UIC- I - ___005___

ANNUAL REPORTS

2010

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, April 28, 2011 2:28 PM
To: VonGonten, Glenn, EMNRD
Cc: Sanchez, Daniel J., EMNRD; Perrin, Charlie, EMNRD
Subject: Key Energy Services, LLC, Farmington SUNCO Disposal Well No. 1 UIC Class I (NH) Commercial Disposal Well (UIC-005) OCD Annual Report (March 23, 2011) Review

I have completed a review of the submitted Annual Report (see comments and/or recommendations in red text). It important to note that the operator issued a letter dated April 15, 2011 indicating that the facility was shutting down on April 15, 2011.

Because of the above, please find the closure requirements from the discharge permit provided below in case OCD needs to move forward with the WQCC OCD discharge permit conditions at this time?

11. Below-Grade Tanks/Sumps and Pits/Ponds.

B. All pits and ponds, including modifications and retrofits, shall be designed by a certified registered professional engineer and approved by the OCD prior to installation. In general, all pits or ponds shall have approved hydrologic and geologic reports, location, foundation, liners, and secondary containment with leak detection, monitoring and **closure plans**. All pits or ponds shall be designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health, safety and the environment for the foreseeable future. Key Energy Services, LLC. shall retrofit all existing systems without secondary containment and leak detection before discharge permit renewal.

20. Additional Site Specific Conditions:

B. The operator shall complete the following "Required Corrective Action" on the following two wells by February 15, 2008, and submit written verification of completion to the Environmental Bureau in the Santa Fe office of the Division. If this required work and written verification is not completed by said date, the owner/operator shall immediately shut-in this injection well, submit to the Aztec district office of the Division a sundry notice of intent to plug and abandon with a proposed procedure and submit to the Environmental Bureau a valid **closure plan**.

25. Closure: The Key Energy Services, LLC. shall notify the OCD when operations of the facility are to be discontinued for a period in excess of six months. Prior to closure of the facility, the operator shall submit for OCD approval, a closure plan including a completed C-103 form for plugging and abandonment of the well(s). Closure and waste disposal shall be in accordance with the statutes, rules and regulations in effect at the time of closure.

There appears to be some deficiencies identified below for transmittal to the operator to address within 30 days if the present situation with facility shut-down permits.

Annual Report General Review Comments:

- Appendix" A": There appears to be incomplete "Generator Non-hazardous Waste Profile sheets" and unsigned by receiving OCD permitted facility records, which should be corrected for the next Annual Report.

Annual Report Requirements

Section 22G:

The owner/operator shall submit Annual Reports of its disposal, operation and well workovers provided herein. The minimum, maximum, average flow waste injection volumes (including total volumes) and annual pressures of waste (oil field exempt, non-exempt, non-hazardous waste) injected will be recorded monthly and submitted to OCD Santa Fe Office on an annual basis in the Annual Report.

- See number 3 below.

The casing-tubing annulus shall contain fluid and be equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The SUNCO DISPOSAL WELL #1 shall be equipped with an expansion tank connected to the casing annulus and maintained at a constant pressure of 100 psig. The

expansion tank shall initially be filled half-full (250 gallon expansion tank) with an approved fluid to establish an equilibrium volume and fluid level. Weekly monitoring of fluid levels in the expansion tank coupled with documented additions/removals of fluids in or out of the expansion tank is required to maintain the equilibrium volume. Any loss or gain of fluids level in the expansion tank shall be recorded and reported to the OCD within 24 hours of discovery. The owner/operator shall provide the following information on an annual basis: weekly expansion tank volume readings with date and time shall be provided in a table in each Annual Report. Key shall monitor, record and note dates of any fluid volume additions or removals to maintain the established equilibrium level from the expansion tank on a weekly basis and report these weekly readings annually in the Annual Report. In addition, any well activity (i.e. plugging, changing injection intervals, etc.) shall be conducted in accordance with all applicable New Mexico Oil Conservation Division regulations.

- Appendix "M" contains preliminary design for well expansion tank, but need to verity that it has been installed or scheduled for installation, and that monitoring is in progress per NOV Compliance inspection in 2010.

- Appendix "E" shows tubing pressure with casing pressure zeroed out due to lack of expansion tank annular pressure monitoring device. Information not really useful, since Appendix "C" contains pressure information from tubing too. Present system does not allow for acceptable detection of MIT failure until MIT is performed.

Section 22 H. Analysis of Injected Waste: Provide an analytical data or test results summary of the injection waste water with each Annual Report. The analytical testing shall be conducted on a quarterly basis with any exceedence reported to the OCD within 24 hours after having knowledge of an exceedence(s).

- See number 4 below.

The language of this Section is as follows:

Provide an quarterly analytical laboratory data or test results with associated data summary reports of the injection injected RCRA (non-hazardous) wastewater with each Annual Report. The analytical testing shall be conducted on a quarterly basis with any exceedence of the RCRA Characteristically Hazardous Criteria listed below reported to the OCD within 24 hours after having knowledge of an any such exceedence(s). All testing shall be in accordance with the current discharge permit and with compliance criterion for hazardous waste concentrations. For example, any exceedence of the RCRA Criterion listed below must be immediately resampled for verification of the exceedence(s), and if confirmed, the well shall be immediately shut-in until the injected fluids are confirmed to be RCRA non-hazardous with weekly sampling for one month to verify compliance with the discharge permit.

RCRA Characteristically Hazardous Waste Criterion or Parameters:

- Ignitability: Characteristic of Ignitability as defined by 40 CFR, Subpart C, sec. 261.21 (i.e., Sample Ignition upon direct contact with flame or flash point < 60C or 140F);
- Corrosivity::Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22 (i.e., pH less than or equal to 2. or pH greater than or equal to 12.5); and
- Reactivity: Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e., Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference: 40 CFR part 261 Subpart C sections 261.21 – 261.23, July 1, 1992.

22 L. Annual Report: All operators shall submit an annual report due on March 31st of each year. The report shall include the following information:

1. Cover sheet marked as "Annual Class I Well Report, name of operator, permit #, API# of well(s), date of report, and person submitting report.

- Satisfied.

2. Brief summary of Class I Well(s) operations including description and reason for any remedial or major work on the well with a copy of OCD Form C-103.

- Need confirmation from last NOV compliance inspection that liners with berm containment areas have been properly emplaced underneath and surrounding tanks. The AR indicates that while the tanks are bermed, "there is no secondary containment at this time."

3. Production volumes as required above in 22.G including a running total should be carried over to each year. The maximum and average injection pressure.

- Appendix "H" shows exceedences to the MSIP of 2400 psig in March, April, August, and November of 2010. The OCD was not notified as required under the permit, which could be a possible NOV violation.

- Appendix C production meter figures for the year appear to have arithmetical errors that need to be double-checked, corrected and resubmitted to the OCD for our records. In addition, hand written values must be replaced with an electronic well flow meter totalizer for accurate and certifiable production information.

- OCD notices that the MSIP of 2400 psig during well formation injection was consistently being approached in December of 2010 with the pump auto shut-down device apparently activating.

- Appendix "D" production figures should be produced with automated meter devices. In addition, hand written values must be replaced with an electronic well flow meter totalizer for accurate and certifiable production information. Also, Appendix B cumulative production figures do not appear to coincide with Appendix D figures.

4. A copy of the chemical analysis as required above in 22.H.

- Appendix "I" appears to be shy all of the required analytical monitoring parameters under the discharge permit outside of the third quarter when the OCD allowed the operator a temporary reprieve based on a laboratory issue and request for reduced analytical suite by the operator. However, this was only temporary for the 3rd quarter and may be a non-issue due to facility closure.

5. A copy of any mechanical integrity test chart, including the type of test, i.e. duration, gauge pressure, etc.

Brief explanation describing deviations from normal production methods.

A copy of any expansion tank monitoring pressure, fluid removals/additions, well problems, drinking water impacts, leaks and spills reports.

- Appendix "M" contains preliminary design for well expansion tank, but need to verity that it has been installed or scheduled for installation, and that monitoring is in progress per NOV Compliance Inspection in 2010.

If applicable, results of any groundwater monitoring.

An Area of Review (AOR) update summary.

- *Could reference AOR in 2010 FOT unless new information is known up to the submittal of the Annual Report. Also, OCD requested more information on 8/20/2010 associated with the 2010 FOT Review that the operator has not addressed for the FOT nor the Annual Report (see No. 11 below).*

Sign-off requirements pursuant to WQCC Subsection G 20.6.2.5101.

A summary with interpretation of MITs, Fall-Off Tests, etc., with conclusion(s) and recommendation(s).

- ***Note: The Operator did not responds to OCD information request from 2010 FOT review (see OCD FOT message below from Carl Chavez to Dan Gibson dated 8/20/2010) and modeling results that should have been received or included in this section of the Annual Report, but was not.***

- *There were no recommendations provided in the report.*

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
To: Gibson, Dan
Cc: Altomare, Mikal, EMNRD <Mikal.Altomare@state.nm.us>
Sent: Fri Aug 20 15:50:49 2010
Subject: Key Energy Services, LLC, Fall-Off Test 2010 (UICI-005) Request for Annual Fall-Off Test Additional Information (API# 30-045-28653)

Dan:

Good afternoon. The OCD is currently reviewing the annual Fall-Off Test (FOT) for 2010 and request the following additional information:

1) The real-time injection flow rate information recorded along with bottom hole pressure and termperature data during the 24 hr. period leading up to FOT monitoring is requested. This information will assist with the software application and verification that a steady-state injection condition was achieved before FOT monitoring started. Also, the OCD requires this information for its software evaluation of the FOT.

2) Please double check the 1-mile Area of Review (AOR) and verify or confirm that no new wells have been drilled, since the last referenced 2007 AOR. AORs are required to be conducted annually is the discharge permit (annual report); however, the AOR requirement in the annual FOT may help satisfy this requirement. If any new wells were drilled since 2007, an updated AOR Map with well boring and construction diagrams depicting cement locations are required to help assess cement conditions in the injection zone(s).

3) Key needs to evaluate well logs for geological information from wells within the project area to determine the extent and configuration of the injection zone.

4) An updated summary pressure and flow rate data chart or data table is required for the disposal well to help assess flow rates at given pressures. The last one received was from Jan. 2002 until 2008.

Please submit this information by COB on Friday, September 17, 2010. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

From: Fesmire, Mark, EMNRD [mailto:mark.fesmire@state.nm.us]
Sent: Friday, November 05, 2010 4:52 PM
To: Terry Duffey
Cc: Molleur, Loren; wayne price; :; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Chavez, Carl J, EMNRD; Jones, William V., EMNRD
Subject: RE: Key Energy - Sunco SWD

Mr. Duffy:

Thank you very much for your recent e-mail concerning the step rate tests. I probably would have been able to respond earlier if the documents that were described as attached would have been. I do understand that this data you sent was meant to help resolve questions that have arisen during the regulatory review, however it does illustrate a point. When a regulatory condition requires the inclusion of data that may otherwise be available in the regulators files, there is always the danger that the regulator will not be able to find the documents, that the documents that they do use for the analysis are the right ones, that the time necessary to locate those documents delays action on the part of the regulator, that a party who reviews the file will not have all the data necessary to make a decision or that the data is the most recent and up to date available. These are the reasons that we request that applications and reports be complete, even though it may appear redundant to those who must prepare the regulatory package.

After a review of the OCD files, I was able to find some of the information that you deemed important, but did not find the Comparison or the SRT for the McGrath well. In this case, the question was raised whether this SRT was run on the subject well.
I have been able to glean the fact that the July 2007 SRT was probably performed on this well, and in spite of the fact that the results seem unusual, they may indicate the true fracture pressure of that well under the conditions that existed in the well when the test was taken in 2007. I still don't know if any of the important conditions have changed, such as the tubing size and the condition of the well equipment.

But I would submit to you that your cursory analysis of the annual fall off tests is not sufficient to satisfy the requirements of the UIC program and would ask that you work thru Mr. Gibson or Mr. Price to provide the data necessary for OCD to draw its own conclusion.

Hopefully, we can work with the Key personnel to resolve this issue quickly.

Mark E. Fesmire, PE

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The OCD 2010 Fall-Off Test review by Carl Chavez and request for more information based on the PTA and modeling conclusion is as follows:

Dan:

Good afternoon. Please see OCD responses in red text from OCD UIC Fall-Off Test Guidance below to your inquiries.

2) Please double check the 1-mile Area of Review (AOR) and verify or confirm that no new wells have been drilled, since the last referenced 2007 AOR. AORs are required to be conducted annually is the discharge permit (annual report); however, the AOR requirement in the annual FOT may help satisfy this requirement. If any new wells were drilled since 2007, an updated AOR Map with well boring and construction diagrams depicting cement locations are required to help assess cement conditions in the injection zone(s). [Provide the most recent provided AOR information with the clarification that "No new wells have been drilled within the 1-mile AOR" to address this request if this is the case. Key may also provide a reference to the AOR with the clarification statement to ensure that the AOR is accurate.]

Section VI. Background Information
9. One mile Area of Review (AOR)
a. Identification of wells located within the one mile AOR
b. Ascertaining the status of wells within the one mile AOR
c. Providing details on any offset producers and injectors completed in the same injection interval

3) Key needs to evaluate well logs for geological information from wells within the project area to determine the extent and configuration of the injection zone. [Clarification is that this is a provision of the approved Fall-Off Test Plan, which OCD feel is warranted based on the model provided and need for further verification that the geology supports the model. See Section VI of the test plan also provided below. Key may wish to provide an isopach map of the injection zone with map and at least 2 cross-sections with logs that may help confirm the geology.]

Section VI. Background Information
10. Geology
a. Description of the geologic environment of the injection interval
b. Discussion on the presence of pinchouts, channels, and faults, if applicable
c. Providing a portion of a relevant structure map, if necessary
Key has identified the injection zone to be modeled as a "Homogeneous Reservoir with Finite Conductivity Fracture and 2 Parallel Boundaries." However, with the wells that exist in the region, Key should seek to address Section 10 above (perhaps an isopach map (with estimated boundaries locations- with local well log documentation may help).]

Section IX. Report Components specifies further that the above are required in the Fall-Off Test Report.

10. One mile Area of Review (AOR)
a. Identify wells located within the one mile AOR
b. Ascertain the status of wells within the one-mile AOR
c. Provide details on any offset producers and injectors completed in the same injection interval

11. Geology
a. Describe geologic environment of the injection interval
b. Discuss the presence of geologic features, i.e., pinchouts, channels, and faults, if applicable
c. Provide a portion of a relevant structure map, if necessary

I hope this addresses your questions. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
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Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")
From: Gibson, Dan [mailto:dgibson@keyenergy.com]
Sent: Wednesday, August 25, 2010 3:39 PM
To: Chavez, Carl J, EMNRD
Cc: Altomare, Mikal, EMNRD; Molleur, Loren
Subject: RE: Key Energy Services, LLC, Fall-Off Test 2010 (UICI-005) Request for Annual Fall-Off Test Additional Information (API# 30-045-28653)

Carl –

We will be able to provide the information requested in items #1 and #4 by the requested date.

For Item #2, Key very recently completed the AOR for this well as part of the annual report submitted to OCD. It is extremely unlikely any new wells have been drilled since this was prepared. It has been a number of years since any new wells were identified in the AOR updates.

We request clarification as to why Item #3 is necessary. We are not refusing your request, we just want to understand why it is necessary before we expend what will likely be considerable time, effort, and expense.

Thanks.

Daniel K. Gibson, P.G. | Key Energy Services, Inc. | Corporate Environmental Director
6 Desta Drive, Suite 4400, Midland, TX 79705| **o:** 432.571.7536 | **c:** 432.638-6134 | **e: dgibson@keyenergy.com**

From: Gibson, Dan
Sent: Friday, August 20, 2010 10:30 PM
To: 'CarlJ.Chavez@state.nm.us'
Cc: 'Mikal.Altomare@state.nm.us'
Subject: Re: Key Energy Services, LLC, Fall-Off Test 2010 (UICI-005) Request for Annual Fall-Off Test Additional Information (API# 30-045-28653)

Carl- I received your info email and am working to address your requests. I'm out of the office until Wednesday, but I have passed on you requests and should have a response time frame by early Tuesday at the latest.

Thanks.

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
To: Gibson, Dan
Cc: Altomare, Mikal, EMNRD <Mikal.Altomare@state.nm.us>
Sent: Fri Aug 20 15:50:49 2010
Subject: Key Energy Services, LLC, Fall-Off Test 2010 (UICI-005) Request for Annual Fall-Off Test Additional Information (API# 30-045-28653)
Dan:

Good afternoon. The OCD is currently reviewing the annual Fall-Off Test (FOT) for 2010 and request the following additional information:

2) The real-time injection flow rate information recorded along with bottom hole pressure and termperature data during the 24 hr. period leading up to FOT monitoring is requested. This information will assist with the software application and

verification that a steady-state injection condition was achieved before FOT monitoring started. Also, the OCD requires this information for its software evaluation of the FOT.

3) Please double check the 1-mile Area of Review (AOR) and verify or confirm that no new wells have been drilled, since the last referenced 2007 AOR. AORs are required to be conducted annually is the discharge permit (annual report); however, the AOR requirement in the annual FOT may help satisfy this requirement. If any new wells were drilled since 2007, an updated AOR Map with well boring and construction diagrams depicting cement locations are required to help assess cement conditions in the injection zone(s).

4) Key needs to evaluate well logs for geological information from wells within the project area to determine the extent and configuration of the injection zone.

5) An updated summary pressure and flow rate data chart or data table is required for the disposal well to help assess flow rates at given pressures. The last one received was from Jan. 2002 until 2008.

Please submit this information by COB on Friday, September 17, 2010. Please contact me if you have questions. Thank you.

- ***Note that the operator never responded to the above OCD information request with the exception of AOR, which was included in the Annual Report.***

Carl J. Chavez, CHMM
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Oil Conservation Division, Environmental Bureau
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Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

12. Annual facility training.

- See comments on Section 24 below where based on recent NOV, Key was to conduct training to train workers on how to operate their Class I Well.

Section 24. Training: All personnel associated with operations at the Key Class I Disposal Well shall have appropriate training in accepting, processing, and disposing o Class I non-exempt non-hazardous oil field waste to insure proper disposal. Key or the new owner/operator for the life of the well shall maintain all training documentation.

- Training indicates that non-oilfield chemicals can be mixed with oilfield wastes to become oilfield waste, but this is not the case. Any mixing of oilfield wastes with non-oilfield wastes becomes a RCRA waste to be treated, disposed and/or recycled under RCRA Regulations.

- Fluids in sumps must be evacuated within 72 hours or under OCD permit provisions.

- Confirm that NOV Compliance Inspection in 2010 requirement for liners and bermage beneath tanks has been met. The AR indicates that while the tanks are bermed, there is no secondary containment at this time.

Recommended: Ask for training documentation over the past 18 months.

- Need to provide Training Sign-In signature sheet with date of training with names of all employees attending the training to verify that training was actually conducted and who received the training.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
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Website: http://www.emnrd.state.nm.us/ocd/index.htm
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

Key Energy Services

Key Energy Services, Inc.
6 Desta Drive
Suite 4300
Midland, Texas 79705

Telephone: 713.571.7536
Facsimile: 713.571.7173

Date: March 23, 2011

To: Mr. Jim Griswold
State of New Mexico
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

VIA Federal Express

Subject: Annual Class I Well Report for 2010

Ref: Sunco UICI-005
API No. 30-045-28653

Dear Jim:

Enclosed you will find the 2010 Annual Class I Well Report for the Sunco Disposal Facility, Permit UICI-005.

If you have any questions please do not hesitate to call me at 432-571-7536 or Wayne Price-Price LLC at 505-715-2809.

Sincerely,

Daniel K. Gibson
Corporate Environmental Director

ANNUAL CLASS I WELL REPORT FOR 2010

Key Energy Services, Inc.

Permit UICI-005

API No. 30-045-28653

Due March 31, 2010

Cover Sheet Pursuant to Permit Condition 22.L.1.

Submitted by: Daniel K. Gibson
Environmental Director

Section 1- Summary of Operations (Permit Condition 22.L.2)

The Operation continues to experience low business activity and no major work was performed on the well, other than the annual MIT and Fall-Off Test. There were minor pump repairs, routine filter maintenance and chemical treatment of the well. On a few occasions, the well was flowed back to the production tanks to remove any debris or oil that was able to get past the filters.

The only waste disposal noted, was the pump filters, which went to Waste Management approved by OCD Brad Jones (documentation in Appendix A). Oil is skimmed off of the tanks and stored until disposal or sales occur. The C-117 process has been implemented for this activity. Key Employees have been instructed to notify the OCD for any waste or oil shipped off-site.

The treating plant, evaporation ponds, and landfarms, previously permitted under rule 711 NM1-9, have been temporary shutdown and Key Energy is working with the OCD permit writer, Brad Jones, on this issue.

The Class I Injection well permit, UIC-5 is still active, but due to the economic downturn and very low revenue, the site is still operating under temporary approval issued by OCD sometime ago. The unloading system for the injection well is a temporary tank area, located just east of the well. The tanks are bermed, but no secondary containment is in place at this time. Conversations between Key Energy and OCD (Price & Chavez, Jones, vonGonten) have generally been focused on BMP's installed during the next permit cycle.

All non-exempt waste received at the facility uses the C-138 acceptance process. The C-138 process is written in the NM1-9 permit, but not the UIC-5 well permit. Key Energy has been providing training on waste acceptance issues and permit conditions for the UIC-5 well. Some training has been conducted on the NM1-9 permit, but since the system is not operational, and all the ponds have been emptied, most of the permit conditions do not apply. In addition, no solid waste for remediation is being delivered to the on-site landfarm at this time.

During the 2010 year, OCD made some minor modifications to the UIC-5 permit. The annual report is now due on March 31, of each year instead of January 31. The chemical analysis and reporting has been changed to allow the required four quarters to be reported in the annual report.

In addition, the OCD removed the permit condition requirement of 20.B. "Required Corrective Actions"; removed the range and maximum daily rate of injection found in 22.C; and corrected the allowable injection pressure from a maximum of 1,580 psig to 2,400 psig found in permit

condition 22.D, and allowed the monthly pressure switch to be reported in the annual report rather than monthly. There were some other changes that are discussed in the Chemical Analysis section below.

The issues described above and other permit-required information are further detailed in the following sections.

Section 2- Production Volumes (Permit Condition 22.L.3)

2010 has been another year of low disposal activity at the site compared to past years. However, there was a slight increase noted from last year. The 2010 year had a total of 419,341 barrels of water injected compared to 390,809 barrels injected in 2009. The non-exempt portion of the waste decreased from 24,900 barrels in 2009 to 16,560 barrels in 2010.

Included in Appendix B, is an Excel spreadsheet used to submit the annual data required by the permit condition 22.L.2. There are additional columns added for monitoring the annular pressure and volumes required pursuant to permit condition 22.G, Murphy pressure switch cut-off test, required pursuant to permit condition 22.D, and general operational notes for each month.

This form displays the pressures and injection volumes and provides the annual report data required for the 2010 year, including the total lifetime injected volumes carried over from previous years.

The lifetime volume injected is 12,790,988 barrels at the end of the 2010 year. The 2010 monthly injection ranged from a high of 50,249 barrels in October, to a low of 13,704 barrels in June. The average monthly injection was 34,945 bbls/month, and the average daily injection was 1,149 bbls/day. The single most active day was in July recorded at 4,654 bbls.

The maximum injection and average pressures were 2,400 psig and 2216 psig, respectfully. The minimum injection pressure is generally 100 psi above the observed wellhead static press, which ranges from about 1,600 to 1,900 psig depending upon how long the pump has been idle.

Also included in Appendix B, is the updated historical chart showing injection volumes to-date. It should be pointed out, last years chart had a minor data error, but has been corrected for 2010.

2010 Data logging and reporting methodology:

The procedure for recording the flow and pressure data is as follows:

At the beginning of each month, the Halliburton flow meter located on the well tubing inlet is reset to zero, and a new 31-day pressure chart is installed on the recording chart recorder, which monitors the tubing and annulus pressures.

At the beginning of each day, the static tubing pressure is recorded from a gauge mounted on the well inlet tubing, located in the well house. This gauge is in parallel with the chart recorder. Immediately after the pump is started, the minimum injection pressure is taken from the Murphy pressure located in the pump house. If the pump did not run during the day, either zero or the well tubing static pressure was recorded.

One hour after the pump has been started, and every hour thereafter, the operator reads the pressure gauge on the tubing and records the volume from the Halliburton flow meter. This information is logged hourly and maintained daily in a 365-day log. This hourly-daily log is included in Appendix C for reference.

The maximum and average pressures are now taken from and calculated using the hourly-daily log readings. The maximum pressure observed for the month is noted and the average pressures are calculated by summing all of the hourly pressure readings for the month divided by the number of hours the pump actually ran. These values are inputted into the annual excel data sheet found in Appendix B .

The information from the hourly-daily log is transferred over to a daily-monthly sheet. This sheet has five columns, date, bbls/hr, bbl/day, bbls/month and cumulative for the year. The bbls/hr is obtained from the hourly-daily log by averaging the recorded bbls/hour. The bbls/day is taken from the hourly-daily log by simply subtracting the ending flow meter number from the previous day's ending number. The bbls/mo is the running daily total for the month, and the cumulative is the running total year-to-date number in barrels. The daily-monthly sheets are included in Appendix D for reference.

Included in Appendix E is the daily-monthly Tubing and Casing Monitoring Log Sheet. This sheet verifies a daily check on the casing and also is where the daily static well pressure and minimum injection pressure is recorded.

Included in Appendix F is the "Key Energy Disposal Monthly Totals. The Monthly Total Sheet is a summary of the loads received at the facility (Barrels Taken In), barrels injected (Barrels Pumped Away), and the difference. Key and non-Key hauled loads, exempt and non-exempt

loads; total loads taken in (received at the facility), and average bbl/load are also provided. Pricing structure charged for non-exempt and exempt barrels, and totals are provided.

Included in Appendix G is a copy of the annual Disposal Pump log.

2010 Monthly Pressure Charts and Pressure Monitoring Methodology:

Monthly Pressure Charts are provided in Appendix H. The recording meter ID # number is 74571 where the red line on the chart shows the tubing press and blue line shows the casing pressure. The charts are 31day charts with a range of 0-3,000 psig. A pressure gauge is installed in parallel to the pressure-recording chart. The chart was calibrated and basically reads the same as the gauge within their respective tolerances.

Future Monitoring:

Key will continue to evaluate the best method of obtaining quality data and will investigate installing a data logger. OCD will be consulted if a monitoring change is proposed.

C-115 Reporting and other forms:

The Key Energy Eunice office is currently filing C-115 forms for this facility. Key questions if this should be a requirement for this type of facility, since the waste stream is not always produced water from production wells. The UIC-5 permit does not specifically mention that these reports are required. In addition, Key Energy would like to receive verification, if, when and why, the following reports would be required. The C-115-EDP, C-117-A, C-117-B, C-118 and C-120's. Our goal for this inquiry is to stay in total compliance.

Section 3- Chemical Analyses (Permit Condition 22.L.4)

Enclosed in Appendix I is the first, second, third and fourth quarterly chemical analysis, laboratory results and the quality assurance/quality control documentation. All samples were collected and analyzed pursuant to EPA approved methods. Samples were collected from the injection well pump outlet, sampling valve.

Permit condition 22H was modified by OCD on June 03, 2010 to allow the quarterly samples to be submitted annually in the annual report. In addition, the previous permit condition was ambiguous concerning the reporting requirements for constituents of concern. The new reporting criteria, is for any exceedance of the RCRA Characteristically Hazardous Waste Criterion or Parameters: Ignitability, Corrosivity, and Reactivity (RCI). In a meeting with OCD on August 03, 2010, Key Energy requested clarification concerning if the RCRA Toxic D waste list must be monitored, reported and notification given if there is an exceedance. OCD

confirmed that only the RCI is required to be monitored, reported, and a notification given pursuant to permit condition 22H, if RCI is over the limits.

Key Energy has evaluated the analytical results and the RCRA RCI limits were never exceeded during the year.

After the permit modifications were written, Key pointed out to OCD that 8260C is the latest EPA published method for volatile organics and most laboratories are not set up to run the 8260C. EPA updated the analysis method to include some pharmaceutical chemicals that are being flushed down drains and getting into water systems. Key Energy would like to continue using the 8260B method unless instructed otherwise.

Permit condition 22I list, 1 and 2-Methylnaphthalene to be run under 8270B. These constituents are now run under 8260B and reported as such. In addition, the new ICP scans (EPA Method 6010) for metals can now meet the required EPA detection limits for Arsenic and Mercury and are ran under that method, not the old AA EPA Methods 7060 and 7470 listed in the permit. Key Energy would like to continue using the 8260B method and ICAP scan for Arsenic and Mercury unless instructed otherwise.

EnviroTech, a local lab located in Farmington, is not equipped to run the full suite for 8270B per se. However, they can analyze all of the constituents of concern using different EPA approved methods. The part they cannot run is the Herbicides and Pesticides. Key Energy would like to continue using different EPA approved methods to meet the 8270B requirement. Also, Key is requesting that the Herbicides and Pesticides be waved from further testing.

Section 4- Mechanical Integrity Testing (Permit Condition 22.L.5)

The Mechanical Integrity Test (MIT) for 2010 was conducted on July 08, 2010. Appendix J contains the Bradenhead Test Report and the MIT report and chart. The MIT test duration was 30 minutes at 400 psi. During the Bradenhead test, the tubing pressure was 1795 psi. The casing pressure was zero (0) Psig and no pressure was noted at the Bradenhead.

Section 5- Deviations from Normal Production Methods (Permit Condition 22.L.6.)

The only reported deviation for 2010 was the annual Fall-Off Test performed in July, 2010. The Fall-Off Test is further discussed in Section 9.

Section 6- Expansion Tank Monitoring, Fluid Removal/Addition, Well Problems, Drinking Water Impacts, and Leak and Spill Reports (Permit Condition 22.L.7)

Section 6A. Expansion tank monitoring pressure, fluid removals/additions: (22.L.7.A)

A pressure gage and the continuous pressure recording chart meter monitor the injection well annulus. The results are included in Section 3. Currently, this well does not have a pressure controlled volumetric measuring tank. Plans are being developed to install this device and will be submitted as part of the next Discharge Permit Renewal. The anticipated design is included in Appendix M for reference.

Section 6B. Well Problems (22.L.7.B.)

The only issues noted during the year were as follows: The recording chart recorder froze a couple of times and showed a false positive of pressure exceedance. The charts were generally marked and initialed upon these occurrences.

Upon two occasions, the pump internal pressure valves failed causing the chart recorder to oscillate at a pump pressure harmonic not representative of real pressure. In both cases, the pump was shut down and valves repaired.

Later in the year, mostly in December, the pump shut down on high and low pressure several times. This was attributed to the fact that the current tank system does not provide a good solids-oil separation as the previous system did. In addition, the suction filters become clogged during the winter months more often when the water viscosity is at it's highest, causing a higher differential pressure in the system between the tank pump system and disposal well inlet. Both high and low pressure, became a problem this year during some of the coldest weather experienced to date.

In order to alleviate the problem, the filters are changed more often, the well is backed flowed to the tanks, soap tubes are placed in the well to reduce the emulsion, oil is skimmed off of the tanks, and incoming loads are screened more closely and rejected, especially if they are high in oil and solids content.

The high pressure noted, is only experienced at the pump outlet, and not at the well inlet as checked and shown by the chart recorder. In order to check the system out, and try to determine the cause of shut-down, the electrical system controls and pressure cut-off modes were by-passed temporary to investigate the cause of the problem. Once the problem was located, the system was placed back into normal operation. In all cases, the well inlet is closely monitored to ensure that pressure limits are never exceeded.

Section 6C. Drinking Water Impacts (22.L.7.C.)

There are no known drinking water impacts caused by the UICI-005 Injection well operations.

Section 6D. Leaks and spill reports; (22.L.7.D.)

In 2010 there were no reportable leaks or spills. Any reportable or non-reportable spill is cleaned up pursuant to OCD guidance and rules. Liquid wastewater is disposed of down-hole in the injection well. De-minimis drips are currently being handled by placing portable catch buckets under hose connections.

Any solid or oily waste generated on site is disposed of at an approved OCD site. Key on-site employees have been instructed to contact OCD before any waste or oil is shipped off-site.

Section 7- Groundwater Monitoring (Permit Condition 22.L.8)

The UICI-005 injection facility does not have groundwater monitoring at this site. There are no planned or intentional discharges of water contaminants that may move directly or indirectly into groundwater. Any unintentional discharge, leak, spill, or drip is handled pursuant to the permit conditions.

Section 8- Area of Review Update Summary (Permit Condition 22.L.9)

An extensive one mile AOR review was conducted again in 2010 for the Key Farmington "Old Sunco" Class I Injection well, OCD permit # UIC-CLI-005 (I-005), located in UL E (1595 FNL & 1005 FWL) of Section 2-Ts29n-R12w. The well presently injects into the Point Lookout formation of the Mesa Verde Group at an interval of 4380-4480 ft bgl. Supporting documentation for the AOR summary is contained in Appendix K.

Using 2010 OCD on-line downloads, the well status list that was constructed in 2009 was compared to the recent data. The list shows API#, Operator well name, UL, Section, Township and Range, footages, wells within one mile, well depth (ft) i.e. Injection/Production interval, casing program status, casing/ cementing status, and corrective action required status. The list has been updated to reflect the most recent findings and is included in Appendix K.

Recapping for 2010, there are 43 wells located within adjacent sections. Within a one-mile radius of the injection well, there are 31 wells, seven of the 31 identified actually penetrated the Point Lookout Formation injection zone. Please refer to the 2009 UICI-005 AOR Annual Review-Section Plot Plan (Updated for 2010) found in Appendix K. The comprehensive list and plot plan was formulated to provide a baseline for future AOR studies.

Every well identified was researched using OCD online records. Wells that did not penetrate the injection zone were given a cursory review to determine if the well depth had changed, and to determine the current well status, i.e. were the wells active or plugged and abandoned.

Wells that did penetrate the injection zone were studied in greater detail. Each of the seven well's casing programs was studied and the following are the findings of these studies and updated for the 2010 year annual report.

2010 AOR findings are as follows:

API # 30-045-08851: The BP-Allen A-1, according to OCD records, is located 790 FNL & 790 FWL of Section 1-Ts29n-R12w. It is shown to be located approximately one mile to the ENE of the UICI-005 injection well. This well was drilled in 1961 with surface casing set at 265 ft bgl and cement circulated to the surface. A production string was run and set at 6786 ft bgl and cemented with 250 sacks.
In 1993 and 2002, substantial remedial work was performed to seal the production casing at different depths. The 2002 report shows that the casing was sealed in a zone between 4,023 ft bgl and 4,055 ft bgl.

In addition, the Picture Cliffs Formation was sealed off above. The well reports and remedial procedures are attached for review.

Conclusions: The OCD reports indicate that the well casing was squeezed off inside and outside of the production string slightly above the Point Lookout Formation which appears to start at about 4,250 ft bgl in this location. The 2007 UICI-005 permit originally had a corrective action requirement for this well. That requirement has since been rescinded by OCD. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: Since there have been no reported or noted issues concerning this well in reference to the UICI-005 injection well, Key proposes no further action at this time.

API # 30-045-08712: The Burlington-McGrath A-1, according to OCD records, is located 1720 FSL & 990 FEL of Section 3-Ts29n-R12w. It is shown to be located approximately 1/2 mile to the SW of the UICI-005 injection well. This well was drilled in 1964 with surface casing set at 300 ft bgl and cemented with 250 sacks. A production string was run and set at 6,710 ft bgl and cemented with 500 sacks. The well reports and remedial procedures are attached for review.

Conclusions: The OCD reports indicate that the intent was to set a DV tool at the base of Mesa Verde and cement through the Picture Cliffs using 800 sacks. The completion reports indicated the production string used only 500 sacks of cement, while this would be enough cement to

cover the Point Lookout Formation injection zone there is some question as to where the TOC (top of cement) is actually located. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: None Required.

API # 30-045-13092: The BP-Cornell C-1, according to OCD records, is located 990 FNL & 990 FWL of Section 11-Ts29n-R12w. It is shown to be located approximately 1 mile to the south of the UICI-005 injection well. This well was drilled in 1962 with surface casing set at 250 ft bgl and cemented with 150 sacks. A production string was run and set at 6,604 ft bgl and cemented with 300 sacks. A casing leak was repaired in 2006 at about 2,017 ft bgl. The well reports and remedial procedures are attached for review.

Conclusions: The 2007 UICI-005 permit originally had a corrective action requirement for this well. That requirement has since been rescinded by OCD. The OCD reports shows a well diagram indicating this well is cemented to the surface on all casing strings. The drawing should be correlated with the cement calculation. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: Since there have been no reported or noted issues concerning this well in reference to the UICI-005 injection well, Key proposes no further action at this time.

API # 30-045-08945: The Burlington-McGrath C-1, according to OCD records, is located 870 FSL & 1190 FEL of Section 34-Ts29n-R12w. It is shown to be located approximately 1/2 mile to the NW of the UICI-005 injection well. This well was drilled in 1963 with surface casing set at 323 ft bgl and cemented with 225 sacks. A production string was run and set at 6,637 ft bgl and cemented with 925 sacks. The well reports and remedial procedures are attached for review.

Conclusions: The OCD reports indicate this well is cemented to the surface on all casing strings. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: None required.

API # 30-045-08946: The Holcomb O&G-Carnahan, according to OCD records, is located 990 FSL & 990 FEL of Section 35-Ts29n-R12w. It is shown to be located approximately 3/4 mile to the NE of the UICI-005 injection well. This well was drilled in 1960 with surface casing set at 301 ft bgl and cemented with 200 sacks. A production string was run and set at 6760 ft bgl and cemented with 250 sacks. The well was plugged and abandoned in 1971. The well reports and remedial procedures are attached for review.

Conclusions: The OCD reports indicate the casing was cut and pulled with several plugs placed in the open hole. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: Since OCD approved the plugging and no issues have been noted concerning this well, in relation to the Key UICI-005 well, Key proposes no future action at this time.

API # 30-045-11770: The Burlington-Hudson J-3, according to OCD records, is located 1750 FNL & 990 FWL of Section 35-Ts29n-R12w. It is shown to be located approximately 1 mile to the north of the UICI-005 injection well. This well was drilled in 1966 with surface casing set at 306 ft bgl and cemented with 250 sacks. A production string was run and set at 6750 ft bgl and cemented with 700 sacks. This well has been recompleted as a Basin-Fruitland Coal well in 2001. The well reports and remedial procedures are attached for review.

Conclusions: The OCD reports indicate this well was originally permitted and drilled to a depth of 6750 ft bgl and more recently, re-completed as a Basin-Fruitland Coal well in 2001. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: Since OCD approved the recompletion and no issues have been noted concerning this well, in relation to the Key UICI-005 well, Key proposes no future action at this time.

API # 30-045-25844: The Marrion O&G-Carnaham COM #2, according to OCD records, is located 1090 FSL & 1070 FEL of Section 35-Ts29n-R12w. It is shown to be located approximately 3/4 mile to the NE of the UICI-005 injection well. This well was drilled in 1984 with surface casing set at 230 ft bkb (below kelly bushing) and cemented with 170 sacks. A production string was run and set at 6,777 ft bkb and cemented with 1100 sacks.

Conclusions: The OCD reports indicate this well is cemented to the surface on all casing strings. There have been no reported or noted issues concerning this well in reference to the UICI-005 injection well.

Corrective actions: None required.

2010 AOR Summary:

There were no new wells installed in the Area of Review (AOR) in 2010, and all of the above wells will be removed from the watch list unless issues arise. Key will perform another AOR and report in 2011.

Section 9- MIT and Fall-Off Tests (Permit Condition 22.L.11)

Mechanical Integrity Test

On July 8, 2010 a mechanical integrity test was conducted on this Class I well. No well interventions had taken place on this wellbore since the previous MIT annual test in 2009. The production casing/tubing annular space was pressured-up to 400 psig using a pump truck and isolated for 30-minutes. The test results were recorded on a circular chart. As seen on the chart the pressure held steady for the required 30 minute interval. Monica Kuehling, an OCD field inspector from the Aztec District Office, witnessed the test as evidenced by her signature on the chart. Immediately thereafter a 96-hour injection conditioning period commenced in preparation for the annual Fall-Off Test.

Annual Fall-Off Test

On July 13, 2010 a 72-hour fall-off test was conducted on this Class I well. An electronic pressure gauge was positioned via wireline across the mid-point (4405') of the injection interval 4350-4460' to gather the downhole pressure data. Prior to the testing the wireline was used to positively confirm that the injection interval was completely open to injection (no fill). There were no diversions from the Test Plan submitted and approved by the Environmental Bureau of the OCD in Santa Fe during the course of the testing. The test results and report were submitted to Santa Fe prior to deadline of 30-days from the end of the test. The interpretation of the results was consistent with the conclusions made in each of the previous annual tests. Essentially there is very little pressure increase being seen in the pore space being affected by injection. We see no indication that injection is getting out-of-zone from the permitted injection interval. Reservoir parameters derived from the pressure response stemming from the injection, followed by the fall-off, are consistent with favorable injectivity this well has always displayed. The average daily injection volumes continue to decline due to diminished demand for Class I disposal in the vicinity of this facility.

Section 10- Annual Facility Training (Permit Condition 22.L.12)

Key provides annual training for facility operation personnel on an annual basis. This annual training is not always specific to the operation of this facility and covers requirements for Spill

Prevention, Control, and Countermeasures (SPCC), elements required by National Pollutant Discharge Elimination System (NPDES) permits, and Key environmental policies.

Pursuant to the discharge permit requirements, 22.L.12, Key Energy has conducted on site training pertaining to the discharge permit requirements. Please find documentation in Appendix L for this training.

Section 11- Certification (Permit Condition 22.L.10)

I certify under 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.

Dennis Douglas
Senior Vice President – Fluids Management Services

3-17-11
Date

APPENDICES

Appendix A	**2010 Waste Disposal**
Appendix B	**2010 Monthly Well Injection Report**
Appendix C	**2010 Hourly-Daily Log Sheets**
Appendix D	**2010 Daily-Monthly Log Sheets**
Appendix E	**2010 Tubing and Casing Monitoring Log Sheets**
Appendix F	**Key Energy Disposal Monthly Totals**
Appendix G	**2010 Maintenance Disposal-Pump Log**
Appendix H	**2010 Monthly Pressure Charts**
Appendix I	**2010 Chemical Analysis Data**
Appendix J	**2010 Bradenhead Test Report and MIT Report with Chart.**
Appendix K	**2010 Supporting Documentation for the AOR**
Appendix L	**2010 Permit Training Documentation**
Appendix M	**Annulus Continuous Pressure Device**

Appendix A
2010 Waste Disposal

WASTE MANAGEMENT

WM of NM - San Juan County
78 County Road 3140
Aztec, NM, 87410
Ph: (505) 334-1121

Original
Ticket# 1325149

Customer Name KEYENERGYSERVIC KEY ENERGY SE
Ticket Date 12/13/2010
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest
Destination
PO
Profile ()
Generator

Carrier KEYENE KEY ENERGY SERVICES
Vehicle# 65806 Volume
Container
Driver
Check#
Billing # 0000300
Gen EPA ID

Grid

	Time	Scale	Operator	Inbound		
In	12/13/2010 10:16:25	Inbound 301	vickyq		Gross	33820 lb
Out	12/13/2010 10:45:15	Outbound 302	tempheip		Tare	9900 lb
					Net	23920.lb
					Tons	11.96

Comments

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 MLY-MSW-Loose- Yds	100	8.00	Yards				SANJ

Yvonne Prado
Key Energy
Key Disposal
Dec. 2010

Total Tax
Total Ticket

Driver's Signature

Generator's Nonhazardous Waste Profile Sheet

Requested Disposal Facility _____ Profile Number

☐ Renewal for Profile Number _____ Waste Approval Expiration Date _____

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: Sunco SWD #1
2. Site Address: 345 C/R 350
3. City/ZIP: Aztec
4. State: NM
5. County: San Juan
6. Contact Name/Title: Neil Allen Truck Supervisor
7. Email Address: nallen@keyenergy.com
8. Phone: 505/334/6186 9. FAX: 505/327-6023
10. NAICS Code: _____
11. Generator USEPA ID #: _____
12. State ID# (if applicable): _____

B. Customer Information ☐ same as above

P. O. Number: _____

1. Customer Name: Key Energy Services
2. Billing Address: 5651 Hwy 64
3. City, State and ZIP: Farmington NM 87499
4. Contact Name: Neil Allen
5. Contact Email: nallen@keyenergy.com
6. Phone: 334/6186 FAX: 505327/4962
7. Transporter Name: Key Energy Services
8. Transporter ID # (if appl.): _____
9. Transporter Address: SAME
10. City, State and ZIP: _____

C. Waste Stream Information

1. DESCRIPTION
   a. Common Waste Name: Water Filters
   State Waste Code(s): _____
   b. Describe Process Generating Waste or Source of Contamination:

   Filtering Produced water

   c. Typical Color(s): Clear to Dark Brown
   d. Strong Odor? ☐ Yes ☑ No Describe: _____
   e. Physical State at 70°F: ☐ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☑ Other: Dry
   f. Layers? ☐ Single layer ☐ Multi- layer ☑ NA
   g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: _____
   h. Free Liquid Range (%): _____ to _____ ☐ NA(solid)
   i. pH Range: ☐ ≤2 ☑ 2.1-12.4 ☐ ≥12.5 ☐ NA(solid) ☐ Actual: _____
   j. Liquid Flash Point: ☐ < 140°F ☐ ≥ 140°F ☐ NA(solid) ☑ Actual: 0
   k. Flammable Solid: ☐ Yes ☑ No
   l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents (Total Composition Must be = 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1.				
2.				
3.				
4.				
5.				
6.				

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION
   a. ☐ Event ☑ Base/Ongoing (Check One)
   b. Estimated Annual Quantity: _____ ☐ Tons ☑ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): _____
   c. Shipping Frequency: _____ Units per ☐ Month ☑ Quarter ☐ Year ☐ One Time ☐ Other
   d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No
   e. USDOT Shipping Description (if applicable): _____
3. SAFETY REQUIREMENTS (Handling, PPE, etc.): _____

Generator's Nonhazardous Waste Profile Sheet

D. Regulatory Status (Please check appropriate responses)

1. Is this a USEPA (40 CFR Part 261)/State hazardous waste? If yes, contact your sales representative. ☐ Yes ☑ No
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   - ☐ Delisted Hazardous Waste
   - ☐ Excluded Wastes Under 40 CFR 261.4
   - ☐ Treated Hazardous Waste Debris
   - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain concentrations of regulated Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   a. If yes, is disposal regulated under TSCA? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated, medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certification (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the Contractor if applicable).
5. Check all that apply:
   - ☑ Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: _____ # Pages: 7
   - ☐ Only the analyses identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: _____
   - ☐ Additional information necessary to characterize the profiled waste has been attached (other than analytical). Indicate the number of attached pages: _____
   - ☐ I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.
   - ☑ By Generator process knowledge, the following waste is not a listed waste and is below all TCLP regulatory limits.

