
2012/03/19 10:39:12	2.48667	3962.840	236.168
2012/03/19 10:43:42	2.56167	3962.759	236.231
2012/03/19 10:48:12	2.63667	3962.628	236.294
2012/03/19 10:52:52	2.71444	3962.505	236.354
2012/03/19 10:57:22	2.78944	3962.421	236.407
2012/03/19 11:01:52	2.86444	3962.327	236.459
2012/03/19 11:06:22	2.93944	3962.303	236.506
2012/03/19 11:10:52	3.01444	3962.051	236.551
2012/03/19 11:15:22	3.08944	3962.135	236.593
2012/03/19 11:19:52	3.16444	3961.960	236.634
2012/03/19 11:24:32	3.24222	3961.939	236.674
2012/03/19 11:29:02	3.31722	3961.805	236.710
2012/03/19 11:33:32	3.39222	3961.650	236.749
2012/03/19 11:38:02	3.46722	3961.573	236.781
2012/03/19 11:42:32	3.54222	3961.506	236.811
2012/03/19 11:47:02	3.61722	3961.341	236.844
2012/03/19 11:51:32	3.69222	3961.329	236.875
2012/03/19 11:56:12	3.77000	3961.207	236.901
2012/03/19 12:00:42	3.84500	3961.175	236.931
2012/03/19 12:05:12	3.92000	3961.018	236.954
2012/03/19 12:09:42	3.99500	3960.937	236.982
2012/03/19 12:14:12	4.07000	3960.749	237.009
2012/03/19 12:18:42	4.14500	3960.754	237.029
2012/03/19 12:23:12	4.22000	3960.554	237.055
2012/03/19 12:27:52	4.29778	3960.596	237.079
2012/03/19 12:32:22	4.37278	3960.564	237.099
2012/03/19 12:36:52	4.44778	3960.266	237.120
2012/03/19 12:41:22	4.52278	3960.323	237.142
2012/03/19 12:45:52	4.59778	3960.268	237.164
2012/03/19 12:50:22	4.67278	3960.145	237.184
2012/03/19 12:54:52	4.74778	3960.077	237.201
2012/03/19 12:59:32	4.82556	3959.917	237.221
2012/03/19 13:04:02	4.90056	3959.825	237.241
2012/03/19 13:08:32	4.97556	3959.796	237.259
2012/03/19 13:13:02	5.05056	3959.637	237.274
2012/03/19 13:17:32	5.12556	3959.566	237.296
2012/03/19 13:22:02	5.20056	3959.484	237.309
2012/03/19 13:26:32	5.27556	3959.480	237.325
2012/03/19 13:31:02	5.35056	3959.320	237.344
2012/03/19 13:35:42	5.42833	3959.164	237.358
2012/03/19 13:40:12	5.50333	3959.215	237.372
2012/03/19 13:44:42	5.57833	3959.041	237.391
2012/03/19 13:49:12	5.65333	3959.009	237.404
2012/03/19 13:53:42	5.72833	3958.748	237.418
2012/03/19 13:58:12	5.80333	3958.726	237.435
2012/03/19 14:02:42	5.87833	3958.727	237.450
2012/03/19 14:07:22	5.95611	3958.605	237.464
2012/03/19 14:11:52	6.03111	3958.551	237.480
2012/03/19 14:16:22	6.10611	3958.369	237.494
2012/03/19 14:20:52	6.18111	3958.369	237.506
2012/03/19 14:25:22	6.25611	3958.260	237.516
2012/03/19 14:29:52	6.33111	3958.123	237.533
2012/03/19 14:34:22	6.40611	3957.839	237.547
2012/03/19 14:39:02	6.48389	3958.029	237.558
2012/03/19 14:43:32	6.55889	3957.765	237.572
2012/03/19 14:48:02	6.63389	3957.699	237.586
2012/03/19 14:52:32	6.70889	3957.717	237.599
2012/03/19 14:57:02	6.78389	3957.646	237.610
2012/03/19 15:01:32	6.85889	3957.442	237.626
2012/03/19 15:06:02	6.93389	3957.347	237.634
2012/03/19 15:10:42	7.01167	3957.315	237.649
2012/03/19 15:15:12	7.08667	3957.264	237.661
2012/03/19 15:19:42	7.16167	3957.031	237.675
2012/03/19 15:24:12	7.23667	3957.055	237.685
2012/03/19 15:28:42	7.31167	3956.856	237.696
2012/03/19 15:33:12	7.38667	3956.733	237.706
2012/03/19 15:37:42	7.46167	3956.697	237.720
2012/03/19 15:42:12	7.53667	3956.650	237.731
2012/03/19 15:46:52	7.61444	3956.461	237.745
2012/03/19 15:51:22	7.68944	3956.445	237.750
2012/03/19 15:55:52	7.76444	3956.342	237.763
2012/03/19 16:00:22	7.83944	3956.224	237.777
2012/03/19 16:04:52	7.91444	3956.095	237.788
2012/03/19 16:09:22	7.98944	3956.037	237.794
2012/03/19 16:13:52	8.06444	3955.857	237.804
2012/03/19 16:18:32	8.14222	3955.887	237.816
2012/03/19 16:23:02	8.21722	3955.825	237.826
2012/03/19 16:27:32	8.29222	3955.661	237.837
2012/03/19 16:32:02	8.36722	3955.483	237.846
2012/03/19 16:36:32	8.44222	3955.433	237.858
2012/03/19 16:41:02	8.51722	3955.381	237.866
2012/03/19 16:45:32	8.59222	3955.296	237.874

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: **4051**

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/19 16:50:12	8.67000	3955.243	237.883
2012/03/19 16:54:42	8.74500	3955.134	237.895
2012/03/19 16:59:12	8.82000	3955.117	237.904
2012/03/19 17:03:42	8.89500	3955.007	237.911
2012/03/19 17:08:12	8.97000	3954.900	237.920
2012/03/19 17:12:42	9.04500	3954.869	237.930
2012/03/19 17:17:12	9.12000	3954.620	237.937
2012/03/19 17:21:52	9.19778	3954.727	237.946
2012/03/19 17:26:22	9.27278	3954.584	237.960
2012/03/19 17:30:52	9.34778	3954.546	237.968
2012/03/19 17:35:22	9.42278	3954.480	237.977
2012/03/19 17:39:52	9.49778	3954.320	237.985
2012/03/19 17:44:22	9.57278	3954.455	237.998
2012/03/19 17:48:52	9.64778	3954.223	238.018
2012/03/19 17:53:32	9.72556	3954.056	238.027
2012/03/19 17:58:02	9.80056	3954.084	238.035
2012/03/19 18:02:32	9.87556	3953.903	238.045
2012/03/19 18:07:02	9.95056	3953.842	238.050
2012/03/19 18:11:32	10.02556	3953.677	238.058
2012/03/19 18:16:02	10.10056	3953.667	238.066
2012/03/19 18:20:32	10.17556	3953.589	238.074
2012/03/19 18:25:02	10.25056	3953.508	238.084
2012/03/19 18:29:42	10.32833	3953.442	238.090
2012/03/19 18:34:12	10.40333	3953.282	238.101
2012/03/19 18:38:42	10.47833	3953.122	238.106
2012/03/19 18:43:12	10.55333	3953.073	238.118
2012/03/19 18:47:42	10.62833	3953.142	238.126
2012/03/19 18:52:12	10.70333	3952.948	238.134
2012/03/19 18:56:42	10.77833	3952.818	238.140
2012/03/19 19:01:22	10.85611	3952.839	238.151
2012/03/19 19:05:52	10.93111	3952.673	238.159
2012/03/19 19:10:22	11.00611	3952.638	238.169
2012/03/19 19:14:52	11.08111	3952.511	238.175
2012/03/19 19:19:22	11.15611	3952.509	238.182
2012/03/19 19:23:52	11.23111	3952.388	238.191
2012/03/19 19:28:22	11.30611	3952.173	238.198
2012/03/19 19:33:02	11.38389	3952.144	238.207
2012/03/19 19:37:32	11.45889	3952.018	238.211
2012/03/19 19:42:02	11.53389	3952.062	238.220
2012/03/19 19:46:32	11.60889	3951.842	238.230
2012/03/19 19:51:02	11.68389	3951.804	238.236
2012/03/19 19:55:32	11.75889	3951.679	238.242
2012/03/19 20:00:02	11.83389	3951.591	238.253
2012/03/19 20:04:42	11.91167	3951.574	238.257
2012/03/19 20:09:12	11.98667	3951.437	238.266
2012/03/19 20:13:42	12.06167	3951.375	238.275
2012/03/19 20:18:12	12.13667	3951.290	238.279
2012/03/19 20:22:42	12.21167	3951.142	238.287
2012/03/19 20:27:12	12.28667	3951.076	238.295
2012/03/19 20:31:42	12.36167	3950.896	238.305
2012/03/19 20:36:12	12.43667	3950.842	238.309
2012/03/19 20:40:52	12.51444	3950.770	238.316
2012/03/19 20:45:22	12.58944	3950.902	238.327
2012/03/19 20:49:52	12.66444	3950.589	238.330
2012/03/19 20:54:22	12.73944	3950.464	238.338
2012/03/19 20:58:52	12.81444	3950.427	238.348
2012/03/19 21:03:22	12.88944	3950.459	238.354
2012/03/19 21:07:52	12.96444	3950.314	238.361
2012/03/19 21:12:32	13.04222	3950.187	238.367
2012/03/19 21:17:02	13.11722	3950.084	238.372
2012/03/19 21:21:32	13.19222	3950.176	238.383
2012/03/19 21:26:02	13.26722	3950.113	238.387
2012/03/19 21:30:32	13.34222	3949.833	238.400
2012/03/19 21:35:02	13.41722	3949.934	238.404
2012/03/19 21:39:32	13.49222	3949.668	238.411
2012/03/19 21:44:12	13.57000	3949.675	238.420
2012/03/19 21:48:42	13.64500	3949.617	238.429
2012/03/19 21:53:12	13.72000	3949.549	238.434
2012/03/19 21:57:42	13.79500	3949.355	238.443
2012/03/19 22:02:12	13.87000	3949.293	238.448
2012/03/19 22:06:42	13.94500	3949.224	238.453
2012/03/19 22:11:12	14.02000	3948.971	238.464
2012/03/19 22:15:52	14.09778	3949.171	238.471
2012/03/19 22:20:22	14.17278	3948.891	238.477
2012/03/19 22:24:52	14.24778	3948.796	238.485
2012/03/19 22:29:22	14.32278	3948.798	238.492
2012/03/19 22:33:52	14.39778	3948.707	238.500
2012/03/19 22:38:22	14.47278	3948.667	238.504
2012/03/19 22:42:52	14.54778	3948.342	238.509
2012/03/19 22:47:32	14.62556	3948.383	238.521
2012/03/19 22:52:02	14.70056	3948.417	238.528
2012/03/19 22:56:32	14.77556	3948.273	238.534
2012/03/19 23:01:02	14.85056	3948.182	238.536
2012/03/19 23:05:32	14.92556	3948.098	238.544
2012/03/19 23:10:02	15.00056	3948.096	238.554
2012/03/19 23:14:32	15.07556	3947.846	238.557
2012/03/19 23:19:02	15.15056	3947.907	238.567
2012/03/19 23:23:42	15.22833	3947.749	238.572
2012/03/19 23:28:12	15.30333	3947.724	238.575
2012/03/19 23:32:42	15.37833	3947.633	238.582
2012/03/19 23:37:12	15.45333	3947.506	238.589
2012/03/19 23:41:42	15.52833	3947.460	238.596
2012/03/19 23:46:12	15.60333	3947.418	238.598
2012/03/19 23:50:42	15.67833	3947.220	238.606
2012/03/19 23:55:22	15.75611	3947.221	238.611
2012/03/19 23:59:52	15.83111	3947.087	238.618
2012/03/20 00:04:22	15.90611	3947.090	238.626
2012/03/20 00:08:52	15.98111	3946.949	238.630
2012/03/20 00:13:22	16.05611	3946.876	238.638
2012/03/20 00:17:52	16.13111	3946.815	238.645
2012/03/20 00:22:22	16.20611	3946.834	238.648
2012/03/20 00:27:02	16.28389	3946.604	238.653
2012/03/20 00:31:32	16.35889	3946.509	238.659
2012/03/20 00:36:02	16.43389	3946.540	238.667
2012/03/20 00:40:32	16.50889	3946.555	238.671
2012/03/20 00:45:02	16.58389	3946.292	238.678
2012/03/20 00:49:32	16.65889	3946.332	238.685
2012/03/20 00:54:02	16.73389	3946.180	238.696
2012/03/20 00:58:42	16.81167	3946.052	238.699
2012/03/20 01:03:12	16.88667	3945.900	238.704
2012/03/20 01:07:42	16.96167	3946.074	238.711
2012/03/20 01:12:12	17.03667	3945.813	238.715
2012/03/20 01:16:42	17.11167	3945.774	238.723
2012/03/20 01:21:12	17.18667	3945.804	238.727
2012/03/20 01:25:42	17.26167	3945.544	238.736
2012/03/20 01:30:12	17.33667	3945.608	238.740
2012/03/20 01:34:52	17.41444	3945.384	238.749
2012/03/20 01:39:22	17.48944	3945.399	238.754

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/20 01:43:52	17.56444	3945.471	238.760
2012/03/20 01:48:22	17.63944	3945.224	238.763
2012/03/20 01:52:52	17.71444	3945.197	238.771
2012/03/20 01:57:22	17.78944	3945.072	238.778
2012/03/20 02:01:52	17.86444	3944.977	238.785
2012/03/20 02:06:32	17.94222	3945.009	238.789
2012/03/20 02:11:02	18.01722	3944.870	238.796
2012/03/20 02:15:32	18.09222	3944.742	238.798
2012/03/20 02:20:02	18.16722	3944.757	238.806
2012/03/20 02:24:32	18.24222	3944.603	238.815
2012/03/20 02:29:02	18.31722	3944.575	238.818
2012/03/20 02:33:32	18.39222	3944.507	238.824
2012/03/20 02:38:12	18.47000	3944.488	238.826
2012/03/20 02:42:42	18.54500	3944.345	238.833
2012/03/20 02:47:12	18.62000	3944.223	238.840
2012/03/20 02:51:42	18.69500	3944.117	238.844
2012/03/20 02:56:12	18.77000	3944.209	238.851
2012/03/20 03:00:42	18.84500	3944.175	238.857
2012/03/20 03:05:12	18.92000	3944.016	238.861
2012/03/20 03:09:52	18.99778	3943.931	238.867
2012/03/20 03:14:22	19.07278	3943.885	238.872
2012/03/20 03:18:52	19.14778	3943.836	238.876
2012/03/20 03:23:22	19.22278	3943.691	238.883
2012/03/20 03:27:52	19.29778	3943.698	238.890
2012/03/20 03:32:22	19.37278	3943.479	238.896
2012/03/20 03:36:52	19.44778	3943.517	238.901
2012/03/20 03:41:32	19.52556	3943.410	238.906
2012/03/20 03:46:02	19.60056	3943.332	238.911
2012/03/20 03:50:32	19.67556	3943.322	238.918
2012/03/20 03:55:02	19.75056	3943.200	238.927
2012/03/20 03:59:32	19.82556	3943.110	238.930
2012/03/20 04:04:02	19.90056	3943.040	238.937
2012/03/20 04:08:32	19.97556	3943.007	238.941
2012/03/20 04:13:02	20.05056	3942.851	238.952
2012/03/20 04:17:42	20.12833	3942.781	238.959
2012/03/20 04:22:12	20.20333	3942.788	238.962
2012/03/20 04:26:42	20.27833	3942.733	238.970
2012/03/20 04:31:12	20.35333	3942.511	238.974
2012/03/20 04:35:42	20.42833	3942.507	238.979
2012/03/20 04:40:12	20.50333	3942.448	238.982
2012/03/20 04:44:42	20.57833	3942.318	238.988
2012/03/20 04:49:22	20.65611	3942.404	238.997
2012/03/20 04:53:52	20.73111	3942.243	239.001
2012/03/20 04:58:22	20.80611	3942.117	239.005
2012/03/20 05:02:52	20.88111	3942.206	239.013
2012/03/20 05:07:22	20.95611	3942.026	239.016
2012/03/20 05:11:52	21.03111	3941.865	239.022
2012/03/20 05:16:22	21.10611	3941.824	239.027
2012/03/20 05:21:02	21.18389	3941.838	239.033
2012/03/20 05:25:32	21.25889	3941.738	239.041
2012/03/20 05:30:02	21.33389	3941.564	239.044
2012/03/20 05:34:32	21.40889	3941.582	239.049
2012/03/20 05:39:02	21.48389	3941.536	239.050
2012/03/20 05:43:32	21.55889	3941.387	239.057
2012/03/20 05:48:02	21.63389	3941.390	239.062
2012/03/20 05:52:42	21.71167	3941.283	239.067
2012/03/20 05:57:12	21.78667	3941.244	239.071
2012/03/20 06:01:42	21.86167	3941.192	239.080
2012/03/20 06:06:12	21.93667	3941.127	239.083
2012/03/20 06:10:42	22.01167	3940.914	239.091
2012/03/20 06:15:12	22.08667	3940.943	239.095
2012/03/20 06:19:42	22.16167	3940.853	239.099
2012/03/20 06:24:12	22.23667	3940.831	239.104
2012/03/20 06:28:52	22.31444	3940.761	239.111
2012/03/20 06:33:22	22.38944	3940.703	239.118
2012/03/20 06:37:52	22.46444	3940.562	239.122
2012/03/20 06:42:22	22.53944	3940.468	239.129
2012/03/20 06:46:52	22.61444	3940.459	239.133
2012/03/20 06:51:22	22.68944	3940.314	239.138
2012/03/20 06:55:52	22.76444	3940.386	239.143
2012/03/20 07:00:32	22.84222	3940.169	239.150
2012/03/20 07:01:42	22.86167	3939.220	239.153
Start Pumping			
2012/03/20 07:05:02	22.91722	4182.029	238.678
2012/03/20 07:09:32	22.99222	4216.684	227.993
2012/03/20 07:14:02	23.06722	4207.090	219.691
2012/03/20 07:18:32	23.14222	4228.661	215.045
2012/03/20 07:23:02	23.21722	4239.695	211.659
2012/03/20 07:27:32	23.29222	4247.467	208.887
2012/03/20 07:32:12	23.37000	4256.089	206.479
2012/03/20 07:36:42	23.44500	4263.795	204.444
2012/03/20 07:41:12	23.52000	4270.646	202.617
2012/03/20 07:45:42	23.59500	4275.698	200.916
2012/03/20 07:50:12	23.67000	4277.244	199.362
2012/03/20 07:54:42	23.74500	4278.772	197.902
2012/03/20 07:59:12	23.82000	4281.398	196.599
2012/03/20 08:03:52	23.89778	4283.662	195.268
2012/03/20 08:08:22	23.97278	4286.730	194.096
2012/03/20 08:12:52	24.04778	4290.165	192.988
2012/03/20 08:17:22	24.12278	4291.992	191.940
2012/03/20 08:21:52	24.19778	4293.181	190.951
2012/03/20 08:26:22	24.27278	4293.599	190.007
2012/03/20 08:30:52	24.34778	4295.288	189.120
2012/03/20 08:35:32	24.42556	4296.558	188.243
2012/03/20 08:40:02	24.50056	4297.699	187.437
2012/03/20 08:44:32	24.57556	4298.802	186.661
2012/03/20 08:49:02	24.65056	4300.572	185.927
2012/03/20 08:53:32	24.72556	4300.715	185.226
2012/03/20 08:58:02	24.80056	4302.928	184.553
2012/03/20 09:02:32	24.87556	4302.183	183.904
2012/03/20 09:07:02	24.95056	4303.592	183.282
2012/03/20 09:11:42	25.02833	4304.734	182.662
2012/03/20 09:16:12	25.10333	4305.781	182.095
2012/03/20 09:20:42	25.17833	4306.741	181.538
2012/03/20 09:25:12	25.25333	4308.115	181.004
2012/03/20 09:29:42	25.32833	4309.309	180.488
2012/03/20 09:34:12	25.40333	4310.662	179.985
2012/03/20 09:38:42	25.47833	4311.702	179.494
2012/03/20 09:43:22	25.55611	4313.436	179.007
2012/03/20 09:47:52	25.63111	4314.695	178.552
2012/03/20 09:52:22	25.70611	4315.818	178.112
2012/03/20 09:56:52	25.78111	4316.859	177.684
2012/03/20 10:01:22	25.85611	4317.933	177.270
2012/03/20 10:05:52	25.93111	4318.351	176.870
2012/03/20 10:10:22	26.00611	4319.604	176.484
2012/03/20 10:15:02	26.08389	4320.190	176.095
2012/03/20 10:19:32	26.15889	4321.251	175.732
2012/03/20 10:24:02	26.23389	4321.688	175.365

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: **4051**

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/20 10:28:32	26.30889	4322.366	174.994
2012/03/20 10:33:02	26.38389	4323.249	174.645
2012/03/20 10:37:32	26.45889	4324.299	174.308
2012/03/20 10:42:02	26.53389	4324.623	173.988
2012/03/20 10:46:42	26.61167	4325.696	173.669
2012/03/20 10:51:12	26.68667	4326.337	173.363
2012/03/20 10:55:42	26.76167	4326.964	173.063
2012/03/20 11:00:12	26.83667	4327.570	172.774
2012/03/20 11:04:42	26.91167	4328.238	172.485
2012/03/20 11:09:12	26.98667	4328.688	172.201
2012/03/20 11:13:42	27.06167	4328.956	171.928
2012/03/20 11:18:12	27.13667	4328.917	171.689
2012/03/20 11:22:52	27.21444	4328.841	171.455
2012/03/20 11:27:22	27.28944	4328.781	171.213
2012/03/20 11:31:52	27.36444	4328.660	170.974
2012/03/20 11:36:22	27.43944	4328.863	170.755
2012/03/20 11:40:52	27.51444	4328.723	170.511
2012/03/20 11:45:22	27.58944	4328.615	170.260
2012/03/20 11:49:52	27.66444	4328.391	170.014
2012/03/20 11:54:32	27.74222	4328.530	169.768
2012/03/20 11:59:02	27.81722	4328.941	169.534
2012/03/20 12:03:32	27.89222	4328.547	169.302
2012/03/20 12:08:02	27.96722	4328.912	169.077
2012/03/20 12:12:32	28.04222	4328.817	168.860
2012/03/20 12:17:02	28.11722	4328.965	168.640
2012/03/20 12:21:32	28.19222	4327.732	168.419
2012/03/20 12:26:12	28.27000	4327.843	168.199
2012/03/20 12:30:42	28.34500	4327.809	167.997
2012/03/20 12:35:12	28.42000	4327.692	167.794
2012/03/20 12:39:42	28.49500	4327.967	167.594
2012/03/20 12:44:12	28.57000	4328.068	167.397
2012/03/20 12:48:42	28.64500	4328.031	167.208
2012/03/20 12:53:12	28.72000	4328.172	167.021
2012/03/20 12:57:52	28.79778	4328.415	166.833
2012/03/20 13:02:22	28.87278	4328.447	166.662
2012/03/20 13:06:52	28.94778	4328.513	166.483
2012/03/20 13:11:22	29.02278	4328.541	166.308
2012/03/20 13:15:52	29.09778	4328.779	166.132
2012/03/20 13:20:22	29.17278	4328.852	165.961
2012/03/20 13:24:52	29.24778	4328.882	165.792
2012/03/20 13:29:32	29.32556	4329.186	165.621
2012/03/20 13:34:02	29.40056	4329.328	165.455
2012/03/20 13:38:32	29.47556	4329.802	165.299
2012/03/20 13:43:02	29.55056	4329.708	165.144
2012/03/20 13:47:32	29.62556	4329.700	164.994
2012/03/20 13:52:02	29.70056	4329.563	164.841
2012/03/20 13:56:32	29.77556	4330.249	164.690
2012/03/20 14:01:02	29.85056	4330.478	164.539
2012/03/20 14:05:42	29.92833	4330.688	164.386
2012/03/20 14:10:12	30.00333	4330.847	164.242
2012/03/20 14:14:42	30.07833	4331.362	164.101
2012/03/20 14:19:12	30.15333	4331.461	163.958
2012/03/20 14:23:42	30.22833	4331.007	163.822
2012/03/20 14:28:12	30.30333	4331.472	163.684
2012/03/20 14:32:42	30.37833	4331.745	163.548
2012/03/20 14:37:22	30.45611	4332.093	163.410
2012/03/20 14:41:52	30.53111	4332.507	163.281
2012/03/20 14:46:22	30.60611	4332.609	163.152
2012/03/20 14:50:52	30.68111	4333.030	163.025
2012/03/20 14:55:22	30.75611	4332.824	162.901
2012/03/20 14:59:52	30.83111	4333.330	162.784
2012/03/20 15:04:22	30.90611	4333.360	162.663
2012/03/20 15:09:02	30.98389	4333.645	162.539
2012/03/20 15:13:32	31.05889	4333.832	162.417
2012/03/20 15:18:02	31.13389	4334.150	162.303
2012/03/20 15:22:32	31.20889	4334.330	162.194
2012/03/20 15:27:02	31.28389	4334.451	162.081
2012/03/20 15:31:32	31.35889	4334.657	161.968
2012/03/20 15:36:02	31.43389	4335.058	161.860
2012/03/20 15:40:42	31.51167	4334.991	161.745
2012/03/20 15:45:12	31.58667	4335.120	161.638
2012/03/20 15:49:42	31.66167	4335.288	161.532
2012/03/20 15:54:12	31.73667	4335.025	161.430
2012/03/20 15:58:42	31.81167	4335.713	161.325
2012/03/20 16:03:12	31.88667	4335.828	161.222
2012/03/20 16:07:42	31.96167	4336.006	161.118
2012/03/20 16:12:12	32.03667	4335.962	161.019
2012/03/20 16:16:52	32.11444	4336.077	160.921
2012/03/20 16:21:22	32.18944	4336.215	160.822
2012/03/20 16:25:52	32.26444	4336.484	160.725
2012/03/20 16:30:22	32.33944	4336.241	160.630
2012/03/20 16:34:52	32.41444	4336.313	160.533
2012/03/20 16:39:22	32.48944	4336.725	160.436
2012/03/20 16:43:52	32.56444	4336.927	160.333
2012/03/20 16:48:32	32.64222	4336.641	160.229
2012/03/20 16:53:02	32.71722	4336.747	160.131
2012/03/20 16:57:32	32.79222	4337.008	160.041
2012/03/20 17:02:02	32.86722	4337.216	159.956
2012/03/20 17:06:32	32.94222	4337.173	159.867
2012/03/20 17:11:02	33.01722	4337.498	159.781
2012/03/20 17:15:32	33.09222	4337.510	159.692
2012/03/20 17:20:12	33.17000	4337.733	159.605
2012/03/20 17:24:42	33.24500	4337.707	159.519
2012/03/20 17:29:12	33.32000	4337.916	159.438
2012/03/20 17:33:42	33.39500	4338.017	159.352
2012/03/20 17:38:12	33.47000	4338.334	159.268
2012/03/20 17:42:42	33.54500	4338.476	159.192
2012/03/20 17:47:12	33.62000	4338.246	159.116
2012/03/20 17:51:52	33.69778	4338.345	159.042
2012/03/20 17:56:22	33.77278	4338.336	158.971
2012/03/20 18:00:52	33.84778	4338.353	158.901
2012/03/20 18:05:22	33.92278	4338.232	158.822
2012/03/20 18:09:52	33.99778	4338.508	158.748
2012/03/20 18:14:22	34.07278	4338.561	158.673
2012/03/20 18:18:52	34.14778	4338.409	158.600
2012/03/20 18:23:32	34.22556	4338.481	158.519
2012/03/20 18:28:02	34.30056	4338.697	158.440
2012/03/20 18:32:32	34.37556	4338.558	158.368
2012/03/20 18:37:02	34.45056	4338.023	158.298
2012/03/20 18:41:32	34.52556	4338.643	158.221
2012/03/20 18:46:02	34.60056	4338.730	158.144
2012/03/20 18:50:32	34.67556	4338.820	158.067
2012/03/20 18:55:02	34.75056	4338.971	158.000
2012/03/20 18:59:42	34.82833	4338.840	157.925
2012/03/20 19:04:12	34.90333	4338.992	157.853
2012/03/20 19:08:42	34.97833	4338.967	157.785
2012/03/20 19:13:12	35.05333	4339.104	157.715
2012/03/20 19:17:42	35.12833	4338.924	157.652

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/20 19:22:12	35.20333	4338.940	157.584
2012/03/20 19:26:42	35.27833	4339.050	157.519
2012/03/20 19:31:22	35.35611	4338.914	157.457
2012/03/20 19:35:52	35.43111	4338.965	157.396
2012/03/20 19:40:22	35.50611	4338.978	157.335
2012/03/20 19:44:52	35.58111	4338.923	157.283
2012/03/20 19:49:22	35.65611	4339.183	157.222
2012/03/20 19:53:52	35.73111	4338.850	157.156
2012/03/20 19:58:22	35.80611	4339.599	157.092
2012/03/20 20:03:02	35.88389	4339.233	157.021
2012/03/20 20:07:32	35.95889	4339.123	156.961
2012/03/20 20:12:02	36.03389	4339.365	156.898
2012/03/20 20:16:32	36.10889	4338.994	156.840
2012/03/20 20:21:02	36.18389	4339.213	156.784
2012/03/20 20:25:32	36.25889	4339.155	156.726
2012/03/20 20:30:02	36.33389	4339.274	156.670
2012/03/20 20:34:42	36.41167	4339.164	156.611
2012/03/20 20:39:12	36.48667	4339.325	156.548
2012/03/20 20:43:42	36.56167	4339.243	156.490
2012/03/20 20:48:12	36.63667	4339.449	156.434
2012/03/20 20:52:42	36.71167	4339.319	156.381
2012/03/20 20:57:12	36.78667	4339.185	156.327
2012/03/20 21:01:42	36.86167	4339.446	156.272
2012/03/20 21:06:22	36.93944	4339.344	156.217
2012/03/20 21:10:52	37.01444	4339.454	156.170
2012/03/20 21:15:22	37.08944	4339.453	156.113
2012/03/20 21:19:52	37.16444	4339.445	156.064
2012/03/20 21:24:22	37.23944	4339.472	156.007
2012/03/20 21:28:52	37.31444	4339.714	155.953
2012/03/20 21:33:22	37.38944	4339.578	155.898
2012/03/20 21:37:52	37.46444	4339.661	155.848
2012/03/20 21:42:32	37.54222	4339.570	155.792
2012/03/20 21:47:02	37.61722	4339.764	155.741
2012/03/20 21:51:32	37.69222	4339.603	155.692
2012/03/20 21:56:02	37.76722	4339.756	155.644
2012/03/20 22:00:32	37.84222	4339.781	155.589
2012/03/20 22:05:02	37.91722	4339.694	155.541
2012/03/20 22:09:32	37.99222	4340.005	155.495
2012/03/20 22:14:12	38.07000	4339.821	155.450
2012/03/20 22:18:42	38.14500	4339.945	155.401
2012/03/20 22:23:12	38.22000	4339.966	155.349
2012/03/20 22:27:42	38.29500	4339.747	155.297
2012/03/20 22:32:12	38.37000	4339.660	155.250
2012/03/20 22:36:42	38.44500	4339.866	155.201
2012/03/20 22:41:12	38.52000	4339.868	155.150
2012/03/20 22:45:52	38.59778	4340.004	155.101
2012/03/20 22:50:22	38.67278	4339.701	155.051
2012/03/20 22:54:52	38.74778	4339.903	155.009
2012/03/20 22:59:22	38.82278	4339.834	154.967
2012/03/20 23:03:52	38.89778	4339.748	154.922
2012/03/20 23:08:22	38.97278	4339.722	154.880
2012/03/20 23:12:52	39.04778	4339.684	154.832
2012/03/20 23:17:32	39.12556	4339.974	154.782
2012/03/20 23:22:02	39.20056	4339.855	154.733
2012/03/20 23:26:32	39.27556	4340.090	154.687
2012/03/20 23:31:02	39.35056	4339.968	154.643
2012/03/20 23:35:32	39.42556	4339.817	154.597
2012/03/20 23:40:02	39.50056	4339.846	154.557
2012/03/20 23:44:32	39.57556	4339.846	154.514
2012/03/20 23:49:02	39.65056	4340.048	154.475
2012/03/20 23:53:42	39.72833	4340.040	154.430
2012/03/20 23:58:12	39.80333	4340.041	154.386
2012/03/21 00:02:42	39.87833	4340.212	154.345
2012/03/21 00:07:12	39.95333	4340.082	154.299
2012/03/21 00:11:42	40.02833	4340.155	154.258
2012/03/21 00:16:12	40.10333	4340.194	154.215
2012/03/21 00:20:42	40.17833	4340.054	154.178
2012/03/21 00:25:22	40.25611	4340.301	154.132
2012/03/21 00:29:52	40.33111	4340.274	154.095
2012/03/21 00:34:22	40.40611	4340.303	154.051
2012/03/21 00:38:52	40.48111	4340.219	154.013
2012/03/21 00:43:22	40.55611	4340.259	153.973
2012/03/21 00:47:52	40.63111	4340.474	153.930
2012/03/21 00:52:22	40.70611	4340.392	153.895
2012/03/21 00:57:02	40.78389	4340.230	153.858
2012/03/21 01:01:32	40.85889	4340.293	153.821
2012/03/21 01:06:02	40.93389	4340.851	153.782
2012/03/21 01:10:32	41.00889	4340.527	153.750
2012/03/21 01:15:02	41.08389	4340.675	153.714
2012/03/21 01:19:32	41.15889	4340.122	153.676
2012/03/21 01:24:02	41.23389	4340.540	153.638
2012/03/21 01:28:42	41.31167	4340.541	153.596
2012/03/21 01:33:12	41.38667	4340.566	153.559
2012/03/21 01:37:42	41.46167	4340.610	153.520
2012/03/21 01:42:12	41.53667	4340.586	153.479
2012/03/21 01:46:42	41.61167	4340.664	153.446
2012/03/21 01:51:12	41.68667	4340.609	153.404
2012/03/21 01:55:42	41.76167	4340.798	153.368
2012/03/21 02:00:22	41.83944	4340.439	153.325
2012/03/21 02:04:52	41.91444	4340.675	153.290
2012/03/21 02:09:22	41.98944	4340.641	153.247
2012/03/21 02:13:52	42.06444	4340.604	153.205
2012/03/21 02:18:22	42.13944	4340.837	153.165
2012/03/21 02:22:52	42.21444	4340.712	153.130
2012/03/21 02:27:22	42.28944	4340.896	153.093
2012/03/21 02:31:52	42.36444	4340.845	153.055
2012/03/21 02:36:32	42.44222	4340.710	153.015
2012/03/21 02:41:02	42.51722	4340.634	152.985
2012/03/21 02:45:32	42.59222	4340.833	152.950
2012/03/21 02:50:02	42.66722	4340.739	152.921
2012/03/21 02:54:32	42.74222	4340.662	152.883
2012/03/21 02:59:02	42.81722	4340.710	152.851
2012/03/21 03:03:32	42.89222	4340.479	152.807
2012/03/21 03:08:12	42.97000	4340.875	152.776
2012/03/21 03:12:42	43.04500	4340.775	152.740
2012/03/21 03:17:12	43.12000	4340.776	152.706
2012/03/21 03:21:42	43.19500	4341.093	152.670
2012/03/21 03:26:12	43.27000	4340.849	152.635
2012/03/21 03:30:42	43.34500	4340.760	152.602
2012/03/21 03:35:12	43.42000	4340.644	152.571
2012/03/21 03:39:52	43.49778	4340.803	152.536
2012/03/21 03:44:22	43.57278	4340.365	152.500
2012/03/21 03:48:52	43.64778	4340.664	152.466
2012/03/21 03:53:22	43.72278	4341.160	152.431
2012/03/21 03:57:52	43.79778	4340.866	152.397
2012/03/21 04:02:22	43.87278	4340.881	152.361
2012/03/21 04:06:52	43.94778	4340.772	152.328
2012/03/21 04:11:32	44.02556	4340.787	152.297

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/21 04:16:02	44.10056	4340.946	152.257
2012/03/21 04:20:32	44.17556	4340.753	152.229
2012/03/21 04:25:02	44.25056	4340.695	152.190
2012/03/21 04:29:32	44.32556	4340.602	152.163
2012/03/21 04:34:02	44.40056	4340.733	152.133
2012/03/21 04:38:32	44.47556	4340.731	152.102
2012/03/21 04:43:02	44.55056	4340.637	152.068
2012/03/21 04:47:42	44.62833	4340.631	152.034
2012/03/21 04:52:12	44.70333	4340.825	152.002
2012/03/21 04:56:42	44.77833	4340.647	151.972
2012/03/21 05:01:12	44.85333	4340.690	151.933
2012/03/21 05:05:42	44.92833	4340.773	151.896
2012/03/21 05:10:12	45.00333	4341.053	151.869
2012/03/21 05:14:42	45.07833	4341.224	151.839
2012/03/21 05:19:22	45.15611	4340.357	151.810
2012/03/21 05:23:52	45.23111	4340.838	151.782
2012/03/21 05:28:22	45.30611	4340.732	151.754
2012/03/21 05:32:52	45.38111	4340.726	151.729
2012/03/21 05:37:22	45.45611	4340.776	151.705
2012/03/21 05:41:52	45.53111	4340.767	151.686
2012/03/21 05:46:22	45.60611	4340.853	151.654
2012/03/21 05:51:02	45.68389	4340.911	151.628
2012/03/21 05:55:32	45.75889	4340.614	151.600
2012/03/21 06:00:02	45.83389	4340.678	151.563
2012/03/21 06:04:32	45.90889	4340.833	151.531
2012/03/21 06:09:02	45.98389	4340.814	151.497
2012/03/21 06:13:32	46.05889	4340.846	151.465
2012/03/21 06:18:02	46.13389	4340.987	151.439
2012/03/21 06:22:42	46.21167	4341.031	151.409
2012/03/21 06:27:12	46.28667	4341.083	151.381
2012/03/21 06:31:42	46.36167	4340.892	151.354
2012/03/21 06:36:12	46.43667	4340.999	151.325
2012/03/21 06:40:42	46.51167	4341.291	151.303
2012/03/21 06:45:12	46.58667	4341.040	151.274
2012/03/21 06:49:42	46.66167	4341.203	151.249
2012/03/21 06:54:22	46.73944	4341.031	151.221
2012/03/21 06:58:52	46.81444	4340.929	151.194
2012/03/21 07:00:42	46.84500	4319.818	151.316
Stop Pumping			
2012/03/21 07:03:22	46.88944	4314.240	153.043
2012/03/21 07:07:52	46.96444	4308.400	157.025
2012/03/21 07:12:22	47.03944	4303.441	160.952
2012/03/21 07:16:52	47.11444	4299.001	164.236
2012/03/21 07:21:22	47.18944	4294.907	166.983
2012/03/21 07:25:52	47.26444	4291.312	169.386
2012/03/21 07:30:32	47.34222	4287.760	171.534
2012/03/21 07:35:02	47.41722	4284.306	173.384
2012/03/21 07:39:32	47.49222	4281.441	175.065
2012/03/21 07:44:02	47.56722	4278.405	176.577
2012/03/21 07:48:32	47.64222	4275.637	178.044
2012/03/21 07:53:02	47.71722	4273.080	179.429
2012/03/21 07:57:32	47.79222	4270.507	180.743
2012/03/21 08:02:12	47.87000	4268.178	182.049
2012/03/21 08:06:42	47.94500	4265.893	183.250
2012/03/21 08:11:12	48.02000	4263.493	184.397
2012/03/21 08:15:42	48.09500	4261.426	185.493
2012/03/21 08:20:12	48.17000	4259.237	186.543
2012/03/21 08:24:42	48.24500	4257.147	187.554
2012/03/21 08:29:12	48.32000	4255.010	188.525
2012/03/21 08:33:52	48.39778	4253.140	189.484
2012/03/21 08:38:22	48.47278	4251.195	190.390
2012/03/21 08:42:52	48.54778	4249.321	191.260
2012/03/21 08:47:22	48.62278	4247.585	192.108
2012/03/21 08:51:52	48.69778	4245.653	192.930
2012/03/21 08:56:22	48.77278	4243.788	193.708
2012/03/21 09:00:52	48.84778	4242.162	194.475
2012/03/21 09:05:32	48.92556	4240.263	195.232
2012/03/21 09:10:02	49.00056	4238.332	195.953
2012/03/21 09:14:32	49.07556	4236.807	196.632
2012/03/21 09:19:02	49.15056	4234.942	197.306
2012/03/21 09:23:32	49.22556	4233.354	197.967
2012/03/21 09:28:02	49.30056	4231.480	198.607
2012/03/21 09:32:32	49.37556	4229.670	199.220
2012/03/21 09:37:02	49.45056	4228.444	199.831
2012/03/21 09:41:42	49.52833	4226.589	200.445
2012/03/21 09:46:12	49.60333	4224.893	200.976
2012/03/21 09:50:42	49.67833	4223.281	201.541
2012/03/21 09:55:12	49.75333	4221.634	202.080
2012/03/21 09:59:42	49.82833	4220.090	202.622
2012/03/21 10:04:12	49.90333	4218.815	203.146
2012/03/21 10:08:42	49.97833	4217.000	203.645
2012/03/21 10:13:22	50.05611	4215.288	204.132
2012/03/21 10:17:52	50.13111	4213.764	204.594
2012/03/21 10:22:22	50.20611	4211.718	205.056
2012/03/21 10:26:52	50.28111	4210.444	205.508
2012/03/21 10:31:22	50.35611	4209.284	205.945
2012/03/21 10:35:52	50.43111	4208.621	206.397
2012/03/21 10:40:22	50.50611	4205.899	206.807
2012/03/21 10:45:02	50.58389	4204.253	207.256
2012/03/21 10:49:32	50.65889	4202.791	207.659
2012/03/21 10:54:02	50.73389	4201.314	208.053
2012/03/21 10:58:32	50.80889	4199.893	208.422
2012/03/21 11:03:02	50.88389	4198.561	208.803
2012/03/21 11:07:32	50.95889	4196.871	209.170
2012/03/21 11:12:02	51.03389	4195.427	209.515
2012/03/21 11:16:42	51.11167	4193.816	209.892
2012/03/21 11:21:12	51.18667	4192.353	210.209
2012/03/21 11:25:42	51.26167	4190.980	210.558
2012/03/21 11:30:12	51.33667	4189.473	210.916
2012/03/21 11:34:42	51.41167	4187.979	211.241
2012/03/21 11:39:12	51.48667	4186.540	211.554
2012/03/21 11:43:42	51.56167	4185.010	211.852
2012/03/21 11:48:22	51.63944	4183.515	212.155
2012/03/21 11:52:52	51.71444	4181.722	212.428
2012/03/21 11:57:22	51.78944	4180.395	212.746
2012/03/21 12:01:52	51.86444	4178.786	213.033
2012/03/21 12:06:22	51.93944	4177.372	213.297
2012/03/21 12:10:52	52.01444	4175.992	213.571
2012/03/21 12:15:22	52.08944	4174.374	213.875
2012/03/21 12:19:52	52.16444	4172.994	214.130
2012/03/21 12:24:32	52.24222	4171.463	214.377
2012/03/21 12:29:02	52.31722	4169.969	214.600
2012/03/21 12:33:32	52.39222	4168.246	214.868
2012/03/21 12:38:02	52.46722	4166.797	215.113
2012/03/21 12:42:32	52.54222	4165.527	215.362
2012/03/21 12:47:02	52.61722	4164.023	215.603
2012/03/21 12:51:32	52.69222	4162.668	215.850
2012/03/21 12:56:12	52.77000	4161.207	216.062

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/21 13:00:42	52.84500	4159.837	216.303
2012/03/21 13:05:12	52.92000	4158.215	216.516
2012/03/21 13:09:42	52.99500	4156.996	216.710
2012/03/21 13:14:12	53.07000	4155.532	216.948
2012/03/21 13:18:42	53.14500	4154.162	217.125
2012/03/21 13:23:12	53.22000	4152.630	217.348
2012/03/21 13:27:52	53.29778	4151.090	217.562
2012/03/21 13:32:22	53.37278	4149.796	217.756
2012/03/21 13:36:52	53.44778	4148.376	217.934
2012/03/21 13:41:22	53.52278	4146.823	218.122
2012/03/21 13:45:52	53.59778	4145.473	218.319
2012/03/21 13:50:22	53.67278	4144.093	218.493
2012/03/21 13:54:52	53.74778	4142.573	218.667
2012/03/21 13:59:32	53.82556	4141.264	218.838
2012/03/21 14:04:02	53.90056	4139.823	218.997
2012/03/21 14:08:32	53.97556	4138.355	219.164
2012/03/21 14:13:02	54.05056	4136.927	219.354
2012/03/21 14:17:32	54.12556	4135.534	219.525
2012/03/21 14:22:02	54.20056	4134.123	219.660
2012/03/21 14:26:32	54.27556	4132.760	219.838
2012/03/21 14:31:02	54.35056	4131.256	219.992
2012/03/21 14:35:42	54.42833	4129.932	220.175
2012/03/21 14:40:12	54.50333	4128.691	220.324
2012/03/21 14:44:42	54.57833	4127.250	220.490
2012/03/21 14:49:12	54.65333	4125.930	220.632
2012/03/21 14:53:42	54.72833	4124.548	220.777
2012/03/21 14:58:12	54.80333	4123.145	220.885
2012/03/21 15:02:42	54.87833	4121.986	221.058
2012/03/21 15:07:22	54.95611	4120.549	221.252
2012/03/21 15:11:52	55.03111	4119.088	221.384
2012/03/21 15:16:22	55.10611	4117.755	221.494
2012/03/21 15:20:52	55.18111	4116.597	221.655
2012/03/21 15:25:22	55.25611	4115.195	221.810
2012/03/21 15:29:52	55.33111	4113.852	221.894
2012/03/21 15:34:22	55.40611	4112.508	222.050
2012/03/21 15:39:02	55.48389	4111.063	222.166
2012/03/21 15:43:32	55.55889	4109.895	222.291
2012/03/21 15:48:02	55.63389	4108.630	222.429
2012/03/21 15:52:32	55.70889	4107.480	222.552
2012/03/21 15:57:02	55.78389	4106.094	222.674
2012/03/21 16:01:32	55.85889	4104.790	222.788
2012/03/21 16:06:02	55.93389	4103.531	222.953
2012/03/21 16:10:42	56.01167	4102.449	223.044
2012/03/21 16:15:12	56.08667	4101.217	223.123
2012/03/21 16:19:42	56.16167	4099.930	223.238
2012/03/21 16:24:12	56.23667	4098.773	223.362
2012/03/21 16:28:42	56.31167	4097.594	223.474
2012/03/21 16:33:12	56.38667	4096.383	223.624
2012/03/21 16:37:42	56.46167	4095.053	223.719
2012/03/21 16:42:22	56.53944	4093.981	223.810
2012/03/21 16:46:52	56.61444	4092.769	223.909
2012/03/21 16:51:22	56.68944	4091.619	224.025
2012/03/21 16:55:52	56.76444	4090.470	224.079
2012/03/21 17:00:22	56.83944	4089.313	224.184
2012/03/21 17:04:52	56.91444	4088.255	224.290
2012/03/21 17:09:22	56.98944	4087.113	224.435
2012/03/21 17:13:52	57.06444	4086.088	224.537
2012/03/21 17:18:32	57.14222	4084.939	224.618
2012/03/21 17:23:02	57.21722	4083.889	224.701
2012/03/21 17:27:32	57.29222	4082.807	224.796
2012/03/21 17:32:02	57.36722	4081.718	224.911
2012/03/21 17:36:32	57.44222	4080.779	225.032
2012/03/21 17:41:02	57.51722	4079.749	225.091
2012/03/21 17:45:32	57.59222	4078.769	225.177
2012/03/21 17:50:12	57.67000	4077.699	225.283
2012/03/21 17:54:42	57.74500	4076.700	225.353
2012/03/21 17:59:12	57.82000	4075.750	225.430
2012/03/21 18:03:42	57.89500	4074.704	225.529
2012/03/21 18:08:12	57.97000	4073.796	225.625
2012/03/21 18:12:42	58.04500	4072.658	225.709
2012/03/21 18:17:12	58.12000	4071.929	225.774
2012/03/21 18:21:52	58.19778	4071.005	225.869
2012/03/21 18:26:22	58.27278	4070.052	225.954
2012/03/21 18:30:52	58.34778	4069.476	226.009
2012/03/21 18:35:22	58.42278	4068.162	226.058
2012/03/21 18:39:52	58.49778	4067.315	226.185
2012/03/21 18:44:22	58.57278	4066.478	226.255
2012/03/21 18:48:52	58.64778	4065.761	226.345
2012/03/21 18:53:32	58.72556	4064.677	226.413
2012/03/21 18:58:02	58.80056	4063.905	226.494
2012/03/21 19:02:32	58.87556	4063.124	226.570
2012/03/21 19:07:02	58.95056	4062.242	226.628
2012/03/21 19:11:32	59.02556	4061.411	226.715
2012/03/21 19:16:02	59.10056	4060.772	226.777
2012/03/21 19:20:32	59.17556	4059.839	226.804
2012/03/21 19:25:02	59.25056	4059.191	226.899
2012/03/21 19:29:42	59.32833	4058.311	226.952
2012/03/21 19:34:12	59.40333	4057.521	227.005
2012/03/21 19:38:42	59.47833	4056.817	227.099
2012/03/21 19:43:12	59.55333	4056.122	227.221
2012/03/21 19:47:42	59.62833	4055.357	227.261
2012/03/21 19:52:12	59.70333	4054.745	227.310
2012/03/21 19:56:42	59.77833	4054.098	227.367
2012/03/21 20:01:22	59.85611	4053.250	227.445
2012/03/21 20:05:52	59.93111	4052.625	227.512
2012/03/21 20:10:22	60.00611	4051.761	227.594
2012/03/21 20:23:32	60.22556	4049.950	227.781
2012/03/21 20:37:02	60.45056	4048.028	227.962
2012/03/21 20:50:32	60.67556	4046.360	228.130
2012/03/21 21:04:02	60.90056	4044.500	228.309
2012/03/21 21:18:02	61.13389	4042.730	228.503
2012/03/21 21:31:32	61.35889	4041.052	228.659
2012/03/21 21:45:02	61.58389	4039.313	228.844
2012/03/21 21:58:32	61.80889	4037.768	228.978
2012/03/21 22:12:02	62.03389	4036.258	229.124
2012/03/21 22:25:32	62.25889	4034.877	229.279
2012/03/21 22:39:02	62.48389	4033.282	229.447
2012/03/21 22:53:02	62.71722	4031.823	229.566
2012/03/21 23:06:32	62.94222	4030.455	229.707
2012/03/21 23:20:02	63.16722	4029.091	229.824
2012/03/21 23:33:32	63.39222	4027.795	229.962
2012/03/21 23:47:02	63.61722	4026.598	230.111
2012/03/22 00:00:32	63.84222	4025.300	230.241
2012/03/22 00:14:02	64.06722	4024.085	230.359
2012/03/22 00:28:02	64.30056	4022.919	230.494
2012/03/22 00:41:32	64.52556	4021.653	230.606
2012/03/22 00:55:02	64.75056	4020.526	230.722
2012/03/22 01:08:32	64.97556	4019.394	230.829

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/22 01:22:02	65.20056	4018.321	230.938
2012/03/22 01:35:32	65.42556	4017.391	231.064
2012/03/22 01:49:02	65.65056	4016.272	231.163
2012/03/22 02:02:32	65.87556	4015.249	231.268
2012/03/22 02:16:32	66.10889	4014.051	231.370
2012/03/22 02:30:02	66.33389	4013.220	231.484
2012/03/22 02:43:32	66.55889	4012.161	231.568
2012/03/22 02:57:02	66.78389	4011.306	231.681
2012/03/22 03:10:32	67.00889	4010.562	231.775
2012/03/22 03:24:02	67.23389	4009.426	231.880
2012/03/22 03:37:32	67.45889	4008.475	231.937
2012/03/22 03:51:32	67.69222	4007.506	232.021
2012/03/22 04:05:02	67.91722	4006.576	232.169
2012/03/22 04:18:32	68.14222	4005.735	232.238
2012/03/22 04:32:02	68.36722	4004.749	232.302
2012/03/22 04:45:32	68.59222	4003.876	232.411
2012/03/22 04:59:02	68.81722	4003.127	232.505
2012/03/22 05:12:32	69.04222	4002.287	232.569
2012/03/22 05:26:32	69.27556	4001.492	232.645
2012/03/22 05:40:02	69.50056	4000.615	232.705
2012/03/22 05:53:32	69.72556	3999.940	232.808
2012/03/22 06:07:02	69.95056	3998.959	232.875
2012/03/22 06:20:32	70.17556	3998.067	232.955
2012/03/22 06:34:02	70.40056	3997.445	233.036
2012/03/22 06:47:32	70.62556	3996.685	233.108
2012/03/22 07:01:32	70.85889	3995.988	233.173
2012/03/22 07:15:02	71.08389	3995.085	233.269
2012/03/22 07:28:32	71.30889	3994.325	233.321
2012/03/22 07:42:02	71.53389	3993.518	233.392
2012/03/22 07:55:32	71.75889	3992.819	233.478
2012/03/22 08:09:02	71.98389	3992.040	233.549
2012/03/22 08:22:32	72.20889	3991.382	233.616
2012/03/22 08:36:32	72.44222	3990.626	233.691
2012/03/22 08:50:02	72.66722	3989.731	233.743
2012/03/22 09:03:32	72.89222	3989.291	233.789
2012/03/22 09:17:02	73.11722	3988.502	233.837
2012/03/22 09:30:32	73.34222	3987.782	233.866
2012/03/22 09:44:02	73.56722	3986.988	233.937
2012/03/22 09:57:32	73.79222	3986.421	234.001
2012/03/22 10:11:02	74.01722	3985.746	234.093
2012/03/22 10:25:02	74.25056	3984.954	234.120
2012/03/22 10:38:32	74.47556	3984.306	234.183
2012/03/22 10:52:02	74.70056	3983.723	234.245
2012/03/22 11:05:32	74.92556	3983.083	234.312
2012/03/22 11:19:02	75.15056	3982.372	234.379
2012/03/22 11:32:32	75.37556	3981.701	234.452
2012/03/22 11:46:02	75.60056	3981.187	234.593
2012/03/22 12:00:02	75.83389	3980.505	234.870
2012/03/22 12:13:32	76.05889	3979.952	234.998
2012/03/22 12:27:02	76.28389	3979.328	235.101
2012/03/22 12:40:32	76.50889	3978.683	235.173
2012/03/22 12:54:02	76.73389	3978.100	235.220
2012/03/22 13:07:32	76.95889	3977.584	235.303
2012/03/22 13:21:02	77.18389	3976.886	235.355
2012/03/22 13:35:02	77.41722	3976.332	235.412
2012/03/22 13:48:32	77.64222	3975.678	235.484
2012/03/22 14:02:02	77.86722	3975.208	235.564
2012/03/22 14:15:32	78.09222	3974.682	235.596
2012/03/22 14:29:02	78.31722	3974.144	235.630
2012/03/22 14:42:32	78.54222	3973.491	235.707
2012/03/22 14:56:02	78.76722	3973.028	235.761
2012/03/22 15:10:02	79.00056	3972.427	235.790
2012/03/22 15:23:32	79.22556	3971.962	235.843
2012/03/22 15:37:02	79.45056	3971.369	235.902
2012/03/22 15:50:32	79.67556	3971.014	235.956
2012/03/22 16:04:02	79.90056	3970.246	235.984
2012/03/22 16:17:32	80.12556	3969.874	236.036
2012/03/22 16:31:02	80.35056	3969.439	236.096
2012/03/22 16:44:32	80.57556	3968.840	236.140
2012/03/22 16:58:32	80.80889	3968.363	236.185
2012/03/22 17:12:02	81.03389	3967.880	236.224
2012/03/22 17:25:32	81.25889	3967.346	236.270
2012/03/22 17:39:02	81.48389	3966.896	236.322
2012/03/22 17:52:32	81.70889	3966.335	236.359
2012/03/22 18:06:02	81.93389	3965.892	236.399
2012/03/22 18:19:32	82.15889	3965.323	236.443
2012/03/22 18:33:32	82.39222	3964.812	236.469
2012/03/22 18:47:02	82.61722	3964.393	236.526
2012/03/22 19:00:32	82.84222	3963.884	236.554
2012/03/22 19:14:02	83.06722	3963.431	236.624
2012/03/22 19:27:32	83.29222	3963.047	236.609
2012/03/22 19:41:02	83.51722	3962.497	236.689
2012/03/22 19:54:32	83.74222	3962.093	236.721
2012/03/22 20:08:32	83.97556	3961.714	236.756
2012/03/22 20:22:02	84.20056	3961.073	236.787
2012/03/22 20:35:32	84.42556	3960.583	236.819
2012/03/22 20:49:02	84.65056	3960.101	236.871
2012/03/22 21:02:32	84.87556	3959.731	236.907
2012/03/22 21:16:02	85.10056	3959.254	236.947
2012/03/22 21:29:32	85.32556	3958.969	236.996
2012/03/22 21:43:32	85.55889	3958.364	237.018
2012/03/22 21:57:02	85.78389	3957.872	237.056
2012/03/22 22:10:32	86.00889	3957.529	237.075
2012/03/22 22:24:02	86.23389	3957.024	237.117
2012/03/22 22:37:32	86.45889	3956.509	237.151
2012/03/22 22:51:02	86.68389	3956.097	237.178
2012/03/22 23:04:32	86.90889	3955.757	237.203
2012/03/22 23:18:32	87.14222	3955.200	237.246
2012/03/22 23:32:02	87.36722	3954.876	237.268
2012/03/22 23:45:32	87.59222	3954.510	237.322
2012/03/22 23:59:02	87.81722	3953.895	237.347
2012/03/23 00:12:32	88.04222	3953.438	237.381
2012/03/23 00:26:02	88.26722	3953.123	237.404
2012/03/23 00:39:32	88.49222	3952.647	237.430
2012/03/23 00:53:02	88.71722	3952.201	237.465
2012/03/23 01:07:02	88.95056	3951.817	237.506
2012/03/23 01:20:32	89.17556	3951.452	237.541
2012/03/23 01:34:02	89.40056	3950.979	237.577
2012/03/23 01:47:32	89.62556	3950.690	237.612
2012/03/23 02:01:02	89.85056	3950.325	237.640
2012/03/23 02:14:32	90.07556	3949.842	237.671
2012/03/23 02:28:02	90.30056	3949.442	237.682
2012/03/23 02:42:02	90.53389	3949.027	237.706
2012/03/23 02:55:32	90.75889	3948.744	237.741
2012/03/23 03:09:02	90.98389	3948.485	237.793
2012/03/23 03:22:32	91.20889	3947.978	237.806
2012/03/23 03:36:02	91.43389	3947.608	237.845
2012/03/23 03:49:32	91.65889	3947.366	237.869

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/23 04:03:02	91.88389	3946.950	237.875
2012/03/23 04:17:02	92.11722	3946.535	237.920
2012/03/23 04:30:32	92.34222	3946.201	237.937
2012/03/23 04:44:02	92.56722	3945.777	237.970
2012/03/23 04:57:32	92.79222	3945.439	237.983
2012/03/23 05:11:02	93.01722	3945.153	238.026
2012/03/23 05:24:32	93.24222	3944.804	238.028
2012/03/23 05:38:02	93.46722	3944.407	238.050
2012/03/23 05:52:02	93.70056	3943.996	238.051
2012/03/23 06:05:32	93.92556	3943.646	238.109
2012/03/23 06:19:02	94.15056	3943.399	238.145
2012/03/23 06:32:32	94.37556	3942.981	238.171
2012/03/23 06:46:02	94.60056	3942.704	238.189
2012/03/23 06:59:32	94.82556	3942.362	238.233
2012/03/23 07:13:02	95.05056	3941.988	238.239
2012/03/23 07:26:32	95.27556	3941.585	238.254
2012/03/23 07:40:32	95.50889	3941.319	238.286
2012/03/23 07:54:02	95.73389	3940.994	238.311
2012/03/23 08:07:32	95.95889	3940.606	238.356
2012/03/23 08:21:02	96.18389	3940.250	238.353
2012/03/23 08:34:32	96.40889	3940.006	238.426
2012/03/23 08:48:02	96.63389	3939.657	238.433
2012/03/23 09:01:32	96.85889	3939.282	238.453
2012/03/23 09:15:32	97.09222	3938.974	238.474
2012/03/23 09:29:02	97.31722	3938.512	238.509
2012/03/23 09:42:32	97.54222	3938.321	238.545
2012/03/23 09:56:02	97.76722	3937.860	238.568
2012/03/23 10:09:32	97.99222	3937.641	238.602
2012/03/23 10:23:02	98.21722	3937.227	238.628
2012/03/23 10:36:32	98.44222	3936.879	238.630
2012/03/23 10:50:32	98.67556	3936.564	238.638
2012/03/23 11:04:02	98.90056	3936.191	238.676
2012/03/23 11:17:32	99.12556	3935.843	238.694
2012/03/23 11:31:02	99.35056	3935.642	238.715
2012/03/23 11:44:32	99.57556	3935.397	238.741
2012/03/23 11:58:02	99.80056	3934.939	238.748
2012/03/23 12:11:32	100.02556	3934.504	238.799
2012/03/23 12:25:32	100.25889	3934.253	238.824
2012/03/23 12:39:02	100.48389	3933.957	238.851
2012/03/23 12:52:32	100.70889	3933.635	238.903
2012/03/23 13:06:02	100.93389	3933.382	238.906
2012/03/23 13:19:32	101.15889	3933.049	238.936
2012/03/23 13:33:02	101.38389	3932.675	238.957
2012/03/23 13:46:32	101.60889	3932.442	238.963
2012/03/23 14:00:32	101.84222	3931.994	238.998
2012/03/23 14:14:02	102.06722	3932.045	238.988
2012/03/23 14:27:32	102.29222	3931.538	238.992
2012/03/23 14:41:02	102.51722	3931.283	239.034
2012/03/23 14:54:32	102.74222	3930.944	239.066
2012/03/23 15:08:02	102.96722	3930.759	239.077
2012/03/23 15:21:32	103.19222	3930.376	239.089
2012/03/23 15:35:02	103.41722	3930.144	239.126
2012/03/23 15:49:02	103.65056	3929.934	239.102
2012/03/23 16:02:32	103.87556	3929.621	239.158
2012/03/23 16:16:02	104.10056	3929.367	239.183
2012/03/23 16:29:32	104.32556	3929.169	239.218
2012/03/23 16:43:02	104.55056	3928.900	239.225
2012/03/23 16:56:32	104.77556	3928.562	239.244
2012/03/23 17:10:02	105.00056	3928.265	239.233
2012/03/23 17:24:02	105.23389	3928.065	239.252
2012/03/23 17:37:32	105.45889	3927.674	239.292
2012/03/23 17:51:02	105.68389	3927.512	239.302
2012/03/23 18:04:32	105.90889	3927.198	239.318
2012/03/23 18:18:02	106.13389	3927.050	239.357
2012/03/23 18:31:32	106.35889	3926.785	239.358
2012/03/23 18:45:02	106.58389	3926.408	239.364
2012/03/23 18:59:02	106.81722	3926.314	239.371
2012/03/23 19:12:32	107.04222	3925.879	239.410
2012/03/23 19:26:02	107.26722	3925.794	239.412
2012/03/23 19:39:32	107.49222	3925.426	239.450
2012/03/23 19:53:02	107.71722	3925.253	239.433
2012/03/23 20:06:32	107.94222	3924.840	239.440
2012/03/23 20:20:02	108.16722	3924.719	239.453
2012/03/23 20:34:02	108.40056	3924.328	239.486
2012/03/23 20:47:32	108.62556	3924.098	239.507
2012/03/23 21:01:02	108.85056	3923.745	239.539
2012/03/23 21:14:32	109.07556	3923.624	239.570
2012/03/23 21:28:02	109.30056	3923.395	239.627
2012/03/23 21:41:32	109.52556	3923.024	239.650
2012/03/23 21:55:02	109.75056	3922.927	239.663
2012/03/23 22:08:32	109.97556	3922.488	239.692
2012/03/23 22:22:32	110.20889	3922.312	239.698
2012/03/23 22:36:02	110.43389	3922.012	239.699
2012/03/23 22:49:32	110.65889	3921.719	239.718
2012/03/23 23:03:02	110.88389	3921.487	239.721
2012/03/23 23:16:32	111.10889	3921.233	239.725
2012/03/23 23:30:02	111.33389	3921.036	239.729
2012/03/23 23:43:32	111.55889	3920.640	239.743
2012/03/23 23:57:32	111.79222	3920.552	239.761
2012/03/24 00:11:02	112.01722	3920.225	239.768
2012/03/24 00:24:32	112.24222	3920.064	239.800
2012/03/24 00:38:02	112.46722	3919.780	239.803
2012/03/24 00:51:32	112.69222	3919.486	239.830
2012/03/24 01:05:02	112.91722	3919.267	239.843
2012/03/24 01:18:32	113.14222	3918.954	239.844
2012/03/24 01:32:32	113.37556	3918.721	239.862
2012/03/24 01:46:02	113.60056	3918.523	239.908
2012/03/24 01:59:32	113.82556	3918.223	239.918
2012/03/24 02:13:02	114.05056	3918.061	239.916
2012/03/24 02:26:32	114.27556	3917.900	239.940
2012/03/24 02:40:02	114.50056	3917.489	239.962
2012/03/24 02:53:32	114.72556	3917.357	239.972
2012/03/24 03:07:32	114.95889	3917.000	239.997
2012/03/24 03:21:02	115.18389	3916.843	240.019
2012/03/24 03:34:32	115.40889	3916.621	240.047
2012/03/24 03:48:02	115.63389	3916.434	240.058
2012/03/24 04:01:32	115.85889	3916.280	240.053
2012/03/24 04:15:02	116.08389	3915.964	240.086
2012/03/24 04:28:32	116.30889	3915.809	240.097
2012/03/24 04:42:32	116.54222	3915.624	240.118
2012/03/24 04:56:02	116.76722	3915.296	240.104
2012/03/24 05:09:32	116.99222	3915.125	240.139
2012/03/24 05:23:02	117.21722	3914.981	240.136
2012/03/24 05:36:32	117.44222	3914.651	240.169
2012/03/24 05:50:02	117.66722	3914.501	240.196
2012/03/24 06:03:32	117.89222	3914.437	240.200
2012/03/24 06:17:02	118.11722	3914.001	240.198
2012/03/24 06:31:02	118.35056	3913.792	240.214

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/24 06:44:32	118.57556	3913.575	240.246
2012/03/24 06:58:02	118.80056	3913.431	240.252
2012/03/24 07:11:32	119.02556	3913.216	240.260
2012/03/24 07:25:02	119.25056	3913.028	240.299
2012/03/24 07:38:32	119.47556	3912.804	240.292
2012/03/24 07:52:02	119.70056	3912.628	240.320
2012/03/24 08:06:02	119.93389	3912.409	240.327
2012/03/24 08:19:32	120.15889	3912.188	240.331
2012/03/24 08:33:02	120.38389	3911.972	240.343
2012/03/24 08:46:32	120.60889	3911.626	240.325
2012/03/24 09:00:02	120.83389	3911.516	240.380
2012/03/24 09:13:32	121.05889	3911.397	240.396
2012/03/24 09:27:02	121.28389	3911.096	240.418
2012/03/24 09:41:02	121.51722	3910.884	240.419
2012/03/24 09:54:32	121.74222	3910.488	240.457
2012/03/24 10:08:02	121.96722	3910.493	240.441
2012/03/24 10:21:32	122.19222	3910.184	240.463
2012/03/24 10:35:02	122.41722	3909.998	240.467
2012/03/24 10:48:32	122.64222	3909.740	240.511
2012/03/24 11:02:02	122.86722	3909.591	240.526
2012/03/24 11:16:02	123.10056	3909.359	240.538
2012/03/24 11:29:32	123.32556	3909.130	240.543
2012/03/24 11:43:02	123.55056	3908.680	240.558
2012/03/24 11:56:32	123.77556	3908.533	240.579
2012/03/24 12:10:02	124.00056	3908.481	240.575
2012/03/24 12:23:32	124.22556	3908.342	240.593
2012/03/24 12:37:02	124.45056	3907.997	240.606
2012/03/24 12:50:32	124.67556	3907.892	240.615
2012/03/24 13:04:32	124.90889	3907.700	240.634
2012/03/24 13:18:02	125.13389	3907.035	240.650
2012/03/24 13:31:32	125.35889	3907.156	240.644
2012/03/24 13:45:02	125.58389	3907.295	240.649
2012/03/24 13:58:32	125.80889	3906.818	240.697
2012/03/24 14:12:02	126.03389	3906.616	240.709
2012/03/24 14:25:32	126.25889	3906.457	240.699
2012/03/24 14:39:32	126.49222	3906.241	240.723
2012/03/24 14:53:02	126.71722	3906.078	240.752
2012/03/24 15:06:32	126.94222	3905.853	240.758
2012/03/24 15:20:02	127.16722	3905.626	240.774
2012/03/24 15:33:32	127.39222	3905.575	240.796
2012/03/24 15:47:02	127.61722	3905.300	240.817
2012/03/24 16:00:32	127.84222	3905.079	240.824
2012/03/24 16:14:32	128.07556	3904.957	240.833
2012/03/24 16:28:02	128.30056	3904.793	240.842
2012/03/24 16:41:32	128.52556	3904.657	240.847
2012/03/24 16:55:02	128.75056	3904.411	240.854
2012/03/24 17:08:32	128.97556	3904.154	240.874
2012/03/24 17:22:02	129.20056	3904.128	240.892
2012/03/24 17:35:32	129.42556	3904.010	240.900
2012/03/24 17:49:32	129.65889	3903.690	240.927
2012/03/24 18:03:02	129.88389	3903.442	240.918
2012/03/24 18:16:32	130.10889	3903.398	240.930
2012/03/24 18:30:02	130.33389	3903.151	240.952
2012/03/24 18:43:32	130.55889	3903.037	240.965
2012/03/24 18:57:02	130.78389	3902.845	240.972
2012/03/24 19:10:32	131.00889	3902.714	240.988
2012/03/24 19:24:32	131.24222	3902.485	240.998
2012/03/24 19:38:02	131.46722	3902.285	241.034
2012/03/24 19:51:32	131.69222	3902.136	241.034
2012/03/24 20:05:02	131.91722	3901.916	241.050
2012/03/24 20:18:32	132.14222	3901.753	241.064
2012/03/24 20:32:02	132.36722	3901.597	241.078
2012/03/24 20:45:32	132.59222	3901.461	241.078
2012/03/24 20:59:02	132.81722	3901.194	241.085
2012/03/24 21:13:02	133.05056	3900.973	241.114
2012/03/24 21:26:32	133.27556	3900.886	241.129
2012/03/24 21:40:02	133.50056	3900.719	241.129
2012/03/24 21:53:32	133.72556	3900.465	241.147
2012/03/24 22:07:02	133.95056	3900.292	241.165
2012/03/24 22:20:32	134.17556	3900.088	241.178
2012/03/24 22:34:02	134.40056	3899.879	241.173
2012/03/24 22:48:02	134.63389	3899.715	241.183
2012/03/24 23:01:32	134.85889	3899.650	241.193
2012/03/24 23:15:02	135.08389	3899.359	241.198
2012/03/24 23:28:32	135.30889	3899.247	241.193
2012/03/24 23:42:02	135.53389	3898.823	241.215
2012/03/24 23:55:32	135.75889	3898.914	241.222
2012/03/25 00:09:02	135.98389	3898.637	241.245
2012/03/25 00:23:02	136.21722	3898.391	241.240
2012/03/25 00:36:32	136.44222	3898.362	241.272
2012/03/25 00:50:02	136.66722	3898.212	241.280
2012/03/25 01:03:32	136.89222	3898.002	241.276
2012/03/25 01:17:02	137.11722	3897.831	241.289
2012/03/25 01:30:32	137.34222	3897.693	241.304
2012/03/25 01:44:02	137.56722	3897.528	241.308
2012/03/25 01:58:02	137.80056	3897.398	241.320
2012/03/25 02:11:32	138.02556	3897.181	241.336
2012/03/25 02:25:02	138.25056	3897.016	241.340
2012/03/25 02:38:32	138.47556	3896.774	241.352
2012/03/25 02:52:02	138.70056	3896.693	241.391
2012/03/25 03:05:32	138.92556	3896.432	241.391
2012/03/25 03:19:02	139.15056	3896.352	241.394
2012/03/25 03:32:32	139.37556	3896.267	241.409
2012/03/25 03:46:32	139.60889	3896.089	241.411
2012/03/25 04:00:02	139.83389	3895.744	241.418
2012/03/25 04:13:32	140.05889	3895.599	241.454
2012/03/25 04:27:02	140.28389	3895.392	241.464
2012/03/25 04:40:32	140.50889	3895.494	241.470
2012/03/25 04:54:02	140.73389	3895.233	241.469
2012/03/25 05:07:32	140.95889	3895.167	241.488
2012/03/25 05:21:32	141.19222	3894.835	241.484
2012/03/25 05:35:02	141.41722	3894.790	241.473
2012/03/25 05:48:32	141.64222	3894.590	241.480
2012/03/25 06:02:02	141.86722	3894.600	241.501
2012/03/25 06:15:32	142.09222	3894.361	241.526
2012/03/25 06:29:02	142.31722	3894.262	241.547
2012/03/25 06:42:32	142.54222	3894.120	241.551
2012/03/25 06:56:32	142.77556	3893.939	241.542
2012/03/25 07:10:02	143.00056	3893.893	241.554
2012/03/25 07:23:32	143.22556	3893.591	241.567
2012/03/25 07:37:02	143.45056	3893.452	241.563
2012/03/25 07:50:32	143.67556	3893.482	241.573
2012/03/25 08:04:02	143.90056	3893.120	241.578
2012/03/25 08:17:32	144.12556	3893.053	241.614
2012/03/25 08:31:32	144.35889	3892.740	241.625
2012/03/25 08:45:02	144.58389	3892.694	241.636
2012/03/25 08:58:32	144.80889	3892.627	241.627
2012/03/25 09:12:02	145.03389	3892.419	241.632

Client: Wattenburg Disposal
Test Date: 2012/03/19 - 2012/03/26
Tool Serial #: 4051

Well Name: Suckla Farms Injection Well #1
Location: SENW Sec 10 T1N R67W
Field/Pool: Wattenburg