Certification Signature: Neil Allen **Title:** Truck Supervisor

Company Name: Key Energy Services **Name (Print):** Neil Allen

Date: 11/24/90

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: _____

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: _____

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

_____

_____

- ☐ Shall not contain free liquid
- ☐ Shipment must be scheduled into disposal facility
- ☐ Approval Number must accompany each shipment
- ☐ Waste Manifest must accompany load

WM Authorization Name / Title: _____ **Date:** _____

State Authorization (If Required): _____ **Date:** _____

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

FILTER Test
11/16/09

Client:	Key Energy	ct #:	98065-0013
Sample ID:	Filter #1	Reported:	11-18-09
Laboratory Number:	52463	Sampled:	11-16-09
Chain of Custody:	8427	Received:	11-16-09
Sample Matrix:	Solid	Date Analyzed:	11-17-09
Preservative:		Date Extracted:	11-16-09
Condition:	Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**22.8**	**0.9**
Toluene	**50.6**	**1.0**
Ethylbenzene	**77.1**	**1.0**
p,m-Xylene	**59.7**	**1.2**
o-Xylene	**27.9**	**0.9**
Total BTEX	**238**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**99.0 %**
	1,4-difluorobenzene	**99.0 %**
	Bromochlorobenzene	**99.0 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Sunco SWD #1**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	11-17-BT QA/QC	Date Reported:	11-18-09
Laboratory Number:	52400	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-17-09
Condition:	N/A	Analysis:	BTEX

Benzene	6.1098E+004	6.1220E+004	**0.2%**	**ND**	**0.1**
Toluene	5.9802E+004	5.9922E+004	**0.2%**	**ND**	**0.1**
Ethylbenzene	5.5949E+004	5.6061E+004	**0.2%**	**ND**	**0.1**
p,m-Xylene	1.1947E+005	1.1971E+005	**0.2%**	**ND**	**0.1**
o-Xylene	4.6307E+004	4.6400E+004	**0.2%**	**ND**	**0.1**

Benzene	**ND**	**ND**	**0.0%**	**0 - 30%**	**0.9**
Toluene	**ND**	**ND**	**0.0%**	**0 - 30%**	**1.0**
Ethylbenzene	**ND**	**ND**	**0.0%**	**0 - 30%**	**1.0**
p,m-Xylene	**ND**	**ND**	**0.0%**	**0 - 30%**	**1.2**
o-Xylene	**ND**	**ND**	**0.0%**	**0 - 30%**	**0.9**

Benzene	**ND**	**50.0**	**49.6**	**99.2%**	**39 - 150**
Toluene	**ND**	**50.0**	**48.6**	**97.2%**	**46 - 148**
Ethylbenzene	**ND**	**50.0**	**48.7**	**97.4%**	**32 - 160**
p,m-Xylene	**ND**	**100**	**96.9**	**96.9%**	**46 - 148**
o-Xylene	**ND**	**50.0**	**48.8**	**97.6%**	**46 - 148**

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for Samples 52400 - 52402, 52458, 52460, 52463, and 52468.**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505)632-0615 Fr (800)362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

envirotech
Analytical Laboratory

TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Filter #1	Date Reported:	11-18-09
Laboratory Number:	52463	Date Sampled:	11-16-09
Chain of Custody:	8427	Date Received:	11-16-09
Sample Matrix:	Solid	Date Analyzed:	11-17-09
Preservative:		Date Digested:	11-17-09
Condition:	Intact	Analysis Needed:	Total Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Arsenic	**0.039**	**0.001**
Barium	**22.0**	**0.001**
Cadmium	**0.017**	**0.001**
Chromium	**0.617**	**0.001**
Lead	**0.309**	**0.001**
Mercury	**0.008**	**0.001**
Selenium	**0.002**	**0.001**
Silver	**0.001**	**0.001**

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Sunco SWD #1**

Analyst

Review

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TRACE METAL ANALYSIS
Quality Control /
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	11-17 TM QA/AC	Date Reported:	11-18-09
Laboratory Number:	52455	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Analysis Requested:	Total RCRA Metals	Date Analyzed:	11-17-09
Condition:	N/A	Date Digested:	11-17-09

Arsenic	**ND**	**ND**	**0.001**	**0.039**	**0.045**	**13.8%**	**0% - 30%**
Barium	**ND**	**ND**	**0.001**	**5.70**	**6.04**	**6.0%**	**0% - 30%**
Cadmium	**ND**	**ND**	**0.001**	**ND**	**ND**	**0.0%**	**0% - 30%**
Chromium	**ND**	**ND**	**0.001**	**0.315**	**0.365**	**16.0%**	**0% - 30%**
Lead	**ND**	**ND**	**0.001**	**0.242**	**0.283**	**16.9%**	**0% - 30%**
Mercury	**ND**	**ND**	**0.001**	**0.002**	**0.003**	**30.0%**	**0% - 30%**
Selenium	**ND**	**ND**	**0.001**	**ND**	**ND**	**0.0%**	**0% - 30%**
Silver	**ND**	**ND**	**0.001**	**ND**	**ND**	**0.0%**	**0% - 30%**

Arsenic	**0.250**	**0.039**	**0.279**	**96.6%**	**80% - 120%**
Barium	**0.500**	**5.70**	**6.27**	**101%**	**80% - 120%**
Cadmium	**0.250**	**ND**	**0.261**	**104%**	**80% - 120%**
Chromium	**0.500**	**0.315**	**0.894**	**110%**	**80% - 120%**
Lead	**0.500**	**0.242**	**0.787**	**106%**	**80% - 120%**
Mercury	**0.100**	**0.002**	**0.100**	**97.9%**	**80% - 120%**
Selenium	**0.100**	**ND**	**0.086**	**85.9%**	**80% - 120%**
Silver	**0.100**	**ND**	**0.104**	**104%**	**80% - 120%**

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for Samples 52455, 52456, 52463, and 52469.**

Analyst

Review

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pH analysis

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Filter #1	Date Reported:	11-19-09
Laboratory Number:	52463	Date Sampled:	11-16-09
Chain of Custody:	8427	Date Received:	11-16-09
Sample Matrix:	Soil	Date Extracted:	11-17-09
Preservative:		Date Analyzed:	11-17-09
Condition:	Intact		

Parameter	Analytical Result	Units
pH	7.92	su

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

Comments: **Sunco SWD #1.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

8427

Client: Key Energy	Project Name / Location: Sunco SWD #1
Client Address:	Sampler Name: Neil Allen
Client Phone No.: 334-6186	Client No.: 98065-0013

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	Preservative	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE	pH			Sample Cool	Sample Intact
Filter #1	11/16/09	—	52463	Soil Sludge (Solid) Aqueous	1 filter					X		X							X			N	Y
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	11/16/09	1448	[signature]	11/16/09	1448
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Call when ready.
Need PO#

envirotech
Analytical Laboratory

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ACCENT Printing • Form 28-0807

Allen, Neil

From: Jones, Brad A., EMNRD [brad.a.jones@state.nm.us]
Sent: Tuesday, November 24, 2009 9:09 AM
To: Allen, Neil
Cc: Powell, Brandon, EMNRD
Subject: RE: enviro tech scann

Based upon the laboratory analytical results provided, OCD hereby approves of your request pursuant to 19.15.35.8 NMAC for disposal of the proposed non- domestic waste at a solid waste facility. The following wastes, associated with the referenced SWD, are approved:

Sunco SWD #1 (API #30-045-28653) - Produced Water Filters (based upon review of corrosivity results)

Waste Management is responsible for the review of any additional testing that they request beyond the testing parameters specified under the provisions of Subsection C of 19.15.35.8 NMAC. Please confirm with the San Juan Regional County Landfill (SJRCL) of any additional testing they might require and their willingness to accept such waste prior to delivery.

Please be advised that approval of this request does not relieve Key Energy Services, LLC of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve Key Energy Services, LLC of its responsibility to comply with any other applicable governmental authority's rules and regulations.

If you have any questions regarding this matter, please do not hesitate to contact me.

Brad

Brad A. Jones
Environmental Engineer
Environmental Bureau
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505
E-mail: brad.a.jones@state.nm.us

-----Original Message-----
From: Allen, Neil [mailto:nallen@keyenergy.com]
Sent: Tuesday, November 24, 2009 8:55 AM
To: Jones, Brad A., EMNRD
Subject: FW: enviro tech scann

Good Morning Brad
I need to dispose of our filters at the SJ County Landfill. I think that I have all the information that you need if not please let me know and I will get the information for you.

Thank You
Neil Allen
505-486-2010

Sunco SWD #1
API no. 30-045-28653

FROM:
Image data has been attached to the e-mail.

Appendix B
2010 Monthly Well Injection Report

2010 Key UIC-CL Injection Well Report

protection code: 1111

Period	Injection Pressure (psig)			Annuals Pressure (psig)			Annuals Volumes Gallons		Injection Flow Rates (bbls/day)			VOLUMES in BBLs				Pressure Limiting Device	Monthly Operational Notes:
Year															2009 Carry-Over		
Prior Year		****													12,371,647		
2010	Max psig	Min psig	Avg psig	Max psig	Min psig	Avg psig	(+)Gain	(-)Loss	Max bbls/day	Min bbls/day	Avg bbls/day	Month Class I (non-exempt)	Monthly Total	YTD	Life of Well	Notes:	Notes:
Jan	2200	1600	2100	0	0	0	na	na	1870	0	567	1040	17572	17,572	12,389,219	1-19 Tested Murphy SW-OK	Misc filter change, pump repair
Feb	2250	1700	2149	0	0	0	na	na	2286	0	1144	1520	32022	49,594	12,421,241	2-14 Tested Murphy SW-OK	Filter change
Mar	2300	1750	2198	0	0	0	na	na	3197	0	1507	2960	45223	94,817	12,466,464	3-10 Tested Murphy SW-OK	Filter change
Apr	2300	1800	2232	0	0	0	na	na	1812	0	1094	880	33900	128,717	12,500,364	4-21 Tested Murphy SW-OK	Filter change
May	2350	1850	2240	0	0	0	na	na	1796	0	1266	1520	39256	167,973	12,539,620	5-17 Tested Murphy SW-OK	Filter change
Jun	2250	1700	2113	0	0	0	na	na	1424	0	457	720	13704	181,677	12,553,324	6-08 Tested Murphy SW-OK	Filter change
Jul	2350	1700	2210	0	0	0	na	na	4654	0	1358	1040	42105	223,782	12,595,429	7-06 Tested Murphy SW-OK	7-13 MIT & Fall-Off Test;starter pump repair
Aug	2400	1800	2246	0	0	0	na	na	2059	0	1307	1920	40508	264,290	12,635,937	8-11 Tested Murphy SW-OK	Filter change-Well Flow Back-well soap treatment
Sep	2300	1800	2169	0	0	0	na	na	2068	0	1190	1280	35700	299,990	12,671,637	9-18 Tested Murphy SW-OK	Filter change
Oct	2400	1900	2241	0	0	0	na	na	3058	0	1621	1680	50249	350,239	12,721,886	10-03 Tested Murphy SW-OK	Pump repair
Nov	2400	1900	2262	0	0	0	na	na	2494	0	1386	400	41575	391,814	12,763,461	11-03 Tested Murphy SW-OK	Filter Change
Dec	2400	1900	2292	0	0	0	na	na	1723	0	888	1600	27527	419,341	12,790,988	12-04 Tested Murphy SW-OK	Pump Experiencing Shutdowns on HI Press.
Summary		****	2216							Avg--------	1149	16560	34,945 Avg/Mo.				

Notes:

Injection Pressures: Injection pressures are recorded hourly during daily operations- The monthly max,min and average values are taken from these logs.

Annuals Pressures: Annuals pressures are recorded hourly during daily operations- The monthly max,min and average values are taken from these logs.

Annuals Volumes: Annuals volumes are recorded hourly during daily operations- The monthly max,min and average values are taken from these logs.

Injection flow rates: Injection Flow rates (volume/time) are recorded hourly during daily operations- The monthly max,min and average values are taken from these logs.

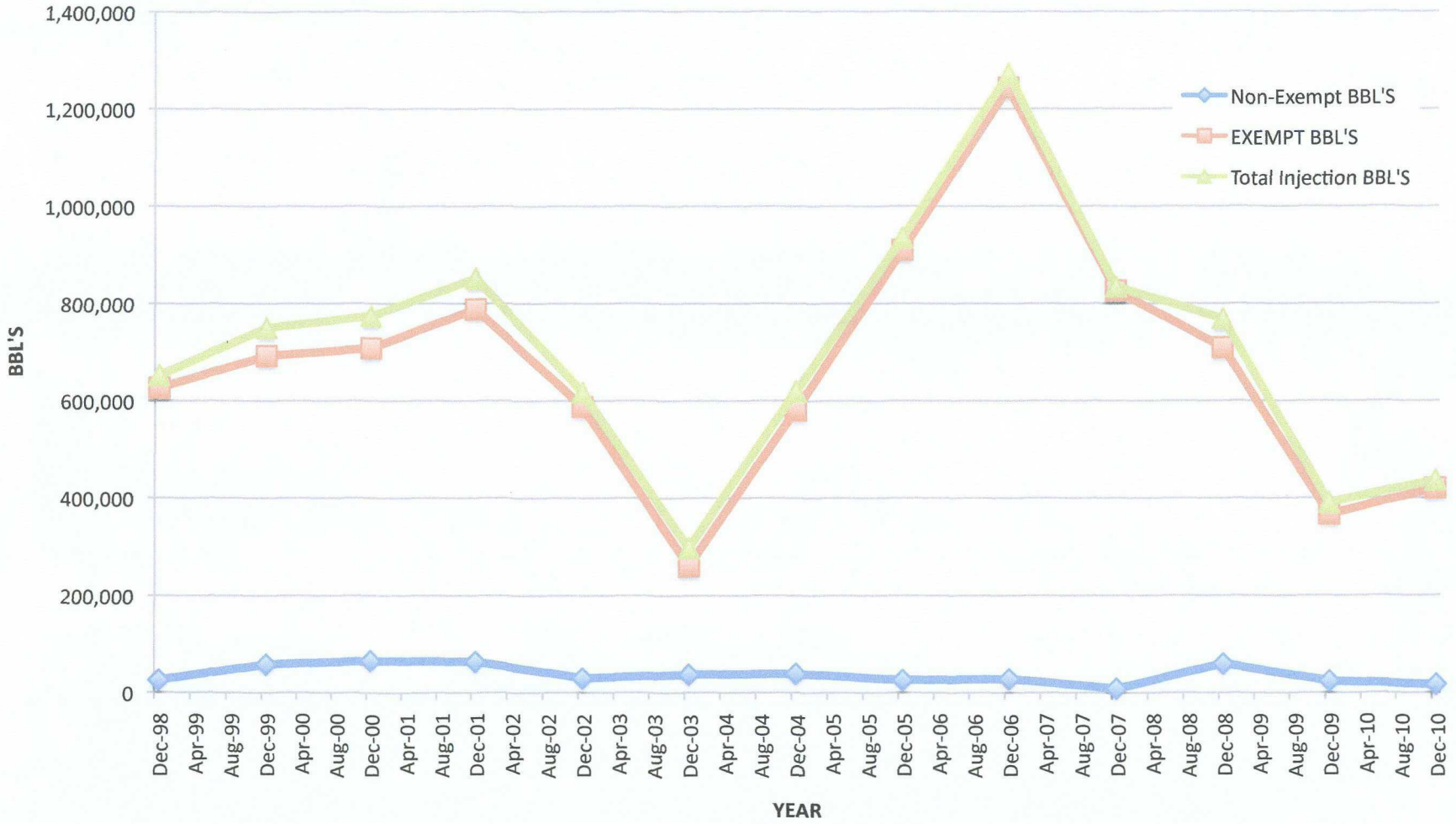
Injection Volumes: Injection Volumes (bbls) are recorded hourly and a daily total is calcualated during daily operations- The monthly max,min and average values are taken from these totaled daily logs.

Pressure Limiting Device: Will be checked monthly with notes and logged.

Operational Notes: A daily inspection logged is maintained. The monthly summary of significate event is recorded in this space.

**** Static well shut-in pressures

KEY FARMINGTON CLASS I INJECTION WELL UIC-5
VOLUMES CHART BBL'S
1998-2010



Appendix C
2010 Hourly-Daily Log Sheets

		31965	
12-31	Pressure	Meter	BBL P.H
12	2050	32118	153
1P	2150	32272	154
2pm	2150	32418	146
3pm	2150	32586	168
4pm	2150	32735	149
5pm	2150	32890	155
1-1-10		0	
11:30	2100	180	
12:30p	2150	331	151
1:30p	2150	486	155
2:30	2150	644	158
3:30	2200	791	147
4:30	2200	948	157
01-02-09			
12:PM	2050	1,083	135
1:PM	2050	1,239	156
2:PM	2100	1,396	157
3:PM	2150	1,553	157
4:PM	2150	1,709	156
5:PM	2150	1,866	157
6:PM	2150	2,063	197
01-05-10			
4:PM	1950	2,400	337
5:PM	2000	2,557	157
1-6-10			
11Am	2050	2714	157
12	2100	2863	149
1Pm	2100	3019	156
2Pm	2100	3178	159
3Pm	2150	3324	146
4Pm	2150	3477	153

1-7-10

	Pressure	3477 Meter	BBL's poche
10 Am	2050	3654	177
11 Am	2100	3808	154
12	2150	3964	156
1 Pm	2150	4121	157
2 Pm	2150	4275	154
3 Pm	2200	4431	156
4 Pm	2200	4584	153
1-8			
9 Am	2050	4752	168
10 Am	2100	4913	161
11 Am	2150	5069	156
12	2150	5223	154
1 Pm	2200	5376	153
2 Pm	2200	5533	157
3 Pm	2200	5690	157
4 Pm	2200	5832	142
1-09-10			
2 : PM	2050	5987	157
3 : PM	2050	6,145	156
4 : PM	2100	6,300	155
5 : PM	2150	6,466	166
1-10-10			
1 : PM	2050	6623	157
2 : PM	2050	6,778	155
3 : PM	2100	6,933	155
4 : PM	2150	7,088	155
5 : PM	2150	7,244	156

7,244

	Pressure		Meter		BBls Per Hr.
01-12-10					
12:PM	2000		7,400		156
1:PM	2050		7,555		155
2:PM	2100		7,710		155
3:PM	2100		7,864		154
4:PM	2150		8018		154
5:PM	2150		8173		155
1-14-10					
9AM					
9	2000		8335		162
10	2050		8491		156
11	2100		8645		154
12pm	2100		8810		165
1pm			8964		154
2	2150		9118		154
3	2150		9288		170
4PM	2150		9424		136
1-15-10					
9AM	2050		9591		167
10	2100		9751		160
11	2150		9915		164
12	2150		10056		141
1pm	5mic	Filter change		Down the	
1	2150		10211		155
2	2150		10385		174
3					
01-17-09					
12:30	2000		10547		162
1:30					
2:30					
3:30					
4:30					

10547

	Pressure	Meter	BBLs Per hr.
01-18-10			
12:PM	1900	10722	175
1:PM	2050	10925	203
~~2:PM~~			
3:39 PM		11080	155
4:39 PM		11,236	156
5:PM			
01-19-10			
12:PM	2050	11,392	156
1:PM	2050	11,547	155
2:PM	2100	11,701	154
3:PM	2100	11,856	155
1-20			
9A	2050	11984	138
10	2100	12151	157
11	2100	12286	135
12	2150	12461	175
1pm	2000	12492	30
01-23-10			
9:AM	1950	12,652	160
10:AM	2000	12,811	159
11:AM	2050	12,970	159
12:PM	2100	13,129	159
1:PM	2100	13,287	158
2:PM	2150	13,445	158
3:PM	2150	13,603	158
4:PM	2150	13,762	159
01-26-10			
12:30	2000	13907	145
1:30	2050	14070	163
2 30	2050	14231	161
3 30	2100	14390	159
4:30	2100	14547	157

74547

Pressure		Meter	BBL pr
1-27-10			
10:30	2000	14694	147
11:30	2100	14841	147
12:30pm	2100	14997	156
1:30	2150	15152	156
1-28	No pumping		
1-29			
8:30 Am	2000	15303	151
9:30	2050	15461	158
10:30	2050	15616	155
11:30	2100	15769	153
12:30pm	2150	15927	158
1:30	2150	16081	154
2:30	2150	16235	154
3:30	2150	16385	150
01-31-10			
9: AM	2000	16548	163
10: AM	2050	16708	160
11: AM	2050	16867	159
12: PM	2100	17026	159
1: PM	2150	17186	160
2: PM	2150	17379	193
3: PM	2150	17572	193
02-01-10			
2: PM	2050	206	206
3: PM	2050	409	203
4: PM	2100	613	204
5: PM	2100	818	205

818

	Pressure	Meter	BBLs Per Hr.	
2-02-10				
12 PM	2050	1,013	195	
1 PM	2050	1,208	195	
2 PM	2100	1,402	194	
3 PM	2150	1,596	194	
4 PM	2150	1,791	195	
5 PM	2150	1,986	195	
2-03-10				
2 PM	2050	2,163	177	4½ min shut
3 PM	2100	2,355	192	
4 PM	2150	2,547	192	
5 PM	2150	2,740	193	
6 PM	2150	2,948	208	4½ min. over
2-5-10				
9 AM	2050	3146	198	
10	2100	3345	199	
11 AM	2100	3528	183	
12 pm	2150	3715	187	
1 pm	2150	3903	188	
2 pm	2150	4091	188	
3 pm	2200	4278	187	
2-6				
1:30 pm	2050	4457	179	
2:30 pm		4636	179	
3:30 pm		4812	176	
2-07-10				
[illegible]	2050	4980	168	
[illegible] PM	2100	5,152	172	
[illegible]	2100	5,324	172	
[illegible]	2150	5,495	171	
[illegible]	2150	5,667	172	
[illegible] PM	2150	5,858	191	

5858

	Pressure	Meter	BBLs	Pe
2-10-10		6044	186	
8:30 Am	2000	6236	192	
9:30	2050	6421	185	
10:30	2100	6617	196	
11:30	2100	6800	183	
12:30pm	2150	6990	190	
1:30	2150	7185	195	
2:30	2150	7373	188	
3:30	2150	7565	192	
4:30	2150			
2-11-10			190	
11 Am	2050	7755	189	
12	2100	7944	188	
1 Pm	2150	8132	188	
2 Pm	2150	8320	188	
3 pm	2200	8508	190	
4 pm	2200	8698		
2-12-10			195	
10 Am	2050	8893	196	
11 Am	2100	9088	184	
12	2150	9272	190	
1 pm	2150	9462	189	
2 pm	2150	9651	189	
3 pm	2200	9840	188	
4 pm	2200	10028	189	
5 pm	2200	10217	188	
6 pm	2250	10405		

10,405

	Pressure	Meter	BBLs Per hr
2-13-10			
9:30 AM	2050	10,595	190
10:30 AM	2100	10,784	189
11:30AM	2100	10,972	188
12:30PM	2150	11,160	188
1:30PM	2150	11,348	188
2:30AM	2150	11,534	186
3:30PM	2150	11,721	187
4:30 PM	2150	11,905	184
5:30 PM	2150	12,093	188
02-14-10			
12:PM	2050	12,285	192
1:PM	2100	12,473	188
2:PM	2100	12,660	187
3:PM	2150	12,847	187
4: AM	2150	13,034	187
02-15-10			
9:30 AM	2000	13,220	186
10:30 AM	2050	13,408	188
11:30AM	2100	13,596	188
12:30PM	2150	13,783	187
1:30 PM	2150	13970	187
2:30PM	2150	14,158	188
3:30PM	2150	14,347	189
4:30	2150	14,536	189
5:00	2150	14,725	189
2-17			
1Pm	2050	14926	195
2pm	2100	15106	186
3pm	2150	15290	184
4	2200	15475	185
5pm			

	Pressure	15475 Meter	BBL/hr
2-18-10			
11 AM	2000	15657	182
12	2100	15839	182
1 PM	2150	16014	175
2 PM	2150	16189	175
3 PM	2200	16365	176
4 PM	2200	16545	180
5 PM	2200	16726	181
6 PM	2200	16905	179
7 PM	2200	17088	183
2-19-10			
8 AM	2100	17277	189
9 AM	2150	17455	178
10 AM	2150	17635	180
11 AM	2200	17812	177
12	2200	17996	184
1 PM	2200	18165	169
2 PM	2200	18341	176
3 PM	2200	18520	179
4 PM	2200	18698	178
5 PM	2200	18874	176
02-20-10			
9 AM	2100	19,048	174
10: AM	2100	19,221	173
11: AM	2150	19,394	173
12: PM	2150	19,566	172
1: PM	2150	19,738	172
2: PM	2200	19910	172
3: PM	2200	20,082	172
4: PM	2200	20,254	172
5: PM	2200	20,427	173

02-21-10

	Pressure	Meter	BBLs Per Hr.
8: AM	2100	20,427	
9: AM	2150	20,620	193
10: AM	2150	20,803	183
11: AM	2150	20,986	183
12: PM	2150	21,169	183
1: PM	2200	21,351	182
02-23-10		21,535	184
10: AM	2050		
11: AM	2100	21,728	193
12: PM	2150	21,910	182
1: PM	2150	22,092	182
~~2: PM~~		22,274	182
3:30 PM			
4:30	2150	22,494	220
4: PM	2150	22,668	174
5:30 PM	2150	22841	173
2-24-10			
8AM	2100	23028	187
9AM	2150	23222	194
10AM	2150	23400	178
11AM	2150	23580	180
12	2200	23764	184
1pm	2200	23947	183
2pm	2200	24128	181
3pm	2200	24309	181
4pm	2200	24489	180
5pm	2200	24671	182
6pm	2200	24850	179
7pm	2250	25034	184
2-25-10			
8	2100	25229	195
9AM	2150	25418	189
10A	2200	25607	189

	Pressure	25607 Meter	BBLs pk
	11 Am 2200	25797	190
	12 2200	25987	190
	1pm 2200	26178	191
	2pm 2200	26367	189
	3pm 2250	26557	190
	4pm 2250	26748	191
	5pm 2250	26938	190
	6pm 2250	27138	193
	7pm 2250	27327	189
2-26-10			
	8Am 2100	27523	176
	9Am 2150	27679	176
	10 Am 2200	27856	177
	11 Am 2200	28033	177
	12 2200	28211	178
	1Pm 2200	28388	177
	2Pm 2250	28565	177
	3pm 2250	28741	176
	4pm 2250	28918	177
	5pm 2250	29095	177
	6pm 2250	29273	178
02-27-10			
	8: AM 2100	29,452	179
	9: AM 2150	29,628	176
	10: AM 2150	29,801	173
	11: AM 2150	29,974	173
	12: PM 2150	30,147	173
	1: PM 2150	30,320	173
	2: PM 2150	30,493	173
	3: PM 2200	30,666	173
	4: PM 2200	30,838	172
	5: PM 2200	31,011	173
	6: PM 2200	31,184	173
			178

31,362

	Pressure	Meter	BBLs Per Hr
02-28-10			
2: PM	2050	31,528	166
3: PM	2150	31 693	165
4: PM	2150	31,859	166
5: PM	2150	32,022	163
03-01-10			
1: PM	2050	169	169
2: PM	2,00	335	166
3: PM	2150	500	165
4: PM	2150	665	165
5: PM	2150	830	165
6: PM	2150	995	165
7: PM	2200	1159	164
03-02-10			
9: AM	2100	1327	168
10: AM	2100	1496	169
11: AM	2150	1666	170
12: PM	2150	1,834	168
1: PM	2150	2,000	166
2: PM	2150	2176	176
3: PM	2200	2,352	176
4: PM	2200	2,537	185
5: PM	2200	2,727	190
6: PM	2200	2,919	192
3-3-10			
9 AM	2150	3120	201
10 AM	2150	3316	196
11 AM	2150	3515	199
12	2200	3724	209
1 pm	2200	3925	201
2 pm	2200	4129	204
3 pm	2200	4337	208

	4337	
Pressure	Meter	BBL ph
4Pm 2200	4637	200
5pm 2200	4750	213
6pm 2200	4958	208
3-4-10		
8:30am 2150	5968	210
8:30-10:00 changed out	Filter Gasket	
11am 2150	5392	224
12 2200	5610	218
1pm 2200	5815	205
2pm 2200	6023	208
3pm 2200	6235	212
4pm 2200	6448	213
5pm 2200	6662	214
6pm 2200	6872	210
7pm 2250	7087	215
8pm 2250	7306	219
9pm 2250	7520	214
10pm 2250	7732	212
11pm 2250	7945	213
12am 2250	8155	210 3197
3-5-10 1AM 2250	8363	208
2AM 2250	8567	204
3AM 2225	8766	199
4AM 2225	8964	198
5AM 2225	9153	189
6AM 2200	9339	186
7AM changed out	5 & 20 mic Filters	
11am 2150	9526	187
12 2150	9709	183
1pm 2200	9892	183
2pm 2200	10075	183
3pm 2200	10255	180

	Pressure TP 2200	10255 Meter 10429	BBL ph
3-06-10			174
10:30 AM	2050	10,603	174
11:30 AM	2100	10,774	171
12:30 PM	2150	10,943	169
1:30 PM	2150	11,109	166
2:30 PM	2150	11,274	165
3:30 PM	2150	11,438	164
4:30 PM	2150	11,602	164
5:30 PM	2150	11,765	163
6:30 PM	2200	11,929	164
3-07-10			
8: AM	2050	12,106	177
9: AM	2100	12,266	160
: AM	2100	12,424	158
11: AM	2150	12,583	159
12: PM	2150	12,741	158
1: PM	2150	12,900	159
2: PM	2150	13,057	157
3: PM	2150	13,214	157
4: PM	2150	13,368	154
5: PM	2200	13,522	154
3-08-10			
9: AM	2050	13,683	161
10: AM	2050	13,840	157
11: AM	2100	13,998	158
12: PM	2150	14,155	157

14,155

	Pressure	Meter	BBLs per hr
03-09-10			
8:30 AM	2050	14,308	
9:30 AM	2050	14,460	153
10:30 AM	2100	14,611	152
11:30 AM	2100	14,762	151
12:30 PM	2100	14,912	151
1:30 PM	2150	15,061	150
2:30 PM	2150	15,211	149
3:30 PM	2150	15,360	150
4:30 PM	2150	15,509	149
5:30 PM		15,658	149
6:30 PM		15,807	149
3-10-10			
11 AM	2200	16006	199
12	2200	16209	203
1pm	2200	16407	198
2pm	2250	16604	197
3pm	2250	16802	198
4pm	2250	17002	200
3-11-10			
8:30 AM	2200	17203	201
9:30 AM	2200	17408	205
10:30 AM	2250	17607	199
11:30 AM	2250	17807	200
12:30 pm	2300	18007	200
1:30 pm	2300	18192	185
2:30 pm	2300	18385	193
3-12-10			
12	2100	18580	195
1pm	2200	18766	186
2pm	2250	18951	185
3 pm	2250	19135	184

	Pressure	19135 Mcfee.	BBLS ph
	4p 2250	19317	182
	5p 2256	19505	188
03-13-10			
	11:AM 2150	19,696	191
	12:PM 2200	19,883	187
	1:PM 2200	20,070	187
	2:PM 2250	20,257	187
	3:PM 2250	20,443	186
	4:PM 2250	20,629	186
	5:PM 2250	20,815	186
	6.PM 2250	21,004	189
03-14-10			
	2:PM 2150	21,190	186
	3:PM 2200	21,374	184
	4:PM 2200	21,558	184
	5:PM 2200	21,741	183
	6:PM 2200	21,924	183
03-15-10			
	3:PM 2150	22,110	186
	4:PM 2150	22,293	183
	5:PM 2200	22,475	182
	6:PM 2200	22,662	187
03-16-10			
	2PM 2150	22,848	186
	3PM 2150	23,030	182
	4.PM 2200	23,211	181
	5:PM 2200	23,390	179
	6:PM 2200	23,573	183
3-17-10			
	10AM 2150	23759	186
	11AM 2200	23943	184
	12 2200	24124	181

	Pressure	24124 Meter	BBL pk
1 Pm	2200	24303	179
2 pm	2200	24483	180
3/18/10			
11 Am	2100	24657	174
12	2150	24829	172
1 pm	2200	25008	179
2 p	2200	25189	181
3 p	2250	25374	185
4 p	2250	25548	174
3-19-10			
8:30 Am	2150	25735	187
9:30	2150	25925	190
10:30	2200	26103	178
11:30	2200	26281	178
12:30 pm	2250	26466	179
1:30 p	2250	26633	173
2:30	2250	26809	176
3:30	2250	26982	173
4:30 pm	2250	27158	176
5:30 pm	2250	27330	172
6:30 pm	2250	27505	175
03-20-10			
12: PM	2150	27,686	181
1: PM	2150	27,865	179
2: PM	2200	28,044	179
3: PM	2200	28,222	178
4: PM	2250	28,401	179
5: PM	2250	28,579	178
6: PM	2250	28,757	178
7: PM	2250	28,936	179

28,936

	Pressure	Meter	BBLs Per Hr
3-21-10			
12:PM	2150	29,113	177
1:PM	2150	29,288	175
2:PM	2150	29,464	176
3:PM	2200	29,639	175
4:PM	2200	29,815	176
5:PM	2250	29,990	175
6:PM	2250	30,167	177
3-22-10			
11:AM	2100	30,346	179
12:AM	2150	30,524	178
1:PM	2150	30,702	178
2:PM	2200	30,883	181
3:PM	2250	31,070	187
4:PM	2250	31,268	198
5:PM	2250	31,471	203
6:PM	2250	31,676	205
7:PM	2250	31,884	208
3-23-10			
11:30 AM	2150	32084	200
12:30 PM	2150	32,300	216
1:30 PM	2200	32,517	217
2:30 PM	2250	32,741	224
3:30 PM	2250	32,965	224
4:30PM	2250	33,191	226
5:30PM	2250	33,417	226
6:30PM	2250	33,644	227

33,644

	Pressure	Meter	BBLS Per
03-24-10	2200	33586	
	2200	34100	244
	2250	34290	214
	2250	34542	190
	2150	34781	252
	2150	34950	239
	2150	35140	169
	2150	35323	190
	2200	35526	183
	2200	35751	206
03-25-10	2200	35975	225
	2250	36166	224
	2250	36368	191
	2250	36558	202
	2250	36764	201
	2300	36945	205
	2300	37140	184
	2300	37347	192
	2300	37545	207
	2300	37717	195
			172
@ 3,2410			
[redacted]	2200	37923	206
	2200	38101	178
	2250	38301	200
	2250	38485	184
	2300	38692	207
	2300	38900	214
	2300	39081	175
	2300	~~39457~~ 39461	372

	Pressure	Meter	BBLs Per hr
		39,453	
3-27-10			
9:AM	2150	39,641	188
10:AM	2150	39,822	181
11:AM	2200	40,000	178
12:PM	2250	40,177	177
1:PM	2250	40,354	177
2:PM	2250	40,530	176
3:PM	2250	40,705	175
4:PM	2250	40,881	176
5:PM	2300	41,056	175
03-28-10			
1:PM	2150	41,231	175
2:PM	2150	41,404	173
3:PM	2200	41,575	171
4:PM	2250	41,747	172
5: PM	2,250	41,919	172
5:30 PM	2250	42,005	86
03-29-10			
1:PM	2150	42,177	172
2:PM	2150	42,349	172
3:PM	2200	42,520	171
4:PM	2200	42,692	172
5:PM	2250	42,864	172
03-30-10			
12:PM	2150	43,041	177
1:PM	2150	43,214	173
2:PM	2200	43,385	171
3:PM	2200	43,556	171
4:PM	2250	43,728	172
5:PM			
3/31/10			
9am	2150	43918	190
10am	2200	44104	186

	Pressure			
11Am	2200		44104	
12	2250		Meter	BBLpA
1pm	2250		44291	187
2pm	2250		44477	186
3pm	2250		44663	186
4pm	2250		44849	186
4-1-10			45035	186
4-2-10			45223	188
8.30Am	2150	181		181
9:30Am	2150	364		183
10:30Am	2200	546		182
11:30am	2250	727		181
12:30pm	2250	908		181
1:30pm	2250	1090		182
2:30pm	2250	1272		182
3:30pm	2250	1451		179
4:30pm	2250	1632		181
5:30pm	2250	1812		180
04-03-10				
9:30AM	2150	1,998		186
10:30AM	2200	2,184		186
11:30AM	2200	2,368		184
12:30PM	2200	2,552		184
1:30PM	2250	2,736		184
2:30PM	2250	2,920		184
3:30PM	2250	3,104		184
04-04-10				
12:PM	2150	3,290		186
1:PM	2200	3,472		182
2:PM	2200	3,654		182
3:PM	2250	3,835		181
4PM	2250	4,016		181
		4:198		182

4,198

	Pressure	Meter	BBLs Per Hr.
4-05-10			
4:30	2150	4,390	192
5:30	2200	4,583	193
6:30	2250	4,774	191
4-06-10			
9:AM	2100	4,958	184
10:AM	2150	5,139	181
11:AM	2000	5,321	182
12:PM	2250	5,503	182
1:PM	2250	5,683	180
2:AM	2250	5,863	180
3:PM	2250	6,043	180
4:PM	2150	6,213	170
5:PM	2150	6,383	170
PM	2150	6,536	153
4-7-10			
12	2200	6708	172
1pm	2200	6888	180
2pm	2250	7061	173
3pm	2250	7237	176
4pm	2300	7412	175
5pm	2300	7586	174
6pm	2300	7762	176
4-8-10			
11Am	2200	7941	179
12	2200	8118	177
1pm	2250	8294	176
2pm	2250	8470	176
3pm	2300	8646	176
4pm	2300	8821	175

8821

Pressure	Meter	BGL ft
4-9-10 12 noon 2150	9030	209
1pm 2200	9236	206
2pm 2250	9447	211
3pm 2250	9670	223
4pm 2300	9893	223
5pm 2300	10116	223
04-10-10		
9:AM 2150	10,322	206
10:AM 2150	10,524	202
11:AM 2200	10,726	202
12:PM 2250	10,930	204
1:PM 2250	11,131	201
2:PM 2250	11,332	201
3:PM 2250	11,533	201
04-11-10		
12:PM 2150	11,752	219
1:PM 2250	11,969	217
2:PM 2250	12,184	215
3:PM 2250	12,399	215
4:PM 2250	12,615	216
5:PM 2250	12,832	217
04-12-10		
11:AM 2150	13058	206
12:PM 2200	13,244	206
1:PM 2250	13450	206
2:PM 2250	13,657	207
3:PM 2250	13,863	206
4:PM 2250	13,922 Pump off	59
5:PM 2250	14,121	199

14,121

	Pressure	Meter		BBLs Per hr.
04-14-10				
	8:30Am 2150	14317		196
	9:30 2200	14514		197
	10:30 2250	14712		198
	11:30 2250	14901		189
	12:30pm 2250	15087		186
	1:30 2250	15273		186
	2:30 2250	15459		186
	3:30 2300	15614		155
	4:40 2300	15769		155
	5:30PM 2300	15957		188
	6:30PM 2300	16,146		189
04-15-10				
	1pm 2200	16330		184
	2pm 2200	16511		181
	3p~ 225	16694		183
04-17-10				
	9:AM 2100	16870		176
	10:AM 2150	17051		181
	11:AM 2150	17232		181
	12:PM 2200	17413		181
	1:PM 2250	17,594		181
	2:PM 2250	17,775		181
	3:PM 2250	17,957		182
	4:PM 2250	18,139		182
04-18-10				
	2:PM 2100	18,325		186
	3:PM 2200	18,495	Pump off For a Few minutes	170
	4:PM 2200	18,679		184
	PM 2250	18,864		185

18,864

	Pressure	Meter	BBLs Per Hr
4-20-10			
9Am	2100	19061	197
10Am	2150	19253	192
11Am		19,438	185
12	2000	19623	185
1Pm	2250	19.806	183
2pm	2250	19,987	181
3pm	2250	20,165	178
4:PM	2250	20,344	179
5:PM	2250	20,524	180
04-21-10			
10AM	2150	20,691	167
11:AM	2200	20,872	181
12:PM	2250	21,052	180
1:PM	2250	21,232	180
2:PM	2250	21,412	180
3:PM	2250	21,593	181
4:PM	2250	21,774	181
5:PM	2300	21,956	182
4-22			
1pm	2150	22144	188
2pm	2250	22334	190
3pm	2250	22520	186
4p	2250	22705	185
5pm	2250	22891	186
4-23-10			
12	2150	23085	194
1pm	2200	23280	195
2Pm	2250	23474	194
3pm	2250	23668	194
4pm	2300	23862	194
5pm	2300	24059	197

4-24-10		24,059		
	Pressure	Meter		BBLs per hr.
12:PM	2150	24,255		196
1:PM	2200	24,451		196
2:PM	2250	24,677	46-4700 BBLs	196
3:PM	2250	24,873	46-4700 BBLs	196
4:PM	2250	25,079	46-4700 BBLs	166
5:PM	2250	25,234	4644-4680 BBLs	195
6:PM	2300	25,430	4644-4680 BBLs	196
4-25-10			44-4500	
12:PM	2150	25,621	4500-4536	191
1:PM	2200	25,810		189
2:PM	2250	25,999	4500-4536	189
3:PM	2250	26,187	" "	188
4:PM	2250	26,375	" "	188
5:PM	2300	26,563	" "	188
PM	2300	26,753	" "	190
4-26-10			4392-4468	
11:AM	2150	26,941	4464-4572	188
12:PM	2200	27,129	" "	188
1:PM	2250	27,316	4464-4500	187
2:PM	2250	27,503	" "	187
3:PM	2250	27,690	4464-4500	187
4:PM	2300	27,877	" "	187
5:PM	2300	28,064	" "	187
6:PM	2300	28,252		188
4-27-10				
1pm	2200	28465	4930 - 4968	213
2pm	2250	28670	" "	205
3pm	2250	28877	" "	207
4pm	2250	29081	" "	204
5pm	2300	29287	" "	206
6pm	2300	29494	" "	207

	Pressure	29494 Meter		BBLs pr
10Am	2200	29687	4640 - 4680	193
11 Am	2250	29883	" "	196
12	2250	30080	4752 - 4788	197
1pm	2300	30277	4644 - 4680	197
2pm	2300	30470	4608 - 4680	193
3pm	2300	30665	" "	195
4pm	2300	30859	" "	194
4-29				
9Am	2200	31050	4460 - 4500	191
10Am	2250	31245	" "	195
11Am	2250	31432	" "	187
12	2250	31623	" "	191
1pm	2300	31806	" "	183
2pm	2300	31994	4350 - 4390	188
3pm	2300	32178	4428 - 4464	184
4pm	2300	32364	4460 - 4500	186
4-30				
10Am	2200	32556	4608 - 4640	192
11Am	2250	32749	" "	193
12	2250	32941		192
1pm	2250	33132		191
2pm	2300	33324	4572 - 4608	192
3pm	2300	33515	" "	191
4pm	2300	33707		192
5pm	2300	33900	4572 - 4608	193

	Pressure	Meter		BBLs Per Hr.
05-01-10			4788-4900	
11: AM	2150	202		202
12: PM	2250	404		202
1: PM	2250	606		202
2: PM	2300	807		201
3: PM	2300	1,010	4824-4860	203
4: PM	2300	1,212		202
5: PM	2300	1,413		201
6: PM	2300	1,616		203
05-02-10			4760-4888	
4: PM	2150	1816		200
5: PM	2250	2,016		200
6: PM	2250	2215		199
7: PM	2250	2,414		199
05-03-10			4744-4824	
12: PM	2150	2,614		200
1: PM	2250	2,812		198
2: PM	2250	3,009		197
3: PM	2250	3,206		197
4: PM	2300	3404		198
5: PM	2300	3602		198
6: PM	2300	3800		198
05-04-10			4788-4860	
11: AM	2200	4,001		201
12: PM	2250	4,200		199
1: PM	2250	4,399		199
2: PM	2250	4,598		199
3: PM	2300	4,798		200
4: PM	2300	4,997		199
5: PM	2300	5,196		199
6: PM	2300	5,395		199
7: PM	2300	5,596		201

5,596

	Pressure	Meter	4688 - 4744 BBLs Perf
05-05-10			
1: PM	2200	5,794	198
2: PM	2250	5,991	197
2:30 ~~3: PM~~	2250	6085	94
4: PM	2250	6293	208
5: PM	2300	6502	209
6:00 PM	2300	6703	201
6:30 PM	2300	6806	103
5-6-10			
12	2150	7007	201
1pm	2	7208	201
2pm	2	7405	197
3p	2300	7604	199
4pm	2300	7803	199
5-7-10			
12:30pm	2150	8001	198
1:30pm	2250	8201	200
2:30pm	2300	8399	198
3:30pm	2300	8598	199
4:30pm	2300	8795	197
5:30pm	2300	8993	198
05-08-10			
1: PM	2150	9,193	200
2: PM	2250	9,391	198
3: PM	2250	9,588	197
4: PM	2250	9,785	197
5: PM	2250	9,982	197
6: PM	2300	10,181	199

10,181

	Pressure	Meter		BBLs Per hr.
5-09-10				
11: AM	2150	10,381		200
12: PM	2200	10,580		199
1: PM	2250	10,778		198
2: PM	2250	10,977		199
3: PM	2250	11,175		198
4: PM	2300	11,375		200
5: PM	2300	11,574		199
6: PM	2300	11,773		199
7: PM	2300	11,973		200
5-10-10				
1: PM	2150	12,173		200
2: PM	2250	12,372		199
3: PM	2250	12,570		198
4 PM	2250	12,768		198
5: PM	2300	12,965		197
6: PM	2300	13,165		200
5-11-10				
11: AM	2200	13,365		200
12: PM	2200	13,563		198
1: PM	2250	13,762		199
2: PM	2250	13,960		198
3: PM	2250	14,160		200
4: PM	Pump off			
5: PM	2250	14,358		198
6: PM	2300	14,557		199
7: PM	2300	14,756		199
5/12				
9AM	2200	14958	4680 - 4717	202
10AM	2200	15156		198
11AM	2250	15357		201
12	2300	15552		195

Pressure

1pm 2300
2pm 2300
3pm 2300
4pm 2300
5pm 2300

5/13/10

9am 2200
10am 2250
11am 2250
12 2250
1pm 2300
2pm 2300
3pm 2300
4pm 2300
5pm 2300

5-14-10

12: AM 2200
1: PM 2200
2: PM 2250
3: PM 2250
4: PM 2250
5: PM 2300
6: PM 2300
7: PM 2300

05-15-10

11: AM 2200
12: PM 2250
1: PM 2250
2: PM 2250
3: PM 2250
4: PM 2300
5: PM 2300

15552

Meter		BBL/h
15747	4608 - 4644	195
15939		192
16132		193
16325		193
16519		194
16718	4644 - 4688	199
16918		200
17117		199
17310		193
17506		196
17697		191
17893		196
18086	4608 - 4680	193
18281		195
18,477		196
18682		205
18887		205
19,060		173
19,255		195
19,449		194
19,643		194
19,839		194
20,033		196
20,226		193
20,420		194
20,613		193
20,806		193
20,999		193
21,195		196

21,195

	Pressure	Meter	BBLs Per Hr.
5-16-10			
12: PM	2150	21,389	194
1: PM	2200	21,581	192
2: PM	2250	21,774	193
3: PM	2250	21,966	192
4: PM	2250	22,159	193
5: PM	2250	22,370	211
05-17-10			
2: PM	2150	22,560	190
3: PM	2200	22,752	192
4: PM	2250	22,944	192
5: PM	2250	23,137	193
5/18/10			
12			
1pm	2150	23321	184
2pm	2200	23514	193
3pm	2200	23706	192
4pm	2250	23896	190
5pm	2250	24090	194
5/19/10			
1pm	2100	24290	200
2pm	2150	24483	193
3pm	2200	24675	192
4pm	2250	24870	195
5pm	2250	25061	191
05-20-10			
12:PM	2150	25,255	194
1: PM	2250	25,446	191
2: PM	2250	25,639	193
3: PM	2250	25,830	191
4: PM	2250	26,022	192
5: PM	2250	26,216	194

26,216

05-21-10	Pressure	Meter	BBLs per MI
11: AM	2150	26,411	195
12: PM	2200	26,604	193
1: PM	2250	26,796	192
2: PM	2250	26,989	193
3: PM	2250	27,181	192
4: PM	2250	27,374	193
5: PM	2300	27,568	194
05-22-10			
11: AM	2150	27,762	194
12: PM	2200	27,955	193
1: PM	2250	28,149	194
2: PM	2250	28,343	194
3: PM	2300	28,536	193
4: PM	2300	28,732	196
05-23-10			
1: PM	2150	28,927	195
2: PM	2200	29,121	194
3: PM	2250	29,315	194
4: PM	2250	29,509	194
5: PM	2250	29,702	193
6: PM	2300	29,896	194
05-24-10			
2: PM	2150	30,090	194
3: PM	2200	30,282	192
4: PM	2250	30,475	193
5: PM	2250	30,668	193
6: PM	2250	30,862	194
05-25-10			
1 PM	2150	31,030	168
2 PM	2200	31,222	M
3 PM	2250	31,414	192
4 PM	2250	31,606	192
5 PM	2250	31,798	192

32,015

	Pressure	Meter	BBLs Per Hr
5-26-10			
11:30am	2150	32207	192
12:30	2200	32401	194
1:30	2200	32596	195
2:30	2250	32790	194
3:30	2250	32982	192
4:30	2250	33,171	189
5:30pm	2300	33,366	195
6:30Am	2350	33,565	199
5/27/10			
1pm	2150	33761	196
2pm	2200	33957	196
3pm	2250	34153	196
4pm	2250	34348	195
6pm	2250	34542	194
6pm	2300	34739	197
5/28/10			
11am	2150	34938	199
12	2200	35134	196
1pm	2200	35331	197
2pm	2250	35528	197
3pm	2250	35719	191
4pm	2300	35914	195
5pm	2300	36109	195
05-29-10			
12 PM	2150	36,303	194
1: PM	2200	36,496	193
2: PM	2250	36,688	192
3: PM	2250	36,883	195
4: PM	2250	37,082	199
5: PM	2300	37,288	206
6: PM	2300	37,495	207

37,495

	Pressure	Meter	BBLs Per 1
05-30-10			
3: PM	2150	37,693	198
4: PM	2200	37,893	200
5: PM	2250	38,092	199
6: PM	2250	38,294	202
05-31-10			
1: PM	2150	38,486	192
2: PM	2200	38,678	192
3: PM	2200	38,870	192
4: PM	2250	39,062	192
5: PM	2250	39,256	194
06-01-10			
1: PM	2150	196	196
2: PM	2150	389	193
3: PM	2200	582	19
4: PM	2250	777	19
5: PM	2250	973	196
6: PM	2250	1172	199
06-04-10			
1:30 PM	2050	1359	187
2:30 PM	2100	1539	180
3:30 PM	2150	1722	183
4:30 PM	2150	1911	188
06-06-10			
12: PM	2050	2097	186
1: PM	2100	2282	185
2: PM	2150	2466	184
3: PM	2150	2651	185
[illegible] PM	2150	2836	185
[illegible]	2200	3023	18

3,023

	Pressure	Meter	BBLs Per Hr.
12:30 PM	2050		
1:30 PM	2150	3,196	173
2:30 PM	2150	3,366	170
3:30 PM	2150	3,536	170
4:30 PM	2200	3,707	171
5:30 PM	2200	3,879	172
06-05-10		4,053	174
1: PM	2100		
2: PM	2130	4,229	
3: PM		4405	176
4: PM		4,470	176
5: PM			65
06-09			
10:30	2100		
11:30	2150	4644	
12:30p	2150	4818	174
06-10		4980	174
11a	2100		172
12	2150	5165	
1p	2150	5309	175
2p	2200	5509	174
3p	2200	5681	170
4p	2250	5853	172
5p	2250	6024	172
		6197	171
			173

6,197

	Pressure	Meter	BBLs Per
06-12-10			
10: AM			
11: AM			
12: PM			
1 : PM	2050	6,372	175
2: PM	2000	6,544	172
3 : PM	2150	6,716	172
4 : PM	2150	6,890	174
5 : PM	2150	7,063	173
5:30 PM	2250	7,151	88
06-13-10			
2: PM	2050	7,324	173
3: PM	2150	7,497	173
4: PM	2150	7,668	171
5: PM	2150	7,840	172
6: PM	2200	8,013	173
06-16-10			
11: AM	2050	8183	170
12: PM	2100	8356	173
1 : PM	2150	8,531	175
06-17-10	1900		
10: AM	2000	8,708	177
11: AM	2050	8,886	178
12: PM	2100	9,063	177
1 : PM	2150	9,240	177
2: PM	2150	9,418	178
3: PM	2150	9,596	178
4: PM	2150	9,774	178
5 : PM	2200	9,955	181

9,955

	Pressure 1950 - 1950	Meter	BBLs Per Hr.
6-21-10			
12: PM	2050	10,125	170
1: PM	2100	10,295	170
2: PM	2100	10,464	169
3: PM	2150	10,633	169
4: PM	2150	10,803	170
5: PM	2150	10,972	169
6: PM	2150	11,142	170
6-22-10	1800-1950		
11: AM	2050	11316	174
12: PM	2100	11490	174
1: PM	2150	11,666	176
2: PM	2150	11,841	175
6-23-10	1800 - 1950		
11: AM	2050	12,015	174
2: PM	2000	12,189	174
1: PM	2150	12,365	176
6-26-10	1700 - 1900		
1: PM	2000	12,538	173
2: PM	2050	12,711	173
6-30-10	1700 - 1900		
10: AM	1950	12,876	165
11: AM	2000	13041	165
12 PM	2050	13,207	166
1: PM	2050	13,373	166
2: PM	2100	13,538	165
3: PM	2100	13,704	166

	Pressure	Meter	BBLs pm
07-02	1700 - 1850		
9 Am	1900	165	165
10 Am	2050	330	165
11 Am	2050	493	163
12	2100	653	160
1 pm	2100	815	162
2 pm	2150	976	161
3 pm	2150	1138	162
4 pm	2156	1300	162
07-03-10	1800 - 1950		
12: PM	2050	1,468	168
1: PM	2050	1,634	166
2: PM	2100	1,800	166
3: PM	2150	1,966	166
4: PM	2150	2,131	165
5: PM	2150	2,298	167
07-05-10	1700 - 1900		
11:30 AM	2000	2,503	205
12:30 PM	2050	2,675	172
1:30 PM	2050	3,547	172
2:30 PM	2100	3,019	172
3:30 PM	2150	3,192	173
4:30 PM	2150	3,365	173
07-06-10	1700 - 1900		
3:30 PM	2050	3,596	231
4:30 PM	2100	3,782	186
5:30 PM	2150	3,969	187
6:30 PM	2150	4,159	190
07-07-10	1800 - 1900		
10 Am	2100	4348	189
11 AM	2100	4537	189
12 PM	2150	4725	188

4,725

7-07-10

	Pressure	Meter	BBLs Per Hr
1 PM	2150	4913	188
2 PM	2150	5103	190
3 PM	2200	5,292	189
4 PM	2200	5,483	191
5 PM	2200	5,673	190
6 PM	2250	5,865	192

5869

07-09-10	1700-1950	Meter	BBLs per hr
8: AM	2050	6049	180
9: AM	2100	6236	187
10: AM	2100	6423	187
11: AM	2150	6610	187
12: PM	2150	6797	188
1: PM	2200	6985	188
2: PM	2200	7175	190
3: PM	2200	7361	186
4: PM	2200	7548	187
5: PM	2250	7737	189
6: PM	2250	7925	188
7: PM	2250	8114	189
8: PM	2250	8300	186
9: PM	2250	8491	191
10: PM	2250	8681	190
11: PM	2275	8867	186
12: AM	2300	9057	190
07-10-10			
1 AM	2300	9247	190
2 AM	2350	9437	190
3 AM	2350	9629	192
4 AM	2350	9821	192
5 AM	2350	10012	191
6 AM	2350	10206	194
7 AM	2300	10,393	187
8 AM	2300	10,580	187
9 AM	2350	10,771	191
10 AM	2350	10,963	192
11 AM	2350	11,155	192
12 PM	2300	11,346	231
1 PM	2300	11,538	192
2 PM	2300	11,731	193
3 PM	2300	11,923	192
4 PM	2300	12,116	193

	Pressure	Meter		BBLs per hr
		12,116		
5 PM	2300	12,308		192
6 PM	2300	12,501		193
7 PM	2300	12,694		193
8 PM	2300	12891		197
9 PM	2300	13083		192
10 PM	2300	13279		196
11 PM	2300	13474		195
12 AM	2300	13663		189
07-11-10	[illegible]	[illegible]		[illegible]
1 AM	2300	[illegible] 13864	201	[illegible]
2 AM	2300	[illegible] 14047	183	
3 AM	2300	14240		193
4 AM	2300	14432		192
5 AM	2300	14625		193
6 AM	2300	14820		195
7 AM	2300	15,009		189
8 AM	2300	15,203		194
9 AM	2300	15,397		194
10 AM	2300	15,592		195
11 AM	2300	15,787		195
12 PM	2300	15,982		195
1 PM	2300	16,176		194
2 PM	2300	16,370		194
3 PM	2300	16,564		194
4 PM	2300	16.758		194
5 PM	2300	16953		195
6 PM	2300	17,148		195
7 PM	2300	17343		195
8 PM	2300	17540		197
9 PM	2300	17734		194
10 PM	2300	17928		194
11 PM	2300	18121		193
12 AM	2300	18317		196

07-12-10

	Pressure	Meter	BBLs Per Hr.
1 AM	2300	18512	195
2 AM	2300	18703	191
3 AM	2300	18899	196
4 AM	2300	19095	196
5 AM	2300	19286	191
6 AM	2300	19481	195
7 AM	2300	19676	195
8 AM	2300	19869	193
9 AM	2300	20064	195
10 AM	2300	20256	192
11 AM	2300	20457	195
12 PM	2300	20650	199
1 PM	Mike got pinched		
2 PM	on Bacon counter		
3 PM	Fixed and Counting		
4 PM	2300	20839	189
5 PM	2300	21010	171
6 PM	2300	21202	192
7 PM	2300	21,396	194
8 PM	2300	21602	206
9 PM	2300	21808	206
10 PM	2300	22015	207
11 PM	2300	22218	203
12 AM	2300	22424	206
07-13-10			
1 AM	2300	22628	204
2 AM	2300	22834	206
3 AM	2300	23034	200
4 AM	2300	23231	197
5 AM	2300	23440	209
6 AM	2300	23640	200
7 AM	2300	23841	201

	Pressure	Meter	BBLs Per Hr.
8 AM	2300	24040	199
9 AM	2300	24242	202
10 Am	2300	24,444	202
11 Am	2300	24,646	202
12	2300	24,849	203
1pm	2350	25054	205
	pump OFF	FALL OFF STARTed	
07-17-10	1775 - 1950		
8: AM	2050	25,231	177
9: AM	2100	25,425	194
10: AM	2150	25,620	195
11: AM	2150	25,814	194
12: PM	2150	26,008	194
1: PM	2200	26,203	195
2: PM	2200	26,398	195
3: PM	2200	26,592	194
4: PM	2250	26,787	195
5: PM	2250	26,983	196
6: PM	2250	27,180	197
07-18-10	1850 - 2050		
9: AM	2150	27,378	198
10: AM	2150	27,574	196
11: AM	2200	27770	196
12: PM	2200	27,967	197
1: PM	2250	28,164	197
2: PM	2250	28,361	197
3: PM	2250	28,557	196
4: PM	2250	28,753	196
5: PM	2250	28,949	196
6: PM	2300	29,145	196
7: PM	2300	29,342	197

29,342

	Pressure		Meter	BBLs Per Hr
07-19-10		1900 - 2100		
11: AM	2200		29,541	199
12: PM	2200		29,738	197
1: PM	2250		29,935	197
2: PM	2300		30,131	196
3: PM	2300		30,328	197
07-20-10	1800 - 2050			
11:30 AM	2200		30,524	196
12:30 PM	2200		30,720	196
1:30 PM	2250		30,916	196
2:30 PM	2250		31,112	196
3:30 PM	2250		31,309	197
4:30 PM	2250		31,506	197
5:30 PM	2300		31,704	198
07-21-10	1850 - 2050			
9: AM	2150		31,903	199
10: AM	2200		32,100	197
11: AM	2250		32,297	197
12: PM	2250		32,494	197
1: PM	2250		32,691	197
2: PM	2300		32,888	197
3: PM	2300		33,084	196
4: PM	2300		33,282	198
7-22-10	1900 - 2100			
10Am	2200		33483	201
11 Am	2250		33683	200
12	2300		33881	198
1pm	2300		34081	200
2pm	2300		34280	199
3 pm	2300		34478	198
3.30pm	2350		34562	84

34,562

1-24-10	Pressure	Meter	BBLs PER Hr.
750 - 1950			
9:30AM	2050	34,718	156
10:30AM	2150	34,873	155
11:30 AM	2150	35,027	154
12:30PM	2200	35,181	154
1:30PM	2200	35,335	154
2:30PM	2200	35,489	154
3:30 PM	2250	35,643	154
4:30 PM	2250	35,799	156
1-25-10	1850 - 2000		
8:30 AM	2100	35950	151
9: AM	2150	36,027	77
7-26-10	1800 - 1950		
10:30AM	2050	36,179	152
11:30AM	2100	36,330	151
2:30 PM	2150	36,482	152
1:30 AM	2150	36,633	151
7-27-10	1800 - 1950		
2: PM	2050	36790	157
3: PM	2100	36950	160
4: PM	2150	37,110	160
5: PM	2150	37,270	160
6: PM	2200	37,433	163
7-28-10	1800 - 1950		
10 AM	2100	37598	165
11 AM	2150	37754	156
12 PM	2150	37, 910	156
1 PM	2200	38,065	155

38,065

07-29-10	1850-2100		
8:30 AM	2100	38219	154
9:30 AM	2150	38,373	154
10:30 AM	2150	38,527	154
11:30 AM	2200	38680	153
12:30 PM	2200	38834	154
1:30 PM	2200	38988	154
2:30 PM	2200	39143	155
07-30-10	1800-2000		
9AM	2100	39301	161
10A	2150	39460	156
11A	2150	39615	156
12	2200	39771	156
1p	2200	39925	157
2p	2200	40084	156
3p	2250	40240	156
4p	2250	40397	157
5pm	2250	40553	156
6pm	2250	40709	156
07-31-10	1900-2050		
9:AM	2100	40,865	156
10:AM	2150	41,19	154
11:AM	2200	41,173	154
12:PM	2200	41,327	154
1:PM	2200	41,481	154
2:PM	2250	41,637	156
3:PM	2250	41792	155
4:PM	2250	41947	155
5:PM	2250	42,105	158

42,105

	Pressure	Meter	BBLs Per Hr.
08-02-10	1800 - 1950		
9:30 PM	2100	162	162
10:30 AM	2150	319	157
11:30 AM	2150	476	157
12:30 PM	2200	633	157
1:30 pm	2200	790	157
2:30 pm	2200	947	157
3:30 PM	2250	1103	156
4:30 PM	2300	1261	158
5:30 PM	2300	1,415	154
6:30 PM	2300	1,571	156
08-03-10	1900 - 2100		
9:30 AM	2200	1,733	162
10:30 AM	2250	1,886	153
11:30 AM	2250	2,042	156
12:30	2300	2,197	155
1:30 pm	2300	2,358	161
2:30 pm	2300	2,519	161
3:30 pm	2300	2,680	161
4:30 PM	2350	2,841	161
5:30 PM	2350	3,002	161
6:30 PM	2350	3,164	162
08-04-10	1900 - 2150		
9 AM	2250	3328	164
10 AM	2250	3490	162
11 AM	2250	3,651	161
12 PM	2250	3,812	161
1 pm	2300	3,974	162
2 pm	2300	4,136	162
3 pm	2300	4,298	162
4 PM	2300	4,460	162
5 PM	2350	4622	162
6 PM	2350	4,786	164

4,786

	Pressure	Meter	BBLs Per Hr
08-05-10	1900 - 2150		
8:30 AM	2200	4960	174
9:30 AM	2200	5131	171
10:30 AM	2250	5303	172
11:30 AM	2300	5476	173
12:30	2300	5647	171
1:30 pm	2350	5820	173
08-06-10	1900 - 2150		
9:30 AM	2200	5979	159
10:30 AM	2200	6135	156
10:30 AM	SHUT pump down TO change out #1 STUFFING Box		
	BACK AT	11:30	
12:30 pm	2250	6295	160
1:30 pm	2250	6458	163
2:30 pm	2250	6621	163
3:30 pm	2300	6786	165
4:30 pm	2300	6947	161
5:30 pm	2300	7110	163
08-07-10	1900 - 2100		
10: AM	2150	7,274	164
11: AM	2200	7,438	164
12: PM	2250	7,602	164
1: PM	2250	7,767	165
2: PM	2250	7,932	165
3: PM	2300	8,096	164
4: PM	2300	8,260	164
5: PM	2300	8,424	164
6: PM		8,587	163

8587

	Pressure	Meter	BBLs Per Hr.
8-08-10	1900 - 2100		
10:30 AM	2150	8,752	165
11:30 AM	2250	8,917	165
12:30 PM	2250	9,080	163
1:30 PM	2250	9,243	163
2:30 PM	2300	9,408	165
08-09-10			
1:30 PM	2100	9,567	159
2:30 PM	Pump off To Repack Stuffing Box #1		
3:30 PM	2200	9722	155
4:30 PM	2200	9876	155
5:30 PM	2250	10,032	156
8-10-10	1850 - 2050		
11 AM	2150	10,186	154
12 PM	2200	10,342	156
1 PM	2250	10,497	155
2 PM	2250	10,653	156
3 PM	2250	10,808	155
4 PM	2250	10,964	156
5 PM	2250	11,120	156
6 PM	2300	11276	156
08-11-10	1900 - 2150		
9 AM	2200	11433	157
10 AM	2200	11589	156
11 AM	2250	11745	156
12	2250	11901	156
1 PM	2250	12057	156
2 PM	2250	12214	157
3 PM	2300	12372	158
4 PM	2300	12530	158
5 PM	2300	12689	159
6 PM	2300	12,848	159

12,848

	Pressure	Meter	BBLs Per
08-12-10	1900 - 2100		
9 AM	2200	13012	164
10 AM	2200	13175	163
11 AM	2250	13243	68
	pump down changed out VALves		
3:30pm	2250	13402	159
4:30pm	2250	13574	172
5:30PM	2300	13745	171
6:30pm	2300	13916	171
7:30pm	2300	14087	171
08-13-10	1900 - 2150		
8 AM	2200	14254	167
9 AM	2200	14420	166
10 AM	2250	14584	164
11 AM	2250	14758	178
12	Shut pump To Replace O-ring on #2 VALve		
1:30pm	2250	14920	162
2:30pm	2250	15078	158
3:30pm	2300	15237	159
4:30pm	2300	15396	159
5:30pm	2250	15556	160
6:30pm	2350	15716	160
08-14-10	1950-2150		
9: AM	2200	15,885	169
10: AM	2250	16,053	168
11: AM	2250	16,221	168
12: PM	2300	16,390	169
1: PM	2300	16,558	168
2: PM	2300	16,727	169
3: PM	2300	16,896	169
4: PM	2350	17,065	169
5: PM	2350	17,233	168
[illegible] AM	[illegible]	17,314	81

		17,314	
08-15-10			
	Pressure 1900 - 2100	Meter	BBLs Per Hr.
11: AM	2200	17,479	165
12: PM	2250	17,642	163
1: PM	2250	17,805	163
2: PM	2300	17,969	164
3: PM	2300	18,132	163
4: PM	2350	18,295	163
5: PM	2350	18,460	165
08-17-10	1800 - 2000		
12:30	2150	18,621	161
1:30pm	2200	18,783	162
2:30pm	2250	18,936	153
3:30pm	2250	19,098	162
4:30pm	2250	19258	160
5:30 PM	2250	19,419	161
08-18-10	1850 - 2050		
1: PM	2150 *	19,580	161
2: PM	2000	19,740	160
3: PM	2250	19900	160
4: PM	2250	20,060	160
5: PM	2250	20,219	159
6: PM	2250	20,380	161
08-19-10	1900 - 2050		
8:30am	2150	20546	166
9:30am	2200	20707	161
10:30am	2250	20866	159
11:30AM	2250	21026	160
12:30	2250	21186	160
1:30pm	2300	21347	161
2:30pm	2300	21506	159
3:30pm	2300	21666	160
4:30pm	2300	21826	160

21826

	Pressure	Meter	BBLS PH
08-20-10			
10:30 AM	2200	21980	164
11:30	2200	22154	164
12:30 PM	2250	22315	161
1:30	2250	22476	161
2:30	2300	22635	159
3:30	2300	22797	162
4:40	2350	22957	160
5:30 PM	2400	23037	80
08-21-10	1900 - 2050		
8:AM	2150	23,201	164
9:AM	2200	23,361	160
10:AM	2200	23,521	160
11:AM	2250	23,681	160
12:PM	2250	23,841	160
1:PM	2250	24,001	160
2:PM	2250	24,162	161
3:PM	2250	24,324	162
4:PM	2300	24,492	168
4:30 PM	2300	24,578	86
08-22-10	1900 - 2050		
12:30AM	2150	24,742	164
1:30 AM	2200	24,904	162
2:30 PM	2200	25,065	161
3:30PM	2250	25,225	160
4:30 AM	2250	25,386	161
5:30PM	2250	25,558	172

25,558

	Pressure	Meter	BBLs Per Hr.
8-23-10	1900 – 2050		
10 AM	2150	25,728	170
11 AM	2150	25,902	174
12 PM	2200	26,078	176
1 PM	2250	26,255	177
2 PM	2250	26,434	179
3 PM	2300	26,615	181
4 PM	2300	26,799	184
5 PM	2350	26,982	183
6 PM	2350	27,166	184
8-24-10	1900 – 2150		
9 AM	2150	27,342	176
10 AM	2250	27,516	174
11 AM	2300	27,689	173
[illegible] PM	2300	27,863	174
1 PM	2350	28,039	176
2 PM	2350	28,200	161
3 PM	2400	28,361	161
6 PM	2000 – 2300		
7 PM	2350	28,539	178
8 PM	2400	28,708	169
8-25-10	1950 – 2200		
8 AM	2250	28,886	178
9 AM	2300	29,056	170
10 AM	2300	29,226	170
11 AM	2300	29,396	170
12 PM	2300	29,568	172
1 PM	2350	29,739	171
2 PM	2350	29,910	171
3 PM	2350	30,081	171
[illegible] PM	2350	30,252	171
5 PM	2350	30,423	171
6 PM	2350 30594	7 PM 2350 30767	171 173

30,767

	Pressure	Meter	BBLs per
08-26-10	1950 - 2150		0
8:AM	2000	30,936	169
9:AM	2250	31,105	169
10:AM	2250	31,274	169
11:AM	2300	31,445	171
12:PM	2300	31,615	170
1:PM	2300	31,785	170
2:PM	2300	31,956	171
3:PM	2350	32,126	170
4:P.M	2350	32,297	171
5:PM	2350	32,468	171
6:PM	2350	32,639	171
7:PM	2350	32,810	171
08-27-10	1950 - 2150		
8:30 AM	2200	32985	175
9:30	2250	33160	175
10:30	2250	33336	176
11:30	2250	33522	186
12:30pm	2300	33707	185
1:30pm	2300	33894	187
2:30pm	2300	34081	187
3:30pm	2300	34272	191
4:30pm	2350	34453	181
5:30pm	2350	34639	186
08-28-10	1950 - 2150		
10:30 AM	2150	34824	185
11:30 AM	2250	35,005	181
12:30 PM	2250	35,187	182
1:30 PM	2250	35,370	183
2:30 PM	2300	35,553	183
3:30 PM	2300	35,737	184
4:30 PM	2300	35,932	195
5:30 PM	2300	36,129	197
6:30 PM	2300	36,337	208

36,337

	Pressure	Meter	BBLs Per Hr.
8-29-10	1950 - 2100		
1:30 PM	2150	36,529	192
2:30 PM	2200	36,723	194
3:30 PM	2250	36,919	196
4:30 PM	2250	37,115	196
5:30 PM	2250	37,311	196
6:30 PM	2250	37,508	197
8-30-10	1950 - 2050		
2:30 PM	2150	37,709	201
3:30 PM	2200	37,916	207
4:30 PM	2200	38,118	202
5:30 PM	2250	38,320	202
6:30 PM	2250	38,525	205
8-31	1900 - 2100		
9 AM	2150	38730	205
10 AM	2200	38937	207
11 AM	2200	39144	207
12	2250	39345	201
1:30 pm	2250	39534	189
2:30 pm	2250	39726	192
3:30 pm	2250	39919	193
4:30 PM	2250	40,115	196
5:30 PM	2250	40,311	196
6:30 PM	2300	40,508	197
9-01-10	1900-2100		
11 AM	2150	172	172
12 PM	2200	346	174
1 PM	2200	520	174
2 PM	2250	696	176
3 PM	2250	823	177
4 PM	2250	1049	176
5 PM	2250	1224	175
6 PM	2250	1405	181

14.05

	Pressure	Meter	BBLs Per H
09-02-10	1900 - 2050		
9 AM	2150	1590	185
10 AM	2200	1776	186
11 AM	2200	1962	186
12	2250	2149	187
1 PM	2250	2335	186
2 PM	2250	2521	186
3 PM	2250	2708	187
4 PM	2250	2895	187
5 PM	2250	3083	188
6 PM	2250	3270	187
09-03-10	1900 - 2100		
9 AM	2150	3457	187
10 AM	2200	3648	191
11 AM	2200	3840	192
12 AM	2200	4026	186
1 PM	Repacked #1 STUFFING Box		
4 PM	2150	4206	180
5 PM	2200	4393	187
09-04-10	1900 - 2050		
2: PM	2100	4565	172
3: PM	2150	4737	172
4: PM	2150	4911	174
5: PM	2200	5085	174
6: PM	2200	5259	174
7: PM	2250	5435	176

	Pressure 1900 - 2050	5,435 Meter	BBLs Per Hr.
11 AM	2100	5,602	167
12 PM	2150	5,770	168
1 PM	2150	5,940	170
2 PM	2200	6,110	170
3 PM	2200	6,280	170
4 PM	2200	6,448	168
5 PM	2200	6,616	168
6 PM	2250	6,785	169
7 PM	2250	6,955	170
9-06-10	1900 - 2050		
1:30 PM	2100	7,090	135
2:30 PM	2150	7,225	135
3:30 PM	2150	7,352	127
4:30 PM	2200	7,479	127
5:30 PM	2200	7,604	125
6:30 PM	2200	7,731	127
9-07-10	1900 - 2050		
~~12:30 PM~~			
1:30 PM	2150	7,885	154
2:30 PM	2200	8,044	156
3:30 PM	2200	8,197	156
4:30 PM	2250	8,352	155
5:30 PM	2250	8,507	155
9-9-10	1800 - 2000		
9 AM	2100	8648	141
10 AM	2150	8820	172
11 AM	2200	8967	147
12	2200	9119	152
1 PM	2250	~~9272~~ 9272	153
2 PM	2250	9425	153
3 PM	2250	9578	153

	Pressure	Meter	BBLs Per Hr.
4pm	2250	9732	154
5pm	2250	9886	154
09-10-10	1900 - 2050		
2:30	2100	10042	156
3:30	2150	10206	164
4:30	2200	10377	171
5:30	2250	10549	172
09-11-10	1850 - 2050		
10:AM	2150	10,715	166
11:AM	2200	10,877	162
12PM	2200	11,039	162
1:PM	2250	11,204	165
2:PM	2250	11,368	164
3:PM	2250	11,533	165
4:PM	2250	11,697	164
5:PM	2250	11,862	165
6:PM	2300	12,027	165
7:PM	2300	12,194	167
09-12-10	1850-2050		
1:PM	2150	12,358	164
2:PM	2200	12,521	163
3:PM	2250	12,683	162
4:PM	2250	12,846	163
5:PM	2250	13,008	162
6:PM	2250	13,170	162
9-13-10	1900 - 2050		
2:30pm	2150	13,339	169
3:30pm	2200	13508	169
4:30pm	2200	13,682	174
5:30pm	2250	13,863	181
6:30PM	2250	14,053	190

14,053

Pressure	Meter	Bbls Per Hr.
09-14-10 1900 - 2050		
1pm 2100	14232	179
2pm 2150	14417	185
3pm 2200	14603	186
4pm 2250	14788	185
5pm 2250	14977	189
6pm 2250	15,165	188
7PM 2250	15,353	188
09-15-10 1900 - 2050		
1pm 2100	15510	157
2pm 2150	15680	170
3pm 2150	15855	175
4pm 2200	16029	175
5pm 2250	16203	174
6PM 2250	16379	176
7PM 2250	16,566	187
09-16-10 1900 - 2050		
8AM 2100	16745	179
9AM 2150	16925	180
10AM 2200	17106	181
11AM 2200	17291	185
12 2250	17476	185
1pm 2250	17661	185
2pm 2250	17846	185
3pm 2250	18030	184
4pm 2250	18214	184
5pm 2250	18398	184
6pm 2250	18582	184
7pm 2250	18766	184
09-17-10 1900 - 2100		
10AM 2200	18992	226
11AM 2250	19205	213

PR Reading

12 2250
1pm 2300
2pm 2300
3pm 2300
4pm 2300
5pm 2300

09-18-10 1950 - 2100
1:PM 2150
2:PM 2200
3:PM 2250
4:PM 2250
5:PM 2200
6:PM 2200

09-19-10 1950 - 2000
1:PM 2050
2:PM 2050
3:PM 2100
4:PM 2150
5:PM 2150
6:PM 2150
7:PM 2200

09-20-10 1,950 - 2,000
1:PM 2050
2:PM 2050
3:PM 2050
4:PM 2100
5:PM 2100

09-21-10 1900 - 1950
1:30 PM 2000
230 PM 2050
3:30 PM 2050
4:30 PM 2050
5:30 PM 2100

19205

Meter

19418
19634
19850
20070
20298
20521

20,733
20,959
21,179
21,375
21,573
21,738

21,888
22,040
22,192
22,344
22,497
22,652
22,813

22,968
23,117
23,266
23,410
23,559

23,710
23,859
24,007
24,154
24,301
24,448

BBL PER

213
216
216
220
223
228

212
226
218
198
198
165

150
152
152
152
153
155
161

155
149
149
144
149

151
149
148
147
147

24,448

	Pressure	Meter	BBls Per Hr.
09-22-10	1900 - 2050		
11AM	2150	24679	
12PM	2200	24899	226
1:PM	2250	25124	225
09-23-10	1850 - 2050		225
3pm	2100	25355	
4pm	2150	25580	231
5pm	2200	25801	225
6pm	2250	26023	221
09-24-10	1900 - 2100		222
10AM	2150	26248	
11AM	2200	26477	225
12PM	2250	26709	229
1pm	2250	26939	232
2pm	2250	27168	230
3pm	2250	27399	229
4pm	2250	27629	231
5pm	2250	27859	230
6pm	2300	28091	230
09-25-10	1900 - 2100		232
11:AM	2150	28,323	
12:PM	2200	28,555	232
1:PM	2250	28,791	232
2:PM	2250	29,024	236
3:PM	2250	29,258	233
4:PM	2250	29,491	234
5:PM	2300	29,721	233
6:PM	2300	29,960	230
			239

29,960

	Pressure	Meter	BBLS Per Hr
09-27-10	1900 – 2250		
10: AM	2150	30,192	232
11: AM	2150	30,424	232
12: PM	2200	30,656	232
1: PM	2200	30,889	233
2: PM	2250	31,122	233
3: PM	2250	31,353	231
4: PM	2250	31,582	229
5: PM	2250	31,811	229
6: PM	2250	32,028	217
09-28-10	1950 - 2050		
2: PM	2050	32,238	210
3: PM	2100	32,450	212
4: PM	2150	32,661	211
5: PM	2150	32,869	208
6: PM	2200	33,075	206
09-29-10	1900 – 2000		
11: AM	2050	33,276	201
12: PM	2100	33,478	202
1: PM	2150	33,680	202
2: PM	2150	33,886	206
3: PM	2150	34,092	206
4: PM	2200	34,296	204
5: PM	2200	34,500	204
6: PM	2200	34,706	206
7: PM	2200	34,913	207
09-30-10	1900 - 2050		
12:30	2100	35113	200
1:30pm	2150	35310	197
2:3pm	2150	35507	197
3:30pm	2150	35700	193

	Pressure	Meter		BBLS PH
10-1-10	1900 - 2000			
	10AM 2050	184		184
	11AM 2050	366		182
	12AM 2100	540		174
	1pm 2100	708		168
	2p — 2150	875		167
	3p — 2150	1042		167
	4pm 2150	1208		166
	5pm 2150	1379		171
10-2-10	1900 - 2100			
	8AM 2100	1626		247
	9 2250	1874		248
	10 2250	2120		246
	11 2250	2365		245
	12 2300	2608		243
	1pm 2300	2854		246
	2 2300	3101		247
	3 2300	3348		247
	4 2300	3599		251
10-03-10	1900 - 2100			
	12:PM 2200	3844		245
	1:PM 2250	4,088		244
	2:PM 2250	4,333		245
	3:PM 2300	4409	Pump shut off	76
	4:PM 2300	4660		251
10-05-10	1900 - 2150			
	9A — 2150	4927		267
	10 2200	5,192		265
	11 2200	5,452		260
	12 2250	5,713		261
	1pm 2250	5,974		261
	2p — 2250	6231		257
	3PM 2250	6,493		262

10-05-10

	Pressure	Meter	BBLs per Hr
4 PM	2300	6,754	
5 PM	2300	7,010	261
6 PM	2300	7,266	256
7 PM	2300	7,520	256
10-06-10	1950 - 2150		254
11 AM	2200	7,772	
12 PM	2250	8,021	252
1 PM	2250	8,266	249
2 PM	2250	8,509	245
3 PM	2300	8,749	243
4 PM	2300	8,988	240
5 PM	2300	9,227	239
6 PM	2300	9,468	239
10-07-10	2000 - 2150		241
4:30pm	2200	9718	
5:30pm	2250	9960	250
10-08-10	1900 - 2100		242
3pm	2200	10211	
4pm	2200	10462	251
5pm	2250	10707	251
6pm	2250	10952	245
10-09-10	1950 - 2150		245
9:30AM	2200	11,203	
10:30AM	2250	11,448	251
11:30AM	2250	11,694	245
12:30PM	2250	11,937	246
1:30PM	2300	12,183	243
2:30PM	2300	12,428	246
3:30PM	2300	12,672	245
4:30PM	2300	12,917	244
			245

12,917

	Pressure	Meter	BBLs Per Hr.
10-11-10	1900 - 2150		
	5:30 PM 2150	13,161	244
	6:30 PM 2200	13,402	241
	7:30 PM 2200	13,645	243
10-12-10	1900 - 2050		
	9 AM 2150	13898	253
	10 AM 2200	14,136	238
	11 AM 2200	14,377	241
	12 2250	14,618	241
	1 pm 2250	14,860	242
	2 pm 2250	15,099	239
10-13-10	1900 - 2100		
	12 PM 2150	15,331	232
	1 PM 2200	15,568	237
	2 PM 2200	15,803	235
	3 PM 2250	16,038	235
	4 PM 2250	16,272	234
	5 PM 2300	16,506	234
	6 PM 2300	16,744	238
	7 PM 2300	16,982	238
10-14-10	1900 - 2100		
	11 AM 2200	17215	233
	12 2200	17435	220
	1 pm 2250	17663	228
	2 pm 2250	17892	229
	3 pm 2250	18123	231
	4 pm 2300	18350	227
	5 pm 2300	18578	228
	6 pm 2300	18805	227
	7 pm 2300	19030	225

19030

	Pressure	Meter	BBL/hr
10-15-10	1950 - 2150		
9AM	2200	19272	242
10AM	2250	19500	228
11AM	2250	19723	223
12	2250	19949	226
1pm	2250	20178	229
2pm	2250	20403	225
3pm	2300	20634	231
4pm	2300	20859	225
5pm	2300	21085	226
6pm	2300	21310	225
10-16-10	1950 - 2150		
9:AM	2150 -	21,544	234
10:AM	2200	21,769	225
11:AM	2250	21,994	225
12:PM	2250	22,221	227
1:PM	2250	22,444	223
2:PM	2300	22,667	223
3:PM	2300	22,886	219
4:PM	2300	23,094	208
5:PM	2300	23,304	210
6:PM	2300	23,515	211
7:PM	2300	23,729	214
10-17-10	1950 - 2150		
9:AM	2200	23,944	215
10:AM	2250	24,154	210
11:AM	2250	24,361	207
12:PM	2250	24,571	210
1:PM	2250	24,781	210
2:PM	2300	24,992	211
3:PM	2300	25,200	208
4:PM	2300	25,411	211

25,411

	Pressure	Meter		BBLs Per Hr.
10-18-10	1950 - 2100			
2 PM	2150	25,626		215
3 PM	2200	25,836		210
4 PM	2250	26,037		201
5 PM	2250	26,243		206
6 PM	2250	26,445		202
7 PM	2250	26,649		204
10-19-10	1950 - 2150			
10 AM	2150	26,864		215
11 AM	2200	27,072		208
12 PM	2250	27,279		207
1 PM	2250	27,490		211
2 PM	2250	27,700		210
3 PM	2250	27,910		210
4 PM	2250	28,121		211
5 PM	2250	28,333		212
6 PM	2250	28,546		213
10-20-10	1950 - 2050			
12 PM	2150	28,702	Pump off	156
1 PM	2200	28,906		204
2 PM	2200	29,106		200
3 PM	2250	29,304		198
4 PM	2250	29,500		196
5 PM	2250	29,699		199
6 PM	2250	29,904		205
7 PM	2250	30,108		204
8 PM	2250	30,313		205
9 PM	2250	30,516		203
10 PM	2250	30,719		203
10-21-10	2000 - 2150			
7 PM	2200	30938		219
8 AM	2200	31140		202

	Pressure	Meter	BBL PH
9am	2250	31343	203
10 Am	2250	31542	199
11 Am	2250	31746	204
12	2250	31952	206
1 pm	2250	32157	205
2 pm	2250	32352	195
3 pm	2250	32548	196
4 pm	2250	32736	188
5 pm	2250	32925	189
6 pm	2250	33114	189
7 pm	2250	33309	195
10-22-10	2000 - 2100		
9:30 Am	2150	33506	197
10:30 Am	2200	33703	197
11:30 Am	225	33894	191
12:30	2250	34086	192
1:30	Shut pump down changed out Values		
2:30	2300	34313	227
3:30	2300	34539	226
4:30	2300	34764	225
10-23-10	2,000 - 2,150		
1: PM	2200	34,990	226
2: PM	2250	35,211	221
3: PM	2300	35,435	224
4: PM	2300	35,662	227
5: PM	2300	35,890	228
6: PM	2300	36,118	228

36,118

	Pressure	Meter	BBLs Per Hr.
24-10	2000 - 2150		
11: AM	2200	36,352	234
12: PM	2250	36,583	231
1: PM	2250	36,815	232
2: PM	2300	37,047	232
3: PM	2300	37,276	229
10/25/10	2000 - 2150		
11 AM	2250	37,504	228
12	2250	37,732	228
1 PM	2250	37,959	227
2 PM	2300	38,188	229
3 PM	2300	38,421	233
4 PM	2300	38,649	228
5 PM	2300	38,878	229
6 PM	2300	39,108	230
7 PM	2300	39,340	232
10-26-10	2000 - 2150		
9 AM	2200	39579	239
10 AM	2250	39,817	238
11 AM	2250	40,060	243
12 PM	2300	40,309	249
1 PM	2300	40,558	249
2 PM	2300	40805	247
3 PM	2300	41,055	250
4 PM	2350	41,305	250
5 PM	2350	41,556	251
6 PM	2350	41,808	252
7 PM	2350	42,059	251

42,059

	Pressure	Meter	BBLs per Hr.
10-27-10	2000 - 2150		
8AM	2250	42320	261
9AM	2300	42575	255
10AM	2300	42831	256
11AM	2300	43086	255
12	2300	43,341	255
1PM	2300	43,594	253
2PM	2350	43845	251
3:PM	2300	44,096	251
4:PM	2350	44,350	254
5:PM	2350	44,605	255
6:PM	2350	44,861	256
7:PM	2350	45,117	256
10-28-10	2000 - 2150		
10AM	2250	45373	256
11AM	2300	45632	259
12	2300	45892	260
1PM	2300	46147	255
2PM	2300	46403	256
3PM	2350	46656	253
4PM	2350	46907	251
5PM	2350	47158	251
10-29-10	2000 - 2150		
2PM	2250	47400	242
3PM	2250	47654	254
4PM	2300	47910	256
5PM	2300	48170	260
6PM	2300	48428	258

48,428

	Pressure	Meter	BBLs Per Hr.
10-30-10	2000-2150		
2 PM	2200	48,693	265
3 PM	2250	48,955	262
4 PM	2250	49,217	262
5 PM	2300	49,478	261
10-31-10	1950 - 2150		
3 PM	2200	49,734	256
4 PM	2250	49,990	256
5 PM	2250	50,249	259
11-1-10	1950 - 2100		
12 PM	2150	252	252
1 PM	2200	495	243
2 PM	2250	740	245
3 PM	2250	987	247
PM	2250	1,233	246
5 PM	2300	1,475	242
6 PM	2300	1,722	247
7 PM	2300	1969	247
11-02-10	1950 - 2100		
1 PM	2200	2,217	248
2 PM	2250	2462	245
3 PM	2250	2,707	245
4 PM	2250	2,959	252
5 PM	2300	3216	257
6 PM	2300	3,473	257
11-3-10	1950 - 2100		
1pm	2200	3730	257
2pm	2250	3968	238
3pm	2250	4,206	238
4pm	2300	4,451	245
5 PM	2300	4,693	242
6 PM	2300	4,932	239
7 PM	2300	5,169	237

5,169

	Pressure	Meter	BBLs per Hr.
11-4-10	1950 - 2100		
11Am	2200	5419	250
12	2250	5656	237
1pm	2250	5895	239
2pm	2300	6134	239
3pm	2300	6374	240
4pm	2300	6611	237
5pm	2300	6849	238
11-5-10	1950 - 2100		
11Am	2150	7075	226
12	2200	7301	226
1pm	2250	7514	213
2pm	2250	7733	219
11-06-10	1900 - 2050		
12:PM	2150	7,957	224
1:PM	2200	8,179	222
2:PM	2200	8,396	217
3:PM	2250	8,613	217
4:PM	2250	8,829	216
5:PM	2250	9,050	221
6:PM	2250	9,271	221
11-07-10	1900 - 2050		
9:AM	2150	9,475	204
10:AM	2200	9,677	202
11:AM	2200	9,874	197
12:PM	2250	10,076	202
1:PM	2250	10,289	213
2:PM	2250	10,504	215
3:PM	2250	10,715	211
4:PM	2250	10,928	213
5:PM	2250	11,134	206
6:PM	2250	11,345	211

	Pressure	Meter	BBLs per Hr.
		11,345	
8-10	1950 – 2050		
10 AM	2000	11,548	203
11 AM	2150	11751	203
12	2200	11,948	197
1 PM	2200	12,150	202
2 PM	2250	12,353	203
3 PM	2250	12,557	204
4 PM	2250	12, 761	204
5 PM	2250	12,967	206
11-9-10	1950 - 2050		
12	2100	13,174	207
1 PM	2100	13, 370	196
2 PM	2100	13,566	196
3 PM	2100	13791	165
4 PM	2100	13,889	158
5 PM	2150	14,046	157
6 PM	2150	14,200	154
7 PM	2150	14, 356	156
11-10-10	1900 – 2100	Rebuilt 6 valves	
11:30 AM	2200	14,595	239
12:30 PM	2200	14,843	248
1:30 PM	2250	15675	232
2:30 PM	2250	15,307	232
3:30 PM	2300	15,548	241
4:30 PM	2300	15783	235
11-11-10	1900 – 2100		
11 AM	2200	16 019	236
12	2250	16261	242
1 PM	2250	16508	247
2 PM	2300	16755	247
3 PM	2300	17002	247
4 PM	2300	17243	241
5 PM	2300	17500	257

17500

	Pressure	Meter		BBL PR
11-12-10	2000 - 2150 - 2250			
	9:30am 2200	17750		250
	10:30AM 2250	18000		250
	11:30am 2300	18256		256
	12:30pm 2300	18510		254
	Shut pump down	11.5		
	4:00pm 2300	18770		260
	4:35 - 2350 High pressure	18910		140
11-13-10	1950 - 2200			
	10 AM 2250	19,156		246
	11: AM 2300	19,375	Pump off ?	219
	12 PM 2300	19621		246
	1: PM 2350	19867		246
	2: PM 2350	20,113		246
	3: PM 2350	20,350		237
	4: PM 2350	20,587		237
	4:30PM 2350	20,711		124
11-14-10	2000 - 2150			
	2: PM 2250	20,943		232
	3: PM 2300	21,183		240
	4: PM 2300	21,428		245
	5: PM 2350	21,673		245
11-15-10	1950 - 2150			
	3: PM 2200	21,920		247
	4: PM 2250	22,161		241
	5: PM 2300	22,402		241
	6: PM 2350	22,630		228

22,630

11-16-10	Pressure 2000 - 2150	Meter		BBLs Per Hr.
12: PM	2250	22853		223
1: PM	2300	23,078		225
2: PM	2350	23,320		242
3: PM	2350	23,547		227
4: PM	2350	23,773		226
5: PM	2350	24,001		228
6: PM	2350	24,233		232
11-17-10	2000 - 2150			
1 PM	2250	24,475		242
2 PM	2300	24,715		240
3 PM	2350	24,951		236
4 PM	2350	25,187		236
5 PM	2350	25,422		235
5:30 PM	2400 Pump off	25,537	High Pressure	115
11-18-10	2000 - 2200			
9 AM	2252	25760		229
10 AM	2300	25995		229
11 AM	2350	~~25995~~ 26215		220
12:30	2400 pump off	26339	High Pressure	124
	Flow back 40 BBLs			
4pm	2250	26567		228
5pm	2300	26795		228
6pm	2350	27028		233
11-19-10	2000 - 2150			
11 AM	2250	27275		247
12	2300	27518		244
1pm	2350	27757		238
2pm	2350	27985		228
3pm	2350	28219		234
4pm	2350	28450		231
5pm	2350	28679		229
5:30	2400 High pressure	28820		141

28,820

	Pressure		Meter		BBLs Per H
11-20-10	2,000 - 2,200				
9: AM	2250		29,052		232
10: AM	2300		29, 281		229
11: AM	2350		29, 510		229
12: PM	2350		29, 741		231
1: PM	2400-2350	Pump off	29,936	High Pressure	195
2: PM	2350		30,165		229
3: PM	2350		30,392		227
4: PM	2350		30,619		227
5: PM	2350		30,849		230
6: PM	2350		31,081		232
7: PM	2350		31,314		233
11-21-10	2050 - 2200				
11: AM	2250		31,550		236
12: PM	2300		31,782		232
1: PM	2300		32,010		228
2: PM	2350		32, 237		227
3: PM	2350		32,468		231
4: PM	2350		32,698		230
5: PM	2350		32,930		232
11-22-10	2000 - 2150		[redacted],		
11: AM	2250		33,166		236
12: PM	2300		33,397		231
1: PM	2300		33,627		230
2: PM	2300		33,856		229
3: PM	2350		34, 086		230
4: PM	2350		34, 314		228
5: PM	2350		34,541		227
6: PM	2350		34,771		230

34,771

1-23-10	2050 - 2200				
	Pressure		Meter		BBLs Per Hr.
10: AM	2250		35,003		232
11: AM	2300		35,230		227
12: PM	2350		35,448		218
1: PM	2400	Pump off	35,688	High Pressure	190
2: PM	2380		35868		230
3: PM	2300	Pump off	36,010	High Pressure	142
4: PM	2400	Pump off	36090	High Pressure	80
1-24-10	2050 - 2200 - 2300				
10:30 AM	2300		36,325		235
11:30 AM	2300		36,557		232
12:30 PM	2350		36,790		233
1:30 PM	2300		37,022		232
2:30 PM	2350		37,254		232
3:30 PM	2400		37,416		162
4: 30 PM		Pump off	High Pressure		
5: 30 PM	2350		37,650		234
1-25-10	2000 - 2200				
9 AM	2250		37835		185
10 AM	2350		38033		198
11 AM	2350		38 229		196
11/26/10	2000 - 2150				
10 AM	2250		38 439		210
11 AM	2300		38637		198
12	2350		38836		199
1-27-10	2000 - 2150				
10: AM	2250		38,990		154
11: AM	2300		39,159		169
12 PM	2300		39,330		171
1: PM	2350		39,503		173

39,503

	Pressure	Meter		BBLS Per HR.
11-28-10	1950 - 2150			
1: PM	2250	39,682		179
2: PM	2300	39,849		167
3: PM	2300	40,018		169
4: PM	2300	40,187		169
11-29-10	1950 - 2150			
5: PM	2200	40,342		155
6: PM	2250	40,498		156
11-30-10	1950 - 2150			
2: PM	2250	40,652		154
3: PM	2250	40,805		153
4: PM	2300	40,959		154
5: PM	2300	41,113		154
6: PM	2350	41,267		154
7: PM	2350	41,420		153
8: PM	2350	41,575		155
12-01-10	2000 - 2200			
11: AM	2250	157		157
12: PM	2300	310		153
1: PM	2300	464		154
2: PM	2350	583	High Pressure	119
3: PM	2350	735		152
4: PM	2350	886		151
5: PM	2350	1,039		151
6: PM	2350	1,189		152
6:30: PM	2400 Pump off	1,238	High Pressure	49
7: PM	Started Pump	1,238		
8: PM	2350	1,389		151
12-2-10	2000 - 2200			
10 AM	2250	1,540		151
11 AM	2300	1,691		151
12	2350	1,842		151

1842

	Pressure		Meter		BBLs Per Hr	
1: PM	2350		1994		152	
2: PM	2350		2146		152	
3: PM	Pump off	High Pressure		Restarted		
4: PM	2350		2,310		164	
5: PM	2350		2460		150	
6 pm	2350		2610		150	
7pm	2350		2756		146	
12-3-10	2100 - 2250 - 2300					
8:30 AM	2250		2909		153	
9:30	2300		3056		147	
10:30	2350		3203		147	
11:30	2350		3349		146	
12:30pm	Shut pump OFF		11.6			
3:00	2350		3509		160	
4pm	pump off high pressure		3633	Restarted	124	
5pm	pump off high Pressure		3778		145	
12-04-10	2100 - 2200					
9: AM	2300 -		3930		152	
10: AM	2350		4,078		148	
11: AM	2400	Pump off	4,183	High Pressure	105	Restart
12: PM	2350		4,335		152	
1: PM	2400	Pump off	4,416	High Pressure	81	Restart
2: PM	2400	Pump off	4,569	High Pressure	153	
3:30 PM	Restart		4,569			
4: PM	2350		4,645		76	
5: PM	2350		4,792		147	
12-05-10	2100 - 2200					
1: PM	2300		4,940		148	
2: PM	2350		5,085		145	
3: PM	2350		5,230		145	
4: PM	2350		5,377		147	
5: PM						

5,377

	Pressure	Meter	BBls Per Hr
12-6-10	2000-2200		
1:30pm	2250	5531	154
2:30pm	2250	5,662	131
3:30pm	2300	5807	145
4:30pm	2350	5952	145
5:AM	2350 11 Ft	6,026	74
12-07-10	2000 - 2150		
3:PM	2250	6,173	147
4:PM	2300	6318	145
4:30:PM	2300	6,391	73
12-08-10	2000-2150		
11:AM	2250	6,536	145
12:PM	2300	6,678	142
1:PM	2300	6,820	142
2:PM	2350	6,962	142
3:PM	2350 Pump off	7,105 High Pressure	143
4:30AM	2350	7,253	148
5:30PM	2400	7,401	~~145~~ 164
12-9-10	2000-2150		
1pm	2250	>523	156
2pm	2300	>719	146
3pm	2356	>865	146
4pm	2350	8011	146
5pm	2350	8160	149
12-10-10	2000 - 2150		
10am	2250	8316	156
11am	2300	8470	154
12	2300	8623	153
1pm	2350	8778	155
2pm	2350	8934	156
3pm	2350	9090	156
4pm	2356	9249	159

9249

	Pressure	MCF	BBL PH
12-11-10	2000 - 2150		
10: AM	2250	9,408	159
11: AM	2300	9,567	159
12: PM	2350	9,725	158
1: PM	2350	9,883	158
2: PM	2350	10,041	158
3: PM	2350	10,202	161
2-12-10	2000 - 2150		
1: PM	2250	10,357	155
2: PM	2300	10,512	155
3: PM	2300	10,667	155
4: PM	2350	10,822	155
5: PM	2350	10,978	156
2-14-10	1900 — 2150		
: AM	2200	11,134	156
2: PM	2250	11,286	152
1: PM	2300	11,438	152
2: PM	2300	11,592	154
3: PM	2350	11,744	152
4: PM	2350	11,896	152
5: PM	2350	12,051	155
6: PM	2350	12,207	156
12-15-10	2000 - 2150		
2: PM	2250	12,364	157
3: PM	2250	12,519	155
4: PM	2300	12,674	155
5: PM	2300	12,832	158
6: PM	2350	12,993	161
-16-10	2000 — 2160		
9AM	2200	13138	145
10AM	2250	13284	146
11 AM	2300	13437	153