Injection-Static Gradient Bottom Gauge

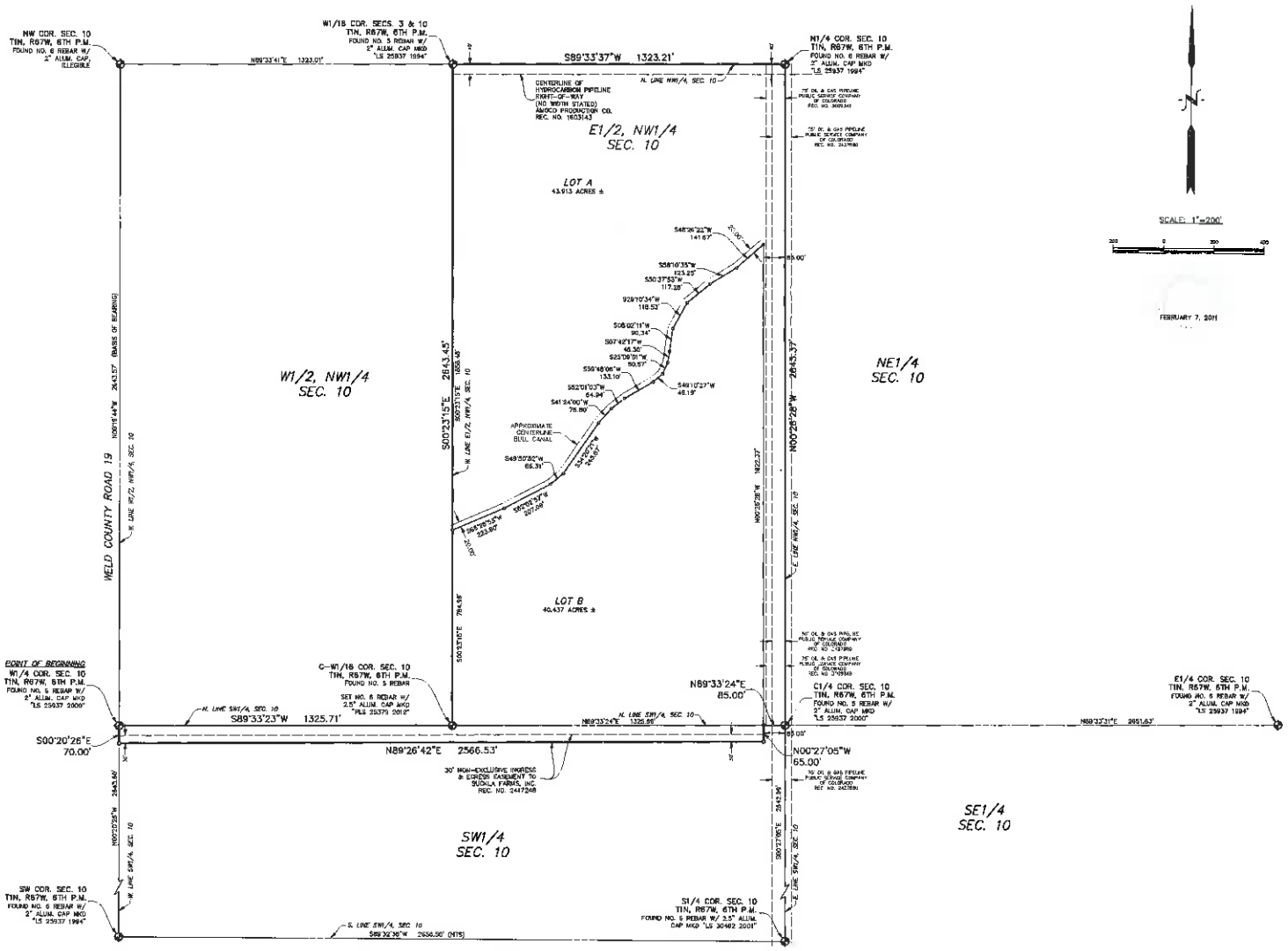
Date/Time (yyyy/mm/dd hh:mm:ss)	Elapsed Time (hours)	Pressure (psig)	Temp. (degF)
2012/03/25 08:25:32	145.25889	3892.321	241.671
2012/03/25 08:39:02	145.48389	3892.032	241.669
2012/03/25 08:52:32	145.70889	3891.836	241.699
2012/03/25 10:06:32	145.94222	3891.816	241.704
2012/03/25 10:20:02	146.16722	3891.636	241.736
2012/03/25 10:33:32	146.39222	3891.422	241.719
2012/03/25 10:47:02	146.61722	3891.260	241.725
2012/03/25 11:00:32	146.84222	3891.207	241.708
2012/03/25 11:14:02	147.06722	3891.089	241.688
2012/03/25 11:27:32	147.29222	3890.760	241.695
2012/03/25 11:41:02	147.51722	3890.712	241.707
2012/03/25 11:55:02	147.75056	3890.658	241.723
2012/03/25 12:08:32	147.97556	3890.404	241.735
2012/03/25 12:22:02	148.20056	3890.310	241.761
2012/03/25 12:35:32	148.42556	3890.163	241.783
2012/03/25 12:49:02	148.65056	3890.029	241.793
2012/03/25 13:02:32	148.87556	3889.837	241.802
2012/03/25 13:16:02	149.10056	3889.700	241.823
2012/03/25 13:30:02	149.33389	3889.576	241.830
2012/03/25 13:43:32	149.55889	3889.305	241.828
2012/03/25 13:57:02	149.78389	3889.220	241.822
2012/03/25 14:10:32	150.00889	3889.006	241.833
2012/03/25 14:24:02	150.23389	3888.980	241.838
2012/03/25 14:37:32	150.45889	3888.718	241.869
2012/03/25 14:51:02	150.68389	3888.669	241.882
2012/03/25 15:05:02	150.91722	3888.510	241.896
2012/03/25 15:18:32	151.14222	3888.324	241.902
2012/03/25 15:32:02	151.36722	3888.410	241.920
2012/03/25 15:45:32	151.59222	3888.217	241.932
2012/03/25 15:59:02	151.81722	3888.005	241.947
2012/03/25 16:12:32	152.04222	3888.001	241.952
2012/03/25 16:26:02	152.26722	3887.899	241.982
2012/03/25 16:40:02	152.50056	3887.618	241.984
2012/03/25 16:53:32	152.72556	3887.551	242.013
2012/03/25 17:07:02	152.95056	3887.378	242.015
2012/03/25 17:20:32	153.17556	3887.417	242.013
2012/03/25 17:34:02	153.40056	3887.424	242.033
2012/03/25 17:47:32	153.62556	3887.032	242.046
2012/03/25 18:01:02	153.85056	3886.964	242.063
2012/03/25 18:14:32	154.07556	3886.703	242.073
2012/03/25 18:28:32	154.30889	3886.609	242.073
2012/03/25 18:42:02	154.53389	3886.532	242.075
2012/03/25 18:55:32	154.75889	3886.425	242.094
2012/03/25 19:09:02	154.98389	3886.120	242.117
2012/03/25 19:22:32	155.20889	3886.244	242.112
2012/03/25 19:36:02	155.43389	3886.063	242.130
2012/03/25 19:49:32	155.65889	3885.939	242.141
2012/03/25 20:03:32	155.89222	3885.714	242.137
2012/03/25 20:17:02	156.11722	3885.599	242.146
2012/03/25 20:30:32	156.34222	3885.435	242.162
2012/03/25 20:44:02	156.56722	3885.442	242.162
2012/03/25 20:57:32	156.79222	3885.178	242.194
2012/03/25 21:11:02	157.01722	3885.383	242.189
2012/03/25 21:24:32	157.24222	3885.009	242.215
2012/03/25 21:38:32	157.47556	3884.837	242.209
2012/03/25 21:52:02	157.70056	3884.748	242.225
2012/03/25 22:05:32	157.92556	3884.638	242.210
2012/03/25 22:19:02	158.15056	3884.515	242.231
2012/03/25 22:32:32	158.37556	3884.240	242.243
2012/03/25 22:46:02	158.60056	3884.166	242.258
2012/03/25 22:59:32	158.82556	3883.938	242.253
2012/03/25 23:13:32	159.05889	3883.624	242.260
2012/03/25 23:27:02	159.28389	3883.739	242.295
2012/03/25 23:40:32	159.50889	3883.659	242.310
2012/03/25 23:54:02	159.73389	3883.653	242.317
2012/03/26 00:07:32	159.95889	3883.267	242.331
2012/03/26 00:21:02	160.18389	3883.121	242.359
2012/03/26 00:34:32	160.40889	3882.974	242.375
2012/03/26 00:48:32	160.64222	3882.824	242.381
2012/03/26 01:02:02	160.86722	3882.891	242.377
2012/03/26 01:15:32	161.09222	3882.675	242.403
2012/03/26 01:29:02	161.31722	3882.438	242.412
2012/03/26 01:42:32	161.54222	3882.480	242.406
2012/03/26 01:56:02	161.76722	3882.282	242.423
2012/03/26 02:09:32	161.99222	3882.052	242.418
2012/03/26 02:23:02	162.21722	3882.019	242.449
2012/03/26 02:37:02	162.45056	3881.917	242.467
2012/03/26 02:50:32	162.67556	3881.666	242.463
2012/03/26 03:04:02	162.90056	3881.440	242.477
2012/03/26 03:17:32	163.12556	3881.549	242.471
2012/03/26 03:31:02	163.35056	3881.447	242.470
2012/03/26 03:44:32	163.57556	3881.248	242.485
2012/03/26 03:58:02	163.80056	3881.111	242.486
2012/03/26 04:12:02	164.03389	3880.910	242.502
2012/03/26 04:25:32	164.25889	3880.966	242.516
2012/03/26 04:39:02	164.48389	3880.739	242.531
2012/03/26 04:52:32	164.70889	3880.716	242.548
2012/03/26 05:06:02	164.93389	3880.623	242.525
2012/03/26 05:19:32	165.15889	3880.311	242.543
2012/03/26 05:33:02	165.38389	3880.324	242.549
2012/03/26 05:47:02	165.61722	3880.115	242.568
2012/03/26 06:00:32	165.84222	3880.152	242.570
2012/03/26 06:14:02	166.06722	3879.899	242.576
2012/03/26 06:27:32	166.29222	3879.914	242.592
2012/03/26 06:41:02	166.51722	3879.744	242.601
2012/03/26 06:54:32	166.74222	3879.766	242.622
2012/03/26 07:08:02	166.96722	3879.483	242.626
2012/03/26 07:22:02	167.20056	3879.390	242.630
2012/03/26 07:35:32	167.42556	3883.035	243.908
2012/03/26 07:49:02	167.65056	3896.147	245.101
D = 9020 feet P = 3896.15 psig T = 245.1 degF			
2012/03/26 08:00:32	167.84222	3029.547	195.492
D = 7000 feet P = 3029.55 psig T = 195.43 degF			
2012/03/26 08:02:32	167.87556	2973.606	192.881
2012/03/26 08:08:02	167.96722	2168.082	150.883
D = 5000 feet P = 2168.08 psig T = 150.88 degF			
2012/03/26 08:16:02	168.10056	1295.191	111.886
2012/03/26 08:17:02	168.11722	1293.556	110.533
D = 3000 feet P = 1293.56 psig T = 110.53 degF			
2012/03/26 08:24:32	168.24222	854.583	89.285
D = 2000 feet P = 854.58 psig T = 89.29 degF			
2012/03/26 08:29:32	168.32556	415.767	75.962
2012/03/26 08:31:32	168.35889	414.374	74.566
D = 1000 feet P = 414.37 psig T = 74.57 degF			
2012/03/26 08:37:02	168.45056	1.769	62.454
D = 0 feet P = 1.77 psig T = 62.45 degF			
2012/03/26 08:43:02	168.55056	1.575	61.070

APPENDIX 2

RECORDED EXEMPTION NO. 1469-10-2 RECX12-xxxx

A PART OF W1/2 OF SECTION 10, T1N, R67W OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO.

AREA = 84.350 ACRES, MORE OR LESS.



CIVILARTS

Flatirons Surveying, Inc.
5717 Arapahoe Road
Boulder, CO 80303

Description of Lease Parcels

sheet 1 of 2

Parcel A

A parcel of land located in the Northwest Quarter of Section 10, Township 1 North, Range 67 West of the 6th P.M., County of Weld, State of Colorado, more particularly described as follows:

Basis of Bearings: Assumed South 00°00'00" West along the West line of Section 10 with all bearings shown hereon relative thereto.

COMMENCING at the West Quarter corner of said Section 10; thence South 00°00'00" West along the West line of said Section 10 a distance of 40.00 feet to a point on the North line of a 30 foot non-exclusive ingress and egress easement as shown on the "USE BY SPECIAL REVIEW" by Nelson Engineers, Project No. 317, dated November, 1994; thence North 89°46'45" East along the north line of said 30 foot non-exclusive ingress and egress easement a distance of 1869.85 feet to the POINT OF BEGINNING; thence continuing North 89°46'45" East a distance of 696.57 feet to a point 85.00 feet West of the East line of said Northwest Quarter of Section 10; thence North 00°06'27" West along a line parallel with and 85.00 West of said East line of the Northwest Quarter a distance of 663.11 feet; thence South 89°53'26" West along a line parallel with the South line of said Northwest Quarter a distance of 696.57 feet; thence South 00°06'27" East along a line parallel with said East line of the Northwest Quarter a distance of 664.46 feet to the POINT OF BEGINNING. Said parcel containing 462,370 square feet (10.61 acres) more or less. TOGETHER WITH:

Parcel B

A parcel of land located in the Northwest Quarter of Section 10, Township 1 North, Range 67 West of the 6th P.M., County of Weld, State of Colorado, more particularly described as follows:
COMMENCING at the West Quarter corner of said Section 10; thence South 00°00'00" West a distance of 40.00 feet along the West line of the Southwest Quarter of said Section 10 to the POINT OF BEGINNING; thence North 89°46'45" East a distance of 1,869.85 feet to the Southwest corner of the above described lease parcel; thence continuing North 89°46'45" East a distance of 696.57 feet along the South line of said lease parcel to the Southeast corner thereof; thence South 00°06'27" East a distance of 30.00 feet; thence South 89°46'45" West a distance of 2,566.48 feet to a point on the West line of the Southwest Quarter of said Section 10; thence North 00°00'00" East a distance of 30.00 feet to the POINT OF BEGINNING. Said parcel containing 76,994 square feet (1.77 acres) more or less.

Total square footage (Parcels A & B) 539,364 square feet (12.38 acres) more or less.

COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR JOHN BRUCE GUYTON 16406

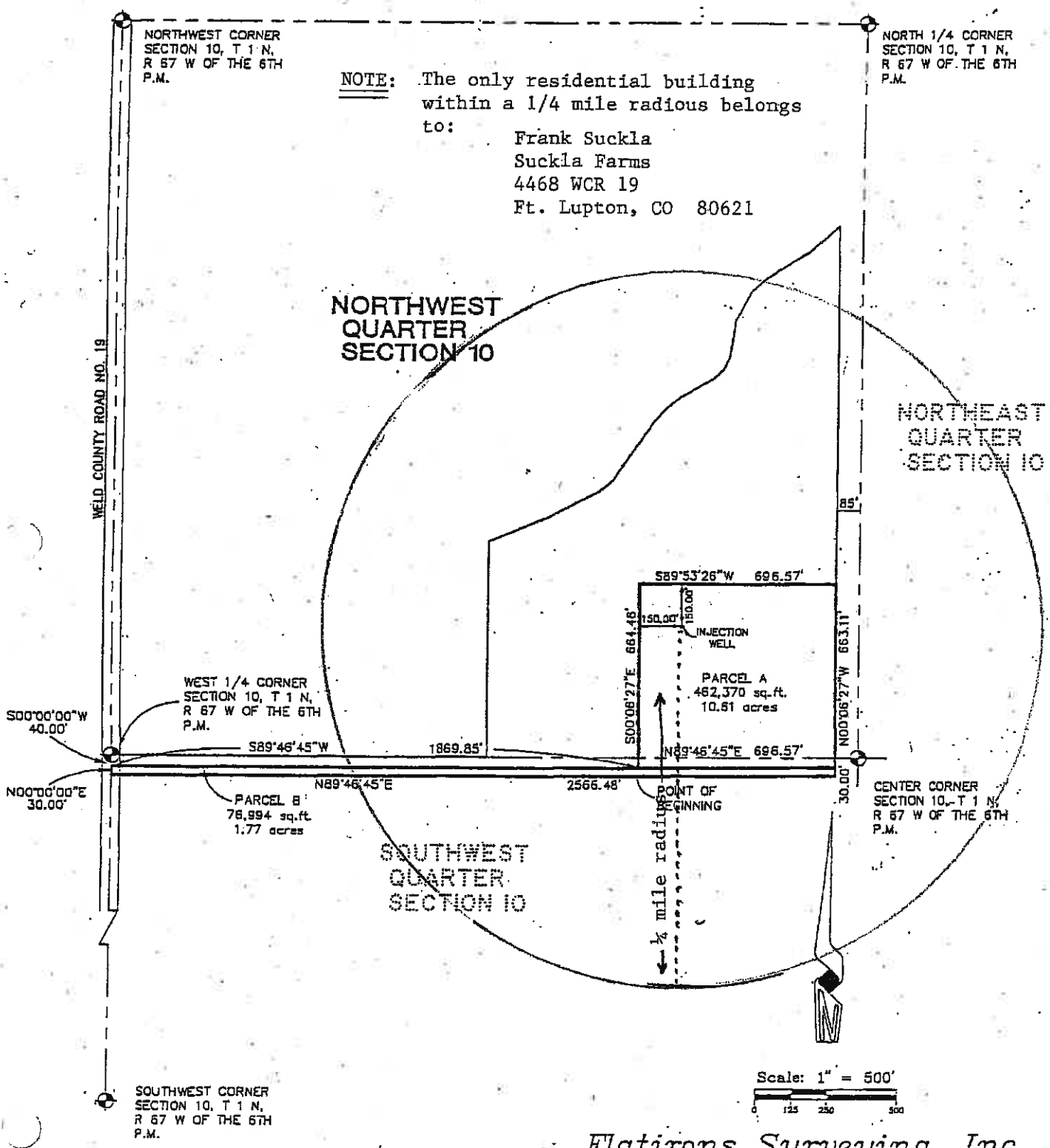
12-98

John B. Guyton Date
Colorado P.L.S. # 16406 Job No. 98-31,192
President, Flatirons Surveying, Inc.

Phone (303)443-7001 Fax (303)443-9830

LEASE PARCELS LOCATED IN THE NW 1/4, SEC. 10, T 1 N, R 67 W OF THE 6TH P.M., WELD COUNTY, COLORADO

SHEET 2 OF 2



Flatirons Surveying, Inc.
5717 ARAPAHOE RD., BOULDER, CO 80303
(303) 443-7001

FSI JOB NO. 98-31,192

COLORADO HISTORICAL SOCIETY
Office of Archaeology and Historic Preservation
1200 Broadway, Denver, Colorado 80203

Ms. Bonnie Mobley
KP Kauffman
1675 Broadway, Ste 2800
Denver, CO 80202

Novemeber 5, 2012

Re: No Project Title Given
File Search No. 17362

At your request, the Office of Archaeology and Historic Preservation has conducted a search of the Colorado Inventory of Cultural Resources located in the following areas:

PM	T	R	S
6th	1N	67W	10

0 sites and 1 survey were located in the designated area(s).

If information on sites in the project area was found, detailed information follows the summary. If no sites or districts were found, but surveys are known to have been conducted in the project area, survey information follows the summary. We do not have complete information on surveys conducted in Colorado, and our site files cannot be considered complete because most of the state has not been surveyed for cultural resources. There is the possibility that as yet unidentified cultural resources exist within the proposed impact area.

Therefore, in the event there is Federal or State involvement, we recommend that a professional survey be conducted to identify any cultural resources in the project area, which are eligible to be listed in the National Register of Historic Places. We look forward to consulting with you regarding the effect of the proposed project on any eligible cultural resource in accordance with the Advisory Council on Historic Preservation Procedures and the Preservation and Protection of Historic and Cultural Resources (36 CFR 800). Please provide this office with the results of the cultural resource survey for our review of professional adequacy and compliance with regulations.

If you have any questions, please contact the Office of Archaeology and Historic Preservation at (303) 866-3395 or 3392.

Thank you for your interest in Colorado's cultural heritage.

Richard Wilshusen
Deputy State Historic Preservation Officer for Archaeology
State Archaeologist

Kevin Black
Assistant State Archaeologist

*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included in documents for public distribution.

17362_sy

APPENDIX 3

FORMATION WATER

BJ TITAN SERVICES

BRIGHTON DISTRICT LAB
BRIGHTON, COLORADO

SUBJECT : WATER ANALYSIS

PLEASE REPLY: 690 BASE LINE CIRCLE
BRIGHTON, CO 80601

FORMATION: Lyons

COMPANY NAME : Wright Disposal LEASE Sickle Farms WELL NO: Inj Well #1

WELL DEPTH: : 9471 FEET COUNTY: Weld STATE: Colo

FIELD : Spindel BHST: 300 °F DATE : 7-17-89

TYPE OF WATER: Swab SAMPLING POINT:

CATIONS:	mg/l	ppm
Sodium, Na	NM	—
Calcium, Ca	684	656
Magnesium, Mg	684	656
Barium, Ba	NM	NM
Total Hardness	1368	1313

ANIONS:		
Chloride, Cl	23400	22457
Sulfate, SO_4	7800	7486
Carbonate, CO_3	0	0
Bicarbonate, HCO_3	2040	1958
Iron(total)	.8	.76

OTHER PROPERTIES:

PH : 8.05

Specific Gravity @ °F : 1.038 at 8

Corrected to 60°F 1.042

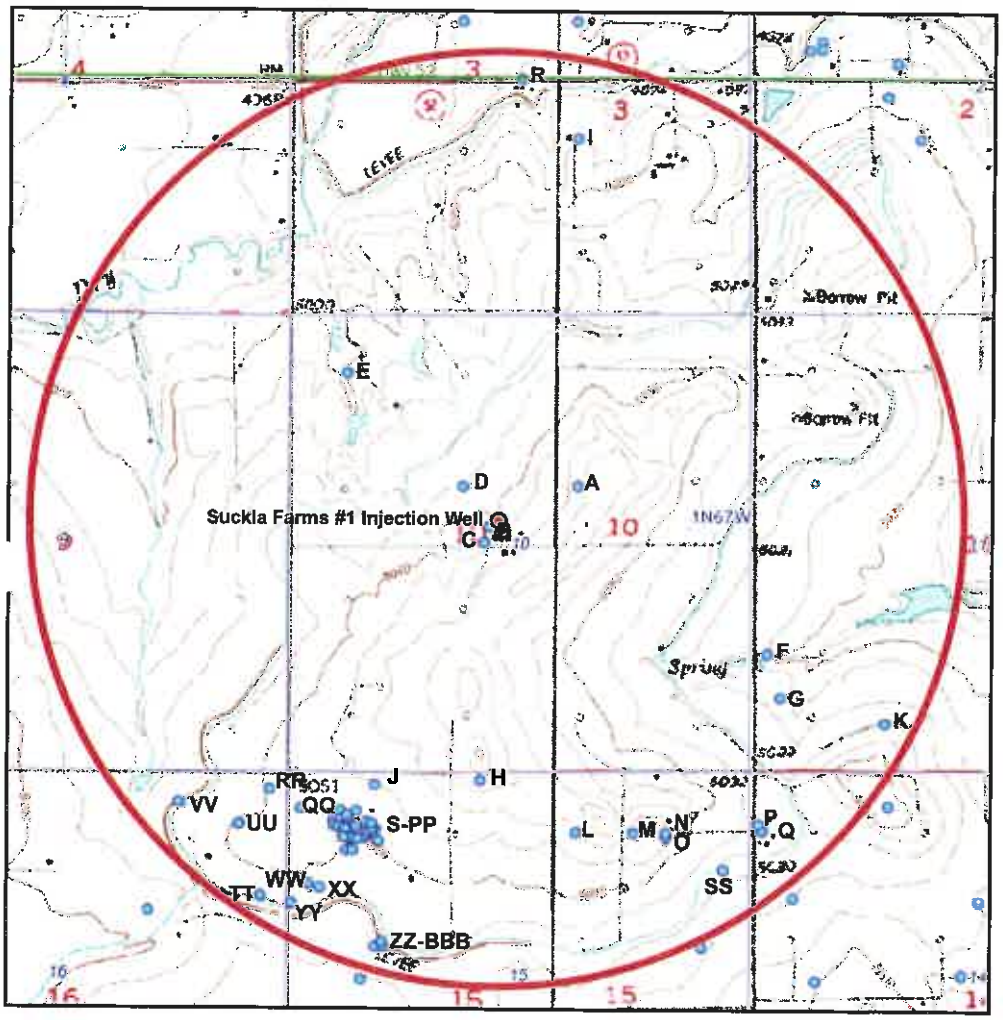
REMARKS & RECOMMENDATIONS:

LAB NO. : DATE : 7-17-89

ANALYZED BY : Raymond Lynch SIGNED: Raymond Lynch

DISTRIBUTION:

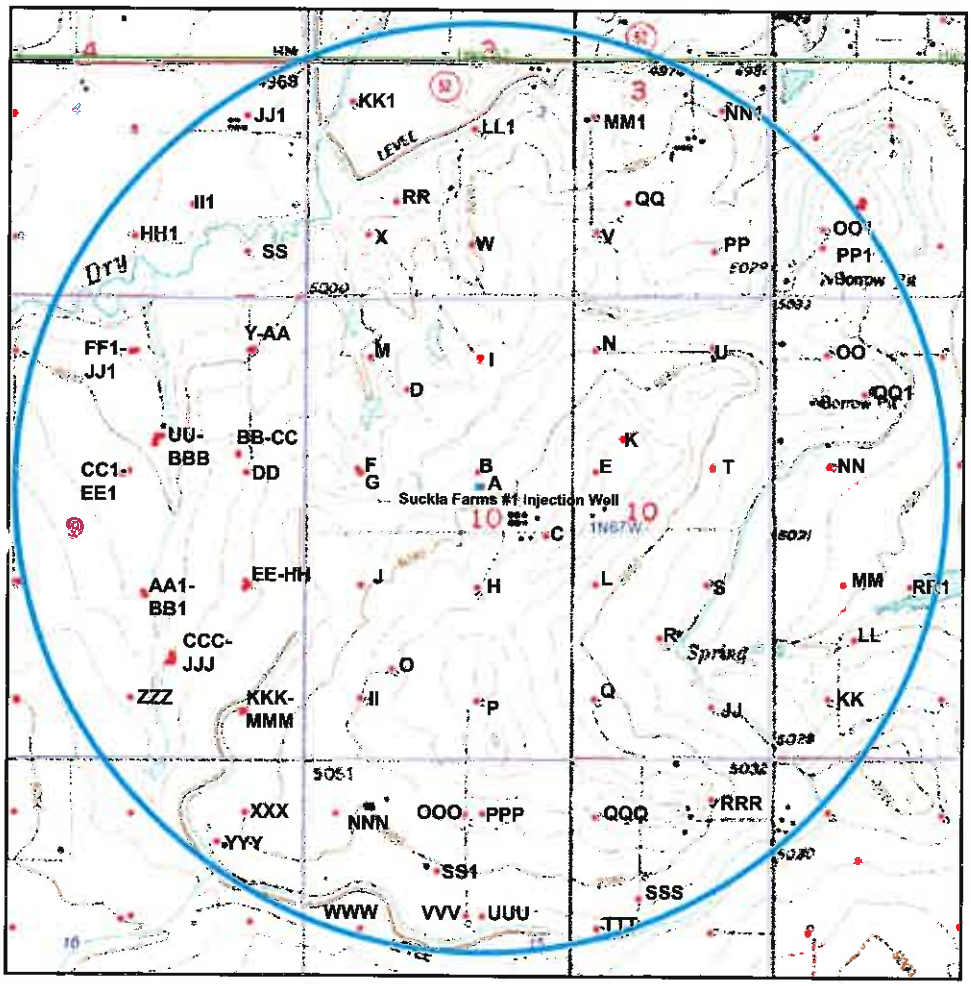
5500 Northwest Central Drive • Houston, Texas 77092 • 713-462-4239



1-Mile Impact Area

Scale 3.25" = 1 Miles

Suckla Farms #1 Injection Well
Wattenberg Disposal, LLC
Surrounding Waters Wells
1 Mile Imapct Area



1-Mile Impact Area

Scale 3.25" = 1 Miles

Suckla Farms #1 Injection Well
Wattenberg Disposal, LLC
Surrounding Oil & Gas Wells
1 Mile Imapct Area

COGCC Resources Premitted Oil & Gas Well (● A)

ID	API	WELL NAME	Location	OPERATOR	STATUS	TOTAL DEPTH
A	05-123-14291	Suckla Farms Inj Well (EPA) #1	T1N 10SEC R67W SENW	K. P. Kauffman Company Inc.	IJ	9571
B	05-123-08069	Suckla Brown Unit #9	T1N 10SEC R67W SENW	Amoco Production CO	PA	4919
C	05-123-09485	Suckla-Brown Unit #17	T1N 10SEC R67W NWSE	K. P. Kauffman Company Inc.	PR	5074
D	05-123-09838	Suckla Farms Inc Unit F #2	T1N 10SEC R67W NWNW	Kerr-Mcgree Oil & Gas Onshore LP	PR	8259
E	05-123-07481	Suckla Brown Unit #4	T1N 10SEC R67W SWNE	Amoco Production CO	PA	4945
F	05-123-07472	Suckla-Brown Unit #3	T1N 10SEC R67W SWNW	K. P. Kauffman Company Inc.	SI	4890
G	05-123-07466	Robert J Brown #1	T1N 10SEC R67W SWNW	Amoco Production CO	DA	4895
H	05-123-07426	Suckla Brown Unit #6	T1N 10SEC R67W NESW	Amoco Production CO	PA	4910
I	05-123-07463	Suckla-Brown Unit #2	T1N 10SEC R67W NENW	Basin Exploration Inc.	PA	4850
J	05-123-08875	Suckla-Brown Unit #14	T1N 10SEC R67W NWSW	Amoco Production CO	PA	4929
K	05-123-07842	Suckla Farms INC F Unit #1	T1N 10SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8306
L	05-123-08070	Suckla Brown Unit #10	T1N 10SEC R67W NWSE	Amoco Production CO	PA	4989
M	05-123-08872	Suckla Brown Unit #11	T1N 10SEC R67W NWNW	Basin Exploration Inc.	PA	4850
N	05-123-08873	Suckla-Brown Unit #12	T1N 10SEC R67W NWNE	K. P. Kauffman Company Inc.	PR	4863
O	05-123-07214	Frank J Suckla #1	T1N 10SEC R67W SWSW	Kerr-Mcgree Oil & Gas Onshore LP	PR	8259
P	05-123-08879	Suckla-Brown Unit #15	T1N 10SEC R67W SESW	K. P. Kauffman Company Inc.	PA	4965
Q	05-123-07484	Suckla-Brown Unit #8	T1N 10SEC R67W SWSE	K. P. Kauffman Company Inc.	PR	4869
R	05-123-09968	Frank J Suckla #2	T1N 10SEC R67W CSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8260
S	05-123-07482	Suckla-Brown Unit #5	T1N 10SEC R67W NESE	K. P. Kauffman Company Inc.	PA	4870
T	05-123-08874	Suckla Brown Unit #13	T1N 10SEC R67W SENE	K. P. Kauffman Company Inc.	PR	4916
U	05-123-07480	Suckla-Brown Unit #1	T1N 10SEC R67W NENE	K. P. Kauffman Company Inc.	PR	4890
V	05-123-07526	UPRR 42 Pan Am E #3	T1N 3SEC R67W SWSE	K. P. Kauffman Company Inc.	PR	4870
W	05-123-08868	UPRR 42 Pan Am E #5	T1N 3SEC R67W SESW	K. P. Kauffman Company Inc.	PR	4866
X	05-123-07496	UPRR 42 Pan Am E #1	T1N 3SEC R67W SWSW	K. P. Kauffman Company Inc.	PA	4844
Y	05-123-30248	NRC #9	T1N 9SEC R67W NENE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
Z	05-123-30249	NRC #41-9	T1N 9SEC R67W NENE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
AA	05-123-30213	NRC #8-9	T1N 9SEC R67W SENE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
[illegible]	05-123-07477	Rocky Mountain Fuel Co B #1	T1N 9SEC R67W NENE	K. P. Kauffman Company Inc.	PR	4862
[illegible]	05-123-08841	Rocky Mountain Fuel Co B #4	T1N 9SEC R67W SENE	K. P. Kauffman Company Inc.	PA	4884
DD	05-123-32872	NRC #R9-9-15H	T1N 9SEC R67W NESE	K. P. Kauffman Company Inc.	PR	6616
EE	05-123-07479	Rocky Mountain Fuel Co C #1	T1N 9SEC R67W NESE	K. P. Kauffman Company Inc.	PR	4875
FF	05-123-30257	NRC #9-9	T1N 9SEC R67W NESE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
GG	05-123-30258	NRC #39-9	T1N 9SEC R67W NESE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
HH	05-123-07485	Suckla-Brown Unit NAV #7	T1N 10SEC R67W SWSW	K. P. Kauffman Company Inc.	PR	4860
II	05-123-08877	Suckla-Brown Unit #16	T1N 10SEC R67W SESE	K. P. Kauffman Company Inc.	PR	4930
JJ	05-123-07572	UPRR 42 Pan AM F #3	T1N 11SEC R67W SWSW	K. P. Kauffman Company Inc.	PR	4908
KK	05-123-30215	NRC #40-9	T1N 9SEC R67W SENE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
LL	05-123-08802	UPRR 42 Pan Am AD #1	T1N 11SEC R67W SWSW	Kerr-Mcgree Oil & Gas Onshore LP	PR	8215
MM	05-123-08893	UPRR 42 Pan Am F #6	T1N 11SEC R67W NWSW	Amoco Production CO	PA	4889
NN	05-123-07511	UPRR 42 Pan Am F #1	T1N 11SEC R67W SWNW	K. P. Kauffman Company Inc.	PR	4905
OO	05-123-08821	R G Burge 11-11 (1-67) #2	T1N 11SEC R67W NWNW	Trinity Energy Corporation	PA	4920
PP	05-123-08996	UPRR 42 Pan Am E #4	T1N 3SEC R67W SESE	K. P. Kauffman Company Inc.	PR	4910
QQ	05-123-10039	Jack Berger GU "C" #2	T1N 3SEC R67W SWSE	Noble Energy INC	PR	8250
RR	05-123-07737	UPRR 42 Pan AM Unit J #1	T1N 3SEC R67W SWSW	Kerr-Mcgree Oil & Gas Onshore LP	PR	8224
SS	05-123-08790	Vera L McCannon #3	T1N 4SEC R67W SESE	K. P. Kauffman Company Inc.	PR	4825
TT	05-123-07841	Rocky Mountain Fuel Co G Unit #1	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8231
UU	05-123-31261	NRC #1-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8700
VV	05-123-31278	NRC #2-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8589
WW	05-123-31266	Bernhardt #4-1	T1N 1SEC R67W NENW	Kerr-Mcgree Oil & Gas Onshore LP	PR	7675
XX	05-123-31215	NRC #41-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8544
YY	05-123-31218	NRC #40-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8600
ZZ	05-123-31273	NRC #8-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8655

ID	API	WELL NAME	Location	OPERATOR	STATUS	TOTAL DEPTH
AAA	05-123-31209	NRC #24-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8590
BBB	05-123-31322	NRC #10-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8607
CCC	05-123-31321	NRC #15-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	7901
DDD	05-123-31371	NRC #9-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8635
EEE	05-123-31256	NRC #39-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8475
FFF	05-123-31343	NRC #16-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8565
GGG	05-123-31291	NRC #38-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8621
HHH	05-123-31274	NRC #37-9	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8398
III	05-123-09958	Rocky Mountain Fuel Co F #3	T1N 9SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8280
JJJ	05-123-09983	Rocky Mountain Fuel Co C #5	T1N 9SEC R67W SESE	Kerr-Mcgree Oil & Gas Onshore LP	PR	4899
KKK	05-123-30209	NRC #16-9	T1N 9SEC R67W SESE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
LLL	05-123-30211	NRC #37-9	T1N 9SEC R67W SESE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
MMM	05-123-18733	Ryan Red VV #15-4	T1N 15SEC R67W NWNW	Petiana Oil & Gas Corporation	PA	7977
NNN	05-123-08592	UPRR 42 Pan Am AG #1	T1N 16SEC R67W NENW	K. P. Kauffman Company Inc.	PR	4910
OOO	05-123-17214	Badding Red #VV 15-3	T1N 16SEC R67W NENW	Noble Energy Inc	PR	7876
PPP	05-123-08766	M. C. Gulles 31-15 (1-67) #1	T1N 15SEC R67W NWNE	Arlian, Inc	PA	4938
QQQ	05-123-07926	Badding #1-15 (1-67) #1	T1N 15SEC R67W NENE	Kerr-Mcgree Oil & Gas Onshore LP	PR	4920
RRR	05-123-08153	UPRR 42 Pan Am Unit M #1	T1N 15SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8242
SSS	05-123-09083	UPRR 42 Pan Am AG #2	T1N 15SEC R67W SWNE	K. P. Kauffman Company Inc.	PR	4925
TTT	05-123-17216	Badding Red VV #15-6	T1N 15SEC R67W SENW	Noble Energy Inc	PR	7844
UUU	05-123-13578	UPRR 42 Pan Am AG #3	T1N 15SEC R67W SENW	K. P. Kauffman Company Inc.	PR	4943
VVV	05-123-17215	Badding Red VV #15-5	T1N 15SEC R67W SWNW	Noble Energy Inc	PR	7848
WWW	05-123-16896	Scheidt State #VV 16-01	T1N 16SEC R67W NENE	Noble Energy Inc	PR	7865
XXX	05-123-07347	Scheidt-State #1	T1N 16SEC R67W NENE	Encana Oil & Gas (USA) Inc	PR	8225
YYY	05-123-19990	Rocky Mountain Fuel Co #16-9	T1N 9SEC R67W SWSE	K. P. Kauffman Company Inc.	PR	4901
ZZZ	05-123-30208	NRC #10-9	T1N 9SEC R67W NWSE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
AA1	05-123-15949	Rocky Mountain Fuel #33-9	T1N 9SEC R67W NWSE	K. P. Kauffman Company Inc.	PR	4901
BB1	05-123-07478	Rocky Mountain Fuel Co B #2	T1N 9SEC R67W SWNE	Amoco Production Co	PA	4820
CC1	05-123-30212	NRC #27-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
DD1	05-123-30214	NRC #7-9	T1N 9SEC R67W SWNE	Kerr-Mcgree Oil & Gas Onshore LP	AI	NA
EE1	05-123-08840	Rocky Mountain Fuel B #3	T1N 9SEC R67W NWNE	K. P. Kauffman Company Inc.	PR	4855
FF1	05-123-07478	McCannon Unit #1	T1N 4SEC R67W SWSE	K. P. Kauffman Company Inc.	PA	4819
GG1	05-123-30250	NRC #2-9	T1N 9SEC R67W NWNE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
HH1	05-123-07465	Vera L McCannon #1	T1N 4SEC R67W NESE	K. P. Kauffman Company Inc.	PR	4783
II1	05-123-30251	NRC #21-9	T1N 9SEC R67W NWNE	Kerr-Mcgree Oil & Gas Onshore LP	AL	NA
JJ1	05-123-08789	UPRR 42 Pan Am E #6	T1N 3SEC R67W NWSW	K. P. Kauffman Company Inc.	PR	4805
KK1	05-123-07527	UPRR 42 Pan Am E #2	T1N 3SEC R67W NESW	K. P. Kauffman Company Inc.	PR	4810
LL1	05-123-10040	Willard Hein Gas Unit #2	T1N 4SEC R67W SWSE	Kerr-Mcgree Oil & Gas Onshore LP	PR	8220
MM1	05-123-08820	G G Hollister 33-3 #1	T1N 3SEC R67W NWSE	Noble Energy Inc	PA	4890
NN1	05-123-07501	Alex H Miller #1-43-3	T1N 3SEC R67W NESE	Anadarko E&P Company	PA	4840
OO1	05-123-07487	Camenisch #1	T1N 2SEC R67W SWSW	Foundation Energy Management LLC	PR	4860
PP1	05-123-10525	Shirley #1	T1N 2SEC R67W SWSW	PDC Energy Inc	PR	7800
QQ1	05-123-10046	UPRR 42 Pan Am AD #2	T1N 11SEC R67W NWNW	Kerr-Mcgree Oil & Gas Onshore LP	PR	8260
RR1	05-123-07543	UPRR 42 Pan Am F #2	T1N 11SEC R67W NESW	Amoco Production Co	PA	4875
SS1	05-123-10822	Lee-USX VV #15-3	T1N 16SEC R67W E2NW	Noble Energy Inc	PR	8300

52 wells + 45 wells = 97 wells

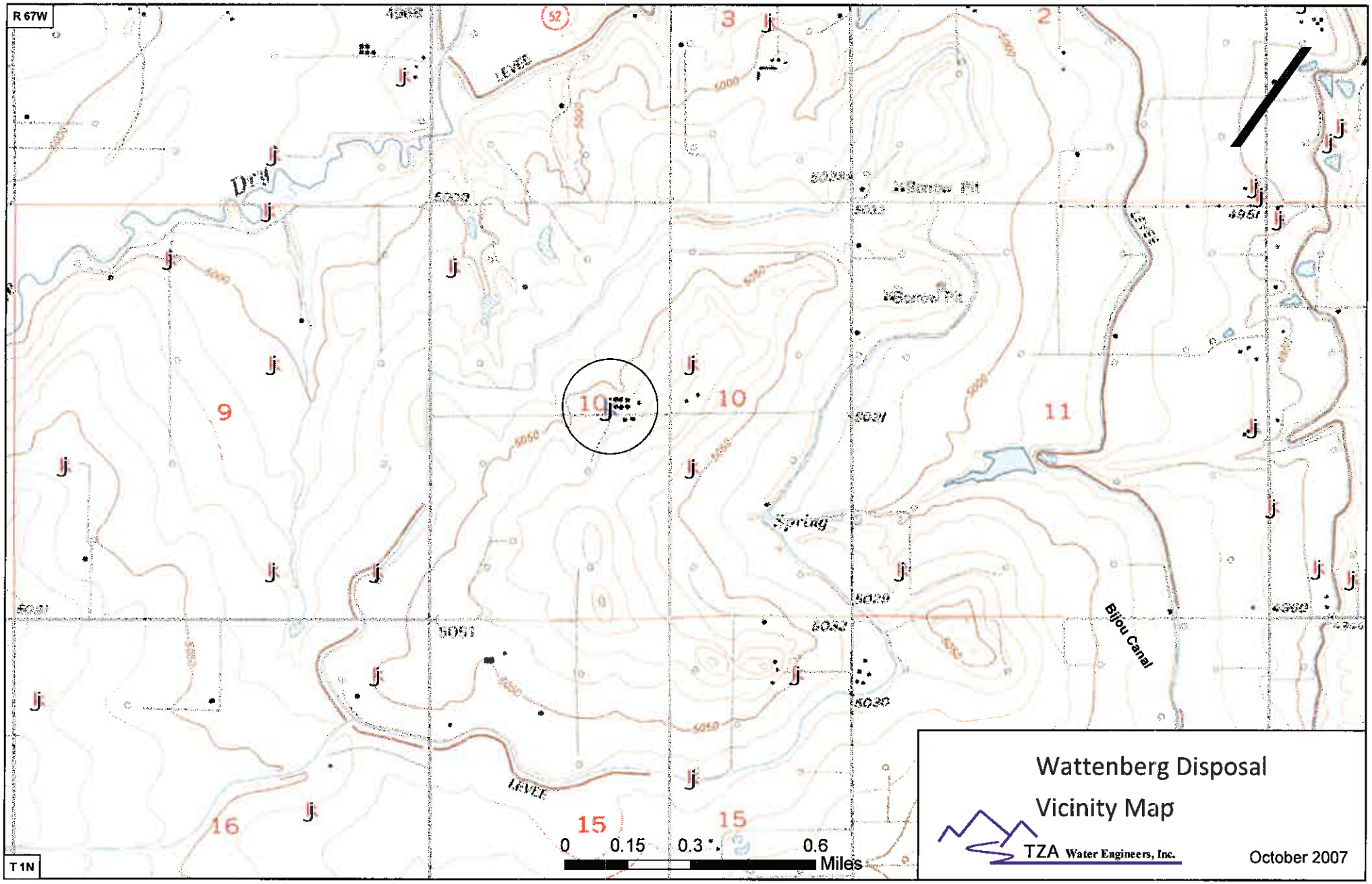
Well Status Key

IJ	Injection Well
PA	Plugged & Abandoned
PR	Production Well
SI	Shut-In Well
DA	Dry & Abandoned
AL	Abandoned Location

Suckla Farms #1 Injection Well
Wattenberg Disposal, LLC
Surrounding Oil & Gas Wells
1 Mile Imapct Area

IZ = 9274' – 9288'
CZ = 9069' – 9274'

range of wells, total depths, 9810' – 8700'
~~except, deepest 9571'~~, TOC = Suckla farms wells
Entrada formation which lies above
injection zone + CZ



Wattenberg Disposal
Vicinity Map

TZA Water Engineers, Inc.

October 2007

Colorado Division Of Water Resources Premitted Water Well (●A)

ID	PERMIT NUMBER	OWNER	LEGAL DESCRIPTION	USE	FORMATION	BOTTOM OF CASING
A	39799-MH	K. P. Kauffman Company Inc.	T1N 10SEC R67W SWNE	Monitoring Well	AU	N/A
B	48618-MH	K. P. Kauffman Company	T1N 10SEC R67W SESW	Monitoring Well	AU	24
C	66819-F	Kauffman Land & Development LLC	T1N 10SEC R67W SENW	Industrial Commercial	Laramie Fox Hill	788
D	47236-MH	K. P. Kauffman Company	T1N 10SEC R67W SENW	Monitoring Well	AU	25
E	45567	Robert J Brown	T1N 10SEC R67W NWNW	Domestic Stock	AU	NB
F	219018	Jon & Kerry Most	T1N 11SEC R67W NWSW	Domestic	Laramie Fox Hills	800
G	218758	Richard J Sharon M Giroux	T1N 11SEC R67W SESW	Domestic	Laramie Fox Hills	800
H	213568	May Lee	T1N 15SEC R67W NENW	Domestic	Laramie Fox Hills	753
I	43055	Carrie Hollister	T1N 3SEC R67W NWSE	Domestic	Laramie Fox Hills	660
J	165107	Panhandle Eastern Pipeline CO	T1N 15SEC R67W NWNW	Monitoring Well	AU	20
K	214864	Harold & Linda JR Amerin	T1N 11SEC R67W SESW	Domestic	Laramie Fox Hills	815
L	283547	Stan I & Kathy R Buckmeier	T1N 15SEC R67W NENE	Domestic	Laramie Fox Hills	NB
M	216811	Stan I & Kathy R Buckmeier	T1N 15SEC R67W NENE	Domestic	AU	NB
N	216627	Stan I & Kathy R Buckmeier	T1N 15SEC R67W NENE	Domestic Stock	AU	P&A
O	216627--A	Stan I & Kathy R Buckmeier	T1N 15SEC R67W NENE	Domestic	Laramie Fox Hills	840
P	84225	Jimmie M Cavabaugh	T1N 14SEC R67W NWNW	Domestic	Laramie Fox Hills	695
Q	158350	Wendy A Dyer	T1N 14SEC 67W NWNW	Domestic	Laramie Fox Hills	700
R	335-WCB	August Gittlein	T1N 3SEC R67W NWNE	Stock	AU	420
S	272441	Kerr-Mcgee Gathering LLC	T1N 15SEC R67W NWNW	Monitoring Well	Quaternary Alluvium	15
T	272442	Kerr-Mcgee Gathering LLC	T1N 15SEC R67W NWNW	Monitoring Well	Quaternary Alluvium	18
U	42601-MH	Kerr Mcgee	T1N 15SEC R67W NWNW	Monitoring Well	AU	N/A
V	262157	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	N/A
W	262158	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	N/A
X	262159	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	12
Y	262160	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
Z	262161	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	16
AA	262162	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	16
BB	262163	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
CC	262164	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	10
DD	262166	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
EE	262168	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
FF	262169	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
GG	262170	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
HH	262171	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
II	262173	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	18
JJ	262182	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	15
KK	262183	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	11
LL	262186	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	20
MM	262186	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	20
NN	262188	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	20
OO	262190	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	18
PP	262191	Kerr Mcgee Rocky Mountain Corp	T1N 15SEC R67W NWNW	Monitoring Well	AU	20
QQ	165109	Panhandle Eastern Pipeline Co	T1N 15SEC R67W NWNW	Monitoring Well	AU	21
RR	185114	Anita L Whisenhunt	T1N 15SEC R67W NWNW	Domestic	Laramie Fox Hills	680
SS	231919	Dennis W & Nancy J Heagney	T1N 15SEC R67W NWNW	Domestic	Laramie Fox Hills	N/A
TT	212870	Gregory K & Angela J Reider	T1N 16SEC R67W SENE	Domestic Stock	Laramie Fox Hills	700
UU	180523	Anita Whisenhunt	T1N 16SEC R67W NENE	Domestic	Laramie Fox Hills	720
VV	214568	Lynn & Jolene Johns	T1N 16SEC R67W NENE	Domestic Stock	AU	680
WW	285693	Anadarko	T1N 15SEC R67W NWNW	Monitoring Well	Quaternary Alluvium	23
XX	285692	Anadarko	T1N 15SEC R67W SWNW	Monitoring Well	Quaternary Alluvium	23
YY	285691	Anadarko	T1N 15SEC R67W SWNW	Monitoring Well	Quaternary Alluvium	19
ZZ	214711	Panhandle Eastern Life Company	T1N 15SEC R67W NWNW	Monitoring Well	AU	28
AAA	214712	Panhandle Eastern Life Company	T1N 15SEC R67W NWNW	Monitoring Well	AU	24
BBB	214713	Panhandle Eastern Life Company	T1N 15SEC R67W NWNW	Monitoring Well	AU	28

Bottom of Casing Range = 10' – 788'
54 wells

Suckla Farms #1 Injection Well
Wattenberg Disposal, LLC
Surrounding Waters Wells
1 Mile Imapct Area

Key

N/A	Not Available
AU	All Unnamed
NB	Not Built

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Colorado's Well Permit Search

Permit Issued: Completion Status Unknown

Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	0049627	**Division:**	1
Permit #:	49627-MH -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	ANADARKO	C/O AECOM 1601 PROSPECT PARKWAY	FT COLLINS, CO 80525-

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
NW	NW	15	1.0N	67.0W	Sixth	

Northing (UTM y): 4434018.5 **Easting (UTM x):** 509896.9
Location Accuracy: Spotted from quarters

Physical Address **Subdivision Name**

City/State/Zip **Filing** **Block** **Lot**

Parcel ID: **Acres in Tract:**

[-] Permit Details

Date Issued: 01/18/2011 **Date Expires:** 04/14/2011

Use(s): OTHER **Aquifer (s):** QUATERNARY ALLUVIUM
Special Use: MONITORING WELL

Area which may be irrigated:
Maximum annual volume of appropriation:

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description

Comments: Four (4) holes to be constructed

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Permit Issued	01/18/2011
Application Received	01/14/2011

[-] Imaged Documents

Document Name	Date Imaged	Annotated
Monitoring Hole Notice	01/26/2011	No

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Colorado's Well Permit Search

Permit Issued: Completion Status Unknown Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	9064449	**Division:**	1
Permit #:	45567- -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	BROWN ROBERT J	3435 E ILIFF AVE	DENVER, CO 80202

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
NW	NW	10	1.0N	67.0W	Sixth	

Northing (UTM y): 4435612.3 **Easting (UTM x):** 509895.1
Location Accuracy: Spotted from quarters

Physical Address **Subdivision Name**

City/State/Zip **Filing Block Lot**

Parcel ID: **Acres in Tract:**

[-] Permit Details

Date Issued: **Date Expires:**

Use(s): DOMESTIC STOCK **Aquifer (s):** ALL UNNAMED AQUIFERS

Special Use:

Area which may be irrigated:
Maximum annual volume of appropriation: 1

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description

Comments:

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

[-] Imaged Documents

Document Name	Date Imaged	Annotated
Original File	12/03/2007	No

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Colorado's Well Permit Search

Permit Issued: Completion Status Unknown Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	0315844C	**Division:**	1
Permit #:	90356-VE -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	DYER STEVE	15871 DUQUESNE CIR	BRIGHTON, CO 80601

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines	
NW	NW	14	1.0N	67.0W	Sixth	673 N	145 W

Northing (UTM y): 4434020.2 **Easting (UTM x):** 511355.8
Location Accuracy: Spotted from section lines

Physical Address **Subdivision Name**

City/State/Zip **Filing** **Block** **Lot**

Parcel ID: **Acres in Tract:**

[-] Permit Details

Date Issued: 07/25/1990 **Date Expires:**

Use(s): DOMESTIC **Aquifer (s):** ALL UNNAMED AQUIFERS
Special Use:

Area which may be irrigated:
Maximum annual volume of appropriation:

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description
	158350- -A	0315848	

Comments:

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

	Lic #	Name	Address	Phone Number
Driller	827	JOHN, LLOYD	PO BOX 639 HENDERSON, CO 80640	303-655-1759

[-] Application/Permit History

Application Received	07/25/1990
Permit Issued	07/25/1990

[-] Imaged Documents

Document Name **Date Imaged** **Annotated**

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Colorado's Well Permit Search

Permit Issued: Completion Status Unknown

Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	0039799	**Division:**	1
Permit #:	39799-MH -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	K P KAUFFMAN COMPANY INC	C/O NATIONWIDE ENVIRONMENTAL 710 KIPLING ST STE 303	DENVER, CO 80215-

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
SW	NE	10	1.0N	67.0W	Sixth	

Northing (UTM y): 4435220.2 **Easting (UTM x):** 510702.3

Location Accuracy: Spotted from quarters

Physical Address **Subdivision Name**

City/State/Zip **Filing** **Block** **Lot**

Parcel ID: **Acres in Tract:**

[-] Permit Details

Date Issued: 07/02/2001 **Date Expires:** 10/02/2001

Use(s): OTHER **Aquifer (s):** ALL UNNAMED AQUIFERS

Special Use: MONITORING WELL

Area which may be irrigated:

Maximum annual volume of appropriation:

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description

Comments:

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**

Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Application Received	07/02/2001
Permit Issued	07/02/2001

[-] Imaged Documents

Document Name	Date Imaged	Annotated
Original File	11/29/2007	No

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Colorado's Well Permit Search

Permit Issued: Completion Status Unknown Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	0047236A	**Division:**	1
Permit #:	47236-MH -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	K P KAUFFMAN COMPANY	C/O APEX CONSULTING SERVICES PO BOX 369	LOUISVILLE, CO 80027-0369

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
SE	NW	10	1.0N	67.0W	Sixth	

Northing (UTM y): 4435217.5 **Easting (UTM x):** 510298.8
Location Accuracy: Spotted from quarters

Physical Address **Subdivision Name**

City/State/Zip **Filing Block Lot**

Parcel ID: **Acres in Tract:**

[-] Permit Details

Date Issued: 07/25/2007 **Date Expires:** 10/23/2007

Use(s): OTHER
Special Use: MONITORING WELL
Aquifer (s): ALL UNNAMED AQUIFERS

Area which may be irrigated:
Maximum annual volume of appropriation:

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description

Comments: Three (3) holes to be constructed

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Application Received	07/25/2007
Permit Issued	07/25/2007

[-] Imaged Documents

Document Name	Date Imaged	Annotated
Monitoring Hole Notice	11/27/2007	No

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Colorado's Well Permit Search

Permit Issued: Completion Status Unknown Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	0049186	**Division:**	1
Permit #:	49186-MH -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	KERR-MCGEE GATHERING LLC	C/O AECOM INC 1601 PROSPECT PARKWAY	FORT COLLINS, CO 80526-

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines
NW	NW	15	1.0N	67.0W	Sixth	

Northing (UTM y): 4434018.5 **Easting (UTM x):** 509896.9
Location Accuracy: Spotted from quarters

Physical Address **Subdivision Name**

City/State/Zip **Filing** **Block** **Lot**

Parcel ID: **Acres in Tract:**

[-] Permit Details

Date Issued: 06/02/2010 **Date Expires:** 08/30/2010

Use(s): OTHER **Aquifer (s):** QUATERNARY ALLUVIUM
Special Use: MONITORING WELL

Area which may be irrigated:
Maximum annual volume of appropriation:

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description

Comments: One (1) hole to be constructed

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Permit Issued	06/02/2010
Application Received	06/01/2010

[-] Imaged Documents

Document Name	Date Imaged	Annotated
Monitoring Hole Notice	06/17/2010	No

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Colorado's Well Permit Search

Permit Issued; Completion Status Unknown Help Last Refresh: 8/7/2012 12:00:56 AM

Receipt:	0442285B	**Division:**	1
Permit #:	216811- -	**Water District:**	2
Well Name / #:		**County:**	WELD
Designated Basin:		**Management District:**	
Case Number:			
WDID:			

[-] Applicant/Owners History

Date Range	Applicant/Owner Name	Address	City/State/Zip
Unknown - Present	BUCKMEIER STAN J & KATHY R	3871 WCR 21	FT LUPTON, CO 80621-8436

[-] Location Information

Approved Well Location:

Q40	Q160	Section	Township	Range	PM	Footage from Section Lines	
NW	NE	15	1.0N	67.0W	Sixth	700 N	1330 E

Northing (UTM y): 4434009.7 **Easting (UTM x):** 510906.3
Location Accuracy: Spotted from section lines

Physical Address **Subdivision Name**

City/State/Zip **Filing** **Block** **Lot**

Parcel ID: **Acres in Tract:** 40

[-] Permit Details

Date Issued: 04/09/1999 **Date Expires:** 04/09/2001

Use(s): DOMESTIC **Aquifer (s):** ALL UNNAMED AQUIFERS
Special Use: ISSUED UNDER PRESUMPTION 3b-IIA

Area which may be irrigated:
Maximum annual volume of appropriation:

Statute:

Permit Requirements:	Totalizing Flow Meter	Geophysical Log	Abandonment Report
	No	No	No

Cross Reference Permit(s):	Permit Number	Receipt	Description

Comments:

[-] Construction/Usage Details

Well Construction Date: **Pump Installation Date:**
Well Plugged: **1st Beneficial Use:**

Elevation	Depth	Perforated Casing (Top)	Perforated Casing (Bottom)	Static Water Level	Pump Rate

[-] Application/Permit History

Permit Issued	04/09/1999
Application Received	03/05/1999

[-] Imaged Documents

Document Name	Date Imaged	Annotated
Original File	12/08/2007	No

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APPENDIX 4

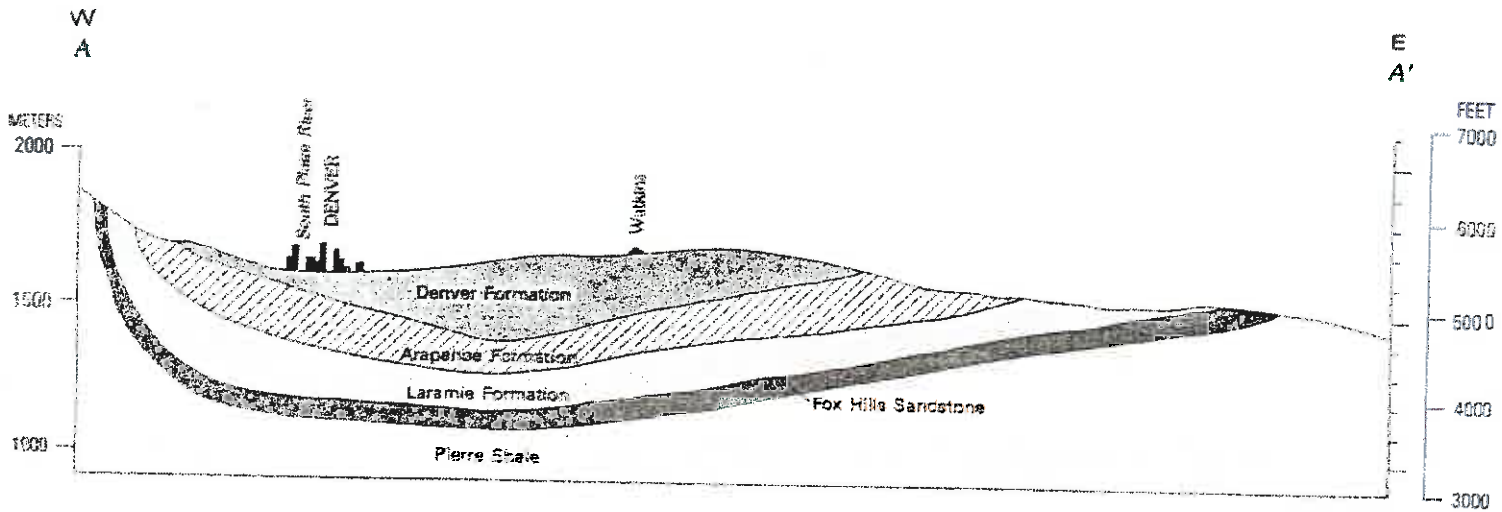


FIGURE 2.—GENERALIZED GEOLOGIC SECTIONS THROUGH THE DENVER BASIN

Arapahoe — Base = 185'
Lara/Fox Hills
Top — 590'
Base — 890'
No Denver FM
No Dawson Arkose
They run into an alluvial

WELD CNTY
Sect. 10 - T1N - R67W
NW/4 (?)
500' FSL 202' FWL
5146' GL

NORTHEASTERN
Denver Basin

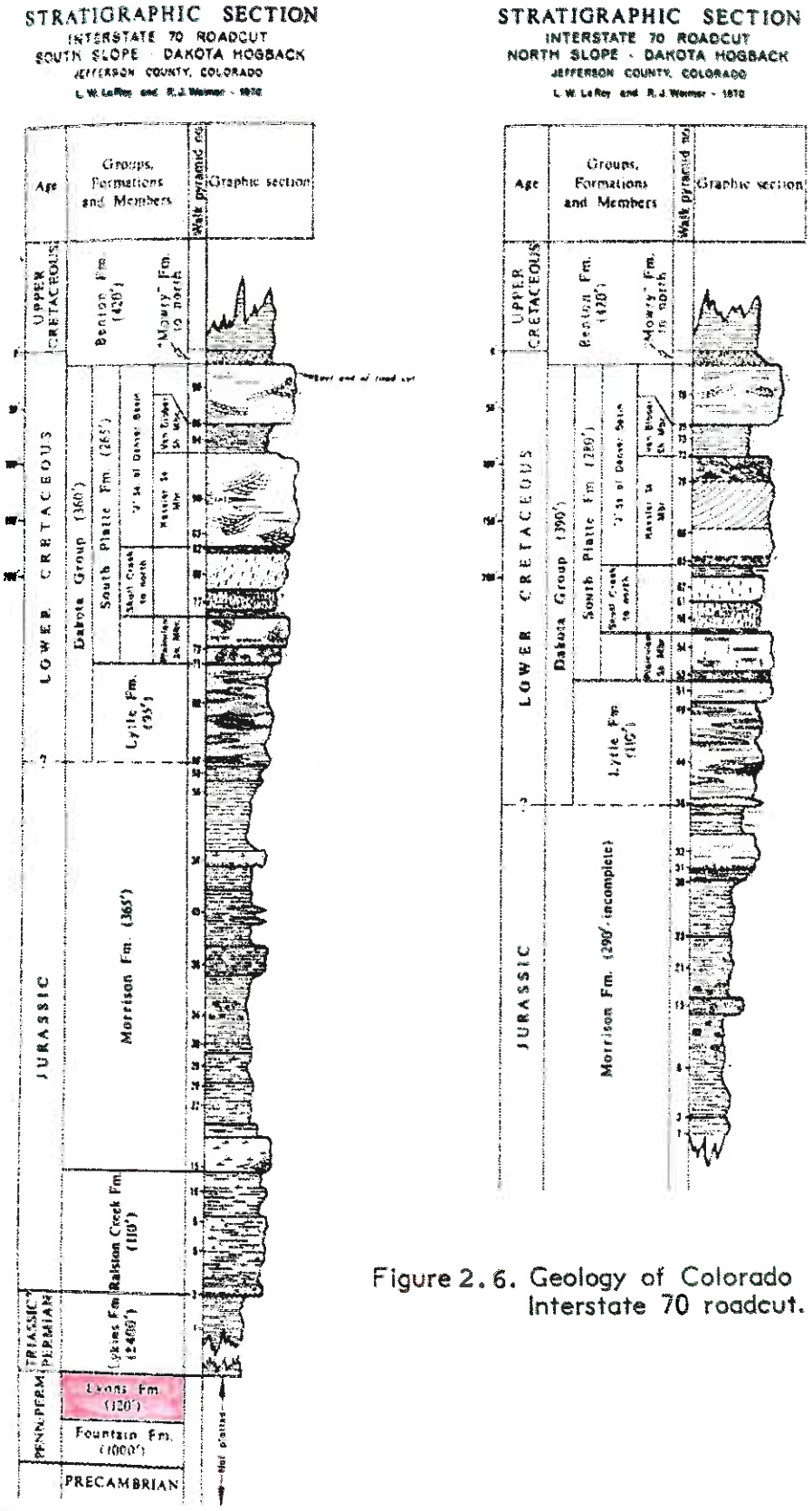
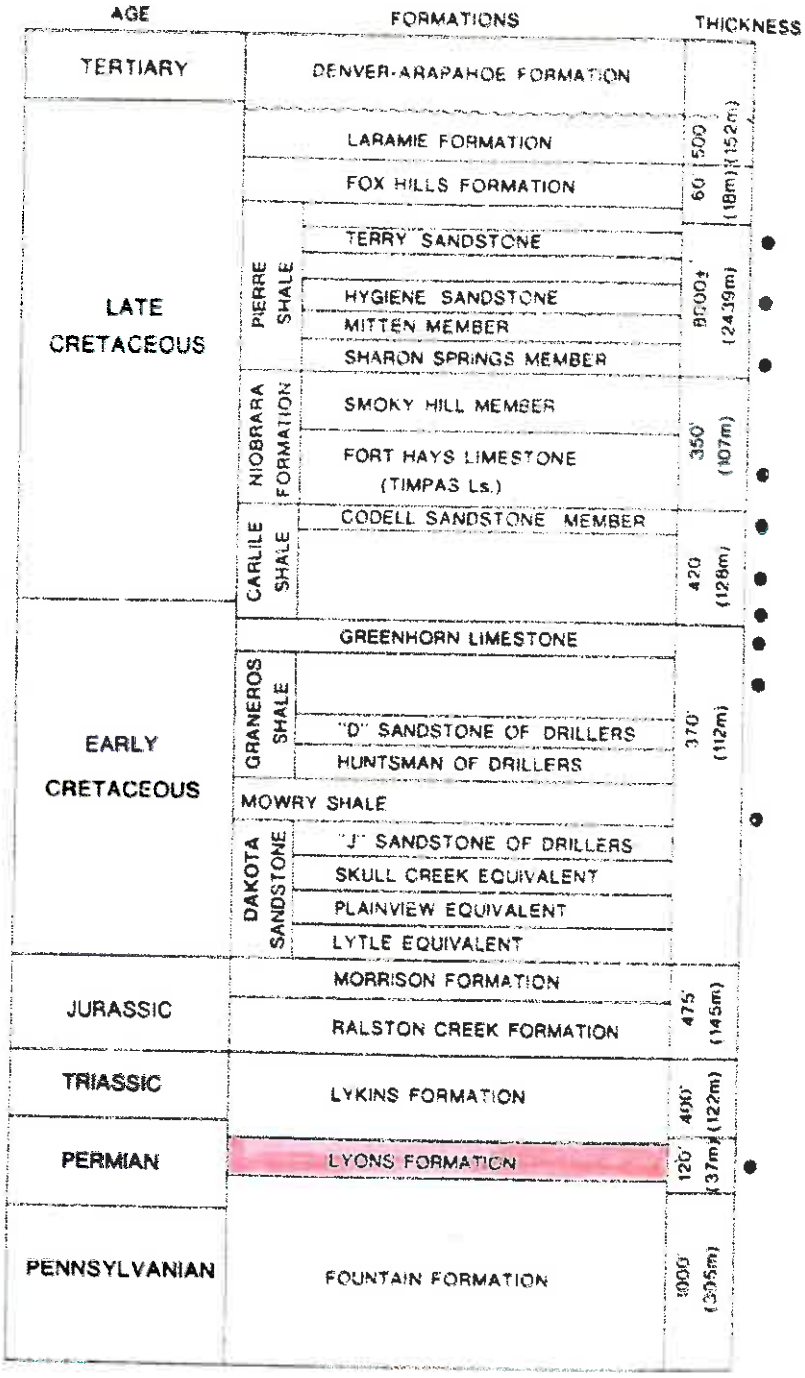


Figure 2.6. Geology of Colorado Interstate 70 roadcut.

NORTHEASTERN
Denver Basin

Figure 2.8. **Generalized stratigraphic column, Front Range area. Dots indicate units which have oil production. (Modified from Weimer, 1973)**

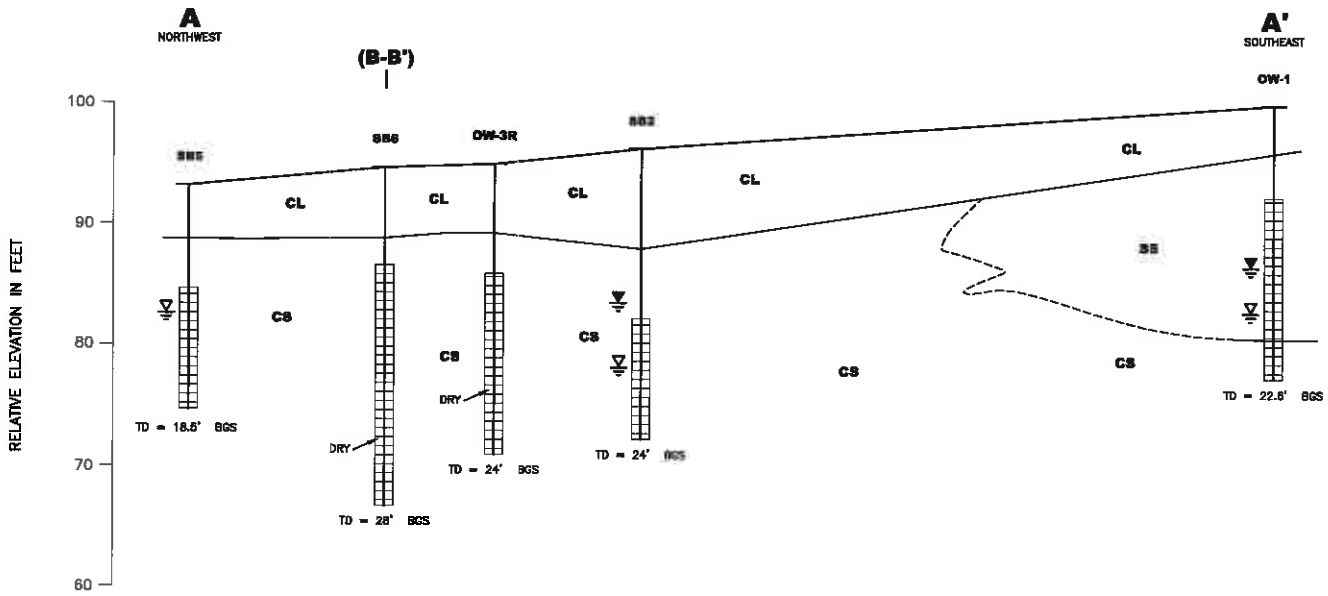


NORTHEASTERN
Denver Basin

C
O

		N. COLORADO FRONT RANGE	NORTHEAST COLORADO	NEBRASKA PANHANDLE
PERMIAN	OCHOA			
	GUADALUPE			
	LEONARD			
	WOLFCAMP	Lyons Ss? Satanka Sh?	Lyons Ss? Satanka Sh?	L. Opeche Sh?
		INGLESIDE FM	CHASE GROUP	CHASE GROUP
PENNSYLVANIAN	VIRGIL	FOUNTAIN FM	VIRGIL	VIRGIL
	MISSOURI		MISSOURI	MISSOURI
	DESMOINES		DES MOINES	DES MOINES
	ATOKA		ATOKA	ATOKA
	MORROW		MORROW	MOR.
	SPRINGER			
PRE-PENN.		PRE-CAMBRIAN	MISS. PRE-CAMBRIAN	MISS. PRE-CAMBRIAN

Figure 2.9. Pennsylvanian and Permian nomenclature chart for Nebraska Panhandle and bordering areas.



LEGEND

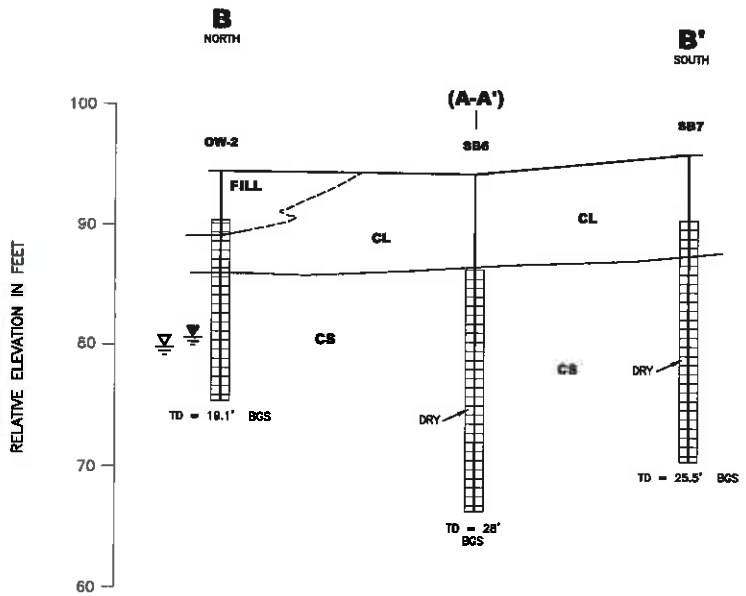
CL	BROWN CLAY, GRAY-BROWN CLAY, BROWN SILTY-CLAY, BROWN SANDY-CLAY
SS	LIGHT BROWN FINE-GRAINED SANDSTONE
CS	GRAY-BROWN CLAYSTONE
BGS	BELOW GROUND SURFACE
———	GROUND SURFACE
— — —	CONTACT LINE (DASHED WHERE INFERRED)
	BOREHOLE
	SCREENED INTERVAL
TD	TOTAL DEPTH IN FEET BGS
(B-B')	DENOTES INTERSECTION WITH GEOLOGIC CROSS-SECTION B-B' SEE FIGURE 2 FOR CROSS SECTION LOCATIONS
	GROUNDWATER ELEVATION ON AUGUST 27, 2007
	WATER ELEVATION DURING DRILLING
DRY	INDICATES THAT MONITORING WELL DID NOT CONTAIN WATER DURING BOTH MEASUREMENT EVENTS

HORIZONTAL SCALE
1" = 20'

VERTICAL SCALE
1" = 10'

FIGURE 3a
GEOLOGIC CROSS-SECTION A-A'
WATTENBERG DISPOSAL FACILITY
WELD COUNTY, COLORADO
K.P. KAUFFMAN COMPANY, INC.