13437

	Pressure		Meter	BBL PR
	12 2300		13591	154
	1pm 2350		13746	155
	2pm 2350		13902	156
	3pm 2350		14057	155
	4pm 2350		14218	161
	5pm 2350		14381	163
12-17-10	2000 - 2150			
	11A 2250		14542	161
	12 2300		14702	160
	1pm 2300		14870	168
	2pm 2350		15034	164
	3pm 2350		15196	162
	4pm 2350		15359	163
	5pm 2400	High pressure	15533	174
12-18-10	2050 - 2200			
	9: AM 2250		15,700	167
	10: AM 2300		15867	167
	11: AM 2300		16,033	166
	12: PM 2300		16,200	167
	1: PM 2350		16,367	167
	2: PM 2350		16,535	168
	3: PM 2350		16,701	166
	4: PM 2350		16,868	167
	5: PM 2350		17035	167
	6: PM 2350		17,201	166
	7: PM 2350	True	17,364	163
12-19-10	2000 - 2150			
	1:30 PM 2250		17,530	166
	2:00 PM 2400	High Pressure	17,580	50
	3:00 PM 2300		17,718	138
	4:00 PM 2300		17,877	159
	5:00 PM 2350		18,036	159
	[illegible] PM 2350		18,195	159
			[illegible]	80

18,275

	Pressure	Meter	BBLs Per Hr.
12-20-10	2000 - 2150		
1: PM	2250	18,443	168
2: PM	2250	18,607	164
3: PM	2300	18,772	165
4: PM	2350	18,937	165
5: PM	2350	19,122	185
6: PM	2350	19,307	185
12-21-0	2000 - 2150		
10: AM	2250	19,459	152
12: AM	2300	19611	152
1: AM	2300	19770	159
2: PM	2300	19,929	159
3: PM	2350	20,088	159
4: PM	2350	20,249	161
5: PM	2350	20,410	161
12-22-10	2000 -		
12-23-10	1950 - 2150		
12:30p	~~2200~~	20592	182
1:30	2250	20772	180
2:30	2300	20943	171
3:30	2300	21115	172
4:30	2350	21285	170
5:30p	2350	21457	172
12-24-10	2000 - 2150		
10:30AM	2250	21637	180
11:30	2300	21808	171
12:30 p	2300	21980	172
1:00 p	2350 Power surge	~~22060~~	70

22,050

	Pressure	Meter		BBLs Per HR
12-26-10	1900 - 2050			
11:AM	2150	22,140	30 minutes	90
12:PM	2250	22,311		171
1:PM	2250	22,483		172
2:PM	2250	22,654		171
3:PM	2300	22,826		172
4:PM	2300	23,000		174
12-27-10	1950 - 2100			
2:PM	2150	23,172		172
3:PM	2250	23,344		172
4:PM	2300	23,515		171
5:PM	2300	23,687		172
12-28-10	1950 - 2100			
1:PM	2200	23,861		174
2:PM	2250	24,033		172
3:PM	2250	24,206		173
4:PM	2300	24,382		176
5:PM	2350	24,558		176
6:PM	2350	24,747		189
12-29-10	2000 - 2150			
9:AM	2250	24,940		193
10:AM	2250	25,127		187
11:AM	2300	25,317		190
12:PM	2300	25,507		190
1:PM	2300	25,698		191
2:PM	2300	25,890		192
3:PM	2300	26,085		195
4:PM	2350	26,278		193
5:PM	2350	26,470		192

26478

	Pressure	Meter	BBL Pr
12-30-10	2000 - 2150		
1pm	2250	26678	208
2	2300	26867	189
3	2300	27061	194
4	2300	27252	191
5	2350	27441	189
3-31-10	2000 - 2150		
4:00pm - 4:30pm		27527	86

Appendix D
2010 Daily-Monthly Log Sheets

JANUARY 2012

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE	
01	158	948	948	948	
02	159	1,115	2,063	2,063	
03	—	—	—	2,063	
04	—	—	—	2,063	
05	247	491	2557	2557	*
06	153	920	3477	3,477	
07	158	1107	4584	4,584	
08	156	1248	5832	5,832	
09	159	634	6466	6,466	
10	156	778	7,244	7,244	
11	—	—	—	7,244	
12	155	929	8173	8,173	
13	—	—	~~81~~	8173	•
14	156	965	9138	9138	
15	160	961	10099	10,099	
16	—	~~286~~	10385	~~10,385~~	Did not RU Pump
17	162	162	10547	10,547	
18	172	689	11,236	11,236	
19	155	620	11,856	11,856	
20	127	636	12492	12,492	
21	—	—	—	12,492	
22	—	—	—	12,492	
23	159	1270	13,762	13,762	
24	—	—	—	13,762	
25	—	—	—	13,762	
26	157	785	14547	14547	
27	151	1005	15152	15152	
28	—	—	—	15152	
29	154	1233	16385	16385	
30	—	—	—	16,385	
31	170	1187	17,572	17,572	

February 2010

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE	
01	205	818	818	18,390	
02	195	1,168	1986	19,558	
03	192	962	2948	20,520	
04				20,520	
05	190	1330	4278	21,850	
06	178	534	4812	22,384	
07	174	1,046	5858	23,430	
08	—	—	—	23,430	
09	—	—	—	23,430	
10	190	1707	7565	25,137	
11	189	1133	8698	26,270	
12	190	1707	10405	27977	
13	188	1688	12,093	29,665	
14	188	941	13,034	30,606	
15	—	—	—	30,606	
16	188	1691	14,725	32,297	
17	187	750	15,475	33,047	
18	179	1613	17088	34,660	
19	179	1786	18877	36,446	
20	173	1,553	20,421	37,999	
21	185	1,108	21,535	39,107	
22	—	—	—	39,107	
23	187	1306	22,841	40,413	
24	183	2193	25034	42606	
25	190	2286	27320	44892	
26	177	1946	29266	46838	29,266
27	175	2,096	31,362	48,934	34,368
28	165	660	32,022	49,594	32,02
29					
30					
31					
				32,022	

March 2010

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH		CUMULATIVE	
01	166	1159	1159		50,753	
02	176	1760	2919		52,513	
03	203	2039	4958		54,552	
04	213	3197	8155		57,749	
05	175	2274	10,429		60,023	
06	167	1500	11,929		61,523	
07	159	1593	13,522		63,116	
08	158	633	14,155		63,749	
09	150	1652	15,807		65,401	
10	199	1195	17002		66596	
11	198	1383	18385		67,979	
12	187	1120	19505		69099	
13	187	1499	20,004		70,598	
14	184	920	21,924		71,518	
15	185	738	22,662		72,256	
16	182	911	23,573		73,167	
17	182	910	24,483		74077	
18	178	1065	25,548		75,142	
19	178	1957	27,505		77,099	
20	179	1431	28,936	*	78,530	*
21	176	1231	30,167		79,761	
22	191	1717	31,884		81,478	
23	220	1760	33,644		83,238	
24	211	2107	35,751		85,345	
25	197	1966	37,717		87,311	
26	184	1744	39,461		89,055	
27	177	1595	41,056	*	90,650	*
28	173	949	42,005		91,599	
29	172	859	42,864		92,458	
30	173	864	43,728		93,322	43,72
31	187	1495	45223		94817	
					45,223	

APRIL 2010

94,817

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE	
01	0	0	0	94,817	
02	181	1812	1812	96,629	
03	185	1,292	3,104	97,921	
04	182	1,094	4,198	99,015	
05	192	576	4,774	99,591	
06	176	1,762	6536	101,353	
07	175	1,226	7762	102,579	
08	177	1,059	8821	103,638	
09	215	1295	10,116	104,933	
10	202	1,417	11,533	106,350	
11	217	1299	12,832	107,649	
12	184	1289	14,121	108,938	
13	—	—	—	108,938	
14	184	2025	16,146	110,963	
15	183	548	16694	111,511	
16	—	—	—	111,511	
17	181	1445	18,139	112,956	
18	181	725	18,864	113,~~861~~ 681	
19	—	—	—	113,~~861~~ 681	
20	184	1660	20,524	~~115,521~~ 115,341	
21	179	1432	21,956	~~116,953~~ 116,773	
22	187	935	22,891	~~117,888~~ 117,708	
23	195	1168	24059	~~119,056~~ 118,876	
24	196	1371	25,430	120,247	25,430
25	189	1323	26,753	121,570	
26	187	1499	28,252	123,069	28,252
27	207	1242	29,494	124,311	
28	195	1365	30,859	125,676	
29	188	1505	32,364	127,181	
30	192	1536	33,900	128,717	
31					
				33,900	

MAY 2010

DATE	BBLS/HR	BBLS DAY	BBLS/MONTH	CUMULATIVE
01	202	1,616	1616	130,333
02	200	798	2414	131,131
03	198	1,386	3,800	132,517
04	200	1796	5596	134,313
05	202	1210	6806	135,523
06	199	977	7803	136,520
07	198	1190	8993	137,710
08	198	1188	10,181	138,898
09	199	1792	11,973	140,690
10	199	1,192	13,165	141,882
11	199	1591	14,756	143,473
12	196	1763	16,519	145,236
13	196	1762	18,281	146,998
14	195	1556	19,837	148,554
15	194	1358	21,195	149,912
16	196	1175	22,370	151,087
17	192	767	23,137	151,854
18	191	953	24090	152,807
19	194	971	25061	153,778
20	193	1155	26,216	154,933
21	193	1352	27,568	156,285
22	194	1164	28,732	157,449
23	194	1164	29,896	158,613
24	193	966	30,862	159,579
25	192	1153	32,015	160,732
26	194	1550	33,565	162,282
27	196	1174	34,739	163,456
28	196	1370	36,109	164,826
29	198	1386	37,495	166,212
30	200	799	38,294	167,011
31	192	962	39,256	167,973
				39,256

37,495

JUNE 2017

DATE	BBLS/HR	BBLS DAY	BBLS/MONTH	CUMULATIVE
01	195	1172	1172	169,145
02	—	—	—	169,145
03	—	—	—	169,145
04	184	739	1911	169,884
05	—	—	—	169,884
06	185	1112	3023	170,996
07	172	1030	4,053	172,026
08	166	417	4470	172,443
09	123	520	4990	172,963
10	172	1207	6197	174,170
11	—	—	—	174,170
12	173	954	7151	175,124
13	172	862	8,013	175,986
14	—	—	—	175,986
15	—	—	—	175,986
16	173	518	8531	176,504
17	—	—	—	176,504
18	—	—	—	176,504
19	178	1124	9,955	177,928
20	—	—	—	177,928
21	170	1187	11142	179,115
22	175	699	11841	179,814
23	175	524	12,365	180,338
24	—	—	—	180,338
25	—	—	—	180,338
26	173	346	12,711	180,684
27	—	—	—	180,684
28	—	—	—	180 684
29	—	—	—	180,684
30	166	993	13,704	181,677
31				
				13,704

12711

July 2010

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE	
01	—	—	—	181,677	
02	162	1300	1300	182,977	
03	166	998	2,298	183,975	
04	—	—	—	183,975	
05	178	1067	3365	185,042	
06	199	794	4159	185,836	
07	190	1706	5865	187,542	
08	—	—	—	187,542	
09	188	3192	9057	190,734	
10	192	4606	13663	195,340	
11	194	4654	18317	199,994	
12	171	4107	22,424	204,101	
13	202	2630	25054	206,731	
14	—	—	—	206,731	
15	—	—	—	206,731	
16	—	—	—	206,731	
17	193	2126	27,180	208,857	
18	197	2162	29,342	211,019	
19	197	986	30,328	212,005	
20	197	1376	31,704	213,381	
21	197	1578	33,282	214,959	
22	183	1280	34 562	216,239	
23	—	—	—	216,239	
24	155	1237	35,799	217,476	
25	152	228	36,027	217,704	
26	152	606	36,633	218,310	
27	160	800	37,433	219,110	37,433
28	158	632	38,065	219,742	
29	154	1078	39143	220,820	
30	157	1566	40709	222,386	40,709
31	155	1396	42,105	223,782	
				42,105	

August 2010

ATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE	
01	—	--	—	223,782	
02	157	1,571	1571	225,353	
03	159	1,593	3164	226,946	
04	162	1,622	4786	228,568	
05	172	1034	5820	~~234,388~~	229,602
06	161	1290	7110	~~235,678~~	230,892
07	164	1477	8587	~~239,155~~	232,369
08	164	821	9408	~~239,976~~	233,190
09	156	624	10,032	~~238,600~~	233,814
10	156	1244	11276	~~239,844~~	235,058
11	157	1572	12,848	~~241,416~~	236,630
12	155	1239	14087	~~242,655~~	237,869
13	163	1633	15720	~~244,288~~	239,502
14	168	1594	17,314	~~245,882~~	241,096
15	163	1146	18460	~~247,028~~	242,242
16	—	—	—	~~247,028~~	242,242
17	160	959	19,419	~~247,987~~	243,201
18	160	961	20,380	~~248,948~~	244,162
19	161	1446	21,826	~~250,394~~	245,608
20	161	1211	23,037	~~251,605~~	246,818
21	162	1541	24,578	~~253,146~~	248,36
22	163	980	25,558	~~254,126~~	249,34
23	179	1608	27,166	~~255,734~~	250,94
24	171	1542	28,708	~~257,276~~	252,49
25	172	3059	30,767	~~257,335~~	254,5
26	170	2,943	32,810	~~261,378~~	256,5
27	183	1829	34639	~~263,207~~	258,42
28	189	1698	36,337	~~264,905~~	260,11
29	195	1171	37,508	261,290	37,5
30	203	1017	38,525	262,307	38,5
31		1983	40,508	264,290	
			40,508	40,508	

September 2010

DATE		BBLS/HR		BBLS/DAY		BBLS/MONTH		CUMULATIVE	
								264,290	
01		176		1405		1405		265,695	
02		182		1365		3220		267,560	
03		187		1123		4393		268 683	
04		174		1042		5435		269,725	
05		169		1520		6955		271,245	
06		129		776		7731		272,021	
07		155		776		8507		272,797	
08		—		—		—		272,797	
09		153		1379		9886		274,176	
10		166		663		10549		274,839	
11		165		1645		12,194		276,484	
12		163		976		13,170		277,460	
13		177		883		14,053		278,343	
14		186		1,300		15,353		279,643	
15		173		1,213		16,566		280,856	
16		183		2200		18766		283 056	
17		219		1755		20521		284811	
18		203		1,217		21,738		286,028	
19		154		1,075		22,813		287,103	
20		149		746		23,559		287,849	
21		148		889		24,448		288,738	
22		226		677		25,125		289,415	26,024
23		225		899		26024	26,024	290314	28091
24		230		2068		28,091	28091	292,381	
25		234		1,869		29,960		294,250	
26		—		—		—		294,250	
27		230		2068		32,028		296,318	32,028
28		209		1,047		33,075		297,365	33,07
29		204		1,838		34,913		299,203	34,91
30		197		787		35 700		299,990	
31									

October 2010

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE
01	172	1379	1379	265,669
02	247	2220	3599	267,889
03	212	4061	4660	268,950
04	—	—	—	268,950
05	260	2860	7520	271,810
06	244	1948	9468	273,758
07	246	492	9960	274,250
08	248	992	10952	275 242
09	246	1965	12,917	277,207
10	—	—	—	277,207
11	243	728	13,645	277,935
12	242	1454	15,099	279,389
13	235	1883	16,982	281,272
14	228	2048	19030	283320
15	228	2280	21,310	285600
16	220	2419	23729	288,019
17	210	1682	25411	289,701
18	206	1238	26649	290,939
19	211	1897	28,546	292,836
20	198	2173	30,719	295,009
21	199	2590	33309	297,599
22	208	1455	34764	299,054
23	226	1354	36,118	300,408
24	232	1158	37,276	301,566
25	229	2064	39,340	303,630
26	247	2719	42,059	306,349
27	255	3058	45,117	309,407
28	255	2041	47158	311,448
29	254	1270	48428	312,718
30	263	1050	49,478	313,768
31	257	771	50,249	314,539
				250,239
			50,249	50,249

Upons carry-over

NOVEMBER 2010

317,527

DATE		BBLS/HR		BBLS/DAY		BBLS/MONTH		CUMULATIVE
01		246		1,969		1,969		316,508
02		251		1,504		3,473		318,012
03		242		1696		5,169		319,708
04		240		1680		6849		321 388
05		221		884		7733		322,272
06		220		1,538		9,271		323, 810
07		207		2,074		11,345		325,884
08		203		1,622		12,967		327,506
09		174		1,389		14,356		328,895
10		238		1,427		15,78		330,322
11		245		1717		17,500		332,038
12		257		1410		18910		333,449
13		240		1,801		20,711		335,250
14		241		962		21,67		336,212
15		239		957		22,630		337,169
16		229		1,603		24,233		338,772
17		237		1,303		25.537		340,076
18		229		1491		27028		341, 567
19		239		1792		28820		343359
20		227		2,494		31,314		345,853
21		231		1,616		32,930		347,469
22		230		1,841		34,771		349,310
23		203		1,319		36,090		350,629
24		223		1,560		37,650		352,189
25		193		579		38,229		352,768
26		202		607		38836		353,375
27		167		667		39,503		354,042
28		171		684		40,187		354,726
29		156		311		40,498		355,037
30		154		1077		41,575		~~356,114~~
31								391,814
								41,575

38836

40,498

[illegible] Comp-09

December 2010

DATE	BBLS/HR	BBLS/DAY	BBLS/MONTH	CUMULATIVE
01	146	1389	1389	357,503
02	152	1367	2756	358870
03	1416	1022	3778	359892
04	156	1014	4792	360,906
05	146	585	5377	361,491
06	144	649	6,026	362,140
07	146	365	6,391	362,505
08	147	1026	7,417	363,531
09	149	743	8160	364274
10	156	1089	9249	365,363
11	159	953	10,20[illegible]	366,316
12	155	776	10,97[illegible]	367,092
13	—	—	—	367,092
14	154	1229	12,20[illegible]	368,321
15	157	786	12,99[illegible]	369,107
16	154	1388	14381	370 495
17	165	1052	15533	371,647
18	166	1831	17364	373478
19	152	911	18,275	374,389
20	172	1032	19,307	375,421
21	158	1103	20,410	376,524
22	—	—	—	376,524
23	175	1048	21457	377,572
24	169	593	22,050	378165
25	—	—	—	378,165
26	173	950	23,000	379,115
27	172	687	23,687	379,802
28	177	1060	24,747	380,861
29	191	1723	26,170	382,584
30	194	971	27141	383,555
31	86	86	27527	~~383641~~ 419,341
				27,527

Dupont Canyon

23,69

JANUARY 2010

DATE	NUMBER OF LOADS						BARRELS		2010
	KEY		OTHER		TOTAL		DAILY		CUMULATIVE
01	8				8		800		800
02	3				3		320		1,120
03	2				2		240		1360
04	3				3		280		1640
05	6				6		520		2160
06	9				10		920		3080
07	9				9		960		4040
08	8				8		880		4920
09	10				10		1,080		6,000
10	3				3		360		6,360
11	5				5		560		6,920
12	7		1		8		800		7,720
13	9				14		1,140		8860
14	12		1		13		965		9825
15	5		1		6		448		10,273
16	4				4		400		10,673
17	4				4		400		11,073
18	4		1		5		480		11,553
19	4				4		280		11,833
20	4		2		6		420		12,253
21	4				4		270		12,523
22	9				9		720		13,243
23	8				8		720		13,963
24	4				4		320		14,283
25	6		1		7		560		14,843
26	8		4		12		950		15,793
27	2				2		160		15953
28	7		2		9		785		16,738
29	11	179		19	11	198	850	17588	17,588
30	7	186			7	205	650	18,238	18,238
31	4	190		19	4	209	300	18,538	18,538

February 2010

18,538

DATE	NUMBER OF LOADS					BARRELS		2010
	KEY		OTHER		TOTAL	DAILY		CUMULATIVE
01	6		5		11	1075		19,613
02	13		3		16	1240		20,853
03	8		4		12	840		21,693
04	6		5		11	755		22448
05	10		1		11	848		23,296
06	8		0		8	620		23916
07	6		0		6	445		24,361
08	3		0		3	220		24,581
09	5		3		8	615		25,196
10	14		0		14	1030		26,226
11	15		0		15	1170		27 396
12	13		5		18	1365		28,761
13	14		0		14	1085		29,846
14	7		0		7	560		30,406
15	7		1		8	580		30,986
16	13		3		16	1045		32,031
17	9		3		12	1005		33036
18	22		2		24	2193		35,229
19	10		6		16	1425		36,654
20	9		6		15	1375		38,029
21	2		0		2	170		38,199
22	10		1		11	840		39,039
23	15		7		22	1305		40,344
24	16		3		19	1710		42 054
25	21		7		28	2075		44 129
26	12	274	8	73	20	347 1745	27336	45 874 27,336
27	12	286	0	73	12	359 1205	28541	47,079 28,541
28	4	290	1	74	5	364 550	29041	47,579 29,041
29								
30								
31								

March 2010

47,579

DATE	NUMBER OF LOADS						BARRELS		2010
	KEY		OTHER		TOTAL		DAILY		CUMULATIVE
01	12		4		16		1,365		48,944
02	11		7		18		1,457		50,401
03	15		6		21		1853		52254
04	16		5		21		1890		54144
05	14		3		17		1530		55,674
06	13		3		16		1,405		57,079
07	6		0		6		650		57729
08	7		1		8		630		58,359
09	19		8		27		2041		60,400
10	8		1		9		690		61,090
11	6		1		8		620		61710
12	13		4		17		1250		62,960
13	14		1		15		1375		64,335
14	6		0		6		460		64,795
15	11		4		15		805		65,600
16	9		2		11		928		66,528
17	7		2		9		680		67,208
18	15		1		16		1258		68,466
19	15		1		16		1605		70,071
20	9		0		9		1,000		71,071
21	7		0		7		800		71,871
22	14		2		16		1680		73,551
23	13		6		19		1650		75,201
24	15		4		19		1680		76,881
25	12		6		18		1500		78,381
26	13		1		14		1290		79,671
27	9		1		10		890		80,561
28	8		0		8		745		81,306
29	7		5		12		960		82266
30	11	336	4	83	15	419	1340	36027	83,606
31	9		5		14		1180		84786

36,027

37,207

37,207

8

April 2010

84,786

DATE	NUMBER OF LOADS KEY	OTHER	TOTAL	BARRELS DAILY	CUMULATIVE 2010	
01	8	1	9	690	85,476	
02	13	1	14	1870	~~86,052~~ 87,346	
03	7	0	7	580	~~87,236~~ 87,926	
04	10	0	10	990	~~88,226~~ 88,916	
05	9	0	9	760	~~88,986~~ 89,676	
06	17	0	17	1637	~~90,623~~ 91,313	
07	~~18~~	1	12	1120	~~91,743~~ 92,433	
08	11	1	12	895	~~92,638~~ 93,328	
09	10	4	14	1180	~~93,818~~ 94,508	
10	9	0	9	910	~~94,728~~ 95,418	
11	9	0	9	935	~~95,663~~ 96,353	
12	8	4	12	1093	~~96,956~~ 97,446	
13	8	1	9	865	~~97,621~~ 98,311	
14	11	0	11	1100	~~98,721~~ 99,411	
15	6	0	6	380	~~99,104~~ 99,791	
16	6	0	6	450	~~99,551~~ 100,241	
17	7	0	7	655	~~100,206~~ 100,896	
18	6	0	6	580	~~100,786~~ 101,476	
19	7	3	10	735	~~101,721~~ 102,411	
20	8	3	11	1105	~~102,826~~ 103,516	
21	8	0	8	825	~~103,651~~ 104,341	
22	8	1	9	935	~~104,586~~ 105,276	
23	9	1	10	980	~~105,566~~ 106,256	
24	13	0	13	1180	22750 107,536	107,536 2275
25	8	0	8	820	108,356	
26	9	4	13	1340	24910 109,696	24,910
27	9	4	13	1175	110,871	
28	13	2	15	1480	112,351	
29	13	2	15	1395	28950 113,746	
30	8	2	~~10~~	1200	29950 114 736	29950
31						
	278	35	313	29,950	29,950	

MAY 2010

114,736

DATE	NUMBER OF LOADS			BARRELS	2010
	KEY	OTHER	TOTAL	DAILY	CUMULATIVE
01	10	~~0~~	10	980	115,716
02	9	~~0~~	9	710	116,426
03	8	3	11	1005	117,431
04	10	~~0~~	10	1000	118,431
05	9	1	10	1010	119,441
06	6	~~0~~	6	620	120,061
07	11	1	12	1120	121,181
08	11	~~0~~	11	1020	122,201
09	9	~~0~~	9	940	123,141
10	11	4	15	1292	124,433
11	12	3	15	1390	125,823
12	8	12	20	2080	127,903
13	11	1	12	1165	129,068
14	10	1	11	980	130,048
15	9	~~0~~	9	880	130,928
16	9	~~0~~	9	920	131,848
17	10	2	12	1,110	132,958
18	9	3	12	1015	133,973
19	7	0	7	650	134,623
20	8	5	13	1130	135,753
21	9	2	11	1060	136,813
22	6	~~0~~	6	640	137,453
23	11	~~0~~	11	1,080	138,533
24	6	2	8	785	139,318
25	12	~~0~~	12	1105	140,423
26	13	~~0~~	13	1265	141,688
27	10	~~0~~	10	1135	142823
28	11	1	12	1123	143946
29	13	~~0~~	13	1155	145,101
30	7	~~0~~	7	775	145,876
31	7	~~0~~	7	715	146,591
	292	41	333	31,855	31,855

278 41 319 30365 30,365

JUNE 2010

146,591

DATE	NUMBER OF LOADS					BARRELS		2010
	KEY		OTHER		TOTAL	DAILY		CUMULATIVE
01	7		4		7	650		147,241
02	7		3		10	800		148,041
03	7		3		10	763		148 804
04	7		2		9	765		149 569
05	6		0		6	670		150,239
06	8		0		8	686		150,925
07	6		5		11	1,075		152,000
08	13		3		16	1,434		153,434
09	9		2		11	1060		154,494
10	6		3		9	802		155,296
11	3		1		4	293		155,589
12	13		0		13	1,440		157,029
13	9		0		9	890		157,919
14	10		3		13	1,234		159,153
15	8		2		10	935		160,088
16	9		0		9	810		160,898
17	10		3		13	1199		162,097
18	12		3		15	1433		163 530
19	7		0		7	605		164,135
20	9		0		9	865		165,000
21	12		0		12	1,085		166,085
22	12		3		15	1,230		167,315
23	16		4		20	1760		169,075
24	12		5		17	1575		170,650
25	10		0		10	765		171,415
26	9		0		9	920		172,335
27	5	242	0	45	5	530	26274	172,865
28	5		3		8	780		173,645
29	13	260	1	49	14	1290	309	174,935
30	7	267	9		16	1315		176,250
31		267		58		325		
						29,659		29,659

26,274

July 2010

176,250

DATE	NUMBER OF LOADS						BARRELS		2010
	KEY		OTHER		TOTAL		DAILY		CUMULATIVE
01	8		1		9		829		177,079
02	10		2		12		1165		178,244
03	7		0		7		695		178,939
04	4		0		4		400		179,339
05	8		0		8		820		180,159
06	13		9		22		1890		182,049
07	11		0		11		985		183,034
08	10		4		14		1240		184,274
09	13		0		13		1155		185,429
10	5		0		5		490		185,919
11	9		0		9		980		186,899
12	6		1		7		560		187,459
13	7		5		12		675		188,134
14	9		6		15		1690		189,824
15	7		6		13		1158		190,982
16	9		5		14		1298		192,280
17	11		0		11		1105		193,385
18	7		0		7		715		194,100
19	2		4		6		520		194,620
20	9		2		11		1040		195,660
21	8		5		13		1165		196,825
22	19		12		31		2800		199,625
23	9		3		12		1045		200670
24	8		0		8		770		201,440
25	5		0		5		495		201,935
26	5		1		6		420		202,355
27	8	207	3	69	11	296	850	26,955	203,205 26,955
28	10		2		12		915		204,120
29	7		4		11		855		204 975
30	10	254	10	85	20	339	1815	30540	206,790 30540
31	11		0		11		1200		207,990
	265		85		350		31,740		31,740

August 210

207,990

DATE	NUMBER OF LOADS					BARRELS		2010
	KEY		OTHER		TOTAL	DAILY		CUMULATIVE
01	8		0		8	635		208,625
02	7		8		15	1100		209,725
03	12		5		17	1620		211,345
04	16		0		16	1460		212,805
05	4		0		4	245		213050
06	11		2		13	1180		214,230
07	13		0		13	1440		215,670
08	7		0		7	745		216,415
09	6		4		10	900		217,315
10	9		8		17	1545		218,860
11	7		0		7	715		219,575
12	14		8		22	1830		221405
13	17		3		20	1965		223370
14	10		0		10	990		224,360
15	8		0		8	835		225,195
16	4		0		4	480		225,675
17	9		1		10	950		226,625
18	7		0		7	728		227,353
19	11		1		12	1030		228,383
20	9		3		12	1225		229 608
21	9		0		9	920		230,528
22	8		0		8	825		231,353
23	6		3		9	880		232,233
24	8		6		14	1260		233,493
25	16		8		24	1887		235,380
26	14		3		17	1630		237,010
27	5		1		6	488		237498
28	9		0		9	890		238,388
29	6		0		6	640	31038	239,028
30	4	274	0	64	4	480	31518	239,508
31	6	280	0		6	535	32053	240,043
	280		64		344	32,053		32,053

31038
31518
32,053

September 2010

240,043

DATE	NUMBER OF LOADS			BARRELS	2010
	KEY	OTHER	TOTAL	DAILY	CUMULATIVE
01	9	0	9	840	240,883
02	4	4	8	975	241,858
03	3	4	7	640	242,498
04	7		8	875	243,373
05	8	0	8	840	244,213
06	6	0	6	665	244,878
07	4	0	4	480	245,358
08	5	2	7	485	245,843
09	9	5	14	1245	247,088
10	7	6	13	1050	248,138
11	11	0	11	1,160	249,298
12	6	0	6	605	249,903
13	0	7	7	560	250,463
14	8	4	12	1160	251,623
15	11	7	18	1,655	253,278
16	11	4	15	1435	254713
17	7	6	13	1173	255,886
18	6	0	6	640	256,526
19	6	0	6	590	257,116
20	1	7	8	521	257,637
21	8	0	8	840	258,477
22	3	0	3	320	258,797
23	4	6	10	799	259,596
24	13	7	20	1935	261,531
25	6	3	9	840	262,371
26	4	0	4	440	262,811
27	8	5	13	1,090	263,901
28	2	7	9	800	264,701
29	9	3	12	1,120	265,821
30	4	3	7	510	266,331
31					

177 85 262

22,768 24,658 25,778

OCTOBER 2010

266,331

DATE	NUMBER OF LOADS						BARRELS		2010
	KEY		OTHER		TOTAL		DAILY		CUMULATIVE
01	12		8		20		1775		268 106
02	5		1		6		600		268,706
03	6		0		6		600		269,306
04	3		1		4		440		269 746
05	10		7		17		1705		271,451
06	5		6		11		835		272,286
07	6		0		6		625		272911
08	6		1		7		800		273, 711
09	6		0		6		720		274,431
10	2		0		2		160		274,591
11	3		8		11		1,000		275,591
12	5		2		7		731		276,322
13	10		0		10		1040		277,362
14	14		5		19		1880		279,242
15	8		10		18		1760		281,002
16	8		10		18		1,545		282,547
17	5		0		5		600		283,147
18	7		12		19		1,580		284,727
19	5		9		14		1,270		285,997
20	11		17		28		2530		288,527
21	10		8		18		1570		290 097
22	5		1		6		575		290,672
23	11		0		11		1030	25,371	296, 702 25,371
24	5		0		5		520		292,222
25	16		8		24		2,176		294,398
26	10		10		20		1,880		296,278
27	11		6		17		1,505		297,783
28	11		2		13		980		298,763
29	9	225	1	183	10	358	695	33,127	299 458 33,12
30	8	233	0	133	8	366	780	33907	300,238 33,907
31	2	235	0	133	2	368	240	34147	300,478 34,14
							34147		34147

November 2010

300,478

DATE	NUMBER OF LOADS				BARRELS		2010
	KEY		OTHER	TOTAL	DAILY		CUMULATIVE
01	15		0	15	1,547		302,025
02	8		0	8	840		302,865
03	10		4	14	1,305		304,170
04	11		1	12	198		305,368
05	7		3	10	520		305,888
06	11		0	11	1,205		307,093
07	9		0	9	1,080		308,173
08	11		0	11	1,025		309,198
09	9		4	13	1,210		310,408
10	5		6	11	880		311,288
11	11		5	16	1435		312,723
12	7		5	12	962		313,685
13	10		0	10	1060		314,745
14	3		0	3	360		315,105
15	3		8	11	880		315,985
16	7		4	11	1,080		317,065
17	10		2	12	1,150		318,215
18	9		6	15	1255		319,470
19	17		4	21	1825		321,295
20	15		0	15	1430		322,725
21	5		0	5	545		323,270
22	4		14	18	1600		324,870
23	7		7	14	1,080		325,950
24	13		4	17	1630		327,580
25	4		0	4	396	82	327,976
26	4	225	0	4	480	302	328,456 27,978
27	4		0	4	480		328,930
28	4		0	4	310		329,240
29	1	234	6	7	560	317	329,800 29,322
30	11	245	4	15	1,100	332	331,200 30,722
31							
	242		87	332	31,722		30,722

December 2010

331,200

DATE	NUMBER OF LOADS						BARRELS		2010
	KEY		OTHER		TOTAL		DAILY		CUMULATIVE
01	12		3		15		1,403		332,603
02	14		6		20		1790		334,393
03	11		5		16		1040		335,433
04	6		0		6		640		336,073
05	8		0		8		710		336,783
06	6		0		6		600		337,383
07	5		1		6		385		337,768
08	14		0		14		1280		339,048
09	9		0		9		865		339,913
10	7		3		10		960		340,873
11	6		0		6		590		341,463
12	10		0		10		860		342,323
13	4		1		5		345		342,668
14	11		0		11		985		343,653
15	6		5		11		1,040		344,693
16	13		5		18		1560		346,253
17	9		10		19		1425		347,678
18	17		2		19		1,445		349,123
19	8		3		11		779		349,902
20	12		7		19		1,425		351,327
21	6		3		9		840		352,167
22	3		0		3		215		352,382
23	14		1		15		1150		353,532
24	7		0		7		520		354,052
25	—		—		—		—		354,052
26	4		0		4		480		354,532
27	10		3		13		1,080		355,612
28	12	244	5	63	17	307	1,295	25,707	356,907
29	8		6		14		1,160		358,067
30	14		0		14		1030		359,097
31	8	274	0	69	8	343	630		359,727
							28,527		28,527

25,707

Appendix E
2010 Tubing and Casing Monitoring Log Sheets

TUBING AND CASING MONITORIN G LOG SHEET

YEAR

MONTH JANUARY 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1950		
2	1750, 1900	ø ø	SW, SW
3	1750	ø	SW
4	1700	ø	SW
5	1650, 1850	ø ø	SW, SW
6			
7			
8			
9	1750, 1950	ø ø	SW SW
10	1750, 1950	ø ø	SW SW
11	1750,	ø	SW
12	1700, 1850	ø ø	SW SW
13			
14			
15			
16	1750	ø	SW
17	1700, 1900	ø ø	SW, SW
18	1650, 1850, 2000	ø ø ø	SW, SW, SW
19	1700, 1900,	ø ø	SW, SW
20			
21			
22			
23	1600, 1900	ø ø	SW SW
24	1700,	ø	SW
25	1650	ø	SW
26	1650, 1900	ø ø	SW SW
27			
28			
29			
30	1700	ø	SW
31	1650, 1900	ø ø	SW SW

TUBING AND CASING MONITORING LOG SHEET

YEAR

MONTH February 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1700, 1900	ø ø	SW SW
2	1750, 1950	ø ø	SW SW
3	1750, 1950	ø ø	SW SW
4			
5			
6			
7	1750, 1950	ø ø	SW SW
8	1750,	ø	SW
9	1700,	ø	SW
10			
11			
12			
13	1750, 1950	ø ø	SW, SW
14	1750, 1950	ø ø	SW SW
15	1750,	ø	SW
16	1700, 1950	ø ø	SW SW
17			
18			
19			
20	1950, 1950	ø ø	SW, SW
21	1750, 1950	ø ø	SW, SW
22	1750,	ø	SW
23	1700, 1950	ø ø	SW SW
24			
25			
26			
27	1750, 2050	ø ø	SW SW
28	1750, 1950	ø ø	SW SW
29			
30			
31			

TUBING AND CASING MONITORING LOG SHEET

YEAR
MONTH March 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1750, 1950	0, 0	SW, SW
2	1850, 2050	0, 0	SW, SW
3			
4			
5			
6	1800, 2050	0, 0	SW, SW
7	1800, 2050	0, 0	SW, SW
8	1800, 2050	0, 0	SW, SW
9	1800, 2000	0, 0	SW, SW
10			
11			
12			
13	1800, 2050	0 0	SW, SW
14	1800, 2050	0 0	SW, SW
15	1800, 2050	0 0	SW, SW
16	1800, 2050	0 0	SW, SW
17			
18			
19			
20	1800, 2050	0 0	SW, SW
21	1800, 2050	0 0	SW, SW
22	1800, 2050	0 0	SW, SW
23	1800, 2050	0 0	SW, SW
24			
25			
26			
27	1800, 2050	0 0	SW, SW
28	1800, 2100	0 0	SW, SW
29	1800, 2050	0 0	SW, SW
30	1800, 2050	0 0	SW, SW
31			

TUBING AND CASING MONITORING LOG SHEET

YEAR

MONTH April 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1			
2			
3	1800, 2050	0 0	SW SW
4	1800, 2100	0 0	SW SW
5	1800, 2100	0 0	SW SW
6	1800, 2050	0 0	SW SW
7			
8			
9			
10	1800, 2100	0 0	SW SW
11	1830, 2050	0 0	SW SW
12	1850, 2050	0 0	SW SW
13	1850,	0	SW
14	1850, 2050	0 0	NA, NA
15			
16			
17	1800, 2050	0 0	SW, SW
18	1850, 2050	0 0	SW, SW
19	1850,	0	SW
20	1850, 2050	0 0	SW SW
21	1850, 2000	0 0	SW SW
22			
23			
24	1850, 2050	0 0	SW SW
25	1850, 2100	0 0	SW SW
26	1850, 2100	0 0	SW SW
27			
28			
29			
30			
31			

TUBING AND CASING MONITORIN 3 LOG SHEET

YEAR

MONTH May 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1850, 2100	ø ø	SW, SW
2	1850, 2100	ø ø	SW, SW
3	1850, 2050	ø ø	SW, SW
4	1850, 2100	ø ø	SW, SW
5	1850, 2100, 2150	ø ø ø	SW, SW, SW
6	1850, 2050	ø	NA
7	1850, 2050	ø	NA
8	1850, 2050	ø ø	SW, SW
9	1850, 2050	ø ø	SW, SW
10	1850, 2050	ø ø	SW, SW
11	1850, 2100, 2201	ø ø ø	SW, SW, SW
12			
13			
14	1850, 2100	ø ø	SW, SW
15	1850, 2100	ø ø	SW, SW
16	1850, 2050	ø ø	SW, SW
17	1850, 2050	ø ø	SW, SW
18	1850, 2100	ø	NA
19	1850, 2050	ø	NA
20	1850, 2050	ø ø	SW, SW
21	1850, 2050	ø ø	SW, SW
22	1850, 2050	ø ø	SW, SW
23	1850, 2100	ø ø	SW, SW
24	1850, 2050	ø ø	SW, SW
25	1850, 2050	ø ø	SW, SW
26	1850, 2050	ø ø	SW NA
27	1850, 2050	ø	NA
28	1850, 2100	ø	NA
29	1850, 2050	ø ø	SW, SW
30	1850, 2100	ø ø	SW, SW
31	1850, 2050	ø ø	SW, SW

TUBING AND CASING MONITORING LOG SHEET

YEAR
MONTH June 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1850, 2050	Ø Ø	SW, SW
2	1850,	Ø	SW,
3	1800,	Ø	NA
4	1800, 1900	Ø Ø	SW, SW
5	1800	Ø	SW
6	1800, 1950	Ø Ø	SW SW
7	1800, 1950	Ø Ø	SW, SW
8	1800, 2000	Ø Ø	SW, SW
9	1800,	Ø	SW
10	1800, 2000	Ø Ø	NA • NA
11	1800	Ø	NA
12	1800, 1950	Ø Ø	SW, SW
13	1850, 1950	Ø Ø	SW, SW
14	1850,	Ø	SW
15	1800,	Ø	SW
16	1750, 1450	Ø Ø	SW NA
17			
18			
19	1700, 1900	Ø Ø	SW, SW
20	1800,	Ø	SW,
21	1750, 1950	Ø Ø	SW, SW
22	1800, 1950	Ø Ø	SW, SW
23	1800, 1950	Ø Ø	SW, SW
24			
25			
26	1700, 1900	Ø Ø	SW, SW
27	1700,	Ø	SW
28	1700,	Ø	SW
29	1700, 1900	Ø Ø	SW, SW
30			
31			

TUBING AND CASING MONITORING LOG SHEET

YEAR

MONTH July 2017

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1700 - 2100		NA
2			
3	1800, 1950	ø ø	SW SW
4	1800,	ø	SW
5	1700, 1900	ø ø	SW, SW
6	1700, 1900	ø ø	SW, SW
7	1800, 1900	ø ø	SW, SW
8	1800,	ø	SW
Test Begins 9	1950	ø	NA
10	2300	ø	SW
11	2300	ø	SW
12	2300	ø	SW
13	2300	ø	SW
14	1900	ø	SW
15			
Test Ends 16			
17	1775, 1950	ø ø	SW SW
18	1850, 2050	ø ø	SW SW
19	1900, 2100	ø ø	SW SW
20	1800, 2050	ø ø	SW SW
21	1850, 2050	ø ø	SW SW
22	1900, 2100	ø ø	NA NA
23	1850,	ø	NA
24	1750, 1950	ø ø	SW SW
25	1850, 2000	ø ø	SW SW
26	1800, 1950	ø ø	SW SW
27	1800, 1950	ø ø	SW SW
28	1800, 1950	ø ø	NA NA
29	1850, 2100	ø ø	SW SW
30	1800, 2000	ø ø	NA NA
31	1900, 2050	ø ø	SW SW

TUBING AND CASING MONITORING LOG SHEET

YEAR
MONTH August 2010

DAY		TUBING PSI	CASING PSI	OBSERVER INT.
	1	1850	0	SW
	2	1800, 1950	0 0	NA NA
	3	1900, 2100	0 0	NA NA
	4	1900, 2050	0 0	NA NA
	5	1900, 2150	0 0	NA NA
	6	1900 - 2150	0 0	NA NA
	7	1900, 2100	0 0	SW, SW
	8	1900, 2100	0 0	SW, SW
	9	1850, 2050, 2100	0 0 0	SW, SW, SW
	10	1850, 2050	0 0	SW, SW
	11	1900, 2150	0 0	NA NA
	12	1900 2100	0 0	NA NA
	13	1900 - 2150	0 0	NA NA
	14	1950, 2150	0 0	SW, SW
	15	1900, 2100	0 0	SW, SW
	16	1900,	0	NA
	17	1800 - 2000	0	NA NA
	18	1850, 2150	0 0	SW, SW
	19	1900, 2050	0 0	NA NA
	20			
	21	1900, 2050	0, 0	SW, SW
	22	1900, 2050	0 0	SW, SW
	23	1900, 2050	0 0	SW, SW
	24	1900, 2150, 2300	0 0 0	SW, SW SW
	25	1950, 2200	0 0	SW, SW
	26	1950, 2150	0 0	SW SW
	27	1950, 2150	0 0	NA NA
	28	1950, 2150	0 0	SW SW
	29	1950, 2100	0 0	SW SW
	30	1950, 2050	0 0	SW SW
	31	1900, 2100	0 0	NA SW

TUBING AND CASING MONITORING LOG SHEET

YEAR
MONTH September 2010

DAY		TUBING PSI	CASING PSI	OBSERVER INT.
	1	1900, 2100	ø ø	SW, SW
	2	1900 - 2050	ø ø	NA NA
	3	1900 - 2300 - 2150	ø ø	NA NA NA
	4	1900, 2050	ø ø	SW, SW
	5	1900, 2050	ø ø	SW, SW
	6	1900, 2050	ø, ø	SW, SW
	7	1900, 2050	ø, ø	SW, SW
	8	1900,	ø	SW
	9	1800, 2000	ø ø	NA NA
	10	1900, 2050	ø ø	NA NA
	11	1850, 2050	ø ø	SW, SW
	12	1850, 2050	ø ø	SW, SW
	13	1900, 2050	ø ø	SW, SW
	14	1900, 2050	ø ø	NA NA
	15	1900, 2050	ø ø	NA NA
	16	1900, 2050	ø ø	NA NA
	17	1900, 2100		
	18	1950, 2100	ø ø	SW, SW
	19	1950, 2000	ø ø	SW, SW
	20	1950, 2000	ø ø	SW, SW
	21	1900, 1950	ø ø	SW, SW
	22	1900, 2050	ø ø	SW, SW
	23	1850, 2050	ø ø	NA NA
	24	1900, 2100	ø ø	NA NA
	25	1900, 2100	ø ø	SW SW
	26	1900,	ø	SW
	27	1900, 2250	ø ø	SW, SW
	28	1950, 2050	ø ø	SW SW
	29	1900, 2000	ø ø	SW SW
	30	1900, 2100	ø ø	NA NA
	31			

TUBING AND CASING MONITORING LOG SHEET

YEAR 2010
MONTH October

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1900 - 2000	ø ø	NA NA
2	1900 - 2100	ø ø	NA NA
3	1900 - 2100	ø	SW
4	1900 -	ø	SW
5	1900 - 2150	ø ø	SW, SW
6	1950 - 2150	ø ø	SW, SW
7	2000 - 2150	ø ø	NA NA
8	1900 - 2100	ø ø	NA NA
9	1950 - 2150	ø ø	SW, SW
10	1950	ø	SW
11	1900 - 2150	ø ø	SW, SW
12	1900 - 2050	ø ø	NA NA
13	1900 - 2100	ø ø	SW, SW
14	1900 - 2100	ø ø	NA NA
15	1950 - 2150	ø ø	NA NA
16	1950 - 2150	ø ø	SW, SW
17	1950 - 2150	ø ø	SW, SW
18	1900 - 2100	ø ø	NA SW
19	1950 - 2150	ø ø	SW, SW
20	1950 - 2050	ø ø	SW SW
21	2000 - 2150	ø ø	NA NA
22	2000 - 2100, 2250	ø ø	NA NA NA
23	2000 - 2150	ø ø	SW, SW
24	2000 - 2150	ø ø	SW, SW
25	2000 - 2150	ø ø	NA NA
26	2000 - 2150	ø ø	NA NA
27	2000 - 2150	ø ø	NA NA
28	2000 - 2150	ø ø	NA NA
29	2000 - 215	ø ø	NA NA
30	2000 - 2150	ø ø	SW, SW
31	1950 - 2150	ø ø	SW, SW

TUBING AND CASING MONITORING LOG SHEET

YEAR
MONTH November 2010

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	1950 2100	~~0~~ ~~0~~	SW
2	1950-2100	~~0~~ ~~0~~	SW, SW
3	1950 - 2100	~~0~~ ~~0~~	NA NA
4	1950 - 2100	~~0~~ ~~0~~	~~NA~~ NA
5	1950 - 2100	~~0~~ ~~0~~	NA NA
6	1900 - 2050	~~0~~ ~~0~~	SW, SW
7	1900 - 2050	~~0~~, ~~0~~	SW, SW
8	1950 - 2050	~~0~~ ~~0~~	
9	1950 - 2050	~~0~~ ~~0~~	SW
10	1900 - 2100	~~0~~ ~~0~~	SW, SW
11	1900 - 2100-2250	~~0~~ ~~0~~ ~~0~~	NA NA NA
12	2000 - 2100-2250	~~0~~ ~~0~~ ~~0~~	NA NA NA
13	1950 - 2200, 2300	~~0~~ ~~0~~ ~~0~~	SW, SW, SW
14	2000 2150	~~0~~ ~~0~~	SW, SW
15	1950, 2150	~~0~~ ~~0~~	SW
16	2000, 2150	~~0~~ ~~0~~	SW, SW
17	2000, 2150	~~0~~ ~~0~~	SW, SW
18	2000, 2200, 2200	~~0~~ ~~0~~ ~~0~~	NA NA NA
19	2000, 2150	~~0~~ ~~0~~	NA NA
20	2000, 2200, 2350	~~0~~ ~~0~~ ~~0~~	SW, SW, SW
21	2050, 2200	~~0~~ ~~0~~	SW, SW
22	2000 - 2150	~~0~~ ~~0~~	SW, SW
23	2050, 2200, 2350, 2350	~~0~~ ~~0~~ ~~0~~ ~~0~~	SW, SW, SW, SW
24	2050, 2200, 2300	~~0~~ ~~0~~ ~~0~~	SW, SW, SW
25	2000 - 2200	~~0~~ ~~0~~	NA NA
26	2000 - 2150	~~0~~ ~~0~~	NA ~~NA~~
27	2000 - 2150	~~0~~ ~~0~~	SW, SW
28	1950 - 2150	~~0~~ ~~0~~	SW, SW
29	~~1950~~ - 2150	~~0~~ ~~0~~	SW SW
30	1950 - 2150	~~0~~ ~~0~~	SW SW
31			

TUBING AND CASING MONITORING LOG SHEET

YEAR 2010
MONTH December

DAY	TUBING PSI	CASING PSI	OBSERVER INT.
1	2000 - 2200 - 2350 - 2350	ø ø ø ø	SW, SW, SW, SW
2	2000 - 2200 - 2350	ø ø ø	NA NA NA
3	2200 - 2250 - 2300	ø ø ø	NA NA NA
4	2100 - 2200 - 2350, 2300 (2350)	ø ø ø ø ø	SW, SW, SW, SW, SW
5	2100 - 2200	ø ø	SW, SW
6	2000 - 2200	ø ø	
7	2000 - 2150	ø ø	SW
8	2000 - 2150, 2350	ø ø ø	SW, SW, SW
9	2000 - 2150	ø ø	NA NA
10			•
11	2000 - 2150	ø ø	SW, SW
12	2000 - 2150	ø ø	SW, SW
13	2000	ø	
14	1900 - 2150	ø	NA NA
15	2000 - 2150	ø ø	SW, SW
16	2000 - 2150	ø ø	NA NA
17	2000 - 2150	ø	NA
18	2050 - 2200	ø ø	SW, SW
19	2000 - 2150, 2250	ø, ø, ø	SW, SW, SW
20	2000 - 2150,	ø, ø	SW, SW
21	2000,	ø	
22	2000	ø	
23	1950 - 2150	ø ø	NA NA
24	2000 2150	ø ø	NA NA
25			
26	1900 - 2050	ø ø	SW, SW
27	1950 - 2100	ø ø	SW, SW
28	1950 - 2100	ø ø	SW SW
29	2000 - 2150	ø ø	SW SW
30	2000 - 2150	ø ø	NA NA
31	2000 - 2150	ø ø	NA NA

Appendix F
Key Energy Disposal
Monthly Totals

Key Energy
Disposal
Monthly Totals

JANUARY 2010

Barrels Taken In 18,538
Barrels Pumped Away 17,572
Barrels Difference 966

EXEMPT LOADS (Key Hauled)	181
EXEMPT LOADS (NOT Key Hauled)	15
Total EXEMPT Loads Hauled	196
NON EXEMPT LOADS (Key Hauled)	9
NON EXEMPT LOADS (NOT Key Hauled)	4
Total NON EXEMPT Loads Hauled	13
Total Loads Taken In	209

Non Exempt Loads	$ 2775.00
Exempt Loads	$ 15,210.25
Total For Month	$ 17,985.25

Key Energy
Disposal
Monthly Totals

February 2010

Barrels Taken In 29,041
Barrels Pumped Away 32,022
Barrels Difference 2,981

EXEMPT LOADS (Key Hauled)	281
EXEMPT LOADS (NOT Key Hauled)	64
Total EXEMPT Loads Hauled	345
NON EXEMPT LOADS (Key Hauled)	9
NON EXEMPT LOADS (NOT Key Hauled)	10
Total NON EXEMPT Loads Hauled	19
Total Loads Taken In	364

Non Exempt Loads	$	3,393 00
Exempt Loads	$	23,789.85
Total For Month	$	27,182.85

Key Energy
Disposal
Monthly Totals

March 2010

Barrels Taken In	37207
Barrels Pumped Away	45223
Barrels Difference	8,016

EXEMPT LOADS (Key Hauled)	330	
EXEMPT LOADS (NOT Key Hauled)	67	
Total EXEMPT Loads Hauled	397	
NON EXEMPT LOADS (Key Hauled)		15
NON EXEMPT LOADS (NOT Key Hauled)		22
Total NON EXEMPT Loads Hauled		37
Total Loads Taken In		434

Non Exempt Loads	$ 6,321
Exempt Loads	$ 29,947 29
Total For Month	$ 36,268 30

APRIL 2010

Key Energy
Disposal
Monthly Totals

Barrels Taken In	29,950
Barrels Pumped Away	33,900
Barrels Difference	3,950

EXEMPT LOADS (Key Hauled)	274
EXEMPT LOADS (NOT Key Hauled)	29
Total EXEMPT Loads Hauled	303
NON EXEMPT LOADS (Key Hauled)	5
NON EXEMPT LOADS (NOT Key Hauled)	6
Total NON EXEMPT Loads Hauled	11
Total Loads Taken In	314

Non Exempt Loads	$	2,022	
Exempt Loads	$	24,245	50
Total For Month	$	26,267	50

Key Energy
Disposal
Monthly Totals

MAY 2,010

Barrels Taken In 31,855
Barrels Pumped Away 39,256
Barrels Difference 7,401

EXEMPT LOADS (Key Hauled)	287	
EXEMPT LOADS (NOT Key Hauled)	27	
Total EXEMPT Loads Hauled	314	
NON EXEMPT LOADS (Key Hauled)	5	350 BBLs
NON EXEMPT LOADS (NOT Key Hauled)	14	1,350 BBLs
Total NON EXEMPT Loads Hauled	19	1700 BBLs
Total Loads Taken In	333	

Non Exempt Loads	$	4,782.50
Exempt Loads	$	25,600.80
Total For Month	$	30,383.30

Key Energy Disposal Monthly Totals

JUNE 2,010

Barrels Taken In 29,659
Barrels Pumped Away 13,704
Barrels Difference 15,955

EXEMPT LOADS (Key Hauled)	262
EXEMPT LOADS (NOT Key Hauled)	54
Total EXEMPT Loads Hauled	316
NON EXEMPT LOADS (Key Hauled)	5
NON EXEMPT LOADS (NOT Key Hauled)	4
Total NON EXEMPT Loads Hauled	9
Total Loads Taken In	325

Non Exempt Loads	$	1995.00
Exempt Loads	$	25 010.90
Total For Month	$	27,005.90

Key Energy Disposal Monthly Totals

July 2010

Barrels Taken In 31,740
Barrels Pumped Away 42,105
Barrels Difference 10,365

EXEMPT LOADS (Key Hauled)	261
EXEMPT LOADS (NOT Key Hauled)	76
Total EXEMPT Loads Hauled	337
NON EXEMPT LOADS (Key Hauled)	4
NON EXEMPT LOADS (NOT Key Hauled)	9
Total NON EXEMPT Loads Hauled	13
Total Loads Taken In	350

Non Exempt Loads	$	3,520 00
Exempt Loads	$	27,872 85
Total For Month	$	31,392.85

Key Energy Disposal Monthly Totals

August 2010

Barrels Taken In	32,053
Barrels Pumped Away	40,508
Barrels Difference	8,455

EXEMPT LOADS (Key Hauled)	266
EXEMPT LOADS (NOT Key Hauled)	54
Total EXEMPT Loads Hauled	320
NON EXEMPT LOADS (Key Hauled)	14
NON EXEMPT LOADS (NOT Key Hauled)	10
Total NON EXEMPT Loads Hauled	24
Total Loads Taken In	344

Non Exempt Loads	$	26,073.66
Exempt Loads	$	7500.00
Total For Month	$	33,573.66

Key Energy
Disposal
Monthly Totals
Sep-10

Barrels Taken In		26,288
Barrels Pumped Away		35,700
Barrels Difference		**9,412**
EXEMPT LOADS (Key Hauled)		182
EXEMPT LOADS (NOT Key Hauled)		83
Total EXEMPT Loads Hauled		**265**
NON EXEMPT LOADS (Key Hauled)		5
NON EXEMPT LOADS (NOT Key Hauled)		11
Total NON EXEMPT Loads Hauled		**16**
Total Loads Taken In		**281**
Average BBL Per Load		93.55
NON EXEMPT LOADS Per BBL	$	9.01
Exempt Loads Per BBL	$	0.92
Non Exempt Loads	$	4,216.00
Exempt Loads	$	22,885.80
Total For Month	**$**	**27,101.80**

Key Energy
Disposal
Monthly Totals

October 2010

Barrels Taken In	34,147
Barrels Pumped Away	50,249
Barrels Difference	16,102

EXEMPT LOADS (Key Hauled)	228
EXEMPT LOADS (NOT Key Hauled)	119
Total EXEMPT Loads Hauled	347
NON EXEMPT LOADS (Key Hauled)	13
NON EXEMPT LOADS (NOT Key Hauled)	8
Total NON EXEMPT Loads Hauled	21
Total Loads Taken In	368

Non Exempt Loads	$ 5,896.00
Exempt Loads	$ 30,060.20
Total For Month	$ 35,956.20

Key Energy
Disposal
Monthly Totals

November 2010

Barrels Taken In 30,722
Barrels Pumped Away 41,575
Barrels Difference 10,853

EXEMPT LOADS (Key Hauled)	242
EXEMPT LOADS (NOT Key Hauled)	85
Total EXEMPT Loads Hauled	327
NON EXEMPT LOADS (Key Hauled)	3
NON EXEMPT LOADS (NOT Key Hauled)	2
Total NON EXEMPT Loads Hauled	5
Total Loads Taken In	332

Non Exempt Loads	$ 1100 ea
Exempt Loads	$ 27,772.65
Total For Month	$ 28,872.65

Key Energy
Disposal
Monthly Totals December 2010

Barrels Taken In 28,527
Barrels Pumped Away 27,527
Barrels Difference 1,000

EXEMPT LOADS (Key Hauled)	268
EXEMPT LOADS (NOT Key Hauled)	55
Total EXEMPT Loads Hauled	323
NON EXEMPT LOADS (Key Hauled)	6
NON EXEMPT LOADS (NOT Key Hauled)	14
Total NON EXEMPT Loads Hauled	20
Total Loads Taken In	343

Non Exempt Loads	$	4,888.00
Exempt Loads	$	25,411.65
Total For Month	$	30,299.65

Appendix G
2010 Maintenance Disposal-Pump Log

KEY ENER[illegible]ISPOSAL - PUMP LOG 2010 month page

44106.0 78787.0 31.0 12.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
01-01		Changed	5 Values	on Suction	Side					
	10:30AM - 4:30PM	2000 -	68 - 62	0 - 0	0 - 0	44112.0		78793.0	37.0	18.0
01-02	11:AM - 6:PM	2000 - 2250	62 - 60	0 - 0	0 - 0	44118.0		78800.0	43.0	25.0
		Replaced	Pop off	valve,	Repacked	Starter Pump				
01-03	3:PM - 5 PM	1950 - 2100	62 - 62	0 - 0	0 - 0	44121.0		78802.0	46.0	27.0
1-6	10Pm -	1 Changed	Out -	20 mic	Welded	Hole in	Bottom of	Pool - 5 pal	0	
1-6	10PM - 4Pm	1950 - 2150	64 - 62	0 - 0	0 - 0	44127.0		78808.0	6	33.0
1-7	9Pm - 4Pm	2000 - 2200	64 - 62	0 - 0	0 - 0	44134.0		78815.0	13	40
1-8	8AM - 4Pm	2000 - 2200	65 - 59	0 - 0	0 0	44142.0		78823.0	21	48
01-09	1:AM - 5:PM	2050 - 2250	62 - 58	0 - 0	0 - 0	44146.0		78827.0	25.0	52.0
01-10	12PM - 5:PM	2050 - 2250	64 - 56	0 - 0	0 - 0	44151.0		78832.0	30.0	57.0
01-12	11AM - 5 Pm	1950 - 2150	60 - 58	0 - 0	0 - 0	44157.0		78838.0	36.0	63.0
1-14	8AM - 4Pm	1950 - 2150	66 - 49	0 - 0	0 - 0	44165.0		78846.0	44.0	71.0
1-15	8Am - 1Pm	2000 - 2150	56 - 40	0 - 0	0 - 0	44170.0		78851.0	49.0	76.0
1-16	1Pm 2Pm	Changed	Out	5 Mic.	Filter	44170.0		78851.0	49	0
1-15	2Pm - 3Pm	2150 - 2150	64 - 62	0 - 0	0 - 0	44171.0		78852.0	50	1
01-17	11:30AM - 12:30PM	2000 - 2100	64 - 64	0 - 0	0 - 0	44172.0		78853.0	51	2
01-18	11:00 - 1.00PM	1950 - 2100	54 - 40	0 - 0	0 - 0	44174.0		78855.0	53	4
		Welded on	Discharge	line						
	2:30 - 4:30 PM	2100 - 2200	52 - 28	0 - 0	0 - 0	44176.0		78857.0	55	6
01-19	11:AM - 3 PM	2000 - 2200	50 - 20	0 - 0	0 - 0	44180.0		78861.0	4.0	10.0
		Changed	20 Micron	Filters		Tested	Murphy	Switch	good	
		Changed	5 Micron	Filters					4.0	0
01-20	8Am - 1Pm	2050 - 2000	65 - 49	0 - 0	0 - 0	44185.0		78867.0	9.0	5
01-22	Removed	Filter	Pod	3 +	5 Micron					0
01-23	8AM - 4:PM	2000 - 2250	58 - 50	0 - 0		44193.0		78875.0	17.0	0
01-25		Replaced	5 Micron		Pod				17.0	0
01-26	11:30AM - 4:30PM	2000 - 2150	64 - 52	0 - 0	0 - 0	44198.0		78880.0	22	5
01-27	9:30Am - 1:30Pm	1950 - 2150	60 - 50	0 - 0	0 - 0	44202.0		78884.0	26	9
01-29	7:30Am 3:30P	1950 - 2150	64 - 46	0 - 0	0 - 0	44210.0		78892.0	34	17
01-31	8:AM - 3:00 PM	2000 - 2250	60 - 42	0 - 0	0 - 0	44,217.0		78899.0	41.0	24.0
		NEW		MOTOR	#					
02-01	1:PM - 5:PM	2000 - 2200	58 - 34	0 - 0	0 - 0	44,221.0		78903.0	45.0	28.0

KEY ENER DISPOSAL - PUMP LOG 2010 month page

44,221.0 78903.0 45.0 28.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
02-02	11 AM - 5:PM	2050 - 2250	44 - 32	0 - 0	0 - 0	44,227.0		78909.0	51.0	34.0
02-03	1 PM - 6:PM	2050 - 2250	40 - 30	0 - 0	0 - 0	44,232.0		78914.0	56.0	39.0
2-5	8Am - 3Pm	2000 - 2200	46 - 32	0 - 0	0 - 0	44,239.0		78921.0	63.0	46.0
2-6	12:30 - 3:30	2000 - 2250	40 - 34	0 - 0	0 - 0	44,242.0		78924.0	66.0	49.0
02-07	11:AM - 4:PM	2050 - 2250	38 - 32	0 - 0	0 - 0	44,248.0		78930.0	72.0	55.0
2-9	Changed OUT	20 MIC	FILTers						0	
2-10	7:30 - 4:30	1900 - 2150	54 - 42	0 - 0	0 - 0	44257.0		78,932.0	9	6.4.0
2-11	10Am - 4Pm	1950 - 2200	46 - 44	0 - 0	0 - 0	44,263.0		78 945.0	15	70.0
2-12	9Am - 6pm	2000 - 2250	50 - 36	0 - 0	0 - 0	44272.6		78 954.0	24	79.0
02-13	8:30AM - 5:30PM	2050 - 2250	40 - 28	0 - 0	0 - 0	44,281.0		78,963.0	33.0	88.0
02-14	CH Anged	5 Micron	Filters			Tested Murphy	SWITCH	good	33.0	0
	11AM - 4:PM	2050 - 2250	54 - 50	0 - 0	0 - 0	44,286.0		78968	38.0	5.0
02-16	8:30AM - 5:30	2050 - 2100	56 - 54	0 - 0	0 - 0	44295.0		78977	47	14
2-17	12 - 4Pm	1950 - 2200	56 - 46	0 - 0	0 - 0	44299.		78981	51	18
2-18	10Am - 7Pm	1950 - 2200	62 - 34	0 - 0	0 - 0	44308		78990	60	27
2-19	7Am - 5Pm	1950 - 2200	48 - 36	0 - 0	0 - 0	44318		79000	70	37
02-20	8:AM - 5:PM	2050 - 2300	46 - 36	0 - 0	0 - 0	44,327.0		79,009.0	79.0	46.0
02-21	7:AM - 1:PM	2050 - 2300	46 - 34	0 - 0	0 - 0	44,333.0		79,015.0	85.0	52.0
02-23	9:AM - 1:PM	2050 - 2250	46 - 36	0 - 0	0 - 0	44,337.0		79,019.0	89.0	56.0
	Replaced	Starter	Pump							
	2:30PM - 5:30 PM	2150 - 2250	36 - 36	0 - 0	0 - 0	44,340.0		79,022.0	92.0	59.0
2-24	7Am - 7Pm	2000 - 2200	46 - 36	0 - 0	0 - 0	44352.0		79034.0	104	71
2-25	7Am - 7Pm	2000 -	36 - 34	0 - 0	0 - 0	44364.0		79046.0	116	83
2-6	7Am 6pm	2000 - 2250	40 36	0 - 0	0 - 0	44375.0		79057.1	127	94
02-27	7:AM - 7:PM	2050 - 2300	45 - 35	0 - 0	0 - 0	44387.0		79069.0	139.0	106.0
02-28	CHANged 20	+ 5	Micron	Filters					0	0
	1:PM - 5:PM	2050 - 2250	68 - 50	0 - 0	0 - 0	44391.0		79,073.0	4.0	4.0
		NEW		MONTH						
03-01	12PM - 7:PM	2050 - 2300	65 - 34	0 - 0	0 - 0	44398.0		79,080	11.0	11.0
03-02	8:AM - 6pm	2150 - 2200	58 - 28	0 - 0	0 - 0	44408		79090	21	21
3-3	8Am - 6pm	2100 - 2200	58 - 26	0 - 0	0 - 0	44418		79 100	31	31
03-04	7:30 AM - 8:30Am	2050 - 2050	45 - 28	0 - 0	0 - 0	44419.0		79101.0	32	32
		Change out Filter		Gaskets	on 20's					

KEY ENERGY DISPOSAL - PUMP LOG

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44,419.0 79,101.0 32 32

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
03-04	10:AM - 12 Am	2050-2225	44 - 28	0 - 0	0 - 0	44434.0		79116.0	47	47
3-5	12Am - 6Am	2250 - 2200	28 - 38	0 - 0	0 - 0	44440.0		79122.0	53	53
3-5	Changed OUT	5 And 20	MIC.	FILTERS					0	0
3-5	10A - 4	2000 - 2200	64 - 68	0 - 0	0 - 0	44446.0		79128.0	6	6
03-06	9:30AM - 6:30PM	2150 - 2250	66 - 62	0 - 0	0 - 0	44,455.0		79,137.0	15.0	15.0
03-07	7:AM - 5:PM	2150 - 2300	62 - 45	0 - 0	0 - 0	44,465.0		79,147.0	25.0	25.0
03-08	8:AM - 12 PM	2000 - 2250	62 - 55	0 - 0	0 - 0	44,469.0		79,151.0	29.0	29.0
03-09	7:30AM - 6:30 PM	2100 - 2250	62 - 46	0 - 0	0 - 0	44,480.0		79,162.0	40.0	40.0
3-10	Changed 3 Disks on Section				side	Tested MVP Oil Switch		Good		
3-10	10Pm - 4p	2150 - 2250	60 - 38	0 - 0	0 - 0	44,486.0		79168.0	46	46
3-11	7:30pm - 2:30p	1950 - 2300	60 - 42	0 - 0	0 - 0	44,493.0		79175.0	53	53
3-12	11Am - 5pm	1950 - 2250	58 - 50	0 - 0	0 - 0	44,499.0		79181.0	59	59
03-13	10AM - 6:PM	2150 - 2350	58 - 42	0 - 0	0 - 0	44,507.0		79159.0	67.0	67.0
03-14	1PM - 6:PM	2150 - 2300	54 - 40	0 - 0	0 - 0	44,512.0		79194.0	72.0	72.0
03-15	2:PM - 6:PM	2150 - 2300	56 - 50	0 - 0	0 - 0	44,516.0		79198.0	76.0	76.0
03-16	1:PM - 6Pm	2150 - 2200	58 - 50	0 - 0	0 - 0	44,521.0		79203.0	81	81
3-17	9Am - 2p	2100 - 2200	62 - 48	0 - 0	0 - 0	44526.0		79208.0	86	86
3-18	10Am - 4p	2050 - 2250	60 - 50	0 - 0	0 - 0	44532.0		79214.0	92	92
3-19	7:30Pm - 6:30pm	2250 - 2250	48 - 44	0 - 0	0 - 0	44543.0		77226.0	103	103
03-20	CHANGE 20 + 5 MICRON FILTERS								0	0
	11AM - 7:PM	2150 - 2350	66 - 65	0 - 0	0 - 0	44,551.0		77,233.0	8.0	8.0
03-21	11:AM - 6:PM	2150 - 2350	68 - 64	0 - 0	0 - 0	44,558.0		77,240.0	15.0	15.0
03-22	10:AM - 7:PM	2150 - 2350	65 - 16	0 - 0	0 - 0	44567.0		77,249.0	24.0	24.0
03-23	Fixed Leak in #1 Stuffing Box Replaced Damaged Box									
	10:30 - 6:30 PM	2150 - 2350	40 - 16	0 - 0	0 - 0	44,575.0		77,257.0	32.0	32.0
03-24	8:AM - 6:PM	2150 - 2350	40 - 16	0 - 0	0 - 0	44,585.0		77,267.0	42.0	42.0
03-25	8:30AM - 6:30 PM	2150 - 2350	40 - 16	0 - 0	0 - 0	44,595.0		77,277.0	52.0	52.0
03-26	8:AM - 5:30 PM	2150 - 2350	40 - 16	0 - 0	0 - 0	44,605.5		77,285.5	60.5	60.5
03-27	8:AM - 5:PM	2150 - 2400	40 - 32	0 - 0	0 - 0	44,612.5		77,294.5	69.5	69.5
03-28	Repacked Starter Pump									
	12PM - 5:30PM	2200 - 2350	40 - 32	0 - 0	0 - 0	44,618.0		77,300.0	75.0	75.0
03-29	Changed 20 + 5 Micron Filters								0	0
	12PM - 5:PM	2150 - 2350	66 - 64	0 - 0	0 - 0	44,623.0		77,305.0	5.0	5.0
03-30	11AM - 4:PM	2150 - 2350	66 - 64	0 - 0	0 - 0	44,628.0		77,310.0	10.0	10.0

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44628.0 77310.0 20.0 10.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
3-31-10	8am - 4pm	1950 - 2250	60 - 64	0 - 0	0 - 0	44636.0		77318.0	18	18
4-1-10		NEW		MONTH						
4-2-10	7:30am 5:30pm	1950	62 -	0 - 0	0 - 0	44646.0		77328.0	28	28
04-03-10	8:30AM - 3:30PM	2150 - 2350	62 - 54	0 - 0	0 - 0	44,653.0		77,335.0	35.0	35.0
04-04	11:AM - 5:PM	2200 - 2350	60 - 48	0 - 0	0 - 0	44,659.0		77,341.0	41.0	41.0
04-05	3:30PM - 6:30 PM	2200 - 2350	60 - 40	0 - 0	0 - 0	44,662.0		77,344.0	44.0	44.0
04-06	8:AM - 6:PM	2150 - 2350	44 - 48	0 - 0	0 - 0	44,672.0		77,354.0	54.0	54.0
4-7	Changed out		3 valves on	Suction	And 3 on	Discharge				
4-7	10Am - 6pm	1900 - 2300	60 - 30	0 - 0	0 - 0	44679.0		77,361.0	61.0	61.0
4-8	Changed out		20 MIC.	Filters					0	
4-8	10Am - 4pm	1950 - 2300	60 - 44	0 - 0	0 - 0	44685.0		77367.0	6	67
4-9	10am - 5:PM	1950 - 2300	60 -	0 - 0	0 - 0	44691.0		77373.0	12.0	73.0
04-10	8:AM - 3:PM	2200 - 2350	40 - 32	0 - 0	0 - 0	44698.0		77380.0	19.0	80.0
04-11	11AM - 5:PM	2150 - 2350	45 - 38	0 - 0	0 - 0	44704.0		77386.0	25.0	86.0
04-12	10:AM - 5:PM	2150 - 2350	45 - 38	0 - 0	0 - 0	44711.0		77393.0	32.0	93.0
04-13	Blew out Pressure + Suction Lines (stainless steel Lines)									
4-14	7:30 - 6:30PM	2000 - 2350	58 - 60	0 - 0	0 - 0	44722.0		77404.0	43.0	104.0
4-15	12:00 - 3:00	2000 - 2250	66 - 72	0 - 0	0 - 0	44725.0		77409.0	46.0	107.0
04-17	8:AM - 4 PM	2050 - 2350	68 - 76	0 - 0	0 - 0	44,733.0		77,417.0	54.0	115.0
04-18	Replaced Murphy Switch, Changed 5 micron Filters									0
	1:PM - 5:PM	2150 - 2250	72 - 76	0 - 0	0 - 0	44,737.0		77,421.0	58.0	4.0
4-20	8am - 5:PM	2000 - 2250	70 - 76	0 - 0	0 - 0	44,746.0		77430.0	67.0	13.0
04-21	Changed		20 Micron	Filters	Tested Mud	Switch	good		0	
	9:AM - 5:PM	2600 - 2300	72 - 48	0 - 0	0 - 0	44,754.0		77,438.0	8.0	21.0
4-22	10 - 5:PM	2050 - 2250	68 - 54	0 - 0	0 - 0	44759.0		77443.0	13.0	26.0
4-23	11Am - 5pm	2050 - 2300	30	0 - 0	0 - 0	44765.0		77449.0	19.0	32.0
04-24	11:AM - 6:PM	2050 - 2300	30 - 36	0 - 0	0 - 0	44772.0		77456.0	26.0	39.0
04-25	11:AM - 6:PM	2100 - 2300	30 - 40	0 - 0	0 - 0	44,779.0		77463.0	33.0	46.0
04-26	10:AM - 6pm	2100 - 2300	26 - 38	0 - 0	0 - 0	44787.0		77471.0	41.0	54.0
4-27	12 - 6pm	2100 - 2300	30 - 30	0 - 0	0 - 0	44793.0		77477.0	47.0	60.0
4-28	9Am - 4pm	2100 - 2300	26 - 28	0 - 0	0 - 0	44800.0		7784.0	54.0	67.0
4-29	8Am - 4pm	2100 - 2300	26 - 30	0 - 0	0 - 0	44808.0		77492.0	62.0	75.0
4-30	9Am - 5pm	2100, 2300	24 - 26	0 - 0	0 - 0	44816.0		77500.0	70.0	83.0

KEY ENER[illegible] DISPOSAL - PUMP LOG

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44846.0 77500.0 70.0 83.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
05-01	10:AM - 6:PM	2100-2300	25 - 28	0 - 0	0 - 0	44,824.0		77508.0	78.0	91.0
05-02	3:PM - 7:PM	2100-2250	25 - 26	0 - 0	0 - 0	44,828.0		77512.0	82.0	95.0
05-03	11:AM - 6:PM	2050-2300	25 - 28	0 - 0	0 - 0	44,835.0		77519.0	89.0	102.0
05-04	10AM - 7:PM	2100-2300	25 - 32	0 - 0	0 - 0	44,844.0		77528.0	98.0	111.0
05-05	12PM - 2:30	2100-2250	26 - 24	0 - 0	0 - 0	44846.5		77530.5	100.5	113.5
	2:30PM - 3PM	Pump	off, NO	Light on,	May	Have been electric Spike				
	3:PM - 6:30PM	2250-2300	24 - 24	0 - 0	0 - 0	44850.0		77,534.0	104.0	117.0
5-6	11Am - 4pm	2100-2300	24 - 24	0 - 0	0 - 0	44855.0		77539.0	109.0	122.0
5-7	11:30Am - 5:30pm	2100-2300	22 - 24	0 - 0	0 - 0	44861.0		77,545.0	115.0	128.0
05-08	12:PM - 6:PM	2050-2300	24 - 24	0 - 0	0 - 0	44867.0		77,551.0	121.0	134.0
05-09	10:AM - 7:PM	2050-2300	24 - 24	0 - 0	0 - 0	44876.0		77,560.0	130.0	143.0
05-10	12 PM - 6:PM	2050-2300	20 - 24	0 - 0	0 - 0	44882.0		77,566.0	136.0	149.0
05-11	10AM - 3:PM	2100-2250	20 - 22	0 - 0	0 - 0	44887.0		77571.0	141.0	154.0
	3:PM - 4:PM	CHAnged	5	+ 3	Micron	Filters			0	0
	4:PM - 7pm	2250-2300	20 - 22	0 - 0	0 - 0	44890.0		77574.0	3	3
5-12	8Am - 5pm	2150-2300	20 - 22	0 - 0	0 - 0	44899.0		77583.0	12	12
5-13	8Am - 5pm	2100-2300	19 - 24	0 - 0	0 - 0	44908.0		77592.0	21	21
05-14	11:AM - 7:00PM	2100-2300	18 - 24	0 - 0	0 - 0	44,916.0		77600.0	29.0	29.0
05-15	10AM - 5:PM	2100-2300	18 - 24	0 - 0	0 - 0	44,923.0		77607.0	36.0	36.0
05-16	11:AM - 5:PM	2050-2250	20 - 24	0 - 0	0 - 0	44,929.0		77613.0	42.0	42.0
05-17	Replaced	#4 oiler Line,	Replaced	Starter	Pump	Tested		murphy switch		good
	1:PM - 5PM	2050-2250	20 - 20	0 - 0	0 - 0	44,933.0		77617.0	46.0	46.0
5-18	12 - 5pm	2050-2250	20 22	0 - 0	0 - 0	44,938.0		77622.0	51.0	51.0
5-19	12 - 5pm	2050-2250	20 - 24	0 - 0	0 - 0	44943.0		77627.0	56.0	56.0
05-20	11:AM - 5:PM	2050-2250	20 - 22	0 - 0	0 - 0	44,949.0		77633.0	62.0	62.0
05-21	10:AM - 5:PM	2050-2300	20 - 24	0 - 0	0 - 0	44,956.0		77640.0	69.0	69.0
05-22	10:AM - 4:PM	2050-2300	22 - 30	0 - 0	0 - 0	44,962.0		77646.0	75.0	75.0
05-23	12PM - 6:PM	2100-2300	22 - 22	0 - 0	0 - 0	44,968.0		77652.0	81.0	81.0
05-24	1:PM - 6:PM	2050-2250	20 - 20	0 - 0	0 - 0	44973.0		77,657.0	88.0	88.0
05-25	12:PM - 6:PM	2050-2300	20 - 20	0 - 0	0 - 0	44,979.0		77,663.0	94.0	94.0
5-26	10:30 - 6:30 PM	2050-2350	21 - 24	0 - 0	0 - 0	44,987.0		77,671.0	102.0	102.0
5-27	12 - 6pm	2050-2300	21 - 24	0 - 0	0 - 0	44993.0		77677.0	108.0	108.0
5-28	10Am - 5pm	2100-2300	20 - 22	0 - 0	0 - 0	45100.0		77684.0	115.0	115.0
05-29	11:AM - 6 PM	2050-2300	22 - 24	0 - 0	0 - 0	45107.0		77691.0	122.0	122.0

KEY ENERG DISPOSAL - PUMP LOG 2010 month page

45107.0 77691.0 122.0 122.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
05-30	2 PM - 6 PM	2200 - 2300	36 - 36	0 - 0	0 - 0	45111.0		77695.0	126.0	126.0
05-31	12 AM - 5 AM	2100 - 2300	24 - 26	0 - 0	0 - 0	45116.0		77700.0	131.0	131.0
		NEW			MONTH					
06-01	12 AM - 6 PM	2100 - 2300	24 - 24	0 - 0	0 - 0	45,122.0		77706.0	137.0	137.0
6-2	Changed	OUT	5 & 3	MIC.	FILTERS				0	0
06-04	12:30 AM - 4:30 PM	1900 - 2150	58 - 56	0 - 0	0 - 0	45126.0		77710.0	4	4
06-06	11 AM - 5 PM	1950 - 2200	44 - 38	0 - 0	0 - 0	45,132.0		77716.0	10.0	10.0
06-07	11:30 AM - 5:30 PM	1950 - 2200	40 - 40	0 - 0	0 - 0	45,138.0		77722.0	16.0	16.0
06-08	Changed	OUT	5 & 3 MIC	FILTERS		Tested Murphy Switch		good	0	0
	12 PM - 2:30 PM	1950 - 2150	70 - 70	0 - 0	0 - 0	45,140.5		77724.5	2.5	2.5
06-09	9:30 AM - 12:30 PM	1950 - 2150	68 - 68	0 - 0	0 - 0	45,143.5		77727.5	5.5	5.5
06-10	10 AM - 5 PM	1950 - 2250	68 - 42	0 - 0	0 - 0	45,150.5		77734.5	12.5	12.5
06-12	12 PM - 5:30 PM	1950 - 2200	40 - 40	0 - 0	0 - 0	45,156.0		77740.0	18.0	18.0
06-13	1 PM - 6 PM	1950 - 2200	40 - 44	0 - 0	0 - 0	45,161.0		77745.0	23.0	23.0
06-16	10 AM - 1 PM	1750 - 2150	44 - 42	0 - 0	0 - 0	45,164.0		77748.0	26.0	26.0
06-19	9 AM - 5 PM	1900 - 2200	40 - 38	0 - 0	0 - 0	45,172.0		77756.0	34.0	34.0
06-21	11 AM - 6 PM	1950 - 2150	44 - 42	0 - 0	0 - 0	45,179.0		77763.0	41.0	41.0
06-22	10 AM - 2 PM	1950 - 2150	40 - 40	0 - 0	0 - 0	45,183.0		77767.0	45.0	45.0
06-23	10 AM - 1 PM	1950 - 2150	50 - 40	0 - 0	0 - 0	45,186.0		77770.0	48.0	48.0
06-26	12 PM - 7 AM	1900 - 2150	44 - 42	0 - 0	0 - 0	45,188.0		77779.0	50.0	50.0
06-30	9 AM - 3 PM	1900 - 2100	40 - 40	0 - 0	0 - 0	45194.0		77785.0	56.0	56.0
	NEW		MONTH							
07-02	8 AM 4 PM	1850 - 2150	70 - 40	0 - 0	0 - 0	45 202.0		77793.0	64.0	64.0
07-03	11 AM - 5 PM	1950 - 2150	46 - 42	0 - 0	0 - 0	45,208.0		77801.0	70.0	70.0
07-04		Repacked	Starter	Pump						
07-05	May	Need A	New Float	For The oil	Res.					
	10:30 AM - 9:30 PM	1900 - 2150	48 - 46	0 - 0	0 - 0	45,214.0		77807.0	76.0	76.0
07-06	Change 5	+ 3 Micron	Filters,	changed	10 Pump Valves	Tested Murphy			0	0
	2:30 PM - 6:30 PM	1900 - 2150	74 - 40	0 - 0	0 - 0	45,218.0		77813.0	4.0	4.0
07-07	9 AM - 6 PM	1900 - 2250	98 - 40	0 - 0	0 - 0	45,227.0		77822.0	13.0	13.0
07-08	Changed	5 & 3 MIC	Filters	For 96	Hr. Running	Test			0	0
07-09	7 AM - 12 AM	1950 - 2300	72 - 65	0 0	0 0	45244.0		77839.0	17.0	17.0

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45244.0 77839.0 12.0 12.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
07-10	12AM - 7:AM	2300-2300	65-65	0 - 0	0 - 0	45251.0		77846.0	24.0	24.0
	7:AM - 7PM	2300-2300	65 - 66	0 - 0	0 - 0	45263.0		77858.0	36.0	36.0
	7PM - 12AM	2300 - 2300	66 - 64	0 - 0	0 - 0	45268.0		77863.0	41.0	41.0
07-11	12AM - 7:AM	2300 - 2300	64 - 64	0 - 0	0 - 0	45275.0		77870.0	48.0	48.0
	7:AM - 7:PM	2300 - 2300	64 - 66	0 - 0	0 - 0	45287.0		77882.0	60.0	60.0
	7:PM - 12AM	2300 - 2300	64 - 64	0 -	0 -	45292.0		77887.0	65.0	65.0
07-12	12:AM - 7:AM	2300 - 2300	64 - 64	0 - 0	0 - 0	45299.0		77894.0	72.0	72.0
	7:AM - 7:PM	2300 - 2300	66 - 66	0 - 0	0 - 0	45311.0		77908.0	84.0	84.0
	7:PM - 12:AM	2300 - 2300	66 - 66	0 - 0	0 - 0	45316.0		77913.0	89.0	89.0
07-13	12:AM 7:AM	2300 - 2300	66 - 64	0 - 0	0 - 0	45323.0		77920.0	96.0	96.0
	7:AM - 1:PM	2300 - 2350	64 - 64	0 - 0	0 - 0	45329.0		77926.0	102.0	102.0
	Pump down For 72 HR Fall off Test									
07-17	7:AM - 6:PM	1950 - 2250	64 - 62	0 - 0	0 - 0	45340.0		77937.0	113.0	113.0
07-18	8:AM - 7:PM	2050 - 2300	64 - 64	0 - 0	0 - 0	45351.0		77948.0	124.0	124.0
07-19	Re Packed Starter Pump									
	10:AM - 3:PM	2100 - 2300	66 - 66	0 - 0	0 - 0	45356.0		77953.0	127.0	127.0
07-20	10:30AM - 5:30PM	2050 - 2300	66 - 66	0 - 0	0 - 0	45363.0		77960.0	134.0	134.0
07-21	8:AM - 4:PM	2050 - 2300	65 - 64	0 - 0	0 - 0	45371.0		77968.0	142.0	142.0
07-22	9A - 3:30pm	2100 - 2400	64 - 64	0 - 0	0 - 0	45377.5		77974.5	148.5	148.5
07-23	Re Packed Starter Pump - Replaced Valves on Well Head									
07-24	6:30AM - 4:30PM	1950 - 2250	64 - 62	0 - 0	0 - 0	45385.5		77982.5	156.5	156.5
07-25	7:30 AM - 9:AM	2000 - 2150	62 - 62	0 - 0	0 - 0	45387.0		77984.0	158.0	158.0
	Changed 5 + 3 Micron Filters - Repacked Starter Pump 3 Times								0	0
07-26	9:30AM - 1:30PM	1950 - 2150	70 - 66	0 - 0	0 - 0	45391.0		77988.0	4.0	4.0
07-27	CHANGED out Starter Pump, Replaced 2 Valves on Discharge Side									
	1:PM - 6.PM	1950 2200	94 - 78	0 - 0	0 - 0	45396.0		77993.0	9.0	9.0
07-28	9AM - 1 PM	1950 - 2200	96 - 76	0 - 0	0 - 0	45400.0		77997.0	13.0	13.0
07-29	7:30AM - 2:30p	2100 - 2200	68 - 62	0 - 0	0 - 0	45407.0		78004.0	20.0	20.0
07-30	8AM - 6:00p	2000 - 2250	74 - 60	0 - 0	0 - 0	45417.0		78014.0	30.0	30.0
07-31	8AM - 5PM	2050 - 2250	62 - 62	0 - 0	0 -	45426.0		78023.0	39.0	39.0
		NEW			MONTH					

KEY ENER[illegible]ISPOSAL - PUMP LOG 2010 month page

						45426.0		78023.0	39.0	39.0
DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
08-02	8:30AM - 6:30PM	1950 - 2300	98 - 62	0 - 0	0 - 0	45436.0		78033.0	49.0	49.0
08-03	8:30AM - 6:30PM	1900 - 2350	60 - 66	0 - 0	0 - 0	45446.0		78043.0	59.0	59.0
08-04	8AM - 6:PM	2100 - 2350	66 - 65	0 - 0	0 - 0	45,456.0		78053.0	69.0	69.0
08-05	7:30AM - 1:30	2100 - 2350	66 - 60	0 - 0	0 - 0	45462.0		78059.0	75.0	75.0
08-06	Replaced	#1 check valve	on oil	Line	Replaced	#1 STUFF	ing Box			
08-06	8:30AM - 5:30	2150 - 2300	66 - 64	0 - 0	0 - 0	45470.0		78067.0	83.0	83.0
08-07	9:00AM - 6:PM	2100 - 2300	62 - 64	0 - 0	0 - 0	45479.0		78076.0	92.0	92.0
08-08	9:30AM - 2:30PM	2100 - 2300	64 - 64	0 - 0	0 - 0	45484.0		78081.0	97.0	97.0
08-09	12:30AM - 1:30PM	2050 - 2100	64 - 64	0 - 0	0 - 0	45485.0		78082.0	98.0	98.0
	1:30PM - 2:30 PM	Repacked	stuffing	Box	#1					
	2:30PM - 5:30PM	2100 - 2300	64 - 64	0 - 0	0 - 0	45488.0		78085.0	101.0	101.0
08-10	Changed	5 + 3	Micron	Filters -	Repacked	Starter	Pump		0	0
	10:AM - 6:PM	2050 - 2300	92 - 82	0 - 0	0 - 0	45496.0		78093.0	8.0	8.0
08-10	8:AM - 6:PM	2150 - 2300	84 - 64	0 - 0	0 - 0	45506.0		78103.0	18.0	18.0
	Tested	Murphy	switch	and it	shut	OFF AT	2400 lbs			
08-12	8AM - 7:30PM	2100 - 2300	80 - 64	0 - 0	0 - 0	45517.5		78114.5	29.5	29.5
08-13	7AM - 11:00	2150 - 2200				45521.5		78118.5	34.5	34.5
	12:30 - 6:30PM	2150 - 2350	90 -	0 - 0	0 - 0	45527.5		78124.5	40.5	40.5
	11:+ 12:30PM	Replaced	O	RING	on	VAlve				
08-14	8AM - 5:30PM	2150 - 2400	66 - 64	0 - 0	0 - 0	45537.0		78134.0	50.0	50.0
08-15	10AM - 5:PM	2100 - 2350	66 - 65	0 - 0	0 - 0	45,544.0		78141.0	57.0	57.0
08-17	10:30AM - 5:30PM	2000 - 2250	94 - 66	0 - 0	0 - 0	45,550.0		78147.0	63.0	63.0
08-18	12PM - 6:PM	2050 - 2250	66 - 66	0 - 0	0 - 0	45,556.0		78153.0	69.0	69.0
08-19	7:30AM - 7:30	2050 - 2300	94 - 66	0 - 0	0 - 0	45565.0		78162.0	78.0	78.0
08-20	9:30AM - 5:00	2050 - 2400	66 - 64	0 - 0	0 - 0	45572.5		78169.5	85.5	85.5
08-20	Flowed	Back well	For	25 min	@	Dropped	Two	soap	sticks	
08-21	7:AM - 430 PM	2050 - 2300	66 - 65	0 - 0	0 - 0	45582.0		78179.0	95.0	95.0
08-22		Repack	Starter	Pump						
	11:30AM - 5:30PM	2050 - 2250	66 - 66	0 - 0	0 - 0	45588.0		78185.0	101.0	101.0
08-23	9:AM - 6:PM	2050 - 2350	64 - 66	0 - 0	0 - 0	45597.0		78194.0	110.0	110.0
08-24	8:AM - 3:PM	2150 - 2400	66 - 66	0 - 0	0 - 0	45604.0		78201.0	117.0	117.0
	6:PM - 8:PM	2300 - 2400	66 - 66	0 - 0	0 - 0	45606.0		78203.0	119.0	119.0
08-25	7:AM - 7:PM	2200 - 2350	66 - 66	0 - 0	0 - 0	45618.0		78215.0	131.0	131.0
08-26	7:AM - 7:PM	2150 - 2350	66 - 66	0 - 0	0 - 0	45630.0		78227.0	143.0	143.0

KEY ENERGY DISPOSAL - PUMP LOG 2010 month page

45630.0 78227.0 143.0 143.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	3 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
08-27	7:30 - 5:30	2150-2350	64 - 64	0 - 0	0 - 0	45640.0		78227.0	153.0	153.0
08-28	9:30 - 6:30 PM	2150-2300	66 - 66	0 - 0	0 - 0	45649.0		78246.0	161.0	161.0
08-29	12:30AM - 6:30PM	2100-2250	66 - 68	0 - 0	0 - 0	45,655.0		78,252.0	167.0	167.0
08-30	1:30PM - 6:30PM	2050-2250	64 - 64	0 - 0	0 - 0	45,660.0		78,257.0	172.0	172.0
08-30	changed	OUT #4	STUFFING	BOX						
08-31	8AM - 12 PM	2100-2250				45.664.0		78,261.0	176.0	176.0
08-31	#2	STUFFING	BOX O RING	WASHED OUT						
	12:30AM - 6:30PM	2200-2300	64 - 64	0 - 0	0 - 0	45668.0		78265.0	182.0	182.0
	NEW			MONTH						
09-01	CHANGED			IN LINE	FILTERS				0	0
	10:AM - 6:PM	2100-2250	92 - 86	0 - 0	0 - 0	45672.0		78,269.0	8.0	8.0
09-02	8.AM - 6.PM	2050-2250	86 - 70	0 - 0	0 - 0	45682.0		78279.0	18.0	18.0
09-03	8 AM - 12	2100-2200	74 - 64	0 - 0	0 - 0	45686.0		78283.0	22.0	22.0
	#1 STUFFING	BOX	REPACKED							
	3PM - 5:PM	2150-2200	70 -			45688.0		78285.0	24.0	24.0
09-04	1 PM - 7:PM	2050-2250	82 - 82	0 - 0	0 - 0	45,694.0		78291.0	30.0	30.0
09-05	10:AM - 7:PM	2050-2250	84 - 84	0 - 0	0 - 0	45,703.0		78300.0	39.0	39.0
09-06		REPLACED	GASKET	ON BARREL	COUNTER					
	12:30AM - 6:30PM	2050-2200	84 - 84	0 - 0	0 - 0	45709.0		78306.0	45.0	45.0
09-07	REPLACED	8 VALVES	4 ON S	UCTION	4 ON D	SCHARGE				
	12:30PM - 5:30PM	2050-2250	78 - 78	0 - 0	0 - 0	45,714.0		78311.0	50.0	50.0
09-09	8AM - 5PM	2000-2250	80 - 78	0 - 0	0 - 0	45723.0		78320.0	59.0	59.0
09-10-10	REPACKED	#1 STUFFING	BOX							
	1:30PM 5:30PM	2050 - 2250	94 -	0 0	0 0	45727.0		78324.0	63.0	63.0
09-11-10	9AM - 7:PM	2050 - 2300	80 - 80	0 - 0	0 - 0	45,737.0		78334.0	73.0	73.0
09-12-10	12PM - 6:PM	2050 - 2250	80 - 78	0 - 0	0 - 0	45,743.0		78340.0	79.0	79.0
09-13-10	1:30PM - 6:30PM	2050 - 2250	80 - 76	0 - 0	0 - 0	45748.0		78345.0	84.0	84.0
09-14-10	12PM - 7PM	2050-2250	72 - 70	0 - 0	0 - 0	45755.0		78352.0	91.0	91.0
09-15-10	12PM - 7:PM	2050-2250	82 - 82	0 - 0	0 - 0	45762.0		78359.0	98.0	98.0
09-16-10	7AM - 7PM	2050-2250	74 - 82	0 0	0 0	45774.0		78371.0	110.0	110.0
09-17-10	9AM - 5	2100 - 2300	74 - 80	0 0	0 0	45782.0		78379.0	118.0	118.0
09-17-10		REPLACED	4 DISKS	ON SUCTION	SIDE AND	4 ON	DISCHARGE			
09-18	12PM - 6:PM	2100-2200	80 - 85	0 - 0	0 - 0	45788.0		78385.0	124.0	124.0

09-18 Tested Murphy switch IT Works

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DATE	TIME	PRESSURE	SUCTION	5 MICRON	3 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
						45788.0		78385.0	124.0	124.0
09-19	12PM - 7:PM	2000-2200	58 - 58	0 - 0	0 - 0	45795.0		78392.0	131.0	131.0
09-20	12PM - 5:PM	2000-2100	40 - 45	0 - 0	0 - 0	45,800.0		78397.0	136.0	136.0
09-21	Changed 3 + 5 Micron Filters								0	0
	12:30AM - 6:30PM	1950 - 2100	30 - 60	0 - 0	0 - 0	45,806.0		78,403.0	6.0	6.0
09-22	Change 3 Valves on Suction 3 Valves on Dischage									
	10:AM - 1:PM	2050-2250	45 - 45	0 - 0	0 - 0	45809.0		78,406	9.0	9.0
09-23	2pm - 6pm	2050-2250	30 - 30	0 0	0 0	45813.0		78410.0	13.0	13.0
09-24	9.Am - 6pm	2100-2300		0 0	0 0	45822.0		78419.0	22.0	22.0
09-25	10:AM - 6:PM	2100 - 2300	30 - 60	0 - 0	0 - 0	45830.0		78427.0	30.0	30.0
09-27	9 AM - 6:PM	2250 - 2250	60 - 40	0 - 0	0 - 0	45839.0		78,436.0	39.0	39.0
09-28	1:PM - 6:PM	2050 - 2200	50 - 50	0 - 0	0 - 0	45844.0		78,441.0	44.0	44.0
09-29	10:AM - 7:PM	2000 - 2200	60 - 40	0 - 0	0 - 0	45853.0		78450.0	53.0	53.0
09-30	11:30 - 3:30pm	2050 - 2150	80 - 60	0 - 0	0 - 0	45857.0		78454.0	57.0	57.0
		NEW MONTH								
10-1-10	9.Am - 5pm	2000-2150	80 -	0 - 0	0 - 0	45865.0		78462.0	65.0	65.0
	Replaced 3 Valves on suction and 1 new stile. Replaced 3 Valves on Discharge & 1 new stile									
10-2	7Am - 4pm	2100 - 2300	90 - 60	0 - 0	0 - 0	45874.0		78471.0	74.0	74.0
10-03	11:AM - 3PM	2100 - 2400	80 - 60	0 - 0	0 - 0	45878.0		78475.0	78.0	78.0
	Pump down High Pressure Tested Murphy Switch good									
	[illegible]	[illegible]	[illegible]	0 - 0	0 - 0	45,879.0		78,476.0	79.0	79.0
10-04	Changed 5 + 3 Micron Filters								0	0
10-05	8Am - 7PM	2150-2300	90 - 60	0 - 0	0 - 0	45,890.0		78,487.0	11.0	11.0
10-06	10 AM - 6:PM	2150-2300	80 - 60	0 - 0	0 - 0	45,898.0		78495.0	19.0	19.0
10-07	3:30pm - 5:30pm	2150 - 2250	80 - 60	0 - 0	0 - 0	45900.0		78497.0	21.0	21.0
10-08	2pm - 6pm	2100 - 2250	60 - 60	0 - 0	0 - 0	45904.0		78501.0	25.0	25.0
10-09	8:30AM - 4:30PM	2150 - 2300	60 - 60	0 - 0	0 - 0	45,912.0		78509.0	33.0	33.0
10-11	4:30PM - 7:30PM	2150 - 2200	60 - 60	0 - 0	0 - 0	45,915.0		78512.0	36.0	36.0
10-12	8Am - 2:PM	2050 - 2250	65 - 60	0 - 0	0 - 0	45,921.0		78518.0	42.0	42.0
10-13	11 AM - 7:PM	2100 - 2300	60 - 55	0 - 0	0 - 0	45,929.0		78526.0	50.0	50.0
10-14	10Am - 7pm	2100-2300	60 - 50	0 - 0	0 - 0	45938.0		78535.0	59.0	59.0
10-15	8Am - 6pm	2150 -	65 -	0 - 0	0 - 0	45948.0		78545.0	69.0	69.0
10-16	8 AM - 7:PM	2150-2300	55 - 60	0 - 0	0 - 0	45959.0		78,556.0	80.0	80.0
10-17	8:AM - 4:PM	2150-2300	60 - 60	0 - 0	0 - 0	45967.0		78564.0	88.0	88.0