KPKD70101 9/07



LEGEND

CL	BROWN CLAY, GRAY-BROWN CLAY, BROWN SILTY-CLAY, BROWN SANDY-CLAY
CS	GRAY-BROWN CLAYSTONE
BGS	BELOW GROUND SURFACE
———	GROUND SURFACE
- - -	CONTACT LINE (DASHED WHERE INFERRED)

BOREHOLE

SCREENED INTERVAL

TD — TOTAL DEPTH IN FEET BGS

(A-A') — DENOTES INTERSECTION WITH GEOLOGIC CROSS-SECTION A-A' SEE FIGURE 2 FOR CROSS SECTION LOCATIONS

GROUNDWATER ELEVATION ON AUGUST 27, 2007

WATER ELEVATION DURING DRILLING

DRY — INDICATES THAT MONITORING WELL DID NOT CONTAIN WATER DURING BOTH MEASUREMENT EVENTS

HORIZONTAL SCALE
1" = 20'

VERTICAL SCALE
1" = 10'

FIGURE 3b
GEOLOGIC CROSS-SECTION B-B'
WATTENBERG DISPOSAL FACILITY
WELD COUNTY, COLORADO
K.P. KAUFFMAN COMPANY, INC.

KPK07C101 9/07

APPENDIX 5

GEOLOGICAL CONSIDERATIONS

The underground sources of drinking water (USDW) in this area are within the Arapahoe and Laramie-Fox Hills Formations, which extend to a maximum depth of 700 feet below ground surface. These USDWs are isolated from the wellbore by cemented surface casing, which is set at a depth of 759 feet in the underlying Pierre Shale. The Pierre Shale is a major regional impervious confining zone some 6,600 feet in thickness. Within the surface casing is a second casing (long string) which extends from the surface to the total depth of the well; inside the long string casing is the tubing through which the injected fluids flow to the injection zone in the Lyons Formation. The base of the tubing is anchored in the long string casing by a packer set at a depth of 9,240 feet, just above perforations in the casing at the injection zone. The diagram attached as Exhibit B provides the construction details and indicates the depths of the major geologic units.

Immediately overlying the porous Lyons Sandstone injection zone is a confining zone composed of 300 feet of impervious shales and interbedded siltstones. A confining zone below the injection interval is also composed of impervious shales. The long string casing is cemented throughout the confining zones, with cement extending 880 feet above the injection interval as verified by a cement bond log. The bond log indicated that the cement appears to have adequate strength and bonding to isolate the injection zone. Thus, this method of well completion assures that all injected fluids enter and remain within the injection zone, and therefore, are not expected to migrate into USDWs.

Upon completion of the Suckla Farms No. 1, the static fluid level of the Lyons Sandstone injection reservoir was determined in order to estimate the existing reservoir pressure. The reservoir fluid level at that time was 1,562 feet below ground surface which is 862 feet below the base of the Laramie-Fox Hills aquifer (base of USDWs). This indicates that the Lyons is a very underpressured formation and is not being actively recharged. Thus, water from the Lyons would not be expected to flow upward via an unplugged well into the Laramie-Fox Hills or overlying aquifers under pre-injection (static) condition. In fact, the direction of flow would be from the Laramie into the Lyons.

At the 9,300 foot depth of the Lyons Sandstone at the Suckla Farms No. 1, the rate of fluid movement is limited for the following reasons: (1) the nearest surface exposure or recharge area of the Lyons Sandstone is along the base of the Front Range; approximately 25 miles west of the well. Surface recharge exerts very little influence over this great a distance; (2) geophysical data indicate the well is located near the structural axis or deepest part of the Denver basin, where no wells have been drilled to the Lyons, and therefore, no formation waters have been withdrawn; (3) actual recharge to and discharge from the Lyons Formation appears to be very limited. The reservoir conditions encountered when the well was drilled provide evidence that recharge and fluid movement associated with the formation are limited.

The Lyons reservoir was very underpressured when the well was initially drilled and completed, as indicated by the reservoir fluid level which was 1,562 feet below ground surface. This contrasts with the artesian aquifers, which serve as USDWs in the area and which flowed at the surface when they were initially developed. The nearest well that penetrates the Lyons is over 16 miles away and beyond any area of influence surrounding the injection well. Additionally, data from the COGCC indicate there is little production of oil and water from the Lyons in Eastern Colorado. There are 14 active and shut-in Lyons producing wells in Weld County, and there is little or no oil and water production from the Lyons in other counties.

Thus, man-made discharge from the Lyons is insignificant; (4) the permeability of the Lyons reservoir is low. The permeability of the reservoir is approximately 10 millidarcies (md) or 2.72×10^{-2} ft/day. This estimate is based on data from the wells in the Pierce Unit, the analysis of drill cuttings, and pressure buildup calculated using injection volume and reservoir pressure buildup data from the Suckla Farms No. 1 collected since injection commenced; (5) the Lyons Formation has a very small change in elevation with distance from the well. The unit slopes upward to the east at about 1 degree, and does not outcrop. The absence of a surface discharge area and significant pumpage indicate that pressures within the Lyons Formation have long since reached equilibrium; and (6) the volume of fluids intended for injection during the permitted life (10 years) of the well is insignificant compared to the existing volume of fluids already in place. In summary, available data indicate that the hydraulic gradient within the Lyons is very small, resulting in a very low rate of ground water movement under natural conditions. The small volume of injected fluids compared to the existing volume of native fluid in storage and the absence of nearby pumping will result in a return to equilibrium conditions in a very short time after injection ceases.

A second phase of reservoir analyses was utilized to evaluate the impact of the injection activity on the Lyons reservoir. This involved use of the reservoir pressure buildup equation (see report on "Radius of Pressure Influence of Injection Wells" by Don L. Warner, EPA-600/2-79-170, August, 1979) to calculate the change in reservoir pressure as a result of operation of the well. An injection rate (1,625 BPD) for the entire life of the well (4,600 days) including operation of the well to date was used along with estimated permeability (10 md) and porosity (0.06) to estimate the increase in reservoir pressure at certain distances from the well.

The most significant estimated pressure increases occur within one-half mile of the Suckla Farms No. 1. At a radius of 1/4-mile, the pressure is estimated to increase by about 500 psi. At this radius, the pressure increase would result in fluid movement through an open well completed in the Lyons to a level which is approximately 250 feet above the base of the lowermost USDW. At the radius of one-half mile, however, the pressure increase is estimated to be in a range between 150 and 350 psi. This would cause fluid to rise at that radius to a level which is below the base of the lowermost USDW.

scans were run on the Dabney G 23-15 and Dan Oster Gas Unit A-1 cores (Fig. 1) using a Honeywell core spectral gamma-ray unit housed in the Department of Geology and Geological Engineering at the Colorado School of Mines. The logs of the cored wells were integrated with core descriptions so that facies could be identified from logs in uncored wells (Fig. 4).

Permeability measurements were made on all four cores at 2-in. (5-cm) intervals using a pressure decay profile permeameter housed in the Petroleum Engineering Department at the Colorado School of Mines. Comparison of permeability measurements made with the permeameter with those from conventional plug analyses gave good agreement. Therefore, permeameter measurements discussed below are considered reproducible and accurate. Porosity measurements were from conventional core analyses from two wells (Burke 24-3S and Dabney 23-15 wells).

Thin section petrographic analyses (minimum of 300 point counts/sample) were completed on 27 samples from three cores to evaluate framework and cement mineralogy as well as mineralogical effects on resistivity log response.

Engineering data such as estimated ultimate recovery (EUR), GOR, and API gravity were integrated with geological data to evaluate possible causes of production variability among the wells.

SEDIMENTARY FACIES

Four distinct sedimentary facies were identified in cores from Latham Bar Trend: (1) siltstone; (2) burrowed muddy sandstone; (3) cross-bedded sandstone; and (4) interlaminated sandstone and mudstone. These facies are similar to those described by Siemers and Ristow (1986) from Terry Sandstone cores to the north. Once the facies were calibrated to well log response, they could usually be identified on logs in uncored wells (Fig. 4). The facies are described briefly below, and in more detail by Al-Raisi (1994). Petrographical analysis and petrophysical measurements are shown in Table 1 and Table 2, respectively.

Siltstone Facies

The siltstone facies is comprised of dark gray siltstone which is poorly bedded to massive with rare thin silty sandstone lenses and subhorizontal laminae. Primary physical sedimentary structures are not readily visible due to extensive bioturbation. The upper contact is sharp with the overlying facies.

Burrowed Muddy Sandstone Facies

This facies is comprised of trough cross-bedded sandstones interbedded with current ripple-bedded, poorly sorted, fine-

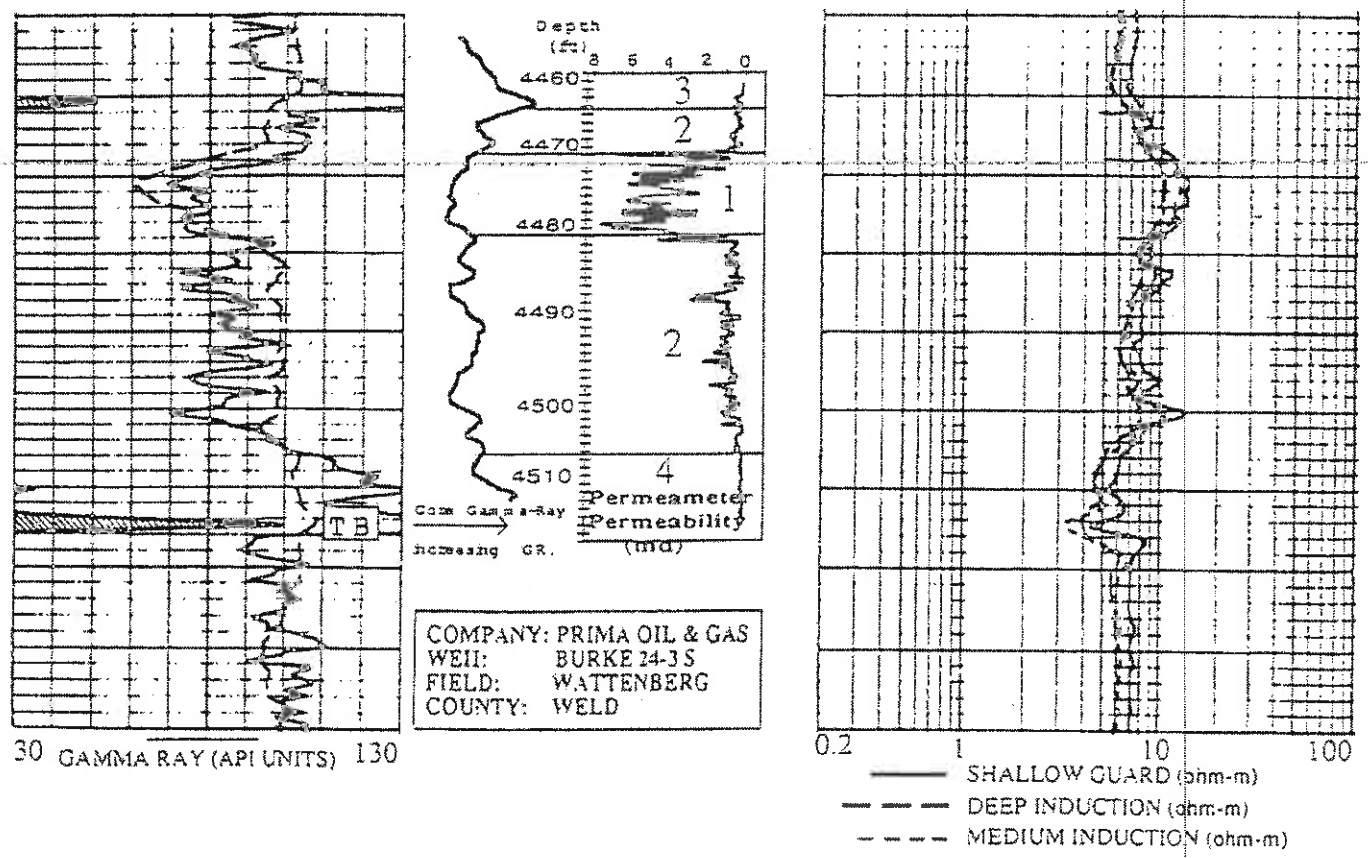
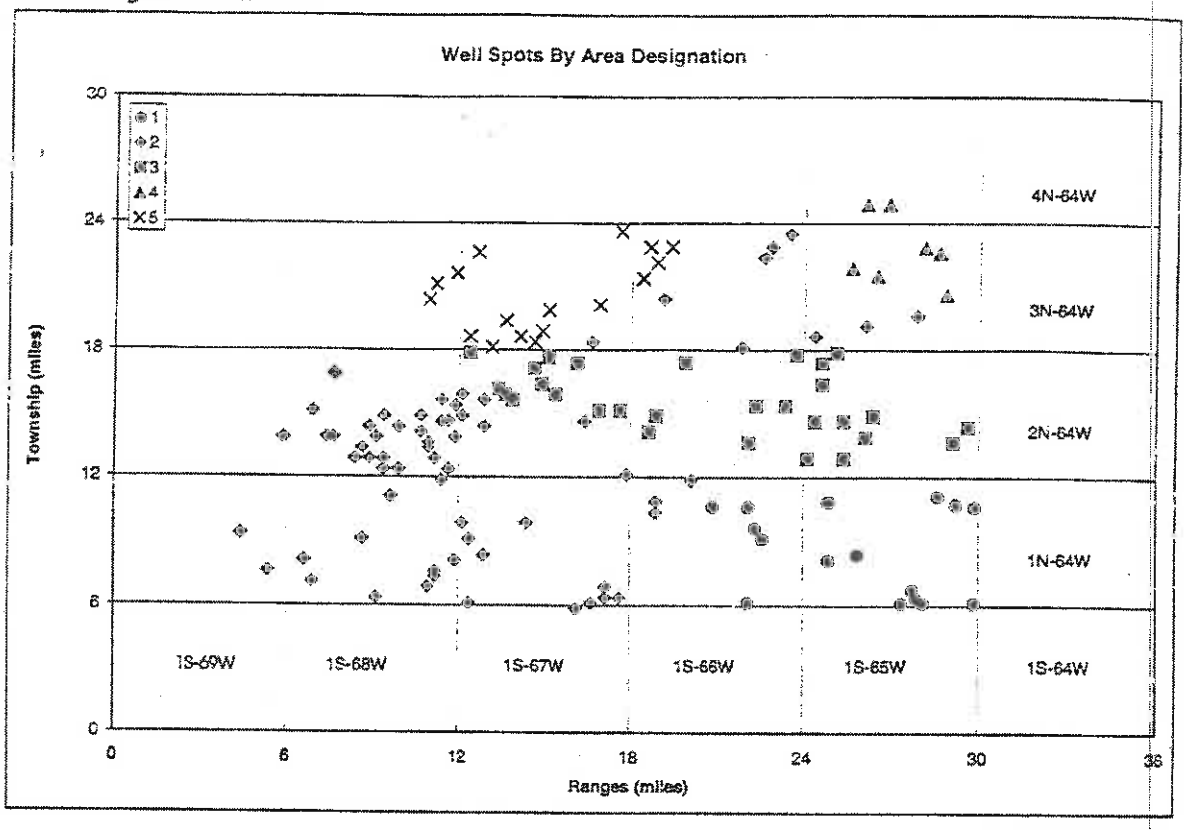


Figure 4. Sedimentary facies, well log signatures, and permeability in the Burke 24-3S well. 1 = cross-bedded sandstone facies; 2 = burrowed muddy sandstone facies; 3 = interlaminated sandstone and mudstone facies; 4 = siltstsone facies. TB = bentonite marker bed selected as a datum for well correlations.

Figure 1.1.1.2



1.1.2. Stratigraphic Section – Horsetooth and Ft. Collins

The reservoir properties of the Ft. Collins and Horsetooth members are more similar than expected, considering the diversity of their depositional environments. The lowest member is the marine Ft. Collins, which was laid down initially to around 100 feet thick. Prior to the Horsetooth being deposited, the sea level fell and the Ft. Collins was exposed and eroded creating valleys. The Horsetooth was later deposited as valleys-fill when the waters of the transgressing Mowry seas flooded the valleys. The permeability of the Horsetooth varies more than the Ft. Collins, but in most areas of the field there is little difference. (See geological write-up in the Appendix I for a more detail description.)

Generally, the total thickness of the two members is over 100 feet thick. The Horsetooth only exists where the Ft. Collins was diminished by erosion. The erosional surface on the top of the Ft. Collins is referred to as the J-Sand unconformity and is always present. With some experience, the J-Sand unconformity is easily identified on well logs. There are areas within the field that require more careful analysis to distinguish between the two members. This normally involves constructing a cross-section combined with the input of an experienced geologist.

1.1.3. Mineralogy limiting performance

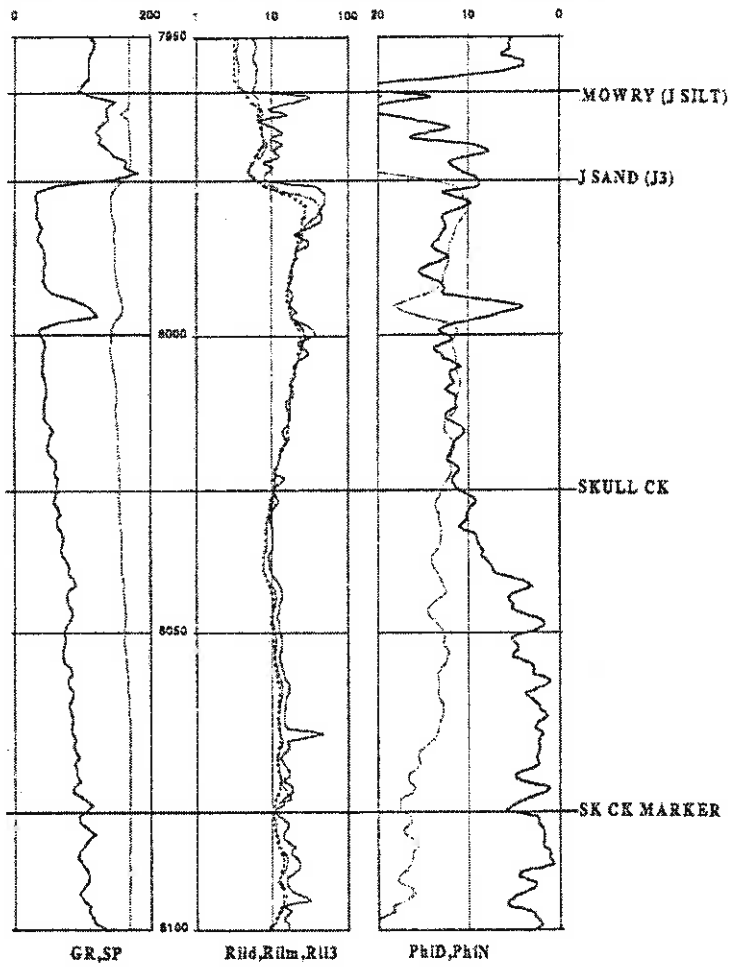
The existence of water sensitive clays within the Horsetooth and Ft. Collins members is characteristic of the formation across the basin. Typical types of formation damage include: swelling clays, fines migration, emulsion blocks, and water blocks.

Early in the development of the J-Sand, permeability regain tests indicated that water based gels reduced the reservoir permeability by at least 50%. Performance data analysis indicates a 50% loss of permeability due to damage is conservative.

currently accepted value for J-Sand water saturation is 40%. A constant 40% water saturation was used in this study.

Figure 1.2.6 –1

TYPE LOG: WATTENBERG 'J' SAND



1.2.7. Volumetric analysis

Original-gas-in-place (OGIP), was calculated assuming 100% recovery factor. The equation and the constant used are as follows:

$$OGIP = 1546 \times P_r \phi (1 - S_w) hA / T_r z \qquad \text{Eq. 1.2.7}$$

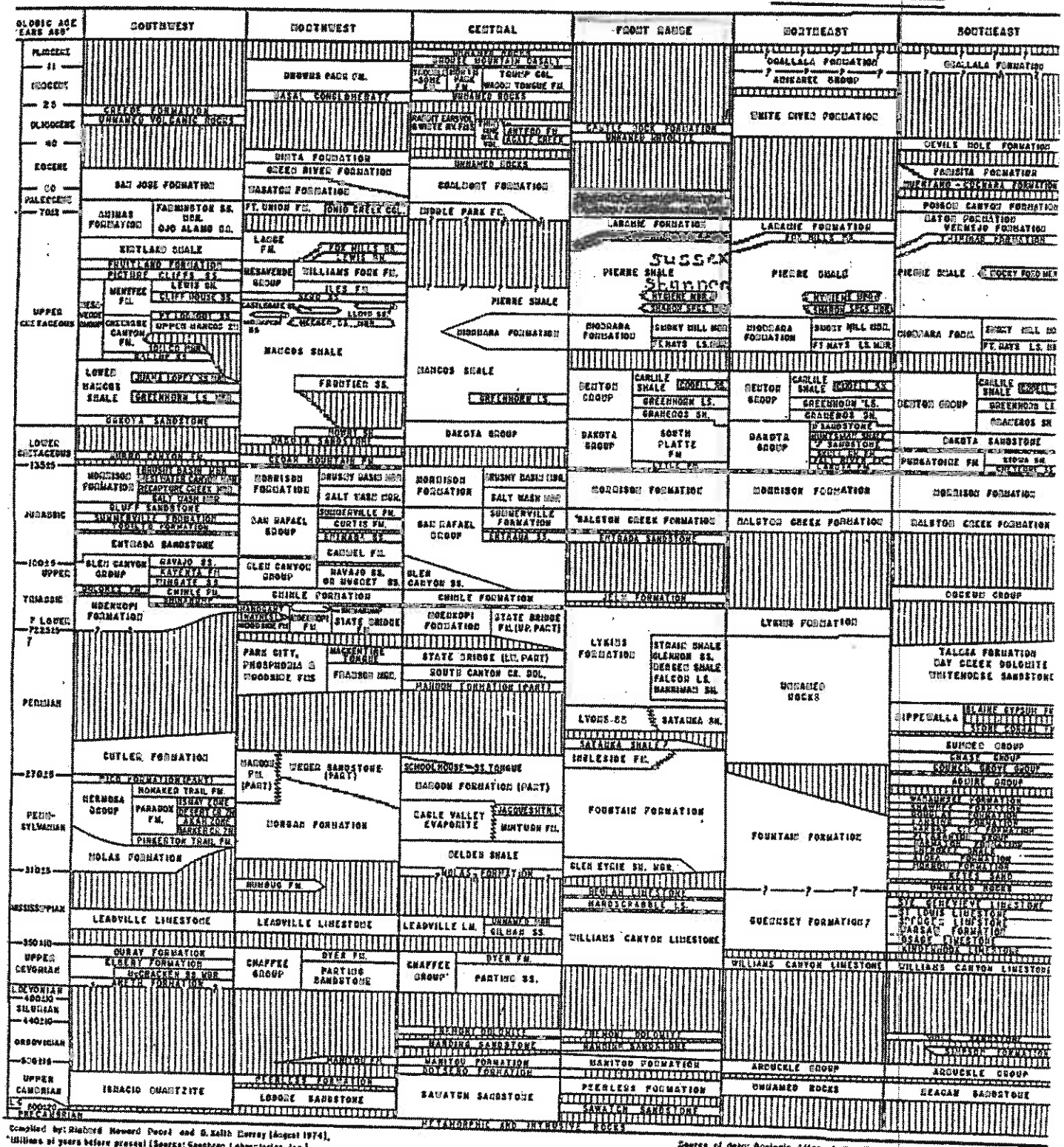
Where:

Constant 1546 = Assumes standard pressure and temperature of 14.65 psia and 520° R.
OGIP = Original-Gas-In-Place, mmcf.
P_r = Reservoir pressure, psia = 2900 psia.
ϕ = Average reservoir porosity, % fraction.
S_w = Water saturation, % fraction = 0.40.
h = Net pay thickness, feet.
A = Drainage area, acres (160).

COLORADO STRATIGRAPHIC CORRELATION CHART

COLORADO GEOLOGICAL SURVEY

EXHIBIT II & III



Compiled by: Richard Howard Dott and G. Keith Curry (August 1974).
*Millions of years before present (Source: Geotron Laboratories, Inc.)

Source of data: Geologic Atlas of the Rocky Mountain Region (RMAG, 1972) and other publications. Reviewed by selected members of the CGAS.

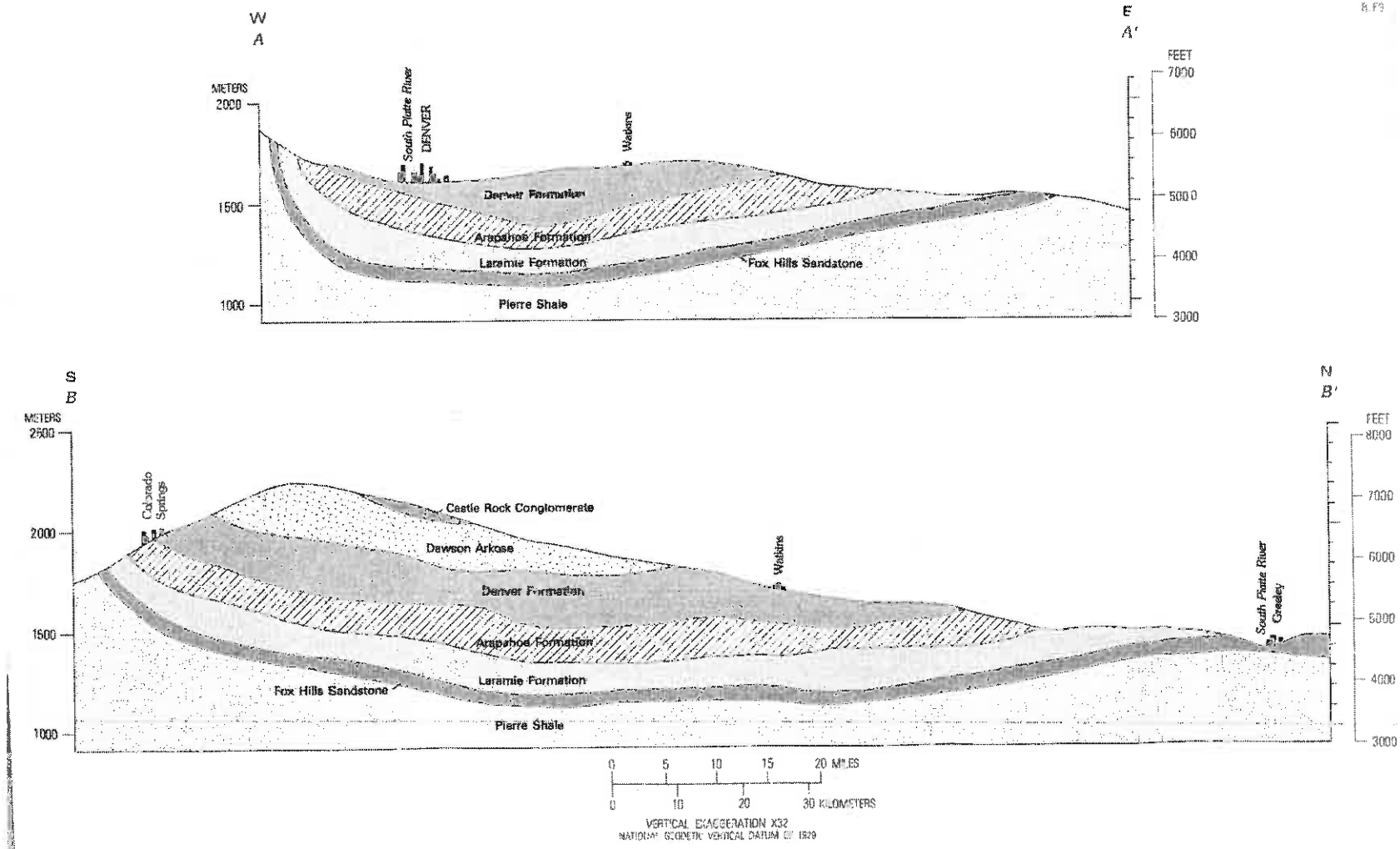


FIGURE 2.—GENERALIZED GEOLOGIC SECTIONS THROUGH THE DENVER BASIN

APPENDIX 6

ScienceLab.com
Chemicals & Laboratory Equipment

Health	1
Fire	1
Reactivity	0
Personal Protection	C

Material Safety Data Sheet
Ethylene glycol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ethylene glycol

Catalog Codes: SLE1072

CAS#: 107-21-1

RTECS: KW2975000

TSCA: TSCA 8(b) inventory: Ethylene glycol

CI#: Not available.

Synonym: 1,2-Dihydroxyethane; 1,2-Ethanediol; 1,2-Ethandiol; Ethylene dihydrate; Glycol alcohol; Monoethylene glycol; Tescol

Chemical Name: Ethylene Glycol

Chemical Formula: HOCH2CH2OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ethylene glycol	107-21-1	100

Toxicological Data on Ingredients: Ethylene glycol: ORAL (LD50): Acute: 4700 mg/kg [Rat]. 5500 mg/kg [Mouse]. 6610 mg/kg [Guinea pig]. VAPOR (LC50): Acute: >200 mg/m 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Non-mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion:
Medical Conditions Aggravated by Exposure: Persons with pre-existiing kidney, respiratory, eye, or neurological problems might be more sensitive to Ethylene Glycol. Notes to Physician: 1. Support vital functions, correct for dehydration and shock, and manage fluid balance. 2. The currently recommended medical management of Ethylene Glycol poisoning includes elimination of Ethylene Glycol and metabolites. Elimination of Ethylene Glycol may be achieved by the following methods: a. Emptying the stomach by gastric lavage. It is useful if initiated within < 1 of ingestion. b. Correct metabolic acidosis with intravenous administration of sodium bicarbonate, adjusting the administration rate accoridng to repeated and frequent measurement of acid/base status. c. Administer ethanol (orally or by IV (intravenously)) or fomepizole (4-methylpyrazole or Antizol)) therapy by IV as an antidote to inhibit the ormation of toxic metabolites. d. If patients are diagnosed and treated early in the course with the above methods, hemodialysis may be avoided if fomepizole or ethanol therapy is effective and has corrected the metabolic acidosis, and no renal failure is present. However, once severe acidosis and renal failure occured, however, hemodialysis is necessary. It is effective in removing Ethylene Glycol and toxic metabolites, and correcting metabolic acidosis.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 398°C (748.4°F)

Flash Points: CLOSED CUP: 111°C (231.8°F). (Tagliabue.)

Flammable Limits: LOWER: 3.2%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:
Explosive decomposition may occur if combined with strong acids or strong bases and subjected to elevated temperatures.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Safety glasses. Synthetic apron. Gloves (impervious). For most conditions, no respiratory protection should be needed. However, if material is heated or sprayed and if atmospheric levels exceed exposure guidelines, use an approved vapor (air purifying) respirator.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
STEL: 120 (mg/m3) [Australia] TWA: 100 (mg/m3) from ACGIH (TLV) [United States] CEIL: 125 (mg/m3) from OSHA (PEL) [United States] CEIL: 50 (ppm) from OSHA (PEL) [United States] TWA: 52 STEL: 104 (mg/m3) [United Kingdom (UK)] Inhalation TWA: 10 (mg/m3) [United Kingdom (UK)] SKIN3 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (syrupy)

Odor: Odorless.

Taste: Mild sweet

Molecular Weight: 62.07 g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point: 197.6°C (387.7°F)

Melting Point: -13°C (8.6°F)

Critical Temperature: Not available.

Specific Gravity: 1.1088 (Water = 1)

Vapor Pressure: .06 mmHg @ 20 C; .092 mmHg at 25 C

Vapor Density: 2.14 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -1.4

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:
Soluble in cold water, hot water, acetone. Slightly soluble in diethyl ether. Miscible with lower aliphatic alcohols, glycerol, acetic acid, acetone and similar ketones, aldehydes, pyridine, similar coal tar bases. Practically insoluble in benzene and its homologs, chlorinated hydrocarbons, petroleum ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials.

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. Absorbs moisture from the air. Avoid contamination with materials with hydroxyl compounds. Also incompatible with aliphatic amines, isocyanates, chlorosulfonic acid, and oleum

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Ingestion.

Toxicity to Animals:
Acute oral toxicity (LD50): 4700 mg/kg [Rat]. Acute toxicity of the vapor (LC50): >200 mg/m3 4 hours [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Non-mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, central nervous system (CNS).

Other Toxic Effects on Humans:
Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

Special Remarks on Toxicity to Animals:
Lowest Published Toxic Dose/Conc: TDL [Man] - Route: oral; Dose: 15gm/kg Lethal Dose/Conc 50% Kill LD50 [Rabbit] - Route: dermal; Dose: 9530 ul/kg

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. No human data has been reported at this time. May affect genetic material (mutagenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. May cause more severe response if skin is abraded. A single prolonged exposure is not likely to result in material being absorbed through skin in harmful amounts. Massive contact with damaged skin may result in absorption of potentially harmful amounts Eyes: Vapors or mist may cause temporary eye irritation (mild temporary conjunctival inflammation) and lacrimation. Corneal injury is unlikely or insignificant.. Ingestion: It is rapidly absorbed from the gastrointestinal tract. Oral toxicity is expected to be moderate in humans due to Ethylene Glycol even though tests with animals show a lower degree of toxicity. Excessive exposure (swallowing large amounts) may cause gastrointestinal tract irritation with nausea, vomiting, abdominal discomfort, diarrhea. It can affect behavior/central nervous system within 0.5 to 12 hours after ingestion. A transient inebriation with excitement, stupor, headache, slurred speech, ataxia, somnolence, and euphoria, similar to ethanol intoxication, can occur within the first several hours. As sthe Ethylene Glycol is metabolized, metabolic acidosis and further central nervous system depression (convulsions, muscle weakness) develop. Serious intoxication may develop to coma associated with hypotonia, hyporeflexia, and less commonly seizures, and meningismus. 12 to 24 hours

Section 12: Ecological Information

Ecotoxicity:
Ecotoxicity in water (LC50): 41000 mg/l 96 hours [Fish (Trout)]. 46300 mg/l 48 hours [water flea]. 34250 mg/l 96 hours [Fish (bluegill fish)]. 34250 mg/l 72 hours [Fish (Goldfish)].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
Illinois toxic substances disclosure to employee act: Ethylene glycol Illinois chemical safety act: Ethylene glycol New York release reporting list: Ethylene glycol Rhode Island RTK hazardous substances: Ethylene glycol Pennsylvania RTK: Ethylene glycol Minnesota: Ethylene glycol Massachusetts RTK: Ethylene glycol Massachusetts spill list: Ethylene glycol New Jersey: Ethylene glycol Louisiana spill reporting: Ethylene glycol TSCA 8(b) inventory: Ethylene glycol TSCA 4(a) proposed test rules: Ethylene glycol SARA 313 toxic chemical notification and release reporting: Ethylene glycol CERCLA: Hazardous substances.: Ethylene glycol: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R22- Harmful if swallowed. S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 0

Personal Protection: C

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Not applicable. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:18 PM

Last Updated: 06/09/2012 12:00 PM

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Chemicals & Laboratory Equipment

Health	2
Fire	3
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Isopropyl alcohol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Isopropyl alcohol

Catalog Codes: SLI1153, SLI1579, SLI1906, SLI1246, SLI1432

CAS#: 67-63-0

RTECS: NT8050000

TSCA: TSCA 8(b) inventory: Isopropyl alcohol

CI#: Not available.

Synonym: 2-Propanol

Chemical Name: isopropanol

Chemical Formula: C3-H8-O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Isopropyl alcohol	67-63-0	100

Toxicological Data on Ingredients: Isopropyl alcohol: ORAL (LD50): Acute: 5045 mg/kg [Rat]. 3600 mg/kg [Mouse]. 6410 mg/kg [Rabbit]. DERMAL (LD50): Acute: 12800 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer, permeator).

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [POSSIBLE]. The substance may be toxic to kidneys, liver, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 399°C (750.2°F)

Flash Points: CLOSED CUP: 11.667°C (53°F) - 12.778 deg. C (55 deg. F) (TAG)

Flammable Limits: LOWER: 2% UPPER: 12.7%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Flammable in presence of oxidizing materials. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:
Vapor may travel considerable distance to source of ignition and flash back. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME. Hydrogen peroxide sharply reduces the autoignition temperature of Isopropyl alcohol. After a delay, Isopropyl alcohol ignites on contact with dioxgenyl tetrafluorborate, chromium trioxide, and potassium tert-butoxide. When heated to decomposition it emits acrid smoke and fumes.

Special Remarks on Explosion Hazards:
Secondary alcohols are readily autooxidized in contact with oxygen or air, forming ketones and hydrogen peroxide. It can become potentially explosive. It reacts with oxygen to form dangerously unstable peroxides which can concentrate and explode during distillation or evaporation. The presence of 2-butanone increases the reaction rate for peroxide formation. Explosive in the form of vapor when exposed to heat or flame. May form explosive mixtures with air. Isopropyl alcohol + phosgene forms isopropyl chloroformate and hydrogen chloride. In the presence of iron salts, thermal decompositon can occur, whicn in some cases can become explosive. A homogeneous mixture of concentrated peroxides + isopropyl alcohol are capable of detonation by shock or heat. Barium perchlorate + isopropyl alcohol gives the highly explosive alkyl perchlorates.

It forms explosive mixtures with trinitormethane and hydrogen peroxide. It produces a violent explosive reaction when heated with aluminum isopropoxide + crotonaldehyde. Mixtures of isopropyl alcohol + nitroform are explosive.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 983 STEL: 1230 (mg/m3) [Australia] TWA: 200 STEL: 400 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 980 STEL: 1225 (mg/m3) from NIOSH TWA: 400 STEL: 500 (ppm) from NIOSH TWA: 400 STEL: 500 (ppm) [United Kingdom (UK)] TWA: 999 STEL: 1259 (mg/m3) [United Kingdom (UK)] TWA: 400 STEL: 500 (ppm) from OSHA (PEL) [United States] TWA: 980 STEL: 1225 (mg/m3) from OSHA (PEL) [United States]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor:
Pleasant. Odor resembling that of a mixture of ethanol and acetone.

Taste: Bitter. (Slight.)

Molecular Weight: 60.1 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: 82.5°C (180.5°F)

Melting Point: -88.5°C (-127.3°F)

Critical Temperature: 235°C (455°F)

Specific Gravity: 0.78505 (Water = 1)

Vapor Pressure: 4.4 kPa (@ 20°C)

Vapor Density: 2.07 (Air = 1)

Volatility: Not available.

Odor Threshold:
22 ppm (Sittig, 1991) 700 ppm for unadapted panelists (Verschuren, 1983).

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0.1

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether, n-octanol, acetone.

Solubility:
Easily soluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone. Insoluble in salt solution. Soluble in benzene. Miscible with most organic solvents including alcohol, ethyl alcohol, chloroform.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, Ignition sources, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Reacts violently with hydrogen + palladium combination, nitroform, oleum, COCl2, aluminum triisopropoxide, oxidants Incompatible with acetaldehyde, chlorine, ethylene oxide, isocyanates, acids, alkaline earth, alkali metals, caustics, amines, crotonaldehyde, phosgene, ammonia. Isopropyl alcohol reacts with metallic aluminum at high temperatures. Isopropyl alcohol attacks some plastics, rubber, and coatings. Vigorous reaction with sodium dichromate + sulfuric acid.

Special Remarks on Corrosivity: May attack some forms of plastic, rubber and coating

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 3600 mg/kg [Mouse]. Acute dermal toxicity (LD50): 12800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 16000 8 hours [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [POSSIBLE]. May cause damage to the following organs: kidneys, liver, skin, central nervous system (CNS).

Other Toxic Effects on Humans:
Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer, permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive/teratogenic effects (fertility, fetoxicity, developmental abnormalities(developmental toxin)) based on animal studies. Detected in maternal milk in human.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause mild skin irritation, and sensitization. Eyes: Can cause eye irritation. Inhalation: Breathing in small amounts of this material during normal handling is not likely to cause harmful effects. However, breathing large amounts may be harmful and may affect the respiratory system and mucous membranes (irritation), behavior and brain (Central nervous system depression - headache, dizziness, drowsiness, stupor, incoordination, unconciousness, coma and possible death), peripheral nerve and senstation, blood, urinary system, and liver. Ingestion: Swallowing small amouts during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Swallowing large amounts may cause gastrointestinal tract irritation with nausea, vomiting and diarrhea, abdominal pain. It also may affect the urinary system, cardiovascular system, sense organs, behavior or central nervous system (somnolence, generally depressed activity, irritability, headache, dizziness, drowsiness), liver, and respiratory system (breathing difficulty). Chronic Potential Health Effects: May cause defatting of the skin and dermatitis and allergic reaction. May cause adverse reproductive effects based on animal data (studies).

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 100000 mg/l 96 hours [Fathead Minnow]. 64000 mg/l 96 hours [Fathead Minnow].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Isopropyl Alcohol UNNA: 1219 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Isopropyl alcohol Illinois toxic substances disclosure to employee act: Isopropyl alcohol Rhode Island RTK hazardous substances: Isopropyl alcohol Pennsylvania RTK: Isopropyl alcohol Florida: Isopropyl alcohol Minnesota: Isopropyl alcohol Massachusetts RTK: Isopropyl alcohol New Jersey: Isopropyl alcohol New Jersey spill list: Isopropyl alcohol Director's list of Hazardous Substances: Isopropyl alcohol Tennesee: Isopropyl alcohol TSCA 8(b) inventory: Isopropyl alcohol TSCA 4(a) final testing order: Isopropyl alcohol TSCA 8(a) IUR: Isopropyl alcohol TSCA 8(d) H

and S data reporting: Isopropyl alcohol: Effective date: 12/15/86 Sunset Date: 12/15/96 TSCA 12(b) one time export: Isopropyl alcohol SARA 313 toxic chemical notification and release reporting: Isopropyl alcohol

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. R36- Irritating to eyes. S7- Keep container tightly closed. S16- Keep away from sources of ignition - No smoking. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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Last Updated: 06/09/2012 12:00 PM

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Chemicals & Laboratory Equipment

Health	2
Fire	3
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Methyl alcohol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Methyl alcohol

Catalog Codes: SLM3064, SLM3952

CAS#: 67-56-1

RTECS: PC1400000

TSCA: TSCA 8(b) inventory: Methyl alcohol

CI#: Not applicable.

Synonym: Wood alcohol, Methanol; Methylol; Wood Spirit; Carbinol

Chemical Name: Methanol

Chemical Formula: CH3OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Methyl alcohol	67-56-1	100

Toxicological Data on Ingredients: Methyl alcohol: ORAL (LD50): Acute: 5628 mg/kg [Rat]. DERMAL (LD50): Acute: 15800 mg/kg [Rabbit]. VAPOR (LC50): Acute: 64000 ppm 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to eyes. The substance may be toxic to blood, kidneys, liver, brain, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), optic nerve. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 464°C (867.2°F)

Flash Points: CLOSED CUP: 12°C (53.6°F). OPEN CUP: 16°C (60.8°F).

Flammable Limits: LOWER: 6% UPPER: 36.5%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:
Explosive in the form of vapor when exposed to heat or flame. Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition, it emits acrid smoke and irritating fumes. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME

Special Remarks on Explosion Hazards:
Forms an explosive mixture with air due to its low flash point. Explosive when mixed with Choroform + sodium methoxide and diethyl zinc. It boils violently and explodes.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Poisonous liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 200 from OSHA (PEL) [United States] TWA: 200 STEL: 250 (ppm) from ACGIH (TLV) [United States] [1999] STEL: 250 from NIOSH [United States] TWA: 200 STEL: 250 (ppm) from NIOSH SKIN TWA: 200 STEL: 250 (ppm) [Canada] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Alcohol like. Pungent when crude.

Taste: Not available.

Molecular Weight: 32.04 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: 64.5°C (148.1°F)

Melting Point: -97.8°C (-144°F)

Critical Temperature: 240°C (464°F)

Specific Gravity: 0.7915 (Water = 1)

Vapor Pressure: 12.3 kPa (@ 20°C)

Vapor Density: 1.11 (Air = 1)

Volatility: Not available.

Odor Threshold: 100 ppm

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -0.8

Ionicity (in Water): Non-ionic.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ingnition sources, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Can react vigorously with oxidizers. Violent reaction with alkyl aluminum salts, acetyl bromide, chloroform + sodium methoxide, chromic anhydride, cyanuirc chlorite, lead perchlorate, phosphorous trioxide, nitric acid. Exothermic reaction with sodium hydroxide + chloroform. Incompatible with beryllium dihydride, metals (potassium and magnesium), oxidants (barium perchlorate, bromine, sodium hypochlorite, chlorine, hydrogen peroxide), potassium tert-butoxide, carbon tetrachloride, alkali metals, metals (aluminum, potassium magnesium, zinc), and dichlormethane. Rapid autocatalytic dissolution of aluminum, magnesium or zinc in 9:1 methanol + carbon tetrachloride - sufficiently vigorous to be rated as potentially hazardous. May attack some plastics, rubber, and coatings.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 5628 mg/kg [Rat]. Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 64000 4 hours [Rat].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human. Causes damage to the following organs: eyes. May cause damage to the following organs: blood, kidneys, liver, brain, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), optic nerve.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

Passes through the placental barrier. May affect genetic material. May cause birth defects and adverse reproductive effects(paternal and maternal effects and fetotoxicity) based on animal studies.

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 29400 mg/l 96 hours [Fathead Minnow].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation:
Methanol in water is rapidly biodegraded and volatilized. Aquatic hydrolysis, oxidation, photolysis, adsorption to sediment, and bioconcentration are not significant fate processes. The half-life of methanol in surfact water ranges from 24 hrs. to 168 hrs. Based on its vapor pressure, methanol exists almost entirely in the vapor phase in the ambient atmosphere. It is degraded by reaction with photochemically produced hydroxyl radicals and has an estimated half-life of 17.8 days. Methanol is physically removed from air by rain due to its solubility. Methanol can react with NO2 in pollulted to form methyl nitrate. The half-life of methanol in air ranges from 71 hrs. (3 days) to 713 hrs. (29.7 days) based on photooxidation half-life in air.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Methyl alcohol UNNA: 1230 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Methyl alcohol Illinois toxic substances disclosure to employee act: Methyl alcohol Illinois chemical safety act: Methyl alcohol New York release reporting list: Methyl alcohol Rhode Island RTK hazardous substances: Methyl alcohol Pennsylvania RTK: Methyl alcohol Minnesota: Methyl alcohol Massachusetts RTK: Methyl alcohol Massachusetts spill list: Methyl alcohol New Jersey: Methyl alcohol New Jersey spill list: Methyl alcohol Louisiana spill reporting: Methyl alcohol California Directors List of Hazardous Substances (8CCR 339): Methyl alcohol Tennesse Hazardous Right to Know : Methyl alcohol TSCA 8(b) inventory: Methyl alcohol SARA 313 toxic chemical notification and release reporting: Methyl alcohol CERCLA: Hazardous substances.: Methyl alcohol: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). Class D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R39- Danger of very serious irreversible effects. R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. S7- Keep container tightly closed. S16- Keep away from sources of ignition - No smoking. S36/37- Wear suitable protective clothing and gloves. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References:
-SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -Material safety data sheet emitted by: la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec. -Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. LOLI, HSDB, RTECS, HAZARDTEXT, REPROTOX databases

Other Special Considerations: Not available.

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Health	3
Fire	0
Reactivity	2
Personal Protection	J

Material Safety Data Sheet
Potassium hydroxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Potassium hydroxide

Catalog Codes: SLP4096, SLP3085, SLP4900, SLP2071

CAS#: 1310-58-3

RTECS: TT2100000

TSCA: TSCA 8(b) inventory: Potassium hydroxide

CI#: Not available.

Synonym:

Chemical Name: Potassium Hydroxide

Chemical Formula: KOH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Potassium hydroxide	1310-58-3	100

Toxicological Data on Ingredients: Potassium hydroxide: ORAL (LD50): Acute: 273 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant), of eye contact (irritant, corrosive), of ingestion, of inhalation. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: metals, acids

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
Violent reaction or ignition under appropriate conditions with acids, alcohols, p-bis(1,3-dibromoethyl) benzene, cyclopentadiene, germanium, hyponitrous acid, maleic anhydride, nitroalkanes, 2-nitrophenol, potassium peroxodisulfate, sugars, 2,2,3,3-tetrafluoropropanol, thorium dicarbide. Molten ortho -nitrophenol reacts violently with potassium hydroxide. When potassium hydroxide and tetrachloroethane are heated, a spontaneously flammable gas, chloroacetylene, is formed. When phosphorus is boiled in a solution of potassium hydroxide, phosphine gas is evolved which is spontaneously flammable. 1,2-Dichloroethylene and Potassium hydroxide reaction produces chloroacetylene which is spontaneously flammable in air. Potassium Persulfate and a little Potassium hydroxide and water will ignite. When wet, attacks metals such as aluminum, tin, lead, and zinc, producing flammable hydrogen gas.

Special Remarks on Explosion Hazards:

Potentially explosive reaction with bromoform + crown ethers, chlorine dioxide, nitrobenzene, nitromethane, nitrogen trichloride, peroxidized tetrahydrofuran, 2,4,6-trinitrotoluene. Reaction with ammonium hexachloroplatiate(2-) + heat forms heat sensitive explosive product. Potassium hydroxide will cause explosive decomposition of maleic anhydride. Detonation will occur when potassiuim hydroxide is mixed with n-methyl-nitroso urea and methylene chloride. Nitrogen trichloride explodes on contact with potassium hydroxide.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:
Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as organic materials, metals, acids, moisture.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
CEIL: 2 (mg/m3) from OSHA (PEL) [United States] CEIL: 2 (mg/m3) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid pellets.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 56.11 g/mole

Color: White.

pH (1% soln/water): 13 [Basic.]

Boiling Point: Decomposition temperature: 1384°C (2523.2°F)

Melting Point: 380°C (716°F)

Critical Temperature: Not available.

Specific Gravity: 2.044 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:
Easily soluble in cold water, hot water. Insoluble in diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, dust generation, exposure to moist air or water.

Incompatibility with various substances:
Highly reactive with acids. Reactive with organic materials, metals, moisture.

Corrosivity:
Extremely corrosive in presence of aluminum, brass, and zinc. Slightly corrosive in presence of copper, of stainless steel(304). Non-corrosive in presence of stainless steel(316).

Special Remarks on Reactivity:
Hygroscopic (absorbs moisture from air). When dissolved in water or alcohol or when the solution is treated with acid, much heat is generated. Reacts violently with acids, halogens, halogenated hydrocarbons, maleic anhydride, organic anhydrides, isocyanates, alkylene oxides, epichlorhydrin, aldehydes, alcohols, gylcols, phenols, cresols, caprolactum solution. Also incompatible with nitro compounds (nitrobenzene, nitromethane, nitrogen trichloride), organic materials, acid anhydrides, acid chlorides, magnesium, peroxidized tetrahydrofuran, chlorine dioxide, maleic dicarbide, sugars. When wet attacks metals such as aluminum, tin, lead, and zinc.

Special Remarks on Corrosivity:
When wet, attacks metals such as aluminum, tin, lead, and zinc, producing flammable hydrogen gas. Severe corrosive effect on brass and bronze.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 273 mg/kg [Rat].

Chronic Effects on Humans:

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. May cause damage to the following organs: upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans:
Extremely hazardous in case of inhalation (lung corrosive). Very hazardous in case of skin contact (corrosive, irritant), of eye contact (corrosive), of ingestion, .

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May affect genetic material based on animal data.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes severe skin irritation and burns. Eyes: Causes severe eye irritation and burns. May cause irreversible eye injury. Inhalation: Causes severe irritation and burns of the respiratory tract and mucous membranes. Irritation may lead to chemical pneumonitis Ingestion: Harmful if swallowed. May cause severe and permanent damage to the digestive tract. Causes severe irritation and burns of the gastrointestinal (digestive) tract with abdominal pain, vomiting and possible death. May cause perforation of the digestive tract. Chronic Potential Health Effects: Chronic contact with dilute solutions of potassium hydroxide can cause dermatitis. Inhalation can produce chronic productive cough, and shortness of breath.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 80 mg/l 24 hours [Mosquito Fish].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Class 8: Corrosive material

Identification: : Potassium hydroxide, solid UNNA: 1813 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
New York release reporting list: Potassium hydroxide Pennsylvania RTK: Potassium hydroxide Florida: Potassium hydroxide Minnesota: Potassium hydroxide Massachusetts RTK: Potassium hydroxide New Jersey: Potassium hydroxide California Director's List of Hazardous Substances: Potassium hydroxide TSCA 8(b) inventory: Potassium hydroxide CERCLA: Hazardous substances.: Potassium hydroxide: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive solid.

DSCL (EEC):

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:23 PM

Last Updated: 06/09/2012 12:00 PM

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APPENDIX 7

Mountain States ACCUTEST LABORATORIES

11/13/12

Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D40343

Sampling Date: 10/29/12

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 29

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.

Brad Madadian
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Sample Summary

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Job No: D40343

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
D40343-1	10/29/12	12:45 MH	10/29/12	AQ	Water	TANK-1
D40343-1F	10/29/12	12:45 MH	10/29/12	AQ	Water Filtered	TANK-1

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	K.P. Kauffmann Company, Inc.	Job No	D40343
Site:	Wattenberg Tank	Report Dat	11/13/2012 5:03:31 PM

On 10/29/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 8.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40343 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ Batch ID: MP8783

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D39996-1FMS, D39996-1FMSD, D39996-1FSDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Potassium, Calcium, Magnesium, Sodium are outside control limits for sample MP8783-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8783-SD1 for Magnesium: Serial dilution indicates possible matrix interference.
- MP8783-SD1 for Calcium: Serial dilution indicates possible matrix interference.
- MP8783-SD1 for Sodium: Serial dilution indicates possible matrix interference.

Wet Chemistry By Method ASTM D287

Matrix ALL Batch ID: GN17457

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ Batch ID: GP8625

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40306-2MS were used as the QC samples for the HEM Oil and Grease analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ Batch ID: GP8573

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40344-3MS, D40344-3MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D40343-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM18/20 2540C

Matrix AQ	Batch ID: GN17495

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40343-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 4500H B+/9040C

Matrix AQ	Batch ID: GN17445

- D40343-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

Wet Chemistry By Method SM20 5310B

Matrix AQ	Batch ID: GP8663

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40770-2DUP, D40770-2MS, D40770-2MSD were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D40343
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 10/29/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D40343-1	**TANK-1**					
Chloride		8850	250		mg/l	EPA 300/SW846 9056
HEM Oil and Grease		9.4	4.8		mg/l	EPA 1664A
Nitrogen, Nitrate		1.1	0.10 10mg/l		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		13500	10		mg/l	SM18/20 2540C
Specific Gravity by Hydrometer		1.0093				ASTM D287
Sulfate		80.0	5.0		mg/l	EPA 300/SW846 9056
Total Organic Carbon		92.6	10		mg/l	SM20 5310B
pH [a]		7.23			su	SM20 4500H B+/9040C
D40343-1F	**TANK-1**					
Calcium		211000	20000		ug/l	SW846 6010C
Magnesium		39700	10000		ug/l	SW846 6010C
Potassium		222000	50000		ug/l	SW846 6010C
Sodium		5880000	20000		ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

4.1

4

Client Sample ID:	TANK-1		
Lab Sample ID:	D40343-1	**Date Sampled:**	10/29/12
Matrix:	AQ - Water	**Date Received:**	10/29/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	8850	250	mg/l	500	10/30/12 19:02	JML	EPA 300/SW846 9056
HEM Oil and Grease	9.4	4.8	mg/l	1	11/08/12	SWT	EPA 1664A
Nitrogen, Nitrate	1.1	0.10	mg/l	10	10/30/12 09:13	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 2.0	2.0	mg/l	500	10/30/12 19:02	JML	EPA 300/SW846 9056
Solids, Total Dissolved	13500	10	mg/l	1	11/01/12	JD	SM18/20 2540C
Specific Gravity by Hydromete	1.0093			1	10/30/12	MM	ASTM D287
Sulfate	80.0	5.0	mg/l	10	10/30/12 09:13	JML	EPA 300/SW846 9056
Total Organic Carbon	92.6	10	mg/l	10	11/13/12 13:37	GH	SM20 5310B
pH [b]	7.23		su	1	10/29/12 15:05	JD	SM20 4500H B+/9040C

(a) Elevated detection limit due to matrix interference.
(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TANK-1		
Lab Sample ID:	D40343-1F	**Date Sampled:**	10/29/12
Matrix:	AQ - Water Filtered	**Date Received:**	10/29/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.2

4

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	211000	20000	ug/l	5	10/31/12	11/01/12	JM	SW846 6010C [1]	SW846 3010A [2]
Magnesium	39700	10000	ug/l	5	10/31/12	11/01/12	JM	SW846 6010C [1]	SW846 3010A [2]
Potassium	222000	50000	ug/l	5	10/31/12	11/01/12	JM	SW846 6010C [1]	SW846 3010A [2]
Sodium	5880000	20000	ug/l	5	10/31/12	11/01/12	JM	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA2949
(2) Prep QC Batch: MP8783

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # D40343

Client / Reporting Information

Company Name: K.P. Kauffman Company, Inc.
Address: 1675 Broadway, Suite 2800
City: Denver State: CO Zip: 80202-4628
Project Contact: Susan Lara-Mesa SLaraMesa@kpk.com
Phone #: 303-825-4822
Samplers's Name: MICHAEL HATTEL (303-665-1400)

Project Information

Project Name: WATTENBERG TANK
Street:
City: Fort Lupton State: CO
Project #:
Fax #:
Client Purchase Order #: 7591

Requested Analysis

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCOR	OIL & GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	pH	CATIONS (Ca, K, Mg, NA)	SPECIFIC GRAVITY	TDS	TOC					LAB USE ONLY
	TANK - I		10/29/12	1245	MDH	LIQ	7	X			X					X	X	X	X	X	X	X					01

Matrix Codes: DW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

Turnaround Time (Business days)

[X] Std. 10 Business Days
Approved By:/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [x] Hard Copy
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] PDF

Comments / Remarks

NO Hard Copy

PDF copy to Mike Hattel with APEX at mhattel@msn.com

PDF copy to Susana Lara-Mesa w KPK at SLaraMesa@kpk.com

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]	10/29/12 1335	1	2		2 [signature] 10-29-12
3		3	4		4 13:40
5		5	Custody Seals: HD	Preserved where applicable: X	On Ice: X Cooler Temp.: 8.40°C

OK TO RUN- SAMPLES COLLECTED WITHIN 2 HRS

5.1

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D40343: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D40343 | Client: KP KAUFMANN | Immediate Client Services Action Required: No

Date / Time Received: 10/29/2012 1:40:00 PM | No. Coolers: 1 | Client Service Action Required at Login: No

Project: WATTENBERG TANK | Airbill #'s: HD

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

Cooler Temperature	Y	or N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	Infared gun	
3. Cooler media:	Ice (bag)	

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

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

Sample Integrity - Instructions	Y	or 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

5.1 5

D40343: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

Metals Analysis

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 10/31/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	9.6	25		
Antimony	30	1.7	3.6		
Arsenic	25	4.4	8.4		
Barium	10	.1	1.8		
Beryllium	10	1.3	3.1		
Boron	50	1	4.4		
Cadmium	10	.6	.59		
Calcium	400	5.4	16	6.9	<400
Chromium	10	.3	.56		
Cobalt	5.0	.4	.42		
Copper	10	1.2	3		
Iron	70	1.2	20		
Lead	50	1.9	2.9		
Lithium	2.0	.5			
Magnesium	200	6.5	22	-1.2	<200
Manganese	5.0	1.2	1.2		
Molybdenum	10	2.1	2.1		
Nickel	30	.5	.57		
Phosphorus	100	14	59		
Potassium	1000	61	150	-11	<1000
Selenium	50	4.8	11		
Silicon	50	2.9			
Silver	30	.4	.98		
Sodium	400	5.9	98	-21	<400
Strontium	5.0	.04	1.5		
Thallium	10	2.9	8.6		
Tin	50	12			
Titanium	10	.1			
Uranium	50	2.2	4.6		
Vanadium	10	.2	.48		
Zinc	30	.5	2.4		

Associated samples MP8783: D40343-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 10/31/12

Metal	D39996-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron	anr				
Cadmium	anr				
Calcium	40100	65000	25000	99.6	75-125
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	41100	66000	25000	99.6	75-125
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	1700	28400	25000	106.8	75-125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	88700	115000	25000	105.2	75-125
Strontium					
Thallium	anr				
Tin	anr				
Titanium	anr				
Uranium					
Vanadium	anr				
Zinc	anr				

Associated samples MP8783: D40343-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 10/31/12

Metal	D39996-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	40100	63600	25000	94.0	2.2	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	41100	64900	25000	95.2	1.7	20
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	1700	28300	25000	106.4	0.4	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	88700	113000	25000	97.2	1.8	20
Strontium						
Thallium	anr					
Tin	anr					
Titanium	anr					
Uranium						
Vanadium	anr					
Zinc	anr					

Associated samples MP8783: D40343-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6

ACCUTEST LABORATORIES
D40343

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 10/31/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	25400	25000	101.6	80-120
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	25100	25000	100.4	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	26500	25000	106.0	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	26100	25000	104.4	80-120
Strontium				
Thallium	anr			
Tin	anr			
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP8783: D40343-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.3

6

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 10/31/12

Metal	D39996-1F Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	40100	46400	15.8*(a)	0-10
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	41100	52500	27.6*(a)	0-10
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	1700	1060	37.7 (b)	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	88700	112000	26.7*(a)	0-10
Strontium				
Thallium	anr			
Tin	anr			
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP8783: D40343-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8783
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

6.1.4

6

Mountain States ACCUTEST LABORATORIES

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: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP8573/GN17484	0.50	0.24	mg/l	20	19.9	99.5	90-110%
Fluoride	GP8573/GN17484	0.10	0.0	mg/l	10	9.22	92.2	90-110%
HEM Oil and Grease	GP8625/GN17581	5.0	0.0	mg/l	40	33.9	84.8	78-114%
Nitrogen, Nitrate	GP8573/GN17484	0.010	0.0	mg/l	4.52	4.44	98.3	90-110%
Nitrogen, Nitrite	GP8573/GN17484	0.0040	0.0	mg/l	6.09	6.22	102.1	90-110%
Solids, Total Dissolved	GN17495	10	0.0	mg/l	400	400	100.0	90-110%
Sulfate	GP8573/GN17484	0.50	0.0	mg/l	30	29.9	99.7	90-110%
Total Organic Carbon	GP8663/GN17649	1.0	0.0	mg/l	8.82	8.61	97.6	90-110%
pH	GN17445			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GP8573: D40343-1
Batch GP8625: D40343-1
Batch GP8663: D40343-1
Batch GN17445: D40343-1
Batch GN17495: D40343-1
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP8625/GN17581	mg/l	40	36.4	7.1	20%

Associated Samples:
Batch GP8625: D40343-1
(*) Outside of QC limits

7.2

7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN17495	D40343-1	mg/l	13500	13500	0.0	0-25%
Total Organic Carbon	GP8663/GN17649	D40770-2	mg/l	1.1	1.1	0.0	0-20%

Associated Samples:
Batch GP8663: D40343-1
Batch GN17495: D40343-1
(*) Outside of QC limits

7.3

7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP8573/GN17484	D40344-3	mg/l	4.4	10	13.9	95.0	80-120%
Fluoride	GP8573/GN17484	D40344-3	mg/l	0.78	2.5	3.1	92.8	80-120%
HEM Oil and Grease	GP8625/GN17581	D40306-2	mg/l	2.9	40	36.9	85.0	78-114%
Nitrogen, Nitrate	GP8573/GN17484	D40344-3	mg/l	0.56	2.83	3.4	100.5	80-120%
Nitrogen, Nitrite	GP8573/GN17484	D40344-3	mg/l	0.0056	0.305	0.29	93.2	80-120%
Nitrogen, Nitrite	GP8573/GN17484	D40344-3	mg/l	0.016	0.305	0.29	93.2	80-120%
Sulfate	GP8573/GN17484	D40344-3	mg/l	12.4	10	21.8	94.0	80-120%
Total Organic Carbon	GP8663/GN17649	D40770-2	mg/l	1.1	10	11.2	101.0	80-120%

Associated Samples:
Batch GP8573: D40343-1
Batch GP8625: D40343-1
Batch GP8663: D40343-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.4

7

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40343
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP8573/GN17484	D40344-3	mg/l	4.4	10	14.2	2.1	20%
Fluoride	GP8573/GN17484	D40344-3	mg/l	0.78	2.5	3.2	3.2	20%
Nitrogen, Nitrate	GP8573/GN17484	D40344-3	mg/l	0.56	2.83	3.5	2.9	20%
Nitrogen, Nitrite	GP8573/GN17484	D40344-3	mg/l	0.0056	0.305	0.30	3.4	20%
Nitrogen, Nitrite	GP8573/GN17484	D40344-3	mg/l	0.016	0.305	0.30	3.4	20%
Sulfate	GP8573/GN17484	D40344-3	mg/l	12.4	10	21.9	0.5	20%
Total Organic Carbon	GP8663/GN17649	D40770-2	mg/l	1.1	10	11.3	0.9	20%

Associated Samples:
Batch GP8573: D40343-1
Batch GP8663: D40343-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

APPENDIX 8

APPENDIX 9

APEX CONSULTING SERVICES, INC.

APEX

566 West Willow Court
Reply to: P.O. Box 369
Louisville, CO 80027-0369
Phone: 303-665-1400
Fax: 303-665-0620
email: apexcsi@comcast.net

July 12, 2012

Ms. Susana Lara-Mesa
K.P. Kauffman Company, Inc.
World Trade Center
1675 Broadway, Suite 2800
Denver, CO 80202-4825

Re: June 2012, Groundwater Monitoring, Wattenberg Disposal Facility, Weld County, Colorado

Dear Ms. Lara-Mesa:

Apex Consulting Services, Inc. (APEX) has completed the June 2012 (semi-annual) groundwater monitoring at the Wattenberg Disposal Facility (Facility) in Weld County, Colorado (Figure 1). This letter report presents a summary of the work performed, the results of the groundwater analysis, and our conclusions.

BACKGROUND

The Facility was originally constructed in 1972 by the Amoco Production Company to dispose of production water from oil and gas wells in the D-J Basin. Wright's Disposal, Inc. purchased the Facility from Amoco in June 1989 and K.P. Kaufman Company, Inc. (KPK) purchased the Facility in June 1998. KPK currently operates the Facility for deep injection disposal of non-hazardous Class I and Class II liquid waste as defined in 40 CFR 144.6. The Facility is operated under the U.S. EPA Underground Injection Control Program, Final Permit No. CO 1516-2115. Three groundwater observation wells (OW-1, OW-2, and OW-3) are located around the periphery of the Facility to monitor groundwater flow direction, gradient, and quality. A groundwater monitoring plan was prepared by Nationwide Environmental Services, Inc. on January 3, 2002. The monitoring plan was subsequently approved by the Solid Waste Unit of the Colorado Department of Public Health and Environment. The monitoring plan included semi-annual groundwater monitoring (OW-1, OW-2, and OW-3) for major cations (calcium, magnesium, potassium, and sodium), major anions (bicarbonate, carbonate, chloride, nitrate, nitrite, and sulfate), Total Organic Carbon (TOC), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and Total Petroleum Hydrocarbons (TPH). During the January 2007 sampling event, product was encountered on the groundwater in observation well OW-3. Contaminated soils in the vicinity of observation well OW-3 were excavated and replaced with clean fill. Observation well OW-3 was removed during the excavation of the contaminated soils. Following the removal of the contaminated soil, a new observation well (OW-3) was installed at the previous location. At the request of the Colorado Department of Public Health and Environment, an additional observation well (OW-4) was installed to the north of the Facility in June 2009.

GROUNDWATER SAMPLING

Groundwater samples were collected for laboratory analyses from observation wells OW-1, OW-2, OW-3 and OW-4 on June 19, 2012. Prior to groundwater sampling, groundwater elevations were measured and recorded in each of the aforementioned observation wells located at the Property. The locations of the observation wells are illustrated on Figure 2. Each of the wells was surveyed to a local datum. Shallow groundwater was present in the wells at depths ranging from approximately 12.5 (OW-1) to 22.6 (OW-4) feet below the ground surface (bgs). Relative groundwater elevations are shown on Figure 2. Groundwater flow direction was determined to be to the north-northwest for this monitoring period. Free product was not present on the groundwater in any of the wells. The observation wells were prepared for sampling by purging three wet well volumes of groundwater from each well with a dedicated bailer. During purging of each observation well, pH, specific conductance, and temperature

were measured. The probes were calibrated before (within 2 hours) taking the measurements. Specific conductance was measured using equivalent EPA standard method 9050. Temperature and pH were measured using a standard probe equivalent to EPA standard method 9040 or 150.1. Groundwater was sampled from the observation wells with a dedicated bailer when pH, specific conductance, and temperature parameters were stable. The pH, specific conductance, and temperature measurements recorded for each sample are summarized on Tables 1, 2, and 3.

GROUNDWATER LABORATORY ANALYSES

The groundwater samples were handled with clean, new, nitrile gloves and placed in laboratory supplied vials and bottles. The samples and a trip blank (distilled water) were stored on ice in a cooler and delivered to Accutest Laboratories (ACCUTEST) under chain-of-custody documentation. The groundwater samples collected from the observation wells were analyzed for calcium, magnesium, potassium, sodium, chloride, nitrate, nitrite, sulfate, TOC, bicarbonate, carbonate, BTEX, and TPH. Laboratory results are summarized on Tables 1, 2, and 3. Laboratory reports provided by ACCUTEST are included in Attachment I.

CONCLUSIONS

Groundwater samples were collected for laboratory analysis from the observation wells OW-1, OW-2, OW-3 and OW-4 on June 19, 2012. Shallow groundwater was present in the observation and monitoring wells at depths ranging from approximately 12.5 to 22.6 feet bgs. Groundwater flow direction was determined to be to the north-northwest for this monitoring period. The analytical results for this monitoring event are consistent with the results from previous monitoring events except for results from observation well OW-2. The detected calcium, magnesium, potassium and sodium concentrations are slightly less than historical concentrations.

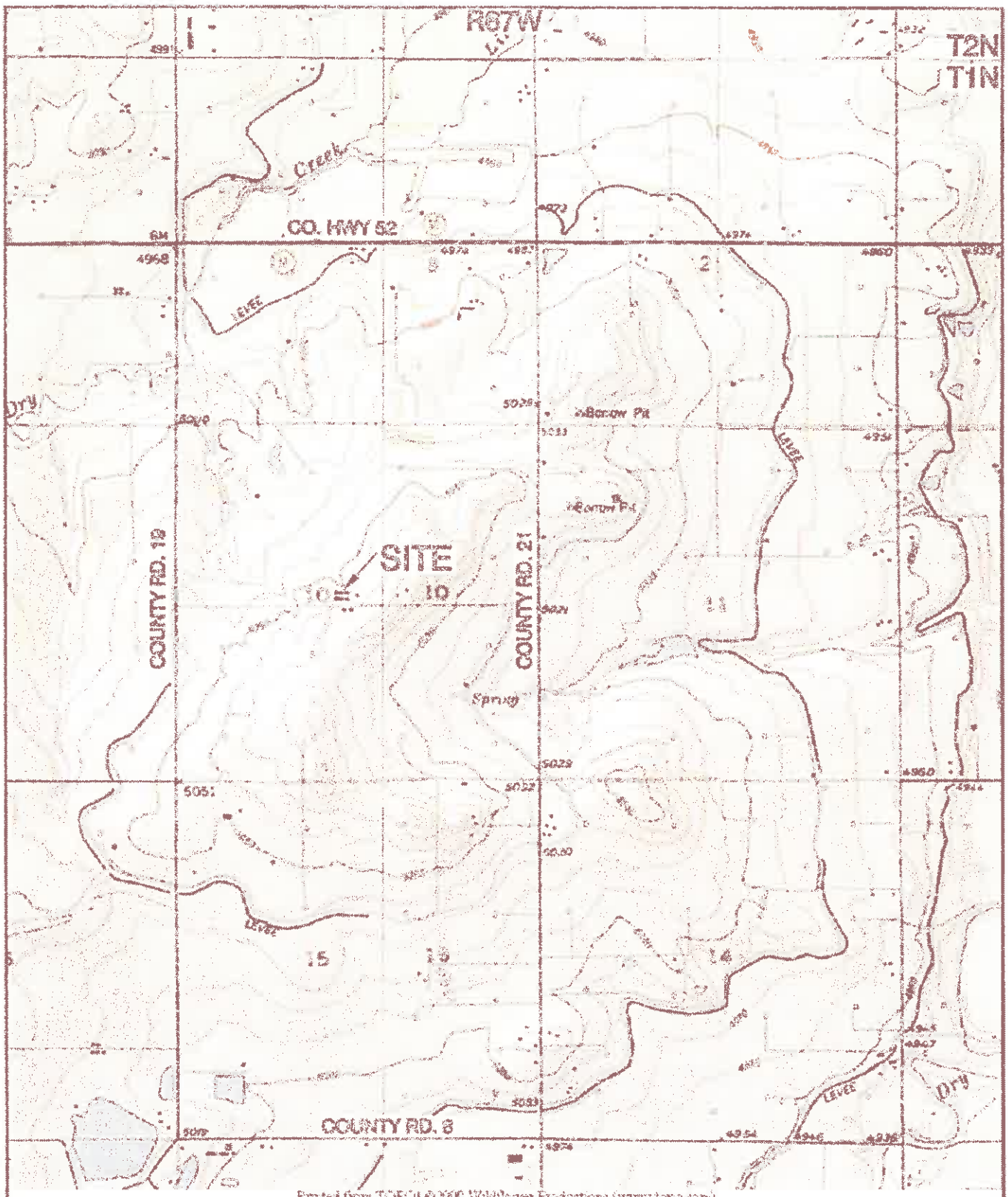
The next semi-annual groundwater monitoring event is scheduled for December 2012. Following the conclusion of the next semi-annual groundwater monitoring event, the data will be evaluated to determine if there is a significant change in groundwater elevation and/or quality.

If you have any questions or comments, please call.

Sincerely,

APEX CONSULTING SERVICES, INC.