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45967.0 78564.0 88.0 88.0

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
10-18	Changed 3	+ 5	Micron	Filters					0	0
	1:PM - 7:PM	2100 - 2250	80 - 65	0 - 0	0 - 0	45973.0		78,520.0	7.0	7.0
10-19	9Am - 6:PM	2150 - 2250	80 - 65	0 - 0	0 - 0	45982.0		78,579.0	16.0	16.0
10-20	11AM - 10:PM	2050 - 2250	70 - 70	0 - 0	0 - 0	45993.0		78,590.0	27.0	27.0
10-21	6Am - 7:00	2150 - 2250	80 - 70	0 - 0	0 - 0	46003.0		78603	40.0	40.0
10-22	8:30Am - 4:36	2100 - 2300	70 - 60	0 - 0	0 - 0	46010.0		78610		
10-22	Changed 3	Discharge	2	Suction	Valves				47.0	47.0
10-23	12PM - 6:PM	2150 - 2300	70 - 60	0 - 0	0 - 0	46016.0		78616.0	53.0	53.0
10-24	10AM - 3:PM	2150 - 2300	70 - 60	0 - 0	0 - 0	46,021.0		78621.0	58.0	58.0
10-25	10Am - 7:PM	2150 - 2300	65 - 60	0 - 0	0 - 0	46,030.0		78630.0	67.0	67.0
10-26	8Am - 7:PM	2150 - 2350	65 - 60	0 - 0	0 - 0	46,041.0		78641.0	78.0	78.0
10-27	7Am - 7:PM	2150 - 2350	65 - 60	0 - 0	0 - 0	46,053.0		78653.0	90.0	90.0
10-28	9Am - 5:Pm	2150 - 2338	70 - 55	0 - 0	0 - 0	46061.0		78661.0	98.0	98.0
10-29	1pm - 6pm	2150 - 2300	65 - 55	0 - 0	0 - 0	46066.0		78666.0	103.0	103.0
10-30	1:PM - 5:PM	2150 - 2300	60 - 60	0 - 0	0 - 0	46070.0		78670.0	107.0	107.0
10-31	2:PM - 5:PM	2150 - 2250	60 - 60	0 - 0	0 - 0	46073.0		78673.0	110.0	110.0
		NEW			MONTH					
11-01	11AM - 7:PM	2100 - 2300	65 - 60	0 - 0	0 - 0	46081.0		78681.0	118.0	118.0
11-02	12PM - 6:PM	2100 - 2300	65 - 60	0 - 0	0 - 0	46087.0		78687.0	124.0	124.0
11-03		Changed out	5	Mic Filters & Tested				Pump Switch	0	0
	12Pm - 7:PM	2100 - 2300	80 - 70	0 - 0	0 - 0	46,094.0		78694.0	7.0	7.0
11-4	10Am - 5pm	2100 - 2300	80 - 60	0 - 0	0 - 0	46101.0		78701.0	14.0	14.0
11-5	10Am - 2pm	2100 - 2350	80 - 60	0 - 0	0 - 0	46105.0		78705.0	18.0	18.0
11-06	11AM - 6:PM	2050 - 2250	70 - 70	0 - 0	0 - 0	46112.0		78712.0	26.0	26.0
11-07	8AM - 6:PM	2050 2250	70 - 65	0 - 0	0 - 0	46122.0		78722.0	36.0	36.0
11-8	9Am - 5:PM	2050 - 2250	70 - 65	0 - 0	0 - 0	46130.0		78730.0	44.0	44.0
11-9	11Am - 7:PM	2050 - 2150	70 - 70	0 - 0	0 - 0	46138.0		78738.0	52.0	52.0
11-10	Rebuilt 6 Valves IN Pump									
	10:30AM - 4:30PM	2100 - 2300	65 - 60	0 - 0	0 - 0	46144.0		78744.0	58.0	58.0
11-11	10Pm - 5pm	2100 - 2300	70 - 60	0 - 0	0 - 0	46151.0		78751.0	65.0	65.0
11-12	8:30 - 12:30	2050 - 2300	60 - 50	0 - 0	0 - 0	46155.0		78755.0	69.0	69.0
11-12	3pm - 4:30	2250 - 2400	60 - 60	0 - 0	0 - 0	46156.5		78756.5	70.5	70.5
11-13	9:AM - 11:00	2200 - ?	60 - 60	0 - 0	0 - 0	46158.5		78758.5	72.5	72.5

KEY ENERGY DISPOSAL - PUMP LOG

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46158.5 78758.5 72.5 72.5

DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
11-13	11:AM - 4:30PM	2300 - 2350	60 - 60	0 - 0	0 - 0	46164.0		78,764.0	78.0	78.0
11-14	1:PM - 5:PM	2150 - 2350	60 - 60	0 - 0	0 - 0	46168.0		78,768.0	82.0	82.0
11-15	2:PM - 6:PM	2150 - 2350	60 - 60	0 - 0	0 - 0	46172.0		78,772.0	86.0	86.0
11-16	11:AM - 6:PM	2150 - 2350	60 - 60	0 - 0	0 - 0	46179.0		78,779.0	93.0	93.0
11-17	Changed		5 + 3	Micron	Filters				0	0
	12PM - 5:30PM	2150 - 2400	85 - 70	0 - 0	0 - 0	46184.5		78784.5	5.5	5.5
11-18	8AM - 11:30	2200 2400	70 - 60	0 0	0 0	46188.0		78788.0	9.0	9.0
	4:PM - 6PM	2200 - 2350	70 - 60	0 0	0 0	46191.0		78791.0	12.0	12.0
11-19	10AM - 5:30	2150 - 2400	70 - 60	0 - 0	0 - 0	46198.5		78798.5	19.5	19.5
11-20	8:AM - 1:PM	2200 - 2400	70 - 60	0 - 0	0 - 0	46203.5		78803.5	24.5	24.5
		Pump off High Pressure								
	1:PM - 7:PM	2300 - 2350	60 - 60	0 - 0	0 - 0	46,209.5		78,809.5	30.5	30.5
11-21	10:AM - 5:PM	2200 - 2350	75 - 60	0 - 0	0 - 0	46,216.5		78816.5	37.5	37.5
11-22	10.AM - 6:PM	2150 - 2350	70 - 55	0 - 0	0 - 0	46,224.5		78824.5	45.5	45.5
11-23	9:AM - 1:PM	2200 - 2400	65 - 60	0 - 0	0 - 0	46228.5		78828.5	49.5	49.5
		Pump off		High	Pressure					
	1:PM - 3:PM	2350 - 2400	60 - 60	0 - 0	0 - 0	46,230.5		78830.5	51.5	51.5
		Pump off		High	Pressure					
	3:PM - 3:30PM	2350 - 2400	60 - 60	0 - 0	0 - 0	46,231.0		78831.0	52.0	52.0
		Pump off		High	Pressure					
11-24	9:30 - 3:30 PM	2200 - 2400	65 - 65	0 - 0	0 - 0	46237.0		78837.0	58.0	58.0
		Pump	off	High	Pressure					
	4:30PM - 5:30	2300 - 2350	65 - 60	0 - 0	0 - 0	46238.0		78838.0	59.0	59.0
11-25	8AM - 11AM	2200 - 2350	70 - 65	0 - 0	0 - 0	46241.0		78841.0	62.0	62.0
11-26	9AM - 12	2150 - 2350	70 - 60	0 - 0	0 - 0	46244.0		78844.0	65.0	65.0
11-27	9AM - 1:PM	2150 - 2350	65 - 55	0 - 0	0 - 0	46248.0		78848.0	69.0	69.0
11-28	12PM - 4:PM	2150 - 2300	65 - 65	0 - 0	0 - 0	46252.0		78852.0	73.0	73.0
	Change 5 + 3 Micron				Filters				0	0
11-29	4:PM - 6:PM	2150 - 2250	65 - 65	0 - 0	0 - 0	46254.0		78854.0	2.0	2.0
11-30		Replaced	3 on Suction Side 1 on Discharge Side - Values							
	1:PM - 8:PM	2150 - 2350	65 - 60	0 - 0	0 - 0	46261.0		78861.0	9.0	9.0
	NEW		MOTH							
12-01	10AM - 2:PM	2200 - 2400	60 - 60	0 - 0	0 - 0	46265.0		78865.0	13.0	13.0

Pump off High Pressure

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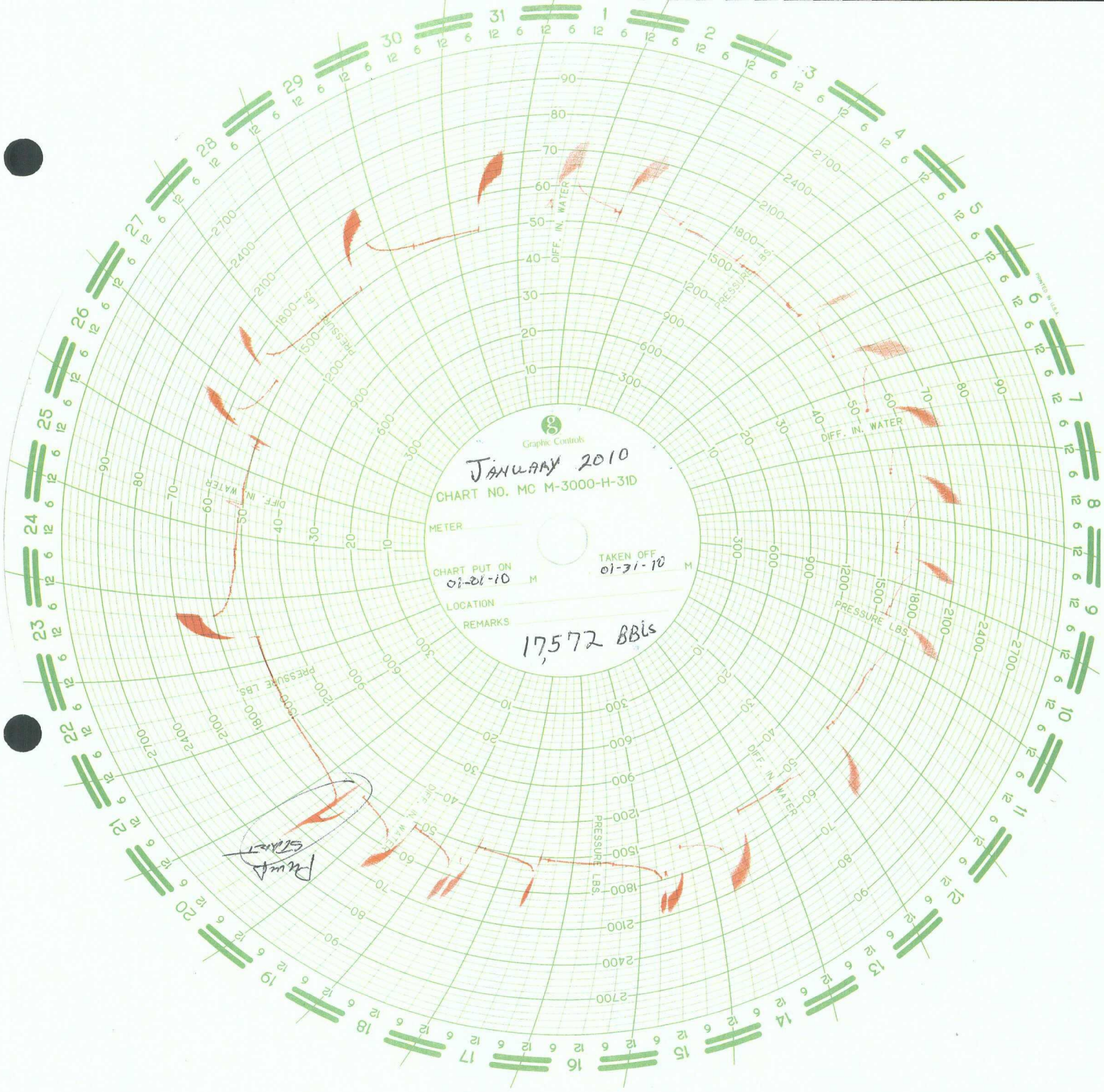
						46,265.0		78865.0	13.0	13.0
DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
12-01	2PM - 6:30PM	2350-2400	60 - 60	ø - ø	ø - ø	46269.5		78869.5	17.5	17.5
		Pump off		High	Pressure					
	7PM - 8:PM	2350 -2350	60 - 55	ø - ø	ø - ø	46,270.5		78870.5	18.5	18.5
12-2	9Am - 2:PM	2200 - 2400	65 - 60	ø - ø	ø - ø	46,275.5		78875.5	23.5	23.5
		Pump off		High	Pressure					
	3:PM - 7Pm	2300 - 2350	60 - 50	ø - ø	ø - ø	46,284.5		78884.5	32.5	32.5
12-3	7:30Am - 1:30Pm	2250 - 2400	65 - 60	ø - ø	ø - ø	46,291.5		78891.5	39.5	39.5
12-04	8:AM - 10:30	2200 - 2400	55 - 50	ø - ø	ø - ø	46,294.0		78894.0	42.0	42.0
		Pump off		High	Pressure					
	11:AM - 12:30	2350 - 2400	50 - 50	ø - ø	ø - ø	46,295.5		78895.5	43.5	43.5
		Pump off		High	Pressure					
	1:PM - 2:PM	2350 - 2400	50 - 50	ø - ø	ø - ø	46.296.5		78896.5	44.5	44.5
		Pump OFF		High	Pressure By Murphy Switch					
	3:30PM - 5:PM	2300 - 2350	50 - 50	ø - ø	ø - ø	46,298.0		78998.0	46.0	46.0
12-05	12PM - 4:PM	2200 - 2350	60 - 55	ø - ø	ø - ø	46302.0		79002	50.0	50.0
12-6	12:30Pm - 5:PM	2200 - 2350	60 - 55	ø - ø	ø - ø	46306.5		79006.5	54.5	54.5
12-07	2:PM - 4:30PM	2150 - 2300	60 - 55	ø - ø	ø - ø	46309.0		79009.0	57.0	57.0
12-08	10:AM - 3:PM	2150 - 2400	55 - 55	ø - ø	ø - ø	46314.0		79014.0	62.0	62.0
		Pump off		High Pressure						
	3:30PM - 5:30PM	2350 - 2400	55 - 55	ø - ø	ø - ø	46316.0		79016.0	64.0	64.0
		Pump OFF		High Pressure						
12-9	12Pm - 5Pm	2150 - 2350	70 - 50	ø - ø	ø - ø	46321.0		79021.0	69.0	69.0
12-10	9Am - 4Pm	2150 - 2350	60 - 50	ø - ø	ø - ø	46328.0		79028.0	76.0	76.0
12-11	9:AM - 3:PM	2150 - 2350	50 - 45	ø - ø	ø - ø	46334.0		79034.0	82.0	82.0
12-12	12:PM - 5:PM	2150 - 2350	55 - 45	ø - ø	ø - ø	46,339.0		79039.0	87.0	87.0
12-14	10Am - 6:PM	2150 - 2350	50 - 45	ø - ø	ø - ø	46,347.0		79,047.0	95.0	95.0
12-15	1:PM - 6:PM	2150 - 2350	50 - 45	ø - ø	ø - ø	46,352.0		79,052.0	100.0	100.0
12-16	8Am - 9:45	2150	50	ø	ø					
		Electrical spike		Pump	OFF					
	10Am - 5Pm	2250 - 2350	40	ø - ø	ø - ø	46361.0		79061.0	109.0	109.0
12-17	10Am - 5Pm	2150 - 2400	60 - 40	ø - ø	ø - ø	46368.0		79068.0	116.0	116.0
12-18	8:PM - 7:PM	2200 - 2350	50 - 40	ø - ø	ø - ø	46,379.0		79079.0	127.0	127.0
12-19	12:30PM - 2:PM	2150 - 2400	50 - 40	ø - ø	ø - ø	46.380.5		79080.5	128.5	128.5

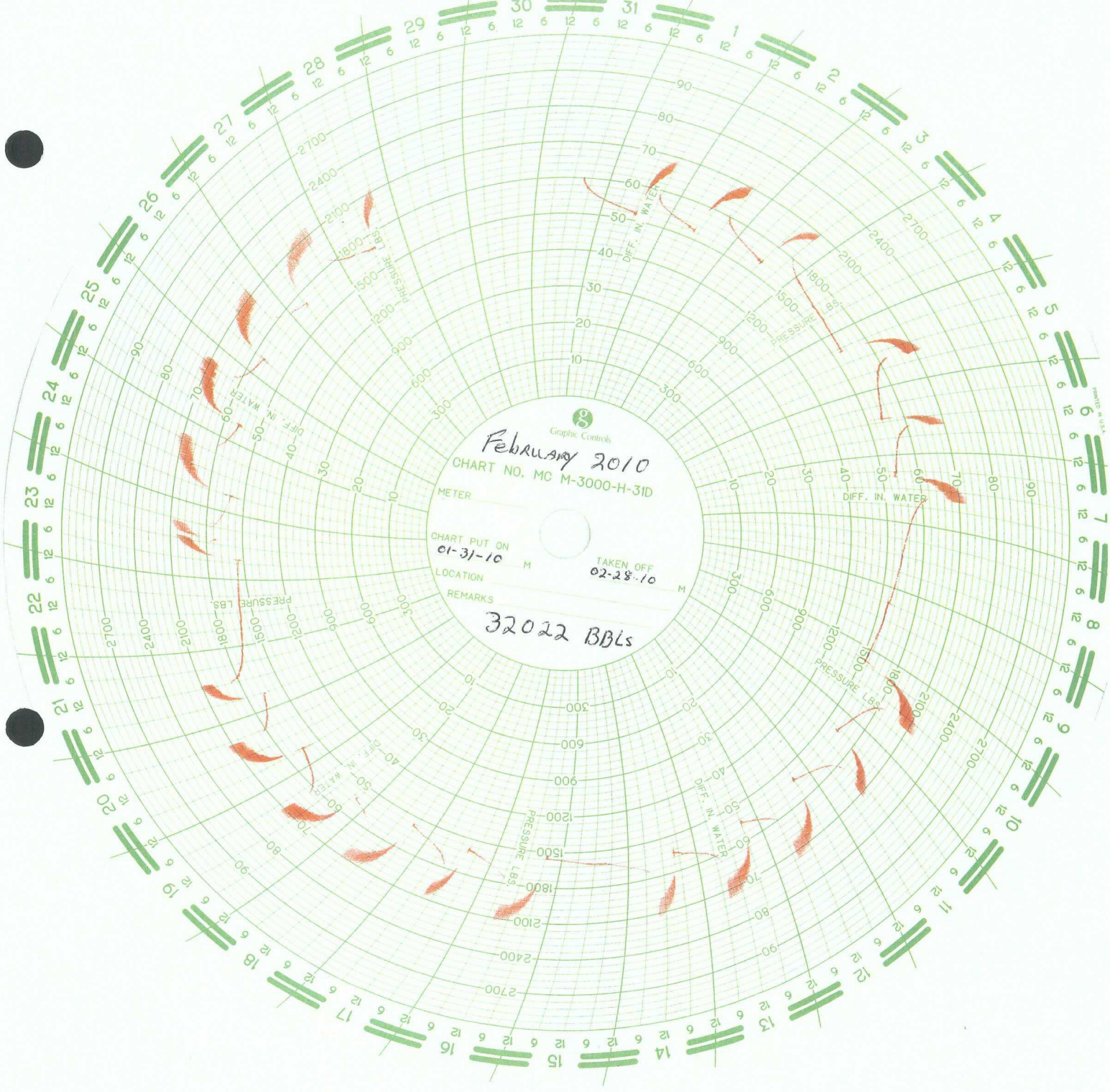
High Pressure

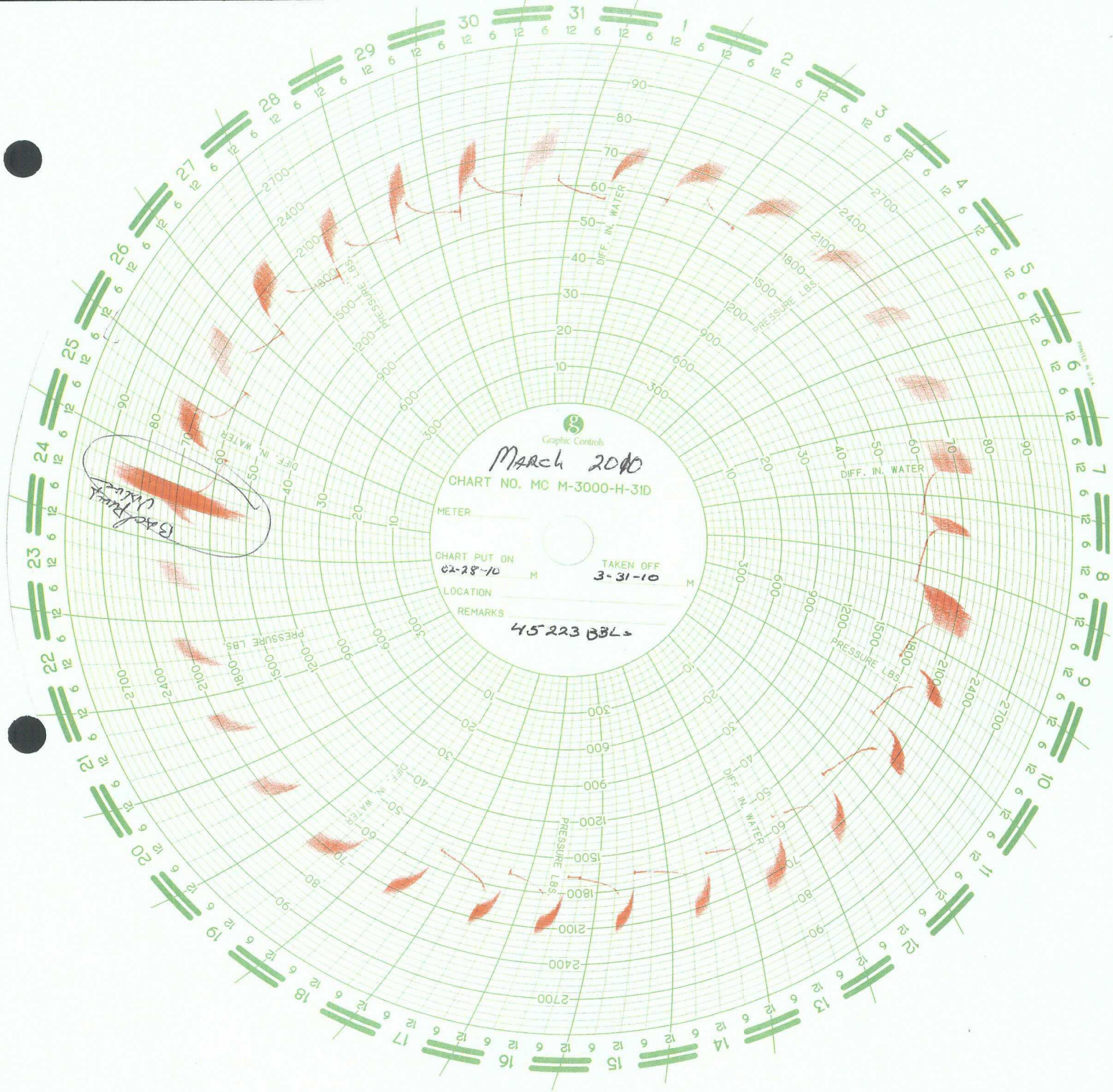
KEY ENERG SPOSAL - PUMP LOG 2010 month page

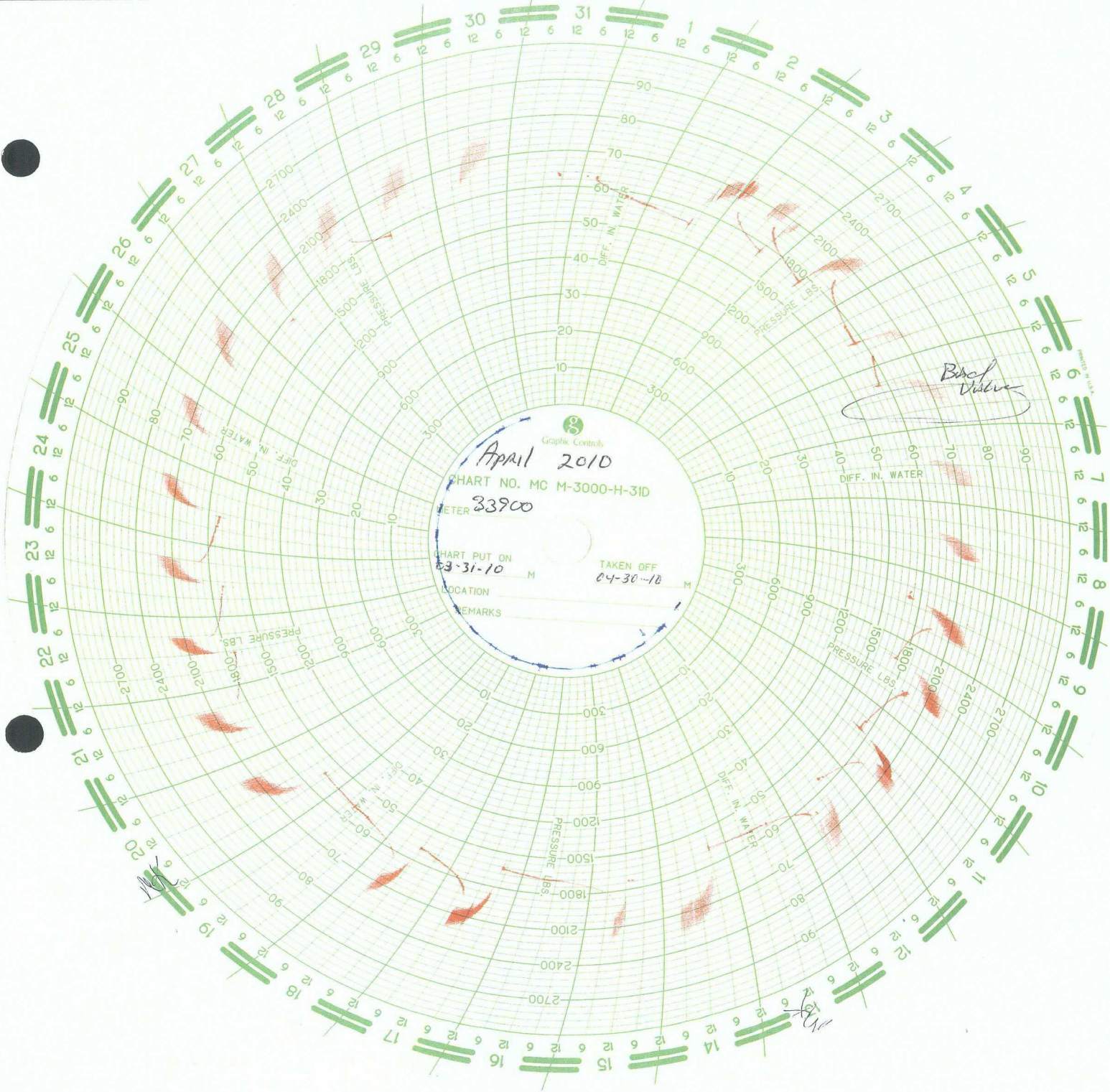
						46380.5		79,080.5	128.5	128.5
DATE	TIME	PRESSURE	SUCTION	5 MICRON	5 MICRON	PUMP HOURS	BBLS/HR	MOTOR HRS	HRS	HRS
12-19	2PM - 6:30 PM	2250 -2350	40 - 40	ø - ø	ø - ø	46385.0		79.085.0	133.0	133.0
12-20	CHANged 3		+ 5	MICRON	Filters				ø	ø
	12PM - 6PM	2150-2350	70-50	ø - ø	ø - ø	46391.0		79,091.0	6.0	6.0
12-21	Changed # 1	STUFFing	Box							
	10AM 5PM	2150 -2350	60 - 50	ø - ø	ø - ø	46398.0		79,098.0	13.0	13.0
12-22	Changed	1 NEW	VALVE & 2	Disks on	Suction	& Discharge				
12-23	11:30 - 5:30	2150 -2350	60 - 50	ø - ø	ø - ø	46404.0		79 104.0	19.0	19.0
12-24	9:30 - 1:00	2150 - 2350	60 - 50	ø - ø	ø - ø	46407.5		79 107.5	22.5	22.5
		1:00 POWER	SERGE							
		Replaced	# 4	stuffing	Box					
12-26	10:30AM-4:PM	2150-2350	50 - 50	ø - ø	ø - ø	46417.0		79117.0	28.0	28.0
12-27	1:PM - 5:PM	2100 - 2300	50 - 50	ø - ø	ø - ø	46417.0		79117.0	32.0	32.0
12-28	12PM - 6:PM	2100 - 2350	50 - 50	ø - ø	ø - ø	46,423.0		79123.0	38.0	38.0
12-29	8:AM - 5:PM	2150 - 2350	50 - 40	ø - ø	ø - ø	46,432.0		79132.0	47.0	47.0
12-30	12 - 5:PM	2150-2350	60 - 40	ø ø	ø ø	46437.0		79137.0	52.0	52.0
		Replaced	# 3	STUFFing	Box					
12-31	4PM - 4:30	2150 -2150	60 - 60	ø ø	ø ø	46437.5		79137.5	52.5	52.5

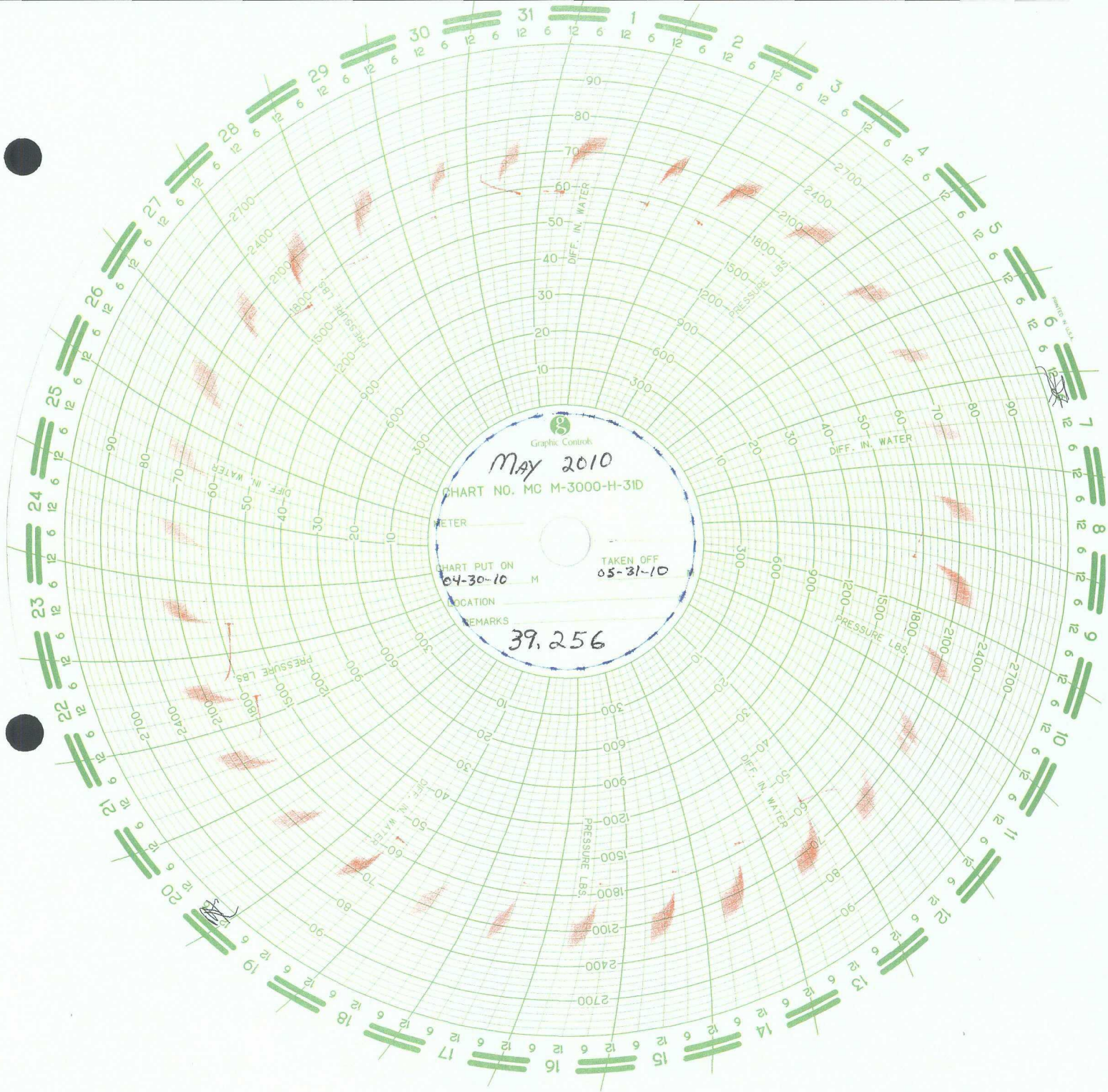
Appendix H
2010 Monthly Pressure Charts

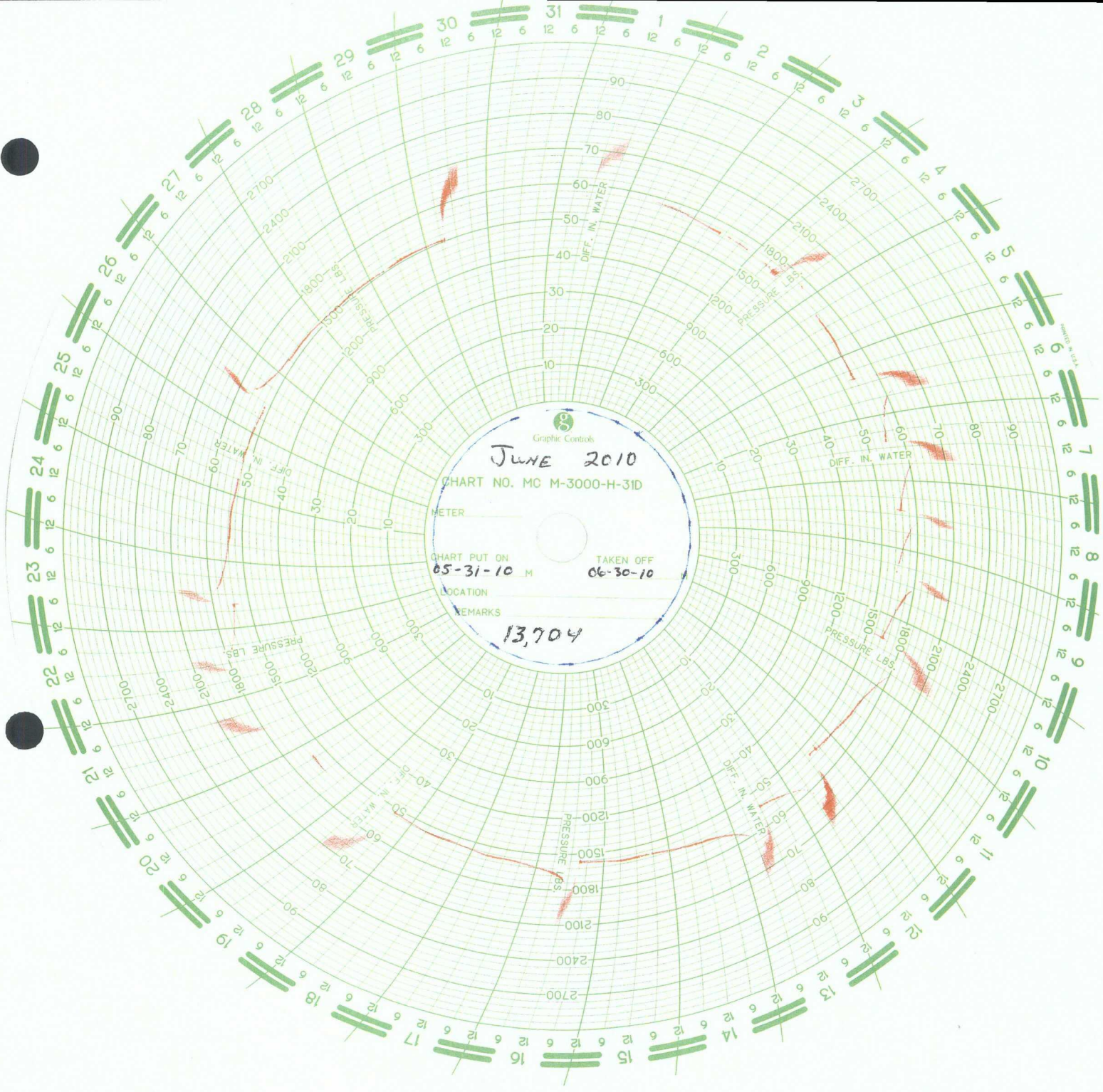

Graphic Controls
JANUARY 2010
CHART NO. MC M-3000-H-31D
METER
CHART PUT ON
01-01-10 M
TAKEN OFF
01-31-10 M
LOCATION
REMARKS
17,572 BBLs
DIFF. IN. WATER
PRESSURE LBS.

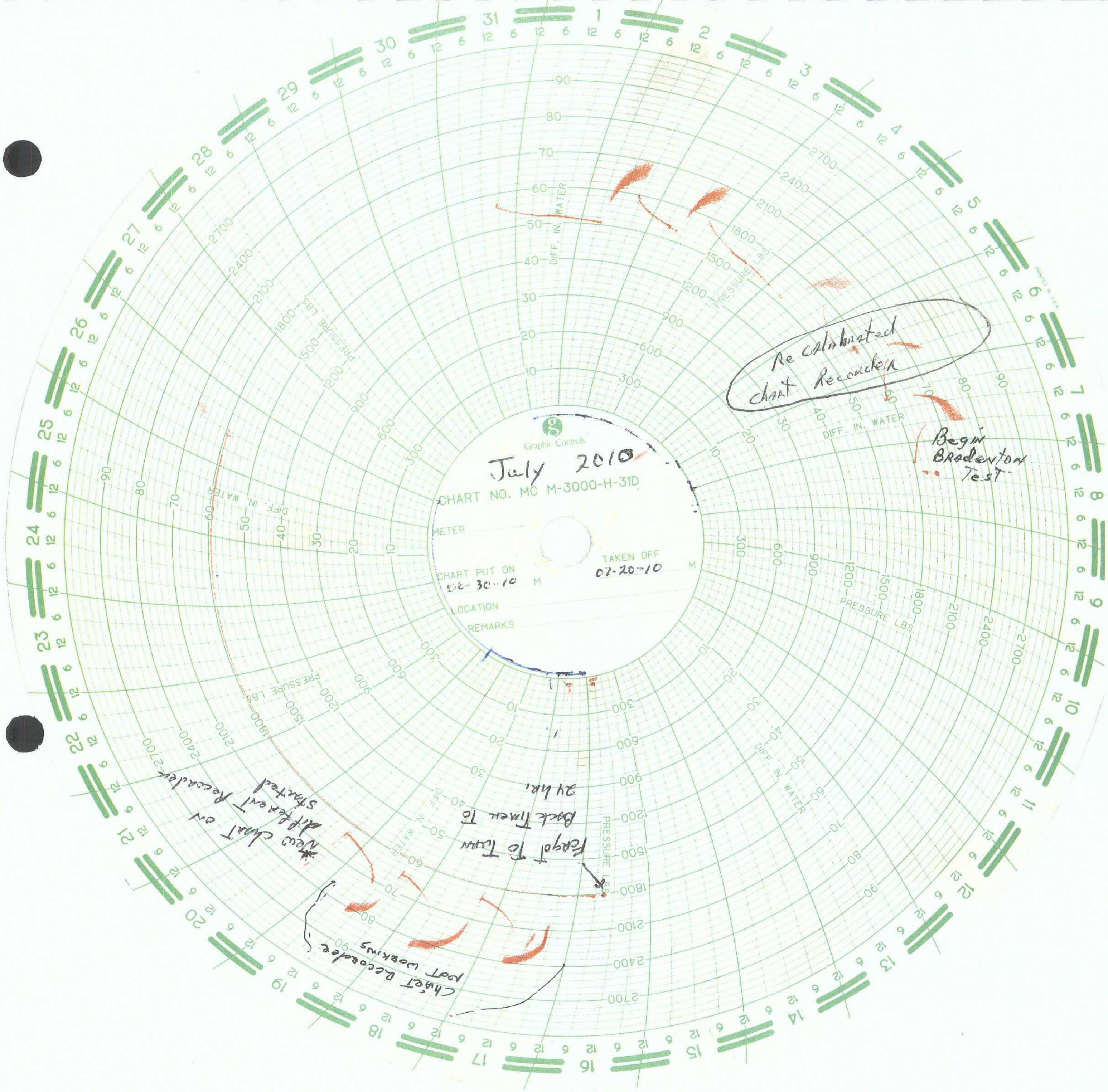

Graphic Controls
February 2010
CHART NO. MC M-3000-H-31D
METER
CHART PUT ON
01-31-10
M
TAKEN OFF
02-28-10
M
LOCATION
REMARKS
32022 BBLs
DIFF. IN. WATER
PRESSURE LBS.

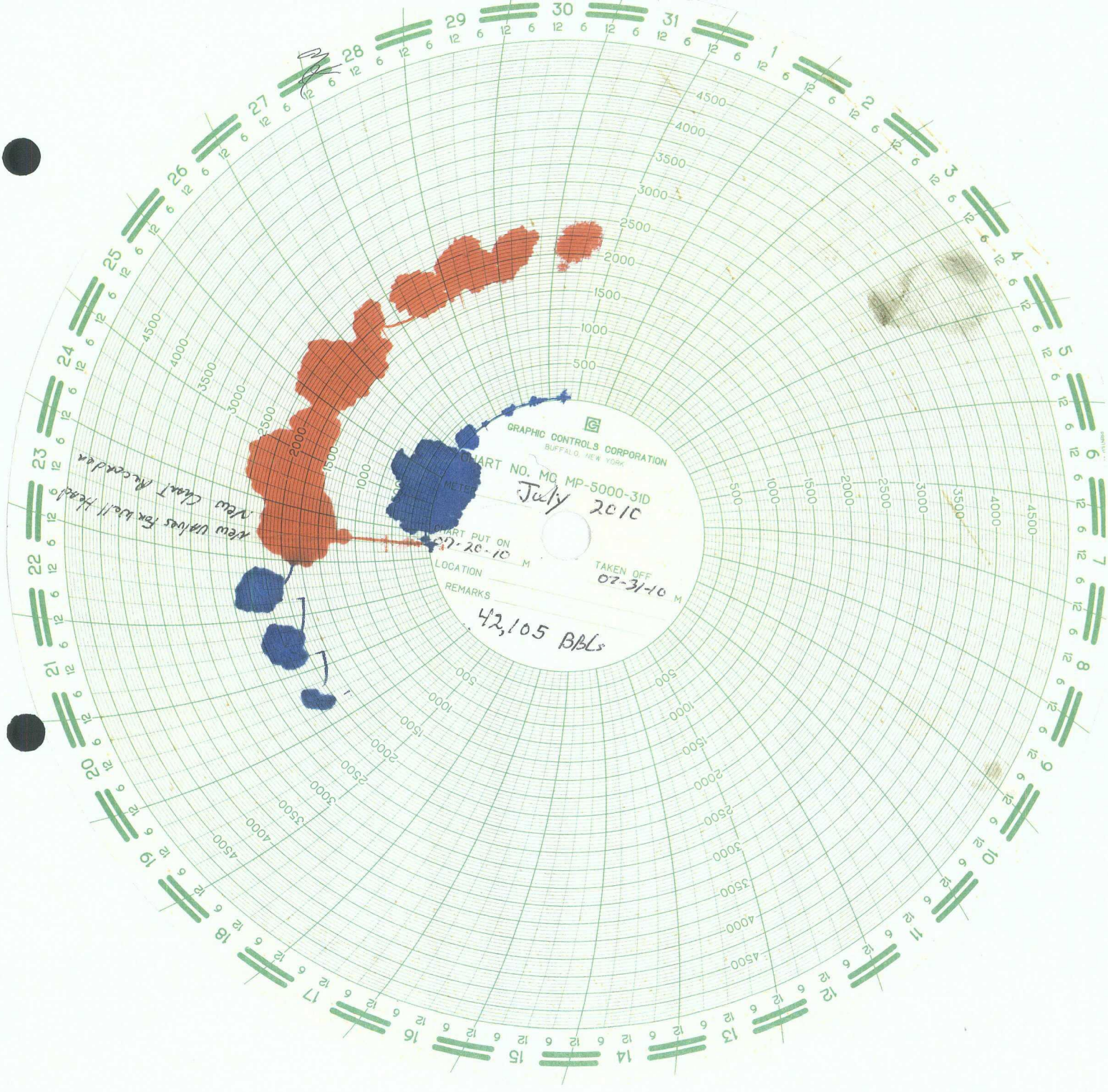

Graphic Controls
March 2010
CHART NO. MC M-3000-H-31D
METER
CHART PUT ON
02-28-10 M
TAKEN OFF
3-31-10 M
LOCATION
REMARKS
45223 BBL
DIFF. IN. WATER
PRESSURE LBS.
Gas Pipeline Valve

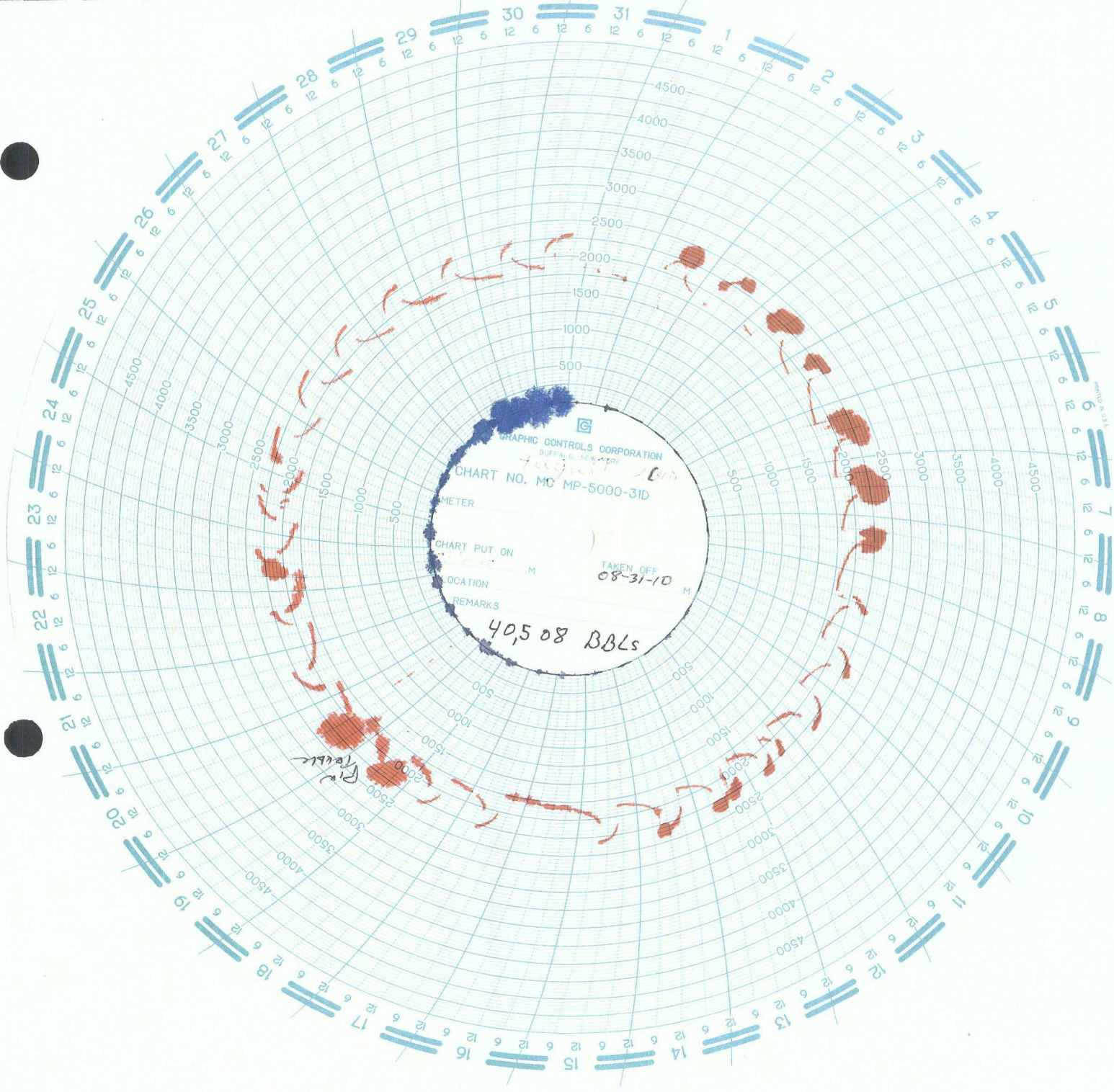

Graphic Controls
April 2010
CHART NO. MC M-3000-H-31D
METER 33900
CHART PUT ON 03-31-10 M
TAKEN OFF 04-30-10 M
LOCATION
REMARKS
DIFF. IN. WATER
PRESSURE LBS.

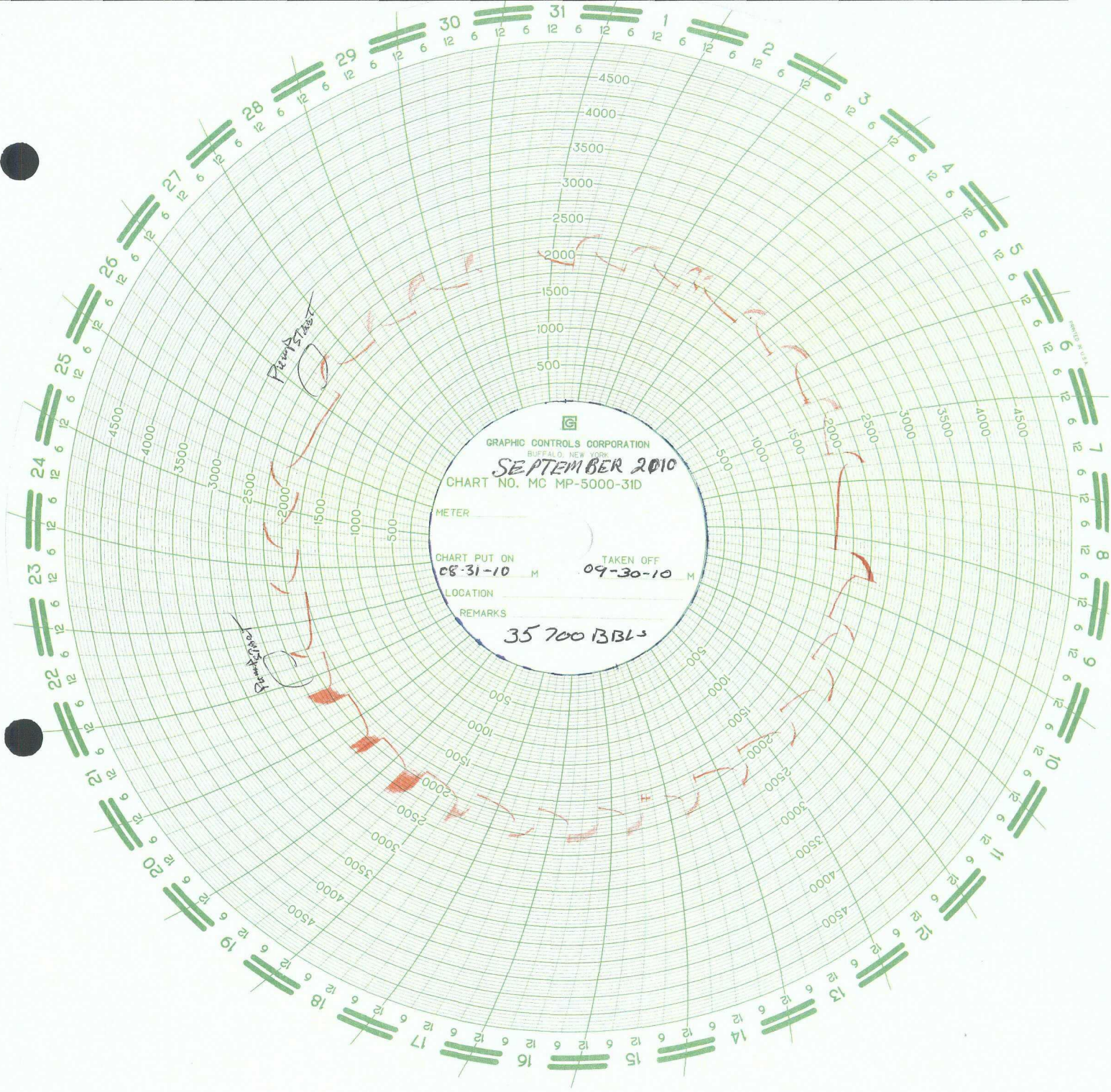

Graphic Controls
MAY 2010
CHART NO. MC M-3000-H-31D
METER
CHART PUT ON
04-30-10
M
TAKEN OFF
05-31-10
LOCATION
REMARKS
39,256
DIFF. IN. WATER
PRESSURE LBS.

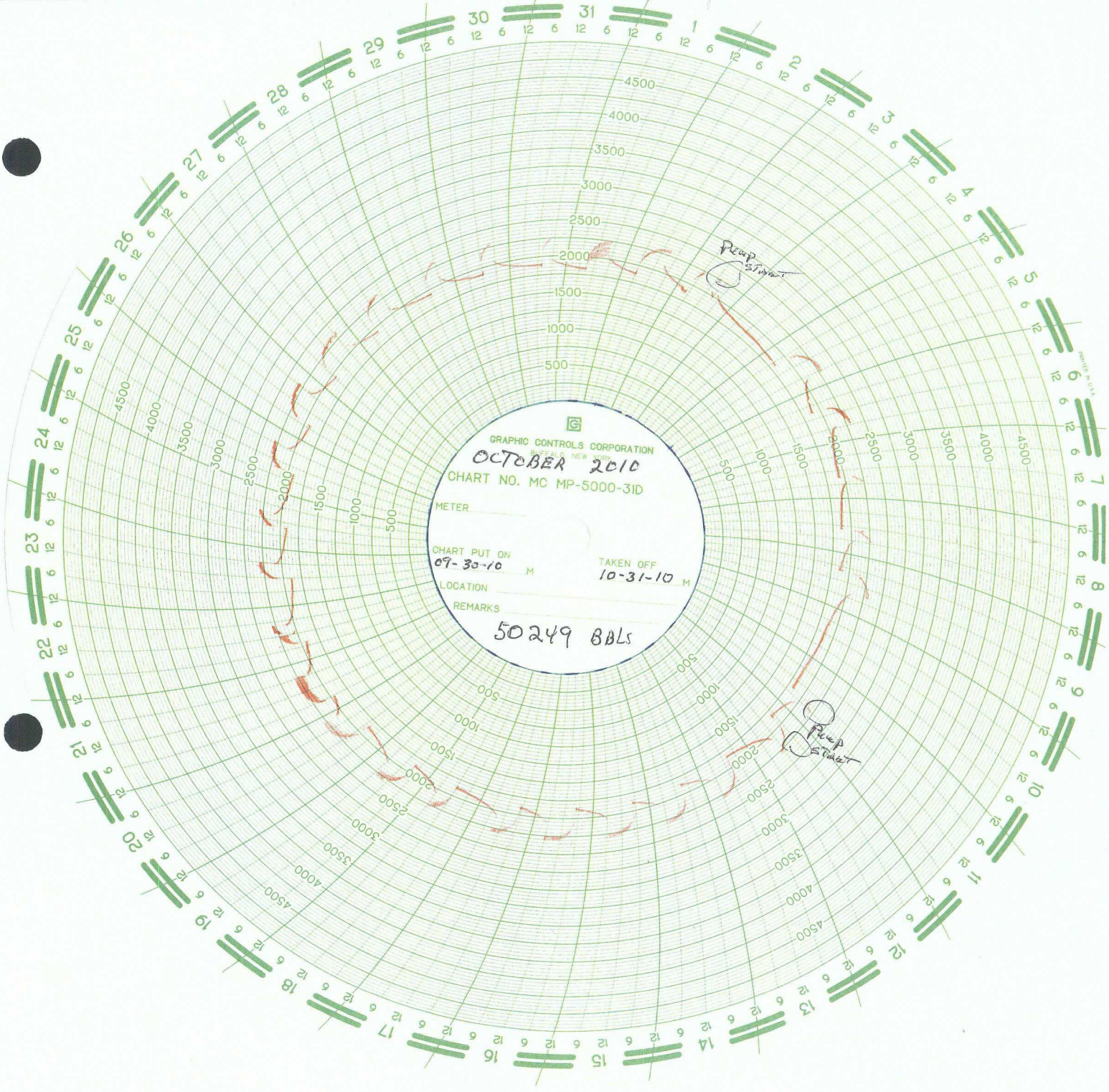

Graphic Controls
JUNE 2010
CHART NO. MC M-3000-H-31D
METER
CHART PUT ON
05-31-10 M
TAKEN OFF
06-30-10
LOCATION
REMARKS
13,704
DIFF. IN. WATER
PRESSURE LBS.

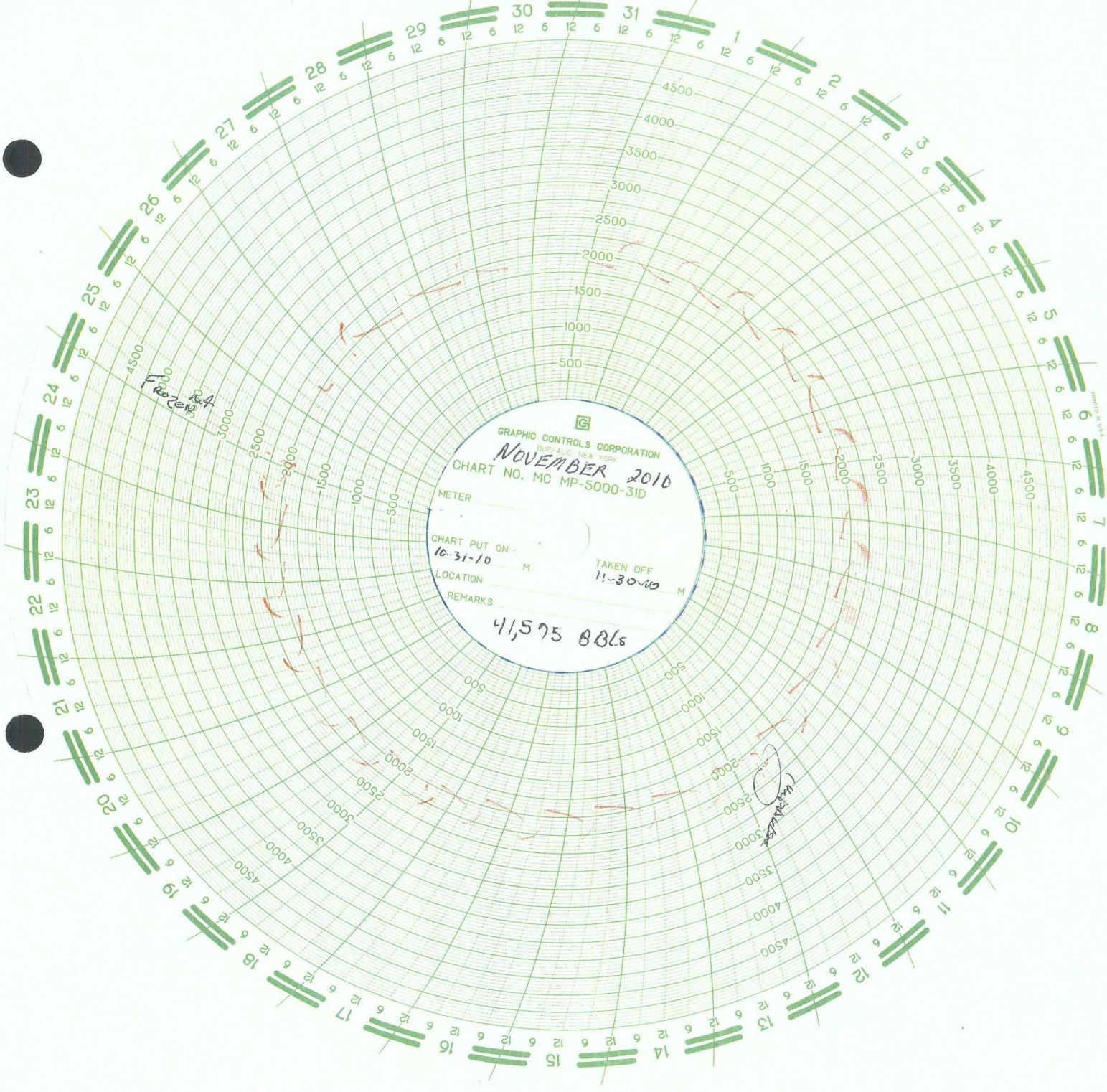

Graphic Controls
July 2010
CHART NO. MC M-3000-H-31D
METER
CHART PUT ON
06-30-10 M
TAKEN OFF
07-20-10 M
LOCATION
REMARKS
DIFF. IN. WATER
PRESSURE LBS.
Re Calabrated chart Recorder
Begin Bradenton Test
Forgot To Turn Back Timer To 24 hr.
*New chart on different Recorder started
Chart Recorder not working

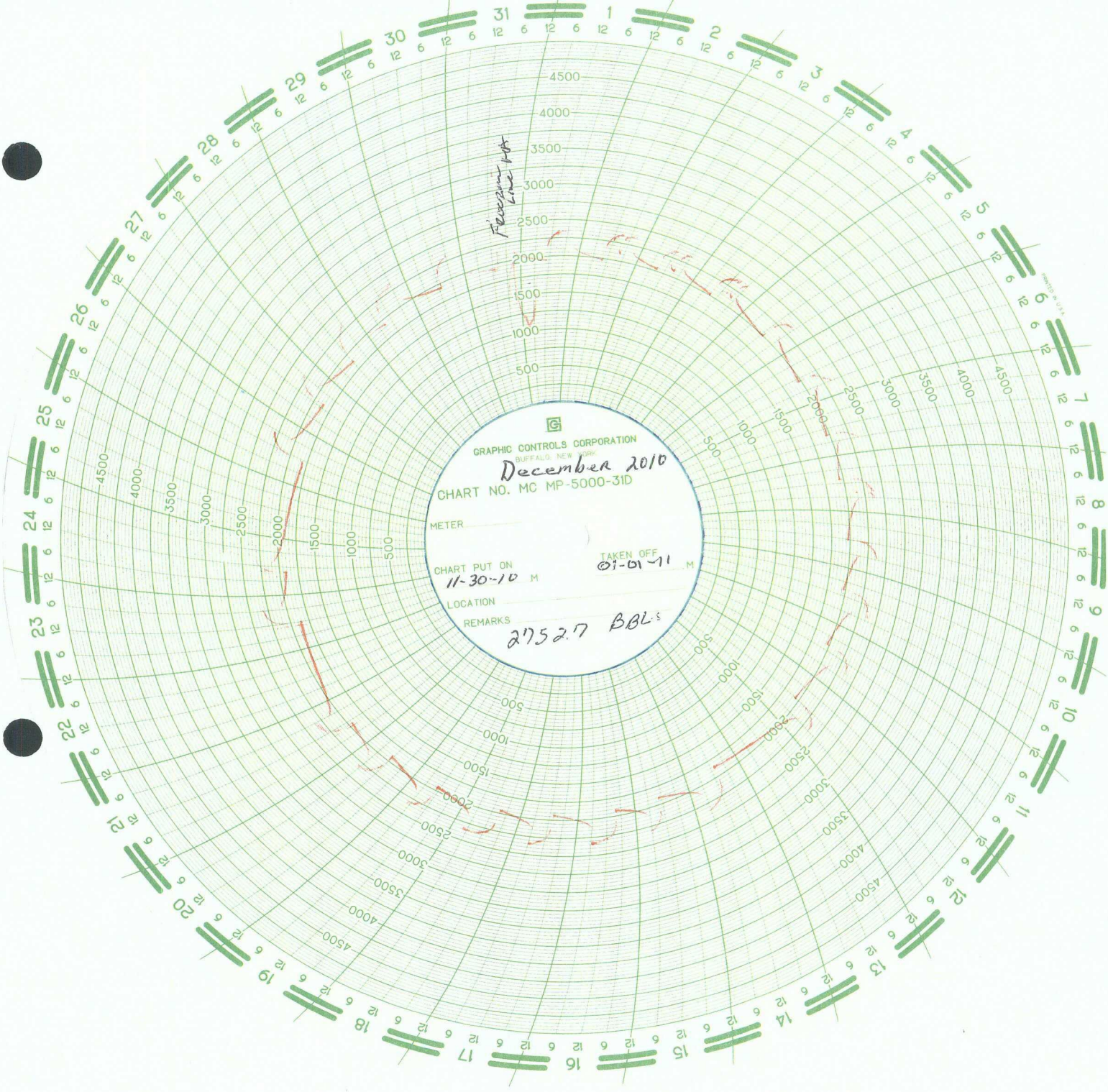

GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC MP-5000-31D
METER
July 2010
CHART PUT ON
07-20-10 M
TAKEN OFF
07-31-10 M
LOCATION
REMARKS
42,105 BBLs
New Values for Well Head
New Chart Recorder


GRAPHIC CONTROLS CORPORATION
CHART NO. MC MP-5000-31D
METER
CHART PUT ON
TAKEN OFF
08-31-10
LOCATION
REMARKS
40,508 BBLs


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
SEPTEMBER 2010
CHART NO. MC MP-5000-31D
METER
CHART PUT ON
08-31-10 M
TAKEN OFF
09-30-10 M
LOCATION
REMARKS
35700 BBLS


GRAPHIC CONTROLS CORPORATION
OCTOBER 2010
CHART NO. MC MP-5000-31D
METER
CHART PUT ON
09-30-10 M
TAKEN OFF
10-31-10 M
LOCATION
REMARKS
50249 BBLs
PUMP STARTED
PUMP STARTED


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
NOVEMBER 2010
CHART NO. MC MP-5000-31D
METER
CHART PUT ON
10-31-10 M
TAKEN OFF
11-30-10 M
LOCATION
REMARKS
41,595 BBLS
Frozen


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
December 2010
CHART NO. MC MP-5000-31D
METER
CHART PUT ON
11-30-10 M
TAKEN OFF
01-01-11 M
LOCATION
REMARKS
27527 BBLS
Pressure Line

Appendix I
2010 Chemical Analysis Data

2010 First Quarter Chemical Analysis for UIC-5 Key Energy Injection Well

NJC-5
1st QTR

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EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	SWD	Date Reported:	04-13-10
Chain of Custody:	9069	Date Sampled:	04-12-10
Laboratory Number:	53668	Date Received:	04-12-10
Sample Matrix:	Aqueous	Date Analyzed:	04-12-10
Preservative:		Analysis Requested:	8260 VOC
Condition:	Cool and Intact		

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	667	(ug/L)	1.0	10
Toluene	5,140	(ug/L)	1.0	100
Ethylbenzene	887	(ug/L)	1.0	10
Xylenes, Total	3,520	(ug/L)	1.0	100
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	760	(ug/L)	1.0	10
1,3,5-Trimethylbenzene	1,060	(ug/L)	1.0	10
1,2-Dichloroethane (EDC)	18.8	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	178	(ug/L)	1.0	1
1-Methylnaphthalene	83.0	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	88.4	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

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EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client: Key Energy
Sample ID: SWD
Laboratory Number: 53668

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	745	(ug/L)	1.0	10
4-Isopropyltoluene	97.3	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	3.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	183	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	2,206	(ug/L)	1.0	10
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	105	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	97.2	% Recovery	74.6-123	1
Toluene-d8	106	% Recovery	84.2-115	1
4-Bromofluorobenzene	103	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **Sunco SWD #1**

Analyst

Christine M Walters
Review

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Analytical Laboratory

Updated

TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	SWD	Date Reported:	04-13-10
Laboratory Number:	53668	Date Sampled:	04-12-10
Chain of Custody:	9069	Date Received:	04-12-10
Sample Matrix:	Aqueous	Date Analyzed:	04-13-10
Preservative:	Cool	Date Digested:	04-13-10
Condition:	Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Barium	8.23	0.001
Cadmium	ND	0.001
Chromium	0.146	0.001
Lead	0.006	0.001
Selenium	0.003	0.001
Silver	0.026	0.001

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Sunco SWD #1**

Analyst

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QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Daily Calibration	Date Reported:	04-13-10
Laboratory Number:	0412V	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-12-10
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
Benzene	100	96.0	96.0	80 - 120
Toluene	100	98.1	98.1	80 - 120
Ethylbenzene	100	90.3	90.3	80 - 120
Xylenes, Total	100	104	104	80 - 120
Methyl tert-butyl ether (MTBE)	100	84.3	84.3	80 - 120
1,2,4-Trimethylbenzene	100	85.1	85.1	80 - 120
1,3,5-Trimethylbenzene	100	88.6	88.6	80 - 120
1,2-Dichloroethane (EDC)	100	88.6	88.6	80 - 120
1,2-Dibromoethane (EDB)	100	96.5	96.5	80 - 120
Naphthalene	100	89.1	89.1	80 - 120
1-Methylnaphthalene	100	94.7	94.7	80 - 120
2-Methylnaphthalene	100	105	105	80 - 120
Bromobenzene	100	86.1	86.1	80 - 120
Bromochloromethane	100	87.6	87.6	80 - 120
Bromodichloromethane	100	84.1	84.1	80 - 120
Bromoform	100	85.5	85.5	80 - 120
Bromomethane	100	94.7	94.7	80 - 120
Carbon Tetrachloride	100	85.5	85.5	80 - 120
Chlorobenzene	100	93.2	93.2	80 - 120
Chloroethane	100	90.3	90.3	80 - 120
Chloroform	100	84.7	84.7	80 - 120
Chloromethane	100	100	100	80 - 120
2-Chlorotoluene	100	85.5	85.5	80 - 120
4-Chlorotoluene	100	86.2	86.2	80 - 120
cis-1,2-Dichloroethene	100	96.8	96.8	80 - 120
cis-1,3-Dichloropropene	100	90.6	90.6	80 - 120
1,2-Dibromo-3-chloropropane	100	96.9	96.9	80 - 120
Dibromochloromethane	100	87.8	87.8	80 - 120
Dibromoethane	100	94.3	94.3	80 - 120
1,2-Dichlorobenzene	100	95.6	95.6	80 - 120
1,3-Dichlorobenzene	100	96.4	96.4	80 - 120
1,4-Dichlorobenzene	100	97.7	97.7	80 - 120
Dichlorodifluoromethane	100	87.5	87.5	80 - 120
1,1-Dichloroethane	100	88.4	88.4	80 - 120
1,1-Dichloroethene	100	93.9	93.9	80 - 120
1,2-Dichloropropane	100	95.7	95.7	80 - 120
1,3-Dichloropropane	100	85.0	85.0	80 - 120
2,2-Dichloropropane	100	83.5	83.5	80 - 120

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: Daily Calibration
Laboratory Number: 0412V

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
1,1-Dichloropropene	100	84.0	84.0	80 - 120
Hexachlorobutadiene	100	89.1	89.1	80 - 120
Isopropylbenzene	100	94.7	94.7	80 - 120
4-Isopropyltoluene	100	105.5	105.5	80 - 120
Methylene Chloride	100	101.2	101.2	80 - 120
n-Butylbenzene	100	91.6	91.6	80 - 120
n-Propylbenzene	100	92.0	92.0	80 - 120
sec-Butylbenzene	100	88.6	88.6	80 - 120
Styrene	100	86.9	86.9	80 - 120
tert-Butylbenzene	100	89.8	89.8	80 - 120
Tetrachloroethene (PCE)	100	97.7	97.7	80 - 120
1,1,1,2-Tetrachloroethane	100	84.7	84.7	80 - 120
1,1,2,2-Tetrachloroethane	100	91.0	91.0	80 - 120
trans-1,2-Dichloroethene	100	91.3	91.3	80 - 120
trans-1,3-Dichloropropene	100	82.4	82.4	80 - 120
Trichloroethene (TCE)	100	85.3	85.3	80 - 120
Trichlorofluoromethane	100	84.6	84.6	80 - 120
1,2,3-Trichlorobenzene	100	95.2	95.2	80 - 120
1,2,4-Trichlorobenzene	100	94.7	94.7	80 - 120
1,1,1-Trichloroethane	100	85.0	85.0	80 - 120
1,1,2-Trichloroethane	100	83.7	83.7	80 - 120
1,2,3-Trichloropropane	100	85.9	85.9	80 - 120
Vinyl Chloride	100	86.3	86.3	80 - 120

Surrogates:			Rec. Limits
Dibromofluoromethane	101	% Recovery	78.6-115
1,2-Dichloroethane-d4	106	% Recovery	74.6-123
Toluene-d8	89.3	% Recovery	84.2-115
4-Bromofluorobenzene	93.0	% Recovery	78.6-115

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Samples 53637 and 53668.**

Analyst

Christine M Waeters
Review

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Blank	Date Reported:	04-13-10
Laboratory Number:	0412VBLK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-12-10
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/L)	1.0	1
Toluene	ND	(ug/L)	1.0	1
Ethylbenzene	ND	(ug/L)	1.0	1
Xylenes, Total	ND	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	ND	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	ND	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	ND	(ug/L)	1.0	1
1-Methylnaphthalene	ND	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: Blank

Laboratory Number: 0412VBLK

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	ND	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	1.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	ND	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	78.9	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	89.4	% Recovery	74.6-123	1
Toluene-d8	94.6	% Recovery	84.2-115	1
4-Bromofluorobenzene	95.9	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: QA/QC for Samples 53637 and 53668.

Analyst

Review

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Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spikes	Date Reported:	04-13-10
Laboratory Number:	04-12 VOA - 53637	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	04-12-10
Condition:	N/A	Analysis Requested:	8260 VOC

Spike		Units: ug/L			Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	330	100.0	385	89.6%	85.3 - 120	1.0
Toluene	1,800	100.0	2,090	110%	73 - 123	1.0
Chlorobenzene	ND	100.0	103	103%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100.0	100	100%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100.0	98	98.4%	76.1 - 126	1.0

Spike Duplicate		Units: ug/L			Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	330	100.0	358	83.3%	85.3 - 120	1.0
Toluene	1,800	100.0	1,950	103%	73 - 123	1.0
Chlorobenzene	ND	100.0	96	95.8%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100.0	96	95.9%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100.0	88	88.1%	76.1 - 126	1.0

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Samples 53637 and 53668.**

Analyst

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CATION / ANION ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	SWD	Date Reported:	04-14-10
Laboratory Number:	53668	Date Sampled:	04-12-10
Chain of Custody:	9069	Date Received:	04-12-10
Sample Matrix:	Aqueous	Date Analyzed:	04-13-10
Preservative:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	8.38	s.u.		
Conductivity @ 25° C	17,600	umhos/cm		
Total Dissolved Solids @ 180C	10,800	mg/L		
Total Dissolved Solids (Calc)	10,830	mg/L		
SAR	50.6	ratio		
Total Alkalinity as CaCO3	1,340	mg/L		
Total Hardness as CaCO3	969	mg/L		
Bicarbonate as CaCO3	1,340	mg/L	21.96	meq/L
Carbonate as CaCO3	<0.1	mg/L	0.00	meq/L
Hydroxide as CaCO3	<0.1	mg/L	0.00	meq/L
Nitrate Nitrogen	0.900	mg/L	0.01	meq/L
Nitrite Nitrogen	0.037	mg/L	0.00	meq/L
Chloride	4,850	mg/L	136.82	meq/L
Fluoride	2.06	mg/L	0.11	meq/L
Phosphate	2.94	mg/L	0.09	meq/L
Sulfate	1,020	mg/L	21.24	meq/L
Iron	1.65	mg/L	0.06	meq/L
Calcium	362	mg/L	18.06	meq/L
Magnesium	15.5	mg/L	1.28	meq/L
Potassium	142	mg/L	3.63	meq/L
Sodium	3,620	mg/L	157.47	meq/L
Cations			180.44	meq/L
Anions			180.23	meq/L
Cation/Anion Difference			0.12%	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: Sunco SWD #1

Analyst

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SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	SWD	Date Reported:	04-14-10
Lab ID#:	53668	Date Sampled:	04-12-10
Sample Matrix:	Aqueous	Date Received:	04-12-10
Preservative:	Cool	Date Analyzed:	04-14-10
Condition:	Intact	Chain of Custody:	9069

Parameter	Result	
IGNITABILITY:	Negative	
CORROSIVITY:	Negative	pH = 8.33
REACTIVITY:	Negative	

RCRA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
IGNITABILITY:	Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21. *(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)*
CORROSIVITY:	Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22. *(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)*
REACTIVITY:	Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. *(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)*

Reference: 40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments: **Sunco SWD #1**

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TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	SWD	Date Reported:	04-13-10
Laboratory Number:	53668	Date Sampled:	04-12-10
Chain of Custody:	9069	Date Received:	04-12-10
Sample Matrix:	Aqueous	Date Analyzed:	04-13-10
Preservative:	Cool	Date Digested:	04-13-10
Condition:	Intact	Analysis Needed:	RCRA Metals

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Barium	8.23	0.001
Cadmium	ND	0.001
Chromium	0.146	0.001
Lead	0.006	0.001
Selenium	0.003	0.001
Silver	0.026	0.001

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectroscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Sunco SWD #1**

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TRACE METAL ANALYSIS
Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID.	04-12 TM QA/AC	Date Reported:	04-13-10
Laboratory Number:	53668	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	RCRA Metals	Date Analyzed:	04-13-10
Condition:	N/A	Date Digested:	04-13-10

Blank & Duplicate Conc. (mg/Kg)	Instrument Blank (mg/Kg)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Barium	ND	ND	0.001	8.23	8.66	5.2%	0% - 30%
Cadmium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.146	0.149	2.0%	0% - 30%
Lead	ND	ND	0.001	0.006	0.005	16.4%	0% - 30%
Selenium	ND	ND	0.001	0.003	0.002	28.6%	0% - 30%
Silver	ND	ND	0.001	0.026	0.029	10.9%	0% - 30%

Spike Conc. (mg/Kg)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Barium	0.500	8.23	8.97	103%	80% - 120%
Cadmium	0.250	ND	0.242	96.7%	80% - 120%
Chromium	0.500	0.146	0.680	105%	80% - 120%
Lead	0.500	0.006	0.471	93.1%	80% - 120%
Selenium	0.100	0.003	0.084	81.7%	80% - 120%
Silver	0.100	0.026	0.141	112%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for Samples 53668.**

Analyst

Review

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TOTAL MERCURY ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	SWD	Date Reported:	04-13-10
Laboratory Number:	53668	Date Sampled:	04-12-10
Chain of Custody:	9069	Date Received:	04-12-10
Sample Matrix:	Aqueous	Date Analyzed:	04-13-10
Condition:	Cool & Intact	Date Digested:	04-13-10
		Analysis Needed:	Total Mercury

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Mercury	**0.09**	**0.02**

ND - Parameter not detected at the stated detection limit.

References: Method 7470A, Mercury in Liquid Waste (Manual Cold-Vapor Technique). SW-846, USEPA, December 1996.

Comments: **Sunco SWD #1**

Analyst

Review

envirotech
Analytical Laboratory

Total Mercury Analysis
Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	04-13-Hg QA/QC	Date Reported:	04-13-10
Laboratory Number:	53668	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	Total Mercury	Date Analyzed:	04-13-10
Condition:	N/A	Date Digested:	04-13-10

Blank & Duplicate Conc. (ug/L)	Instrument Blank (ug/L)	Method Blank (ug/L)	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Mercury	ND	ND	0.02	0.09	0.08	11.1%	0% - 30%

Spike Conc. (ug/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Mercury	10.0	0.09	8.26	81.8%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 7470A, Mercury in Liquid Waste (Manual Cold-Vapor Technique). SW-846, USEPA, December 1996.

Comments: **QA/QC for Sample 53668.**

Analyst

Review

CHAIN OF CUSTODY RECORD

03069

Client:	Project Name / Location:
Key Energy	Sunco SWD #1
Client Address:	Sampler Name: Neil Allen
Client Phone No.: 486-2010	Client No.: 98065-0013

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE	8270	Hg	As	Sample Cool	Sample Intact
SWD	4/12/10	14:30	53668	Soil Sludge Solid (Aqueous)	7 2L ambers, 1 500L, 2 vials, 1 1L, 1 250					X	X	X	X					X	X	X	Y	Y
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		
				Soil Sludge Solid Aqueous																		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Neil Allen	4/12/10	2:55	[signature]	4/12/10	14:55
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

envirotech
Analytical Laboratory

5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com

Hall Environmental Analysis Laboratory, Inc.

Date: *16-Apr-10*

CLIENT:	Envirotech	Client Sample ID:	53668-SWD
Lab Order:	1004248	Collection Date:	4/12/2010 2:30:00 PM
Project:	Key Energy	Date Received:	4/13/2010
Lab ID:	1004248-01	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Acenaphthylene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Aniline	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Anthracene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Azobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Benz(a)anthracene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Benzo(a)pyrene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Benzo(b)fluoranthene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Benzo(g,h,i)perylene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Benzo(k)fluoranthene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Benzoic acid	ND	100		µg/L	1	4/14/2010 5:53:58 PM
Benzyl alcohol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Bis(2-chloroethyl)ether	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Bis(2-ethylhexyl)phthalate	1300	250		µg/L	5	4/15/2010 3:40:10 PM
4-Bromophenyl phenyl ether	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Butyl benzyl phthalate	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Carbazole	ND	50		µg/L	1	4/14/2010 5:53:58 PM
4-Chloro-3-methylphenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
4-Chloroaniline	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2-Chloronaphthalene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2-Chlorophenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Chrysene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Di-n-butyl phthalate	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Di-n-octyl phthalate	1500	250		µg/L	5	4/15/2010 3:40:10 PM
Dibenz(a,h)anthracene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Dibenzofuran	ND	50		µg/L	1	4/14/2010 5:53:58 PM
1,2-Dichlorobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
1,3-Dichlorobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
1,4-Dichlorobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
3,3'-Dichlorobenzidine	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Diethyl phthalate	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Dimethyl phthalate	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2,4-Dichlorophenol	ND	100		µg/L	1	4/14/2010 5:53:58 PM
2,4-Dimethylphenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
4,6-Dinitro-2-methylphenol	ND	100		µg/L	1	4/14/2010 5:53:58 PM
2,4-Dinitrophenol	ND	100		µg/L	1	4/14/2010 5:53:58 PM
2,4-Dinitrotoluene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2,6-Dinitrotoluene	ND	50		µg/L	1	4/14/2010 5:53:58 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Estimated value
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- MCL Maximum Contaminant Level
- NC Non-Chlorinated
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitation Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *16-Apr-10*

CLIENT:	Envirotech	Client Sample ID:	53668-SWD
Lab Order:	1004248	Collection Date:	4/12/2010 2:30:00 PM
Project:	Key Energy	Date Received:	4/13/2010
Lab ID:	1004248-01	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Fluoranthene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Fluorene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Hexachlorobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Hexachlorobutadiene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Hexachlorocyclopentadiene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Hexachloroethane	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Isophorone	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2-Methylnaphthalene	290	50		µg/L	1	4/14/2010 5:53:58 PM
2-Methylphenol	94	50		µg/L	1	4/14/2010 5:53:58 PM
3+4-Methylphenol	69	50		µg/L	1	4/14/2010 5:53:58 PM
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	4/14/2010 5:53:58 PM
N-Nitrosodimethylamine	ND	50		µg/L	1	4/14/2010 5:53:58 PM
N-Nitrosodiphenylamine	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Naphthalene	220	50		µg/L	1	4/14/2010 5:53:58 PM
2-Nitroaniline	ND	50		µg/L	1	4/14/2010 5:53:58 PM
3-Nitroaniline	ND	50		µg/L	1	4/14/2010 5:53:58 PM
4-Nitroaniline	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Nitrobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2-Nitrophenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
4-Nitrophenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Pentachlorophenol	ND	100		µg/L	1	4/14/2010 5:53:58 PM
Phenanthrene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Phenol	95	50		µg/L	1	4/14/2010 5:53:58 PM
Pyrene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Pyridine	ND	50		µg/L	1	4/14/2010 5:53:58 PM
1,2,4-Trichlorobenzene	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2,4,5-Trichlorophenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
2,4,6-Trichlorophenol	ND	50		µg/L	1	4/14/2010 5:53:58 PM
Surr: 2,4,6-Tribromophenol	74.2	16.6-150		%REC	1	4/14/2010 5:53:58 PM
Surr: 2-Fluorobiphenyl	71.6	19.6-134		%REC	1	4/14/2010 5:53:58 PM
Surr: 2-Fluorophenol	34.1	9.54-113		%REC	1	4/14/2010 5:53:58 PM
Surr: 4-Terphenyl-d14	88.6	22.7-145		%REC	1	4/14/2010 5:53:58 PM
Surr: Nitrobenzene-d5	66.6	14.6-134		%REC	1	4/14/2010 5:53:58 PM
Surr: Phenol-d5	41.5	10.7-80.3		%REC	1	4/14/2010 5:53:58 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Envirotech
Project: Key Energy **Work Order:** 1004248

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles											
Sample ID: mb-21933		*MBLK*					**Batch ID:** 21933		**Analysis Date:** 4/15/2010 3:09:36 PM		
Acenaphthene	ND	µg/L	10								
Acenaphthylene	ND	µg/L	10								
Aniline	ND	µg/L	10								
Anthracene	ND	µg/L	10								
Azobenzene	ND	µg/L	10								
Benz(a)anthracene	ND	µg/L	10								
Benzo(a)pyrene	ND	µg/L	10								
Benzo(b)fluoranthene	ND	µg/L	10								
Benzo(g,h,i)perylene	ND	µg/L	10								
Benzo(k)fluoranthene	ND	µg/L	10								
Benzoic acid	ND	µg/L	20								
Benzyl alcohol	ND	µg/L	10								
Bis(2-chloroethoxy)methane	ND	µg/L	10								
B[illegible]hloroethyl)ether	ND	µg/L	10								
B[illegible]hloroisopropyl)ether	ND	µg/L	10								
[illegible]-ethylhexyl)phthalate	ND	µg/L	10								
[illegible]mophenyl phenyl ether	ND	µg/L	10								
[illegible] benzyl phthalate	ND	µg/L	10								
Carbazole	ND	µg/L	10								
4-Chloro-3-methylphenol	ND	µg/L	10								
4-Chloroaniline	ND	µg/L	10								
2-Chloronaphthalene	ND	µg/L	10								
2-Chlorophenol	ND	µg/L	10								
4-Chlorophenyl phenyl ether	ND	µg/L	10								
Chrysene	ND	µg/L	10								
Di-n-butyl phthalate	ND	µg/L	10								
Di-n-octyl phthalate	ND	µg/L	10								
Dibenz(a,h)anthracene	ND	µg/L	10								
Dibenzofuran	ND	µg/L	10								
1,2-Dichlorobenzene	ND	µg/L	10								
1,3-Dichlorobenzene	ND	µg/L	10								
1,4-Dichlorobenzene	ND	µg/L	10								
3,3'-Dichlorobenzidine	ND	µg/L	10								
Diethyl phthalate	ND	µg/L	10								
Dimethyl phthalate	ND	µg/L	10								
2,4-Dichlorophenol	ND	µg/L	20								
2,4-Dimethylphenol	ND	µg/L	10								
4,6-Dinitro-2-methylphenol	ND	µg/L	20								
2,4-Dinitrophenol	ND	µg/L	20								
2,4-Dinitrotoluene	ND	µg/L	10								
2,6-Dinitrotoluene	ND	µg/L	10								
[illegible]thene	ND	µg/L	10								
[illegible]ne	ND	µg/L	10								
[illegible]exachlorobenzene	ND	µg/L	10								

Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Envirotech
Project: Key Energy
Work Order: 1004248

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles											
Sample ID: mb-21933		*MBLK*				Batch ID: 21933		Analysis Date: 4/15/2010 3:09:36 PM			
exachlorobutadiene	ND	µg/L	10								
exachlorocyclopentadiene	ND	µg/L	10								
exachloroethane	ND	µg/L	10								
deno(1,2,3-cd)pyrene	ND	µg/L	10								
ophorone	ND	µg/L	10								
-Methylnaphthalene	ND	µg/L	10								
-Methylphenol	ND	µg/L	10								
+4-Methylphenol	ND	µg/L	10								
-Nitrosodi-n-propylamine	ND	µg/L	10								
-Nitrosodimethylamine	ND	µg/L	10								
-Nitrosodiphenylamine	ND	µg/L	10								
aphthalene	ND	µg/L	10								
-Nitroaniline	ND	µg/L	10								
-Nitroaniline	ND	µg/L	10								
-Nitroaniline	ND	µg/L	10								
-Nitrobenzene	ND	µg/L	10								
-Nitrophenol	ND	µg/L	10								
-Nitrophenol	ND	µg/L	10								
entachlorophenol	ND	µg/L	20								
henanthrene	ND	µg/L	10								
henol	ND	µg/L	10								
yrene	ND	µg/L	10								
yridine	ND	µg/L	10								
,2,4-Trichlorobenzene	ND	µg/L	10								
,4,5-Trichlorophenol	ND	µg/L	10								
,4,6-Trichlorophenol	ND	µg/L	10								
Sample ID: lcs-21933		*LCS*				Batch ID: 21933		Analysis Date: 4/14/2010 2:51:29 PM			
cenaphthene	78.54	µg/L	10	100	0	78.5	33.2	88.1			
-Chloro-3-methylphenol	139.7	µg/L	10	200	0	69.9	26.5	101			
-Chlorophenol	131.5	µg/L	10	200	0	65.8	27.5	88.7			
,4-Dichlorobenzene	65.76	µg/L	10	100	0	65.8	27.2	74.1			
,4-Dinitrotoluene	80.48	µg/L	10	100	0	80.5	32.6	107			
-Nitrosodi-n-propylamine	65.90	µg/L	10	100	0	65.9	27.1	96.3			
-Nitrophenol	96.68	µg/L	10	200	0	48.3	6.78	74.7			
entachlorophenol	156.8	µg/L	20	200	0	78.4	14.8	113			
henol	72.32	µg/L	10	200	0	36.2	17	53.4			
yrene	70.36	µg/L	10	100	0	70.4	27	96.3			
,2,4-Trichlorobenzene	64.76	µg/L	10	100	0	64.8	30	77.9			
Sample ID: lcsd-21933		*LCSD*				Batch ID: 21933		Analysis Date: 4/14/2010 3:21:44 PM			
cenaphthene	79.58	µg/L	10	100	0	79.6	33.2	88.1	1.32	30.5	
loro-3-methylphenol	149.9	µg/L	10	200	0	74.9	26.5	101	7.00	28.6	
orophenol	137.1	µg/L	10	200	0	68.6	27.5	88.7	4.17	107	
Dichlorobenzene	56.12	µg/L	10	100	0	56.1	27.2	74.1	15.8	62.1	
Dinitrotoluene	83.52	µg/L	10	100	0	83.5	32.6	107	3.71	14.7	

Qualifiers:

- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Envirotech
Project: Key Energy

Work Order: 1004248

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C: Semivolatiles											
Sample ID: lcsd-21933		*LCSD*				**Batch ID: 21933**		**Analysis Date: 4/14/2010 3:21:44 PM**			
N-Nitrosodi-n-propylamine	63.66	µg/L	10	100	0	63.7	27.1	96.3	3.46	30.3	
4-Nitrophenol	96.12	µg/L	10	200	0	48.1	6.78	74.7	0.581	36.3	
Pentachlorophenol	157.2	µg/L	20	200	0	78.6	14.8	113	0.255	49	
Phenol	71.74	µg/L	10	200	0	35.9	17	53.4	0.805	52.4	
Pyrene	73.54	µg/L	10	100	0	73.5	27	96.3	4.42	16.3	
1,2,4-Trichlorobenzene	66.52	µg/L	10	100	0	66.5	30	77.9	2.68	36.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Chain-of-Custody Record

Client: Enviroteech

Address: 5796 US HWY 64
Farmington, NM 87401

Phone #: 505 632-0615

email or ~~Fax#~~: cwalters@envirotech-inc.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Key Energy

Project #: 98065-0013

Project Manager: Christine Walters

Sampler: Neil Allen

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1004248	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
4/12/10	1430	53668-SWD	2 4-Liter Ambers	COOL	1											X	

Date:	Time:	Relinquished by:	Received by:	Date:	Time:
4/12/10	1715		4/13/10	1208	
Date:	Time:	Relinquished by:	Received by:		

Remarks: PO # 14848

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited lab... This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the ... report.

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Apr-10*

CLIENT:	Envirotech	**Client Sample ID:**	53668-SWD
Lab Order:	1004278	**Collection Date:**	4/12/2010 2:30:00 PM
Project:	Key Energy	**Date Received:**	4/14/2010
Lab ID:	1004278-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA 200.8: METALS						Analyst: **TES**
Arsenic	0.0039	0.0025		mg/L	2.5	4/20/2010 2:49:28 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Apr-10*

QA/QC SUMMARY REPORT

Client: Envirotech
Project: Key Energy

Work Order: 1004278

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA 200.8: Metals											
Sample ID: MB-21976		*MBLK*				Batch ID:	**21976**	Analysis Date:	4/20/2010 2:26:04 PM		
Arsenic	ND	mg/L	0.0025								
Sample ID: LLLCS-21976		*LCS*				Batch ID:	**21976**	Analysis Date:	4/20/2010 2:31:38 PM		
Arsenic	0.05223	mg/L	0.0025	0.05	0	104	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Chain-of-Custody Record

Client: Envirotech

Address: 5796 US Hwy 64
Farmington, NM 87401

Phone #: (505-632-0615

email or Fax#: cwalters@envirotech-

QA/QC Package:
- ☐ Standard
- ☐ Level 4 (Full Validation)
- ☐ Other ____
- ☐ EDD (Type) ____

Turn-Around Time: ☒ Standard ☐ Rush ____

Project Name: Key Energy

Project #: 98065-0013

Project Manager: Christine Walters

Sampler: Neil Allen

On Ice: ☒ Yes ☐ No

Sample Temperature: 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1004278	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Arsenic (7060)	~~(EDB)~~ ICPMS	200.8 ICPMS		Air Bubbles (Y or N)
4/12/10	14:30	53668-SWD	Plastic 125 mL	HNO_3	-1												X				

Date:	Time:	Relinquished by:	Received by:	
4/13/10	16:30	Kevin Thompson	[signature]	9:20 4/14/10
Date:	Time:	Relinquished by:	Received by:	

Remarks: ~~*Arsenic analysis using atomic absorption (EPA Method 7060)~~ Decided on EDA METHOD ~~6020~~ 200.8 [illegible] speaking with client

PO# 14861

[illegible] necessary, samples submitted to Hall Environmental may be subcontracted to other accredited lab[illegible] This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the [illegible] report.

2010 Second Quarter Chemical Analysis for UIC-5 Key Energy Injection Well

2ND QTY
UIC-5

Key Energy Services
6 Desta Drive
Suite 4400
Midland, Texas 79705

Telephone: 432.620.0300
Facsimile: 432.571.7173
www.keyenergy.com

September 14, 2010

Mr. Daniel Sanchez
UIC Director
State of New Mexico
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

VIA EMAIL AND US MAIL

Reference: Key Farmington UIC-5 (Sunco) Injection Well
Subject: 2010 Second Quarter Sampling Results

Dear Mr. Sanchez:

Please find enclosed the second quarter sampling results for the Key Farmington UIC-5 (Sunco) Injection Well. The sampling was conducted pursuant to permit conditions 22 H, modified by OCD on June 03, 2010, and 22 I. The analytical data and summary report are being submitted this quarter at the request of the OCD.

Section 22H: (Modified)

The language of this Section will be amended as follows, with strike-through indicating eliminated portions and underlining indicating additions/new language:

§ Provide ~~an~~ quarterly analytical laboratory data ~~or test results~~ with associated data summary reports of the ~~injection~~ injected RCRA (non-hazardous) wastewater with each Annual Report. The analytical testing shall be conducted on a quarterly basis with any exceedence of the RCRA Characteristically Hazardous Criteria listed below reported to the OCD within 24 hours after having knowledge of ~~an~~ any such exceedence(s). All testing shall be in accordance with the current discharge permit and with compliance criterion for hazardous waste concentrations. For example, any exceedence of the RCRA Criterion listed below must be immediately resampled for verification of the exceedence(s), and if confirmed, the well shall be immediately shut-in until the injected fluids are confirmed to be RCRA non-hazardous with weekly sampling for one month to verify compliance with the discharge permit.

RCRA Characteristically Hazardous Waste Criterion or Parameters:

Ignitability:
§ Characteristic of Ignitability as defined by 40 CFR, Subpart C, sec. 261.21 (i.e., Sample Ignition upon direct contact with flame or flash point < 60°C or 140°F)

Corrosivity:
§ Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22 (i.e., pH less than or equal to 2 or pH greater than or equal to 12.5)

Reactivity:
§ Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. (i.e., Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at Standard Temperature and Pressure (STP) with pH between 2.0 and 12.5)

Reference: 40 CFR part 261 Subpart C sections 261.21 – 261.23, July 1, 1992.

22 I. Records shall be maintained at Key for the life of the well. The required analytical test methods are:

a. Aromatic and halogenated volatile hydrocarbon scan by EPA Method 8260C GC/MS. Semi-volatile Organics GC/MS EPA Method 8270B including 1- and 2-methylnaphthalene.
b. General water chemistry (Method 40 CFR 136.3) to include calcium, potassium, magnesium, sodium, bicarbonate, carbonate, chloride, sulfate, total dissolved solids (TDS), pH, and conductivity.
c. Heavy metals using the ICP scan (EPA Method 6010) and Arsenic and Mercury using atomic absorption (EPA Methods 7060 and 7470).
d. EPA RCRA Characteristics for Ignitability, Corrosivity and Reactivity (40 CFR part 261 Subpart C Sections 261.21 – 261.23, July 1, 1992).