Michael D. Hattel, P.G., P.E.S.
Principal
MDH:mh
Attachments
C:\Users\Mike Hatel\Documents\KPK\Wittenberg\Rpts\KPK GW RPT 0712.rtf



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APEX JOB: 1-0025.001.00

NORTH

0 1000 2000

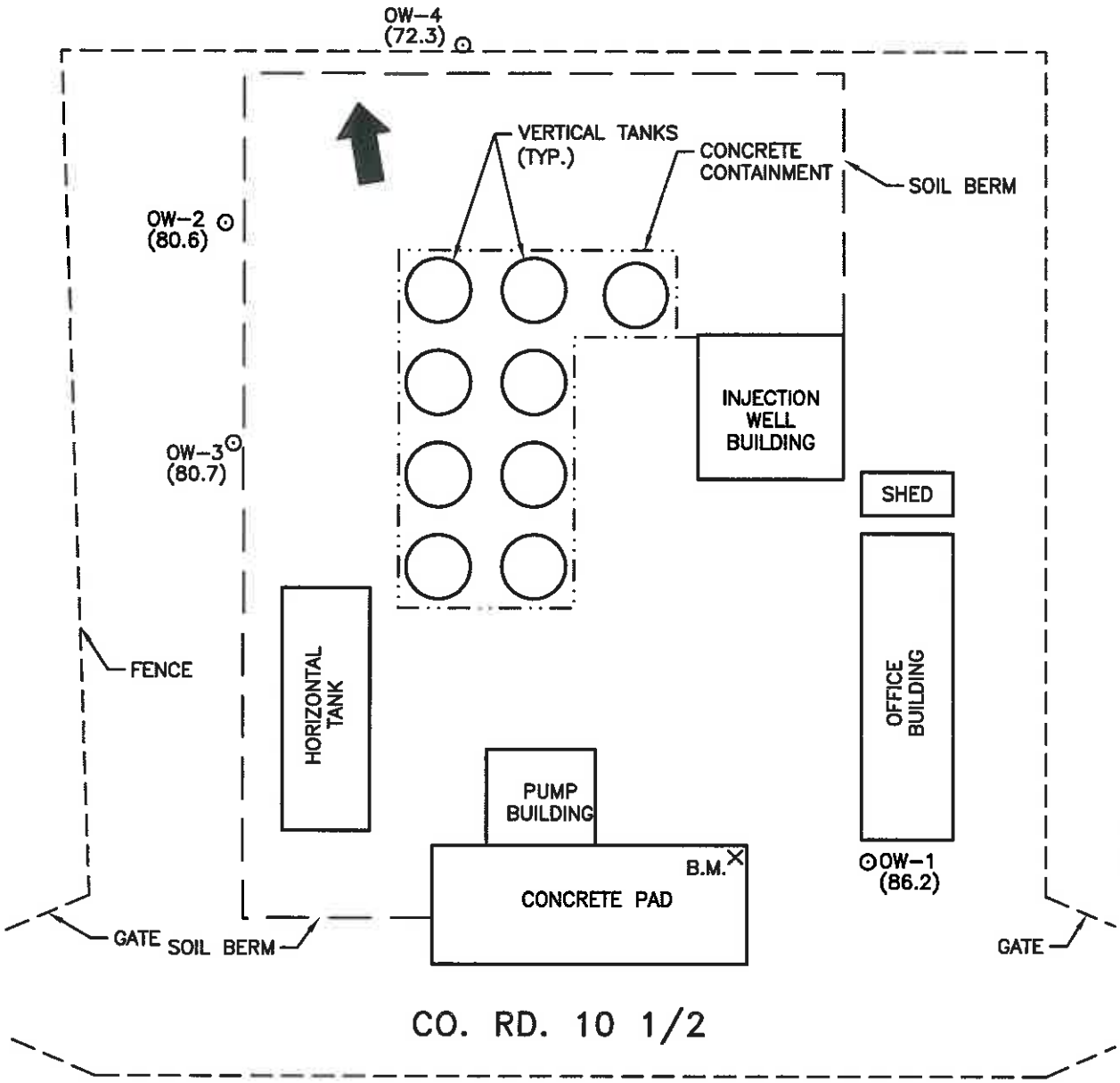
SCALE: 1" = 2000'

WATTENBERG DISPOSAL FACILITY
VICINITY MAP

APEX

FIGURE:
1

MDS FILE: 01-054\VICINITY-WATTENBERG.DWG



NOTE: DATA COLLECTED ON JUNE 19, 2012.

LEGEND:

OW-2 (80.8)	OBSERVATION WELL, NUMBER, AND RELATIVE GROUNDWATER ELEVATION
	CURRENT GROUNDWATER FLOW DIRECTION
B.M.	BENCH MARK, ELEVATION 100.00 FEET
ND	NO DATA

NORTH

0 30 60

SCALE: 1" = 60'

APEX JOB: 1-0025.001.00

WATTENBERG DISPOSAL FACILITY
SITE MAP
JUNE 19, 2012

APEX

FIGURE:
2

C:\MDS WORK FILES\files\01-054\SITEMAP-WATTENBERG_06-12

TABLE 1

Summary of BTEX[1], TPH[2] and TOC[3] Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[3]	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC[4] (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	<.15	<.18	<.24	<.63	<1.6	79.00
	12/16/02	6.54	14.9	>4000	<.15	<.18	<.24	<.63	<1.6	29
	6/30/03	6.64	13.2	>4000	<1.5	<.18	<.24	<.63	<1.6	250
	12/30/03	6.54	14.1	>4000	<.15	<.18	<.24	<.63	<1.6	86
	6/30/04	6.19	13.2	>4000	<.18	<.21	<.17	<.96	<1.5	28
	12/29/04	6.30	12.9	>4000	<.18	<.21	<.17	<.96	<1.6	33
	6/30/05	6.60	13.2	>4000	<.074	<.078	<.088	<.20	<1.5	27
	12/28/05	6.85	15.5	>4000	<.074	<.078	<.088	<.20	<1.5	27
	6/29/06	6.54	13.5	>4000	1.0	<.078	1.1	5.0	<1.5	140
	7/27/06[5]	6.51	13.6	>4000	<.074	<.078	<.088	<.20	NA	NA
	1/25/07	6.81	13.3	>4000	<1.0	<2.0	<2.0	<4.0	5.3	28.7
	7/2/07	6.59	12.9	>4000	<1.0	<2.0	<2.0	<4.0	15.0	30.0
	1/31/08	6.69	12.9	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	30.3
	6/24/08	6.52	12.3	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	31.4
	12/29/08	6.50	14.7	>4000	<1.0	<2.0	<2.0	<4.0	6.2	30.1
	6/29/09	6.52	14.9	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	30.8
	12/15/09	6.51	13.3	>4000	<1.0	<2.0	<2.0	<4.0	5.9	30.6
	6/23/10	6.61	12.4	>4000	<1.0	<2.0	<2.0	<4.0	5.0	31.8
	12/13/10	6.80	14.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	31.7
	6/21/11	6.62	12.3	>4000	0.28J	<1.0	<1.0	<2.0	7.1	29.2
	7/12/11	6.58	12.4	>400	<1.0	<2.0	<2.0	<2.0	NA	NA
OW-2	9/18/02	7.05	14.8	>4000	<.15	<.18	<.24	<.63	<1.6	230
	12/16/02	7.09	14.0	>4000	<.15	<.18	<.24	<.63	<1.6	60
	6/30/03	7.28	12.9	>4000	<.15	<.18	<.24	<.63	<1.7	150
	12/30/03	7.23	13.3	>4000	<.15	<.18	<.24	<.63	<1.7	58
	6/30/04	6.86	13.0	>4000	<.18	<.21	<.17	<.96	<1.5	37
	12/29/04	6.80	12.3	>4000	<.18	<.21	<.17	<.96	<1.4	54
	6/30/05	7.18	12.5	>4000	<.074	<.078	<.088	<.20	<1.5	48
	12/28/05	7.23	14.5	>4000	<.074	<.078	<.088	<.20	<1.5	48
	6/29/06	7.22	12.9	>4000	<.074	<.078	<.088	<.20	<1.5	59
	1/25/07	7.37	12.8	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	44.4
	7/2/07	7.18	13.3	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	36.7

TABLE 1 (continued)

Summary of BTEX[1], TPH[2] and TOC[3] Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[3]	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC[4] (mg/L)
OW-2	1/31/08	7.27	12.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43
(Cont)	6/24/08	7.18	12.1	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	47.1
	12/29/08	7.13	14.0	>4000	<1.0	<2.0	<2.0	<4.0	<4.0	45.4
	6/29/09	7.15	14.2	>4000	<1.0	<2.0	<2.0	<4.0	5.7	43.9
	12/15/09	7.11	13.0	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.1
	6/23/10	7.30	12.4	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	43.5
	12/13/10	7.14	13.6	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	44.5
	6/21/11	7.19	12.5	>4000	<0.2	<1.0	<1.0	<2.0	4.9	37.2
OW-3	9/18/02	6.88	15.4	>4000	<.15	<.18	<.24	<.63	<5.1	95
	12/16/02	7.08	15.3	>4000	<.15	<.18	<.24	<.63	<1.6	63
	6/30/03	7.05	14.6	>4000	<.15	<.18	<.24	<.63	<1.6	200
	12/30/03	7.27	13.4	>4000	<.15	<.18	<.24	<.6 3	<1.8	85
	6/30/04	6.89	12.4	>4000	3.5	1.3	<.17	<.9 6	<2.0	68
	9/9/04[5]	6.86	13.5	>4000	<.18	<.17	<.17	<. 96	NA	NA
	12/29/04	6.65	12.3	>4000	<.18	<.21	<.17	<.9 6	<1.5	78
	6/30/05	6.90	12.5	>4000	<.074	<.078	<.088	<.2 0	<1.6	80
	12/28/05	7.12	15.2	>4000	<.074	<.078	<.088	<.2 0	<1.5	92
	6/29/06	7.59	15.8	>4000	<.074	<.078	<.088	<.2 0	<1.5	82
	1/25/07	7.47	12.7	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	62.9
	7/2/07	6.90	13.7	>4000	1500	71000	19000	178000	NA	NA
	1/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	<1.0	<2.0	<2.0	<4.0	<5.0	53
	6/29/09	7.15	14.1	>4000	1.0	<2.0	<2.0	<4.0	5.0	43.5
	7/27/09	7.11	14.2	>4000	NA	NA	NA	NA	NA	NA
	12/15/09	7.17	13.0	>4000	1.6	<2.0	<2.0	<4.0	<6.33	46.4
	1/04/10	7.15	13.2	>4000	<1.0	<2.0	<2.0	<4.0	NA	NA
	6/23/10	7.35	12.3	>4000	<1.0	<2.0	<2.0	<4.0	<13.0	44.8
	12/13/10	7.05	13.2	>4000	<1.0	<2.0	<2.0	<4.0	7.6	45.0
	6/21/11	7.19	12.3	>4000	1.4	<1.0	<1.0	<2.0	<6.2	40.1
	7/12/11	7.15	12.4	>4000	<1.0	<1.0	<1.0	<1.0	NA	NA

TABLE 1 (continued)

Summary of BTEX[1], TPH[2] and TOC[3] Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[3]	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TPH (mg/L)	TOC[4] (mg/L)
OW-4	12/15/09	7.14	12.9	>4000	<1.0	<2.0	<2.0	<4.0	NA	68.9
	6/23/10	7.17	13.5	>4000	<1.0	<2.0	<2.0	<4.0	<7.4	78.4
	12/13/10	7.18	13.1	>4000	<1.0	<2.0	<2.0	<4.0	<11	69.9
	6/21/11	7.23	12.2	>4000	<0.2	<1.0	<1.0	<2.0	<6.4	68.1

1 Benzene, toluene, ethylbenzene, and total xylenes by Method 8021B.
2 Total petroleum hydrocarbons by Method 1664.
3 Specific conductance in micro-siemens at 25 degrees Celsius.
4 Total organic carbon by Method 415.1.
5 Second sample collected in accordance with ground water monitoring plan.

J Estimated value.
mg/L milligrams per liter.
NA Not Analyzed
ug/L micrograms per liter.
NS No Sample

TABLE 2

Summary of Major Cation[1] Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[2]	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	330	310	11	2300
	12/16/02	6.54	14.9	>4000	370	320	15	2500
	6/30/03	6.64	13.2	>4000	370	350	12	2600
	12/30/03	6.54	14.1	>4000	500	340	12	2600
	6/30/04	6.19	13.2	>4000	300	300	11	2000
	12/29/04	6.30	12.9	>4000	420	360	14	2600
	6/30/05	6.73	13.2	>4000	410	370	12	2500
	12/28/05	6.85	15.5	>4000	420	380	18	2700
	6/29/06	6.54	13.5	>4000	440	410	26	2700
	1/25/07	6.81	13.3	>4000	380	350	14	2300
	7/2/07	6.59	12.9	>4000	450	400	21	2700
	1/31/08	6.69	12.9	>4000	460	420	14	2900B
	6/24/08	6.52	12.3	>4000	410	380	11	2800
	12/29/08	6.50	14.7	>4000	460	420	12	2700
	6/29/09	6.52	14.9	>4000	440	410	11	2800
	12/15/09	6.51	13.3	>4000	470	470	15	2400
	6/23/10	6.61	12.4	>4000	554	501	<50	2810
	12/13/10	6.80	14.6	>4000	472	450	13	2540
	6/21/11	6.62	12.3	>4000	457	415	11.7	2400
OW-2	9/18/02	7.05	14.8	>4000	600	680	18	3800
	12/16/02	7.09	14.0	>4000	690	700	23	3700
	6/30/03	7.28	12.9	>4000	600	660	21	4200
	12/30/03	7.23	13.3	>4000	770	640	21	4300
	6/30/04	6.86	13.0	>4000	480	610	18	3500
	12/29/04	6.80	12.3	>4000	600	630	19	4000
	6/30/05	7.18	12.5	>4000	640	670	19	3800
	12/28/05	7.23	14.5	>4000	550	640	22	4000
	6/29/06	7.22	12.9	>4000	580	670	24	4700

TABLE 2 (continued)

Summary of Major Cation[1] Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[2]	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
OW-2	1/25/07	7.37	12.8	>4000	550	620	25	3600
(Cont.)	7/2/07	7.18	13.3	>4000	620	660	38	4300
	1/31/08	7.27	12.6	>4000	600	640	20	4100B
	6/24/08	7.18	12.1	>4000	530	580	18	4000
	12/29/08	7.13	14.0	>4000	570	630	19	4100
	6/29/09	7.15	14.2	>4000	510	560	17	4000
	12/15/0	7.11	13.0	>4000	560	670	22	3300
	6/23/10	7.30	12.4	>4000	648	698	<50	4000
	12/13/10	7.14	13.6	>4000	573	669	17.7	3730
	6/21/11	7.19	12.5	>4000	536	606	17.3	347
OW-3	9/18/02	6.88	15.4	>4000	480	690	16	3900
	12/16/02	7.08	15.3	>4000	530	720	20	4100
	6/30/03	7.13	14.6	>4000	490	670	17	4200
	12/30/03	7.27	13.4	>4000	640	650	17	4300
	6/30/04	6.89	12.4	>4000	490	610	18	3500
	12/29/04	6.65	12.3	>4000	530	660	18	4100
	6/30/05	6.90	12.5	>4000	530	710	18	4100
	12/28/05	7.12	15.2	>4000	520	730	20	4200
	6/29/06	7.29	15.8	>4000	510	730	22	4400
	1/25/07	7.47	12.7	>4000	510	640	24	3700
	7/2/07	6.90	13.7	>4000	NA	NA	NA	NA
	1/31/08	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	500	630	20	4400
	6/29/09	7.15	14.1	>4000	520	570	17	4200
	12/15/09	7.17	13.0	>4000	460	630	26	3900
	6/23/10	7.35	12.3	>4000	564	695	<50	4310
	12/13/10	7.05	13.2	>4000	512	639	18.9	4030
	6/21/11	7.19	12.3	>4000	422	511	15.5	3130

TABLE 2 (continued)

Summary of Major Cation[1] Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[2]	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
OW-4	12/15/09	7.14	12.9	>4000	500	600	29	3800
	6/23/10	7.17	13.5	>4000	602	617	<50	4610
	12/13/10	7.18	13.1	>4000	497	583	21.4	3800
	6/21/11	7.23	12.2	>4000	501	559	21	3890

1 By Method 6010B.
B Analyte detected in blank
2 Specific conductance in micro-siemens at 25 degrees Celsius.
mg/L milligrams per liter.
NS No Sample

TABLE 3

Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[1]	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N[3] (mg/L)	Nitrite as N[3] (mg/L)	Sulfate[3] (mg/L)	Chloride[3] (mg/L)
OW-1	9/18/02	6.46	17.5	>4000	890	<1	<.36	<.34	2500	3300
	12/16/02	6.54	14.9	>4000	880	<1	<1.4	<1.3	2400	3800
	6/303/03	6.64	13.2	>4000	NS	NS	<1.8	<2.5	1900	3400
	12/30/03	6.54	14.1	>4000	880	<1.2	<0.01	<0.02	2300	1000
	6/30/04	6.19	13.2	>4000	780	<1.2	<0.02	<0.02	2100	3800
	12/29/04	6.30	12.9	>4000	840	<3.4	<0.07	<0.04	2100	3400
	6/30/05	6.73	13.2	>4000	850	<1.2	<0.02	<0.02	2400	3900
	12/28/05	6.85	15.5	>4000	860	<1.2	<0.02	<0.02	2600	4500
	6/29/06	6.54	13.5	>4000	850	<1.2	<0.02	<0.02	2700	4800
	1/25/07	6.81	13.3	>4000	1000	<5.0	<0.56	<0.76	2030	3880
	7/2/07	6.59	12.9	>4000	976	<5.0	<0.10	<0.40	1970	3940
	1/31/08	6.69	12.9	>4000	977	<5.0	<0.25	<0.40	1870	4210
	6/24/08	6.52	12.3	>4000	936	<5.0	<2.3	<6.1	1830	4400
	12/29/08	6.50	14.7	>4000	754	<5.0	<.45	<15	1730	9070
	6/29/09	6.52	14.9	>4000	763	<5.0	<.90	<3.1	1690	4690
	12/15/09	6.51	13.3	>4000	742	<5.0	<1.5	<1.5	1640	4880
	6/23/10	6.61	12.4	>4000	707	<5.0	<0.90	<6.1	1650	4780
	12/13/10	6.80	14.6	>4000	740	<5.0	<0.90	<15	1740	5080
	6/21/11	6.62	12.3	>4000	705	<5.0	<0.45	<15	1680	4650
OW-2	9/18/02	7.05	14.8	>4000	1100	<1	13	<.84	5200	5300
	12/16/02	7.09	14.0	>4000	1100	<1	5	<1.7	4700	5800
	6/30/03	7.28	12.9	>4000	NS	NS	16	<2.5	5300	4200
	12/30/03	7.23	13.3	>4000	1100	<1.2	16	<0.09	5200	4500
	6/30/04	6.86	13.0	>4000	960	<1.2	16	<0.25	5700	5000
	12/29/04	6.80	12.3	>4000	1000	<3.4	13	<0.04	5000	4300
	6/30/05	7.18	12.5	>4000	1100	<1.2	12	<0.25	5800	4500
	12/28/05	7.23	14.5	>4000	1000	<1.2	14	16	5600	5400
	6/29/06	7.22	12.9	>4000	970	<1.2	9	<0.25	5600	6100

TABLE 3 (continued)

Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[1]	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N[3] (mg/L)	Nitrite as N[3] (mg/L)	Sulfate[3] (mg/L)	Chloride[3] (mg/L)
OW-2	1/25/07	7.37	12.8	>4000	1210	<5.0	7.1	<1.9	4930	5000
(cont)	7/2/07	7.18	13.3	>4000	1190	<5.0	9	<1.0	5270	4790
	1/31/08	7.27	12.6	>4000	1200	<5.0	6.6	<.40	4640	4500
	6/24/08	7.18	12.1	>4000	1170	<5.0	4.26	<6.1	4400	5200
	12/29/08	7.13	14.0	>4000	950	<5.0	7.8	<15	4830	4940
	6/29/09	7.15	14.2	>4000	931	<5.0	7.2	<6.1	4900	5070
	12/15/09	7.11	13.0	>4000	930	<5.0	12.2	<1.5	6240	4230
	6/23/10	7.30	12.4	>4000	904	<5.0	6.4	<15.0	4960	5160
	12/13/10	7.14	13.6	>4000	930	<5.0	7.9	<15.0	6160	5750
	6/21/11	7.19	12.5	>4000	948	<5.0	5.7	<15.0	4740	4870
OW-3	9/18/02	6.88	15.4	>4000	NS	NS	NS	NS	NS	NS
	12/16/02	7.08	15.3	>4000	1100	<1	<1.8	<1.7	8400	3800
	6/30/03	7.13	14.6	>4000	NS	NS	2.0J	<2.5	6100	3800
	12/30/03	7.27	13.4	>4000	1200	<1.2	0.24	<0.09	6300	1200
	6/30/04	6.89	12.4	>4000	920	<1.2	0.20	<0.02	5400	4900
	12/29/04	6.65	12.3	>4000	1100	<3.4	<0.07	<0.07	6700	3200
	6/30/05	6.90	12.5	>4000	1100	<1.2	<0.28	<0.25	8000	3800
	12/28/05	7.12	15.2	>4000	1100	<1.2	6.2	11	6800	3800
	6/29/06	6.54	13.5	>4000	1100	<1.2	2.7	<0.25	680	4800
	1/25/07	7.47	12.7	>4000	1100	<5.0	<1.4	<1.9	5900	4750
	7/2/07	6.9	13.7	>4000	NA	NA	NA	NA	NA	NA
	1/31/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/24/08	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/05/09	7.05	14.0	>4000	1200	<5.0	4.3	1.9	6100	4390
	6/29/09	7.15	14.1	>4000	919	<5.0	7.4	<6.1	5010	4970
	12/15/09	7.17	13.0	>4000	920	<5.0	6.2	<1.5	4740	5050
	6/23/10	7.35	12.3	>4000	960	<5.0	8.0	<6.1	5960	3920
	12/13/10	7.05	13.2	>4000	960	<5.0	9.5	<15.0	5960	4690
	6/21/11	7.19	12.3	>4000	973	<5.0	4.0	<15.0	5100	3490

TABLE 3 (continued)

Summary of Major Anion Analytical Results for Groundwater Samples Collected from Wattenberg Disposal Facility, Weld County, Colorado

Sample	Date	pH	Temperature (Celsius)	Specific Conductance[1]	Bicarbonate (mg/L)	Carbonate (mg/L)	Nitrate as N[3] (mg/L)	Nitrite as N[3] (mg/L)	Sulfate[3] (mg/L)	Chloride[3] (mg/L)
OW-4	12/15/09	7.14	12.9	>4000	276	<5.0	89.3	<1.5	6450	4350
	6/23/10	7.17	13.5	>4000	257	<5.0	80.2	<6.1	6650	3580
	12/13/10	7.18	13.1	>4000	300	<5.0	69.1	<15.0	7880	3840
	6/21/11	7.23	12.2	>4000	262	<5.0	71.0	<15.0	6880	3690

1 Specific conductance in micro-siemens at 25 degrees Celsius.
2 By Method 310.1.
3 By Method 300.
J Analyte was detected above the Reporting Limit but below the Quantitation Limit.

mg/L milligrams per liter.
NS No sample.

ATTACHMENT I

Mountain States ACCUTEST LABORATORIES

07/12/12

Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D35614

Sampling Date: 06/19/12

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
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ATTN: Mike Hattel

Total number of pages in report: 70

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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.

Brad Madadian
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Sample Summary

K.P. Kauffmann Company, Inc.

Job No: D35614

Wattenberg Tank

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D35614-1	06/19/12	08:05 MH	06/19/12	AQ	Ground Water	OW-1
D35614-1F	06/19/12	08:05 MH	06/19/12	AQ	Groundwater Filtered	OW-1
D35614-2	06/19/12	09:00 MH	06/19/12	AQ	Ground Water	OW-2
D35614-2F	06/19/12	09:00 MH	06/19/12	AQ	Groundwater Filtered	OW-2
D35614-3	06/19/12	10:00 MH	06/19/12	AQ	Ground Water	OW-3
D35614-3F	06/19/12	10:00 MH	06/19/12	AQ	Groundwater Filtered	OW-3
D35614-4	06/19/12	07:00 MH	06/19/12	AQ	Ground Water	OW-4
D35614-4F	06/19/12	07:00 MH	06/19/12	AQ	Groundwater Filtered	OW-4

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	K.P. Kauffmann Company, Inc.	Job No	D35614
Site:	Wattenberg Tank	Report Date	7/3/2012 1:59:30 PM

On 06/19/2012, 4 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.0 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D35614 was assigned to the project. The lab sample IDs, client sample IDs, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ Batch ID: GTA937

- All samples were analyzed within the recommended method holding time.
- Sample(s) D35500-5MS, D35500-5MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix AQ Batch ID: MP7763

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35556-1MS, D35556-1MSD, D35556-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Magnesium are outside control limits for sample MP7763-SD1. Probable cause due to sample homogeneity.
- MP7763-SD1 for Magnesium: Serial dilution indicates possible matrix interference.

Wet Chemistry By Method EPA 1664A

Matrix AQ Batch ID: GP7619

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35613-1MS were used as the QC samples for the HEM Oil and Grease analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ Batch ID: GP7531

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35605-2MS, D35605-2MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D35614-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- All samples for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM20 2320B

Matrix AQ	Batch ID: GN15605

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35590-1DUP, D35590-1MS, D35590-1MSD were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix AQ	Batch ID: GN15606

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ	Batch ID: GN15607

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM20 2540C

Matrix AQ	Batch ID: GN15581

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35590-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 5310B

Matrix AQ	Batch ID: GP7527

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D35259-1MS, D35259-1MSD, D35259-2DUP were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D35614
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 06/19/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D35614-1	**OW-1**					
Alkalinity, Bicarbonate as CaCO3		822	5.0		mg/l	SM20 2320B
Alkalinity, Total as CaCO3		822	5.0		mg/l	SM20 2320B
Chloride		4170	130		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		10100	10		mg/l	SM20 2540C
Sulfate		1790	50		mg/l	EPA 300/SW846 9056
Total Organic Carbon		33.3	2.0		mg/l	SM20 5310B
D35614-1F	**OW-1**					
Calcium		510000	4000		ug/l	SW846 6010C
Magnesium		463000	2000		ug/l	SW846 6010C
Potassium		12600	10000		ug/l	SW846 6010C
Sodium		2720000	4000		ug/l	SW846 6010C
D35614-2	**OW-2**					
Alkalinity, Bicarbonate as CaCO3		951	5.0		mg/l	SM20 2320B
Alkalinity, Total as CaCO3		951	5.0		mg/l	SM20 2320B
Chloride		4890	130		mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate		4.3	0.90		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		15900	10		mg/l	SM20 2540C
Sulfate		4730	130		mg/l	EPA 300/SW846 9056
Total Organic Carbon		45.4	5.0		mg/l	SM20 5310B
D35614-2F	**OW-2**					
Calcium		405000	4000		ug/l	SW846 6010C
Magnesium		425000	2000		ug/l	SW846 6010C
Potassium		10400	10000		ug/l	SW846 6010C
Sodium		2400000	4000		ug/l	SW846 6010C
D35614-3	**OW-3**					
Alkalinity, Bicarbonate as CaCO3		959	5.0		mg/l	SM20 2320B
Alkalinity, Total as CaCO3		959	5.0		mg/l	SM20 2320B
Chloride		3560	130		mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate		8.8	0.90		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		15500	10		mg/l	SM20 2540C
Sulfate		5690	130		mg/l	EPA 300/SW846 9056
Total Organic Carbon		40.5	5.0		mg/l	SM20 5310B

Summary of Hits

Job Number: D35614
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 06/19/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D35614-3F	**OW-3**					
Calcium		447000	4000		ug/l	SW846 6010C
Magnesium		528000	2000		ug/l	SW846 6010C
Potassium		16800	10000		ug/l	SW846 6010C
Sodium		3530000	4000		ug/l	SW846 6010C
D35614-4	**OW-4**					
Alkalinity, Bicarbonate as CaCO3		261	5.0		mg/l	SM20 2320B
Alkalinity, Total as CaCO3		261	5.0		mg/l	SM20 2320B
Chloride		3920	130		mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate		87.5	4.5		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		17200	10		mg/l	SM20 2540C
Sulfate		6990	130		mg/l	EPA 300/SW846 9056
Total Organic Carbon		71.3	5.0		mg/l	SM20 5310B
D35614-4F	**OW-4**					
Calcium		504000	4000		ug/l	SW846 6010C
Magnesium		539000	2000		ug/l	SW846 6010C
Potassium		17900	10000		ug/l	SW846 6010C
Sodium		3740000	4000		ug/l	SW846 6010C

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

4.1
4

Client Sample ID:	OW-1		
Lab Sample ID:	D35614-1	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
Method:	SW846 8021B	**Percent Solids:**	n/a
Project:	Wattenberg Tank		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16587.D	1	06/20/12	SK	n/a	n/a	GTA937
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	87%		60-140%

ND = Not detected
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:	OW-1		
Lab Sample ID:	D35614-1	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	822	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Total as CaCO3	822	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Chloride	4170	130	mg/l	250	06/19/12 17:51	JML	EPA 300/SW846 9056
HEM Oil and Grease	< 4.9	4.9	mg/l	1	07/03/12	SWT	EPA 1664A
Nitrogen, Nitrate [a]	< 0.90	0.90	mg/l	20	06/19/12 14:44	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 2.5	2.5	mg/l	250	06/19/12 17:51	JML	EPA 300/SW846 9056
Solids, Total Dissolved	10100	10	mg/l	1	06/26/12	JD	SM20 2540C
Sulfate	1790	50	mg/l	100	06/19/12 17:37	JML	EPA 300/SW846 9056
Total Organic Carbon	33.3	2.0	mg/l	2	06/20/12 15:18	NS	SM20 5310B

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OW-1		
Lab Sample ID:	D35614-1F	**Date Sampled:**	06/19/12
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	510000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Magnesium	463000	2000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Potassium	12600	10000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Sodium	2720000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA2553
(2) Prep QC Batch: MP7763

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OW-2		
Lab Sample ID:	D35614-2	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
Method:	SW846 8021B	**Percent Solids:**	n/a
Project:	Wattenberg Tank		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16588.D	1	06/20/12	SK	n/a	n/a	GTA937
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	84%		60-140%

ND = Not detected
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:	OW-2		
Lab Sample ID:	D35614-2	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.3

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	951	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Total as CaCO3	951	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Chloride	4890	130	mg/l	250	06/19/12 18:06	JML	EPA 300/SW846 9056
HEM Oil and Grease	< 4.8	4.8	mg/l	1	07/03/12	SWT	EPA 1664A
Nitrogen, Nitrate	4.3	0.90	mg/l	20	06/19/12 14:58	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 2.5	2.5	mg/l	250	06/19/12 18:06	JML	EPA 300/SW846 9056
Solids, Total Dissolved	15900	10	mg/l	1	06/26/12	JD	SM20 2540C
Sulfate	4730	130	mg/l	250	06/19/12 18:06	JML	EPA 300/SW846 9056
Total Organic Carbon	45.4	5.0	mg/l	5	06/20/12 15:29	NS	SM20 5310B

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OW-2		
Lab Sample ID:	D35614-2F	**Date Sampled:**	06/19/12
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.4

4

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	405000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Magnesium	425000	2000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Potassium	10400	10000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Sodium	2400000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA2553
(2) Prep QC Batch: MP7763

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OW-3		
Lab Sample ID:	D35614-3	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
Method:	SW846 8021B	**Percent Solids:**	n/a
Project:	Wattenberg Tank		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16589.D	1	06/20/12	SK	n/a	n/a	GTA937
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	83%		60-140%

ND = Not detected
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:	OW-3		
Lab Sample ID:	D35614-3	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.5

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	959	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Total as CaCO3	959	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Chloride	3560	130	mg/l	250	06/19/12 18:20	JML	EPA 300/SW846 9056
HEM Oil and Grease	< 5.0	5.0	mg/l	1	07/03/12	SWT	EPA 1664A
Nitrogen, Nitrate	8.8	0.90	mg/l	20	06/19/12 15:13	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 2.5	2.5	mg/l	250	06/19/12 18:20	JML	EPA 300/SW846 9056
Solids, Total Dissolved	15500	10	mg/l	1	06/26/12	JD	SM20 2540C
Sulfate	5690	130	mg/l	250	06/19/12 18:20	JML	EPA 300/SW846 9056
Total Organic Carbon	40.5	5.0	mg/l	5	06/20/12 15:41	NS	SM20 5310B

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

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4

Client Sample ID:	OW-3		
Lab Sample ID:	D35614-3F	**Date Sampled:**	06/19/12
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	447000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Magnesium	528000	2000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Potassium	16800	10000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Sodium	3530000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA2553
(2) Prep QC Batch: MP7763

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

4.7
4

Client Sample ID:	OW-4		
Lab Sample ID:	D35614-4	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
Method:	SW846 8021B	**Percent Solids:**	n/a
Project:	Wattenberg Tank		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16590.D	1	06/20/12	SK	n/a	n/a	GTA937
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	81%		60-140%

ND = Not detected
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:	OW-4		
Lab Sample ID:	D35614-4	**Date Sampled:**	06/19/12
Matrix:	AQ - Ground Water	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.7

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	261	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Alkalinity, Total as CaCO3	261	5.0	mg/l	1	06/27/12	CT	SM20 2320B
Chloride	3920	130	mg/l	250	06/19/12 19:18	JML	EPA 300/SW846 9056
HEM Oil and Grease	< 5.2	5.2	mg/l	1	07/03/12	SWT	EPA 1664A
Nitrogen, Nitrate	87.5	4.5	mg/l	100	06/19/12 18:35	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 2.5	2.5	mg/l	250	06/19/12 19:18	JML	EPA 300/SW846 9056
Solids, Total Dissolved	17200	10	mg/l	1	06/26/12	JD	SM20 2540C
Sulfate	6990	130	mg/l	250	06/19/12 19:18	JML	EPA 300/SW846 9056
Total Organic Carbon	71.3	5.0	mg/l	5	06/20/12 16:14	NS	SM20 5310B

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	OW-4		
Lab Sample ID:	D35614-4F	**Date Sampled:**	06/19/12
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/19/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	504000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Magnesium	539000	2000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Potassium	17900	10000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]
Sodium	3740000	4000	ug/l	1	06/27/12	06/28/12	JB	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA2553
(2) Prep QC Batch: MP7763

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D35614

Client / Reporting Information

Company Name	K.P. Kauffman Company, Inc.
Address	1675 Broadway, Suite 2800
City / State / Zip	Denver / CO / 80202-4628
Project Contact	Susana Lara-Mesa (SLaraMesa@kpk.com)
Phone #	303-665-1400
Samplers's Name	MICHAEL HATTEL (303-665-1400)

Project Information

Project Name	WATTENBERG GROUNDWATER
Street	
City / State	Fort Lupton / CO
Project #	
Fax #	
Client Purchase Order #	7591

Requested Analysis

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	OIL & GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	TOC	CATIONS (Ca, K, Mg, NA)	BTEX 8021	ALKALINITY (CARB/BICARB)	TDS	LAB USE ONLY
	OW-1		6/19/12	0805	MDH	GW	8	X			X					X	X	X	X	X	X	X	01
	OW-2			0900	MDH	GW	8	X			X					X	X	X	X	X	X	X	02
	OW-3			1000	MDH	GW	8	X			X					X	X	X	X	X	X	X	03
	OW-4			0700	MDH	GW	8	X			X					X	X	X	X	X	X	X	04

Matrix Codes: OW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

DR 6/19

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

Approved By:/ Date:

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [X] Hard Copy
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [X] PDF

Comments / Remarks

PDF copy to Susana Lara-Mesa with KPK at SLaraMesa@kpk.com

PDF copy also to Mike Hattel with APEX at mhattel@msn.com

Hard copy ONLY to Mike Hattel with APEX, P.O. Box 369, Louisville, CO 80027-0369

NO TDS BOTTLE Received ok to re Ah-ap DR 6/19

Emergency T/A data available VIA Lablink

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]	6/19/12 1215	1 [signature] 6/19 1215	2		2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # HD	Preserved where applicable [illegible]	On Ice [illegible] Cooler Temp. 4.0

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D35614: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D35614 Client: KP KAUFFMAN Immediate Client Services Action Required: No

Date / Time Received: 6/19/2012 12:15:00 PM No. Coolers: 1 Client Service Action Required at Login: No

Project: WATTENBERG Airbill #'s: HD

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

Cooler Temperature	Y	or N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	Infared gun	
3. Cooler media:	Ice (bag)	

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

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

Sample Integrity - Instructions	Y	or 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

5.1

5

D35614: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

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: D35614
Account: KPKCOD K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA937-MB	TA16580.D	1	06/20/12	SK	n/a	n/a	GTA937

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

D35614-1, D35614-2, D35614-3, D35614-4

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	83%	60-140%

Blank Spike Summary

Job Number: D35614
Account: KPKCOD K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTA937-BS	TA16581.D	1	06/20/12	SK	n/a	n/a	GTA937

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

D35614-1, D35614-2, D35614-3, D35614-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	27.2	23.5	86	70-130
100-41-4	Ethylbenzene	45.6	39.8	87	70-130
108-88-3	Toluene	212	175	83	70-130
1330-20-7	Xylenes (total)	216	194	90	68-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	89%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D35614
Account: KPKCOD K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D35500-5MS	TA16583.D	20	06/20/12	SK	n/a	n/a	GTA937
D35500-5MSD	TA16584.D	20	06/20/12	SK	n/a	n/a	GTA937
D35500-5	TA16582.D	20	06/20/12	SK	n/a	n/a	GTA937

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

D35614-1, D35614-2, D35614-3, D35614-4

CAS No.	Compound	D35500-5 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2330		544	2720	72	2740	75	1	67-130/30
100-41-4	Ethylbenzene	594		912	1360	84	1350	83	1	62-130/30
108-88-3	Toluene	101		4230	3520	81	3490	80	1	66-130/30
1330-20-7	Xylenes (total)	4670		4320	8160	81	8090	79	1	61-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D35500-5	Limits
120-82-1	1,2,4-Trichlorobenzene	90%	89%	86%	60-140%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
06/21/12 09:26

Quantitation Report (QT Reviewed)

Signal #1 : Z:\062012\TA16587.D\FID1A.CH Vial: 18
Signal #2 : Z:\062012\TA16587.D\FID2B.CH
Acq On : 20 Jun 2012 7:27 pm Operator: StephK
Sample : D35614-1 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 08:46:38 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

		Compound	R.T.	Response	Conc	Units	
		System Monitoring Compounds					
2)	S	1,2,4-Trichlorobenzene	14.70	3840982	100.910	%	
10)	S	1,2,4-Trichlorobenzene (P)	14.70	2332483	86.846	%	m
		Target Compounds					
1)	H	TVH-Gasoline	7.55	5609965	<MDL	mg/L	
4)	T	Methyl-t-butyl-ether	2.60	52646	1.560	ug/L	
5)	T	Benzene	4.91	50912	0.602	ug/L	m
6)	T	Toluene	0.00	0	N.D.	ug/L	d
7)	T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8)	T	m,p-Xylene	10.99	14028	0.183	ug/L	m
9)	T	o-Xylene	0.00	0	N.D.	ug/L	d
11)	T	Naphthalene	14.93	76175	1.700	ug/L	m

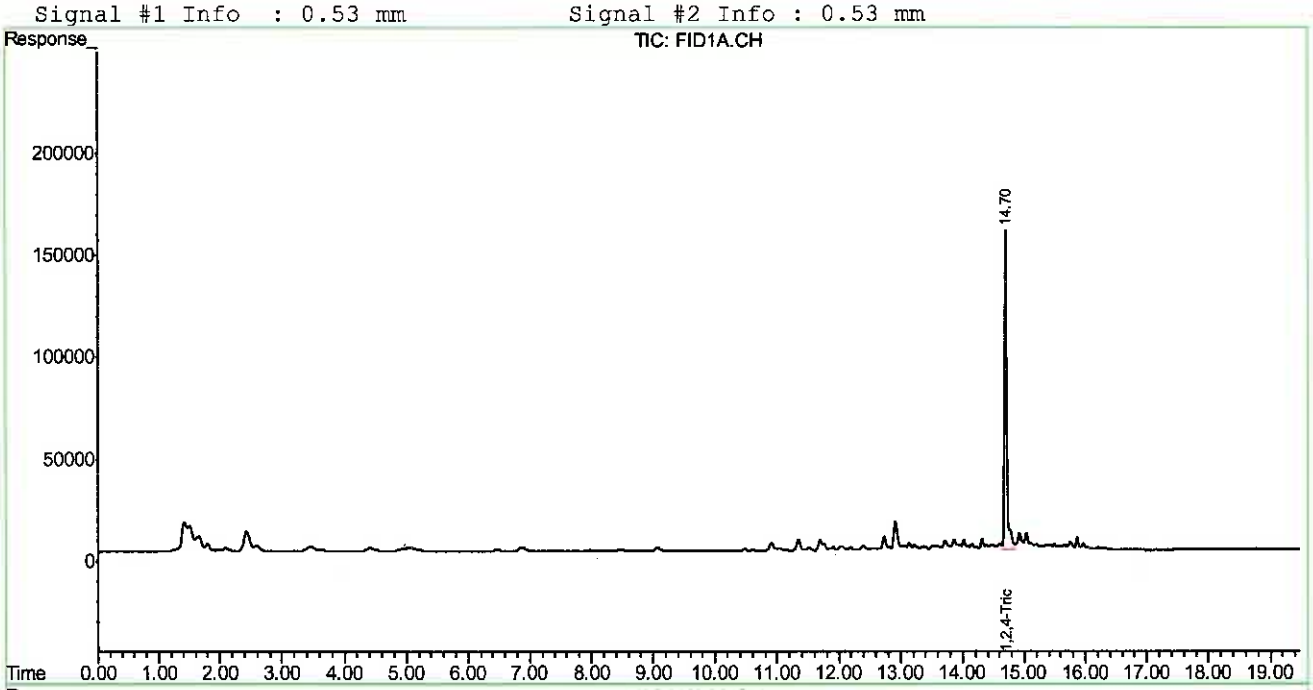
(f)=RT Delta > 1/2 Window (m)=manual int.
TA16587.D TA904GA904WATER.M Thu Jun 21 08:57:02 2012 GC

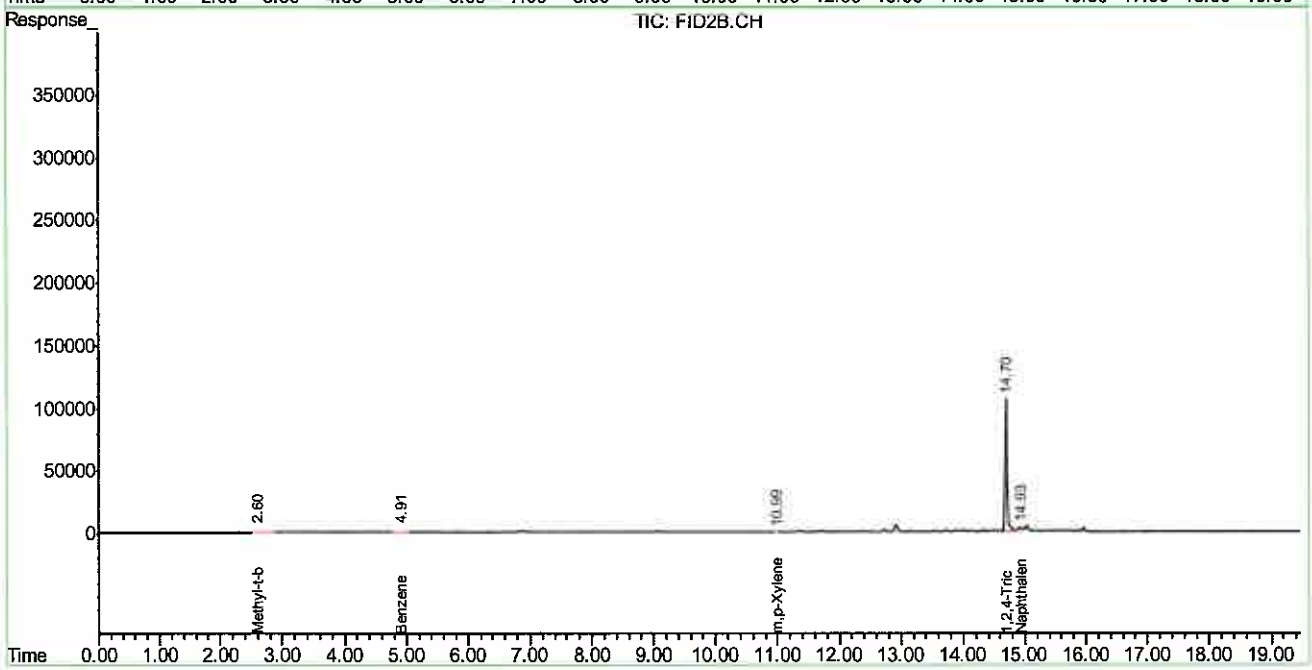
Quantitation Report (QT Reviewed)

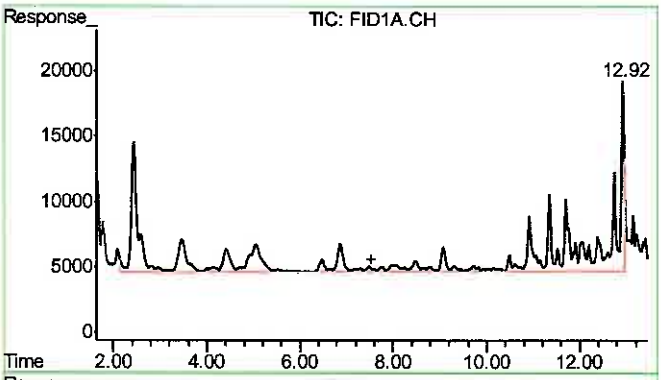
Signal #1 : Z:\062012\TA16587.D\FID1A.CH Vial: 18
Signal #2 : Z:\062012\TA16587.D\FID2B.CH
Acq On : 20 Jun 2012 7:27 pm Operator: StephK
Sample : D35614-1 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 6:54 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

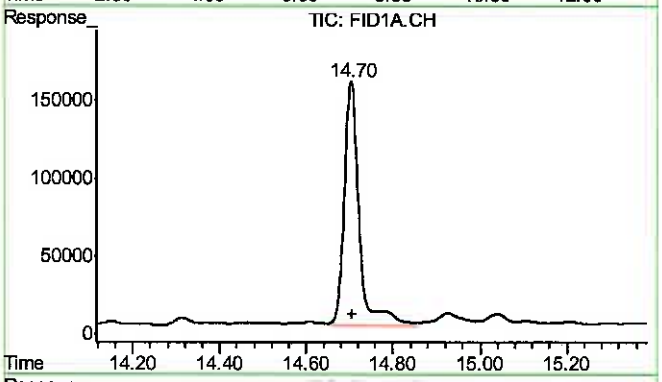






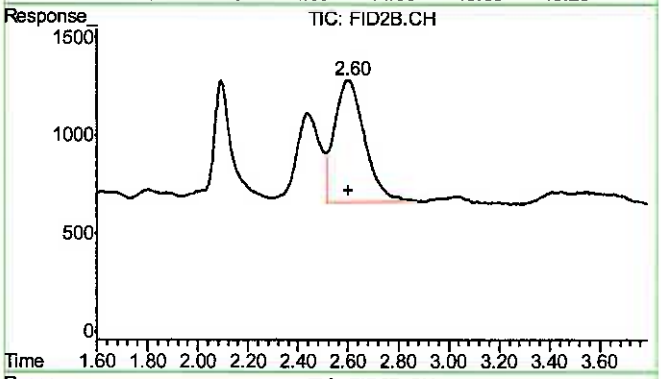
#1 TVH-Gasoline

R.T.: 7.550 min
Delta R.T.: 0.000 min
Response: 5609965
Conc: N.D.



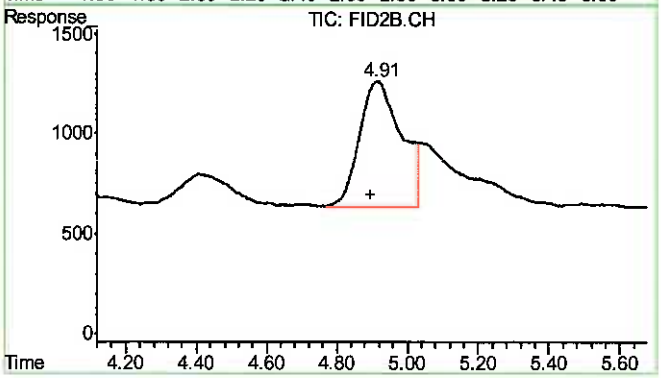
#2 1,2,4-Trichlorobenzene

R.T.: 14.705 min
Delta R.T.: 0.000 min
Response: 3840982
Conc: 100.91 %



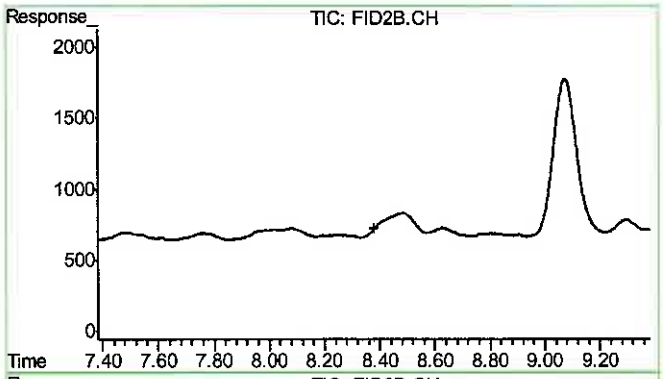
#4 Methyl-t-butyl-ether

R.T.: 2.601 min
Delta R.T.: 0.003 min
Response: 52646
Conc: 1.56 ug/L



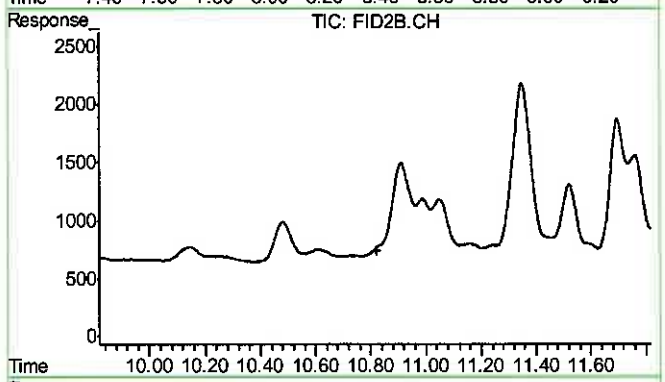
#5 Benzene

R.T.: 4.913 min
Delta R.T.: 0.017 min
Response: 50912
Conc: 0.60 ug/L m



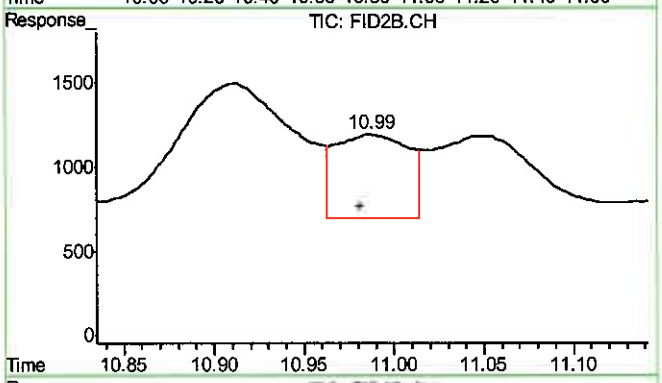
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.382 min
Response: 0
Conc: N.D.



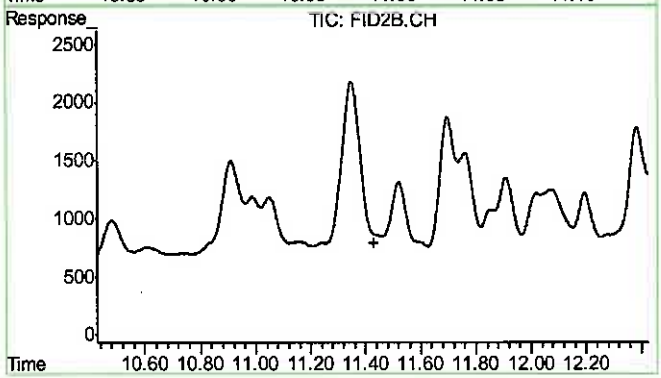
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.820 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

R.T.: 10.986 min
Delta R.T.: 0.005 min
Response: 14028
Conc: 0.18 ug/L m

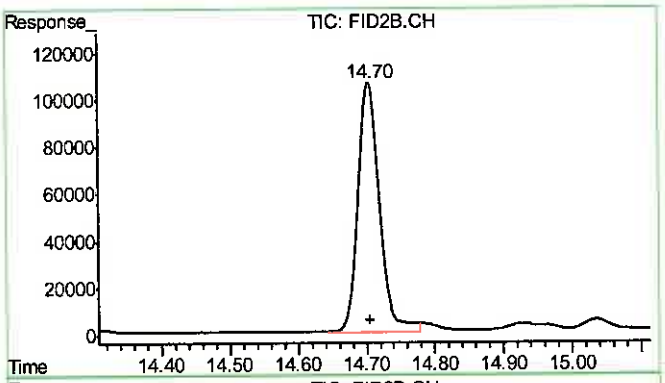


#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.428 min
Response: 0
Conc: N.D.

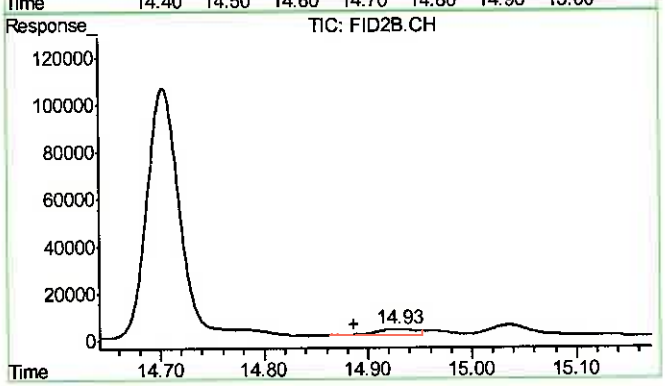
7.1.1

7



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.703 min
Delta R.T.: -0.002 min
Response: 2332483
Conc: 86.85 % m



#11 Naphthalene

R.T.: 14.928 min
Delta R.T.: 0.041 min
Response: 76175
Conc: 1.70 ug/L m

7.1.1

7

Quantitation Report (QT Reviewed)

Signal #1 : Z:\062012\TA16588.D\FID1A.CH Vial: 19
Signal #2 : Z:\062012\TA16588.D\FID2B.CH
Acq On : 20 Jun 2012 8:02 pm Operator: StephK
Sample : D35614-2 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 08:46:41 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

		Compound	R.T.	Response	Conc	Units	
		System Monitoring Compounds					
2)	S	1,2,4-Trichlorobenzene	14.70	3307700	86.899	%	
10)	S	1,2,4-Trichlorobenzene (P)	14.70	2245736	83.617	%	
		Target Compounds					
1)	H	TVH-Gasoline	7.55	1566721	<MDL	mg/L	
4)	T	Methyl-t-butyl-ether	2.60	128726	3.815	ug/L	
5)	T	Benzene	0.00	0	N.D.	ug/L	d
6)	T	Toluene	0.00	0	N.D.	ug/L	d
7)	T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8)	T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9)	T	o-Xylene	0.00	0	N.D.	ug/L	d
11)	T	Naphthalene	14.89	4142	<MDL	ug/L	m

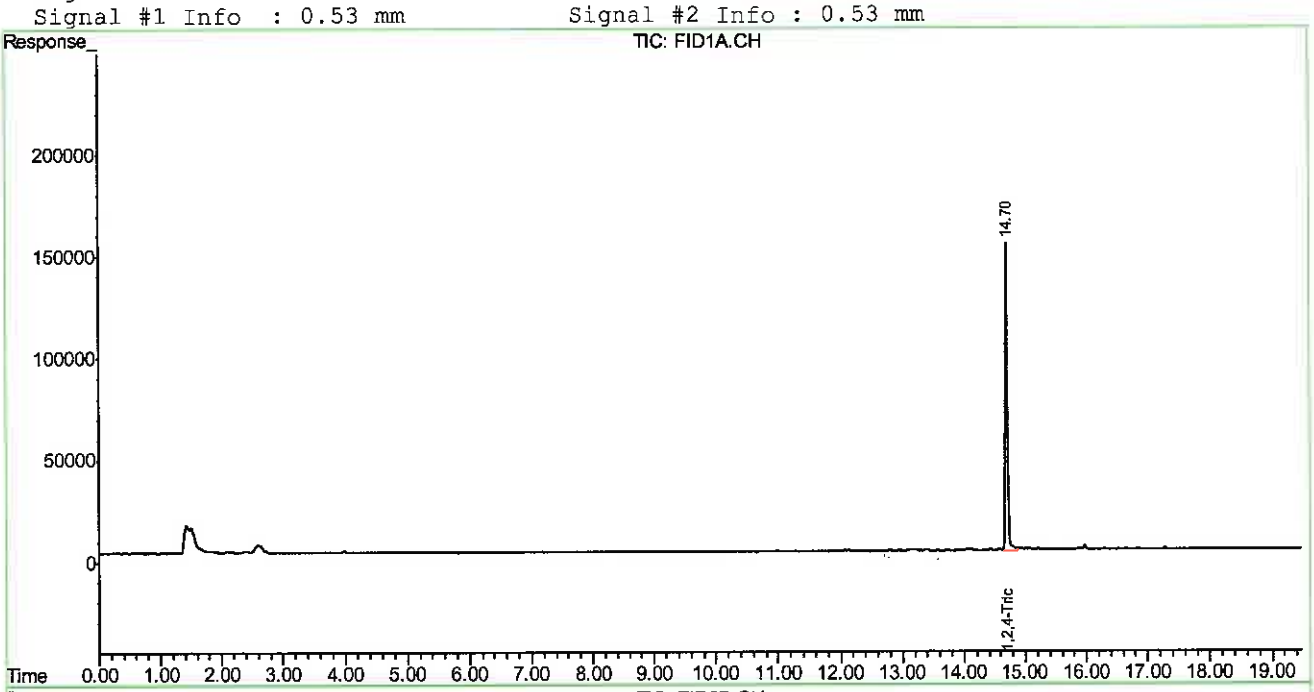
(f)=RT Delta > 1/2 Window (m)=manual int.

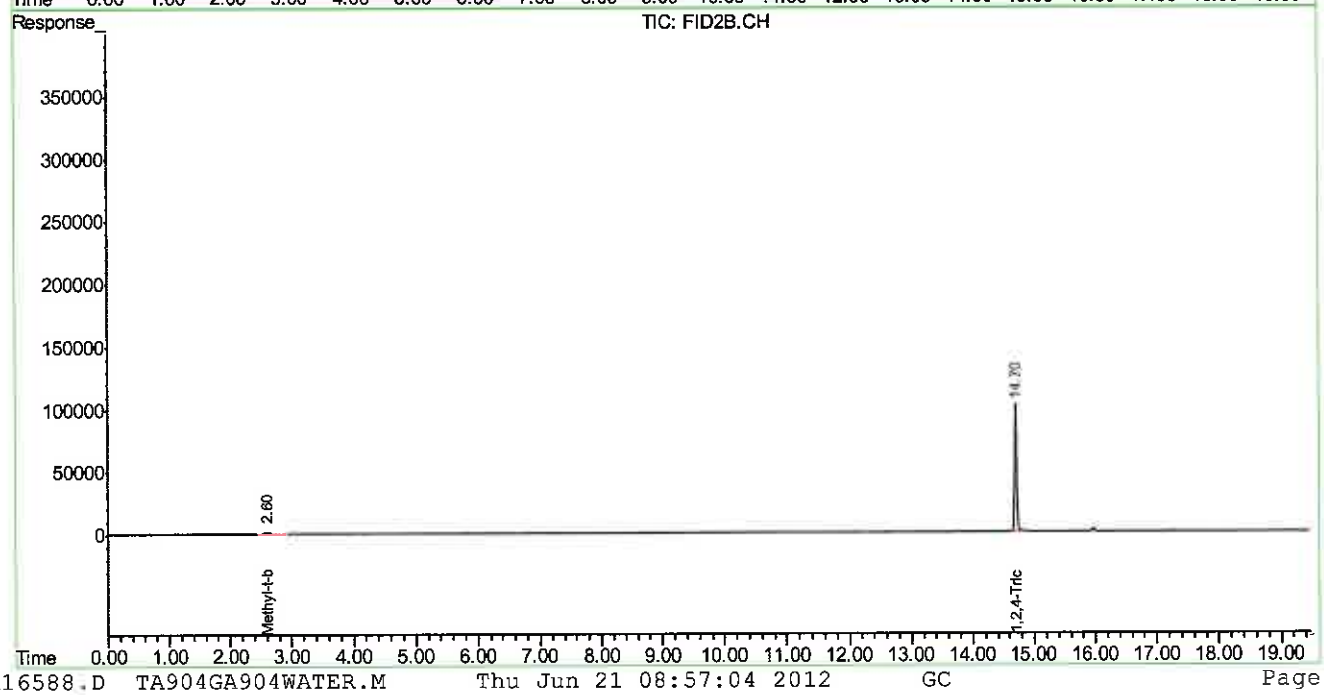
Quantitation Report (QT Reviewed)

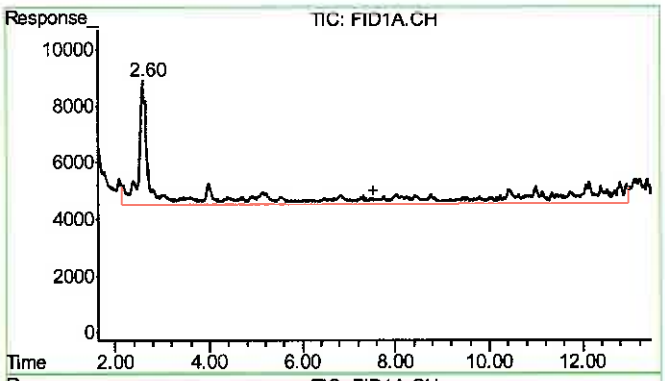
Signal #1 : Z:\062012\TA16588.D\FID1A.CH Vial: 19
Signal #2 : Z:\062012\TA16588.D\FID2B.CH
Acq On : 20 Jun 2012 8:02 pm Operator: StephK
Sample : D35614-2 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 6:55 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

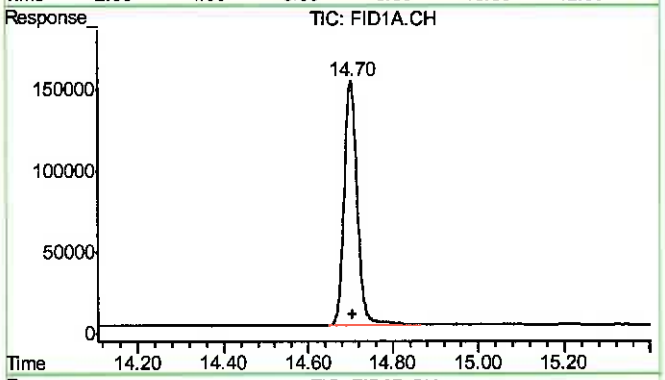






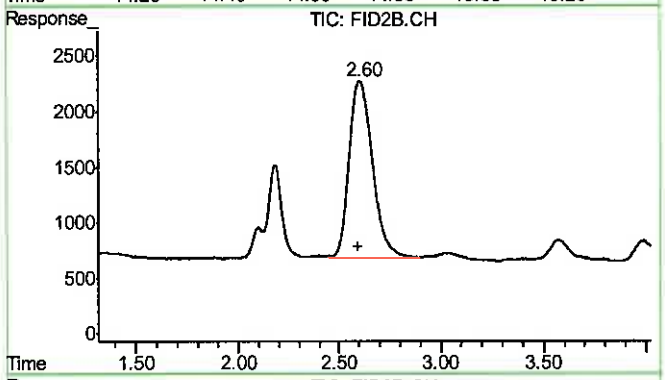
#1 TVH-Gasoline

R.T.: 7.550 min
Delta R.T.: 0.000 min
Response: 1566721
Conc: N.D.



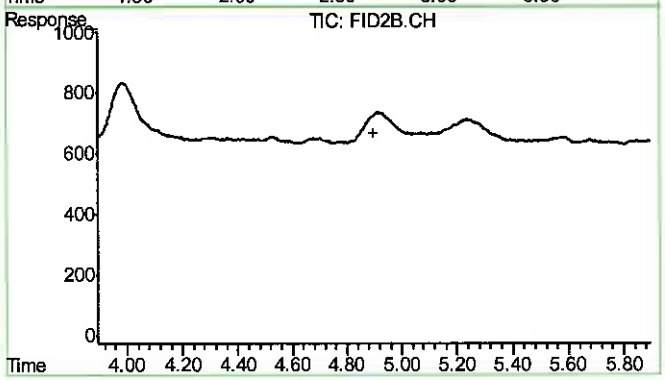
#2 1,2,4-Trichlorobenzene

R.T.: 14.702 min
Delta R.T.: -0.003 min
Response: 3307700
Conc: 86.90 %



#4 Methyl-t-butyl-ether

R.T.: 2.604 min
Delta R.T.: 0.005 min
Response: 128726
Conc: 3.81 ug/L

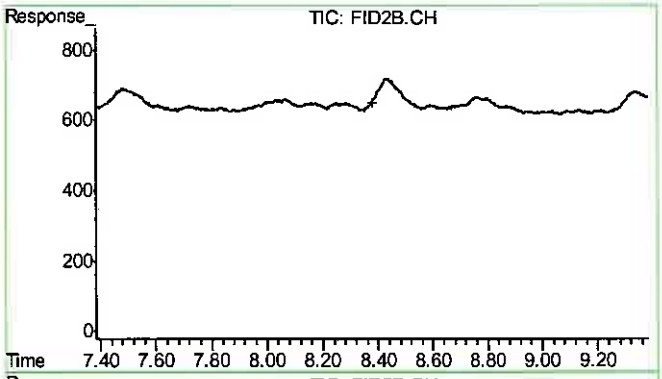


#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.896 min
Response: 0
Conc: N.D.

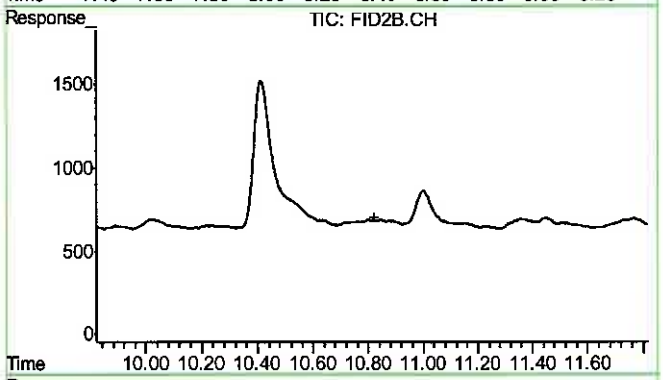
7.1.2

7



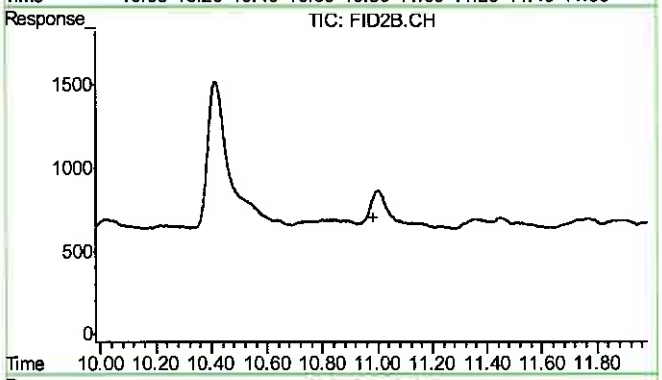
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.382 min
Response: 0
Conc: N.D.



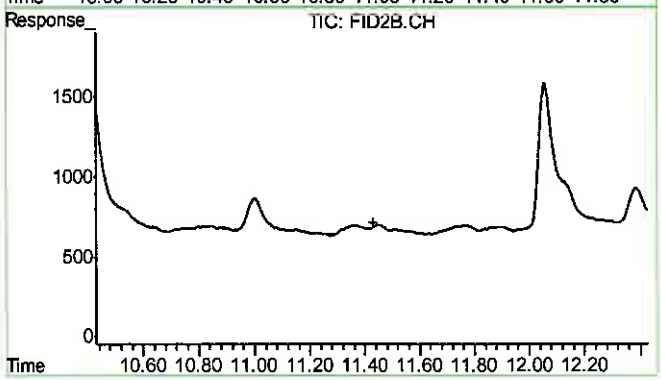
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.820 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.981 min
Response: 0
Conc: N.D.

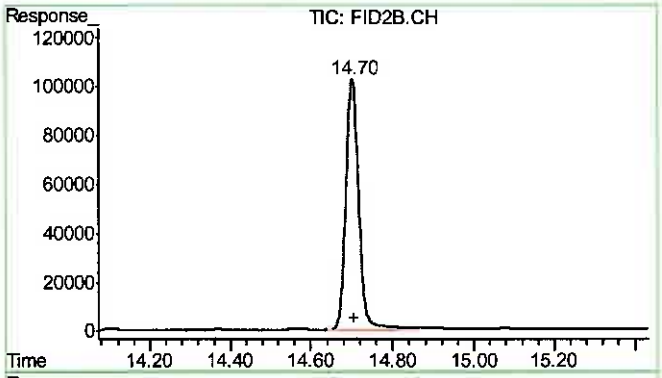


#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.428 min
Response: 0
Conc: N.D.

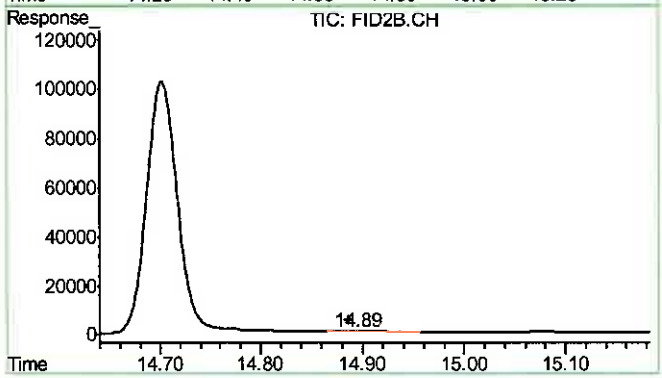
7.1.2

7



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.702 min
Delta R.T.: -0.003 min
Response: 2245736
Conc: 83.62 %



#11 Naphthalene

R.T.: 14.893 min
Delta R.T.: 0.007 min
Response: 4142
Conc: N.D.

7.1.2

7

ACCUTEST LABORATORIES D35614

Quantitation Report (QT Reviewed)

Signal #1 : Z:\062012\TA16589.D\FID1A.CH Vial: 20
Signal #2 : Z:\062012\TA16589.D\FID2B.CH
Acq On : 20 Jun 2012 8:36 pm Operator: StephK
Sample : D35614-3 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 08:46:44 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

		Compound	R.T.	Response	Conc	Units	
		System Monitoring Compounds					
2)	S	1,2,4-Trichlorobenzene	14.70	3289077	86.410	%	
10)	S	1,2,4-Trichlorobenzene (P)	14.70	2238827	83.359	%	
		Target Compounds					
1)	H	TVH-Gasoline	7.55	1086073	<MDL	mg/L	
4)	T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5)	T	Benzene	4.91	63463	0.751	ug/L	
6)	T	Toluene	0.00	0	N.D.	ug/L	d
7)	T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8)	T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9)	T	o-Xylene	0.00	0	N.D.	ug/L	d
11)	T	Naphthalene	14.89	39765	0.887	ug/L	

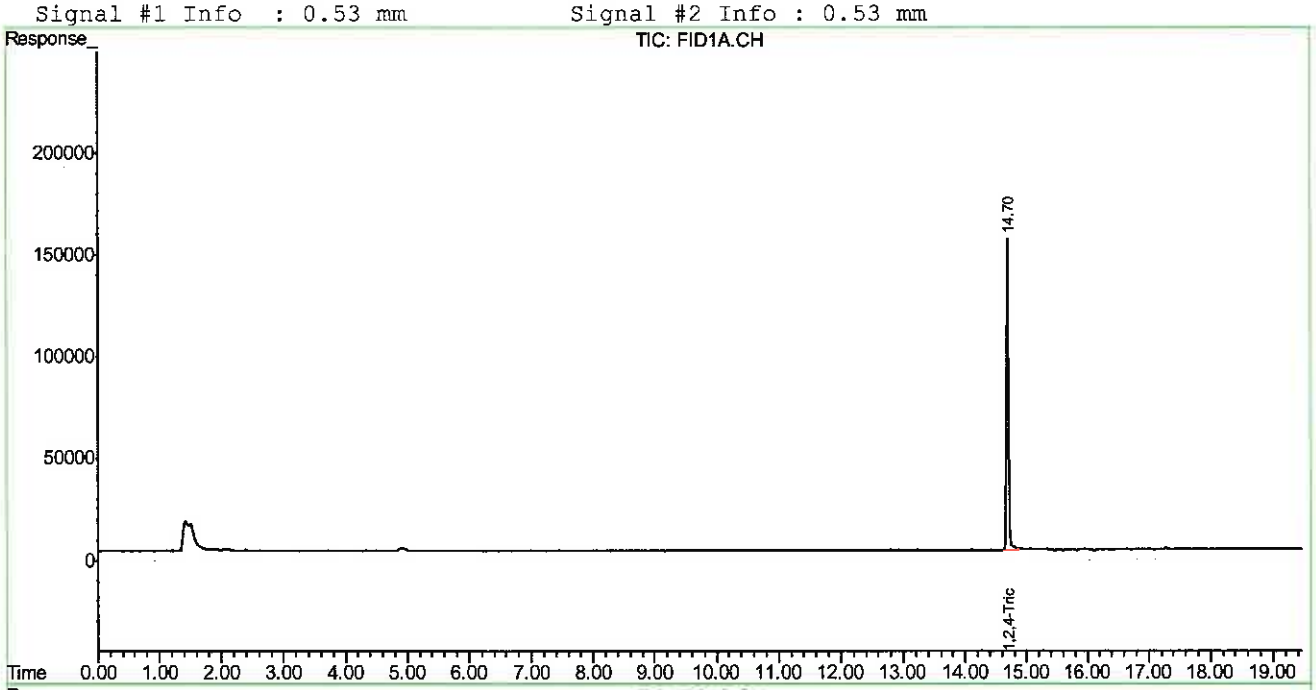
(f)=RT Delta > 1/2 Window (m)=manual int.

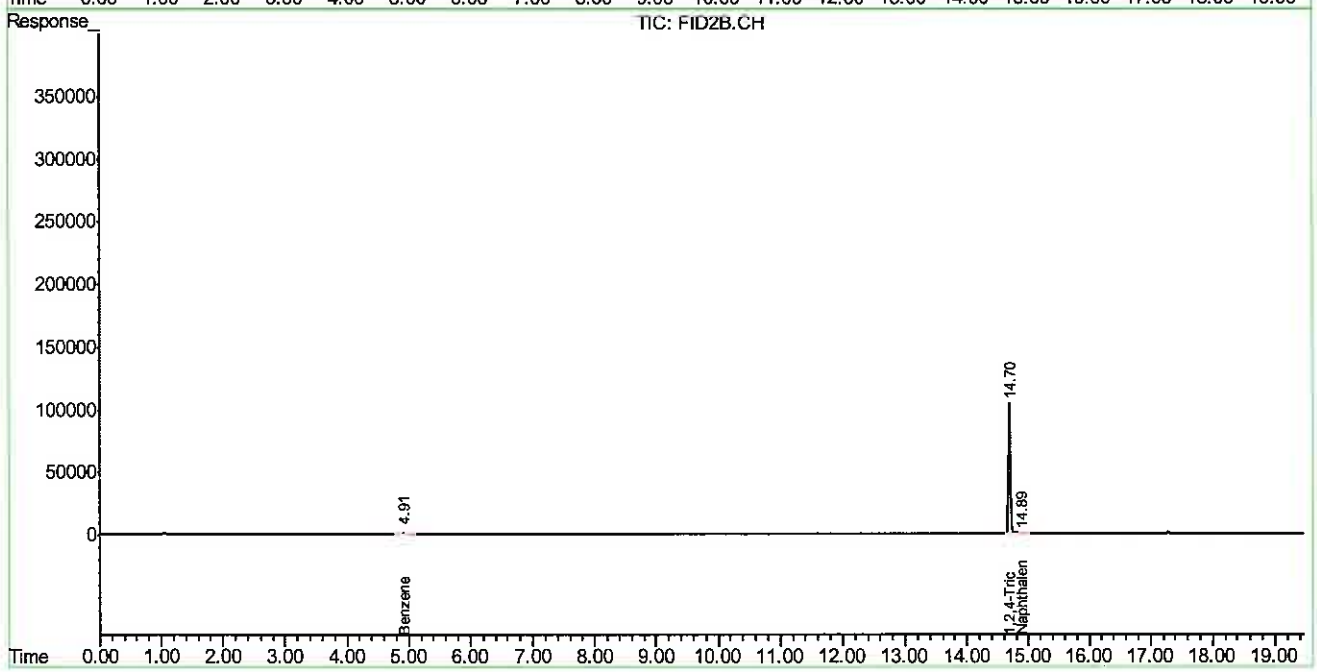
Quantitation Report (QT Reviewed)

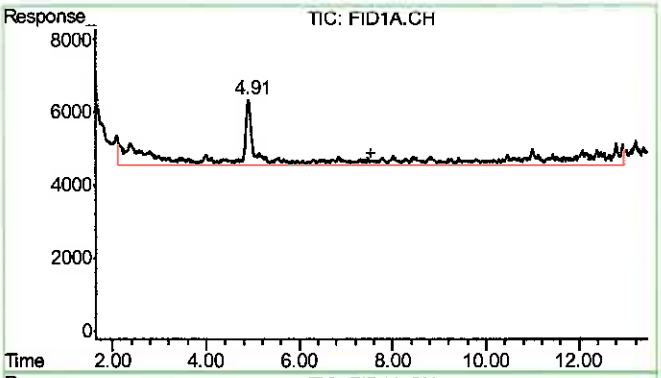
Signal #1 : Z:\062012\TA16589.D\FID1A.CH Vial: 20
Signal #2 : Z:\062012\TA16589.D\FID2B.CH
Acq On : 20 Jun 2012 8:36 pm Operator: StephK
Sample : D35614-3 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 6:55 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

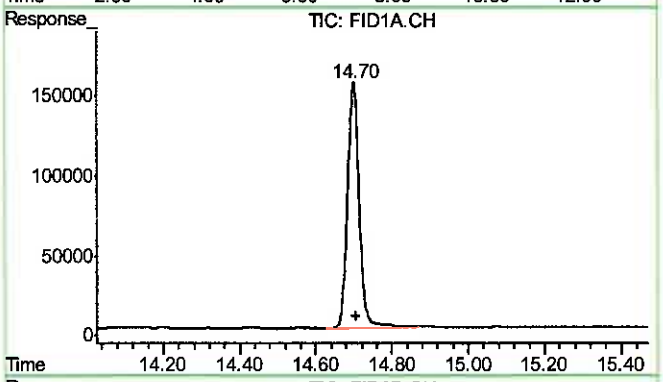






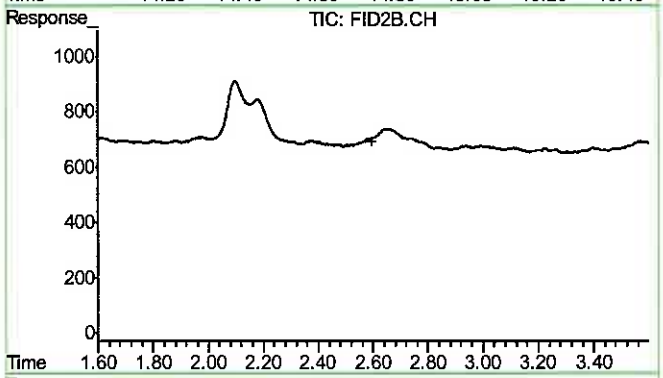
#1 TVH-Gasoline

R.T.: 7.550 min
Delta R.T.: 0.000 min
Response: 1086073
Conc: N.D.



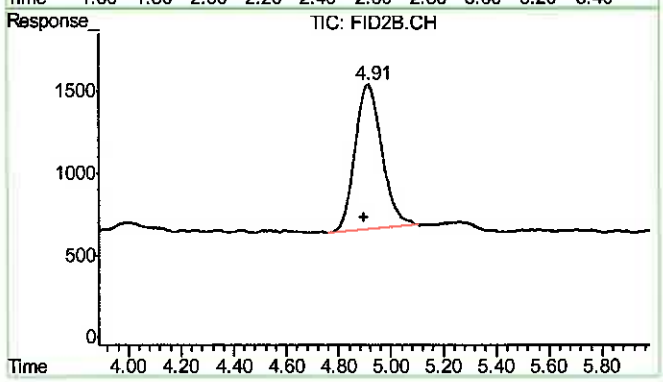
#2 1,2,4-Trichlorobenzene

R.T.: 14.700 min
Delta R.T.: -0.005 min
Response: 3289077
Conc: 86.41 %



#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.599 min
Response: 0
Conc: N.D.

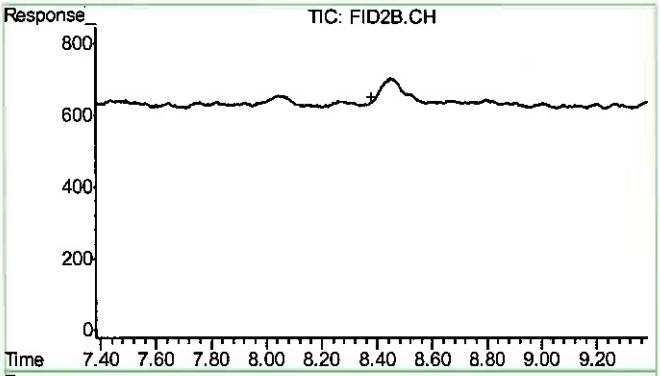


#5 Benzene

R.T.: 4.914 min
Delta R.T.: 0.017 min
Response: 63463
Conc: 0.75 ug/L

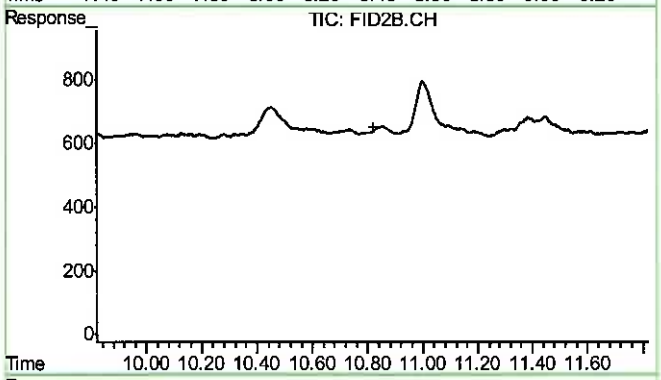
7.1.3

7



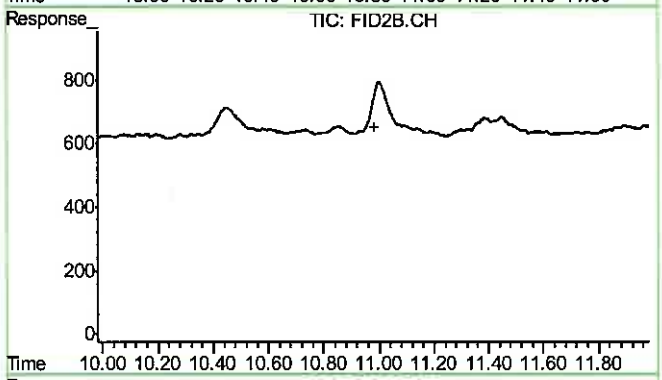
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.382 min
Response: 0
Conc: N.D.



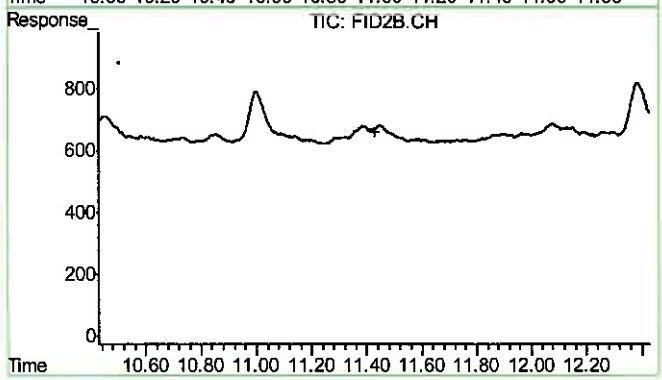
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.820 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.981 min
Response: 0
Conc: N.D.

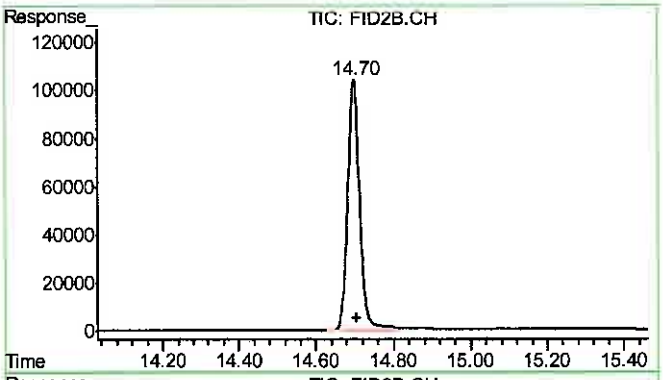


#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.428 min
Response: 0
Conc: N.D.

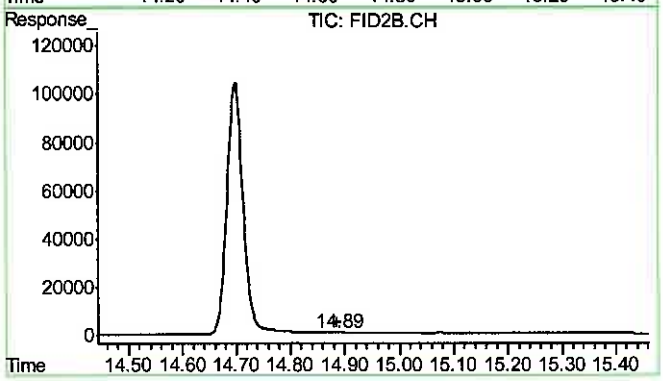
7.1.3

7



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.699 min
Delta R.T.: -0.006 min
Response: 2238827
Conc: 83.36 %



#11 Naphthalene

R.T.: 14.886 min
Delta R.T.: 0.000 min
Response: 39765
Conc: 0.89 ug/L

7.1.3

7

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
06/21/12 09:26

Quantitation Report (QT Reviewed)

Signal #1 : Z:\062012\TA16590.D\FID1A.CH Vial: 21
Signal #2 : Z:\062012\TA16590.D\FID2B.CH
Acq On : 20 Jun 2012 9:11 pm Operator: StephK
Sample : D35614-4 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 08:46:47 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

		Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds							
2)	S	1,2,4-Trichlorobenzene	14.70	3230234	84.864	%	
10)	S	1,2,4-Trichlorobenzene (P)	14.70	2180939	81.204	%	m
Target Compounds							
1)	H	TVH-Gasoline	7.55	1042493	<MDL	mg/L	
4)	T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5)	T	Benzene	0.00	0	N.D.	ug/L	d
6)	T	Toluene	0.00	0	N.D.	ug/L	d
7)	T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8)	T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9)	T	o-Xylene	0.00	0	N.D.	ug/L	d
11)	T	Naphthalene	0.00	0	N.D.	ug/L	d

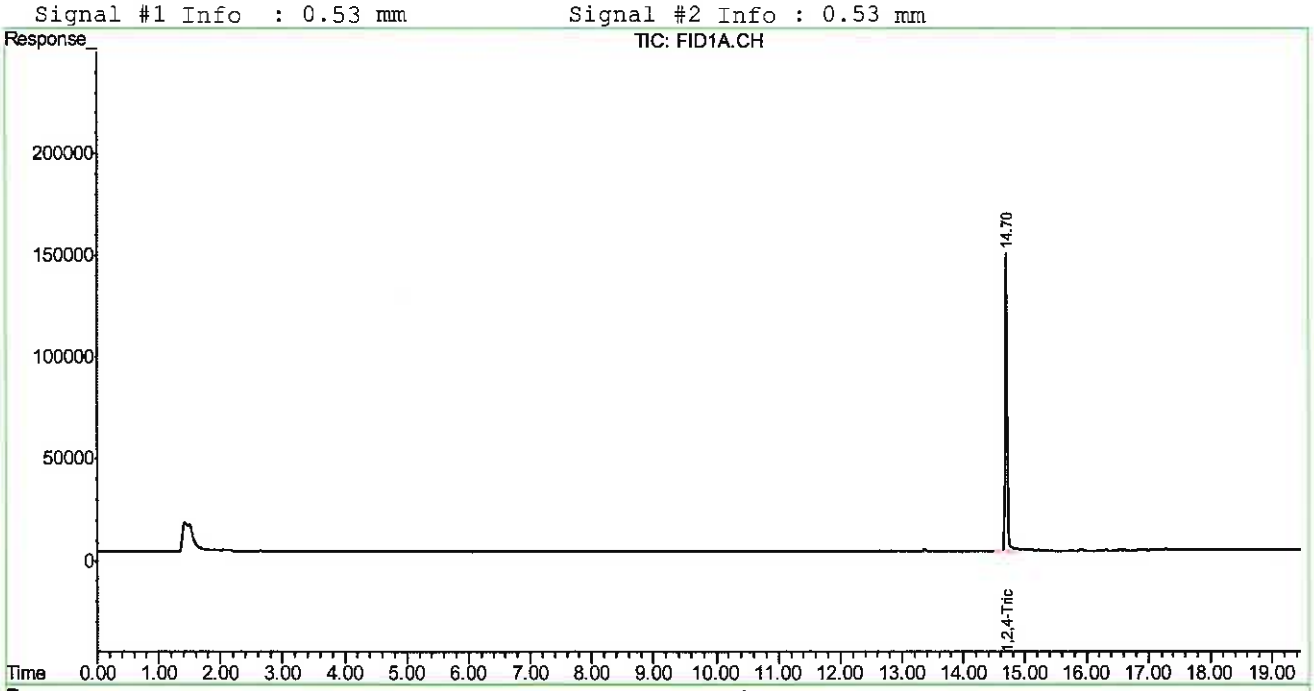
(f)=RT Delta > 1/2 Window (m)=manual int.
TA16590.D TA904GA904WATER.M Thu Jun 21 08:57:08 2012 GC

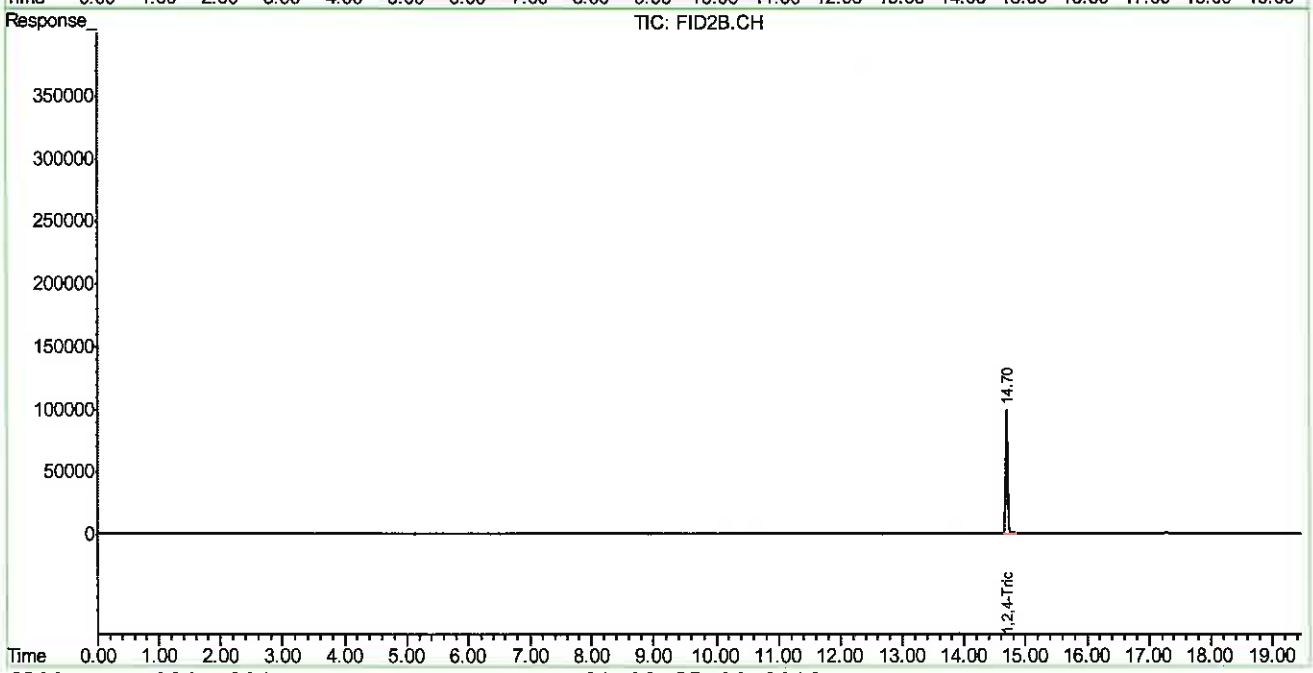
Quantitation Report (QT Reviewed)

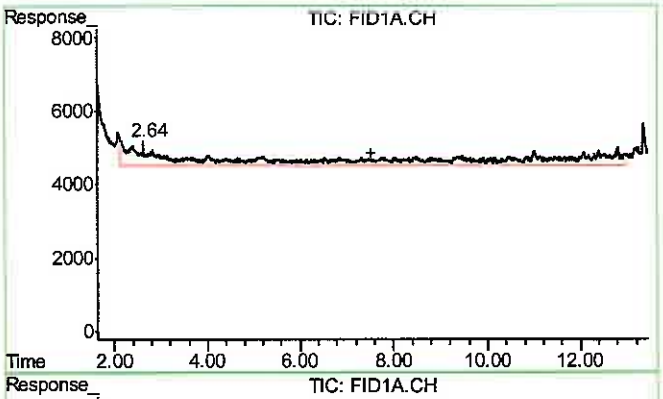
Signal #1 : Z:\062012\TA16590.D\FID1A.CH Vial: 21
Signal #2 : Z:\062012\TA16590.D\FID2B.CH
Acq On : 20 Jun 2012 9:11 pm Operator: StephK
Sample : D35614-4 Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 21 6:55 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Jun 21 08:46:16 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

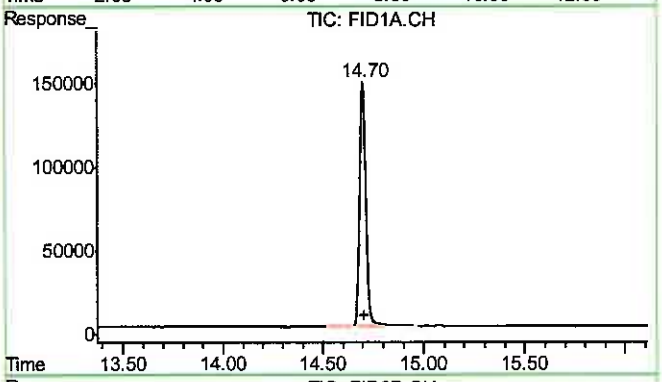






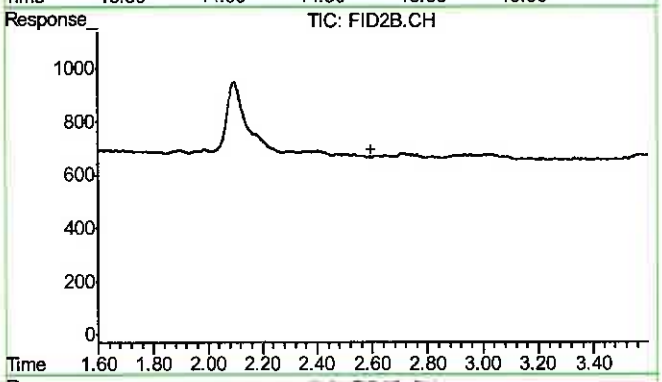
#1 TVH-Gasoline

R.T.: 7.550 min
Delta R.T.: 0.000 min
Response: 1042493
Conc: N.D.



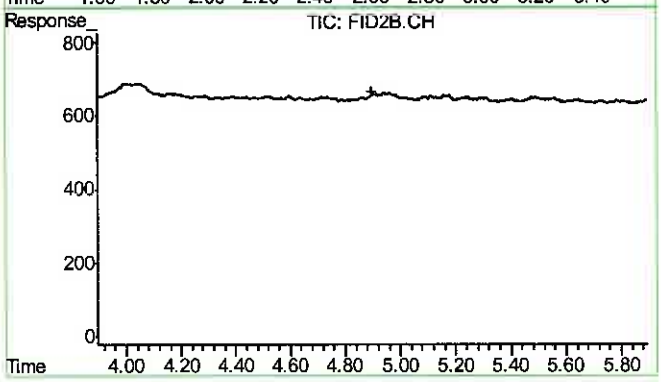
#2 1,2,4-Trichlorobenzene

R.T.: 14.701 min
Delta R.T.: -0.004 min
Response: 3230234
Conc: 84.86 %



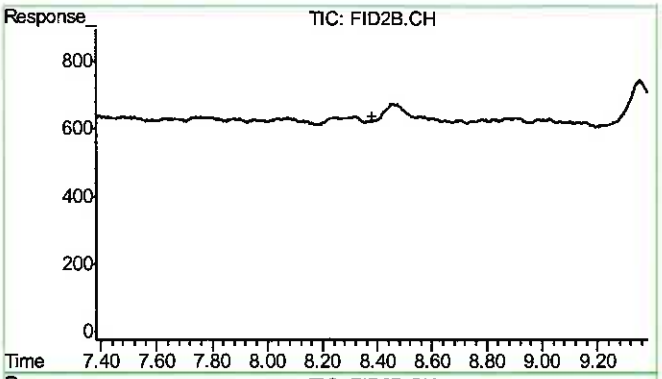
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.599 min
Response: 0
Conc: N.D.



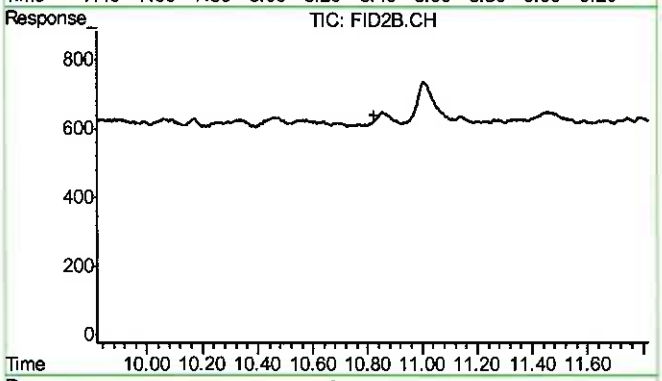
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.896 min
Response: 0
Conc: N.D.



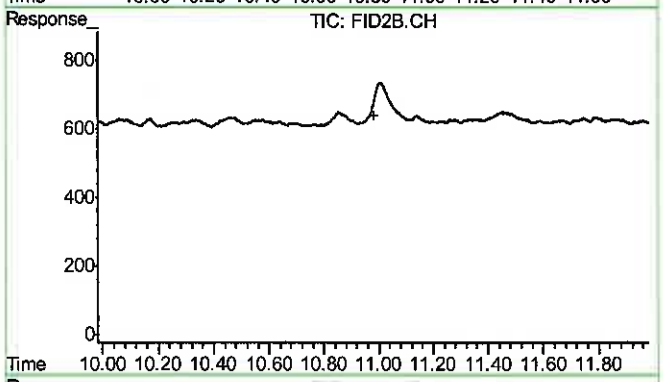
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.382 min
Response: 0
Conc: N.D.



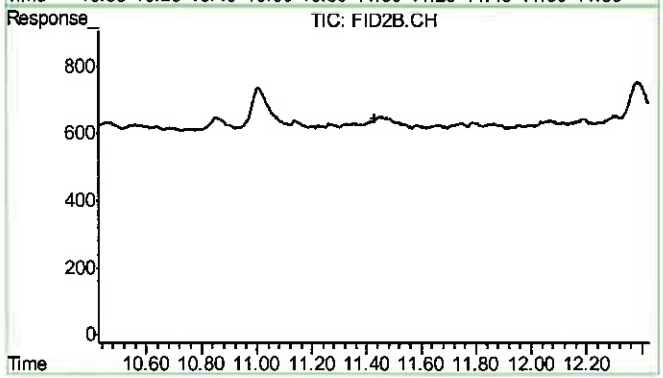
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.820 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

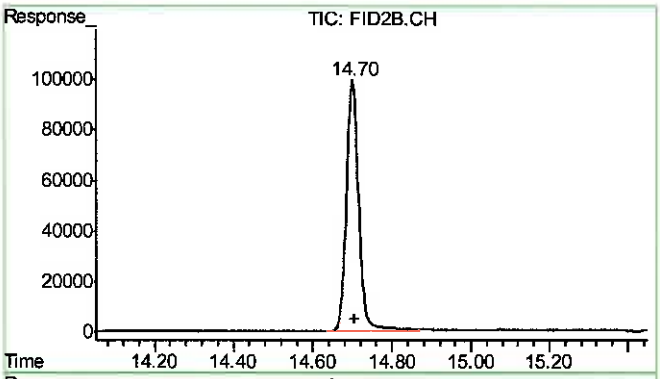
R.T.: 0.000 min
Exp R.T. : 10.981 min
Response: 0
Conc: N.D.



#9 o-Xylene

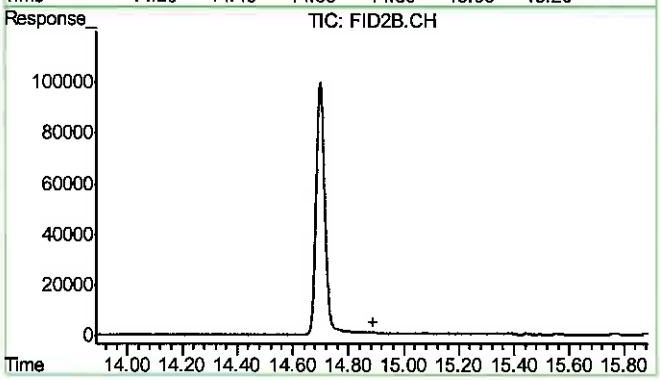
R.T.: 0.000 min
Exp R.T. : 11.428 min
Response: 0
Conc: N.D.

ACCUTEST LABORATORIES
D35614



#10 1,2,4-Trichlorobenzene (P)

```
      R.T.:  14.700 min
Delta R.T.:  -0.006 min
  Response:   2180939
      Conc:  81.20 % m
```



#11 Naphthalene

```
      R.T.:   0.000 min
Exp R.T.  :  14.887 min
  Response:         0
      Conc:    N.D.
```

7.1.4

7

Manual Integrations
APPROVED
(compounds with "m" flag)
Judy Melson
06/21/12 09:26

Quantitation Report (QT Reviewed)

Signal #1 : Z:\062012\TA16580.D\FID1A.CH Vial: 11
Signal #2 : Z:\062012\TA16580.D\FID2B.CH
Acq On : 20 Jun 2012 3:25 pm Operator: StephK
Sample : MB Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 20 15:53:26 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 20 15:15:58 2012
Response via : Initial Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

		Compound	R.T.	Response	Conc	Units	
		System Monitoring Compounds					
2)	S	1,2,4-Trichlorobenzene	14.70	3270904	85.933	%	
10)	S	1,2,4-Trichlorobenzene (P)	14.70	2231162	83.074	%	m
		Target Compounds					
1)	H	TVH-Gasoline	7.55	1233467	<MDL	mg/L	
4)	T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5)	T	Benzene	0.00	0	N.D.	ug/L	d
6)	T	Toluene	0.00	0	N.D.	ug/L	d
7)	T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8)	T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9)	T	o-Xylene	0.00	0	N.D.	ug/L	d
11)	T	Naphthalene	14.88	42272	0.943	ug/L	m

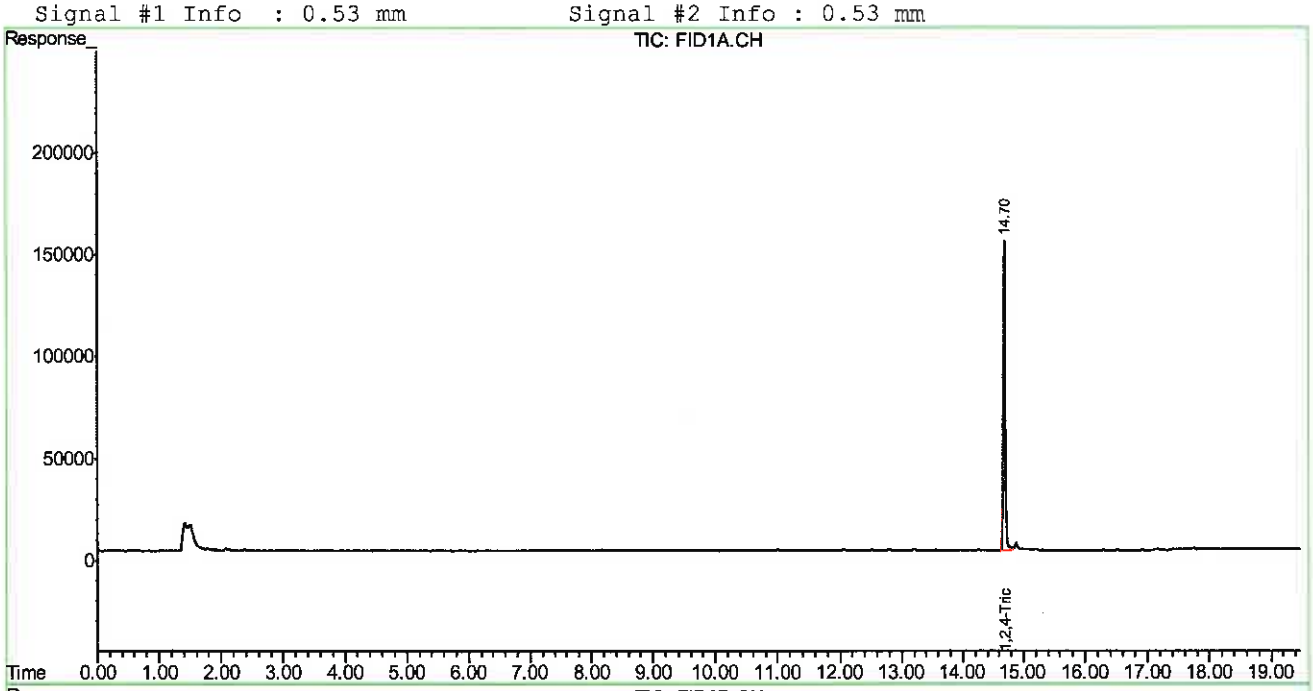
(f)=RT Delta > 1/2 Window (m)=manual int.
TA16580.D TA904GA904WATER.M Thu Jun 21 08:56:41 2012 GC

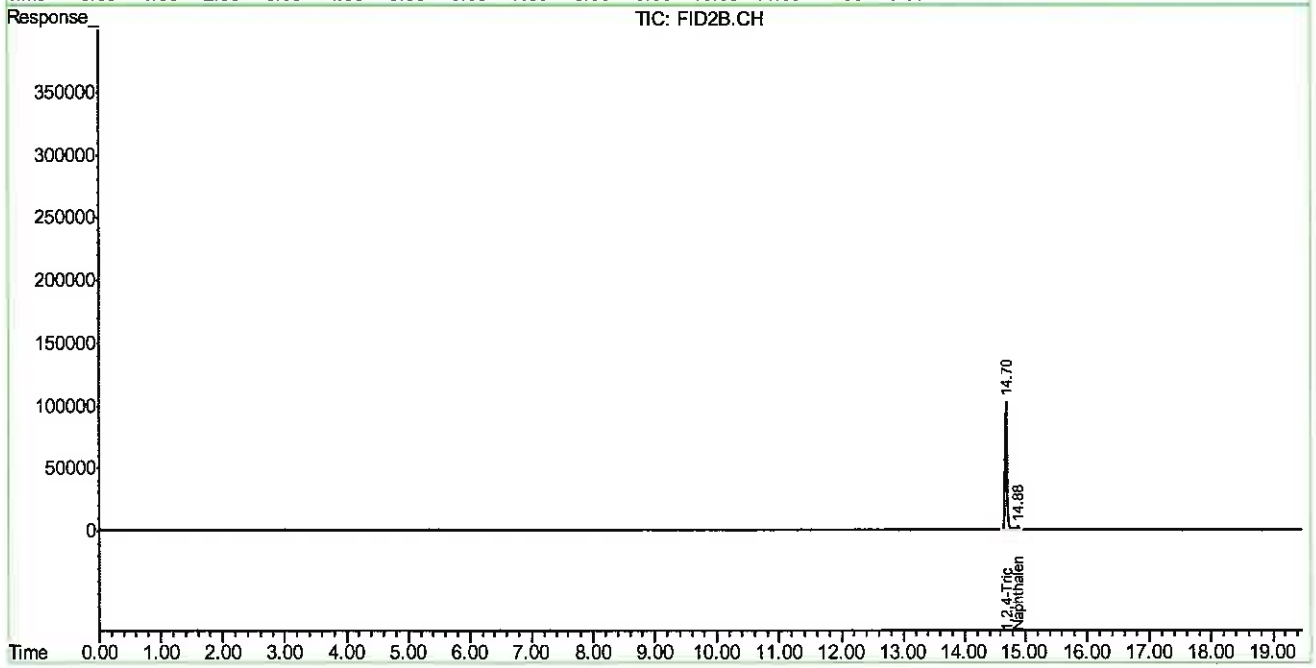
Quantitation Report (QT Reviewed)

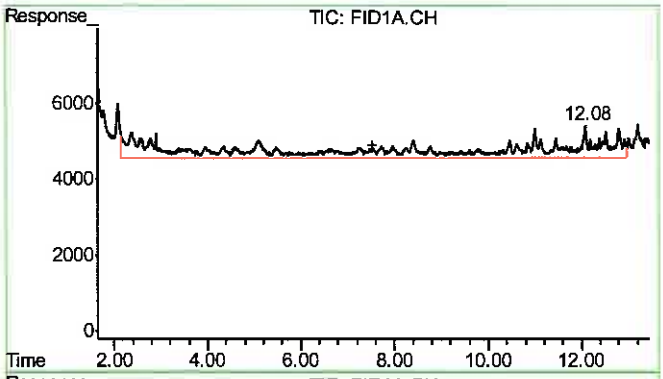
Signal #1 : Z:\062012\TA16580.D\FID1A.CH Vial: 11
Signal #2 : Z:\062012\TA16580.D\FID2B.CH
Acq On : 20 Jun 2012 3:25 pm Operator: StephK
Sample : MB Inst : BTEX2
Misc : GC2924,GTA937,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jun 20 13:54 2012 Quant Results File: TA904GA904WATER.RES

Quant Method : C:\MSDCHEM\1...\TA904GA904WATER.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Jun 20 15:15:58 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

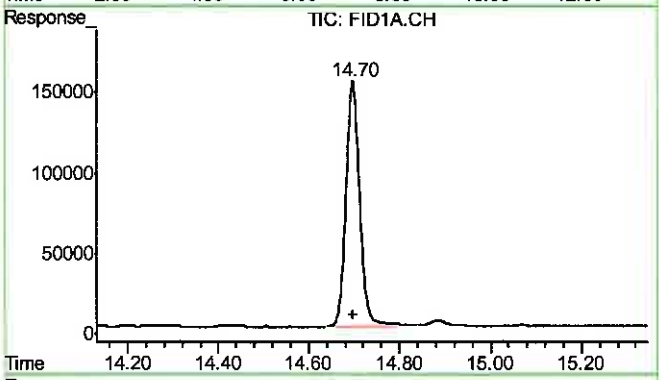






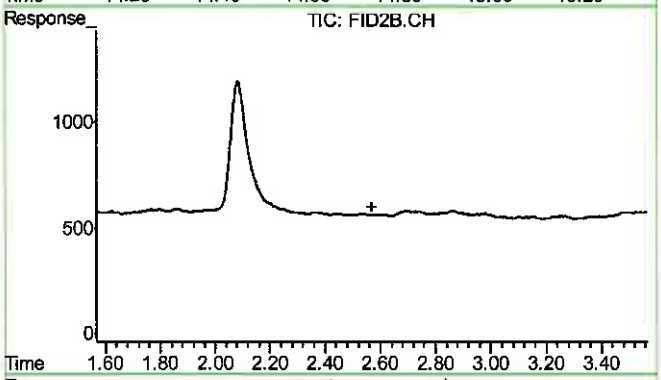
#1 TVH-Gasoline

R.T.: 7.550 min
Delta R.T.: 0.000 min
Response: 1233467
Conc: N.D.



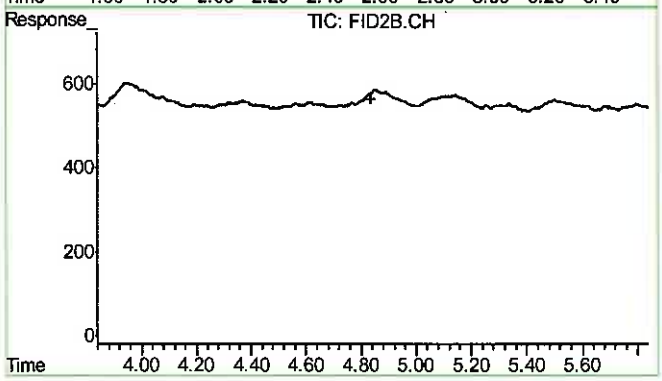
#2 1,2,4-Trichlorobenzene

R.T.: 14.698 min
Delta R.T.: 0.001 min
Response: 3270904
Conc: 85.93 %



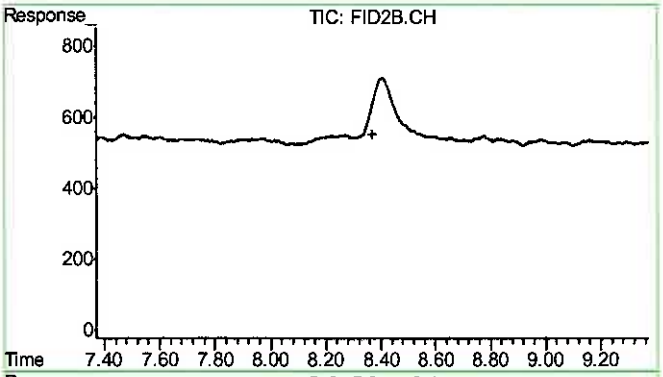
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.568 min
Response: 0
Conc: N.D.



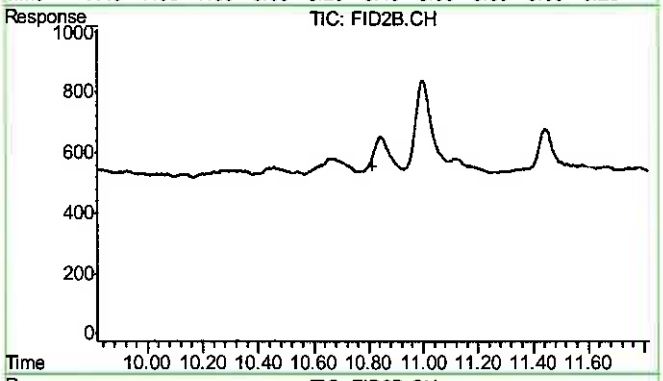
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.839 min
Response: 0
Conc: N.D.



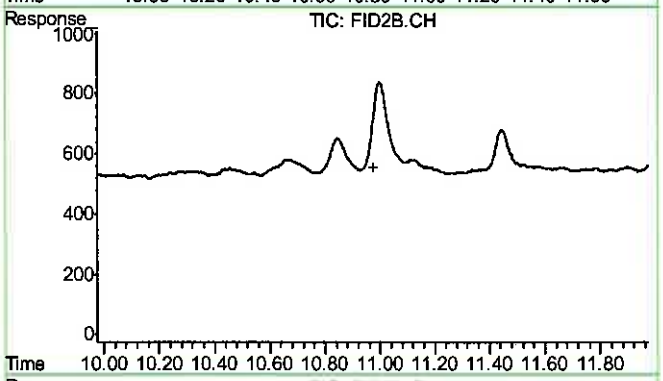
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.370 min
Response: 0
Conc: N.D.



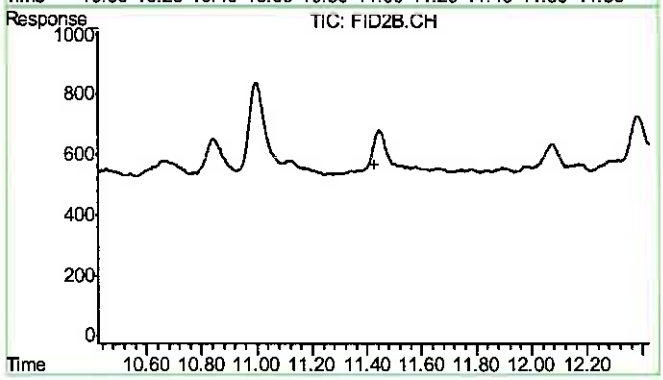
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.817 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.975 min
Response: 0
Conc: N.D.

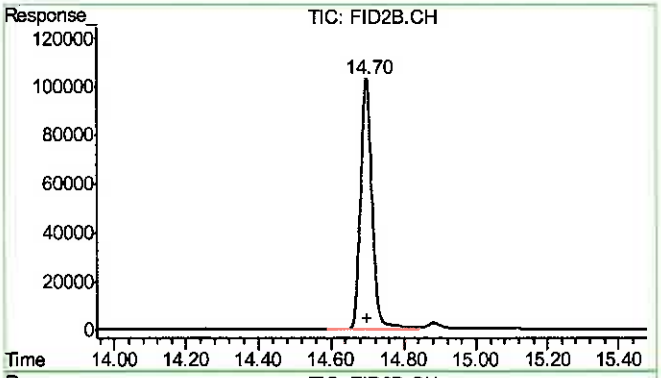


#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.425 min
Response: 0
Conc: N.D.

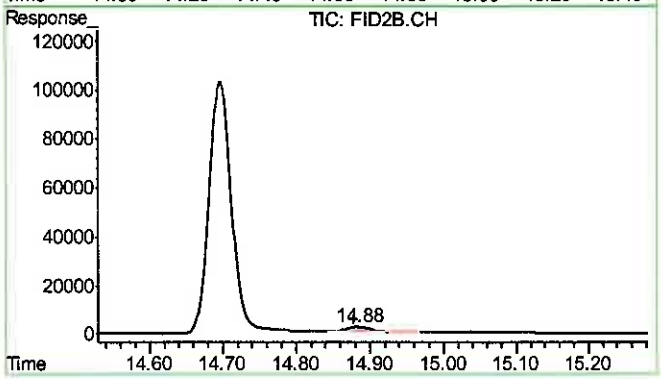
7.2.1

7



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.697 min
Delta R.T.: 0.000 min
Response: 2231162
Conc: 83.07 % m



#11 Naphthalene

R.T.: 14.883 min
Delta R.T.: 0.005 min
Response: 42272
Conc: 0.94 ug/L m

7.2.1

7

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/27/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	9.6	21		
Antimony	30	1.7	3.2		
Arsenic	25	4.4	7.6		
Barium	10	.1	.5		
Beryllium	10	1.3	3.1		
Boron	50	1	2.6		
Cadmium	10	.6	.59		
Calcium	400	5.4	7.3	18.8	<400
Chromium	10	.3	.39		
Cobalt	5.0	.4	.4		
Copper	10	1.2	3		
Iron	70	1.2	19		
Lead	50	1.9	2.9		
Lithium	2.0	.5	.65		
Magnesium	200	6.5	11	5.6	<200
Manganese	5.0	1.2	1.8		
Molybdenum	10	2.1	2.1		
Nickel	30	.5	.53		
Phosphorus	100	14	59		
Potassium	1000	61	61	62.1	<1000
Selenium	50	4.8	5.7		
Silicon	50	2.9	2.1		
Silver	30	.4	.65		
Sodium	400	5.9	98	-57	<400
Strontium	5.0	.04	1.5		
Thallium	10	2.9	3		
Tin	50	12	24		
Titanium	10	.1	1.2		
Uranium	50	2.2	2.2		
Vanadium	10	.2	.39		
Zinc	30	.5	1.5		

Associated samples MP7763: D35614-1F, D35614-2F, D35614-3F, D35614-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

8.1.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/27/12

Metal	D35556-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron	anr				
Cadmium	anr				
Calcium	15100	39700	25000	98.4	75-125
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	1620	25000	25000	93.5	75-125
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	7140	33500	25000	105.4	75-125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	10000000002060000		25000	120.0	75-125
Strontium					
Thallium	anr				
Tin					
Titanium	anr				
Uranium					
Vanadium	anr				
Zinc	anr				

Associated samples MP7763: D35614-1F, D35614-2F, D35614-3F, D35614-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

8.1.2

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763 Methods: SW846 6010C
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/27/12

Metal	D35556-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	15100	39300	25000	96.8	1.0	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	1620	25100	25000	93.9	0.4	20
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	7140	33600	25000	105.8	0.3	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	10000000001820000		25000	-840.0	(a 12.4	20
Strontium						
Thallium	anr					
Tin						
Titanium	anr					
Uranium						
Vanadium	anr					
Zinc	anr					

Associated samples MP7763: D35614-1F, D35614-2F, D35614-3F, D35614-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

8.1.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/27/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	25500	25000	102.0	80-120
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	25700	25000	102.8	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	26200	25000	104.8	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	26300	25000	105.2	80-120
Strontium				
Thallium	anr			
Tin				
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP7763: D35614-1F, D35614-2F, D35614-3F, D35614-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

8.1.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 06/27/12

Metal	D35556-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	15100	16500	9.4	0-10
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	1620	1780	10.2*(a)	0-10
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	7140	7070	1.0	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	10000000002080000		2.2	0-10
Strontium				
Thallium	anr			
Tin				
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP7763: D35614-1F, D35614-2F, D35614-3F, D35614-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7763
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

8.1.4

8

Mountain States ACCUTEST LABORATORIES

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: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN15606	5.0	0.0	mg/l	100	98.7	98.7	90-110%
Alkalinity, Carbonate	GN15607	5.0	0.0	mg/l	100	98.7	98.7	80-120%
Alkalinity, Total as CaCO3	GN15605	5.0	0.0	mg/l	100	98.7	98.7	90-110%
Bromide	GP7531/GN15513	0.20	0.0	mg/l	20	19.8	99.0	90-110%
Chloride	GP7531/GN15513	0.50	0.28	mg/l	20	19.7	98.5	90-110%
HEM Oil and Grease	GP7619/GN15658	5.0	0.0	mg/l	40	36.9	92.3	78-114%
Nitrogen, Nitrate	GP7531/GN15513	0.045	0.0	mg/l	4.52	4.31	95.4	90-110%
Nitrogen, Nitrite	GP7531/GN15513	0.010	0.0	mg/l	6.09	6.25	102.6	90-110%
Solids, Total Dissolved	GN15581	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP7531/GN15513	0.50	0.0	mg/l	30	29.5	98.3	90-110%
Total Organic Carbon	GP7527/GN15510	1.0	0.0	mg/l	7.2	7.19	99.9	90-110%

Associated Samples:
Batch GN15581: D35614-1, D35614-2, D35614-3, D35614-4
Batch GN15605: D35614-1, D35614-2, D35614-3, D35614-4
Batch GN15606: D35614-1, D35614-2, D35614-3, D35614-4
Batch GN15607: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7527: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7531: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7619: D35614-1, D35614-2, D35614-3, D35614-4
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP7619/GN15658	mg/l	40	33.3	10.3	20%

Associated Samples:
Batch GP7619: D35614-1, D35614-2, D35614-3, D35614-4
(*) Outside of QC limits

9.2
6

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN15605	D35590-1	mg/l	484	490	1.3	0-20%
Solids, Total Dissolved	GN15581	D35590-1	mg/l	668	668	0.0	0-25%
Total Organic Carbon	GP7527/GN15510	D35259-2	mg/l	0.98	0.89	9.6	0-20%

Associated Samples:
Batch GN15581: D35614-1, D35614-2, D35614-3, D35614-4
Batch GN15605: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7527: D35614-1, D35614-2, D35614-3, D35614-4
(*) Outside of QC limits

9.3
9

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN15605	D35590-1	mg/l	484	100	574	90.4	80-120%
Bromide	GP7531/GN15513	D35605-2	mg/l	0.0	2.5	2.5	100.0	80-120%
Bromide	GP7531/GN15513	D35605-2	mg/l	0.0	2.5	2.5	100.0	80-120%
Chloride	GP7531/GN15513	D35605-2	mg/l	36.5	100	136	99.2	80-120%
Chloride	GP7531/GN15513	D35605-2	mg/l	36.8	100	136	99.2	80-120%
HEM Oil and Grease	GP7619/GN15658	D35613-1	mg/l	69.9	40	109	97.8	78-114%
Nitrogen, Nitrate	GP7531/GN15513	D35605-2	mg/l	2.9	5.65	8.5	99.1	80-120%
Nitrogen, Nitrite	GP7531/GN15513	D35605-2	mg/l	0.23	0.305	0.53	98.5	80-120%
Sulfate	GP7531/GN15513	D35605-2	mg/l	14.5	10	24.1	93.0	80-120%
Sulfate	GP7531/GN15513	D35605-2	mg/l	14.8	10	24.1	93.0	80-120%
Total Organic Carbon	GP7527/GN15510	D35259-1	mg/l	2.3	10	12.1	98.0	80-120%

Associated Samples:
Batch GN15605: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7527: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7531: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7619: D35614-1, D35614-2, D35614-3, D35614-4
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

9.4
9

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

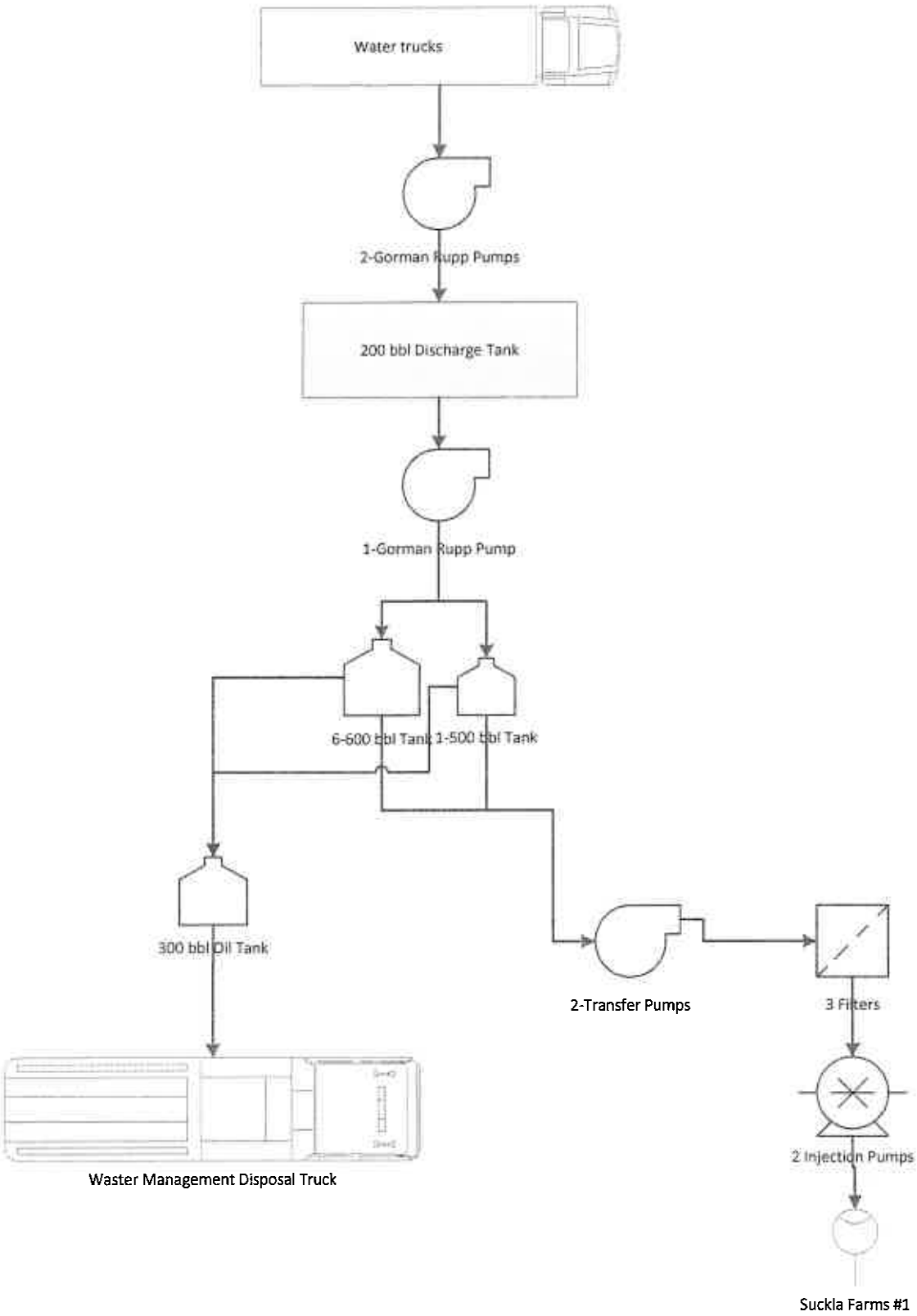
Login Number: D35614
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN15605	D35590-1	mg/l	484	100	569	0.8	20%
Bromide	GP7531/GN15513	D35605-2	mg/l	0.0	2.5	2.5	0.0	20%
Bromide	GP7531/GN15513	D35605-2	mg/l	0.0	2.5	2.5	0.0	20%
Chloride	GP7531/GN15513	D35605-2	mg/l	36.5	100	134	1.5	20%
Chloride	GP7531/GN15513	D35605-2	mg/l	36.8	100	134	1.5	20%
Nitrogen, Nitrate	GP7531/GN15513	D35605-2	mg/l	2.9	5.65	8.4	1.2	20%
Nitrogen, Nitrite	GP7531/GN15513	D35605-2	mg/l	0.23	0.305	0.54	1.9	20%
Sulfate	GP7531/GN15513	D35605-2	mg/l	14.5	10	24.1	0.0	20%
Sulfate	GP7531/GN15513	D35605-2	mg/l	14.8	10	24.1	0.0	20%
Total Organic Carbon	GP7527/GN15510	D35259-1	mg/l	2.3	10	12.0	0.8	20%

Associated Samples:
Batch GN15605: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7527: D35614-1, D35614-2, D35614-3, D35614-4
Batch GP7531: D35614-1, D35614-2, D35614-3, D35614-4
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

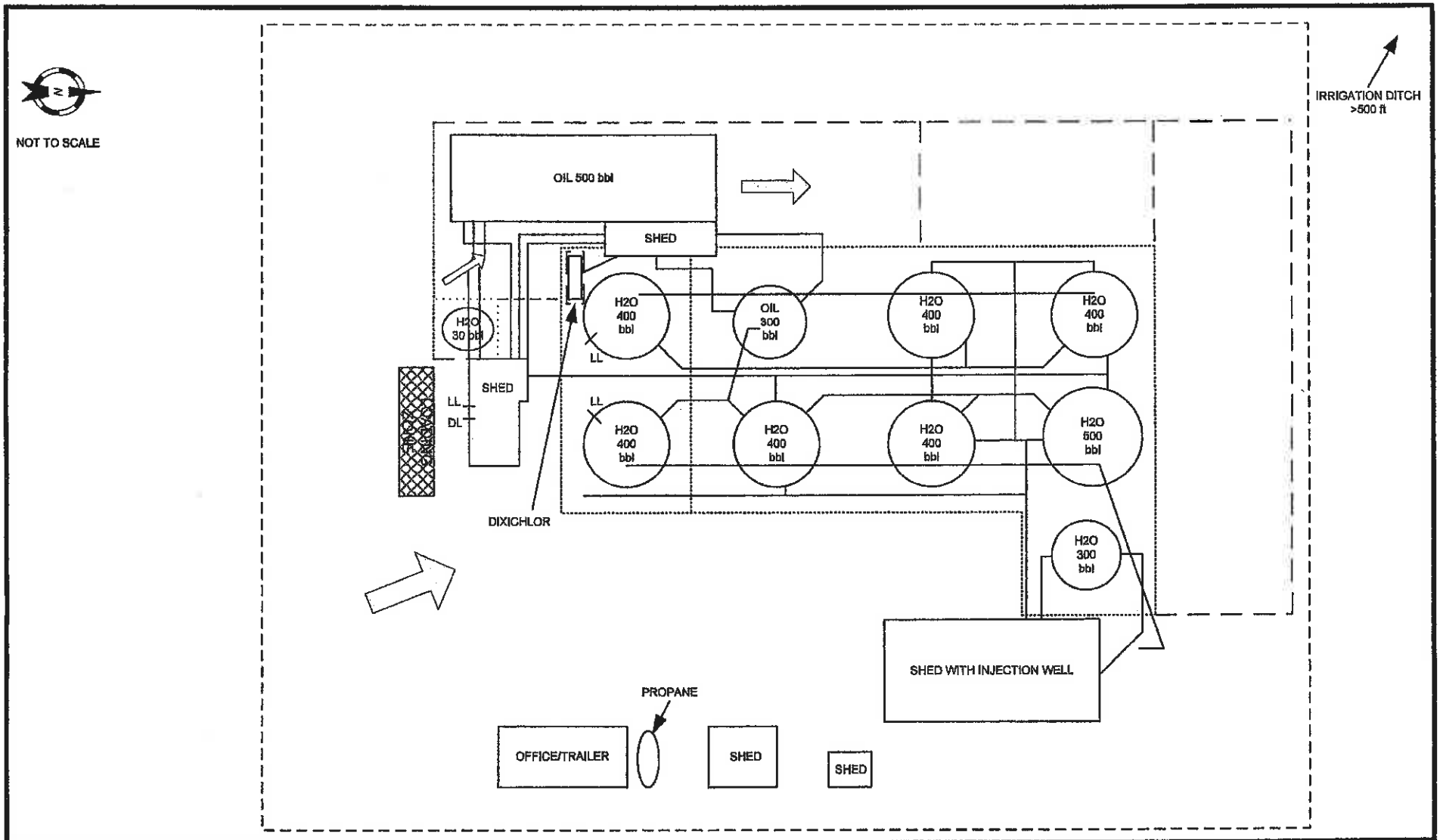
9.5
9

APPENDIX 10



Wattenberg Disposal, LLC.

Plant Flow Chart Diagram



LEGEND

-·-·-·-	FENCE
———	ABOVEGROUND PIPING
· · · · ·	APPROXIMATE LOCATION OF BURIED PIPING
— —	EARTHEN BERM
·····	CONCRETE BERM
⇦	DIRECTION OF SURFACE RUNOFF FLOW
bbl	BERMS
LL	LOAD LINE
DL	DRAIN LINE

K.P. KAUFFMAN COMPANY, INC.

WATTENBERG DISPOSAL FACILITY
SENW SEC 10 T 1N R68W
WELD COUNTY, COLORADO
FIGURE 2

APPENDIX II

OGCC FORM 5
R(10/88)

STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION
DEPARTMENT OF NATURAL RESOURCES

File one copy for Patented Federal and Indian lands.
File in duplicate for State lands.

ET 00031047

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. TYPE OF WELL
☐ OIL ☐ GAS ☐ DRY
☒ INJECTION ☐ OTHER

6. TYPE OF COMPLETION ☐ COMMINGLED
☒ NEW WELL ☐ DEEPEN ☐ PLUG BACK
☐ MULTI-COMPLETE ☐ OTHER

1. OPERATOR: WRIGHT'S DISPOSAL
PHONE: 303-426-8911
ADDRESS: 9270 QUITMAN, WESTMINSTER, CO. 80030

2. DRILLING CONTRACTOR: EXETER
PHONE: 303-861-0181

7. FEDERAL OR STATE LEASE NO.

8. IF INDIAN, ALLOTTEE OR TRIBE NAME

3. LOCATION OF WELL (Footages from section lines)
At surface 500 FSL 2020 FWL
At top prod. interval reported below SAME
At total depth SAME
WAS DIRECTIONAL SURVEY RUN? NO ☒ YES ☐ IF YES, ATTACH COPY

4. ELEVATIONS
KB 5056.2
GR 5046.2

9. WELL NAME AND NUMBER: SUCKLA FARMS INJ WELL #1

10. FIELD OR WILDCAT: SPINDLE

11. QTR. QTR. SEC. T. R. AND MERIDIAN: NW¼ 10-1N-67W

12. PERMIT NO.	13. API NO.	14. SPUD DATE	15. DATE TD REACHED	16. DATE COMPL. ☐ D&A ☒ READY TO PROD	17. COUNTY	18. STATE
89-363	05 123 14291	6/16/89	7/01/89	7/12/89	WELD	CO.

19. TOTAL DEPTH	20. PLUG BACK TOTAL DEPTH	21. DEPTH BRIDGE PLUG SET
MD 9571 TVD 9571	MD 9476 TVD 9476	MD NA TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (SUBMIT COPY OF EACH): IES - Density, CAL, GR - Bond Cor.

23. WAS WELL CORED? NO ☒ YES ☐ (SUBMIT ANALYSIS)
WAS DST RUN? NO ☒ YES ☐ (SUBMIT REPORT)

24. CASING & LINER RECORD (Report all strings set in well)

SIZE	WEIGHT (LB/FT)	HOLE SIZE	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	NO. OF SKS. & TYPE OF CEMENT	SLURRY VOL. (BBL.)	TOP OF CEMENT
8 5/8	24#	12¼	GR	759	NA	200 "C"		Surface
5½	20	7⅞	GR	9557	NA	255 "G"		8406

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER DEPTH (MD)	SIZE	DEPTH SET (MD)	PACKER DEPTH (MD)	SIZE	DEPTH SET (MD)	PACKER DEPTH (MD)
2⅞	9254	9240	5½					

26. PRODUCING INTERVALS

FORMATION	TOP	BOTTOM
A) LYONS	9139	9424
B)		
C)		
D)		

27. PERFORATION RECORD

PERFORATED INTERVAL	SIZE	NO. HOLES	PERF. STATUS
9276 - 9418	.50	194	OPEN

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
9276 - 9418	2500 gals 7½% HCL containing 2,560,000 SCF N_2 & 246 Ball Sealers

RECEIVED
JUL 17 1989
COLO. OIL & GAS CONS. COMM.

29. PRODUCTION - INTERVAL A

DATE FIRST PRODUCED	TEST DATE	HOURS TESTED	TEST PRODUCTION →	OIL BBL	GAS MCF	WATER BBL	OIL GRAVITY CORR. API	GAS DISPOSITION	PRODUCTION METHOD
NA									

CHOKE SIZE	FLOW. TBG. PRESS.	CSG. PRESS.	24 HR. RATE →	OIL BBL	GAS MCF	WATER BBL	GAS: OIL RATIO	WELL STATUS

PRODUCTION - INTERVAL B

DATE FIRST PRODUCED	TEST DATE	HOURS TESTED	TEST PRODUCTION →	OIL BBL	GAS MCF	WATER BBL	OIL GRAVITY CORR. API	GAS DISPOSITION	PRODUCTION METHOD

CHOKE SIZE	FLOW. TBG. PRESS.	CSG. PRESS.	24 HR. RATE →	OIL BBL	GAS MCF	WATER BBL	GAS: OIL RATIO	WELL STATUS

COMPLETE AND SIGN BACK PAGE

PRODUCTION - INTERVAL C

DATE FIRST PRODUCED	TEST DATE	HOURS TESTED	TEST PRODUCTION →	OIL BBL	GAS MCF	WATER BBL	OIL GRAVITY CORR. API	GAS DISPOSITION	PRODUCTION METHOD

CHOKE SIZE	FLOW. TBG. PRESS.	CSG. PRESS.	24 HR. RATE →	OIL BBL	GAS MCF	WATER BBL	GAS: OIL RATIO	WELL STATUS

PRODUCTION - INTERVAL D

DATE FIRST PRODUCED	TEST DATE	HOURS TESTED	TEST PRODUCTION →	OIL BBL	GAS MCF	WATER BBL	OIL GRAVITY CORR. API	GAS DISPOSITION	PRODUCTION METHOD

CHOKE SIZE	FLOW. TBG. PRESS.	CSG. PRESS.	24 HR. RATE →	OIL BBL	GAS MCF	WATER BBL	GAS: OIL RATIO	WELL STATUS

30. DISPOSITION OF GAS *(Sold, used for fuel, vented, etc.)*

NA

31. SUMMARY OF POROUS ZONES (INCLUDE AQUIFERS):

SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF: CORED INTERVALS AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES AND RECOVERIES.

FORMATION	TOP	BOTTOM	DESCRIPTIONS, CONTENTS, ETC.
Lyons	9139	9424	Fn to med grn SS; Cl to Lt orange in color. Some Cementing Matrix. Fractured w/ 10% Red to Org. shl & Trc. of Blk shl. Frac. NS/NO.

32. FORMATION (LOG) MARKERS

NAME	TOP MEAS. DEPTH
Niobrara	7362
Codell	7694
J Sand	8133
Dakota	8281
Lakota	8368
Morrison	8404
Entrada	8562
Forell	9069
Lyons	9139
Lyons SS	9288

33. ADDITIONAL REMARKS (INCLUDE PLUGGING PROCEDURE):

34. CIRCLE ENCLOSED ATTACHMENTS:

1. MECHANICAL LOGS (1 full set req'd)
2. GEOLOGIC REPORT
3. DST REPORT
4. DIRECTIONAL SURVEY
5. SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION
6. CORE ANALYSIS
7. OTHER:

35. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

PRINT Robert A. Fullop

SIGNED Robert A. Fullop TITLE Engineer DATE 7/18/89

APPENDIX 12

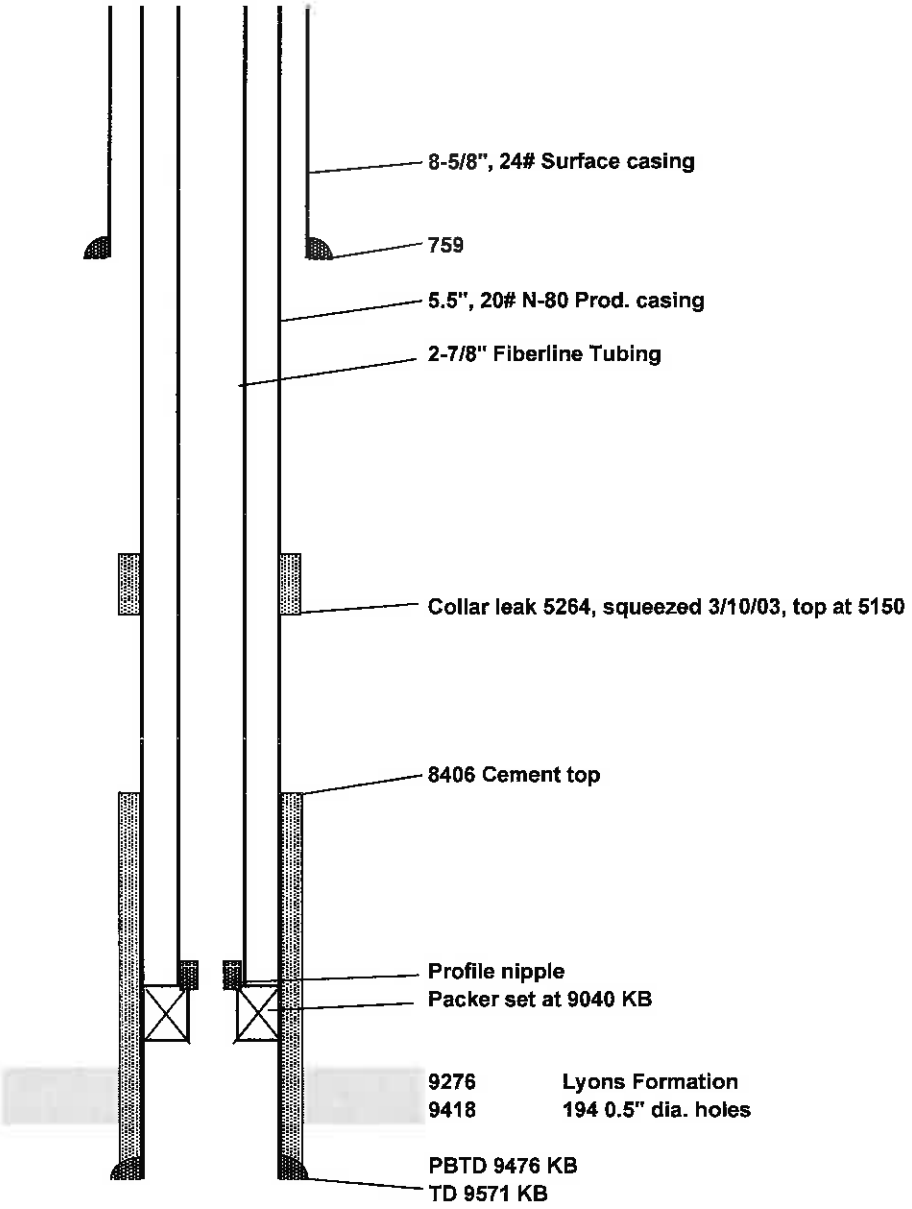
KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlemeier

Well: Suckla Farms Injection Well #1	Road Dir: 19 at 10.5, 3/10E, N into		DATE: 3/15/2012
L. Desc: senw 10 1n 67w	County: Weld, CO	Line Locate: n/a	
Formation: Lyons	Perfs: 9276-9418, 194 holes		
Casing: 5.5" 20# N-80	TD: 9571	PBTD: 9476	KB Meas: 10

Injection tubing detail:

Footage	No. jts.	
10.00	KB	Top of tubing under 10' KB meas.
9021.99	284	Tbg 2-7/8" OD, EUE, 8rd, 6.5#, N-80, Fiberglass-lined, 2.150" ID
0.80	1	2-7/8"x2-3/8", 3.668" OD, x-over profile nipple, stainless steel, 1.78" ID
7.20	1	2-3/8"x5.5" Arrowset I packer, set in tension, elements at 9036.60' KB
9039.99		TOTAL, Set at 9040' KB



APPENDIX 13

OMB No. 2040-0042 Approval Expires 12/31/2011

EPA

United States Environmental Protection Agency
Washington, DC 20460

Injection Well Monitoring Report

Year 2012	Month	Month	Month
Injection Pressure (PSI)	July	August	September
1. Minimum	500	500	500
2. Average	500	444	396
3. Maximum	500	500	500
Injection Rate (Gal/Min)			
1. Minimum	55	55	55
2. Average	55	55	55
3. Maximum	55	55	55
Annular Pressure (PSI)			
1. Minimum	130	130	130
2. Average	130	130	130
3. Maximum	130	130	130
Injection Volume (Gal)			
1. Monthly Total	754,362	746,130	625,212
2. Yearly Cumulative	4,575,312	5,321,442	5,946,654
Temperature (F °)			
1. Minimum			
2. Average			
3. Maximum			
pH			
1. Minimum			
2. Average			
3. Maximum			
Other			
Class I-Non-Hazardous	30	0	0
Class I-Non-Haz. Cumulative	90	90	90

Name and Address of Permittee		Permit Number
Wattenberg Disposal, LLC, 10137 WCR 19, Fort Lupton, CO 80621		CO-10938-2115
Name and Official Title *(Please type or print)*	**Signature**	**Date Signed**
Renae Patterson, Admin. Asst.	Renae Patterson	10/10/12

EPA Form 7520-8 (Rev. 12-08)

EASE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	LEASE TOTALS
60003	1415 CORPORATION C										20																						20
60002	1415 CORPORATION B													20																			20
60093	1415 CORPORATION G													20																			20
61864	AMOCO-CHARTER-SCHNEI																		27									42					69
61883	AMOCO CHART SCHNEIDER A																		26									41					67
61902	AMOCO CHART SCHNEIDER B																		27									42					69
58366	AMOCO-ENERGY-SMITS U		35																	30					20								85
67529	ANDERSON #1							13																									13
61450	ANDERSON 1, 2											40																25					65
17450	ANDERSON												10																				10
23789	ANDERSON 13-32							12																									12
23790	ANDERSON 12-32							13																									13
23792	ANDERSON 14-32							12																									12
58425	BELL UNIT, *CHARLES			13										8																	48		69
58408	BELL, *CHARLES C			12										7																	47		66
9850B	BERGER, *JACK & BERG																			50						45							95
24035	BLISS 41-21																											85					85
61106	BURKHARDT SELTZER											30														25							55
24571	CAMENISCH 2-32						13																										13
24591	CAMENISCH 8-32						12																										12
24569	CAMENISCH 41-32						13																										13
24704	CAMENISCH 50-32						12																										12
17451	CARTER 21-33			105																130						130							365
58463	CHRISTENSEN UNIT, *N													13																			13
58444	CHRISTENSEN, *NELS													12																			12
6825	CHURCH 7-A 31-2																25																25
09163	COBURN CLEMENTINE 1												13																		20		33
09593	COBURN CLEMENTINE B1												12																		20		32
58482	DAMIANA, *JAMES A		45			30																											75
60040	DEEPE C, *CARL R						25																										25
7885	DEVORE 1, 2																									10							10
7886	DEVORE 2																									10							10
9272	DEVORE 3, 4																									10							10
9271	DEVORE 4																									10							10
62611	ED KAM 1-21																								30								30
62293	ED KAM 2-23													30																			30
56054	ED KAM 3-28													35																			35
23829	ELAINE																12								15								27
08391	ELKHORN CO B3		7											4												7							18
08694	ELKHORN CO B5		7											5												6							18
09488	ELKHORN CO B6		6											4												7							17
09489	ELKHORN CO B7		7											4												7							18
09490	ELKHORN CO B8		7											4												6							17
09491	ELKHORN CO B9		6											4												7							17
60074	EWING C #1, *HARRY																			17													17
16081	EWING 23-30																			40													40
00001	FACILITY 1			95				50					130											80		130					65		550
00002	FACILITY 2												145				130							160	130	40	40						645
00003	FACILITY 3																		50														50
00004	FACILITY 4					130	100																	130	130								490
00005	FACILITY 5											50		130										70		130		50					430
00006	FACILITY 6											50																					50
00007	FACILITY 7		130								130														146								406
00008	FACILITY 8					70																		145		65	46						326
04WA	FACILITY 4WA										130																						130
04WB	FACILITY 4WB			90								90							50								65						295
89064	FED WILDHORSE 10,15,																											35					35
60095	FINDLAY, *RICHARD R		130								130																						260
59269	FIRECRACKER						65							45							30						70						210
32751	FRONT RANGE 11-17-5									70																							70
25792	FRONT RANGE 11-17-11		55											20																			75
62608	GENESIS 1					35														40													75
62603	GENESIS 3																								40								40
59839	GRANT #'S 1,2,3,4																									50							50
60173	GREELEY NATIONAL BAN												60											45									105
61484	GUILDNER																				30												30
5866	GUTHRIE 1 & 2			35						45				25						40						30						35	210
60211	HANKS									40																							40
60249	HART UNIT B, MARTIN													10																			10
60271	HART UNIT G													30																			30
59033	HAUDRICH #1 & 2						50							55											40						45		190
62020	HEIN 1-2						30																								50		80
25314	HEPP 31-32						55																										55
60290	HERMAN UNIT B, *ALFR										15									25					15								55
58505	HERMAN UNIT, *ALFRED										15									25					15								55
56139	HILL 1 A																										10						10
56140	HILL 1B																										10						10
56134	HILL 3-10						25																				30						55
58501	HLADKY-O'GORMAN		20			13						23					15								25							23	119
60310	HORST B, JOHN 1 & 2																			30													30
04200	HORTH R1-R2						20																		20								40
58520	IONE LAND & CATTLE																									15							15
60320	IONE UNIT B 1																									15							15

16238	JOHNSON 32-3D																									70						70
59592	JOHNSON #'S 1 & 2												20																			20
08680	JOHNSON ROLAND 1									25																					30	55
08696	JOHNSON ROLAND B-1									25																					30	55
66431	JORDAN 34-4					20																										20
62592	KAMMERZELL 1-9				10																											10
22843	KAMMERZELL 7-4				10																											10
16057	KOCH 41-6										20																					20
09204	KOCH, KEN										20																					20
29842	KOESTER 18-33												50							95												145
29605	KOESTER 18-33-4									30																						30
34025	KOESTER 18-33-5																	100	520	130			260		120							1130
34022	KOESTER 18-33-22		70									520		350	250																	1190
29606	KOESTER 3-33-3					40			95				50	50					45	50							40					370
30275	KOESTER 3-33-21		650	490	475	130	390																		50							2185
30329	KOESTER 3-33-29					210			210			110				260	80	85	130					75	60							1220
6080	KORTUM 2 A										30							40													45	115
16118	KUNZMAN 43-6										9																					9
07666	KUNZMAN JOHN A #1										8																					8
09296	KUNZMAN 2										9																					9
09719	KUNZMAN 4										9																					9
09853	LANSDOWN 1				25						18																					43
07348	LANSDOWN WM D 1				25						17															32						74
59831	LANSON'S FARM 1-16								90				60							50								80				280
16883	LEGG 14-22																									33						33
58138	LOEFFLER 1-18				25												25														30	80
67150	LOEFFLER 2-24										20																				30	50
61685	MARCUS 1															30																30
56144	MATSUSHIMA 1-5			35																						35						70
23517	MATSUSHIMA 2-6X			35																						35						70
66429	MAUL 20-2				325												50														40	415
59071	MCCRUMB #'S 1 & 2									40																					45	85
23687	MCQUEARY 1													13										15								28
8644	MILLARD 1																			20												20
10548	MILLARD 2																	23		20												43
58709	MILLER 13-5					24												23														47
66278	MILLER B #14, *CARL					23																										23
60559	MILLER E #1, *CARL A					23												24														47
6436	MITCHELL 32-3			30																35					35							100
6440	MITCHELL 32-7								30																							30
6446	MITCHELL 32-9																													85		85
62296	MONFORT 2-30		15														25															40
60648	MONTOYA 1, 2																														40	40
61697	MOSER #1-A								45																							45
6352	MURPHY 5-2			30					35											45												110
6336	MURPHY 31-3																								30					45		75
69075A	MUSICK 2-4-7			10									15													25						50
69075B	MUSICK 3-5			20									25													25						70
32872	NRC 9-9-15H		80		100								95			60	40		70		80			100	40			70				755
6119	NEWLANDER																								30							30
08965	PREM TURKEY FARMS B2												8																			8
07876	PREM TURKEY FARMS C1												9																			9
08943	PREM TURKEY FARMS C2												8																			8
259619	ROCKY MOUNTAIN FUEL 9-6								80														45					21				146
60762	ROCKY MTN FUEL CO C 7&8																											22				22
68126	ROCKY MTN FUEL CO C 4, 10																											42				42
6377	ROSENFIELD 6-1																55															55
6381	ROSENFIELD 6-5												45																			45
58596	SAKATA 1																								15							15
60790	SCHUTT, MARVIN E 1																	30														30
61188	SELTZER 1A																													20		20
15997	SHANNON 24-30																	40														40
12602	SPRAGUE A M A 1											10																				10
6515	STATE 14-32			27	27									18	20																43	135
6741	STATE 14			26	26									19	20																44	135
6746	STATE 14-31			27	27									18	20																43	135
60819A	STREAR, *SIDNEY									20																					20	40
60820	STREAR									20																					20	40
60122	STROH #1					5				9																						14
66643	STROH #2					4				11																						15
26390	STROH 7-33					5				9																						14
24147	STROH 28-16					4				11																						15
26308	STROH 15-28					4				11																						15
24238	STROH 28-9					4				11																						15
24237	STROH 28-10					4				11																						15
24142	STROH 33-1					5				9																						14
24146	STROH 33-2					5				9																						14
24143	STROH 33-4					5				9																						14
60838	SUCKLA A UNIT 1&2																	13														13
60895	SUCKLA D UNIT 1&2																	14														14
60952	SUCKLA FARMS C 2&3																	13														13
60990	SUCKLA E										90		20																			110
60933	SUCKLA BROWN 17												30																			30
58853	TWOMBLEY B, *MARGARE											20																		20		40
2090B	UPRR 23 D 2					20											25														20	65
2091B	UPRR 23 D4												30																		30	60
61070	UPRR 42 PAN AM AF 1,																								60							60

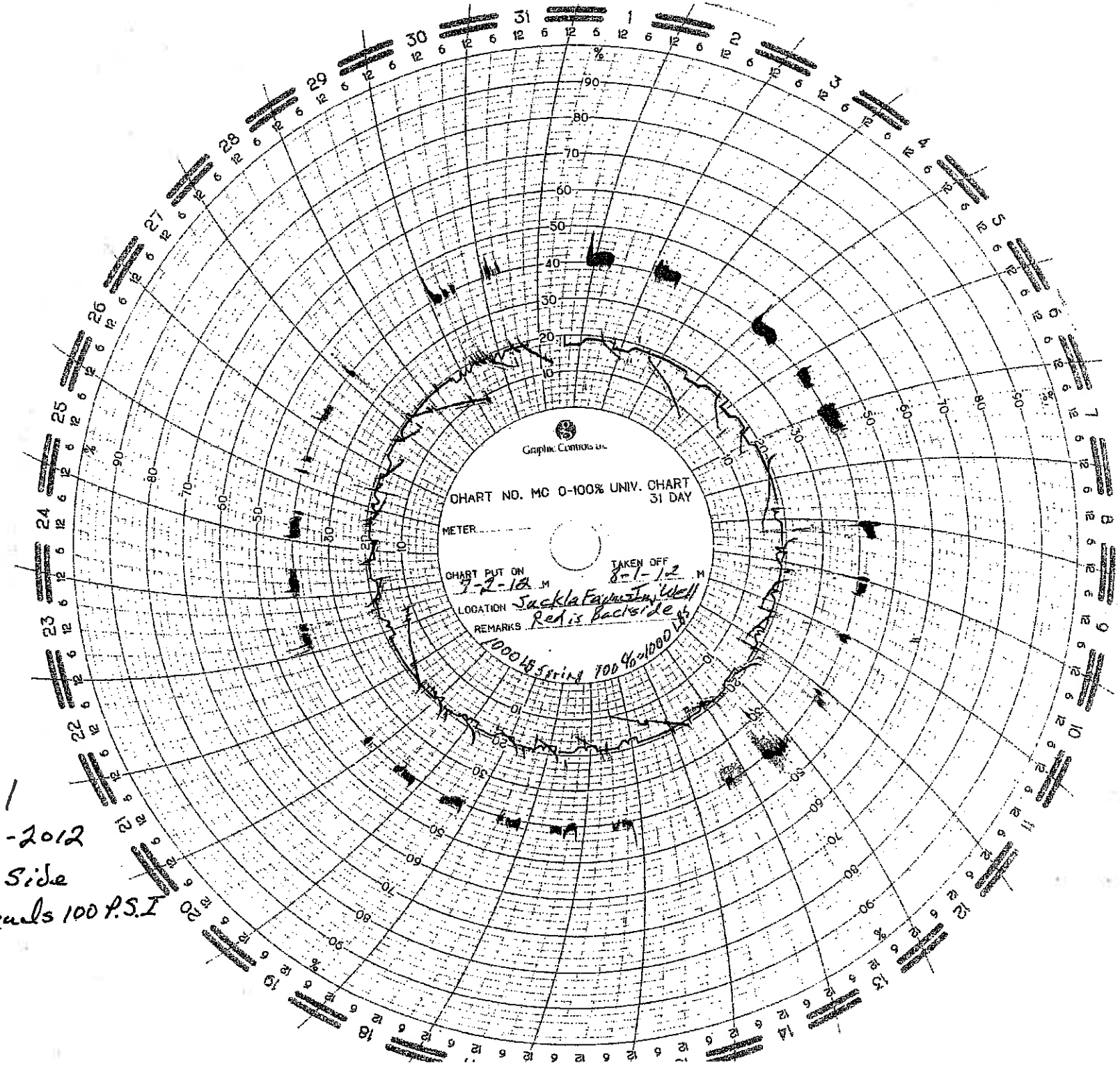
61008	UPRR 42 D																											50					50
61047	UPRR 42 PAN AM G												30					60															90
58691	UPRR 42 PAN AM K																										50	30					80
61067	UPRR 43 PAN AM I						65							40													50						155
61078	VINCENT UNIT, R S 1&																			18													18
62130	WAGNER #1																	7															7
61719	WAGNER #1B																	8															8
62131	WAGNER #'S 1A & 2A																	15															15
61095	WALKING, 'CARY		20			12						22					15								25							22	116
66995	WUERTZ 12-3			60									65					70													70	290	555
	TOTALS	0	1290	1140	0	1365	1020	490	0	740	700	555	605	980	520	0	745	800	540	1385	635	80	0	935	841	1195	596	705	0	0	535	880	
																																	19287

ASE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	LEASE TOTALS
																																	0
	ANGI ALLES RECEIVER																																0
18	BERTHOUD BOOSTER																																0
	CDP 7 RECEIVER																																0
12	EATON PLANT																																0
33	ENTERPRISE BOOSTER																																0
09	GREELEY OFFICE																																0
11	GREELEY PLANT																																0
	JODY BOOSTER																																0
18	JOHNSTOWN BOOSTER																																0
34	KRAUTHEAD																																0
13	LUCERNE PLANT																																0
	MARIA BOOSTER																																0
18	MARILYN BOOSTER																																0
18	MARTHA BOOSTER																																0
14	MEWBOURN PLANT																																0
	MID POINT BOOSTER																																0
	PARKER PARSLEY BOOSTER																																0
62	PLATTEVILLE PLANT																																0
	REINICK RECEIVER																																0
35	RIVERSIDE BOOSTER																																0
32	ROGGEN FIELD																																0
31	ROGGEN PLANT						220						240				120	240						240									1060
18	SINGLETREE BOOSTER																																0
	SOUTHFIELD BOOSTER																																0
10	SPINDLE PLANT																																0
18	SURREY BOOSTER																																0
36	TAMPA																																0
23	WELD BOOSTERS																																0
17	WELD FIELD																																0
35	WELD MEASUREMENT																																0
18	WEST SPINDLE BOOSTER																																0
																																	0
	TOTAL	0	0	0	0	0	220	0	0	0	0	0	240	0	0	0	120	240	0	0	0	0	0	240	0	0	0	0	0	0	0	0	1060
																																	1060

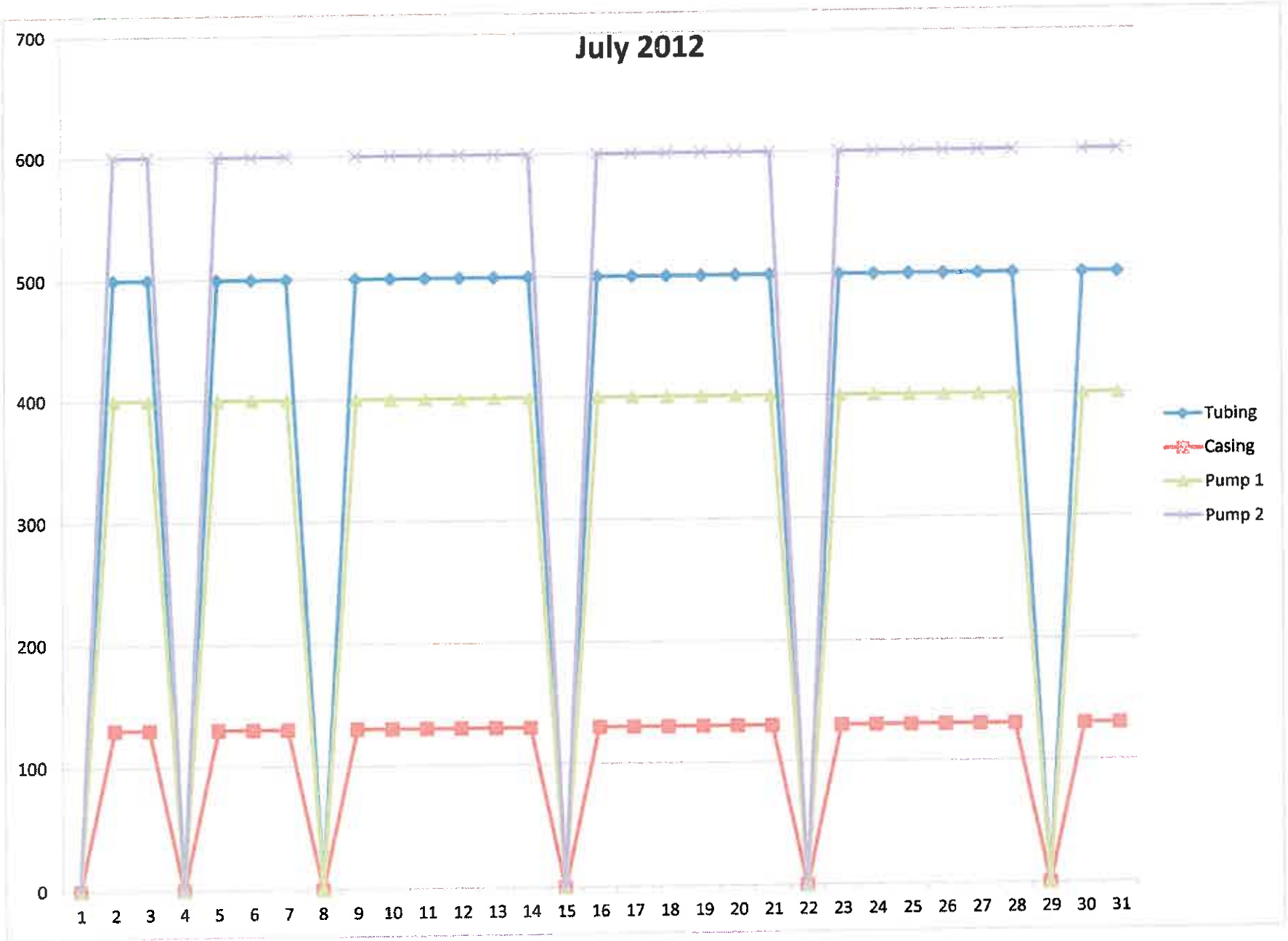
July 2012

WATTENBERG DAILY EVALUATION SHEET

Date	Time	Injecting Fluid Yes	Injecting Fluid No	Pressured Annulus Yes	Pressured Annulus No	Tubing Pressure	Annulus Pressure	Estimated Barrels Injected (prior 24 hrs)	Ambient Air Temperature (est)	Weather Conditions	Remarks/Summary Prior 24 Hrs.
un 1	Closed		X	X		Ø	130	397			
un 2	6:30A		X	X		Ø	130	Ø			
un 3	6:30A		X	X		Ø	130	995			
un 4	Closed		X	X		Ø	130	1003			
un 5	7:00A		X	X		Ø	130	Ø			
un 6	6:30A		X	X		Ø	130	885			
un 7	5:15A		X	X		Ø	130	1044			
un 8	Closed		X	X		Ø	130	909			
un 9	5:30A		X	X		Ø	130	Ø			
un 10	5:15A		X	X		Ø	130	829			
un 11	6:30A		X	X		Ø	130	707			
un 12	6:30A		X	X		Ø	130	538			
un 13	6:30A		X	X		Ø	130	535			
un 14	6:15A		X	X		Ø	130	975			
un 15	Closed		X	X		Ø	130	962			
un 16	7:30A		X	X		Ø	130	Ø			
un 17	6:30A		X	X		Ø	130	681			
un 18	6:30A		X	X		Ø	130	844			
un 19	6:30A		X	X		Ø	130	816			
un 20	6:30A		X	X		Ø	130	837			
un 21	6:15A		X	X		Ø	130	873			
un 22	Closed		X	X		Ø	130	403			
un 23	6:30A		X	X		Ø	130	Ø			
un 24	7:30A		X	X		Ø	130	731			
un 25	6:30A		X	X		Ø	130	864			
un 26	6:30A		X	X		Ø	130	915			
un 27	6:30A		X	X		Ø	130	519			
un 28	6:30A		X	X		Ø	130	705			
un 29	Closed		X	X		Ø	130	226			
un 30	6:30A		X	X		Ø	130	Ø			
un 31	6:30A		X	X		Ø	130	511			



Suckla Farms
Injection Well # 1
7-2-2012 to 8-1-2012
1000 LB Spring Back Side
pressure @ 10 % equals 100 P.S.I


July 2012
700
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Tubing
Casing
Pump 1
Pump 2

Mountain States ACCUTEST LABORATORIES

08/14/12

Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D36884

Sampling Date: 07/31/12

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 29

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.

Brad Madadian
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

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Sample Summary

K.P. Kauffmann Company, Inc.

Job No: D36884

Wattenberg Tank

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
D36884-1	07/31/12	08:30 MH	07/31/12	AQ	Water	TANK-I
D36884-1F	07/31/12	08:30 MH	07/31/12	AQ	Water Filtered	TANK-I

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	K.P. Kauffmann Company, Inc.	Job No	D36884
Site:	Wattenberg Tank	Report Date	8/14/2012 3:16:40 PM

On 07/31/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.2 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D36884 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ Batch ID: MP8044

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D36951-1MS, D36951-1MSD, D36951-1SDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D287

Matrix ALL Batch ID: GN16225

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ Batch ID: GP7941

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D36884-1MS were used as the QC samples for the HEM Oil and Grease analysis.
- The matrix spike (MS) recovery(s) of HEM Oil and Grease are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ Batch ID: GP7841

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D36877-1MS, D36877-1MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D36884-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM20 2540C

Matrix AQ Batch ID: GN16077

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D36826-3DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 4500H B+

Matrix AQ	Batch ID: GN16086

- D36884-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

Wet Chemistry By Method SM20 5310B

Matrix AQ	Batch ID: GP7870

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D36829-2DUP, D37066-1MS, D37066-1MSD were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D36884
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 07/31/12

3

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D36884-1	**TANK-I**					
Chloride		9970	250	100	mg/l	EPA 300/SW846 9056
HEM Oil and Grease		150	4.8	2.6	mg/l	EPA 1664A
Nitrogen, Nitrate		1.3	1.1	0.55	mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		16500	10	5.0	mg/l	SM20 2540C
Specific Gravity by Hydrometer		1.0075				ASTM D287
Sulfate		196	13	5.0	mg/l	EPA 300/SW846 9056
Total Organic Carbon		4330	230	110	mg/l	SM20 5310B
pH [a]		8.68			su	SM20 4500H B+
D36884-1F	**TANK-I**					
Calcium		59200	20000	370	ug/l	SW846 6010C
Magnesium		30000	10000	550	ug/l	SW846 6010C
Potassium		178000	50000	3100	ug/l	SW846 6010C
Sodium		5060000	4000	980	ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D36884-1	**Date Sampled:**	07/31/12
Matrix:	AQ - Water	**Date Received:**	07/31/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	9970	250	mg/l	500	07/31/12 18:06	JML	EPA 300/SW846 9056
HEM Oil and Grease	150	4.8	mg/l	1	08/14/12	SWT	EPA 1664A
Nitrogen, Nitrate	1.3	1.1	mg/l	25	07/31/12 12:06	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 5.0	5.0	mg/l	500	07/31/12 18:06	JML	EPA 300/SW846 9056
Solids, Total Dissolved	16500	10	mg/l	1	07/31/12	JD	SM20 2540C
Specific Gravity by Hydromete	1.0075			1	08/09/12	MM	ASTM D287
Sulfate	196	13	mg/l	25	07/31/12 12:06	JML	EPA 300/SW846 9056
Total Organic Carbon	4330	230	mg/l	227	08/06/12 12:33	NS	SM20 5310B
pH [b]	8.68		su	1	07/31/12 11:45	CT	SM20 4500H B+

(a) Elevated detection limit due to matrix interference.
(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Report of Analysis

4.2
4

Client Sample ID:	TANK-I		
Lab Sample ID:	D36884-1F	**Date Sampled:**	07/31/12
Matrix:	AQ - Water Filtered	**Date Received:**	07/31/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	59200	20000	ug/l	5	08/02/12	08/04/12	JM	SW846 6010C [1]	SW846 3010A [3]
Magnesium	30000	10000	ug/l	5	08/02/12	08/04/12	JM	SW846 6010C [1]	SW846 3010A [3]
Potassium	178000	50000	ug/l	5	08/02/12	08/04/12	JM	SW846 6010C [1]	SW846 3010A [3]
Sodium	5060000	4000	ug/l	1	08/02/12	08/07/12	JB	SW846 6010C [2]	SW846 3010A [3]

(1) Instrument QC Batch: MA2681
(2) Instrument QC Batch: MA2688
(3) Prep QC Batch: MP8044

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

4036 Youngfield St. Wheat Ridge, CO 80033
303-425-6021 FAX 303-425-6854

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: 36884

Client / Reporting Information

Company Name: K.P. Kauffman Company, Inc.
Address: 1675 Broadway, Suite 2800
City: Denver State: CO Zip: 80202-4628
Project Contact: Susan Lara-Mesa SLaraMesa@kpk.com
Phone #: 303-825-4822
Samplers's Name: MICHAEL HATTEL (303-665-1400)

Project Information

Project Name: WATTENBERG TANK
Street:
City: Fort Lupton State: CO
Project #:
Fax #:
Client Purchase Order #: 7591

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	MeOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	NaOCORB	OIL & GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	pH	CATIONS (Ca, K, Mg, NA)	SPECIFIC GRAVITY	TDS	TOC				LAB USE ONLY
	TANK - I		7/31/12	0830	MDH	LIQ	7	X			X					X	X	X	X	X	X	X				0
																										DR 7/31

Requested Analysis

Matrix Codes: DW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

Approved By:/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [x] Hard Copy
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] PDF

Comments / Remarks

NO Hard Copy

PDF copy to Mike Hattel with APEX at mhattel@msn.com

PDF copy to Susana Lara-Mesa w KPK at SLaraMesa@kpk.com

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	7/31/12 1005	1	2		2 7/31/12
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # HA	Preserved where applicable X	On Ice X Cooler Temp. 2.2°

D36884: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D36884 Client: KP KAUFFMAN COMPANY, INC. Immediate Client Services Action Required: No

Date / Time Received: 7/31/2012 10:05:00 AM No. Coolers: 1 Client Service Action Required at Login: No

Project: WATTENBERG TANK Airbill #'s:

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

Cooler Temperature	Y	or N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	Infared gun	
3. Cooler media:	Ice (bag)	

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

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

Sample Integrity - Instructions	Y	or 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

5.1

5

D36884: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 08/02/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	9.6	21		
Antimony	30	1.7	3.2		
Arsenic	25	4.4	7.6		
Barium	10	.1	.5		
Beryllium	10	1.3	3.1		
Boron	50	1	2.6		
Cadmium	10	.6	.59		
Calcium	400	5.4	7.3	7.4	<400
Chromium	10	.3	.39		
Cobalt	5.0	.4	.4		
Copper	10	1.2	3		
Iron	70	1.2	19		
Lead	50	1.9	2.9		
Lithium	2.0	.5	.65		
Magnesium	200	6.5	11	0.50	<200
Manganese	5.0	1.2	1.8		
Molybdenum	10	2.1	2.1		
Nickel	30	.5	.53		
Phosphorus	100	14	59		
Potassium	1000	61	61	46.4	<1000
Selenium	50	4.8	5.7		
Silicon	50	2.9	2.1		
Silver	30	.4	.65		
Sodium	400	5.9	98	-110	<400
Strontium	5.0	.04	1.5		
Thallium	10	2.9	3		
Tin	50	12	24		
Titanium	10	.1	1.2		
Uranium	50	2.2	2.2		
Vanadium	10	.2	.39		
Zinc	30	.5	1.5		

Associated samples MP8044: D36884-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.1

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 08/02/12

Metal	D36951-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium	43700	71000	25000	109.2	75-125
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	6680	32400	25000	102.9	75-125
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	5290	30700	25000	101.6	75-125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	9270	35400	25000	104.1	75-125
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium					
Vanadium	anr				
Zinc	anr				

Associated samples MP8044: D36884-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 08/02/12

Metal	D36951-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium	43700	70500	25000	107.2	0.7	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	6680	33600	25000	107.7	3.6	20
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	5290	31900	25000	106.4	3.8	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	9270	34800	25000	101.7	1.7	20
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium	anr					
Zinc	anr					

Associated samples MP8044: D36884-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 08/02/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	26700	25000	106.8	80-120
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	25100	25000	100.4	80-120
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	25300	25000	101.2	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	25700	25000	102.8	80-120
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP8044: D36884-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.3 6

SERIAL DILUTION RESULTS SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 08/02/12

Metal	D36951-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	43700	45800	4.8	0-10
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	6680	6820	2.0	0-10
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	5290	5800	9.5	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	9270	9370	0.0	0-10
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP8044: D36884-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8044
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.4

6

Mountain States ACCUTEST LABORATORIES

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: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP7841/GN16107	0.20	0.0	mg/l	20	20.1	100.5	90-110%
Chloride	GP7841/GN16107	0.50	0.31	mg/l	20	20.7	103.5	90-110%
HEM Oil and Grease	GP7941/GN16288	5.0	0.0	mg/l	40	38.5	96.3	78-114%
Nitrogen, Nitrate	GP7841/GN16107	0.045	0.0	mg/l	4.52	4.33	95.8	90-110%
Nitrogen, Nitrite	GP7841/GN16107	0.010	0.0	mg/l	6.09	6.34	104.1	90-110%
Solids, Total Dissolved	GN16077	10	0.0	mg/l	400	402	100.5	90-110%
Sulfate	GP7841/GN16107	0.50	0.0	mg/l	30	29.4	98.0	90-110%
Total Organic Carbon	GP7870/GN16172	1.0	0.0	mg/l	8.82	8.19	92.9	90-110%
pH	GN16086			su	8.00	7.96	99.5	99.3-100.7%

Associated Samples:
Batch GN16077: D36884-1
Batch GN16086: D36884-1
Batch GP7841: D36884-1
Batch GP7870: D36884-1
Batch GP7941: D36884-1
(*) Outside of QC limits

7.1

7

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP7941/GN16288	mg/l	40	36.9	4.2	20%

Associated Samples:
Batch GP7941: D36884-1
(*) Outside of QC limits

7.2
7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN16077	D36826-3	mg/l	4780	4820	0.8	0-25%
Total Organic Carbon	GP7870/GN16172	D36829-2	mg/l	118	115	2.6	0-20%

Associated Samples:
Batch GN16077: D36884-1
Batch GP7870: D36884-1
(*) Outside of QC limits

7.3

7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP7841/GN16107	D36877-1	mg/l	0.33	5	5.3	99.4	80-120%
Chloride	GP7841/GN16107	D36877-1	mg/l	30.9	20	51.1	101.0	80-120%
HEM Oil and Grease	GP7941/GN16288	D36884-1	mg/l	150	40	207	142.5N(a)	78-114%
Nitrogen, Nitrate	GP7841/GN16107	D36877-1	mg/l	0.15	1.13	1.2	92.9	80-120%
Nitrogen, Nitrite	GP7841/GN16107	D36877-1	mg/l	0.0	0.609	0.57	93.6	80-120%
Sulfate	GP7841/GN16107	D36877-1	mg/l	168	100	256	88.0	80-120%
Total Organic Carbon	GP7870/GN16172	D37066-1	mg/l	192	200	383	95.5	80-120%

Associated Samples:
Batch GP7841: D36884-1
Batch GP7870: D36884-1
Batch GP7941: D36884-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

7.4

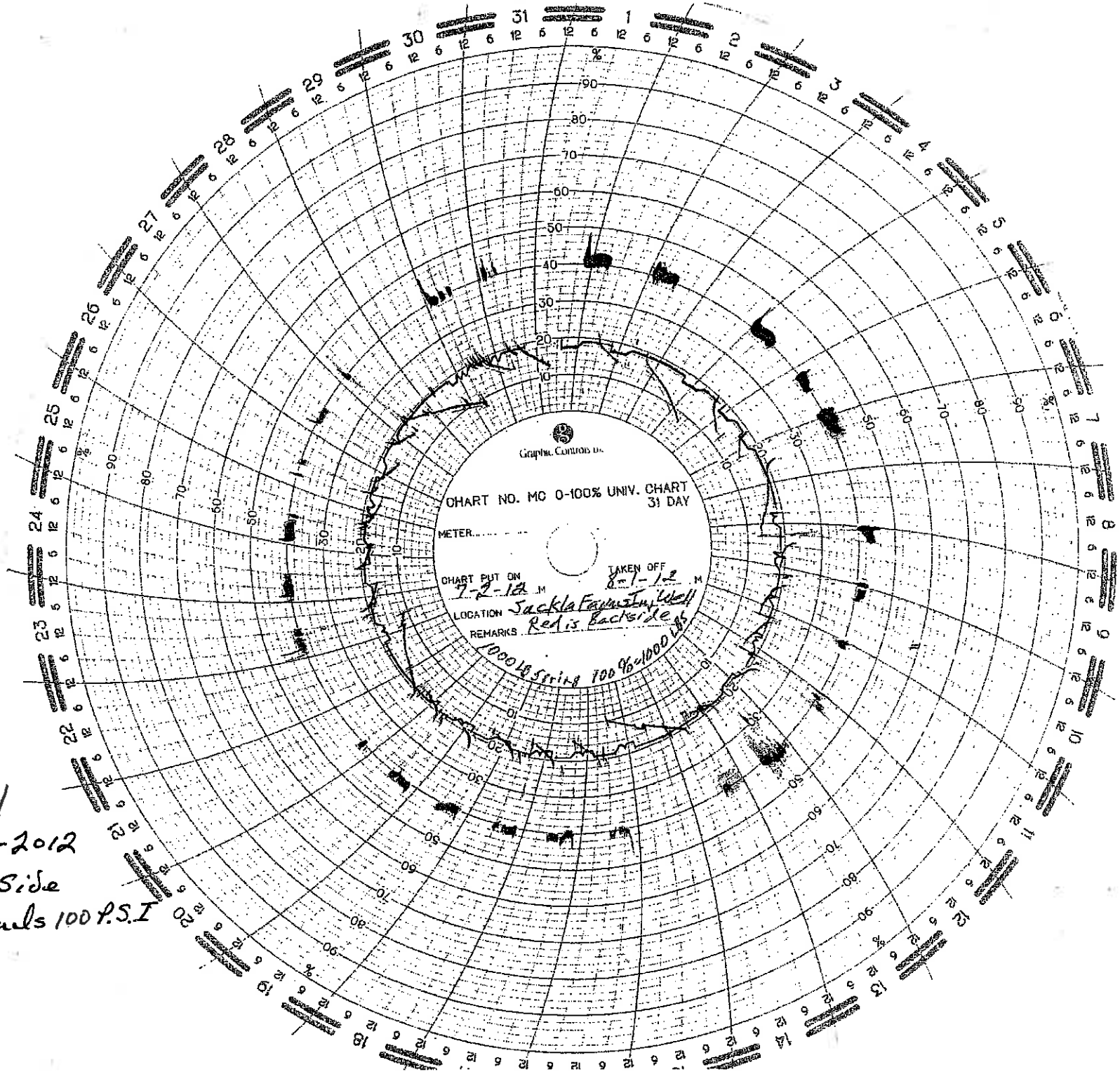
7

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D36884
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP7841/GN16107	D36877-1	mg/l	0.33	5	5.4	1.9	20%
Chloride	GP7841/GN16107	D36877-1	mg/l	30.9	20	51.3	0.4	20%
Nitrogen, Nitrate	GP7841/GN16107	D36877-1	mg/l	0.15	1.13	1.3	8.0	20%
Nitrogen, Nitrite	GP7841/GN16107	D36877-1	mg/l	0.0	0.609	0.58	1.7	20%
Sulfate	GP7841/GN16107	D36877-1	mg/l	168	100	258	0.8	20%
Total Organic Carbon	GP7870/GN16172	D37066-1	mg/l	192	200	383	0.0	20%

Associated Samples:
Batch GP7841: D36884-1
Batch GP7870: D36884-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



Suckla Farms
Injection Well # 1
7-2-2012 to 8-1-2012
1000 LB Spring Back Side
pressure @ 10 % equals 100 P.S.I

LEASE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	LEASE TOTALS
60003	1415 CORPORATION C																												35				35
60002	1415 CORPORATION B																				23												23
60093	1415 CORPORATION G																				22												22
61864	AMOCO-CHARTER-SCHNEI									22						37																	59
61883	AMOCO CHART SCHNEIDER A									21						36																	57
61902	AMOCO CHART SCHNEIDER B									22						37																	59
58368	AMOCO-ENERGY-SMITS U						20								30							30											80
17450	ANDERSON		18							17																				30			65
58425	BELL UNIT, *CHARLES								30													30							40			33	133
58406	BELL, *CHARLES C								30													30							40			32	132
59850B	BERGER, *JACK & BERG								45						40																		85
61186	BURKHARDT SELTZER		20																										35				55
60113	CAMENISCH 1																														60		60
17451	CARTER 21-33																												130				130
58463	CHRISTENSEN UNIT, *N						17															20											37
58444	CHRISTENSEN, *NELS						18															20											38
6825	CHURCH 7-A 31-2								60																								60
09163	COBURN CLEMENTINE 1																17																17
09593	COBURN CLEMENTINE B1																18																18
58462	DAMIANA, *JAMES A						30																										30
60040	DEEPE C, *CARL R		40													45																	85
7895	DEVORE 1, 2		8														11															9	28
7896	DEVORE 2		9														12															8	29
9272	DEVORE 3, 4		9														11															9	29
9271	DEVORE 4		9														11															9	29
7866	DUTCHER B 1														16																	20	36
6845	DUTCHER B 2														17																	20	37
6684	DUTCHER C 1														16																	20	36
6899	DUTCHER C 2														16																	20	36
67144	ED KAM 4-33		30																														30
23829	ELAINE		17																														17
08391	ELKHORN CO B3										7														7								14
08694	ELKHORN CO B5										8														7								15
09486	ELKHORN CO B6										7														7								14
09489	ELKHORN CO B7										8														6								14
09490	ELKHORN CO B8										7														6								13
09491	ELKHORN CO B9										8														7								15
16081	EWING 23-30														40															40			80
00001	FACILITY 1							50						80		20					75			50				130					405
00002	FACILITY 2						100	130									80					260	130						40		130		870
00003	FACILITY 3		30																		70												100
00004	FACILITY 4	130					70	160								45		270					130	130	35					40			1010
00005	FACILITY 5		25											130							100			130								70	455
00006	FACILITY 6		25																		35									45	40		145
00007	FACILITY 7		130												160																	70	360
00008	FACILITY 8										80											130	55										265
004WA	FACILITY 4WA													50		25								130									205
004WB	FACILITY 4WB													110											80								190
59269	FIRECRACKER	65						50							80																	60	255
62016	FRISBEE																						100										100
32762	FRONT RANGE 11-17-7																								65			130	670	130			995
32755	FRONT RANGE 11-17-8			470			190								130										65			130				520	1505
25792	FRONT RANGE 11-17-11		30						55																								85
62608	GENESIS 1							60		60								60															180
07887	GERHARDT GEORGE H 1																															11	11
08124	GERHARDT GEORGE H 2																															12	12
08946	GERHARDT GEORGE H 3																															11	11
13577	GERHARDT GEORGE H 4																															11	11
60135	GERHARDT MARIE B																								45								45
59839	GRANT #'S 1,2,3,4																							40									40
61484	GUILDNER																													35			35
5869	GUTHRIE 1 & 2							45						45				30						35					40			40	235
60211	HANKS																35																35
60249	HART UNIT B, MARTIN																											35					35
60268	HART UNIT D																						110										110
59033	HAUDRICH #1 & 2						50								40															60			150
1900	HAUGEN																						50										50
62020	HEIN 1-2																	30												20			50
60290	HERMAN UNIT B, *ALFR						20																	25									45
58505	HERMAN UNIT, *ALFRED						20																	25									45
56134	HILL 3-10																													13			13
56176	HILL 4-10																													12			12
58501	HLADKY-O'GORMAN							20							15													12				8	55
60310	HORST B, JOHN 1 & 2															13														20			33
04200	HORTH R1-R2							20														20										30	70
2199	HOSMER 4-4																				65												65
66583	JEFFERS A							80																									80
59592	JOHNSON #'S 1 & 2									25																							25
08680	JOHNSON ROLAND 1																											25					25
08896	JOHNSON ROLAND B-1																											25					25
16057	KOCH 41-6																				18												18
09204	KOCH, KEN																				17												17
29842	KOESTER 18-33		130	50																		260						50					490

August 2012

29643	KOESTER 18-33-o												166																			166
29605	KOESTER 18-33-4																							40								40
29606	KOESTER 3-33-3	65																														65
30329	KOESTER 3-33-29															220	390	260		650	130		130				30			240		2050
6080	KORTUM 2 A															40												35				75
15116	KUNZMAN 43-6								5															8								13
07656	KUNZMAN JOHN A #1								5															7								12
09296	KUNZMAN 2								5															8								13
09719	KUNZMAN 4								5															7								12
09853	LANSDOWN 1					10																										10
07346	LANSDOWN WM D 1					10																										10
10437	LANSDOWN WM D UNIT D1															37																37
59831	LANSON'S FARM 1-16						70																90								90	250
16883	LEGG 14-22															38																38
56138	LOEFFLER 1-18													40										30								70
67150	LOEFFLER 2-24																							30								30
61685	MARCUS 1																										30					30
56144	MATSUSHIMA 1-5																					40										40
23517	MATSUSHIMA 2-5X																					40										40
68429	MAUL 20-2												30																			30
07861	MCCOY PHILLIP #1									18																						18
59071	MCCRUMB #S 1 & 2									30													35									65
23667	MCQUEARY 1		18																													18
61487	MEREDITH								60							40																100
8644	MILLARD 1			20																		18										38
10548	MILLARD 2			20																		17										37
56709	MILLER 13-5			17											12								15								22	66
68278	MILLER B #14, *CARL			16											11								15								22	64
60559	MILLER E #1, *CARL A			17											12								15								21	65
6436	MITCHELL 32-3	50				30							40							40				25						20		205
6440	MITCHELL 32-7							45																						40		85
6442	MITCHELL 32-8	35																														35
62296	MONFORT 2-30			40																							30					70
6352	MURPHY 5-2			30				25						30										50						25		160
07112	MURPHY 11-5	40				15																										55
6336	MURPHY 31-3								110						60														95			265
59075A	MUSICK 2-4-7									20													30								15	65
59075B	MUSICK 3-5									30													25									55
32872	NRC 9-8-15H	100		40		80			95	45			60			80	40			80		55		50			75					820
6119	NEWLANDER																					35										35
06985	PREM TURKEY FARMS B2																												7			7
07876	PREM TURKEY FARMS C1																												6			6
06943	PREM TURKEY FARMS C2																												7			7
259818	ROCKY MOUNTAIN FUEL 9-8																			37												37
68126	ROCKY MTN FUEL CO C 4, 10																			38												38
6377	ROSENFIELD 6-1			30																				20								50
6381	ROSENFIELD 6-5					25																										25
60790	SCHUTT, MARVIN E 1														12														20			32
61188	SELTZER 1A			20											20																	40
15997	SHANNON 24-30													40															40			80
60600	SICKLER, SHELDON 1 T																					80						70				150
12602	SPRAGUE A M A 1		17						18																				30			65
6515	STATE 14-32			10			43			27			30							30	15							27		43		225
6741	STATE 14			10			44			26			30							30	15							26		44		225
6746	STATE 14-31			10			43			27			30							30	15							27		43		225
60819A	STREAR, *SIDNEY													33													33					66
60820	STREAR													32													32					64
60838	SUCKLA A UNIT 1&2						13															10		13								36
60895	SUCKLA D UNIT 1&2						14															10		14								38
60952	SUCKLA FARMS C 2&3						13															10		13								36
60933	SUCKLA BROWN 17																						35									35
35080	SUNMARKE 19-26-11																90										110			390		590
58853	TWOMBLEY B, *MARGARE															25													40			65
12090B	UPRR 23 D 2																													25		25
12091B	UPRR 23 D4																													20		20
61070	UPRR 42 PAN AM AF 1,																										60					60
61006	UPRR 42 D												100			130							75								50	355
56691	UPRR 42 PAN AM K					20																						35				55
61067	UPRR 43 PAN AM I																														50	50
62130	WAGNER #1								8											45							15				14	82
61719	WAGNER #1B								9																		15				13	37
62131	WAGNER #S 1A & 2A								18																						13	31
61095	WALKING, *CARY						20							15													13				7	55
15925	WOOLEY 13-14									17																						17
66995	WUERTZ 12-3																	40		45	15			35			25					160
61142	YURK																							60								60
	TOTALS	485	565	800	0	0	725	875	290	505	365	0	0	921	790	385	805	910	300	0	1470	990	890	1030	740	0	0	1005	1250	690	1120	1340	
																																19246
																																19246

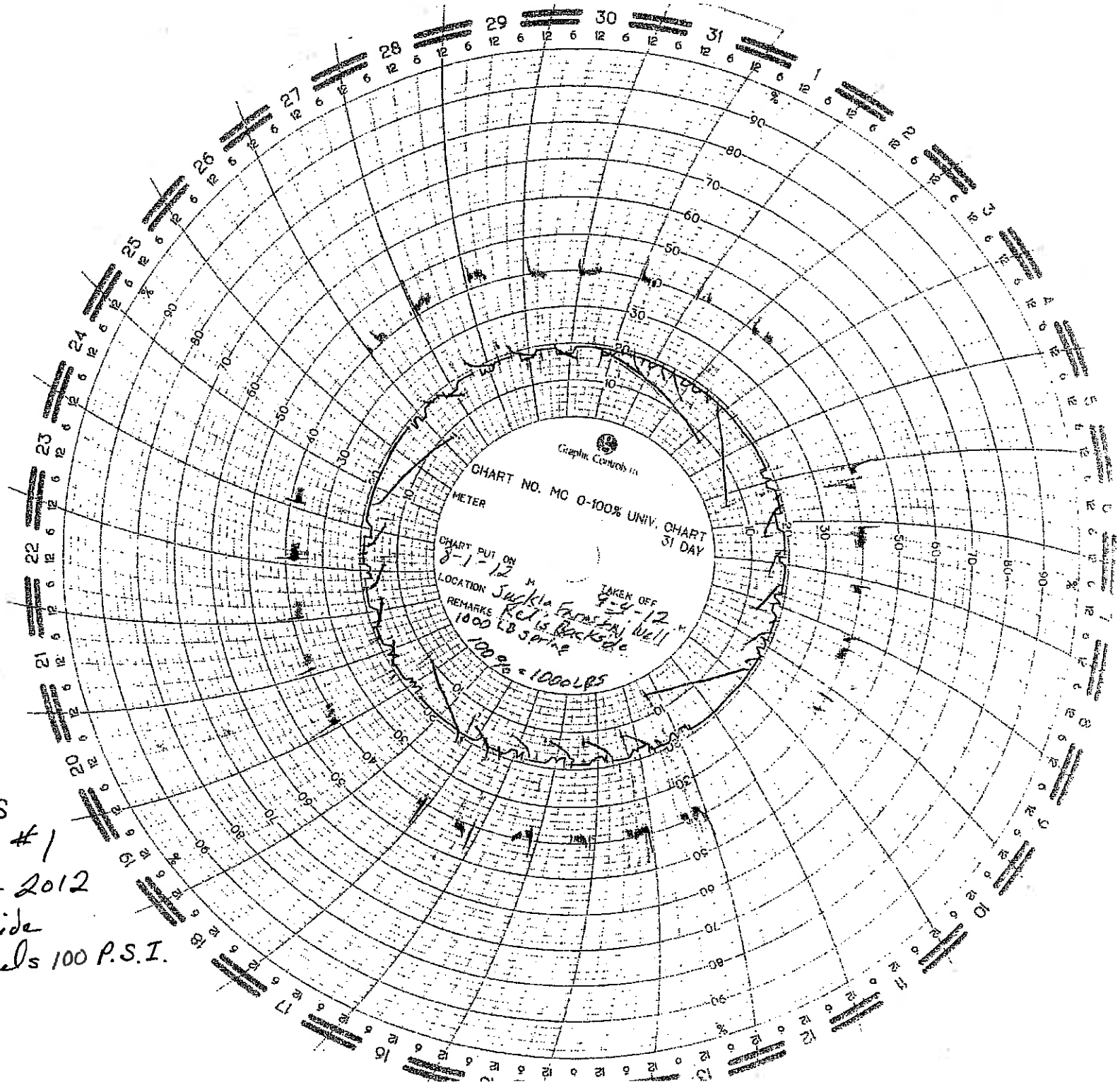
ASE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	LEASE TOTALS
																																	0
	ANGI ALLES RECEIVER																																0
18	BERTHOUD BOOSTER																																0
	CDP 7 RECEIVER																																0
12	EATON PLANT																																0
33	ENTERPRISE BOOSTER																																0
09	GREELEY OFFICE																																0
11	GREELEY PLANT																																0
	JODY BOOSTER																																0
18	JOHNSTOWN BOOSTER																																0
34	KRAUTHEAD																																0
13	LUCERNE PLANT																																0
	MARIA BOOSTER																																0
18	MARILYN BOOSTER																																0
18	MARTHA BOOSTER																																0
14	MEWBOURN PLANT																																0
	MID POINT BOOSTER																																0
	PARKER PARSLEY BOOSTER																																0
62	PLATTEVILLE PLANT																																0
	REINICK RECEIVER																																0
35	RIVERSIDE BOOSTER																																0
32	ROGGEN FIELD																																0
31	ROGGEN PLANT		240				240			220					220						240											240	1400
18	SINGLETREE BOOSTER																																0
	SOUTHFIELD BOOSTER																																0
10	SPINDLE PLANT																																0
18	SURREY BOOSTER																																0
36	TAMPA																																0
23	WELD BOOSTERS																																0
17	WELD FIELD																																0
35	WELD MEASUREMENT																																0
18	WEST SPINDLE BOOSTER																																0
																																	0
	TOTAL	0	240	0	0	0	240	0	0	220	0	0	0	0	220	0	0	0	0	0	240	0	0	0	0	0	0	0	0	0	0	240	1400
																																	1400

SE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	LEASE TOTALS
	KPK/KWS Wash Bay								30																								30
																																	0
	TOTAL	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
																																	30

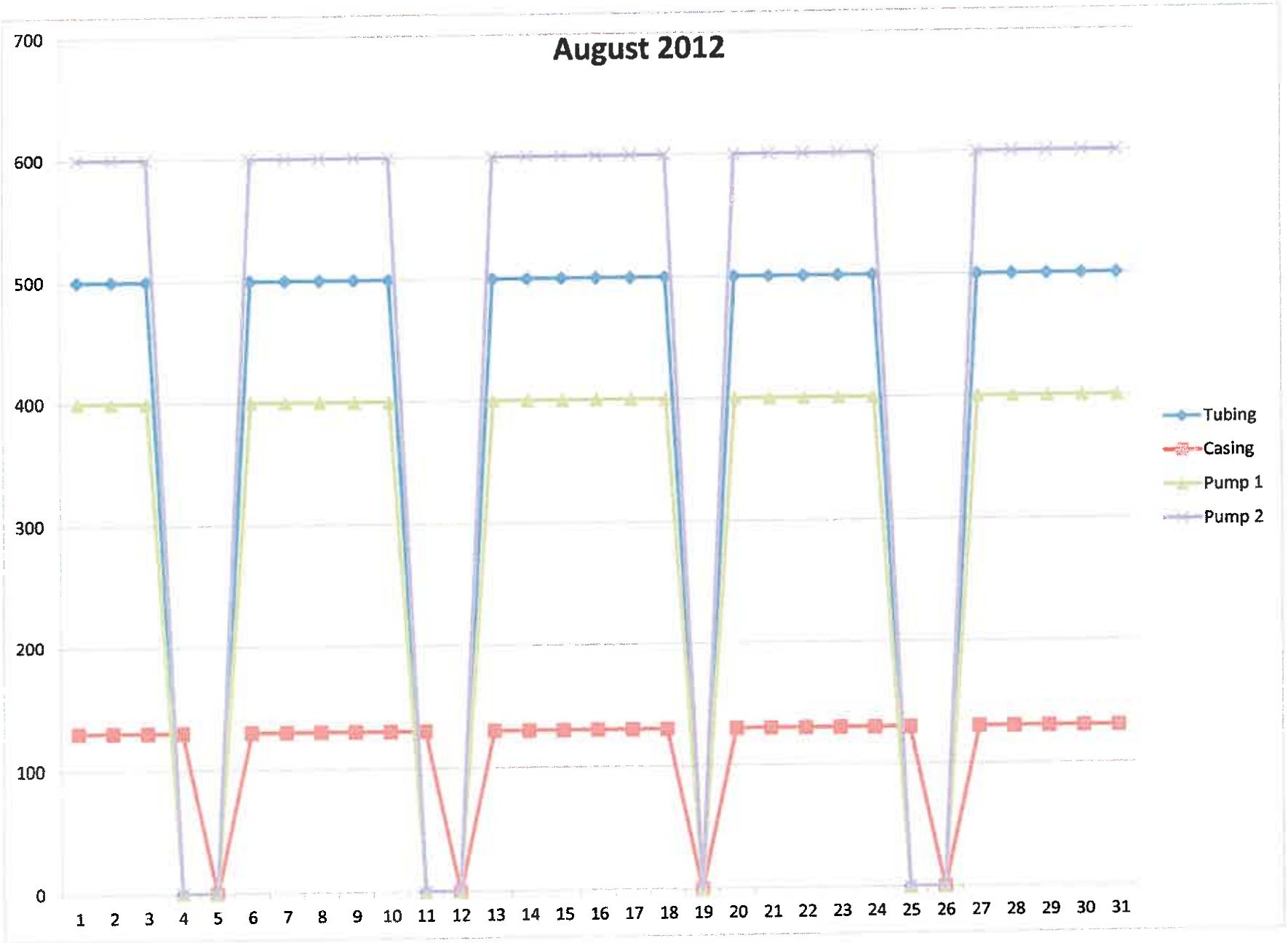
August 2012

WATTENBERG DAILY EVALUATION SHEET

Date	Time	Injecting Fluid Yes	Injecting Fluid No	Pressured Annulus Yes	Pressured Annulus No	Tubing Pressure	Annulus Pressure	Estimated Barrels Injected (prior 24 hrs)	Ambient Air Temperature (est)	Weather Conditions	Remarks/Summary Prior 24 Hrs.
1	6:30A		X	X		Ø	130	338			
2	6:45A		X	X		Ø	130	655			
3	6:15A		X	X		Ø	130	353			
4	Closed		X	X		Ø	130	715			
5	Closed		X	X		Ø	130	Ø			
6	6:15A		X	X		Ø	130	Ø			
7	6:15A		X	X		Ø	130	684			
8	6:15A		X	X		Ø	130	963			
9	6:30A		X	X		Ø	130	516			
10	6:30A		X	X		Ø	130	678			
11	Closed		X	X		Ø	130	478			
12	Closed		X	X		Ø	130	Ø			
13	6:30A		X	X		Ø	130	Ø			
14	6:30A		X	X		Ø	130	654			
15	6:30A		X	X		Ø	130	927			
16	6:30A		X	X		Ø	130	722			
17	6:30A		X	X		Ø	130	902			
18	6:30A		X	X		Ø	130	688			
19	Closed		X	X		Ø	130	348			
20	6:30A		X	X		Ø	130	Ø			
21	6:15A		X	X		Ø	130	765			
22	6:15A		X	X		Ø	130	809			
23	6:15A		X	X		Ø	130	857			
24	6:15A		X	X		Ø	130	878			
25	Closed		X	X		Ø	130	964			
26	Closed		X	X		Ø	130	Ø			
27	6:15A		X	X		Ø	130	Ø			
28	6:30A		X	X		Ø	130	630			
29	6:30A		X	X		Ø	130	1117			
30	6:30A		X	X		Ø	130	984			
31	6:30 AM		X	X		Ø	130	664			



Suckla Farms
Injection Well #1
8-1-2012 to 9-4-2012
1000 LB Spring Back Side
Pressure @ 10% equals 100 P.S.I.


August 2012
700
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Tubing
Casing
Pump 1
Pump 2

Mountain States ACCUTEST LABORATORIES

09/11/12

Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D37993

Sampling Date: 08/27/12

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 29

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.

Brad Madadian
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Sample Summary

K.P. Kauffmann Company, Inc.

Job No: D37993

Wattenberg Tank

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
D37993-1	08/27/12	07:45 MH	08/27/12	AQ	Water	TANK-I
D37993-1F	08/27/12	07:45 MH	08/27/12	AQ	Water Filtered	TANK-I

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	K.P. Kauffmann Company, Inc.	Job No	D37993
Site:	Wattenberg Tank	Report Date	9/11/2012 4:02:24 PM

On 08/27/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 1.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D37993 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ Batch ID: MP8301

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38274-1MS, D38274-1MSD, D38274-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Potassium are outside control limits for sample MP8301-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Wet Chemistry By Method ASTM D287

Matrix ALL Batch ID: GN16560

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ Batch ID: GP8151

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38316-3MS were used as the QC samples for the HEM Oil and Grease analysis.
- The matrix spike (MS) recovery(s) of HEM Oil and Grease are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity between bottles.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ Batch ID: GP8047

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38009-1MS, D38009-1MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D37993-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D37993-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM18/20 2540C

Matrix AQ	Batch ID: GN16539

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38009-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 4500H B+

Matrix AQ	Batch ID: GN16485

- D37993-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

Wet Chemistry By Method SM20 5310B

Matrix AQ	Batch ID: GP8142

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38071-1MS, D38071-1MSD, D38193-1DUP were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D37993
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 08/27/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D37993-1	**TANK-I**					
Chloride		9660	250		mg/l	EPA 300/SW846 9056
HEM Oil and Grease		247	4.8		mg/l	EPA 1664A
Solids, Total Dissolved		14700	10		mg/l	SM18/20 2540C
Specific Gravity by Hydrometer		1.0057				ASTM D287
Sulfate		35.0	10		mg/l	EPA 300/SW846 9056
Total Organic Carbon		214	10		mg/l	SM20 5310B
pH [a]		6.91			su	SM20 4500H B+
D37993-1F	**TANK-I**					
Calcium		125000	20000		ug/l	SW846 6010C
Magnesium		18700	10000		ug/l	SW846 6010C
Potassium		176000	50000		ug/l	SW846 6010C
Sodium		3420000	20000		ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D37993-1	**Date Sampled:**	08/27/12
Matrix:	AQ - Water	**Date Received:**	08/27/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.1

4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	9660	250	mg/l	500	08/28/12 18:30	JML	EPA 300/SW846 9056
HEM Oil and Grease	247	4.8	mg/l	1	09/11/12	SWT	EPA 1664A
Nitrogen, Nitrate [a]	< 0.20	0.20	mg/l	20	08/28/12 13:34	JML	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 2.0	2.0	mg/l	500	08/28/12 18:30	JML	EPA 300/SW846 9056
Solids, Total Dissolved	14700	10	mg/l	1	08/30/12	JD	SM18/20 2540C
Specific Gravity by Hydromete	1.0057			1	08/31/12	MM	ASTM D287
Sulfate	35.0	10	mg/l	20	08/28/12 13:34	JML	EPA 300/SW846 9056
Total Organic Carbon	214	10	mg/l	10	09/10/12 15:05	JML	SM20 5310B
pH [b]	6.91		su	1	08/27/12 14:25	JD	SM20 4500H B+

(a) Elevated detection limit due to matrix interference.
(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D37993-1F	**Date Sampled:**	08/27/12
Matrix:	AQ - Water Filtered	**Date Received:**	08/27/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

4.2 4

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	125000	20000	ug/l	5	09/05/12	09/06/12	JB	SW846 6010C [1]	SW846 3010A [2]
Magnesium	18700	10000	ug/l	5	09/05/12	09/06/12	JB	SW846 6010C [1]	SW846 3010A [2]
Potassium	176000	50000	ug/l	5	09/05/12	09/06/12	JB	SW846 6010C [1]	SW846 3010A [2]
Sodium	3420000	20000	ug/l	5	09/05/12	09/06/12	JB	SW846 6010C [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA2780
(2) Prep QC Batch: MP8301

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

2 36 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX 303-425-6854

FED-EX Tracking #
Purchase Order Control #
Accutest Quote #
Accutest Job # D37993

Client / Reporting Information

Company Name: K.P. Kauffman Company, Inc.
Address: 1675 Broadway, Suite 2800
City: Denver State: CO Zip: 80202-4628
Project Contact: Susan Lara-Mesa SLaraMesa@kpk.com
Phone #: 303-825-4822
Samplers's Name: MICHAEL HATTEL (303-665-1400)

Project Information

Project Name: WATTENBERG TANK
Street
City: Fort Lupton State: CO
Project #
Fax #
Client Purchase Order #: 7591

Requested Analysis

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	OIL & GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	pH	CATIONS (Ca, K, Mg, NA)	SPECIFIC GRAVITY	TDS	TOC					LAB USE ONLY
	TANK - I		8/27/12	0745	MDH	LIQ	7	X			X					X	X	X	X	X	X	X					01

Matrix Codes: DW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

Approved By/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [X] Hard Copy
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [X] PDF

Comments / Remarks

NO Hard Copy

PDF copy to Mike Hattel with APEX at mhattel@msn.com

PDF copy to Susana Lara-Mesa w KPK at SLaraMesa@kpk.com

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:
[signature]	8/27/12 1055	1 [signature]	2		2
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	Cooler Temp.
		5	HD	X	1.7°

5.1

5

D37993: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D37993 | Client: KP KAUFFMAN COMPANY, INC. | Immediate Client Services Action Required: No

Date / Time Received: 8/27/2012 10:55:00 AM | No. Coolers: 1 | Client Service Action Required at Login: No

Project: WATTENBERG TANK | Airbill #'s: HD

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

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

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

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

Sample Integrity - Instructions	Y	or	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

5.1

5

D37993: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/05/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	21	25		
Antimony	30	3.6	3.6		
Arsenic	25	5.4	8.4		
Barium	10	.8	1.8		
Beryllium	10	1.3	3.1		
Boron	50	4.3	4.4		
Cadmium	10	.6	.59		
Calcium	400	8.4	16	8.7	<400
Chromium	10	.3	.56		
Cobalt	5.0	.4	.42		
Copper	10	1.2	3		
Iron	70	1.9	20		
Lead	50	2.4	2.9		
Lithium	2.0	2.8			
Magnesium	200	22	22	-8.7	<200
Manganese	5.0	1.2	1.2		
Molybdenum	10	2.1	2.1		
Nickel	30	.5	.57		
Phosphorus	100	14	59		
Potassium	1000	150	150	-20	<1000
Selenium	50	6.1	11		
Silicon	50	6.5			
Silver	30	.5	.98		
Sodium	400	21	98	-33	<400
Strontium	5.0	.2	1.5		
Thallium	10	2.9	8.6		
Tin	50	12			
Titanium	10	.1			
Uranium	50	4.6	4.6		
Vanadium	10	.3	.48		
Zinc	30	.8	2.4		

Associated samples MP8301: D37993-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.1

ACCUTEST LABORATORIES
D37993

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/05/12

Metal	D38274-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium	15600	41500	25000	103.6	75-125
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	2940	29200	25000	105.0	75-125
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium	1180	29300	25000	112.5	75-125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	6880	35000	25000	112.5	75-125
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium					
Vanadium	anr				
Zinc	anr				

Associated samples MP8301: D37993-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/05/12

Metal	D38274-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium	15600	42200	25000	106.4	1.7	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	2940	28700	25000	103.0	1.7	20
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium	1180	28800	25000	110.5	1.7	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	6880	34800	25000	111.7	0.6	20
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium	anr					
Zinc	anr					

Associated samples MP8301: D37993-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/05/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	25900	25000	103.6	80-120
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	25700	25000	102.8	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	27300	25000	109.2	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	27700	25000	110.8	80-120
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP8301: D37993-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.3

6

ACCUTEST LABORATORIES

D37993

SERIAL DILUTION RESULTS SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/05/12

Metal	D38274-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium	15600	16600	6.0	0-10
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	2880	3070	4.7	0-10
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium	1180	1430	21.1 (a)	0-10
Selenium	anr			
Silicon				
Silver	anr			
Sodium	6880	7030	2.2	0-10
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP8301: D37993-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8301
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

6.1.4

6

Mountain States ACCUTEST LABORATORIES

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: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP8047/GN16507	0.50	0.0	mg/l	20	20.3	101.5	90-110%
HEM Oil and Grease	GP8151/GN16699	5.0	0.0	mg/l	40	35.1	87.8	78-114%
Nitrogen, Nitrate	GP8047/GN16507	0.010	0.0	mg/l	4.52	4.37	96.7	90-110%
Nitrogen, Nitrite	GP8047/GN16507	0.0040	0.0	mg/l	6.09	6.66	109.4	90-110%
Solids, Total Dissolved	GN16539	10	0.0	mg/l	400	400	100.0	90-110%
Sulfate	GP8047/GN16507	0.50	0.0	mg/l	30	29.9	99.7	90-110%
Total Organic Carbon	GP8142/GN16684	1.0	0.0	mg/l	8.82	8.60	97.5	90-110%
pH	GN16485			su	8.00	7.97	99.6	99.3-100.7%

Associated Samples:
Batch GP8047: D37993-1
Batch GP8142: D37993-1
Batch GP8151: D37993-1
Batch GN16485: D37993-1
Batch GN16539: D37993-1
(*) Outside of QC limits

7.1

7

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP8151/GN16699	mg/l	40	32.8	6.8	20%

Associated Samples:
Batch GP8151: D37993-1
(*) Outside of QC limits

7.2

7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN16539	D38009-1	mg/l	780	790	1.3	0-25%
Total Organic Carbon	GP8142/GN16684	D38193-1	mg/l	18.5	17.9	3.3	0-20%

Associated Samples:
Batch GP8142: D37993-1
Batch GN16539: D37993-1
(*) Outside of QC limits

7.3
7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP8047/GN16507	D38009-1	mg/l	155	100	272	117.0	80-120%
HEM Oil and Grease	GP8151/GN16699	D38316-3	mg/l	22.9	40	53.1	75.5N(a)	78-114%
Nitrogen, Nitrate	GP8047/GN16507	D38009-1	mg/l	3.0	2.83	5.7	95.6	80-120%
Nitrogen, Nitrite	GP8047/GN16507	D38009-1	mg/l	0.10	1.52	1.6	98.5	80-120%
Sulfate	GP8047/GN16507	D38009-1	mg/l	32.5	50	82.1	99.2	80-120%
Total Organic Carbon	GP8142/GN16684	D38071-1	mg/l	5.5	10	15.9	104.0	80-120%

Associated Samples:
Batch GP8047: D37993-1
Batch GP8142: D37993-1
Batch GP8151: D37993-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity between bottles.

7.4

7

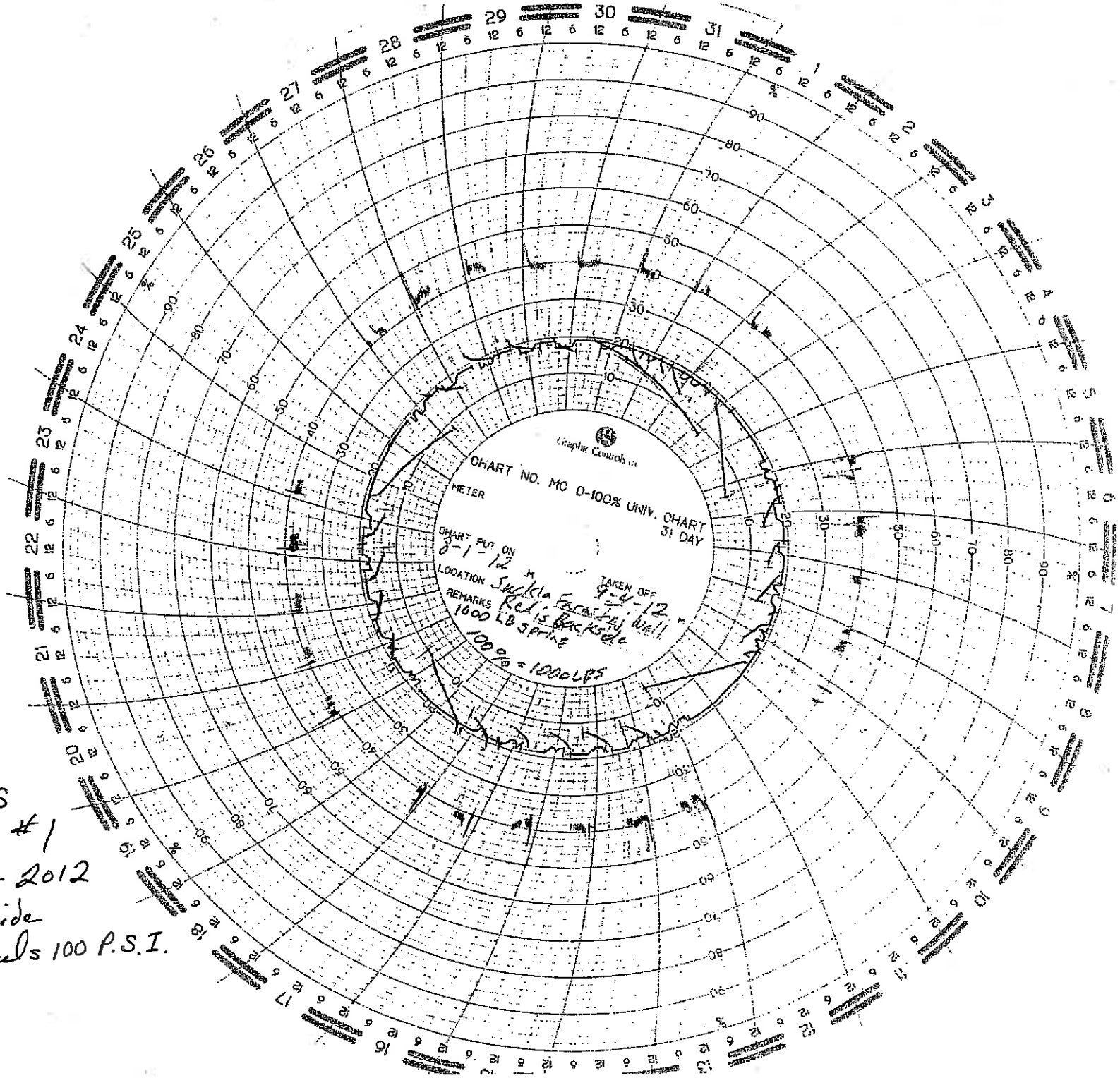
MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D37993
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP8047/GN16507	D38009-1	mg/l	155	100	271	0.4	20%
Total Organic Carbon	GP8142/GN16684	D38071-1	mg/l	5.5	10	15.8	0.6	20%

Associated Samples:
Batch GP8047: D37993-1
Batch GP8142: D37993-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.5



Suckla Farms
Injection Well #1
8-1-2012 to 9-4-2012
1000 LB Spring Back Side
Pressure @ 10 equals 100 P.S.I.

Mountain States ACCUTEST LABORATORIES

10/08/12

Technical Report for

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D39041

Sampling Date: 09/24/12

Report to:

Apex Consulting Services
PO Box 369
Louisville, CO 80027-0369
mhattel@msn.com; slaramesa@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 29

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.

Brad Madadian
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Sample Summary

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Job No: D39041

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
D39041-1	09/24/12	07:30 MH	09/24/12	AQ	Water	TANK-I
D39041-1F	09/24/12	07:30 MH	09/24/12	AQ	Water Filtered	TANK-I

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	K.P. Kauffmann Company, Inc.	Job No	D39041
Site:	Wattenberg Tank	Report Date	10/8/2012 3:04:39 PM

On 09/24/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D39041 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010C

Matrix AQ Batch ID: MP8490

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D39061-1MS, D39061-1MSD, D39061-1SDL were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D287

Matrix ALL Batch ID: GN17041

- The data for ASTM D287 meets quality control requirements.

Wet Chemistry By Method EPA 1664A

Matrix AQ Batch ID: GP8362

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D39049-1MS were used as the QC samples for the HEM Oil and Grease analysis.

Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ Batch ID: GP8265

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D39063-1MS, D39063-1MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D39041-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- D39041-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Wet Chemistry By Method SM18/20 2540C

Matrix AQ Batch ID: GN16953

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D39035-6DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM20 4500H B+

Matrix AQ	Batch ID: GN16903

- D39041-1 for pH: Analysis performed past the required 15 minutes from collection time/holding time.

Wet Chemistry By Method SM20 5310B

Matrix AQ	Batch ID: GP8320

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D39076-1MS, D39076-1MSD, D39076-3DUP were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D39041
Account: K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank
Collected: 09/24/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D39041-1	**TANK-I**					
Chloride		8440	200		mg/l	EPA 300/SW846 9056
HEM Oil and Grease		541	4.8		mg/l	EPA 1664A
Solids, Total Dissolved		15700	10		mg/l	SM18/20 2540C
Specific Gravity by Hydrometer		1.0114				ASTM D287
Sulfate		89.0	10		mg/l	EPA 300/SW846 9056
Total Organic Carbon		666	50		mg/l	SM20 5310B
pH [a]		6.71			su	SM20 4500H B+
D39041-1F	**TANK-I**					
Calcium		198000	20000		ug/l	SW846 6010C
Magnesium		23600	10000		ug/l	SW846 6010C
Potassium		205000	50000		ug/l	SW846 6010C
Sodium		4940000	20000		ug/l	SW846 6010C

(a) Analysis performed past the required 15 minutes from collection time/holding time.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D39041-1	**Date Sampled:**	09/24/12
Matrix:	AQ - Water	**Date Received:**	09/24/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	8440	200	mg/l	400	09/25/12 13:43	GH	EPA 300/SW846 9056
HEM Oil and Grease	541	4.8	mg/l	1	10/08/12	SWT	EPA 1664A
Nitrogen, Nitrate [a]	< 0.20	0.20	mg/l	20	09/25/12 10:33	GH	EPA 300/SW846 9056
Nitrogen, Nitrite [a]	< 0.80	0.80	mg/l	200	09/25/12 13:31	GH	EPA 300/SW846 9056
Solids, Total Dissolved	15700	10	mg/l	1	09/27/12	CT	SM18/20 2540C
Specific Gravity by Hydromete	1.0114			1	10/03/12	MM	ASTM D287
Sulfate	89.0	10	mg/l	20	09/25/12 10:33	GH	EPA 300/SW846 9056
Total Organic Carbon	666	50	mg/l	50	10/02/12 13:56	JML	SM20 5310B
pH [b]	6.71		su	1	09/24/12 13:15	CT	SM20 4500H B+

(a) Elevated detection limit due to matrix interference.
(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TANK-I		
Lab Sample ID:	D39041-1F	**Date Sampled:**	09/24/12
Matrix:	AQ - Water Filtered	**Date Received:**	09/24/12
		Percent Solids:	n/a
Project:	Wattenberg Tank		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	198000	20000	ug/l	5	09/26/12	09/26/12	JB	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	23600	10000	ug/l	5	09/26/12	09/26/12	JB	SW846 6010C [1]	SW846 3010A/M [2]
Potassium	205000	50000	ug/l	5	09/26/12	09/26/12	JB	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	4940000	20000	ug/l	5	09/26/12	09/26/12	JB	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA2847
(2) Prep QC Batch: MP8490

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D39041

Client / Reporting Information

Company Name: K.P. Kauffman Company, Inc.
Address: 1675 Broadway, Suite 2800
City: Denver State: CO Zip: 80202-4628
Project Contact: Susan Lara-Mesa SLaraMesa@kpk.com
Phone #: 303-825-4822
Samplers's Name: MICHAEL HATTEL (303-665-1400)

Project Information

Project Name: WATTENBERG TANK
Street:
City: Fort Lupton State: CO
Project #:
Fax #:
Client Purchase Order #: 7591

Requested Analysis

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	NaHSO4	MEOH	ENCORE	OIL & GREASE 1664	ANIONS (NITRATE, NITRITE, SULFATE, CHLORIDE)	pH	CATIONS (Ca, K, Mg, NA)	SPECIFIC GRAVITY	TDS	TOC					LAB USE ONLY
	TANK - I		9/24/12	0730	MDH	LIQ	7	X			X					X	X	X	X	X	X	X					01

Matrix Codes: DW- Drinking Water; GW- Ground Water; WW- Water; SW- Surface Water; SO- Soil; SL-Sludge; OI-Oil; LIQ- Other Liquid; AIR- Air; SOL-Other Solid; WP-Wipe

Turnaround Time (Business days)

[X] Std. 10 Business Days
Approved By:/ Date:

Emergency T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] NJ Reduced
- [ ] NJ Full
- [x] Hard Copy
- [ ] FULL CLP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] PDF

Comments / Remarks

NO Hard Copy

PDF copy to Mike Hattel with APEX at mhattel@msn.com

PDF copy to Susana Lara-Mesa w KPK at SLaraMesa@kpk.com

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]	9/27/12 1040	1 [signature]	2		2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # HD	Preserved where applicable ☑	On Ice ☑ Cooler Temp. 2.7

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D39041: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D39041 Client: KP KAUFFMAN COMPANY INC Immediate Client Services Action Required: No

Date / Time Received: 9/24/2012 10:40:00 AM No. Coolers: 1 Client Service Action Required at Login: No

Project: WATTENBERG TANK Airbill #'s: ND

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

Cooler Temperature	Y	or N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	Infared gun	
3. Cooler media:	Ice (bag)	

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

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

Sample Integrity - Instructions	Y	or 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
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4036 Youngfield Street
F: (303) 425-6854
Wheat Ridge, CO
www.accutest.com

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D39041: Chain of Custody
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Mountain States ACCUTEST LABORATORIES

Metals Analysis

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/26/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	9.6	25		
Antimony	30	1.7	3.6		
Arsenic	25	4.4	8.4		
Barium	10	.1	1.8		
Beryllium	10	1.3	3.1		
Boron	50	1	4.4		
Cadmium	10	.6	.59		
Calcium	400	5.4	16	2.2	<400
Chromium	10	.3	.56		
Cobalt	5.0	.4	.42		
Copper	10	1.2	3		
Iron	70	1.2	20		
Lead	50	1.9	2.9		
Lithium	2.0	.5			
Magnesium	200	6.5	22	11.7	<200
Manganese	5.0	1.2	1.2		
Molybdenum	10	2.1	2.1		
Nickel	30	.5	.57		
Phosphorus	100	14	59		
Potassium	1000	61	150	64.0	<1000
Selenium	50	4.8	11		
Silicon	50	2.9			
Silver	30	.4	.98		
Sodium	400	5.9	98	-6.7	<400
Strontium	5.0	.04	1.5		
Thallium	10	2.9	8.6		
Tin	50	12			
Titanium	10	.1			
Uranium	50	2.2	4.6		
Vanadium	10	.2	.48		
Zinc	30	.5	2.4		

Associated samples MP8490: D39041-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/26/12

Metal	D39061-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium	anr				
Calcium	5260	32900	25000	110.6	75-125
Chromium					
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Lithium					
Magnesium	1430	29000	25000	110.3	75-125
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium	1660	30300	25000	114.6	75-125
Selenium					
Silicon					
Silver					
Sodium	3130	31000	25000	111.5	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP8490: D39041-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/26/12

Metal	D39061-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium	anr					
Calcium	5260	32900	25000	110.6	0.0	20
Chromium						
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium	1430	28000	25000	106.3	3.5	20
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium	1660	29100	25000	109.8	4.0	20
Selenium						
Silicon						
Silver						
Sodium	3130	29800	25000	106.7	3.9	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP8490: D39041-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/26/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	27500	25000	110.0	80-120
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	26200	25000	104.8	80-120
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	27000	25000	108.0	80-120
Selenium				
Silicon				
Silver				
Sodium	26500	25000	106.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP8490: D39041-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.3

SERIAL DILUTION RESULTS SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/26/12

Metal	D39061-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium	5260	5400	2.5	0-10
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Lithium				
Magnesium	1430	1500	4.8	0-10
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	1660	1750	5.3	0-10
Selenium				
Silicon				
Silver				
Sodium	3130	3160	1.0	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP8490: D39041-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP8490
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

6.1.4

6

ACCUTEST LABORATORIES

D39041

Mountain States ACCUTEST LABORATORIES

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: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP8265/GN16916	0.50	0.0	mg/l	20	19.5	97.5	90-110%
Fluoride	GP8265/GN16916	0.10	0.0	mg/l	10	9.20	92.0	90-110%
HEM Oil and Grease	GP8362/GN17087	5.0	0.0	mg/l	40	34.6	86.5	78-114%
Nitrogen, Nitrate	GP8265/GN16916	0.010	0.0	mg/l	4.52	4.29	95.0	90-110%
Nitrogen, Nitrite	GP8265/GN16916	0.0040	0.0	mg/l	6.09	6.20	101.8	90-110%
Solids, Total Dissolved	GN16953	10	0.0	mg/l	400	395	98.8	90-110%
Sulfate	GP8265/GN16916	0.50	0.0	mg/l	30	28.7	95.7	90-110%
Total Organic Carbon	GP8320/GN17023	1.0	0.0	mg/l	8.82	8.75	99.2	90-110%
pH	GN16903			su	8.00	7.99	99.9	99.3-100.7%

Associated Samples:
Batch GP8265: D39041-1
Batch GP8320: D39041-1
Batch GP8362: D39041-1
Batch GN16903: D39041-1
Batch GN16953: D39041-1
(*) Outside of QC limits

7.1

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BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP8362/GN17087	mg/l	40	34.7	0.3	20%

Associated Samples:
Batch GP8362: D39041-1
(*) Outside of QC limits

7.2

7

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN16953	D39035-6	mg/l	86.0	86.0	0.0	0-25%
Total Organic Carbon	GP8320/GN17023	D39076-3	mg/l	11.9	12.3	3.3	0-20%

Associated Samples:
Batch GP8320: D39041-1
Batch GN16953: D39041-1
(*) Outside of QC limits

7.3

7

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP8265/GN16916	D39063-1	mg/l	1.5	10	11.2	97.0	80-120%
Fluoride	GP8265/GN16916	D39063-1	mg/l	0.065	2.5	2.4	93.4	80-120%
HEM Oil and Grease	GP8362/GN17087	D39049-1	mg/l	3.8	40	35.2	78.5	78-114%
Nitrogen, Nitrate	GP8265/GN16916	D39063-1	mg/l	0.059	0.565	0.60	95.8	80-120%
Nitrogen, Nitrite	GP8265/GN16916	D39063-1	mg/l	0.0	0.305	0.30	98.5	80-120%
Sulfate	GP8265/GN16916	D39063-1	mg/l	4.4	10	14.2	98.0	80-120%
Total Organic Carbon	GP8320/GN17023	D39076-1	mg/l	1.2	10	12.1	109.0	80-120%

Associated Samples:
Batch GP8265: D39041-1
Batch GP8320: D39041-1
Batch GP8362: D39041-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.4

7

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D39041
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP8265/GN16916	D39063-1	mg/l	1.5	10	11.2	0.0	20%
Fluoride	GP8265/GN16916	D39063-1	mg/l	0.065	2.5	2.4	0.0	20%
Nitrogen, Nitrate	GP8265/GN16916	D39063-1	mg/l	0.059	0.565	0.60	0.0	20%
Nitrogen, Nitrite	GP8265/GN16916	D39063-1	mg/l	0.0	0.305	0.30	0.0	20%
Sulfate	GP8265/GN16916	D39063-1	mg/l	4.4	10	14.2	0.0	20%
Total Organic Carbon	GP8320/GN17023	D39076-1	mg/l	1.2	10	12.2	0.8	20%

Associated Samples:
Batch GP8265: D39041-1
Batch GP8320: D39041-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

7.5
7

LEASE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		LEASE TOTALS
61864	AMOCO-CHARTER-SCHNEI										17	30									37												84
61883	AMOCO CHART SCHNEIDER A										16	30									36												82
61902	AMOCO CHART SCHNEIDER B										17	30									37												84
58368	AMOCO-ENERGY-SMITS U				40									30						30							30						130
67529	ANDERSON #1					50																											50
61450	ANDERSON 1, 2																		45														45
17450	ANDERSON																	20															20
58425	BELL UNIT, *CHARLES					30							32												15								77
58406	BELL, *CHARLES C					30							33												15								78
598508	BERGER, *JACK & BERG											45																					45
62607	BERNHARDT 1-11																									30							30
24571	CAMENISCH 2-32				10																												10
24591	CAMENISCH 8-32				10																												10
24569	CAMENISCH 41-32				10																												10
24704	CAMENISCH 50-32				10																												10
17451	CARTER 21-33						130				130		65		25												80						430
58463	CHRISTENSEN UNIT, *N				15																18					20							53
58444	CHRISTENSEN, *NELS				15																17					20							52
6825	CHURCH 7-A 31-2																									80							80
09163	COBURN CLEMENTINE 1					20															15												35
09593	COBURN CLEMENTINE B1					20															15												35
58482	DAMIANA, *JAMES A					30																				30							60
60040	DEEPE C, *CARL R																				35												35
07895	DEVORE 1, 2																				9												9
07896	DEVORE 2																				8												8
09272	DEVORE 3, 4																				9												9
09271	DEVORE 4																				9												9
07886	DUTCHER B 1							15													18												33
08945	DUTCHER B 2							15													19												34
08684	DUTCHER C 1							15													19												34
08899	DUTCHER C 2							15													19												34
67144	ED KAM 4-33																			30													30
08391	ELKHORN CO B3							6													6												12
08694	ELKHORN CO B5							5													5												10
09488	ELKHORN CO B6							6													6												12
09489	ELKHORN CO B7							6													6												12
09490	ELKHORN CO B8							6													6												12
09491	ELKHORN CO B9							6													6												12
16081	EWING 23-30																				20	40											60
00001	FACILITY 1				80			125			60		130						80	40					50			130					695
00002	FACILITY 2										270		130					160		35		195						80	100				970
00003	FACILITY 3										40											60											100
00004	FACILITY 4												110	70	130							160					130	130					730
00005	FACILITY 5												20	80	105							35				25		140					405
00006	FACILITY 6						35							30																			65
00007	FACILITY 7																										100		160				260
00008	FACILITY 8							130																			130						260
004WA	FACILITY 4WA																											130					130
004WB	FACILITY 4WB					90							60									70											220
69064	FED WILDHORSE 10,15,																	70															70
60095	FINDLAY, *RICHARD R																												80				80
59269	FIREGRACKER											35							65									50					150
62016	FRISBEE																										80						80
32751	FRONT RANGE 11-17-5														130					60	260							102					552
32754	FRONT RANGE 11-17-6																											103					103
32762	FRONT RANGE 11-17-7				520	560					32																						1132
32755	FRONT RANGE 11-17-8				715	130	80				33																						958
25792	FRONT RANGE 11-17-11					70						130	130																				330
62608	GENESIS 1																									100							100
62603	GENESIS 3													40																			40
59839	GRANT #'S 1,2,3,4											45																	38				83
60173	GREELEY NATIONAL BAN																												30				30
5869	GUTHRIE 1 & 2						36						40					35								45							156
60211	HANKS						30														35												65
60271	HART UNIT G						5																										5
60274	HART UNIT I						5																										5
59033	HAUDRICH #1 & 2					40		25											40									35					140
62020	HEIN 1-2																		35														35
25314	HEPP 31-32																											40					40
60290	HERMAN UNIT B, *ALFR						30											25											18				73
58505	HERMAN UNIT, *ALFRED						30											25											17				72
58501	HLADKY-O'GORMAN						15																		17								32
60310	HORST B, JOHN 1 & 2																	15															15
04200	HORTH R1-R2												20																50				70
2199	HOSMER 4-4																												40				40
60324	HUNZIKER																					120											120
59592	JOHNSON #'S 1 & 2																		25														25
08680	JOHNSON ROLAND 1																				28												28
08896	JOHNSON ROLAND B-1																				27												27
60344	JUST 2																												10				10
16057	KOCH 41-6												20																				20
09204	KOCH, KEN												20																				20
29642	KOESTER 18-33														40				50									40					130

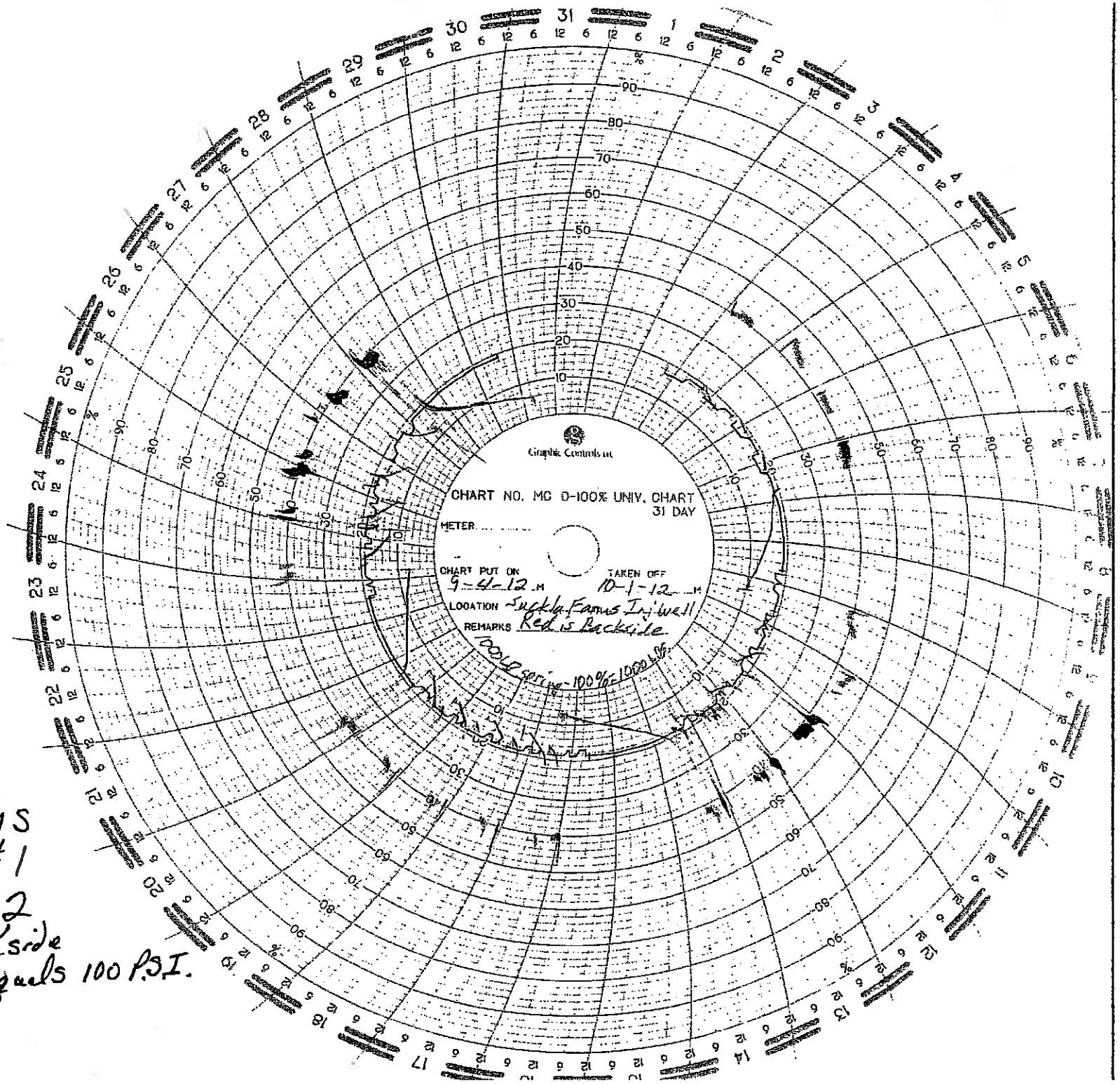
34025	KOESTER 18-33-c				80		100				65																					245
34022	KOESTER 18-33-22				40																											40
29606	KOESTER 3-33-3										65	30							30			25										150
6080	KORTUM 2 A													30																		30
31483	KNUDSEN																												80			80
07666	KUNZMAN JOHN A #1																												10			10
09296	KUNZMAN 2																												10			10
09719	KUNZMAN 4																												10			10
09653	LANSDOWN 1										30																					30
07348	LANSDOWN WM D 1										30																					30
10437	LANSDOWN WM D UNIT D1							55							20														30			105
69831	LANSON'S FARM 1-16														60							100					80		57			297
16883	LEGG 14-22							55							20														30			105
56138	LOEFFLER 1-16						30																			20						50
67150	LOEFFLER 2-24																									20						20
56144	MATSUSHIMA 1-5																									30						30
23517	MATSUSHIMA 2-9X																									30						30
56141	MATSUSHIMA 3-14													20																		20
23516	MATSUSHIMA 4-19X													20																		20
68429	MAUL 20-2							30																								30
62564	MCCARTY 2																		20													20
26729	MCCARTY 10-21																		20													20
07881	MCCOY PHILLIP #1																									60						60
59071	MCCRUMB #'S 1 & 2				40									30										45								115
9644	MILLARD 1										20			15																		35
10548	MILLARD 2										20			15																		35
58709	MILLER 13-5							12											22													34
68278	MILLER B #14, *CARL							11											22													33
60559	MILLER E #1, *CARL A							12											21													33
6436	MITCHELL 32-3					30						30																				60
6442	MITCHELL 32-6																		40							30						70
62295	MONFORT 1-29																			40												40
62296	MONFORT 2-30													25																		25
6352	MURPHY 5-2					40									15							20		45								120
6336	MURPHY 31-3										130							90		75		190										485
9075A	MUSICK 2-4-7																							10								10
9075B	MUSICK 3-5																		40					10								50
32872	NRC 9-9-15H				135		45	35				40		85	25			60				80		75					90			660
6119	NEWLANDER													30																		30
59619	ROCKY MOUNTAIN FUEL 9-8						20																						17			37
60762	ROCKY MTN FUEL CO C 7&8						20																						16			36
68126	ROCKY MTN FUEL CO C 4, 10						40																						17			57
6377	ROSENFIELD 8-1														25																	25
6381	ROSENFIELD 8-5											35																				35
60790	SCHUTT, MARVIN E 1																	15														15
61188	SELTZER 1A						30																									30
15997	SHANNON 24-30																					40										40
12602	SPRAGUE A M A 1																	20														20
6515	STATE 14-32							43				22			30					15												110
6741	STATE 14							44				21			30					15												110
6746	STATE 14-31							43				22			30					15												110
0819A	STREAR, *SIDNEY																	30														30
60820	STREAR																	30														30
66843	STROH #2				10																											10
24147	STROH 28-16				10																											10
26308	STROH 15-28				10																											10
24238	STROH 28-9				10																											10
24237	STROH 28-10				10																											10
60838	SUCKLA A UNIT 1&2						12																					13				25
60895	SUCKLA D UNIT 1&2						11																					14				25
60952	SUCKLA FARMS C 2&3						12																					13				25
60990	SUCKLA E											55																				55
24646	SUNMARKE										325		45									75										445
58653	TWOMBLEY B, *MARGARE										40													70								110
20918	UPRR 23 D4																												40			40
61008	UPRR 42 D							85											100										100			285
61047	UPRR 42 PAN AM G																				55											55
58891	UPRR 42 PAN AM K													30															30			60
61067	UPRR 43 PAN AM I														55							40						60				155
61078	VINCENT UNIT, R S 1&																				20											20
62130	WAGNER #1																									9						9
61719	WAGNER #1B						12													17						9						38
62131	WAGNER #'S 1A & 2A						13													18						9						40
61095	WALKING, *CARY						15																	18		8						41
66995	WUERTZ 12-3							30																								30
	TOTALS	0	0	0	1770	1160	756	830	0	0	1340	600	855	580	740	0	0	595	655	390	800	1250	0	0	370	575	630	1080	1080	0	0	0	
																																	16036
																																	16036

ASE #	LEASE NAME	DATE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	LEASE TOTALS
																																	0
	ANGI ALLES RECEIVER																																0
18	BERTHOUD BOOSTER																																0
	CDP 7 RECEIVER																																0
12	EATON PLANT																																0
33	ENTERPRISE BOOSTER																																0
09	GREELEY OFFICE																																0
11	GREELEY PLANT																																0
	JODY BOOSTER																																0
18	JOHNSTOWN BOOSTER																																0
34	KRAUTHEAD																																0
13	LUCERNE PLANT																																0
	MARIA BOOSTER																																0
18	MARILYN BOOSTER																																0
18	MARTHA BOOSTER																																0
14	MEWBOURN PLANT																																0
	MID POINT BOOSTER																																0
	PARKER PARSLEY BOOSTER																																0
52	PLATTEVILLE PLANT																																0
	REINICK RECEIVER																																0
35	RIVERSIDE BOOSTER																																0
32	ROGGEN FIELD																																0
31	ROGGEN PLANT						120							220						120							240						700
18	SINGLETREE BOOSTER																																0
	SOUTHFIELD BOOSTER																																0
10	SPINDLE PLANT																																0
18	SURREY BOOSTER																																0
36	TAMPA																																0
23	WELD BOOSTERS																																0
17	WELD FIELD																																0
35	WELD MEASUREMENT																																0
16	WEST SPINDLE BOOSTER																																0
																																	0
	TOTAL	0	0	0	0	0	120	0	0	0	0	0	0	220	0	0	0	0	0	120	0	0	0	0	0	0	240	0	0	0	0	0	700
																																	700

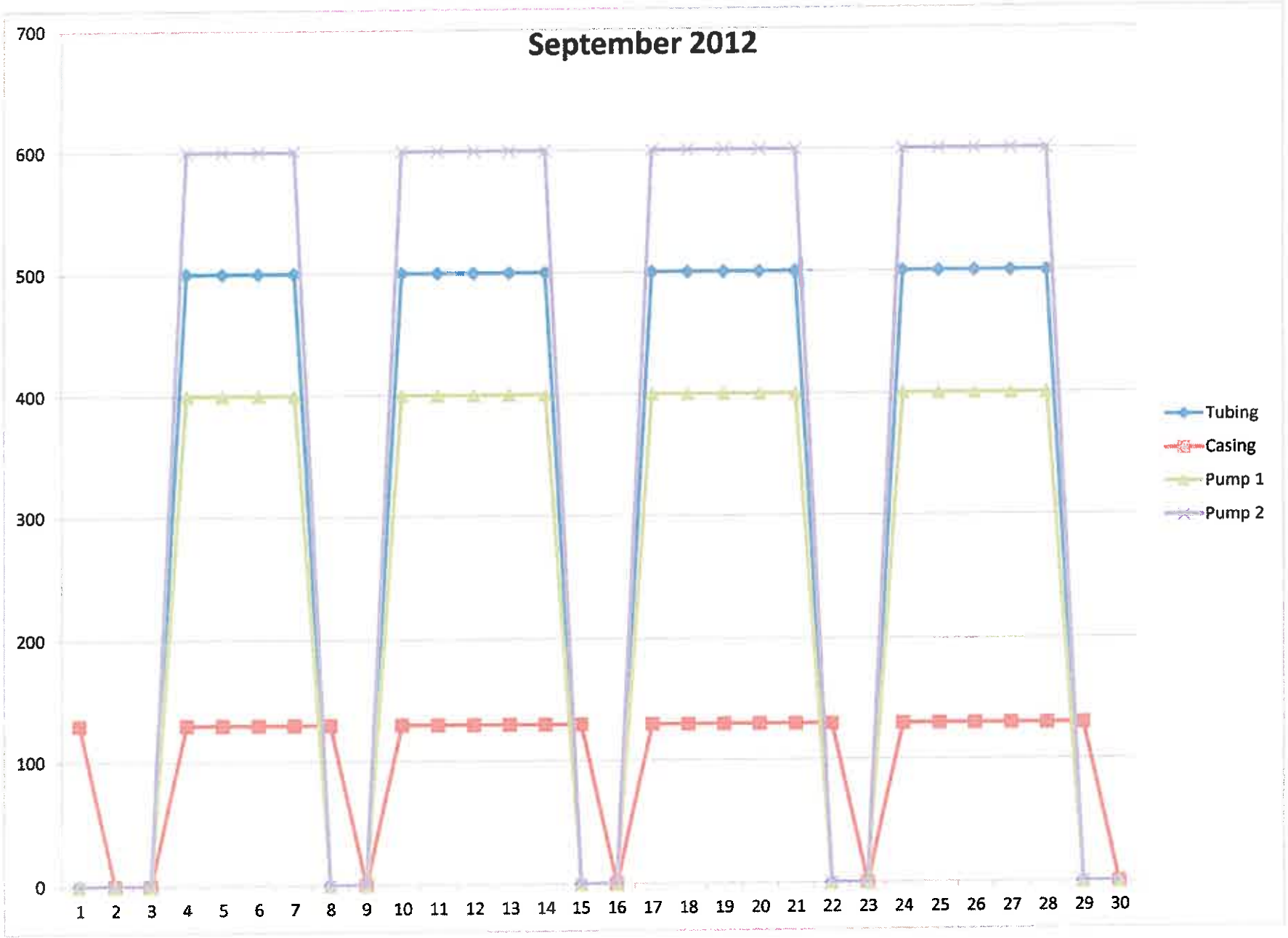
September 2012

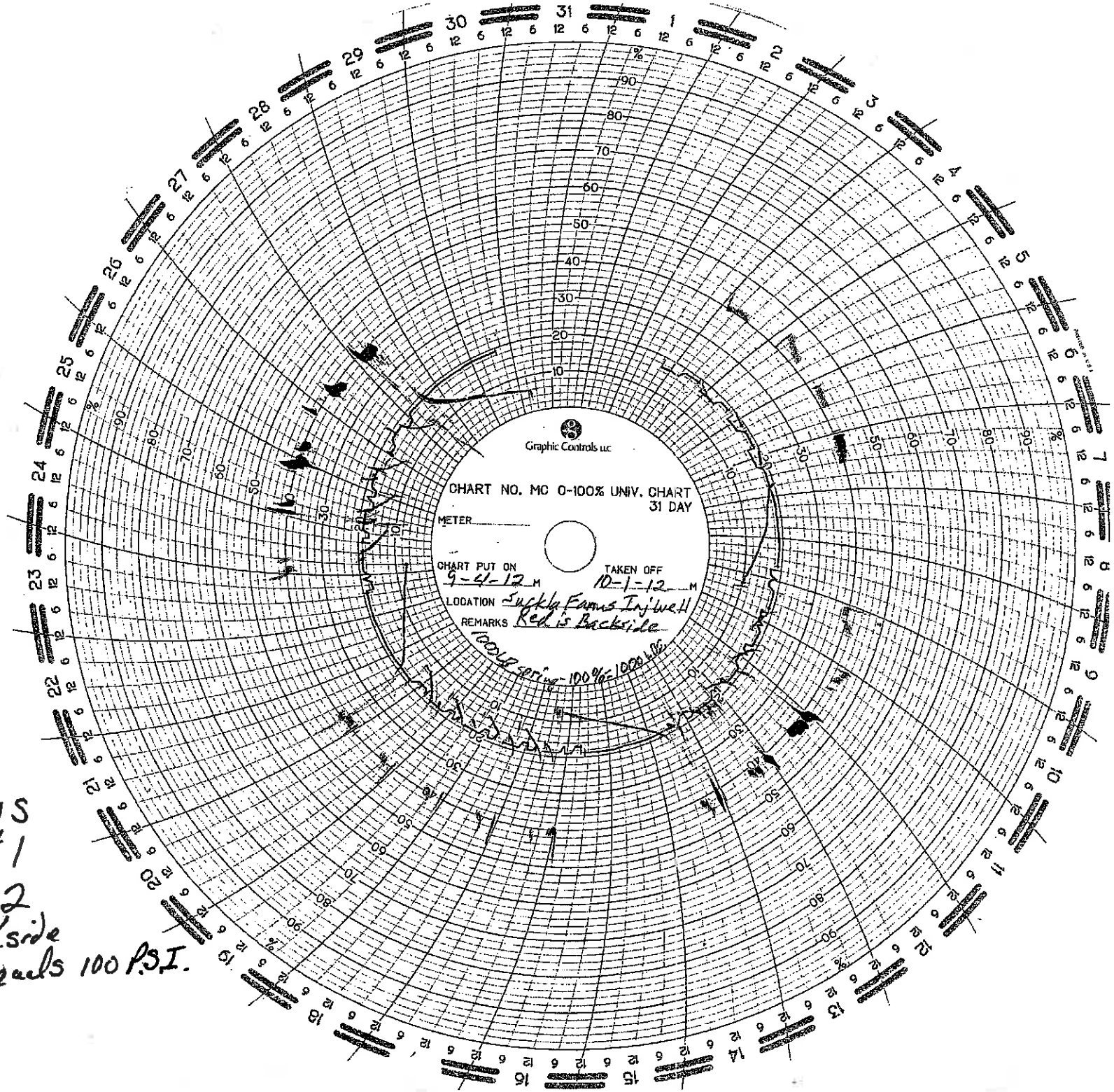
WATTENBERG DAILY EVALUATION SHEET

Date	Time	Injecting Fluid Yes	Injecting Fluid No	Pressured Annulus Yes	Pressured Annulus No	Tubing Pressure	Annulus Pressure	Estimated Barrels Injected (prior 24 hrs)	Ambient Air Temperature (est)	Weather Conditions	Remarks/Summary Prior 24 Hrs.
1	Closed		X	X		Ø	130	814			
2	Closed		X	X		Ø	130	Ø			
3	Closed		X	X		Ø	130	Ø			
4	6:30A		X	X		Ø	130	Ø			
5	6:15A		X	X		Ø	130	1052			
6	5:00A		X	X		Ø	130	1280			
7	5:30A		X	X		Ø	130	1146			
8	Closed		X	X		Ø	130	1151			
9	Closed		X	X		Ø	130	Ø			
10	5:45A		X	X		Ø	130	Ø			
11	5:45A		X	X		Ø	130	919			
12	5:45A		X	X		Ø	130	816			
13	6:30A		X	X		Ø	130	831			
14	5:45A		X	X		Ø	130	606			
15	Closed		X	X		Ø	130	452			
16	Closed		X	X		Ø	130	Ø			
17	5:45A		X	X		Ø	130	Ø			
18	5:45A		X	X		Ø	130	563			
19	5:45A		X	X		Ø	130	502			
20	5:45A		X	X		Ø	130	624			
21	5:45A		X	X		Ø	130	668			
22	Closed		X	X		Ø	130	940			
23	Closed		X	X		Ø	130	Ø			
24	6:30A		X	X		Ø	130	Ø			
25	6:30A		X	X		Ø	130	640			
26	6:30A		X	X		Ø	130	431			
27	6:30A		X	X		Ø	130	738			
28	6:30A		X	X		Ø	130	926			
29	Closed		X	X		Ø	130	601			
30	Closed		X	X		Ø	130	Ø			
31											



Suckla Farms
Injection Well #1
9-4-12 to 10-1-12
1000 LB Spring Backside
pressure @ 10% equals 100 P.S.I.


September 2012
700
600
500
400
300
200
100
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Tubing
Casing
Pump 1
Pump 2



Suckla Farms
Injection Well #1
9-4-12 to 10-1-12
1000 LB Spring Backside
pressure @ 10% equals 100 P.S.I.

APPENDIX 14

WATTENBERG DISPOSAL, LLC
UNDERGROUND INJECTION WELL
SUCKLA FARMS #1

CLOSURE PLAN

Wattenberg Disposal Facility is a Class I and II water disposal facility. The term "water" as used in the text, refers to liquids that are permitted for disposal at the facility. The facility is expected to continue to dispose of water for many years to come. When the facility closes, the following Closure and Post-Closure Plan procedures will take effect.

Wattenberg Disposal, LLC (owner) and Kauffman Well Service (operator) will complete the closure activities in accordance with the Closure Plan within one hundred eighty (180) days following the beginning of closure. Extension of the closure period may be granted by the Colorado Department of Public Health and Environment (CDPHE) if the owner or operator demonstrates that the closure process will of necessity take longer than 180 days and the owner/operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment. Per requirements, the public, the Environmental Protection Agency (EPA), CDPHE, and the Weld County Department of Public Health and Environment (WCDPHE) shall be given 60 days official notice before closure procedures commence. Signs shall be placed at the facility, and written notice shall be given accordingly per: 6 CCR 1007-2 Sec. 2.5. The facility will be locked-out to off-loading trucks on the day of closure. When closure is complete, a report will be submitted to both CDPHE and WCDPHE documenting that closure has been completed in accordance with the Closure Plan. This report must be approved by CDPHE (Le. in consultation with WCDPHE).

i. After the water in the tanks is drained and processed through the system, the well will be plugged according to the EPA requirements set forth in the Underground Injection Control (VIC) permit.

ii. The surface facility equipment and support structures will be dismantled in the following manner:

   a. The horizontal discharge tank will be drained, cleaned out and cut apart for scrap or disposed of properly. All water will be run through the system and pumped down hole. Any sludge left in the bottom of the tank will be set inside the dike on a separate 2 -10 mil plastic liner (i.e., preferably composed of high density polyethylene) and the sides diked around the plastic. If appropriate, a thicker liner will be used. If the plastic liner is compromised, the underlying soils will be properly characterized and managed. The placement of the liner over the perimeter berms will be in a "bowl" shaped configuration so as to minimize leakage. After use, the plastic liner will either be cleaned and recycled or taken to an approved disposal site for nonhazardous materials, if appropriate. If legally defensible laboratory analysis shows the sludge to be hazardous, the sludge, liner and all residual cleaning material shall be managed as hazardous waste. If possible, a representative sample of sludge from the bottom of the tank will be tested using EPA Method 8260B to analyze for volatile organic compounds and EPA Method 8270C for semi-volatile organic compounds. Paint filter testing will also be done on the sludge using EPA Method 9095. Since this is a *Class* I & II nonhazardous disposal facility,

any Class I water or fluid that comes into this facility will be tested and determined to be non-hazardous before it will be disposed of in the facility. Testing of the residual sludge for hazardous characteristics is required by the solid waste regulations as well as to provide for final disposal of the sludge (i.e., including the event that the sludge is determined to be hazardous.) However, since this facility takes in Class IT exempt water, and going under the assumption that all samples will prove NON-hazardous, the sludge is expected to be disposed of at a non-hazardous facility in a certified bio-bed at "CSI Waste Management" in Bennett, Colorado (or other authorized and certified non-hazardous facility in the Wattenberg Disposal area). Each sludge sample will also be analyzed per EPA Report SW846 "Test Methods for Evaluating Solid Waste." The following tests shall be run on each sample: Total Metals Analysis will be utilized in lieu of the Toxicity Characteristic Leaching Procedure (TCLP). However, if a TCLP is required, EPA SW-846 Method 1311 will be used. The total metals results will be divided by (20) to arrive at an equivalent TCLP value. At a minimum, arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver will be analyzed according to EPA SW846 Method 6010B (Inductively Coupled Plasma). However, if possible Method 7470-A (Coal Vapor Techniques for Mercury in Liquids) will be used for Mercury analysis in lieu of Method 601OB. Polychlorinated Biphenyls (PBC's) will be analyzed according to Method 8082.

b. The vertical storage tanks will be drained and any sludge will be managed in the same way as the horizontal tanks described in Part II.A.

c. The vertical storage tanks will be drained of water, the water run through the system then pumped down the hole. The tanks themselves will be steam cleaned and cut apart for scrap or disposed of properly. If the sludge sample from a particular tank is found to be hazardous, then the residual materials from the tank's cleaning operation will be managed as a hazardous waste.

d. The dike will be dismantled. Clean soil from the dismantled dike will be used at other facilities in other areas as fill or dike construction material away from the Wattenberg Disposal Facility. Any hydrocarbon contaminated soil that is observed in the dike and tank farm area will be tested using EPA SW-846 Method 8015, modified for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and also tested for Total Petroleum Hydrocarbons (TPH), paint filter and ignitability. The soil characterization analysis results shall be forwarded to CDPHE and WCDPHE. Non-hazardous contaminated soils will then be hauled with a manifest to the "CSI Landfill" at Bennett, Colorado (or other authorized and suitable non-hazardous facility in the Wattenberg Disposal area). The soils underlying the tanks will be left in place or will be properly disposed of based on the above soil test results. Should contaminated soils underlying any tank: be removed, samples shall be taken from opposite ends and at the middle of the corresponding excavation and tested for BTEX. TPH, paint filter and ignitability to confirm whether or not the remaining soils are clean. Any rock at the facility that is clean will be reused as a road base or gravel support. If appropriate, any rock stained with contaminates will be hauled with a manifest with the soil to the "CSI" Landfill. Any contaminated soil and stones that are determined to be hazardous will be managed in accordance with all applicable laws, regulations and ordinances.

e. The flow lines will all be drained and removed where necessary. Any piece of equipment that can be re-used will be moved elsewhere to a different site or sold. The sumps, pump house, filter building as well as all machinery, all other items associated with plant operations will be disposed of properly, moved off the site and re-used (if possible) or sold. Proper documentation will be provided as to the disposition of these assets.

f. The concrete retainer walls and concrete building foundations will be broken up and buried on site to a depth of eight feet. Restoration and reclamation of the surface will be done to return the site to the original contour and use.

iii. Groundwater monitoring will continue for a minimum of ten years after closure (unless approved otherwise by CDPHE in consultation with WCDPHE), in accordance with the conditionally approved ground water monitoring plan on a semi-annual (June and December) basis. Following closure, Wattenberg Disposal may request a release of the facility from further ground water monitoring after eight (8) successive semi-annual sampling events. This would depend upon assessment monitoring not being triggered during this time period. When ground water monitoring is discontinued, the three ground water monitoring wells will be abandoned per State of Colorado requirements.

iv. No waste impoundments will be needed due to the fact that all liquid will be injected down the disposal well and any sludge remaining in the storage tanks will be tested per Part A of this document. Any changes or problems shall be addressed to CDPHE and WCDPHE. The final decision as to any dispositions other than those stated in this document shall be made by these agencies. This facility, however, poses no imminent nor substantial endangerment to the public health or environment.

This plan shall be implemented as of _____, 2012

_____

Environmental and Regulatory Manager, Wattenberg Disposal LLC

PETERSON ENERGY
MANAGEMENT INC

2154 West Eisenhower Boulevard Loveland, Colorado 80537 970-669-7411 info@petersonenergy.com
www.petersonenergy.com

August 15, 2012

Mr. Kent Gilbert
V.P. Exploration & Production
Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, CO 80202

RE: Suckla Farms Injection Well #1
EPA Class I Permit C01516-02115

Dear Kent:

You have asked me to review the Plugging and Abandonment Plan included in the EPA permit for the subject well. The attached bid estimated the gross cost to be $29,000 to plug and abandon the well. The salvage value of the recovered tubing and casing was estimated to be $19,000. Consequently, this well could be abandoned at a net cost of $10,000. However, this bid does not factor in contingencies and complications such as the casing and tubing being unrecoverable or unsalvageable. As a result, in my opinion, a $50,000 plugging bond should be satisfactory. The salvage value of the injection facility equipment should likewise more than pay for decommissioning and surface restoration of the plant site.

We appreciate the opportunity to be of service. Please contact us if we may answer any questions.

Sincerely,

Andrew S. Peterson, PE

Andrew S. Peterson, PE
President
Peterson Energy Management, Inc.

Encl.

AUG 17 2012

BY: .....

STAY AHEAD OF THE CURVE.

WESTERN WELLSITE SERVICES , LLC.
17509 Rd 14, Ft. Morgan, Colorado 80701
(970)-867-9007 or (970)-867-8374 (Fax)
Email:daverebol@hotmail.com

August 7, 2012

Mr. Andy Peterson
Peterson Energy Management
970-203-4263

Re: P&A bid for Suckla Farms #1
Sec 10-1N-67W
Weld County, Colorado

Mr. Peterson,

We would P&A the above well for $29,000 per the rules of the COGCC. We would buy the tubing for $1/ft, and the casing for $2/ft. Normally the casing is recovered in this area to the top of the cement (5,150').

Therefore, the net cost to P&A the well, excluding any surface re-hab is about $10,000.

This bid would include the well servicing rig, cement and cementing equipment, wireline, pump, water, a welder, 5000# BOP, cement retainers as specified in procedure, bits, a backhoe, and supervision. This bid does not any dirt work beyond leveling up the wellhead area, or disposal of fluids.

If down hole problems are encountered (packers stuck, hunting casing leaks, can not get plugs to set depths, extra squeezes, need to fish, etc) and/or the State or the BLM changes the procedure on location, extra rig time is at going rates, extra cement at $25/sack pumped, and outside services are at cost.

Please call myself or Harlan Hodge at 970-301-0257 if you have any questions.

Thank you,

Dave Rebol
970-768-2064 cell

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

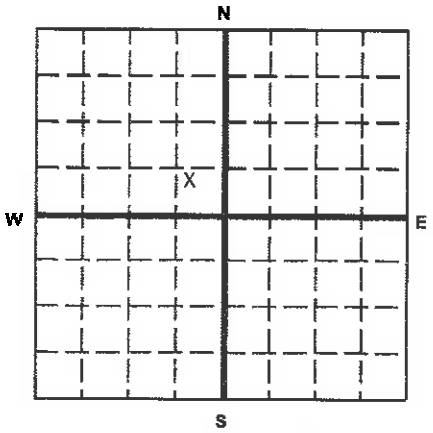
United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility
Suckla Farms #1

Name and Address of Owner/Operator
Wattenberg Disposal, LLC
1675 Broadway, Suite 2800 Denver, CO 80202

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
CO	Weld	CO 10938-02115

Surface Location Description
___ 1/4 of ___ 1/4 of sw 1/4 of nw 1/4 of Section 10 Township 1N Range 67W

Locate well in two directions from nearest lines of quarter section and drilling unit
Surface Location 500 ft. frm (N/S) S Line of quarter section
and 2020 ft. from (E/W) W Line of quarter section.

TYPE OF AUTHORIZATION
- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name Suckla Farms

WELL ACTIVITY
- [x] CLASS I
- [x] CLASS II
  - [x] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Well Number Suckla Farms #1

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
8 5/8	24	759	759	12 1/4
5 1/2	20	9575	9571	7 7/8

METHOD OF EMPLACEMENT OF CEMENT PLUGS
- [ ] The Balance Method
- [x] The Dump Bailer Method
- [ ] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (Inche	5 1/2	5 1/2	5 1/2	7 7/8	7 7/8	5 1/2	
Depth to Bottom of Tubing or Drill Pipe (ft	9476	9476	9476	9476	9476	9476	
Sacks of Cement To Be Used (each plug)	10	50	50	50	50	60	
Slurry Volume To Be Pumped (cu. ft.)	15	76	76	76	76	96	
Calculated Top of Plug (ft.)	4	300	550	4600	7250	9150	
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	15.8	15.8	15.8	15.8	15.8	15.8	
Type Cement or Other Material (Class III)	G	G	G	G	G	G	

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
9276	9418		

Estimated Cost to Plug Wells
$29,000

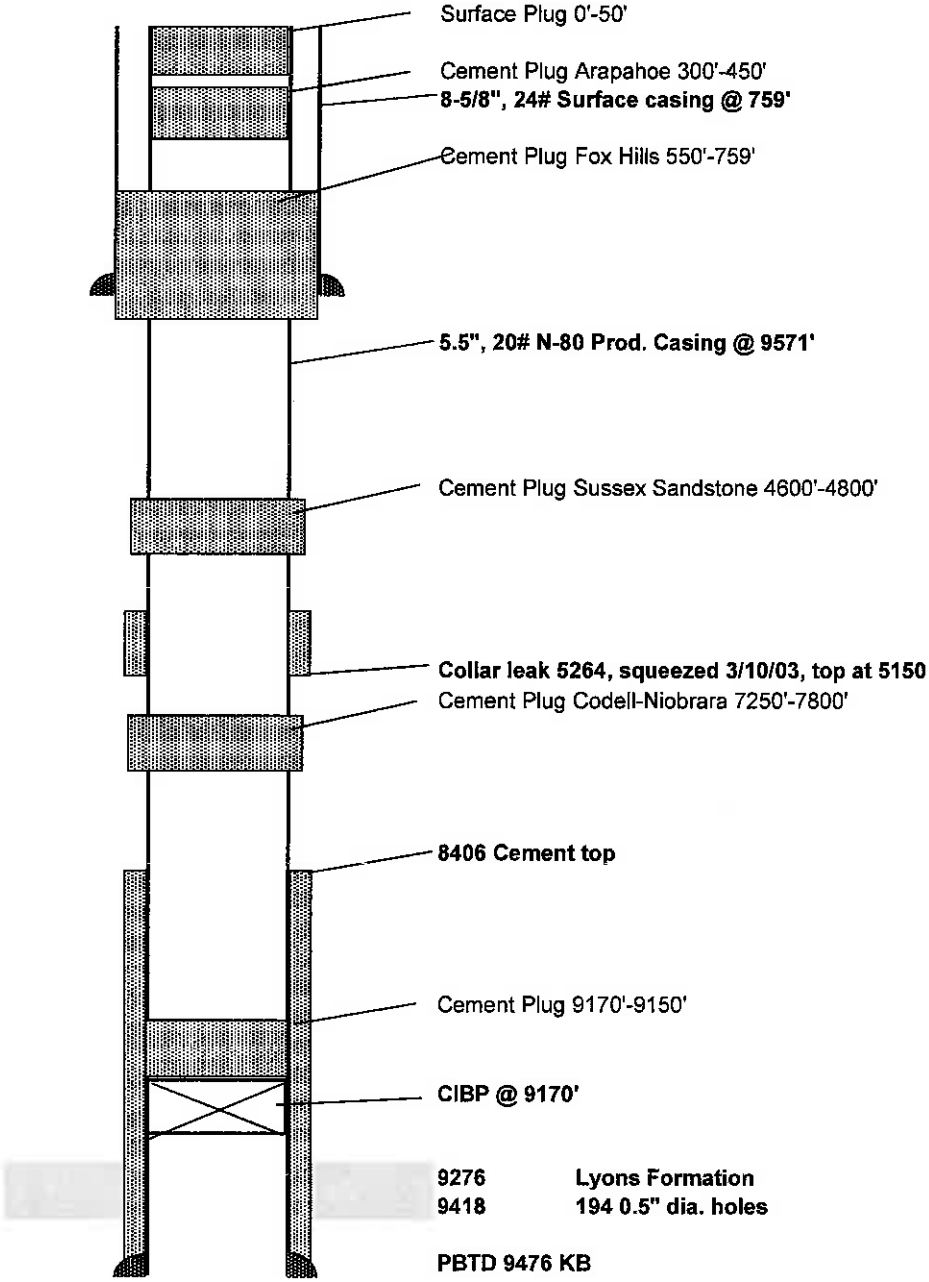
Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Susana Lara-Mesa	Slaramesa	12/03/2012

KPK
K.P. Kauffman Co., Inc.
P&A Wellbore Diagram

Well: Suckla Farms Injection Well #1		**Road Dir: 19 at 10.5, 3/10E, N into**	**DATE: 12/3/2012**
L. Desc:	**senw 10 1n 67w**	**County: Weld, CO**	
Formation:	**Lyons**	**Perfs: 9276-9418, 194 holes**	
Casing:	**5.5" 20# N-80**	**TD: 9571**	**PBTD: 9476**	**KB Meas: 10**



P&A Cement Schedule

Plug	Top	Bottom	Length	ID Area	Annulus Area	Volume
Surface	0 ft	50 ft	50 ft	17.93 sqft	0.00 sqft	6.23 cft
Arapahoe	300 ft	450 ft	150 ft	17.93 sqft	0.00 sqft	18.68 cft
Fox Hills	550 ft	759 ft	209 ft	17.93 sqft	23.72 sqft	60.45 cft
Sussex	4600 ft	4800 ft	200 ft	23.76 sqft	48.09 sqft	99.79 cft
Codell-Nio	7250 ft	7800 ft	550 ft	23.76 sqft	48.09 sqft	274.42 cft
Lyons	9150 ft	9170 ft	20 ft	23.76 sqft	0.00 sqft	3.30 cft

Formation	Top (ft)	USDW?
Arapahoe	350	Y
Fox Hills	650	Y
Upper Pierre Sand	885	N
Pierre Shale	1033	N
Upper Pierre Sand	1430	N
Pierre Shale	1850	N
Parkman	3353	N
Pierre Shale	3440	N
Sussex Sandstone	4710	N
Pierre Shale	4790	N
Shannon Sandstone	5190	N
Pierre Shale	5250	N
Niobrara Shale	7362	N
Codell Sandstone	7690	N
Carlile Shale	7715	N
Huntsman	8000	N
Dakota Group Sandsto	8130	N
Lakota	8368	N
Morrison Shale	8430	N
Entrada Sandstone	8620	N
Opeche Shale	8760	N
Lykias Shale	9010	N
Forell	9069	N
Blaine Salts	9140	N
Lyons Sandstone	9290	N
Satanka Shale	9430	N

APPENDIX 15

COPY

SURETY PERFORMANCE BOND

U.S. ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL
FINANCIAL RESPONSIBILITY REQUIREMENT

To: Mail Code: 8ENF-UFO
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

BOND COVERS THE PLUGGING OF INJECTION WELLS

Date Bond Executed: May 19, 2008

Effective Date: May 19, 2008

Principal: Wattenberg Disposal LLC
(Legal name of owner or operator)

1675 Broadway, Ste 2800, Denver, CO 80202-4690
(Business address of owner or operator)

Type of Organization: Corporation
(Individual, joint venture, partnership, or corporation)

State of incorporation: _____

Surety(ies): Fidelity and Deposit Company of Maryland
(Name)

1400 American Lane, Tower 1, 19th Floor, Schaumburg, IL 60196
(Business Address)

EPA Identification number, name, address, and plugging and abandonment amount(s) for each injection well guaranteed by this bond. (Indicate plugging and abandonment amounts for each well. Attach separate list if necessary.)

Injection Well Information	Plug & Abandon Amount
Well-Suckla Farms #1	$84,852.00
SE 1/4 NW 1/4, Sec 10, T1N-R67W, Weld County, CO	

Total penal sum of bond: $ 84,852.00

Surety's bond number: 04127324

KNOW ALL PERSONS BY THESE PRESENTS, That we, the principal and surety(ies) hereto are firmly bound to the U.S. Environmental Protection Agency (hereinafter called EPA), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that where the surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as it set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS said Principal is required, under the Underground Injection Control Regulations, as amended, to have a permit or comply with provisions to operate under rule for each injection well identified above, and

WHEREAS said Principal is required to provide financial assurance for plugging and abandonment as a condition of the permit or approval to operate under rule, and

WHEREAS said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall faithfully perform plugging and abandonment, whenever required to do so, of each injection well for which this bond guarantees plugging and abandonment, in accordance with the plugging abandonment plan and other requirements of the permit or provisions for operating under rule and other requirements of the permit or provisions for operating under rule and other requirements of the permit or provisions for operating under rule as may be amended, pursuant to all applicable laws, statutes, rules and regulations, as such laws, statutes, rules, and regulations may be amended,

Or, if the Principal shall provide alternate financial assurance as specified in Subpart F of 40 CFR 144, and obtain the EPA Administrator's written approval of such assurance, within 90 days after the date of notice of cancellation is received by both the Principal and the EPA regional Administrator (s), from the Surety(ies), then this obligation shall be null and void. Otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by an EPA Regional Administrator that the Principal has been found in violation of the plugging and abandonment requirement of 40 CFR 144, for an injection well which this bond guarantees performances of plugging and abandonment, the Surety(ies) shall either perform plugging and abandonment with the plugging and abandonment plan and other permit conditions or provisions for operating under rule and other requirement or place the amount for plugging and abandonment into a standby trust fund as directed by the EPA Regional Administrator.

Upon notification by an EPA Regional Administrator that the Principal has failed to provide alternate financial assurance as specified in Subpart F of 40 CFR 144, and obtain written approval of such assurance from EPA Regional Administrator(s) during the 90 days following receipt by both the Principal and the EPA Regional Administrator(s) of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the injection well(s) into the standby trust fund as directed by the EPA Regional Administrator.

The Surety(ies) hereby waive(s) notification of amendments to plugging and abandonment plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the

bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of the said penal sum.

The Surety(ies) may cancel the bond by sending notice by certified mail to the owner or operator and to the EPA regional Administrator(s) for the Region(s) in which the injection well(s) is (are) located, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA regional Administrator(s), as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the EPA Regional Administrator(s) of the EPA Region(s) in which the bonded injection well(s) is (are) located.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new plugging and abandonment amount, provided that the penal sum does not increase by more than 20% in any one year, and no decrease in the penal sum takes place without the written permission of the EPA Regional Administrator(s).

IN WITNESS WHEREOF, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording on this surety bond is identical to the wording specified in 40 CFR 144.70 (c), as such regulation was constituted on the date this bond was executed.

Wattenberg Disposal LLC.	Fidelity and Deposit Company of Maryland
PRINCIPAL:	CORPORATE SURETY (IES):
Kevin P Kaufman	Jana M. Forrest
(Name)	(Name)
1675 Broadway, Ste 2800, Denver, CO 80202	1400 American Ln, T 1, 19th Fl,
(Address)	(Address) Schaumburg, IL 60196
	800-821-7803
	(Surety Telephone Number)
(Signature)	(Signature)
Chairman/CEO	Attorney-in-Fact
(Title)	(Title)
Corporate Seal	Corporate Seal
	Maryland
State of Incorporation	State of Incorporation
$ 1,697	$ 17,152,000
Bond Premium	Liability Limit

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as the Surety above.)

APPENDIX 16

COPY

WATTENBERG
DISPOSAL, LLC

SW/NW Sec.10-T1N-R67W: Weld Cnty

PERMIT APPLICATION

Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, Colorado 80202

February 23, 2002

UNDERGROUND INJECTION CONTROL PERMIT
ADDENDUM TO FORM 4

Wattenberg Disposal, LLC
Office: 1675 Broadway, Suite 2800
Denver, CO 80202

Well: 10137 WCR 19
Ft. Lupton, CO, 80621

A. AREA OF REVIEW METHODS:
The area of review shall be a fixed radius of 1/4 mile from the well bore.

B. MAPS OF WELLS / AREA AND AREA OF REVIEW:
Please refer to the information which is on file with our previous permit at the EPA.

C. CORRECTIVE ACTION PLAN AND WELL DATA:
There are no existing wells within a five mile radius of the existing injection well that penetrate the Lyons formation.

D. MAPS AND CROSS SECTIONS OF USDW's:
Please refer to the information which is on file with our previous permit at the EPA.

E. NAME AND DEPTH OF USDW's (Class II)
Arapahoe formation - 350', and Foxhills formation - 650'

F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA:
Please refer to the information which is on file with our previous permit at the EPA.

G. GEOLOGICAL DATA ON INJECTION AND CONFINING ZONES (Class II)
The Lyons formation (the strata into which we inject) is a massive Permian Sandstone, white to pink in color, and is a cross bedded sandstone of fine to coarse grains. The top of the Lyons is at 9139' KB to 9424 KB with a frac gradient of .70. The top of the formation is covered by the Harriman Shale which is a medium hard to hard red shale. The base of the Lyons is the Satanka Shale, similar in deposition as the Harriman Shale.

H. OPERATING DATA:
The Suckla Farms injection well currently injects between 500 to 1000 bbls of Class II non-hazardous produced water from oil and gas wells in Weld County, Colorado. We do not currently inject any industrial materials. The annulus fluid between the tubing and the casing is fresh water treated with an anticorrosive chemical. Our most recent Fluid Analysis Report should be in the Wattenberg files at the EPA.

M. CONSTRUCTION DETAILS:
Please refer to this information which was submitted with our original permit request.

Q PLUGGING AND ABANDONMENT PLAN:
EPA Form 7520-14 (Plugging and Abandonment Plan) is included with this Permit Application.

R. NECESSARY RESOURCES: LETTER OF CREDIT
Please refer to this document which is in file with our original permit. We have not applied for a new letter of credit since we have posted a perpetual bond.

S. AQUIFER EXEMPTION:
We are not requesting an aquifer exemption. Our injection zone is well below the fresh water aquifer (Foxhills) formation. Please refer to the geological information in your file which was submitted with our original permit request.

T. EXISTING EPA PERMITS:
Our existing permit to operate this underground injection well facility at Suckla Farms expires at Midnight, July 21, 2002. We are making this application for a new permit to replace the current one, number CO1516-02115

U DESCRIPTION OF BUSINESS
Wattenberg Disposal, LLC is in the business of collecting, treating, and disposing of Class I and Class II non-hazardous produced water from oil and gas wells and industrial waste water by injecting said fluids into the Lyons formation at 9276' to 9418'.

B & D

MAPS OF WELLS / AREA AND AREA OF REVIEW

&

MAPS AND CROSS SECTIONS OF USDW's

Flatirons Surveying, Inc.
5717 Arapahoe Road
Boulder, CO 80303

Description of Lease Parcels

sheet 1 of 2

Parcel A

A parcel of land located in the Northwest Quarter of Section 10, Township 1 North, Range 67 West of the 6th P.M., County of Weld, State of Colorado, more particularly described as follows:

Basis of Bearings: Assumed South 00°00'00" West along the West line of Section 10 with all bearings shown hereon relative thereto.

COMMENCING at the West Quarter corner of said Section 10; thence South 00°00'00" West along the West line of said Section 10 a distance of 40.00 feet to a point on the North line of a 30 foot non-exclusive ingress and egress easement as shown on the "USE BY SPECIAL REVIEW" by Nelson Engineers, Project No. 317, dated November, 1994; thence North 89°46'45" East along the north line of said 30 foot non-exclusive ingress and egress easement a distance of 1869.85 feet to the POINT OF BEGINNING; thence continuing North 89°46'45" East a distance of 696.57 feet to a point 85.00 feet West of the East line of said Northwest Quarter of Section 10; thence North 00°06'27" West along a line parallel with and 85.00 West of said East line of the Northwest Quarter a distance of 663.11 feet; thence South 89°53'26" West along a line parallel with the South line of said Northwest Quarter a distance of 696.57 feet; thence South 00°06'27" East along a line parallel with said East line of the Northwest Quarter a distance of 664.46 feet to the POINT OF BEGINNING. Said parcel containing 462,370 square feet (10.61 acres) more or less. TOGETHER WITH:

Parcel B

A parcel of land located in the Northwest Quarter of Section 10, Township 1 North, Range 67 West of the 6th P.M., County of Weld, State of Colorado, more particularly described as follows:
COMMENCING at the West Quarter corner of said Section 10; thence South 00°00'00" West a distance of 40.00 feet along the West line of the Southwest Quarter of said Section 10 to the POINT OF BEGINNING; thence North 89°46'45" East a distance of 1,869.85 feet to the Southwest corner of the above described lease parcel; thence continuing North 89°46'45" East a distance of 696.57 feet along the South line of said lease parcel to the Southeast corner thereof; thence South 00°06'27" East a distance of 30.00 feet; thence South 89°46'45" West a distance of 2,566.48 feet to a point on the West line of the Southwest Quarter of said Section 10; thence North 00°00'00" East a distance of 30.00 feet to the POINT OF BEGINNING. Said parcel containing 76,994 square feet (1.77 acres) more or less.

Total square footage (Parcel A & B) = 539,364 square feet (12.38 acres) more or less.

COLORADO REGISTERED JOHN BRUCE GUYTON 16406 PROFESSIONAL LAND SURVEYOR

1-12-98

John B. Guyton
Colorado P.L.S. # 16406
President, Flatirons Surveying, Inc.

Date
FSI Job No. 98-31,192

Phone (303)443-7001 Fax (303)443-9830

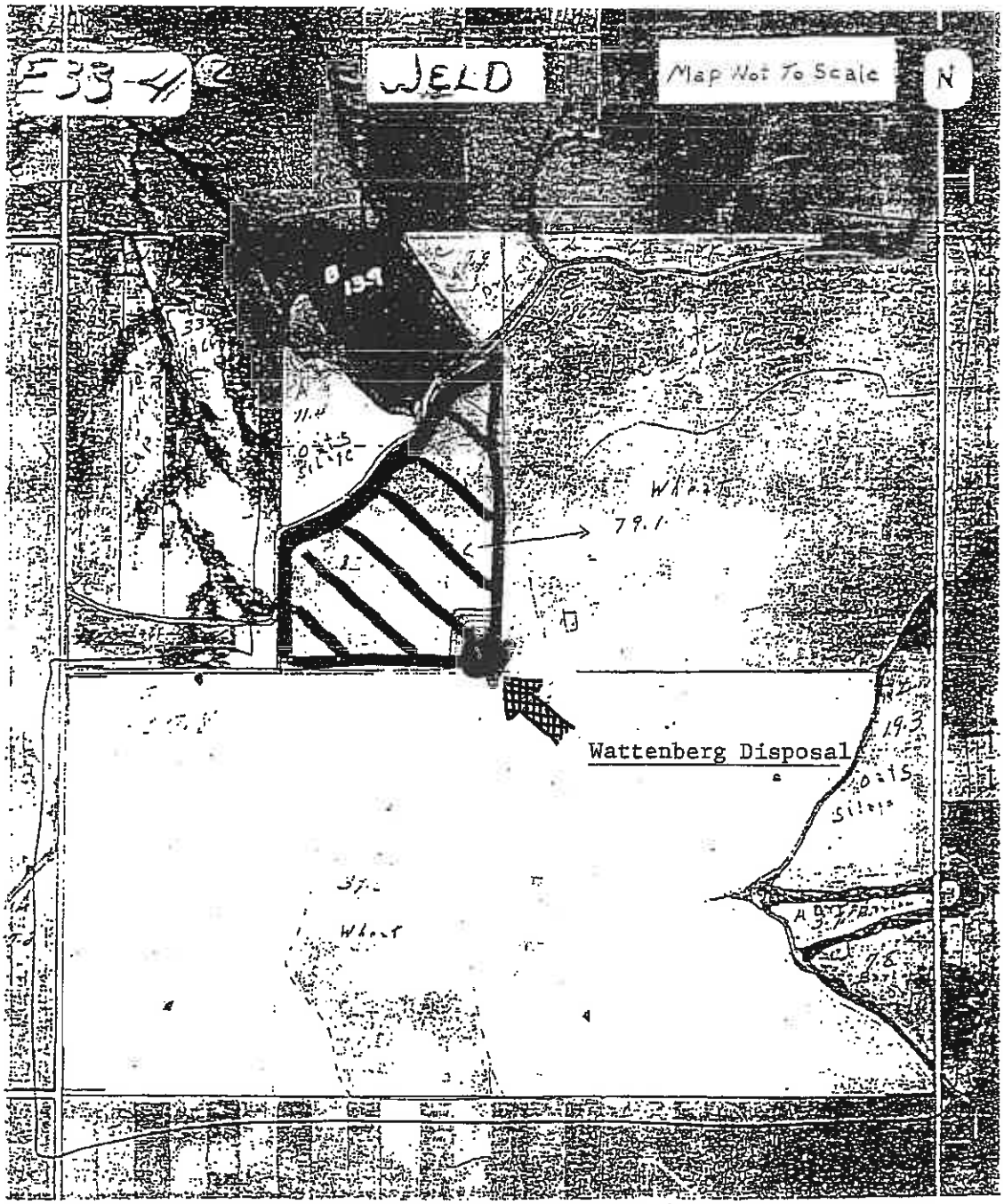


EXHIBIT A

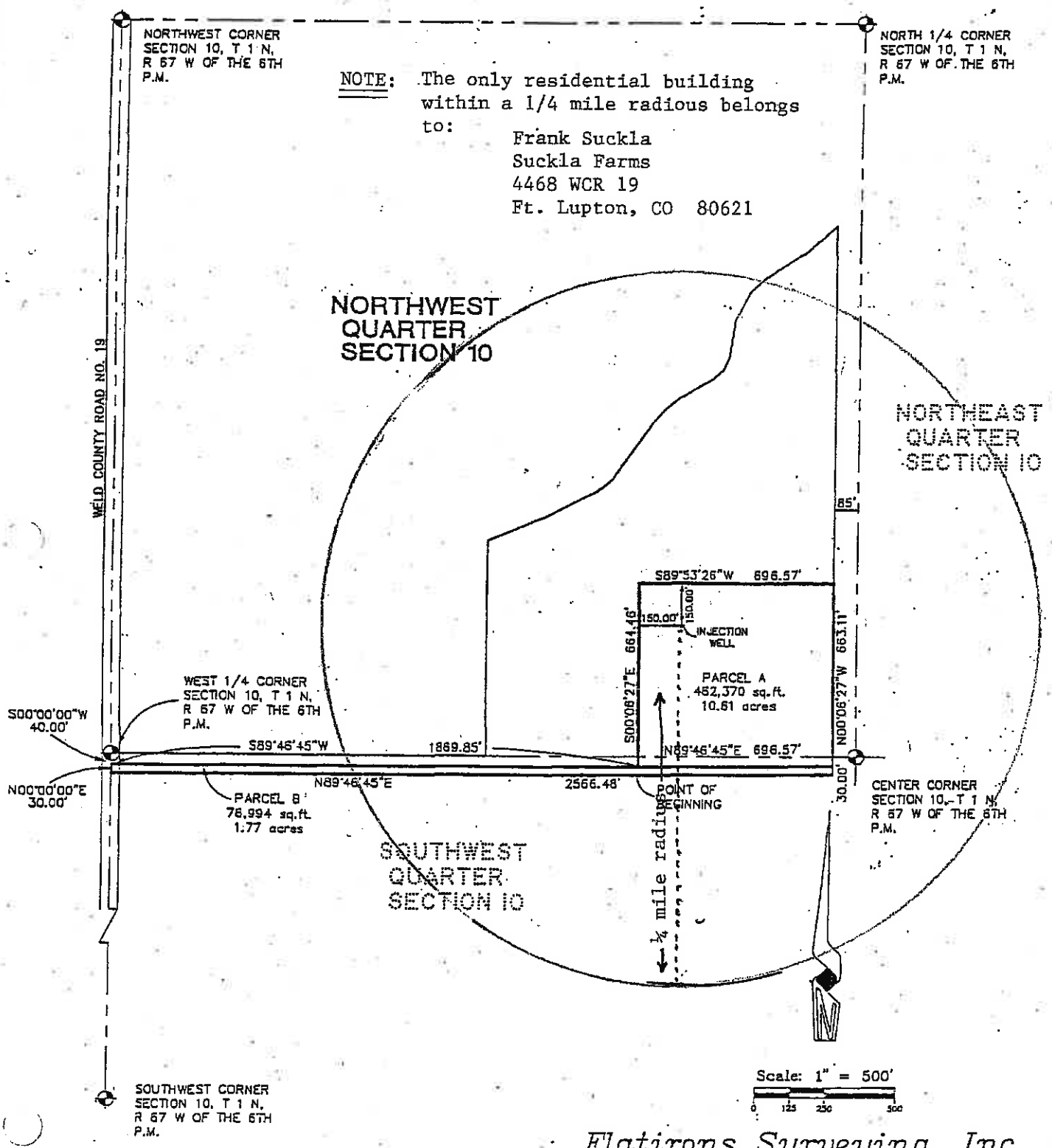
The S 1/2 of the E 1/2 of the NW 1/4 Section 10, Township 1 North, Range 67 W of the 6th P.M. of Weld County, Colorado, but with the northwesterly boundary to lie instead along the southern edge of the right of way that extends 20' above and 20' below the center line of the concrete irrigation ditch that runs in a north easterly direction from the western boundary of the northernmost portion of the parcel.

The North 20 feet of the SW 1/4 of said Section 10.

FJS

LEASE PARCELS LOCATED IN THE NW 1/4, SEC. 10, T 1 N, R 67 W OF THE 6TH P.M., WELD COUNTY, COLORADO

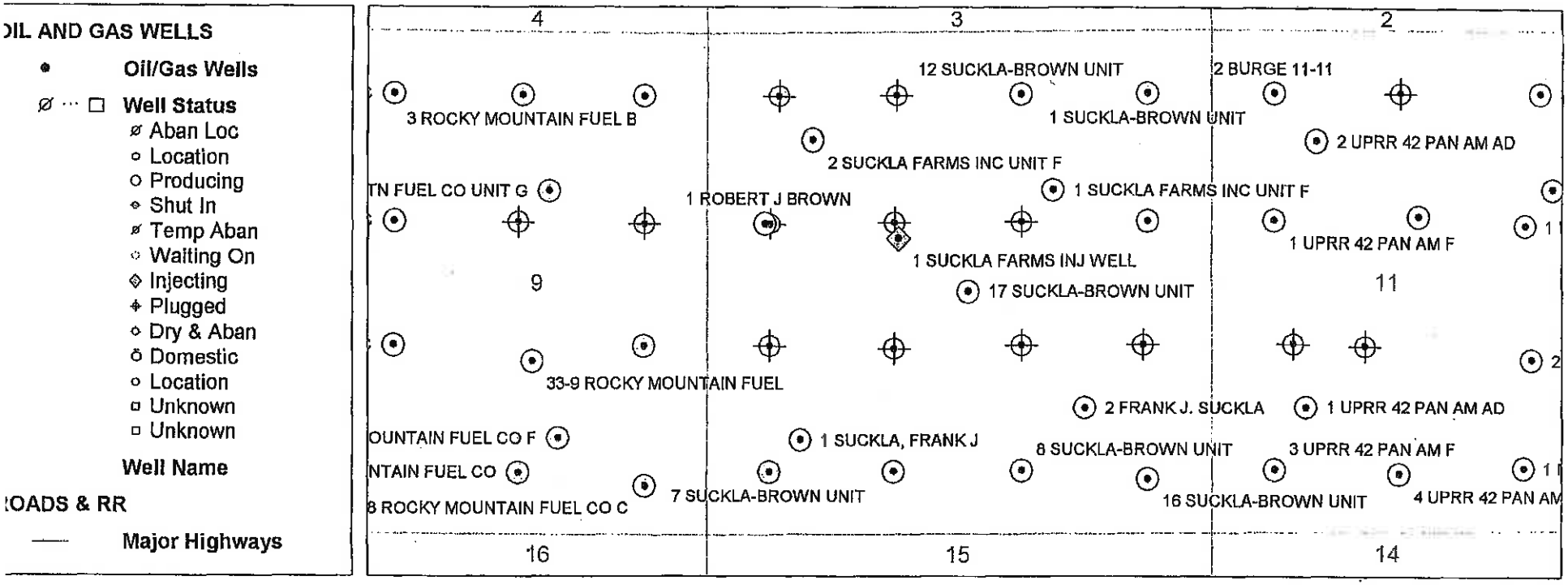
SHEET 2 OF 2



Flatirons Surveying, Inc.
5717 ARAPAHOE RD., BOULDER, CO 80303
(303) 443-7001

FSI JOB NO. 98-31,192

COGCC GIS OnLine



SCALE 1 : 19,042

1,000 0 1,000 2,000 3,000

FEET

N

G & S

GEOLOGICAL DATA

ON INJECTION & CONFINING ZONES

&

AQUIFER EXEMPTION

GEOLOGICAL CONSIDERATIONS

The underground sources of drinking water (USDW) in this area are within the Arapahoe and Laramie-Fox Hills Formations, which extend to a maximum depth of 700 feet below ground surface. These USDWs are isolated from the wellbore by cemented surface casing, which is set at a depth of 759 feet in the underlying Pierre Shale. The Pierre Shale is a major regional impervious confining zone some 6,600 feet in thickness. Within the surface casing is a second casing (long string) which extends from the surface to the total depth of the well; inside the long string casing is the tubing through which the injected fluids flow to the injection zone in the Lyons Formation. The base of the tubing is anchored in the long string casing by a packer set at a depth of 9,240 feet, just above perforations in the casing at the injection zone. The diagram attached as Exhibit B provides the construction details and indicates the depths of the major geologic units.

Immediately overlying the porous Lyons Sandstone injection zone is a confining zone composed of 300 feet of impervious shales and interbedded siltstones. A confining zone below the injection interval is also composed of impervious shales. The long string casing is cemented throughout the confining zones, with cement extending 880 feet above the injection interval as verified by a cement bond log. The bond log indicated that the cement appears to have adequate strength and bonding to isolate the injection zone. Thus, this method of well completion assures that all injected fluids enter and remain within the injection zone, and therefore, are not expected to migrate into USDWs.

Upon completion of the Suckla Farms No. 1, the static fluid level of the Lyons Sandstone injection reservoir was determined in order to estimate the existing reservoir pressure. The reservoir fluid level at that time was 1,562 feet below ground surface which is 862 feet below the base of the Laramie-Fox Hills aquifer (base of USDWs). This indicates that the Lyons is a very underpressured formation and is not being actively recharged. Thus, water from the Lyons would not be expected to flow upward via an unplugged well into the Laramie-Fox Hills or overlying aquifers under pre-injection (static) condition. In fact, the direction of flow would be from the Laramie into the Lyons.

At the 9,300 foot depth of the Lyons Sandstone at the Suckla Farms No. 1, the rate of fluid movement is limited for the following reasons: (1) the nearest surface exposure or recharge area of the Lyons Sandstone is along the base of the Front Range; approximately 25 miles west of the well. Surface recharge exerts very little influence over this great a distance; (2) geophysical data indicate the well is located near the structural axis or deepest part of the Denver basin, where no wells have been drilled to the Lyons, and therefore, no formation waters have been withdrawn; (3) actual recharge to and discharge from the Lyons Formation appears to be very limited. The reservoir conditions encountered when the well was drilled provide evidence that recharge and fluid movement associated with the formation are limited.

The Lyons reservoir was very underpressured when the well was initially drilled and completed, as indicated by the reservoir fluid level which was 1,562 feet below ground surface. This contrasts with the artesian aquifers, which serve as USDWs in the area and which flowed at the surface when they were initially developed. The nearest well that penetrates the Lyons is over 16 miles away and beyond any area of influence surrounding the injection well. Additionally, data from the COGCC indicate there is little production of oil and water from the Lyons in Eastern Colorado. There are 14 active and shut-in Lyons producing wells in Weld County, and there is little or no oil and water production from the Lyons in other counties.

Thus, man-made discharge from the Lyons is insignificant; (4) the permeability of the Lyons reservoir is low. The permeability of the reservoir is approximately 10 millidarcies (md) or 2.72 X 10^{-2} ft/day. This estimate is based on data from the wells in the Pierce Unit, the analysis of drill cuttings, and pressure buildup calculated using injection volume and reservoir pressure buildup data from the Suckla Farms No. 1 collected since injection commenced; (5) the Lyons Formation has a very small change in elevation with distance from the well. The unit slopes upward to the east at about 1 degree, and does not outcrop. The absence of a surface discharge area and significant pumpage indicate that pressures within the Lyons Formation have long since reached equilibrium; and (6) the volume of fluids intended for injection during the permitted life (10 years) of the well is insignificant compared to the existing volume of fluids already in place. In summary, available data indicate that the hydraulic gradient within the Lyons is very small, resulting in a very low rate of ground water movement under natural conditions. The small volume of injected fluids compared to the existing volume of native fluid in storage and the absence of nearby pumping will result in a return to equilibrium conditions in a very short time after injection ceases.

A second phase of reservoir analyses was utilized to evaluate the impact of the injection activity on the Lyons reservoir. This involved use of the reservoir pressure buildup equation (see report on "Radius of Pressure Influence of Injection Wells" by Don L. Warner, EPA-600/2-79-170, August, 1979) to calculate the change in reservoir pressure as a result of operation of the well. An injection rate (1,625 BPD) for the entire life of the well (4,600 days) including operation of the well to date was used along with estimated permeability (10 md) and porosity (0.06) to estimate the increase in reservoir pressure at certain distances from the well.

The most significant estimated pressure increases occur within one-half mile of the Suckla Farms No. 1. At a radius of 1/4-mile, the pressure is estimated to increase by about 500 psi. At this radius, the pressure increase would result in fluid movement through an open well completed in the Lyons to a level which is approximately 250 feet above the base of the lowermost USDW. At the radius of one-half mile, however, the pressure increase is estimated to be in a range between 150 and 350 psi. This would cause fluid to rise at that radius to a level which is below the base of the lowermost USDW.

REPORT DATE
Fri May 19 11:55:27 MDT 2000

COLORADO WELLS, APPLICATIONS AND PERMITS
COLORADO DIVISION OF WATER RESOUCES

PERMIT	D	CTY	OWNER INFORMATION																				
ACTIVITY			STATUS						1ST USED	ANN	AREA	GEOL	WELL	WELL	WTR	SEC LOC				TWN		P
CD	DATE		CD	DATE	WD	MD	DB	USE	DATE	APR	IRR	AQER	YIELD	DPTH	LEV	COORD	QTRS	SEC	SHP	RNG	M
0		1	WEL	* SWOKLA FARMS FT LUPTON, CO 80621																		
AP	08-20-1979				2	0	0	89		0	0		0	0	0	0.0	SWNE	10	1N	67W	S
45567		1	WEL	BROWN ROBERT J 3435 E ILIFF AVE DENVER, CO 80202																		
					2	0		89		0	0		20.00	450	0	0.0	NWNW	10	1N	67W	S

* SUCKLA FARMS #1

SE/4 NW/4 Sec.10-T1N-R67W

Weld County, CO

Per: USGS Dept. of the Interior
02-05-02

"There are no other water wells within a 1-mile radius of the Suckla Farms Injection well."

H

OPERATING DATA

MIT as required for permit #CO1516-02115 Part II, C 2.(e))

NOTE: Also included :

DIFFERENTIAL TEMPERATURE LOG / COLLAR CORRELATION

&

Peterson Energy Management, Inc.: "Temperature Log Review"
BHP Test Report

Mechanical Integrity Test
Casing or Annulus Pressure Mechanical Integrity Test

U.S. Environmental Protection Agency
Underground Injection Control Program
999 18th Street, Suite 500 Denver, CO 80202-2466

EPA Witness: _____ Date: 2 / 1 / 01
Test conducted by: RICK CHLEMEIER, K.P. KAUFFMAN CO.
Others present: CINDI ETCHEVERRY, WELD COUNTY HEALTH ; MIKE CARTER, KP KAUFFMAN, CO.

Well Name: SUCKLA FARMS INJ. WELL #1 Type: ER (SWD) Status: AC TA UC
Field: SPINDLE
Location: SE NW Sec: 10 T 1 (N)/S R 67 E/(W) County: WELD State: CO.
Operator: WATTENBERG DISPOSAL, LLC, DENVER, CO.
Last MIT: 8 / 24 / 00 Maximum Allowable Pressure: 3700 PSIG

Is this a regularly scheduled test? [ ] Yes [X] No
Initial test for permit? [ ] Yes [X] No
Test after well rework? [X] Yes [ ] No
Well injecting during test? [ ] Yes [X] No If Yes, rate: _____ bpd

Pre-test casing/tubing annulus pressure: 0/0 psig

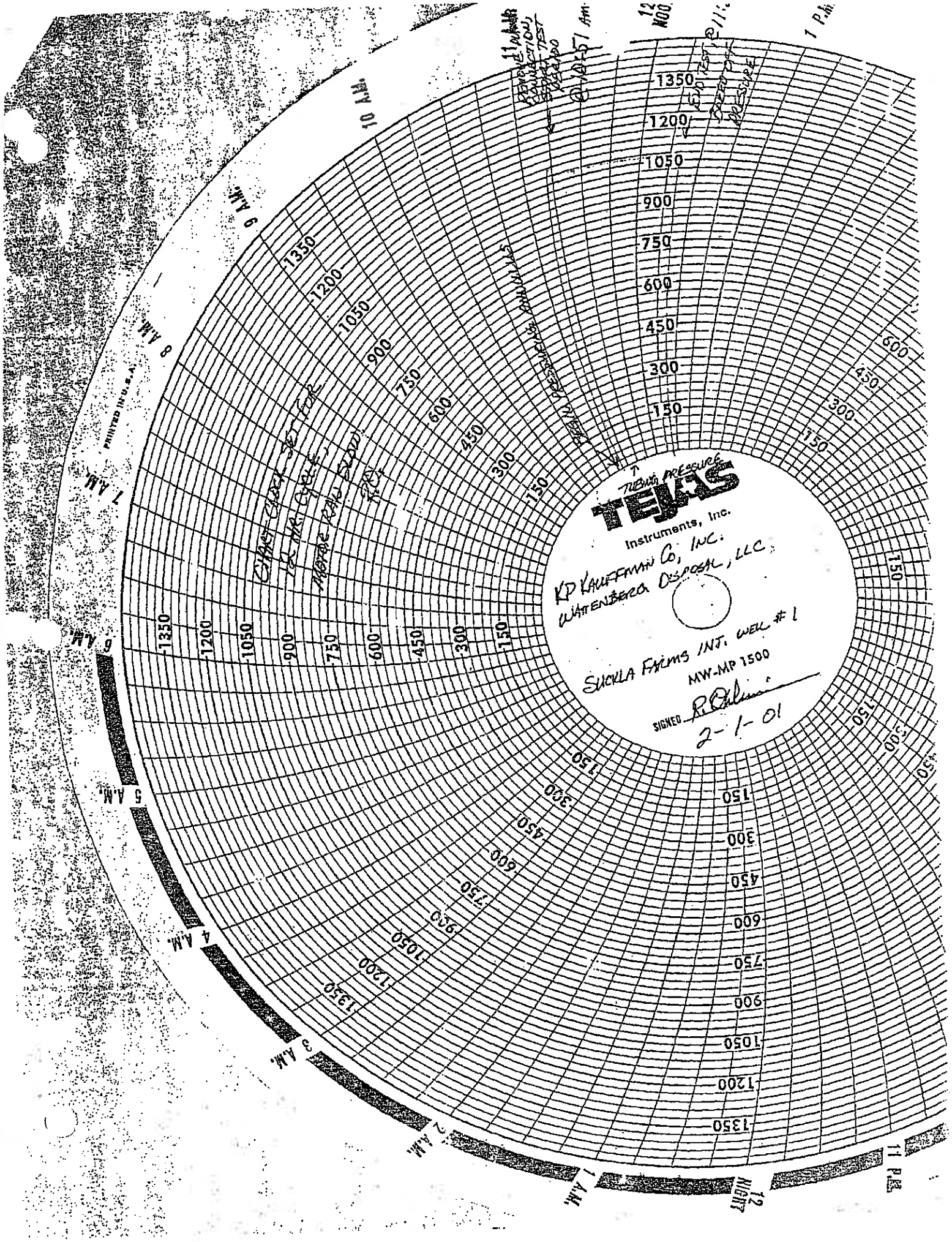
MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING	*PRESSURE*		
Initial Pressure	0 psig	psig	psig
End of test pressure	0 psig	psig	psig
CASING / TUBING	*ANNULUS*	*PRESSURE*	
0 minutes	1075 psig	psig	psig
5 minutes	1075 psig	psig	psig
10 minutes	1075 psig	psig	psig
15 minutes	1070 psig	psig	psig
20 minutes	1070 psig	psig	psig
25 minutes	1070 psig	psig	psig
30 minutes	1070 psig	psig	psig
_____ minutes	psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[X] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? [ ] Yes [X] No

MECHANICAL INTEGRITY PRESSURE TEST

Additional comments for mechanical integrity pressure test, such as volume of fluid added to annulus and bled back at end of test, reason for failing test (casing head leak, tubing leak, other), etc.:
ONE BBL FLUID PUMPED IN, ONE BBL FLUID RECOVERED

Signature of Witness: R. Chlemeier

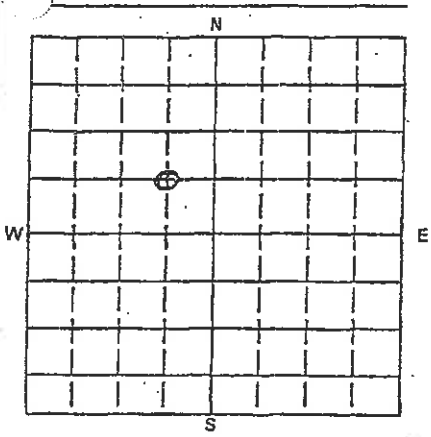

TEJAS
Instruments, Inc.
KP KAUFFMAN Co, INC.
WATTENBERG DISPOSAL, LLC
SUCKLA FARMS INJ. WELL #1
MW-MP 1500
SIGNED
2-1-01
TUBING PRESSURE
CHART CLOCK SET FOR
1 HR. CYCLE
MOTOR RAN SLOW
PRINTED IN U.S.A.
10 A.M.
9 A.M.
8 A.M.
7 A.M.
6 A.M.
5 A.M.
4 A.M.
3 A.M.
2 A.M.
1 A.M.
12 NIGHT
11 P.M.
1 P.M.
1350
1200
1050
900
750
600
450
300
150

EPA

WELL REWORK RECORD

NAME AND ADDRESS OF PERMITTEE	NAME AND ADDRESS OF CONTRACTOR
WATTENBERG DISPOSAL, LLC 1675 BROADWAY, STE. 2800 DENVER, CO 80202	KP KAUFFMAN CO., INC 1675 BROADWAY, STE. 2800 DENVER, CO 80202

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
CO	WELD	CO1516-02115

SURFACE LOCATION DESCRIPTION
SE ¼ OF NW ¼ OF ¼ SECTION 10 TOWNSHIP 1N RANGE 67W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 500 ft. from (N/S) S Line of quarter section
and 2020 ft. from (E/W) W Line of quarter section

WELL ACTIVITY	Total Depth Before Rework	TYPE OF PERMIT
☒ Brine Disposal ☐ Enhanced Recovery ☐ Hydrocarbon Storage	9571'	☒ Individual ☐ Area Number of Wells 1
	Total Depth After Rework: 9571'	
Lease Name: SUCKLA FARMS INJECTION WELL #1	Date Rework Commenced: 1-26-01	Well Number: #1
	Date Rework Completed: 1-31-01	

WELL CASING RECORD — BEFORE REWORK

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	
8 5/8"	759'	200	"G"			1000 GAL 7½% HCL
						2000 GAL 15% FE ACID, AUG. 19, 2000
5½"	9557'	255	"G"	9276'	9418'	

WELL CASING RECORD — AFTER REWORK *(Indicate Additions and Changes Only)*

Casing		Cement		Perforations		Acid or Fracture Treatment Record
Size	Depth	Sacks	Type	From	To	

DESCRIBE REWORK OPERATIONS IN DETAIL USE ADDITIONAL SHEETS IF NECESSARY	WIRE LINE LOGS, LIST EACH TYPE	
	Log Types	Logged Intervals
PULLED TBG & PACKER, LAID DOWN 5500' OF PLAIN TUBING,		
ADDED 5500' OF FIBERLINE TUBING TO EXISTING 3500' OF		
FIBERLINE TUBING. CIRCULATED PACKER FLUID, SET PACKER,		
MIT CONDUCTED ON 2-1-01.		

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
RICK OHLEMEIER COMPLETION SUP., KP KAUFFMAN CO.	R. Ohlemeier	2-1-01

KPK
K.P. Kauffman Co., Inc.
Daily Workover or Completion Report

SUPERVISOR: Rick Ohlemeier
Road Dir: 19 at 10.5, 3/10E, N into

Well:	Suckla Farms Injection Well #1	WELL DOWN:	n/a
L. Desc:	SENW 10-1N-67W	County: Weld, CO	ROL DATES: 01/26/2001
Formation:	Lyons	Perfs: 9276-9413, 194 holes	
Casing:	5.5 20# N-80	TD: 9571 PBTD: 9476	KB Meas: 10

Contractor: KWS RIG 3

Well Problem: Replace tubing with fiberline tubing.

Operation:

01/26/2001 MIRU. No further ops.

01/29/2001 Release packer. POOH and lay down unlined 2-7/8" tubing. Stand back 110 jts. fiberline tubing. No further ops.

01/30/2001 RIH with packer and tubing. Reverse circulate 60 bw treated with Anhib II.

01/31/2001 Continue reverse circulating 70 additional bbl treated water. Set packer. Pressure test annulus to 1000 psi for 15 min. Tested good. Bleed off pressure. SWI for temperature stabilization.

02/01/2001 Conduct and record MIT for EPA approval. Field test passed. Waiting on approval from EPA.

Tbg psi:
Csg psi:

Footage	Jts.	Description of Items Run
5496.54	173	2-7/8" J-55, 6.5 lb fiberline
3499.35	110	2-7/8" N-80, 6.5 lb fiberline
1.7	1	2-3/8" x 2-7/8" x-over
1.1	1	Seating nipple
7.8	1	2-3/8" x 5.5 AS-1 Packer
9008.49		TOTAL
8		8' Under KB
9014.49		Packer set at 9014' KB

Oil used:	Water used:	Chem used:	Gals
From:	From:	Type:	0
Carrier:	Carrier:	Type:	0
		Type:	

COST ESTIMATE:

Code	Intangible	Cum	Code	Tangible	Daily	Cum
9000/862						
	Total: 0	0		Total: 0		0

CRB

peterson energy
management, inc.

November 10, 2001

Mr. Kent Gilbert
V.P. Exploration & Production
Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, CO 80202

RE: Suckla Farms Injection Well #1
EPA Class I Permit CO1516-02115
Temperature Log Review

Dear Kent:

In this report we detail the results of the temperature logs run by ADI Wireline on October 26th & November 1st, 2001. A base pass was run on October 26th after the well had been shut in for 3 hours. This pass shows differential warming above the perforated interval similar to the temperature log run July 12, 1993, with fluid storage beginning at 9350'. A possible storage anomaly occurs just below the packer at 9000' WLM, but this is more likely an artifact related to transient wellbore effects in the vicinity of the packer. After injecting thirty minutes, a second pass was made while injecting. This pass showed all fluid exiting in the zone, and no anomalies noted above the zone. All perforations appeared to be taking fluid.

After the six day pressure falloff test, a static temperature log was again run, showing a normal static gradient to a fluid storage top at 9215'. No anomaly was noted in the vicinity of the packer, confirming that the response seen on the first pass October 26th was indeed a transient event. Three temperature passes were made after resuming injection. All three passes showed a normal profile, with no anomalies noted, and the entire zone taking fluid. It is possible that the cooling seen starting at 9215' on Run #1 November 1st indicates fluid could be communicating up to this point (61' over the zone), but no higher. However, none of the other passes show any storage above the perforated interval. In addition, the initial static temperature log run July 12, 1993 showed similar storage anomalies above the zone at 9190' and 9235'. These were proved to be artifacts by the subsequent tracer survey.

We were unable to locate a wireline company that still runs radioactive tracer surveys in time for this study. Regulatory difficulties involved in handling RA material have led many companies to quit offering the service.

petroleum engineering

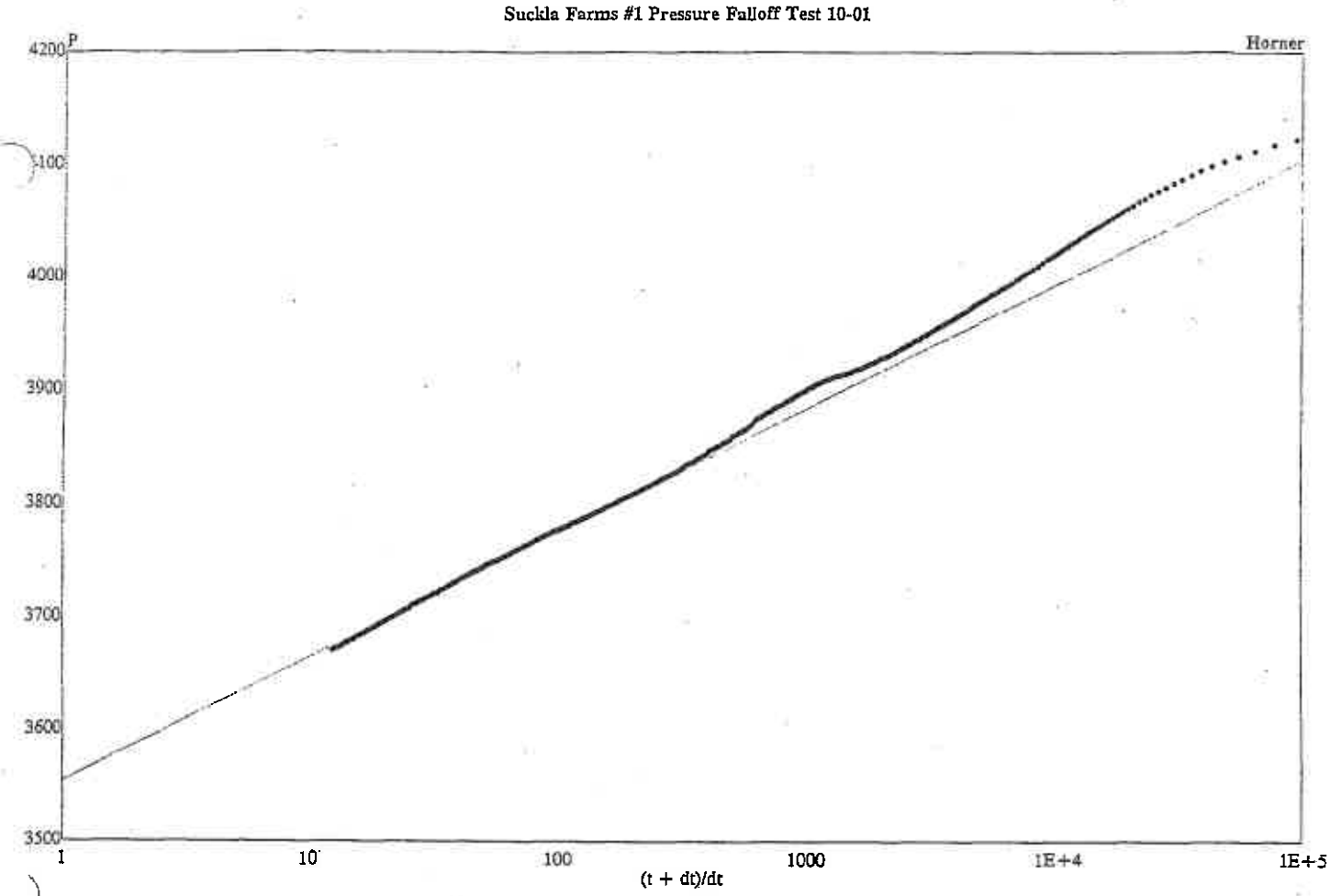
1805 Morning Drive, Loveland, CO 80538 (970) 669-7411 Fax (970) 669-4077

It is our opinion that the temperature logs run October 26th and November 1st show conclusively that all injection fluids are being confined to the 9276'-9418' perforated interval.

We appreciate the opportunity to be of service. Please contact us if we may answer any questions.

Sincerely,

Andrew S. Peterson, PE
President



Suckla Farms #1 Pressure Falloff Test 10-01

Analysis Results: Horner

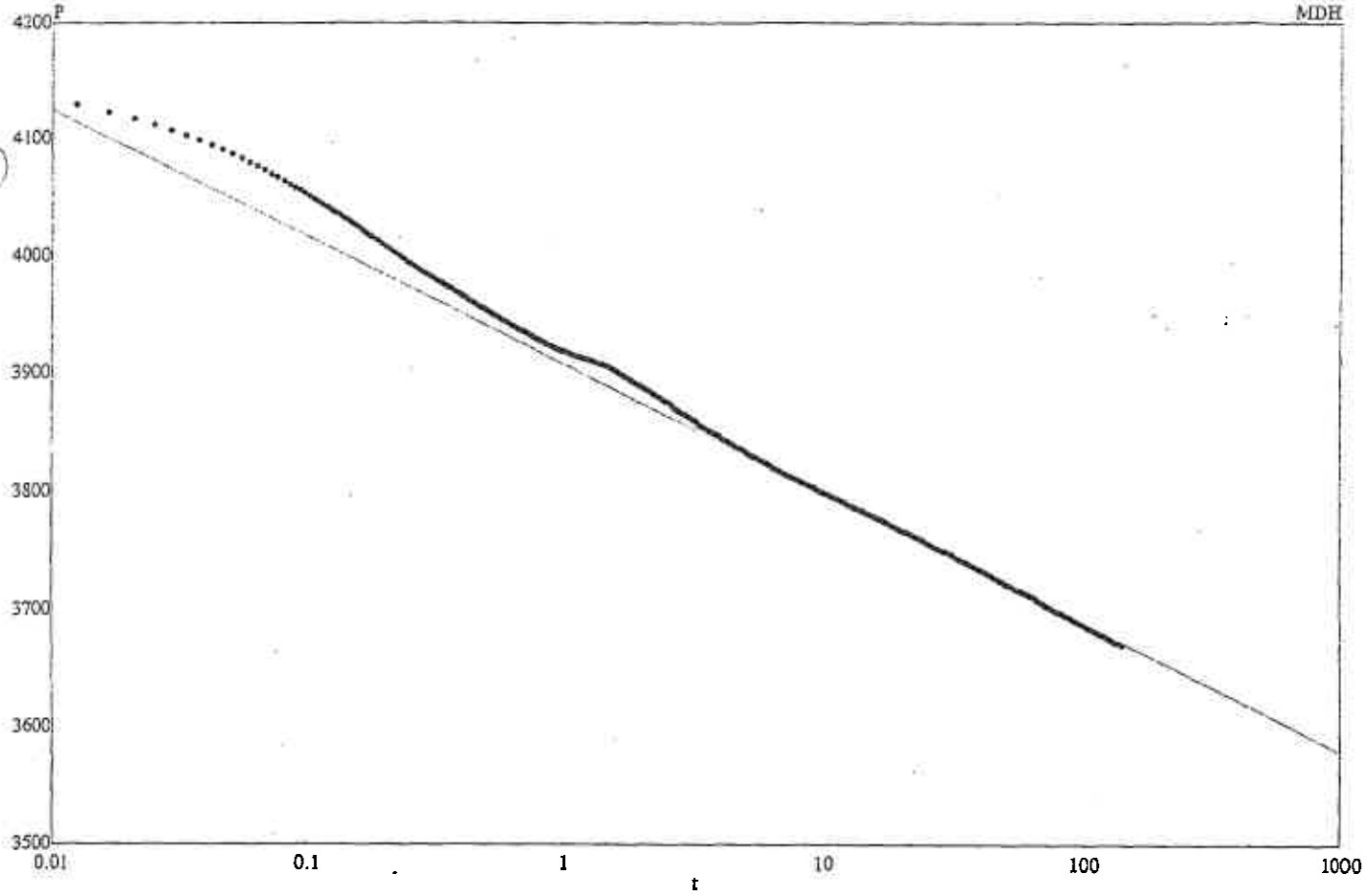
Parameters:

Slope = 109.914
m(1 hr) = 3905.95
Prd Time: = 1580 hr

Calculated Values:

kh = 676.66 md-ft
k = 4.76521 md
Skin = -2.9094
P* = 3554.3 psi

Suckla Farms #1 Pressure Falloff Test 10-01



Suckla Farms #1 Pressure Falloff Test 10-01

Analysis Results: MDH

Parameters:

Slope = -109.132

P 1 hr: = 3906.6

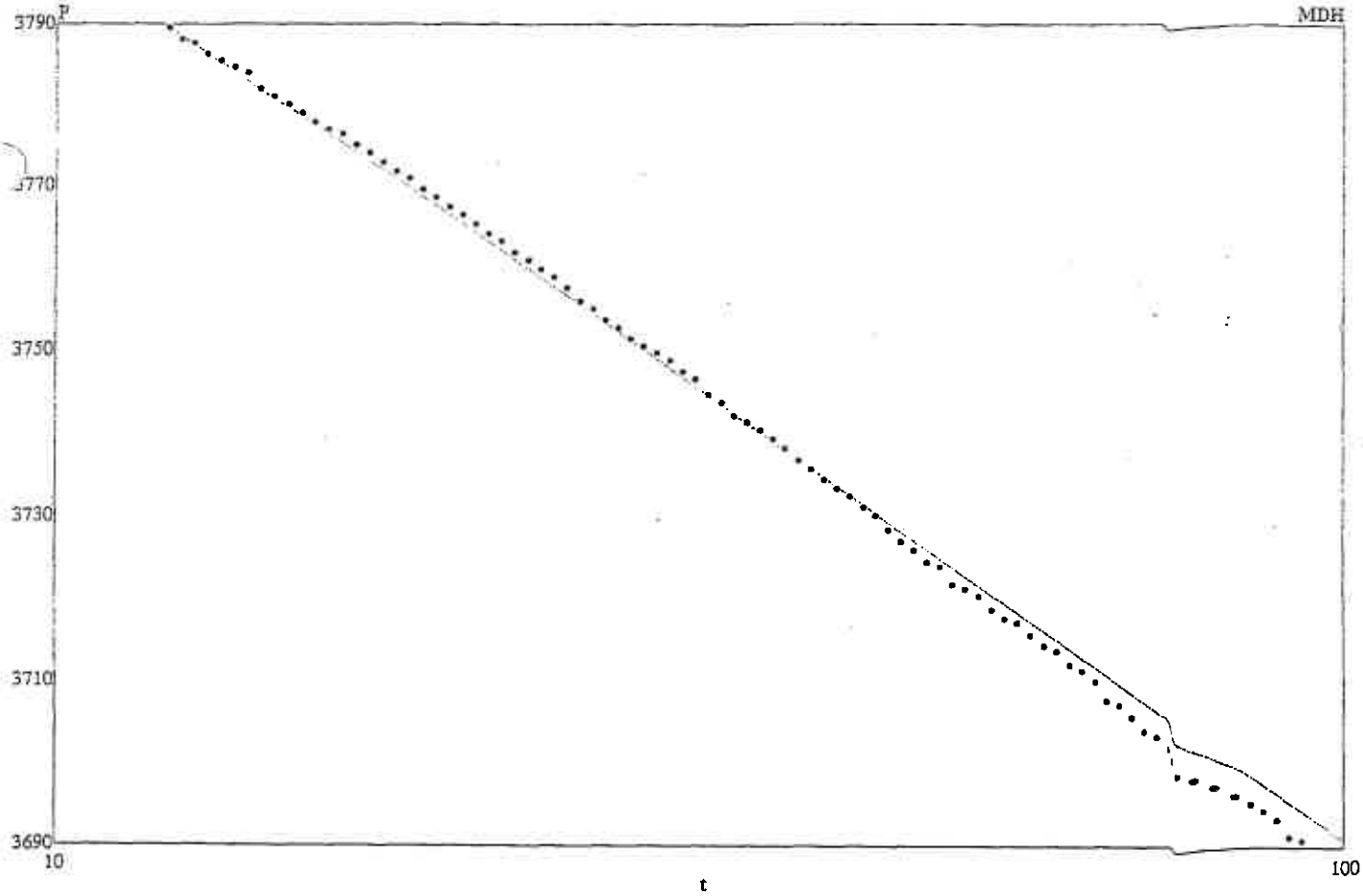
Calculated Values:

kh = 681.509 md-ft

k = 4.79936 md

Skin = -2.89754

Suckla Farms #1 Pressure Falloff Test 10-01



Suckla Farms #1 Pressure Falloff Test 10-01

Analysis Results: MDH

Parameters:

Slope = -108.127

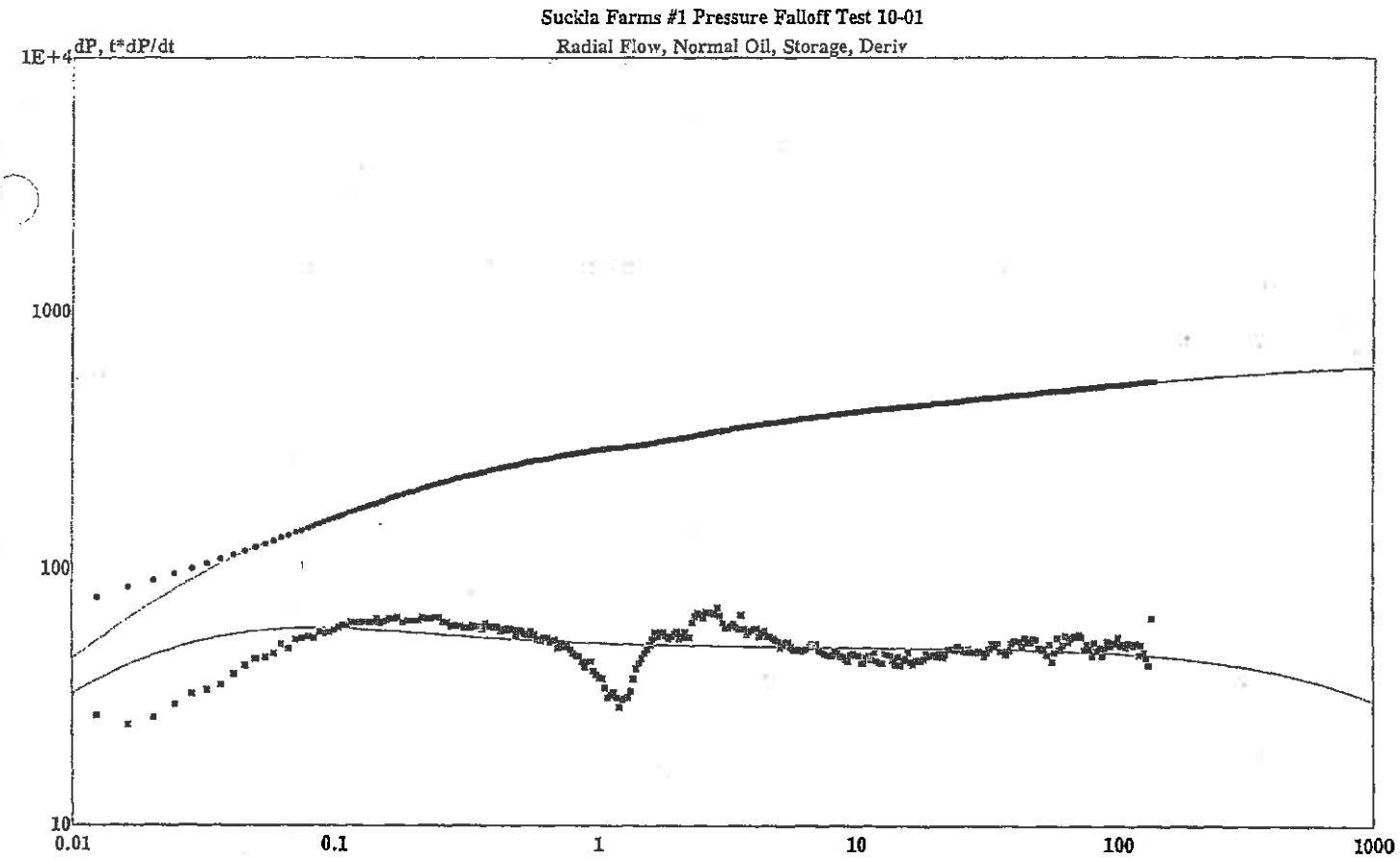
P 1 hr: = 3907.15

Calculated Values:

kh = 122.158 md-ft

k = 0.86027 md

Skin = -1.32122



Suckla Farms #1 Pressure Falloff Test 10-01

Analysis Results: Radial Flow, Normal Oil, Storage, Deriv

Dimensionless Parameters:

tD/CD(1) = 75.379
pD(1) = 0.009885
CaDe2S = 1.7888
CD/CaD = 1

Calculated Values:

Std Dev = 4.2348
k = 4.4972 md
kh = 638.6 md-ft
S = -3.181
CD = 1036

Lightning Wireline, Inc.
P.O. Box 1531
Loveland, Colorado 80539

Tel: (970) 669-8059 Fax: (970) 669-4077

B.H.P. TEST REPORT

Company : WATTENBERG DISPOSAL

Well Number	: SUCKLA FARMS #1	Packr set at	: 9014
Test date	: 10/26/01-11/01/01	Fluid level @	
Lease	: SUCKLA	Perforations	: 9276'-9418'
Field	: WATTENBERG	DW Tbg press	: 0
County	: WELD	DW Csg press	: 0
State	: COLORAOD	Stab flw rate	: -300
Location	: SECTION 10-T1N-R67W	Instrument #	: 21063
Formation	: LYONS	Tested by	: ASP/LG/JMR
Total depth	@ 9448	Calculated by	: ASP
Atmos press.	: 12.3	Gauge set at	: 9005.1
Tubing size	: 2 7/8	B.H. Temp. F	: 242

Test type:

Flowing Pressure Gradient	-	No
Bottom Hole Pressure Build-up Test	-	Yes
Bottom Hole Pressure Draw-Down Test	-	No
Shut-in Pressure Gradient	-	No

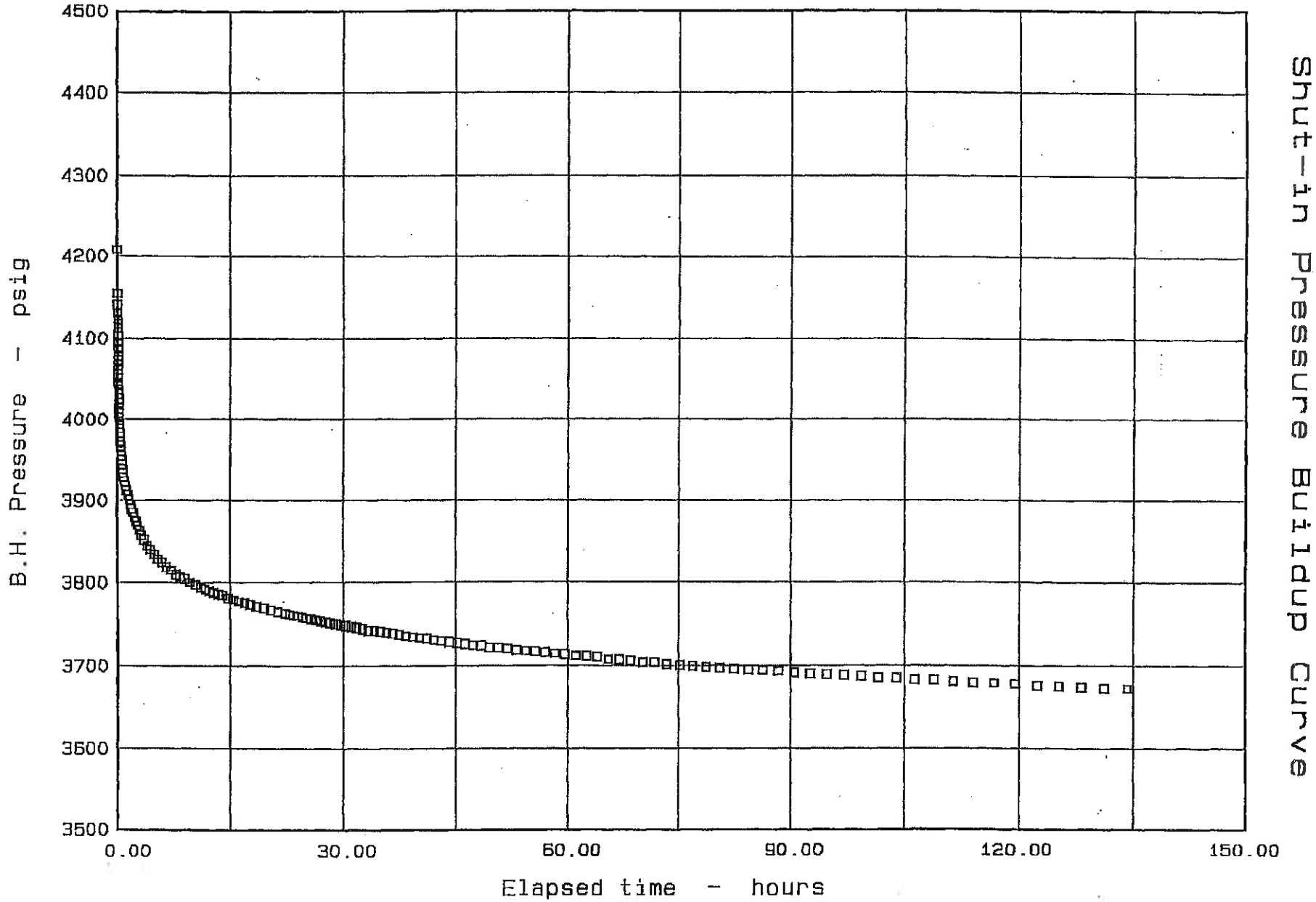
Data File : SUCK

Lightning Wireline, Inc.

Company : WATTENBERG DISPOSAL
Lease : SUCKLA
County : WELD

Well # : SUCKLA FARMS #1
Field : WATTENBERG
State : COLORAOD

Location : SECTION 10-T1N-RE
Test date : 10/26/01-11/01/01
File - SUCKLA2

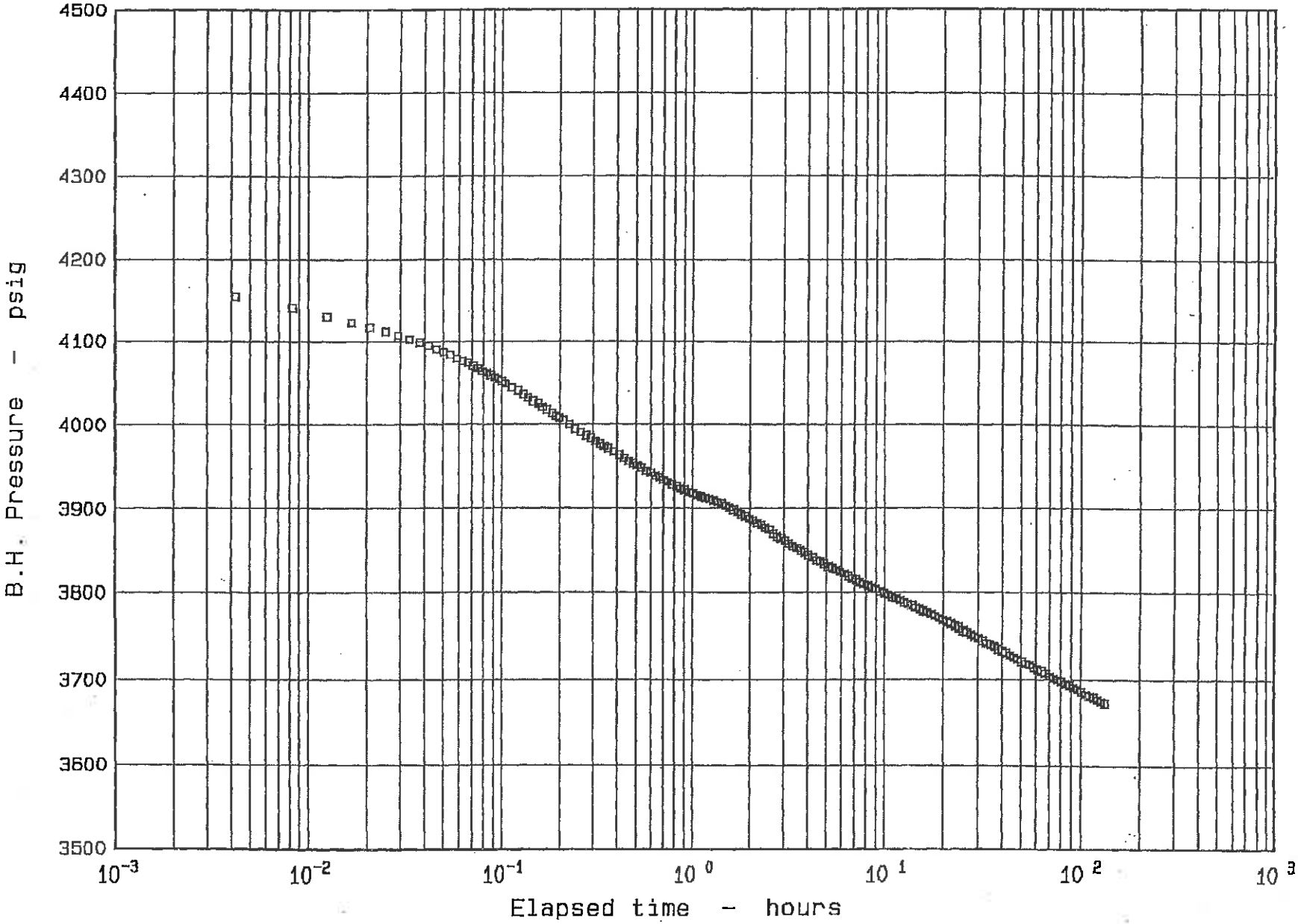


Lightning Wireline, Inc.

Company : WATTENBERG DISPOSAL
Lease : SUCKLA
County : WELD

Well # : SUCKLA FARMS #1
Field : WATTENBERG
State : COLORAOD

Location : SECTION 10-T1N-RE
Test date : 10/26/01-11/01/01
File - SUCKLA2



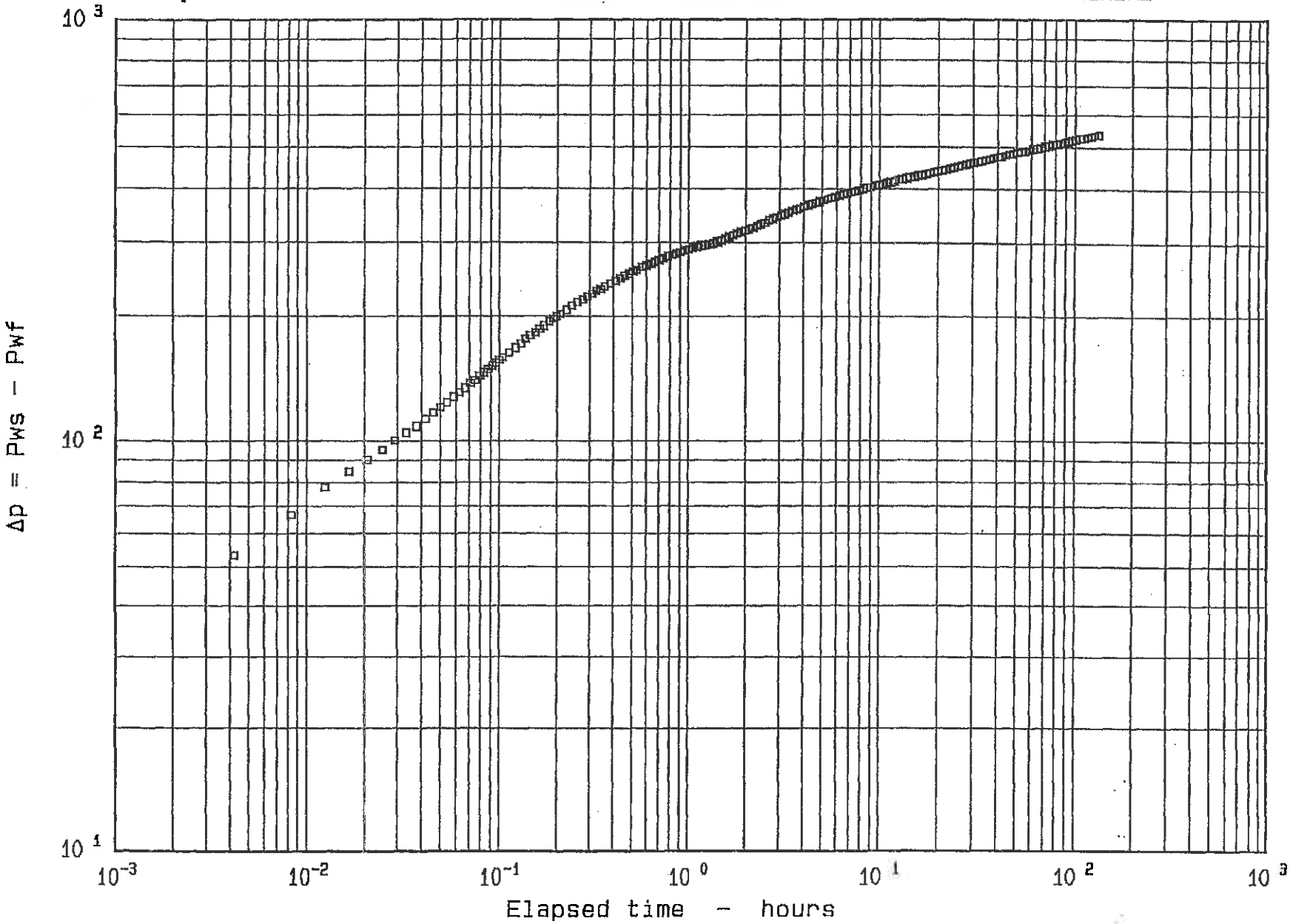
Shut-in Pressure Semi-Log Plot

Lightning Wireline, Inc.

Company : WATTENBERG DISPOSAL
Lease : SUCKLA
County : WELD

Well # : SUCKLA FARMS #1
Field : WATTENBERG
State : COLORAOD

Location : SECTION 10-T1N-RE
Test date : 10/26/01-11/01/01
File - SUCKLA2



Bottom Hole Pressure Build-up Test

Company : WATTENBERG DISPOSAL

Well Number : SUCKLA FARMS #1 Test date : 10/26/01-11/01/01

Data File : SUCKLA3.BHP

Remarks:

Delta Time (hours)	Pressure (psig)	Pressure (psia)	Delta Pressure (psia)
0.0000	4,207.29	4,207.29	
1.0042	3,917.56	3,917.56	289.73
2.0417	3,886.23	3,886.23	321.06
3.0583	3,860.73	3,860.73	346.56
4.0625	3,843.41	3,843.41	363.88
5.1375	3,830.44	3,830.44	376.85
6.1958	3,821.91	3,821.91	385.38
7.2958	3,813.51	3,813.51	393.78
8.3875	3,806.88	3,806.88	400.41
9.4375	3,801.07	3,801.07	406.22
10.6208	3,795.85	3,795.85	411.44
11.6625	3,792.01	3,792.01	415.28
12.8042	3,787.67	3,787.67	419.62
14.0542	3,783.98	3,783.98	423.31
15.0792	3,780.08	3,780.08	427.21
16.1792	3,777.04	3,777.04	430.25
17.3542	3,774.08	3,774.08	433.21
18.6042	3,770.96	3,770.96	436.33
19.9625	3,767.48	3,767.48	439.81

Cont....

Bottom Hole Pressure Build-up Test

Delta Time (hours)	Pressure (psig)	Pressure (psia)	Delta Pressure (psia)
21.4125	3,764.24	3,764.24	443.05
22.4292	3,761.96	3,761.96	445.33
23.5125	3,759.89	3,759.89	447.40
24.6292	3,757.64	3,757.64	449.65
25.8125	3,755.05	3,755.05	452.24
27.0458	3,752.78	3,752.78	454.51
28.3292	3,750.54	3,750.54	456.75
29.6792	3,748.87	3,748.87	458.42
31.0958	3,746.65	3,746.65	460.64
32.5792	3,743.88	3,743.88	463.41
34.1292	3,741.50	3,741.50	465.79
35.7458	3,739.50	3,739.50	467.79
37.4458	3,736.93	3,736.93	470.36
39.2292	3,734.56	3,734.56	472.73
41.0958	3,732.57	3,732.57	474.72
43.0458	3,730.21	3,730.21	477.08
44.0625	3,728.57	3,728.57	478.72
45.0958	3,727.13	3,727.13	480.16
46.1625	3,726.04	3,726.04	481.25
47.2458	3,724.59	3,724.59	482.70
48.3625	3,724.07	3,724.07	483.22
49.4958	3,721.88	3,721.88	485.41
50.6625	3,721.36	3,721.36	485.93
51.8458	3,720.48	3,720.48	486.81

Cont....

Bottom Hole Pressure Build-up Test

Delta Time (hours)	Pressure (psig)	Pressure (psia)	Delta Pressure (psia)
53.0625	3,718.85	3,718.85	488.44
54.3125	3,717.77	3,717.77	489.52
55.5792	3,717.26	3,717.26	490.03
56.8792	3,715.83	3,715.83	491.46
58.2125	3,714.56	3,714.56	492.73
59.5792	3,713.86	3,713.86	493.43
60.9792	3,712.25	3,712.25	495.04
62.4125	3,711.55	3,711.55	495.74
63.8792	3,710.32	3,710.32	496.97
65.3792	3,707.79	3,707.79	499.50
66.9125	3,707.28	3,707.28	500.01
68.4792	3,705.84	3,705.84	501.45
70.0792	3,704.21	3,704.21	503.08
71.7125	3,703.53	3,703.53	503.76
73.4125	3,702.10	3,702.10	505.19
75.1458	3,701.04	3,701.04	506.25
76.9125	3,699.43	3,699.43	507.86
78.7125	3,698.74	3,698.74	508.55
80.5792	3,697.69	3,697.69	509.60
82.4792	3,696.45	3,696.45	510.84
84.4125	3,695.40	3,695.40	511.89
86.3792	3,694.53	3,694.53	512.76
88.4125	3,693.47	3,693.47	513.82
90.4792	3,691.32	3,691.32	515.97

Cont....

Bottom Hole Pressure Build-up Test

Delta Time (hours)	Pressure (psig)	Pressure (psia)	Delta Pressure (psia)
92.6125	3,690.83	3,690.83	516.46
94.7792	3,689.40	3,689.40	517.89
97.0125	3,688.54	3,688.54	518.75
99.2792	3,687.12	3,687.12	520.17
101.6125	3,685.52	3,685.52	521.77
104.0125	3,684.66	3,684.66	522.63
106.4458	3,683.24	3,683.24	524.05
108.9458	3,682.59	3,682.59	524.70
111.5125	3,680.81	3,680.81	526.48
114.1125	3,679.55	3,679.55	527.74
116.8125	3,678.89	3,678.89	528.40
119.5458	3,677.84	3,677.84	529.45
122.3458	3,676.43	3,676.43	530.86
125.2125	3,675.20	3,675.20	532.09
128.1458	3,673.79	3,673.79	533.50
131.1458	3,672.56	3,672.56	534.73

Note:
Actual log & log pocket included in EPA permit packet.

ADI
Wireline Services
Ft. Morgan, CO

2-28-02

DIFFERENTIAL TEMPERATURE LOG COLLAR CORRELATION

Company WATTENBERG DISPOSAL, LLC
Well SUCKLA FARMS INJECTION WELL
Field SPINDLE
County WELD
State COLORADO

Company WATTENBERG DISPOSAL, LLC
Well SUCKLA FARMS INJECTION WELL
Field SPINDLE
County WELD
State COLORADO

Location
NW/4
500' FSL & 202' FWL
SEC. 10 TWP. 1 N RGE. 67 W

Other Services
NONE

Permanent Datum	GROUND LEVEL	Elevation	5046
Log Measured From	KELLY BUSHING		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B. 5056
D.F. 5055
G.L. 5046

Date	26-OCT-2001	01-NOV-2001	
Run Number	ONE	TWO	
Depth Driller	9448	9448	
Depth Logger	9420	9420	
Bottom Logged Interval	9420	9420	
Top Log Interval	8652	8665	
Open Hole Size	N/A	N/A	
Type Fluid	WATER	WATER	
Density / Viscosity	---	---	
Max. Recorded Temp.	207	247	
Estimated Cement Top	N/A	N/A	
Time Well Ready	ROA	ROA	
Time Logger on Bottom	---	---	
Equipment Number	201/MAST	201/MAST	
Location	FORT MORGAN	FORT MORGAN	
Recorded By	JIM McKIE	JIM McKIE	
Witnessed By	MR. ANDY PETERSON	MR. RICK OHLEMEIER	

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
				2 7/8	6.5#	SURFACE	8990

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	5 1/2	20#	SURFACE	9476
Liner				

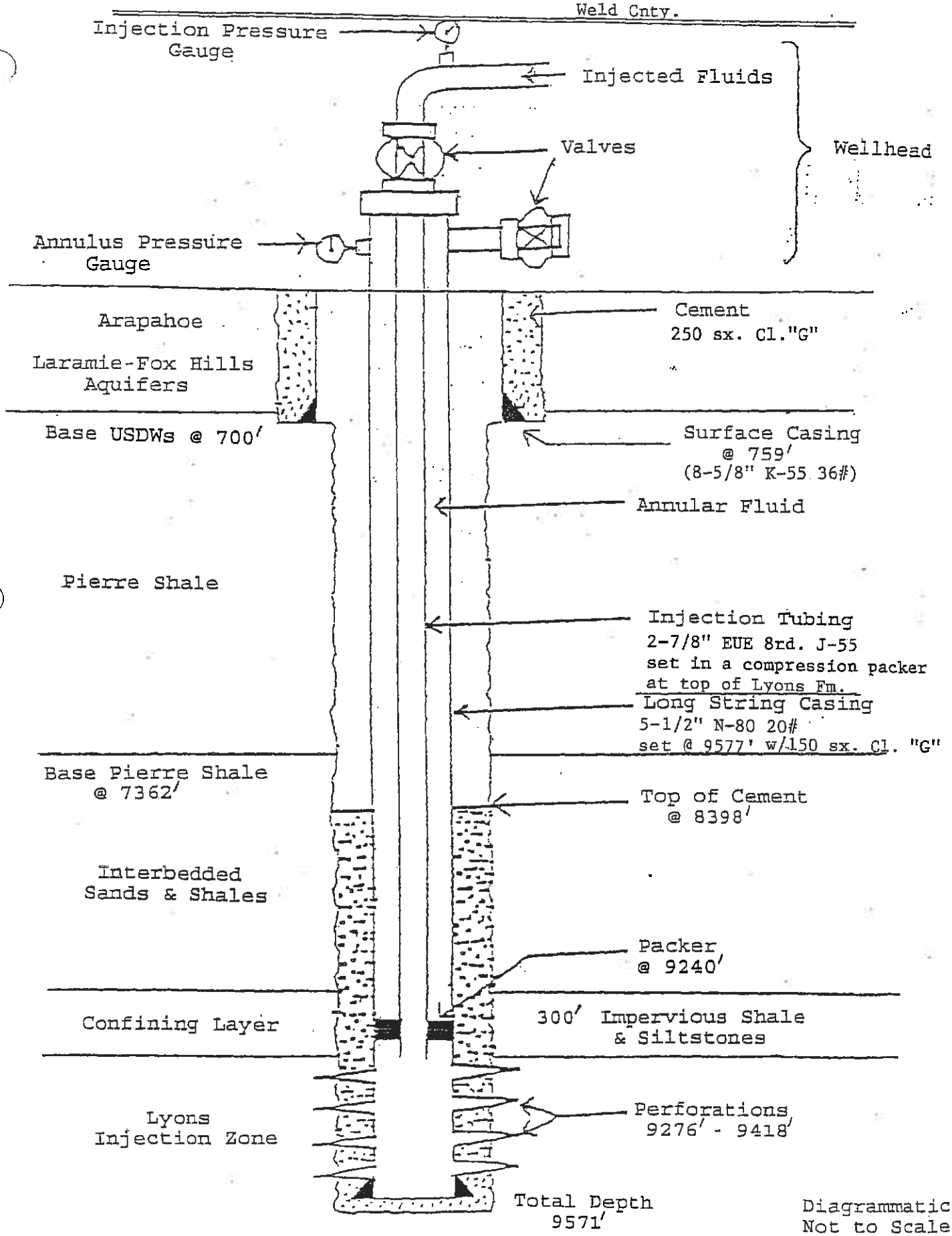
(in file else-where)

M

CONSTRUCTION DETAILS

WATTENBERG DISPOSAL, LLC

(SUCKLA FARMS No. 1) SE/NW Se.10-T1N-R67W
Weld Cnty.



Diagrammatic
Not to Scale

EXHIBIT V

OGCC FORM 5
R(10/86)

STATE OF COLORADO
OIL AND GAS CONSERVATION COMMISSION
DEPARTMENT OF NATURAL RESOURCES

File one copy for Patented Federal and Indian lands.
File in duplicate for State lands.

FOR OFFICE USE			
ET	FE	UC	SE

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. TYPE OF WELL
☐ OIL ☐ GAS ☐ DRY
☒ INJECTION ☐ OTHER

6. TYPE OF COMPLETION ☐ COMMINGLED
☒ NEW WELL ☐ DEEPEN ☐ PLUG BACK
☐ MULTI-COMPLETE ☐ OTHER

7. FEDERAL OR STATE LEASE NO.

8. IF INDIAN, ALLOTTEE OR TRIBE NAME

1. OPERATOR: WRIGHT'S DISPOSAL — PHONE: 303-426-8911
ADDRESS: 9270 QUITMAN, WESTMINSTER, CO. 80030

2. DRILLING CONTRACTOR: EXETER — PHONE: 303-861-0181

3. LOCATION OF WELL (Footages from section lines)
At surface: 500 FSL 2020 FWL
At top prod. interval reported below: SAME
At total depth: SAME
WAS DIRECTIONAL SURVEY RUN? NO ☒ YES ☐ IF YES, ATTACH COPY

4. ELEVATIONS
KB 5056.2
GR 5046.2

9. WELL NAME AND NUMBER: SUCKLA FARMS INJ WELL #

10. FIELD OR WILDCAT: SPINDLE

11. QTR. QTR. SEC. T. R. AND MERIDIAN: NW/4 10-1N-67W

12. PERMIT NO.	13. API NO.	14. SPUD DATE	15. DATE TD REACHED	16. DATE COMPL. ☐ D&A ☒ READY TO PROD	17. COUNTY	18. STATE
89-363	05 123 14291	6/16/89	7/01/89	7/12/89	WELD	CO.

19. TOTAL DEPTH	20. PLUG BACK TOTAL DEPTH	21. DEPTH BRIDGE PLUG SET
MD 9571 TVD 9571	MD 9476 TVD 9476	MD NA TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (SUBMIT COPY OF EACH): IES - Density, CAL, GR - Bond Cor.

23. WAS WELL CORED? NO ☒ YES ☐ (SUBMIT ANALYSIS)
WAS DST RUN? NO ☒ YES ☐ (SUBMIT REPORT)

24. CASING & LINER RECORD (Report all strings set in well)

SIZE	WEIGHT (LB/FT)	HOLE SIZE	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	NO. OF SKS. & TYPE OF CEMENT	SLURRY VOL. (BBL.)	TOP OF CEMENT
8 5/8	24#	12 1/4	GR	759	NA	200 "C"		Surface
5 1/2	20	7 7/8	GR	9557	NA	255 "G"		8406

25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER DEPTH (MD)	SIZE	DEPTH SET (MD)	PACKER DEPTH (MD)	SIZE	DEPTH SET (MD)	PACKER DEPTH (MD)
2 7/8	9254	9240	5 1/2					

26. PRODUCING INTERVALS

FORMATION	TOP	BOTTOM
A) LYONS	9139	9424
B)		
C)		
D)		

27. PERFORATION RECORD

PERFORATED INTERVAL	SIZE	NO. HOLES	PERF. STATUS
9276 - 9418	.50	194	OPEN

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
9276 - 9418	2500 gals 7 1/2% HCL containing 2,560,000 SCF N2
	& 240 Ball Sealers

29. PRODUCTION - INTERVAL A

DATE FIRST PRODUCED	TEST DATE	HOURS TESTED	TEST PRODUCTION →	OIL BBL	GAS MCF	WATER BBL	OIL GRAVITY CORR. API	GAS DISPOSITION	PRODUCTION METHOD
NA									

CHOKE SIZE	FLOW. TBG. PRESS.	CSG. PRESS.	24 HR. RATE →	OIL BBL	GAS MCF	WATER BBL	GAS: OIL RATIO	WELL STATUS

PRODUCTION - INTERVAL B

DATE FIRST PRODUCED	TEST DATE	HOURS TESTED	TEST PRODUCTION →	OIL BBL	GAS MCF	WATER BBL	OIL GRAVITY CORR. API	GAS DISPOSITION	PRODUCTION METHOD

CHOKE SIZE	FLOW. TBG. PRESS.	CSG. PRESS.	24 HR. RATE →	OIL BBL	GAS MCF	WATER BBL	GAS: OIL RATIO	WELL STATUS

COMPLETE AND SIGN BACK PAGE

Q

PLUGGING AND ABANDONMENT PLAN

&

FORM 7520 P&A PLAN

peterson energy
management, inc.

November 7, 2001

Mr. Kent Gilbert
V.P. Exploration & Production
Wattenberg Disposal, LLC
1675 Broadway, Suite 2800
Denver, CO 80202

RE: Suckla Farms Injection Well #1
EPA Class I Permit CO1516-02115

Dear Kent:

You have asked me to review the Plugging and Abandonment Plan included in the EPA permit for the subject well. I estimate this procedure could be accomplished in a total of three rig days, at a gross cost of $21,500. The salvage value of the recovered tubing and casing is estimated to be at least $25,000. Consequently, this well could be abandoned at a net $3,500 profit. As a result, in my opinion, a $30,000 plugging bond should be satisfactory. The salvage value of the injection facility equipment should likewise more than pay for decommissioning and restoration of the plant site.

We appreciate the opportunity to be of service. Please contact us if we may answer any questions.

Sincerely,

Andrew S. Peterson, PE
President

petroleum engineering

1805 Morning Drive, Loveland, CO 80538 (970) 669-7411 Fax (970) 669-4077

Plugging and Abandonment Plan

Plug #1 - Within the 5-1/2 inch casing, set a 60-sack Class "G" cement plug from 9,220 feet to 9,476 feet, the plug back depth of the well.

Plug #2 - Within the 7-7/8 inch borehole, set a 50-sack Class "G" cement plug from 7,220 feet (or a minimum of 50 feet above the 5-1/2 inch casing stub), to a depth of 7,400 feet (or a minimum of 50 feet below the casing stub).

Plug #3 - Within the 8-5/8 inch surface casing and the 7-7/8 inch borehole, set a 30-sack Class "G" cement plug from 709 feet (50 feet above the surface casing shoe) to 820 feet, or to a minimum of 50 feet below the surface casing shoe.

Plug #4 - Within the 8-5/8 inch surface casing, set a 20-sack Class "G" cement plug from the surface to a minimum depth of 50 feet.

R

NECESSARY RESOURCES

NOTE: A LETTER of CREDIT is not required when a BOND has been posted. (Copy enclosed)

IMA

600 IMA Plaza, 250 North Water
P.O. Box 2992, Wichita, KS 67201-2992
[316] 267-9221, FAX [316] 266-6254
AFFILIATIONS: Assurex, Intersure

COPY

DECEMBER 1, 2000

ATTENTION OBLIGEE: EPA REGION VIII
999 18th STREET, SUITE 500
DENVER, CO 80202-2405

PRINCIPAL ON BOND: WATTENBERG DISPOSAL LLC

THIS BOND # 04127324 WRITTEN THROUGH FIDELITY AND DEPOSIT COMPANY OF MARYLAND IS BEING FILED TO REPLACE THE CURRENT BOND YOU HAVE ON FILE, BOND # 141797488 WRITTEN THROUGH AMERICAN CASUALTY COMPANY OF READING PENNSYLVANIA. UPON RECEIPT OF THIS REPLACEMENT BOND, PLEASE SEND WRITTEN NOTICE OF RELEASE ON BOND # 141797488 DIRECTLY TO CNA'S ADDRESS: SUSIE GILLAM, CNA COMPANY, LIGHTON PLAZA,7400 COLLEGE BLVD., SUITE 225, OVERLAND PARK, KS 66210

AS BOND BROKER, I WOULD APPRECIATE RECEIVING A COPY OF THE RELEASE LETTER AS WELL AS ACCEPTANCE OF REPLACEMENT BOND. IF YOU FIND A PROBLEM WITH THIS REPLACEMENT BOND CONTACT ME DIRECT AT 316-266-6310. THANK YOU FOR YOUR PROMPT ATTENTION TO THIS MATTER.

SANDRA J. SHRYACK
SR. BOND UNDERWRITER
IMA, INC.
P.O. BOX 2992
WICHITA, KS 67201-2992

Sample Use
Comparable Language Accepted

SURETY PERFORMANCE BOND (PERPETUAL)

U.S. ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL
FINANCIAL RESPONSIBILITY REQUIREMENT

TO: Regional Administrator
ATTN: Underground Injection Control 8ENF-T

Financial Responsibility
U.S. EPA Region VIII
999 18th Street, Suite 500
Denver, Colorado 80202-2466

BOND COVERS THE PLUGGING OF INJECTION WELLS

Date bond executed: December 1, 2000

Effective Date: January 27, 2001

Principal: Wattenberg Disposal LLC
(Legal name of owner or operator)

1675 Broadway, S-2800, World Trade Center, Denver, CO 80202
(Business address of owner or operator)

Type of organization: Corporation
(Individual, joint venture, partnership, or corporation)

State of incorporation: _____

Surety(ies): Fidelity and Deposit Company of Maryland
(Name)
P.O. Box 1227, Baltimore, MD 21203
(Business Address)

EPA Identification number, name, address, and plugging and abandonment amount(s) for each injection well guaranteed by this bond. (Indicate plugging and abandonment amounts for each well. Attach separate list if necessary.)

Injection Well Information	Plug & Abandon Amount
Well - Suckla Farms #1	$30,000
SE¼ NW¼ Sec 10 TN 1N R 67W, Weld County, CO	

Total penal sum of bond: $30,000.00

Surety's bond number: 04127324

this bond guarantees performances of plugging and abandonment, the Surety(ies) shall either perform plugging and abandonment with the plugging and abandonment plan and other permit conditions or provisions for operating under rule and other requirements or place the amount for plugging and abandonment into a standby trust fund as directed by the EPA Regional Administrator.

Upon notification by an EPA Regional Administrator that the Principal has failed to provide alternate financial assurance as specified in Subpart F of 40 CFR 144, and obtain written approval of such assurance from the EPA Regional Administrator(s) during the 90 days following receipt by both the Principal and the EPA Regional Administrator(s) of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the injection well(s) into the standby trust fund as directed by the EPA Regional Administrator.

The Surety(ies) hereby waive(s) notification of amendments to plugging and abandonment plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice by certified mail to the owner or operator and to the EPA Regional Administrator(s) for the Region(s) in which the injection well(s) is (are) located, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA Regional Administrator(s), as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the EPA Regional Administrator(s) of the EPA Region(s) in which the bonded injection well(s) is (are) located.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new plugging and abandonment amount, provided that the penal sum does not increase by more than 20% in any one year, and no decrease in the penal sum takes place without the written permission of the EPA Regional Administrator(s).

RIDER

Surety Bond No. 04127324

It is hereby agreed by and between the undersigned principal(s) and surety, in consideration for the additional premium or consideration paid for this rider, if any, and the consent by the United States Environmental Protection Agency, to terminate the period of liability on Bond No(s). 141797488 as the principal(s) and American Casualty Company of Reading Pennsylvania as surety, the undersigned principal(s) and surety hereby assume any and all liabilities that may be outstanding on Bond No(s). 141797488 including, but not limited to, the obligation properly to plug and abandon all wells existing on leases to which Bond No(s). 141797488 applies and any unpaid rentals or royalties heretofore accruing: provided, however, that this rider shall not act to increase the potential or cumulative liability of the surety above the face amount of the bond to which this rider attaches.

Effective the 1st day of December, 20 00.

Executed this 1st day of December, 20 00.

Witnesses:

Wattenberg Disposal LLC
Principal

1675 Broadway, S-2800, Denver, CO 80202

1675 Broadway, S-2800, Denver, CO 80202
Address

Title

Fidelity and Deposit Company of Maryland
Surety

P. O. Box 2992, Wichita, KS 67201-2992

P. O. Box 2992, Wichita, KS 67201-2992
Address

Sandra J. Shryack, Attorney-in-Fact

NOTE: A power of attorney document for the surety's representative must accompany this rider.

Power of Attorney

FIDELITY AND DEPOSIT COMPANY OF MARYLAND

HOME OFFICE: P.O. BOX 1227, BALTIMORE, MD 21203-1227

Know ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, a corporation of the State of Maryland, by F. L. BORLEIS, Vice-President, and T. C. JOHNSON, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Company, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, does hereby nominate, constitute and appoint **W. C. Cohen, Jr., Joseph C. Lukens, II, Scott T. Post, Richard K. Stone, Bret S. Burton, Jana M. Forrest, Patricia Brogan, Sandra J. Shryack and Erica M. Plummer, all of Wichita, Kansas, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Company as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney revokes that issued on behalf of W. C. Cohen, Jr., Joseph C. Lukens, II, Scott T. Post, Richard K. Stone, Bret S. Burton, Jana M. Forrest, Patricia Brogan, and Sandra J. Shryack, dated September 3, 1999.

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Company, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seal of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 27th day of June, A.D. 2000.

ATTEST: **FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

SEAL

T. C. Johnson

T. C. Johnson *Assistant Secretary*

By: Fred L Borleis Jr

F. L. Borleis *Vice-President*

State of Maryland }
County Of Harford } ss:

On this 27th day of June, A.D. 2000, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came F. L. BORLEIS, Vice-President and T. C. JOHNSON, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself deposeth and saith, that they are the said officers of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and that the said Corporate Seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

PATRICIA A. TROMBETTI NOTARY PUBLIC HARFORD COUNTY MD

Patricia A. Trombetti

Patricia A. Trombetti *Notary Public*

My Commission Expires: October 9, 2002

L1428-076-6692

Form Approved. OMB No. 2040-0042.

EPA

COPY

United States Environmental Protection Agency

Underground Injection Control Permit Application

(Collected under the authority of the Safe Drinking Water Act. Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number		T/A	C
U			

Read Attached Instructions Before Starting

For Official Use Only

Application approved mo	day	year	Date received mo	day	year	Permit Number	Well ID	FINDS Number
						C01516-02115	Suckla Farms #1	

II. Owner Name and Address

Owner Name: Wattenberg Disposal, LLC

Street Address: 1675 Broadway, Suite 2800 — Phone Number: 303-825-4822

City: Denver — State: CO — ZIP CODE: 80202

III. Operator Name and Address

Operator Name: Kauffman Well Service, Inc.

Street Address: 1675 Broadway, Suite 2800 — Phone Number: 303-825-4822

City: Denver — State: CO — ZIP CODE: 80202

IV. Commercial Facility

[X] Yes
[ ] No

V. Ownership

[X] Private
[ ] Federal
[ ] Other

VI. Legal Contact

[X] Owner
[X] Operator

VII. SIC Codes

4953

VIII. Well Status *(Mark 'x')*

[X] A. Operating — Date Started: mo 7, day 21, year '92

[ ] B. Modification/Conversion

[ ] C. Proposed

OPERATING... EXISTING INJECTION WELL

IX. Type of Permit Requested *(Mark 'x' and specify if required)*

[X] A. Individual [ ] B. Area

Number of Existing Wells	Number of Proposed Wells	Name(s) of field(s) or project(s)
1 (one)	0 (none)	Field: Wattenberg

X. Class and Type of Well *(see reverse)*

A. Classes(es) (enter codes(s)	B. Type(s) (enter codes(s)	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
Class 1 Class 2	"I" "D"	- N/A -	1 (one)

XI. Location of Well(s) or Approximate Center of Field or Project

Latitude Deg	Min	Sec	Longitude Deg	Min	Sec	Township and Range Sec	Twp	Range	1/4 Sec	Feet From	Line	Feet From	Line
S00°	06'	27"	S89°	53'	26"	10	1 N	67W	NW	500'	S	2020'	W

XII. Indian Lands *(Mark 'x')*

[ ] Yes
[X] No

XIII. Attachments

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)
For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.

XIV. Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Title *(Type or Print)*	B. Phone No. *(Area Code and No.)*
Kevin P. Kauffman, President & CEO - Kauffman Well Service, Inc.	(303) 825-4822
C. Signature: as CEO	D. Date Signed: 3/23/02

EPA Form 7520-6 (Rev. 8-91)

COPY

Form Approved. OMB No. 2040-0042.

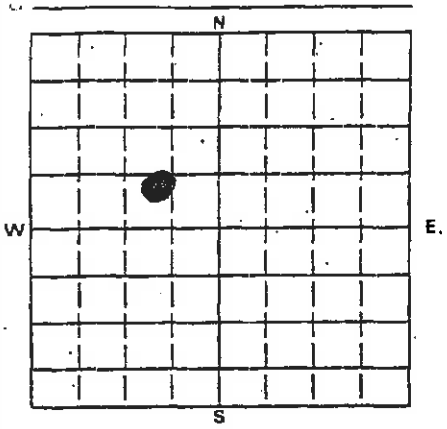
EPA UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

NAME AND ADDRESS OF EXISTING PERMITTEE
Wattenberg Disposal, LLC
0137 WCR 19 (Weld Cnty.)
. Lupton, CO 80621

NAME AND ADDRESS OF SURFACE OWNER
Kauffman Well Service, Inc.
1675 Broadway, Suite 2800 (Denver Cnty.)
Denver, CO 80202

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT — 640 ACRES



STATE	COUNTY	PERMIT NUMBER
CO	Denver	CO1516-02115

SURFACE LOCATION DESCRIPTION
SW 1/4 of NW 1/4 of ___ 1/4 of ___ 1/4 of Section 10 Township 1N Range 67W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location 500 ft. from (N/S) S Line of quarter section

2020 ft. from (E/W) W Line of quarter section

WELL ACTIVITY
- ■ Brine Disposal
- ☐ Enhanced Recovery
- ☐ Hydrocarbon Storage

TYPE OF PERMIT
- ■ Individual
- ☐ Area

Number of Wells 1

Lease Name Suckla Farms Well Number Inject. Well #1

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING — CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
01	2001	578	650	12,749	0		
02	'01	472	750	6,184	0		
03	'01	372	750	4,904	0		
04	'01	389	400	3,531	0		
05	'01	359	400	7,611	0		
06	'01	376	400	10,011	0		
07	'01	397	400	8,397	0		
08	'01	357	400	12,110	0		
09	'01	400	400	8,800	0		
10	'01	400	400	7,688	0		
11	'01	401	425	8,525	0		
12	'01	400	400	5,729	0		

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AND OFFICIAL TITLE *(Please type or print)*	SIGNATURE	DATE SIGNED
Kent L. Gilbert Environmental Mgr.		7/23/02

EPA Form 7520-11

P 191 649 952

MAIL

DENVER CO MAR -4'02

PB METER 508643c

7.55

U.S. POSTAGE

P 191 649 952

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to KEN PHILLIPS EPA REGION VIII: ENF-T	
Street & Number SUITE 300-999 18TH. ST.	
Post Office, State, & ZIP Code DENVER CO 80202	
Postage	$3.95
Certified Fee	2.10
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.50
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$ 7.55
Postmark or Date	

PS Form 3800, April 1995

WATTENBERG DISPOSAL: PERMIT

side

SENDER: WATTENBERG: PERMIT

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
KEN PHILLIPS
EPA REGION VIII: ENF-T
SUITE 300
999 18TH. ST.
DENVER, CO 80202

4a. Article Number
P-191-649-952

4b. Service Type
☐ Registered ■ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

5. Received By: *(Print Name)* Scott J. Candler

6. Signature: *(Addressee or Agent)* X Scott J. Candler

7. Date of Delivery MAR - 7 2002

8. Addressee's Address *(Only if requested and fee is paid)*

PS Form 3811, December 1994 102595-97-B-0179 Domestic Return Receipt

...ing Return Receipt Service.

K.P. KAUFFMAN COMPANY, INC.
1675 BROADWAY, SUITE 2800
DENVER, CO 80202-4628

Al Craver
EPA Region VIII (Mail Code ENF-T)
Suite 300
999 18th. St.
Denver, CO. 80202

FIRST CLASS MAIL