Summary of Results:

22H. Please find attached the Suspected Hazardous Waste Analysis for Ignitability (D001), Corrosivity (D002), and Reactivity (D003). The results were all negative.

22.I.a. Please find attached the analytical results required in permit condition 22I. Method 8260B (volatile organics) was used instead of the requested 8260C. 8260C is the latest EPA published method for volatile organics and several laboratories contacted were not set up to run the 8260C analysis. After discussing these criteria with several labs, all agreed that the normal 8260B is still being used instead of 8260C. Apparently, the main difference appears to be that EPA has included

pharmaceutical chemicals in Method 8260B, which are flushed down the drains of domestic home users.

The Class I waste disposed of at the Farmington facility does not contain these types of waste streams, therefore, the 8260B which is the standard for volatile organics in the industry will be used when necessary.

The complete suite 8270B semi-volatiles is included and attached for reference. Both 1 and 2-methylnaphthalene are now part of Method 8260B and are included for reference. The 8270B results from Envirotech lab only included PAH's, therefore, in order to obtain the entire suite, which included non-oilfield herbicides and Pesticides, Envirotech had to send out these samples to ESC labs in Tennessee.

22.I.b. Please find attached the analytical results required by permit condition 22.I.b. "General Water Chemistry". While this is currently a permit requirement, there is no criteria or chemical constituent limits for injection.

22.I.c. Please find attached the analytical results required by permit condition 22.I.c. "Heavy metals using the ICP scan (EPA Method 6010) and Arsenic and Mercury using atomic absorption (EPA Methods 7060 and 7470)." The Heavy Metals includes "WQCC metals". Arsenic and Mercury was run by using method 6010 ICP. The new ICP's can now meet the detection limits as required and methods 7060/7470 are not required.

22.I.d. Covered in 22H. Above.

Key met with OCD personnel on August 03, 2010 to discuss a reduced list of chemicals for the 3rd quarter 2010 sampling event. OCD approved the request for the third quarter sampling event. Key will be requesting, after the next sampling event, that samples required in the permit are revaluated and minor modification issued. This will greatly reduce Key's analytical expenses and still allow OCD to evaluate the characteristics of the injected waste.

If you have any questions or concerns, please do not hesitate to call or write.

Sincerely,

Daniel K. Gibson, P.G.
Corporate Environmental Director

cc: Ms. Mikal Altomare
State of New Mexico
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Mr. Glenn vonGonten
State of New Mexico
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Mr. Carl Chavez
State of New Mexico
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Mr. Wayne Price
Price LLC
312 Encantado Ridge CT NE
Rio Rancho, New Mexico 87124

Mr. Loren Molleur

Attachments

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	8260 Blank	Date Reported:	07-21-10
Laboratory Number:	0713VBLK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-13-10
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/L)	1.0	1
Toluene	ND	(ug/L)	1.0	1
Ethylbenzene	ND	(ug/L)	1.0	1
Xylenes, Total	ND	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	ND	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	ND	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	ND	(ug/L)	1.0	1
1-Methylnaphthalene	ND	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: 8260 Blank
Laboratory Number: 0713VBLK

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	ND	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	1.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	ND	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	84.7	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	120	% Recovery	74.6-123	1
Toluene-d8	89.2	% Recovery	84.2-115	1
4-Bromofluorobenzene	104	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 55091**

Analyst

Review

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Daily Calibration	Date Reported:	07-21-10
Laboratory Number:	0713VCAL	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-13-10
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
Benzene	100	100	100	80 - 120
Toluene	100	100	100	80 - 120
Ethylbenzene	100	100	100	80 - 120
Xylenes, Total	100	100	100	80 - 120
Methyl tert-butyl ether (MTBE)	100	100	100	80 - 120
1,2,4-Trimethylbenzene	100	100	100	80 - 120
1,3,5-Trimethylbenzene	100	100	100	80 - 120
1,2-Dichloroethane (EDC)	100	100	100	80 - 120
1,2-Dibromoethane (EDB)	100	100	100	80 - 120
Naphthalene	100	100	100	80 - 120
1-Methylnaphthalene	100	100	100	80 - 120
2-Methylnaphthalene	100	100	100	80 - 120
Bromobenzene	100	100	100	80 - 120
Bromochloromethane	100	100	100	80 - 120
Bromodichloromethane	100	100	100	80 - 120
Bromoform	100	100	100	80 - 120
Bromomethane	100	100	100	80 - 120
Carbon Tetrachloride	100	100	100	80 - 120
Chlorobenzene	100	100	100	80 - 120
Chloroethane	100	100	100	80 - 120
Chloroform	100	100	100	80 - 120
Chloromethane	100	100	100	80 - 120
2-Chlorotoluene	100	100	100	80 - 120
4-Chlorotoluene	100	100	100	80 - 120
cis-1,2-Dichloroethene	100	100	100	80 - 120
cis-1,3-Dichloropropene	100	100	100	80 - 120
1,2-Dibromo-3-chloropropane	100	100	100	80 - 120
Dibromochloromethane	100	100	100	80 - 120
Dibromoethane	100	100	100	80 - 120
1,2-Dichlorobenzene	100	100	100	80 - 120
1,3-Dichlorobenzene	100	100	100	80 - 120
1,4-Dichlorobenzene	100	100	100	80 - 120
Dichlorodifluoromethane	100	100	100	80 - 120
1,1-Dichloroethane	100	100	100	80 - 120
1,1-Dichloroethene	100	100	100	80 - 120
1,2-Dichloropropane	100	100	100	80 - 120
1,3-Dichloropropane	100	100	100	80 - 120
2,2-Dichloropropane	100	100	100	80 - 120

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: Daily Calibration
Laboratory Number: 0713VCAL

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
1,1-Dichloropropene	100	100	100	80 - 120
Hexachlorobutadiene	100	100	100	80 - 120
Isopropylbenzene	100	100	100	80 - 120
4-Isopropyltoluene	100	100	100	80 - 120
Methylene Chloride	100	100	100	80 - 120
n-Butylbenzene	100	100	100	80 - 120
n-Propylbenzene	100	100	100	80 - 120
sec-Butylbenzene	100	100	100	80 - 120
Styrene	100	100	100	80 - 120
tert-Butylbenzene	100	100	100	80 - 120
Tetrachloroethene (PCE)	100	100	100	80 - 120
1,1,1,2-Tetrachloroethane	100	100	100	80 - 120
1,1,2,2-Tetrachloroethane	100	100	100	80 - 120
trans-1,2-Dichloroethene	100	100	100	80 - 120
trans-1,3-Dichloropropene	100	100	100	80 - 120
Trichloroethene (TCE)	100	100	100	80 - 120
Trichlorofluoromethane	100	100	100	80 - 120
1,2,3-Trichlorobenzene	100	100	100	80 - 120
1,2,4-Trichlorobenzene	100	100	100	80 - 120
1,1,1-Trichloroethane	100	100	100	80 - 120
1,1,2-Trichloroethane	100	100	100	80 - 120
1,2,3-Trichloropropane	100	100	100	80 - 120
Vinyl Chloride	100	100	100	80 - 120

Surrogates:			Rec. Limits
Dibromofluoromethane	100	% Recovery	78.6-115
1,2-Dichloroethane-d4	100	% Recovery	74.6-123
Toluene-d8	100	% Recovery	84.2-115
4-Bromofluorobenzene	100	% Recovery	78.6-115

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 55091**

Analyst

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CATION / ANION ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	INJ WATER	Date Reported:	07-15-10
Laboratory Number:	55093	Date Sampled:	07-08-10
Chain of Custody:	9911	Date Received:	07-08-10
Sample Matrix:	Aqueous	Date Analyzed:	07-10-10
Preservative:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	**5.85**	s.u.		
Conductivity @ 25° C	**19,500**	umhos/cm		
Total Dissolved Solids @ 180C	**13,500**	mg/L		
Total Dissolved Solids (Calc)	**14,000**	mg/L		
SAR	**61.0**	ratio		
Total Alkalinity as CaCO3	**1,380**	mg/L		
Total Hardness as CaCO3	**141**	mg/L		
Bicarbonate as CaCO3	**1,380**	mg/L	22.62	meq/L
Carbonate as CaCO3	**<0.1**	mg/L	0.00	meq/L
Hydroxide as CaCO3	**<0.1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**3.80**	mg/L	0.06	meq/L
Nitrite Nitrogen	**0.001**	mg/L	0.00	meq/L
Chloride	**6,950**	mg/L	196.06	meq/L
Fluoride	**1.10**	mg/L	0.06	meq/L
Phosphate	**34.7**	mg/L	1.10	meq/L
Sulfate	**733**	mg/L	15.26	meq/L
Iron	**9.93**	mg/L	0.36	meq/L
Calcium	**448**	mg/L	22.36	meq/L
Magnesium	**8.06**	mg/L	0.66	meq/L
Potassium	**194**	mg/L	4.96	meq/L
Sodium	**4,760**	mg/L	207.06	meq/L
Cations			235.04	meq/L
Anions			235.15	meq/L
Cation/Anion Difference			**0.05%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Key Farmington UIC-5 INJ Water**

Analyst

Review

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TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	INJ WATER	Date Reported:	07-15-10
Laboratory Number:	55094	Date Sampled:	07-08-10
Chain of Custody:	9911	Date Received:	07-08-10
Sample Matrix:	Aqueous	Date Analyzed:	07-14-10
Preservative:	HNO3	Date Digested:	07-13-10
Condition:	Cool & Intact	Analysis Needed:	Total RCRA Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Arsenic	**ND**	**0.001**
Barium	**5.68**	**0.001**
Cadmium	**ND**	**0.001**
Chromium	**ND**	**0.001**
Lead	**0.010**	**0.001**
Mercury	**1.38**	**0.001**
Selenium	**0.011**	**0.001**
Silver	**ND**	**0.001**

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: **Key Farmington UIC-5 INJ Water**

Analyst

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TRACE METAL ANALYSIS
Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-14-TM QA/QC	Date Reported:	07-15-10
Laboratory Number:	55094	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	Total RCRA Metals	Date Analyzed:	07-14-10
Condition:	Intact	Date Digested:	07-13-10

Blank & Duplicate Conc. (mg/L)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Barium	ND	ND	0.001	5.68	5.88	3.5%	0% - 30%
Cadmium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Lead	ND	ND	0.001	0.010	0.012	20.0%	0% - 30%
Mercury	ND	ND	0.001	1.38	1.38	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.011	0.011	2.9%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.250	ND	0.230	92.0%	80% - 120%
Barium	0.500	5.68	6.41	104%	80% - 120%
Cadmium	0.250	ND	0.225	90.1%	80% - 120%
Chromium	0.500	ND	0.551	110%	80% - 120%
Lead	0.500	0.010	0.410	80.4%	80% - 120%
Mercury	0.100	1.38	1.59	107%	80% - 120%
Selenium	0.100	0.011	0.090	81.4%	80% - 120%
Silver	0.100	ND	0.117	117%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for Samples 55094 and 55108.**

Analyst

Review

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SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	INJ Water	Date Reported:	07-22-10
Lab ID#:	55095	Date Sampled:	07-08-10
Sample Matrix:	Aqueous	Date Received:	07-08-10
Preservative:	Cool	Date Analyzed:	07-10-10
Condition:	Intact	Chain of Custody:	9911

Parameter	Result	
IGNITABILITY:	**Negative**	
CORROSIVITY:	**Negative**	**pH = 5.82**
REACTIVITY:	**Negative**	

RCRA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
IGNITABILITY:	Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21. *(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)*
CORROSIVITY:	Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22. *(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)*
REACTIVITY:	Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. *(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)*
Reference:	40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.
Comments:	**Key Farmington UIC-5 INJ Water**

Analyst

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CHAIN OF CUSTODY RECORD

09911

Client: KEY ENERGY	Project Name / Location: KEY FARMINGTON UIC-5 INJ WATER
Client Address: 5651 US HWY 64 87401	Sampler Name: WAYNE PRICE - PRICE LLC
Client Phone No.: 1-505-715-2809	Client No.: 98065-0013

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	Preservative ICE	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion (GEN CHEM)	RCI	TCLP with H/P	PAH (8270)	TPH (418.1)	CHLORIDE	METALS 6010 - ICP Hg(7470)(7471) - AA	RCI (- Not on AA per Wayne JD 7/14/10)		Sample Cool	Sample Intact
INJ WATER	7-8-10	2:56 pm	55091	Soil Solid Sludge (Aqueous)	2-40ml VOA		X				X											X	X
" "	"	2:50 pm	55092	Soil Solid Sludge (Aqueous)	2-1000ml SVOA			X								X						X	X
" "	"	2:52 pm	55093	Soil Solid Sludge (Aqueous)	1-500ml			X					X									X	X
" "	"	2:53 pm	55094	Soil Solid Sludge (Aqueous)	2-250ml			HNO_3											X			X	X
" "	"	2:54 pm	55095	Soil Solid Sludge (Aqueous)	1-125ml			X												X		X	X
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
WAYNE PRICE [signature]	JULY 08 2010	3:28 pm	[signature]	7/8/10	15:29:00
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

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Water Analysis

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj Water	Date Reported:	08-16-10
Laboratory Number:	55453	Date Sampled:	08-04-10
Sample Matrix:	Aqueous	Date Received:	08-04-10
Preservative:	Cool	Date Analyzed:	08-05-10
Condition:	Cool & Intact	Chain of Custody:	10114

Parameter	Analytical Result	Units
Cyanide (total)	**0.165**	mg/L

Reference: U.S.E.P.A., Method 335.3 Cyanide, Total.

Comments: **Key Farmington UIC-5 Inj Water**

Analyst

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TRACE METAL ANALYSIS

Client:	Key energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	08-10-10
Laboratory Number:	55453	Date Sampled:	08-04-10
Chain of Custody:	10114	Date Received:	08-04-10
Sample Matrix:	Aqueous	Date Analyzed:	08-10-10
Preservative:	Cool	Date Digested:	08-09-10
Condition:	Intact	Analysis Needed:	Total Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Aluminum	**1.76**	**0.001**
Cobalt	**0.007**	**0.001**
Copper	**ND**	**0.001**
Iron	**12.3**	**0.001**
Manganese	**0.425**	**0.001**
Molybdenum	**0.079**	**0.001**
Nickel	**0.056**	**0.001**
Zinc	**0.295**	**0.001**

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **Key Farmington UIC-5 Inj Water**

Analyst

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TRACE METAL ANALYSIS
Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	08-10-TM QA/QC	Date Reported:	08-10-10
Laboratory Number:	55453	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	Total Metals	Date Analyzed:	08-10-10
Condition:	N/A	Date Digested:	08-09-10

Blank & Duplicate Conc. (mg/L)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Aluminum	ND	ND	0.001	1.76	1.78	1.1%	0% - 30%
Cobalt	ND	ND	0.001	0.007	0.005	28.6%	0% - 30%
Copper	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Iron	ND	ND	0.001	12.3	12.5	1.7%	0% - 30%
Manganese	ND	ND	0.001	0.425	0.434	2.2%	0% - 30%
Molybdenum	ND	ND	0.001	0.079	0.080	1.1%	0% - 30%
Nickel	ND	ND	0.001	0.056	0.040	27.6%	0% - 30%
Zinc	ND	ND	0.001	0.295	0.296	0.2%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Aluminum	0.500	1.76	2.29	101%	80% - 120%
Cobalt	0.500	0.007	0.436	86.0%	80% - 120%
Copper	0.500	ND	0.409	81.9%	80% - 120%
Iron	0.500	12.3	12.3	95.9%	80% - 120%
Manganese	0.500	0.425	0.841	91.0%	80% - 120%
Molybdenum	0.100	0.079	0.164	91.6%	80% - 120%
Nickel	0.500	0.056	0.486	87.4%	80% - 120%
Zinc	0.500	0.295	0.701	88.2%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.
Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for Sample 55453**

Analyst

Review

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EPA METHOD 8041
TCLP PHENOLS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	08-26-10
Laboratory Number:	55453	Date Sampled:	08-04-10
Chain of Custody:	10114	Date Received:	08-04-10
Sample Matrix:	Aqueous	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	08-12-10
Condition:	Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.004	200
p,m-Cresol	ND	0.004	200
2,4,6-Trichlorophenol	ND	0.004	2.0
2,4,5-Trichlorophenol	ND	0.004	400
Pentachlorophenol	ND	0.004	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	86.2%
	2,4,6-Tribromophenol	82.6%

References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: **Key Farmington UIC-5 Inj. Water**

Analyst

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EPA METHOD 8041
TCLP PHENOLS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	0812ABLK QA/QC	Date Reported:	08-26-10
Laboratory Number:	55453	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-12-10
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate Conc (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	Percent Diff.
o-Cresol	ND	ND	0.004	ND	ND	0.0%
p,m-Cresol	ND	ND	0.004	ND	ND	0.0%
2,4,6-Trichlorophenol	ND	ND	0.004	ND	ND	0.0%
2,4,5-Trichlorophenol	ND	ND	0.004	ND	ND	0.0%
Pentachlorophenol	ND	ND	0.004	ND	ND	0.0%

ND - Parameter not detected at the stated detection limit.

References:
Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8041, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Comments: **QA/QC for Sample 55453.**

Analyst

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EPA METHOD 8091
Nitroaromatics and Cyclic Ketones

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	08-17-10
Laboratory Number:	55453	Date Sampled:	08-04-10
Chain of Custody:	10114	Date Received:	08-04-10
Sample Matrix:	Aqueous	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	08-12-10
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	**ND**	**0.004**	**5.0**
Hexachloroethane	**ND**	**0.004**	**3.0**
Nitrobenzene	**ND**	**0.004**	**2.0**
Hexachlorobutadiene	**ND**	**0.004**	**0.5**
2,4-Dinitrotoluene	**ND**	**0.004**	**0.13**
HexachloroBenzene	**ND**	**0.004**	**0.13**

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorobiphenyl	**86.1%**

References: Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8270, Determination of Semi-Volatile Organics by Capillary Column GC/MS

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: **Key Farmington UIC-5 Inj Water**

Analyst

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EPA METHOD 8091
Nitroaromatics and Cyclic Ketones
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	0812BBLK QA/QC	Date Reported:	08-17-10
Laboratory Number:	55453	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-12-10
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate Conc (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	Percent Diff.
Pyridine	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
Hexachloroethane	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
Nitrobenzene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
Hexachlorobutadiene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
2,4-Dinitrotoluene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
HexachloroBenzene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**

ND - Parameter not detected at the stated detection limit.

References:
Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8270, Determination of Semi-Volatile Organics by Capillary Column GC/MS

Comments: **QA/QC for Sample 55453**

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CHAIN OF CUSTODY RECORD

10114

Client:	Project Name / Location:
KEY ENERGY	KEY FARMINGTON UIC-5 INJ WATER
Client Address:	**Sampler Name:**
5651 Hwy 64	Neil Allen
Client Phone No.:	**Client No.:**
505-486-2010	98065-0013

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative HgCl2	Preservative HCl	Preservative ICE	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	ICP with H/P	PAH 8041 8021	TPH (418.1)	CHLORIDE	Chromium & Ba	MEK	6010 Metals	Sample Cool	Sample Intact
Inj Water				Soil Sludge Solid Aqueous	2 x 250mL 2 x 250mL			X						X			TCL	X			X	X	X
Inj. Water	8/4/10	2:00 pm	55453	Soil Sludge Solid Aqueous	2x40mL 2x1L amber			X							X					X		X	X
1				Soil Sludge Solid Aqueous	2x1L amber			X								X						X	X
1	All one sample. MB.			Soil Sludge Solid Aqueous	2x40mL VOA			X													X	X	1
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Neil Allen	8/4/10	2:18 pm		8/4/10	2:18 pm
	8/4/10	2:45 pm		8/4/10	2:45 pm

INJ. PUMP Discharge

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HIC-5
2 W GR

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EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client:	Key Energy	Project #:	98085-0013
Sample ID:	INJ Water	Date Reported:	07-21-10
Chain of Custody:	9911	Date Sampled:	07-08-10
Laboratory Number:	55091	Date Received:	07-08-10
Sample Matrix:	Aqueous	Date Analyzed:	07-13-10
Preservative:	HCl	Analysis Requested:	8260 VOC
Condition:	Cool and Intact		

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	27.6	(ug/L)	1.0	1
Toluene	1,210	(ug/L)	1.0	1
Ethylbenzene	241	(ug/L)	1.0	1
Xylenes, Total	1,360	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	191	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	272	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	402	(ug/L)	1.0	1
1-Methylnaphthalene	51.1	(ug/L)	2.0	1
2-Methylnaphthalene	34.9	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

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EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client: Key Energy
Sample ID: INJ Water
Laboratory Number: 55091

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	189	(ug/L)	1.0	1
4-Isopropyltoluene	29.9	(ug/L)	1.0	1
Methylene Chloride	19.6	(ug/L)	3.0	1
n-Butylbenzene	13.8	(ug/L)	1.0	1
n-Propylbenzene	56.0	(ug/L)	1.0	1
sec-Butylbenzene	289	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	86.4	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	86.4	% Recovery	74.6-123	1
Toluene-d8	93.1	% Recovery	84.2-115	1
4-Bromofluorobenzene	99.1	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **Key Farmington UIC-5 INJ Water**

Analyst

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Analytical Laboratory

EPA Method 8270
Polynuclear Aromatic Hydrocarbons

Client:	Key Energy	Project #:	98065-0013
Sample ID:	INJ Water	Date Reported:	07-21-10
Laboratory Number:	55092	Date Sampled:	07-08-10
Chain of custody:	9911	Date Received:	07-08-10
Sample Matrix:	Aqueous	Date Analyzed:	07-16-10
Preservative:	Cool	Date Concentrated:	07-14-10
Condition:	Cool & Intact	Analysis Requested:	8270

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	**ND**	**0.001**
Acenaphthylene	**ND**	**0.001**
Acenaphthene	**ND**	**0.001**
Fluorene	**ND**	**0.001**
Phenanthrene	**ND**	**0.001**
Anthracene	**ND**	**0.001**
Fluoranthene	**ND**	**0.001**
Pyrene	**ND**	**0.001**
Benzo[a]anthracene	**ND**	**0.001**
Chrysene	**ND**	**0.001**
Benzo(b)fluoranthene	**ND**	**0.001**
Benzo[k]fluoranthene	**ND**	**0.001**
Benzo(a)pyrene	**ND**	**0.001**
Indeno[1,2,3]pyrene	**ND**	**0.001**
Dibenzo[a,h]anthracene	**ND**	**0.001**
Benzo(g,h,i)perylene	**ND**	**0.001**

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronapthalene	**83.8**

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **Key Farmington UIC-5 INJ Water**

Analyst

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EPA Method 8270
Polynuclear Aromatic Hydrocarbons
Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	8270 Cal 200 ppm	Date Reported:	07-21-10
Laboratory Number:	0618P200 QA/QC	Date Sampled:	N/A
Chain of custody:	N/A	Date Received:	N/A
Sample Matrix:	Aquesous	Date Analyzed:	07-16-10
Preservative:	N/A	Date Concentrated:	N/A
Condition:	N/A	Analysis Requested:	8270

Parameter	Concentration (mg/L)	Result	% Recovered	% Recovery Limits
Naphthalene	200	184	91.8	80 - 120
Acenaphthylene	200	182	90.9	80 - 120
Acenaphthene	200	200	100	80 - 120
Fluorene	200	200	100	80 - 120
Phenanthrene	200	200	100	80 - 120
Anthracene	200	200	100	80 - 120
Fluoranthene	200	200	100	80 - 120
Pyrene	200	200	100	80 - 120
Benzo[a]anthracene	200	200	100	80 - 120
Chrysene	200	200	100	80 - 120
Benzo(b)fluoranthene	200	200	100	80 - 120
Benzo[k]fluoranthene	200	200	100	80 - 120
Benzo(a)pyrene	200	200	100	80 - 120
Indeno[1,2,3]pyrene	200	200	100	80 - 120
Dibenzo[a,h]anthracene	200	200	100	80 - 120
Benzo(g,h,i)perylene	200	200	100	80 - 120

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronapthalene	90.6

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 55092**

Analyst

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EPA Method 8270
Polynuclear Aromatic Hydrocarbons

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	07-21-10
Laboratory Number:	0716PMB QA/QC	Date Sampled:	N/A
Chain of custody:	N/A	Date Received:	N/A
Sample Matrix:	Aqueous	Date Analyzed:	07-16-10
Preservative:	N/A	Date Concentrated:	07-14-10
Condition:	N/A	Analysis Requested:	8270

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	ND	0.00
Acenaphthylene	ND	0.00
Acenaphthene	ND	0.00
Fluorene	ND	0.00
Phenanthrene	ND	0.00
Anthracene	ND	0.00
Fluoranthene	ND	0.00
Pyrene	ND	0.00
Benzo[a]anthracene	ND	0.00
Chrysene	ND	0.00
Benzo(b)fluoranthene	ND	0.00
Benzo[k]fluoranthene	ND	0.00
Benzo(a)pyrene	ND	0.00
Indeno[1,2,3]pyrene	ND	0.00
Dibenzo[a,h]anthracene	ND	0.00
Benzo(g,h,i)perylene	ND	0.00

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronapthalene	91.3

References: *Method 8270, Semi-Volatile Organics by Capillary Column GC/MS* SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 55092**

Analyst

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EPA Method 8270
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	Matrix Spike	Date Reported:	07-21-10
Laboratory Number:	55092	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	8270	Date Analyzed:	07-16-10
Condition:	N/A		

Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Naphthalene	ND	100.0	95.2	0.001	95.2%	10-122
Acenaphthylene	ND	100.0	81.4	0.001	81.4%	10-139
Acenaphthene	ND	100.0	108	0.001	108%	10-124
Fluorene	ND	100.0	111	0.001	111%	10-142
Phenanthrene	ND	100.0	114	0.001	114%	10-155
Anthracene	ND	100.0	117	0.001	117%	10-126
Fluoranthene	ND	100.0	102	0.001	102%	14-123
Pyrene	ND	100.0	108	0.001	108%	10-140
Benzo[a]anthracene	ND	100.0	106	0.001	106%	10-116
Chrysene	ND	100.0	95.9	0.001	95.9%	12-135
Benzo(b)fluoranthene	ND	100.0	87.4	0.001	87.4%	10-199
Benzo[k]fluoranthene	ND	100.0	85.4	0.001	85.4%	10-150
Benzo(a)pyrene	ND	100.0	79.4	0.001	79.4%	10-159
Indeno[1,2,3]pyrene	ND	100.0	80.6	0.001	80.6%	10-128
Dibenzo[a,h]anthracene	ND	100.0	84.3	0.001	84.3%	10-110
Benzo(g,h,i)perylene	ND	100.0	89.4	0.001	89.4%	10-116

ND - Parameter not detected at the stated detection limit.

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 55092**

Analyst

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EPA Method 8270
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	07/16PAHLabBlank	Date Reported:	07-21-10
Laboratory Number:	QA/QC	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-16-10
Condition:	N/A	Analysis Requested:	8270

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	ND	0.00
Acenaphthylene	ND	0.00
Acenaphthene	ND	0.00
Fluorene	ND	0.00
Phenanthrene	ND	0.00
Anthracene	ND	0.00
Fluoranthene	ND	0.00
Pyrene	ND	0.00
Benzo[a]anthracene	ND	0.00
Chrysene	ND	0.00
Benzo(b)fluoranthene	ND	0.00
Benzo[k]fluoranthene	ND	0.00
Benzo(a)pyrene	ND	0.00
Indeno[1,2,3]pyrene	ND	0.00
Dibenzo[a,h]anthracene	ND	0.00
Benzo(g,h,i)perylene	ND	0.00

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY:	Parameter	Percent Recovery
	1-fluoronapthalene	88.1

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Samples 55092**

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EPA Method 8270
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	Matrix Duplicate	Date Reported:	07-21-10
Laboratory Number:	55092	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	8270	Date Analyzed:	07-16-10
Condition:	N/A		

Parameter	Sample Result (mg/L)	Duplicate Sample Result (mg/L)	Det. Limit (mg/L)	Percent Difference
Naphthalene	ND	ND	0.001	0.0%
Acenaphthylene	ND	ND	0.001	0.0%
Acenaphthene	ND	ND	0.001	0.0%
Fluorene	ND	ND	0.001	0.0%
Phenanthrene	ND	ND	0.001	0.0%
Anthracene	ND	ND	0.001	0.0%
Fluoranthene	ND	ND	0.001	0.0%
Pyrene	ND	ND	0.001	0.0%
Benzo[a]anthracene	ND	ND	0.001	0.0%
Chrysene	ND	ND	0.001	0.0%
Benzo(b)fluoranthene	ND	ND	0.001	0.0%
Benzo[k]fluoranthene	ND	ND	0.001	0.0%
Benzo(a)pyrene	ND	ND	0.001	0.0%
Indeno[1,2,3]pyrene	ND	ND	0.001	0.0%
Dibenzo[a,h]anthracene	ND	ND	0.001	0.0%
Benzo(g,h,i)perylene	ND	ND	0.001	0.0%

ND - Parameter not detected at the stated detection limit.

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 55092**

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QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spikes	Date Reported:	07-21-10
Laboratory Number:	55091	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-13-10
Condition:	N/A	Analysis Requested:	8260 VOC

Spike	Units: ug/L				Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	27.6	100	112	87.8%	85.3 - 120	1.0
Toluene	1,210	100	1,400	107%	73.0 - 123	1.0
Chlorobenzene	ND	100	85.7	85.7%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100	88.4	88.4%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100	83.6	83.6%	76.1 - 126	1.0

Spike Duplicate	Units: ug/L				Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	27.6	100	136	107%	85.3 - 120	1.0
Toluene	1,210	100	1,440	110%	73.0 - 123	1.0
Chlorobenzene	ND	100	86.3	86.3%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100	89.9	89.9%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100	86.0	86.0%	76.1 - 126	1.0

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 55091**

Analyst

Review

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Tax I.D. 62-0814289

Est. 1970

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

Report Summary

Monday August 16, 2010

Report Number: L472785
Samples Received: 08/06/10
Client Project: 98065-0013

Description: Key Energy

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

August 16, 2010

Date Received : August 06, 2010
Description : Key Energy

Sample ID : 55453-INJ WATER

Collected By : N. Allen
Collection Date : 08/04/10 14:00

ESC Sample # : L472785-01

Site ID :

Project # : 98065-0013

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Volatile Organics						
Acetone	2.8	2.5	mg/l	8260B	08/08/10	50
Acrolein	BDL	2.5	mg/l	8260B	08/08/10	50
Acrylonitrile	BDL	0.50	mg/l	8260B	08/08/10	50
Benzene	0.33	0.050	mg/l	8260B	08/08/10	50
Bromobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
Bromodichloromethane	BDL	0.050	mg/l	8260B	08/08/10	50
Bromoform	BDL	0.050	mg/l	8260B	08/08/10	50
Bromomethane	BDL	0.25	mg/l	8260B	08/08/10	50
n-Butylbenzene	0.076	0.050	mg/l	8260B	08/08/10	50
sec-Butylbenzene	BDL	0.050	mg/l	8260B	08/08/10	50
tert-Butylbenzene	BDL	0.050	mg/l	8260B	08/08/10	50
Carbon tetrachloride	BDL	0.050	mg/l	8260B	08/08/10	50
Chlorobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
Chlorodibromomethane	BDL	0.050	mg/l	8260B	08/08/10	50
Chloroethane	BDL	0.25	mg/l	8260B	08/08/10	50
2-Chloroethyl vinyl ether	BDL	2.5	mg/l	8260B	08/08/10	50
Chloroform	BDL	0.25	mg/l	8260B	08/08/10	50
Chloromethane	BDL	0.12	mg/l	8260B	08/08/10	50
2-Chlorotoluene	BDL	0.050	mg/l	8260B	08/08/10	50
4-Chlorotoluene	BDL	0.050	mg/l	8260B	08/08/10	50
1,2-Dibromo-3-Chloropropane	BDL	0.25	mg/l	8260B	08/08/10	50
1,2-Dibromoethane	BDL	0.050	mg/l	8260B	08/08/10	50
Dibromomethane	BDL	0.050	mg/l	8260B	08/08/10	50
1,2-Dichlorobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
1,3-Dichlorobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
1,4-Dichlorobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
Dichlorodifluoromethane	BDL	0.25	mg/l	8260B	08/08/10	50
1,1-Dichloroethane	BDL	0.050	mg/l	8260B	08/08/10	50
1,2-Dichloroethane	BDL	0.050	mg/l	8260B	08/08/10	50
1,1-Dichloroethene	BDL	0.050	mg/l	8260B	08/08/10	50
cis-1,2-Dichloroethene	BDL	0.050	mg/l	8260B	08/08/10	50
trans-1,2-Dichloroethene	BDL	0.050	mg/l	8260B	08/08/10	50
1,2-Dichloropropane	BDL	0.050	mg/l	8260B	08/08/10	50
1,1-Dichloropropene	BDL	0.050	mg/l	8260B	08/08/10	50
1,3-Dichloropropane	BDL	0.050	mg/l	8260B	08/08/10	50
cis-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	08/08/10	50
trans-1,3-Dichloropropene	BDL	0.050	mg/l	8260B	08/08/10	50
2,2-Dichloropropane	BDL	0.050	mg/l	8260B	08/08/10	50
Di-isopropyl ether	BDL	0.050	mg/l	8260B	08/08/10	50
Ethylbenzene	0.54	0.050	mg/l	8260B	08/08/10	50
Hexachloro-1,3-butadiene	BDL	0.050	mg/l	8260B	08/08/10	50
Isopropylbenzene	0.058	0.050	mg/l	8260B	08/08/10	50
p-Isopropyltoluene	0.10	0.050	mg/l	8260B	08/08/10	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L472785-01 (SV8151) - Diluted due to matrix
L472785-01 (SV8081) - Diluted due to matrix

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

August 16, 2010

Date Received : August 06, 2010
Description : Key Energy

Sample ID : 55453-INJ WATER

Collected By : N. Allen
Collection Date : 08/04/10 14:00

ESC Sample # : L472785-01

Site ID :

Project # : 98065-0013

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Butanone (MEK)	BDL	0.50	mg/l	8260B	08/08/10	50
Methylene Chloride	BDL	0.25	mg/l	8260B	08/08/10	50
4-Methyl-2-pentanone (MIBK)	BDL	0.50	mg/l	8260B	08/08/10	50
Methyl tert-butyl ether	BDL	0.050	mg/l	8260B	08/08/10	50
Naphthalene	BDL	0.25	mg/l	8260B	08/08/10	50
n-Propylbenzene	0.14	0.050	mg/l	8260B	08/08/10	50
Styrene	BDL	0.050	mg/l	8260B	08/08/10	50
1,1,1,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	08/08/10	50
1,1,2,2-Tetrachloroethane	BDL	0.050	mg/l	8260B	08/08/10	50
1,1,2-Trichloro-1,2,2-trifluoro	BDL	0.050	mg/l	8260B	08/08/10	50
Tetrachloroethene	BDL	0.050	mg/l	8260B	08/08/10	50
Toluene	1.2	0.25	mg/l	8260B	08/08/10	50
1,2,3-Trichlorobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
1,2,4-Trichlorobenzene	BDL	0.050	mg/l	8260B	08/08/10	50
1,1,1-Trichloroethane	BDL	0.050	mg/l	8260B	08/08/10	50
1,1,2-Trichloroethane	BDL	0.050	mg/l	8260B	08/08/10	50
Trichloroethene	BDL	0.050	mg/l	8260B	08/08/10	50
Trichlorofluoromethane	BDL	0.25	mg/l	8260B	08/08/10	50
1,2,3-Trichloropropane	BDL	0.050	mg/l	8260B	08/08/10	50
1,2,4-Trimethylbenzene	0.83	0.050	mg/l	8260B	08/08/10	50
1,2,3-Trimethylbenzene	0.23	0.050	mg/l	8260B	08/08/10	50
1,3,5-Trimethylbenzene	0.41	0.050	mg/l	8260B	08/08/10	50
Vinyl chloride	BDL	0.050	mg/l	8260B	08/08/10	50
Xylenes, Total	3.5	0.15	mg/l	8260B	08/08/10	50
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	08/08/10	50
Dibromofluoromethane	87.6		% Rec.	8260B	08/08/10	50
4-Bromofluorobenzene	98.4		% Rec.	8260B	08/08/10	50
Pesticides						
Aldrin	BDL	0.0025	mg/l	8081A	08/13/10	50
Alpha BHC	BDL	0.0025	mg/l	8081A	08/13/10	50
Beta BHC	BDL	0.0025	mg/l	8081A	08/13/10	50
Delta BHC	BDL	0.0025	mg/l	8081A	08/13/10	50
Gamma BHC	BDL	0.0025	mg/l	8081A	08/13/10	50
Chlordane	BDL	0.025	mg/l	8081A	08/13/10	50
4,4-DDD	BDL	0.0025	mg/l	8081A	08/13/10	50
4,4-DDE	BDL	0.0025	mg/l	8081A	08/13/10	50
4,4-DDT	BDL	0.0025	mg/l	8081A	08/13/10	50
Dieldrin	BDL	0.0025	mg/l	8081A	08/13/10	50
Endosulfan I	BDL	0.0025	mg/l	8081A	08/13/10	50
Endosulfan II	BDL	0.0025	mg/l	8081A	08/13/10	50
Endosulfan sulfate	BDL	0.0025	mg/l	8081A	08/13/10	50
Endrin	BDL	0.0025	mg/l	8091A	08/13/10	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L472785-01 (SV8151) - Diluted due to matrix
L472785-01 (SV8081) - Diluted due to matrix

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

August 16, 2010

Date Received : August 06, 2010
Description : Key Energy

Sample ID : 55453-INJ WATER

Collected By : N. Allen
Collection Date : 08/04/10 14:00

ESC Sample # : L472785-01

Site ID :

Project # : 98065-0013

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Endrin aldehyde	BDL	0.0025	mg/l	8081A	08/13/10	50
Endrin ketone	BDL	0.0025	mg/l	8081A	08/13/10	50
Hexachlorobenzene	BDL	0.0025	mg/l	8081A	08/13/10	50
Heptachlor	BDL	0.0025	mg/l	8081A	08/13/10	50
Heptachlor epoxide	BDL	0.0025	mg/l	8081A	08/13/10	50
Methoxychlor	BDL	0.0025	mg/l	8081A	08/13/10	50
Toxaphene	BDL	0.025	mg/l	8081A	08/13/10	50
Pesticides Surrogates						
Decachlorobiphenyl	0.00		% Rec.	8081A	08/13/10	50
Tetrachloro-m-xylene	0.00		% Rec.	8081A	08/13/10	50
Herbicides						
2,4-D	BDL	0.10	mg/l	8151	08/12/10	50
Dalapon	BDL	10.	mg/l	8151	08/12/10	50
2,4-DB	BDL	0.10	mg/l	8151	08/12/10	50
Dicamba	BDL	0.10	mg/l	8151	08/12/10	50
Dichloroprop	BDL	0.10	mg/l	8151	08/12/10	50
Dinoseb	BDL	0.10	mg/l	8151	08/12/10	50
MCPA	BDL	5.0	mg/l	8151	08/12/10	50
MCPP	BDL	5.0	mg/l	8151	08/12/10	50
2,4,5-T	BDL	0.10	mg/l	8151	08/12/10	50
2,4,5-TP (Silvex)	BDL	0.10	mg/l	8151	08/12/10	50
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	0.00		% Rec.	8151	08/12/10	50

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/16/10 12:04 Printed: 08/16/10 12:05
L472785-01 (SV8151) - Diluted due to matrix
L472785-01 (SV8081) - Diluted due to matrix

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L472785

August 16, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,1,1-Trichloroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,1,2-Trichloroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,1-Dichloroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,1-Dichloroethene	< .001	mg/l			WG492583	08/08/10 12:34
1,1-Dichloropropene	< .001	mg/l			WG492583	08/08/10 12:34
1,2,3-Trichlorobenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,2,3-Trichloropropane	< .001	mg/l			WG492583	08/08/10 12:34
1,2,3-Trimethylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,2,4-Trichlorobenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,2,4-Trimethylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG492583	08/08/10 12:34
1,2-Dibromoethane	< .001	mg/l			WG492583	08/08/10 12:34
1,2-Dichlorobenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,2-Dichloroethane	< .001	mg/l			WG492583	08/08/10 12:34
1,2-Dichloropropane	< .001	mg/l			WG492583	08/08/10 12:34
1,3,5-Trimethylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,3-Dichlorobenzene	< .001	mg/l			WG492583	08/08/10 12:34
1,3-Dichloropropane	< .001	mg/l			WG492583	08/08/10 12:34
1,4-Dichlorobenzene	< .001	mg/l			WG492583	08/08/10 12:34
2,2-Dichloropropane	< .001	mg/l			WG492583	08/08/10 12:34
2-Butanone (MEK)	< .01	mg/l			WG492583	08/08/10 12:34
2-Chloroethyl vinyl ether	< .05	mg/l			WG492583	08/08/10 12:34
2-Chlorotoluene	< .001	mg/l			WG492583	08/08/10 12:34
4-Chlorotoluene	< .001	mg/l			WG492583	08/08/10 12:34
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG492583	08/08/10 12:34
Acetone	< .05	mg/l			WG492583	08/08/10 12:34
Acrolein	< .05	mg/l			WG492583	08/08/10 12:34
Acrylonitrile	< .01	mg/l			WG492583	08/08/10 12:34
Benzene	< .001	mg/l			WG492583	08/08/10 12:34
Bromobenzene	< .001	mg/l			WG492583	08/08/10 12:34
Bromodichloromethane	< .001	mg/l			WG492583	08/08/10 12:34
Bromoform	< .001	mg/l			WG492583	08/08/10 12:34
Bromomethane	< .005	mg/l			WG492583	08/08/10 12:34
Carbon tetrachloride	< .001	mg/l			WG492583	08/08/10 12:34
Chlorobenzene	< .001	mg/l			WG492583	08/08/10 12:34
Chlorodibromomethane	< .001	mg/l			WG492583	08/08/10 12:34
Chloroethane	< .001	mg/l			WG492583	08/08/10 12:34
Chloroform	< .005	mg/l			WG492583	08/08/10 12:34
Chloromethane	< .001	mg/l			WG492583	08/08/10 12:34
cis-1,2-Dichloroethene	< .001	mg/l			WG492583	08/08/10 12:34
cis-1,3-Dichloropropene	< .001	mg/l			WG492583	08/08/10 12:34
Di-isopropyl ether	< .001	mg/l			WG492583	08/08/10 12:34
Dibromomethane	< .001	mg/l			WG492583	08/08/10 12:34
Dichlorodifluoromethane	< .005	mg/l			WG492583	08/08/10 12:34
Ethylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
Hexachloro-1,3-butadiene	< .001	mg/l			WG492583	08/08/10 12:34
Isopropylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
Methyl tert-butyl ether	< .001	mg/l			WG492583	08/08/10 12:34
Methylene Chloride	< .005	mg/l			WG492583	08/08/10 12:34
n-Butylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
n-Propylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
Naphthalene	< .005	mg/l			WG492583	08/08/10 12:34
p-Isopropyltoluene	< .001	mg/l			WG492583	08/08/10 12:34
sec-Butylbenzene	< .001	mg/l			WG492583	08/08/10 12:34
Styrene	< .001	mg/l			WG492583	08/08/10 12:34
tert-Butylbenzene	< .001	mg/l			WG492583	08/08/10 12:34

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Est. 1970

EnviroTech- NM
Lynn Barry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L472785

August 16, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloroethene	< .001	mg/l			WG492583	08/08/10 12:34
Toluene	< .005	mg/l			WG492583	08/08/10 12:34
trans-1,2-Dichloroethene	< .001	mg/l			WG492583	08/08/10 12:34
trans-1,3-Dichloropropene	< .001	mg/l			WG492583	08/08/10 12:34
Trichloroethene	< .001	mg/l			WG492583	08/08/10 12:34
Trichlorofluoromethane	< .005	mg/l			WG492583	08/08/10 12:34
Vinyl chloride	< .001	mg/l			WG492583	08/08/10 12:34
Xylenes, Total	< .003	mg/l			WG492583	08/08/10 12:34
4-Bromofluorobenzene		% Rec.	92.36	75-128	WG492583	08/08/10 12:34
Dibromofluoromethane		% Rec.	88.47	79-125	WG492583	08/08/10 12:34
Toluene-d8		% Rec.	101.5	87-114	WG492583	08/08/10 12:34
2,4,5-T	< .002	mg/l			WG492927	08/11/10 14:18
2,4,5-TP (Silvex)	< .002	mg/l			WG492927	08/11/10 14:18
2,4-D	< .002	mg/l			WG492927	08/11/10 14:18
2,4-DB	< .002	mg/l			WG492927	08/11/10 14:18
Dalapon	< .002	mg/l			WG492927	08/11/10 14:18
Dicamba	< .002	mg/l			WG492927	08/11/10 14:18
Dichloroprop	< .002	mg/l			WG492927	08/11/10 14:18
Dinoseb	< .002	mg/l			WG492927	08/11/10 14:18
MCPA	< .1	mg/l			WG492927	08/11/10 14:18
MCPP	< .1	mg/l			WG492927	08/11/10 14:18
2,4-Dichlorophenyl Acetic Acid		%	109.0	42-112	WG492927	08/11/10 14:18
4,4-DDD	< .00005	mg/l			WG492618	08/11/10 12:04
4,4-DDE	< .00005	mg/l			WG492618	08/11/10 12:04
4,4-DDT	< .00005	mg/l			WG492618	08/11/10 12:04
Aldrin	< .00005	mg/l			WG492618	08/11/10 12:04
Alpha BHC	< .00005	mg/l			WG492618	08/11/10 12:04
Beta BHC	< .00005	mg/l			WG492618	08/11/10 12:04
Chlordane	< .0005	mg/l			WG492618	08/11/10 12:04
Delta BHC	< .00005	mg/l			WG492618	08/11/10 12:04
Dieldrin	< .00005	mg/l			WG492618	08/11/10 12:04
Endosulfan I	< .00005	mg/l			WG492618	08/11/10 12:04
Endosulfan II	< .00005	mg/l			WG492618	08/11/10 12:04
Endosulfan sulfate	< .00005	mg/l			WG492618	08/11/10 12:04
Endrin	< .00005	mg/l			WG492618	08/11/10 12:04
Endrin aldehyde	< .00005	mg/l			WG492618	08/11/10 12:04
Endrin ketone	< .00005	mg/l			WG492618	08/11/10 12:04
Gamma BHC	< .00005	mg/l			WG492618	08/11/10 12:04
Heptachlor	< .00005	mg/l			WG492618	08/11/10 12:04
Heptachlor epoxide	< .00005	mg/l			WG492618	08/11/10 12:04
Hexachlorobenzene	< .00005	mg/l			WG492618	08/11/10 12:04
Methoxychlor	< .00005	mg/l			WG492618	08/11/10 12:04
Toxaphene	< .0005	mg/l			WG492618	08/11/10 12:04
Decachlorobiphenyl		% Rec.	86.74	10-122.6	WG492618	08/11/10 12:04
Tetrachloro-m-xylene		% Rec.	79.53	15.3-114.2	WG492618	08/11/10 12:04

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0239	95.5	75-134	WG492583
1,1,1-Trichloroethane	mg/l	.025	0.0237	94.6	67-137	WG492583
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0250	99.9	72-128	WG492583
1,1,2-Trichloroethane	mg/l	.025	0.0241	96.3	79-123	WG492583
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0282	113.	51-149	WG492583
1,1-Dichloroethane	mg/l	.025	0.0275	110.	67-133	WG492583

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Quality Assurance Report
Level II

L472785

August 16, 2010

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1-Dichloroethane	mg/l	.025	0.0271	108.	60-130	WG492583
1,1-Dichloropropene	mg/l	.025	0.0254	102.	68-132	WG492583
1,2,3-Trichlorobenzene	mg/l	.025	0.0241	96.5	63-138	WG492583
1,2,3-Trichloropropane	mg/l	.025	0.0252	101.	68-130	WG492583
1,2,3-Trimethylbenzene	mg/l	.025	0.0256	102.	70-127	WG492583
1,2,4-Trichlorobenzene	mg/l	.025	0.0245	98.0	65-137	WG492583
1,2,4-Trimethylbenzene	mg/l	.025	0.0249	99.8	72-135	WG492583
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0224	89.6	55-134	WG492583
1,2-Dibromoethane	mg/l	.025	0.0239	95.6	75-126	WG492583
1,2-Dichlorobenzene	mg/l	.025	0.0242	96.7	75-122	WG492583
1,2-Dichloroethane	mg/l	.025	0.0257	103.	63-137	WG492583
1,2-Dichloropropane	mg/l	.025	0.0259	103.	74-122	WG492583
1,3,5-Trimethylbenzene	mg/l	.025	0.0257	103.	73-134	WG492583
1,3-Dichlorobenzene	mg/l	.025	0.0243	97.3	73-131	WG492583
1,3-Dichloropropane	mg/l	.025	0.0242	96.7	77-119	WG492583
1,4-Dichlorobenzene	mg/l	.025	0.0246	98.5	70-121	WG492583
2,2-Dichloropropane	mg/l	.025	0.0234	93.7	46-151	WG492583
2-Butanone (MEK)	mg/l	.125	0.113	90.2	53-132	WG492583
2-Chloroethyl vinyl ether	mg/l	.125	0.101	81.0	0-171	WG492583
2-Chlorotoluene	mg/l	.025	0.0249	99.7	74-128	WG492583
4-Chlorotoluene	mg/l	.025	0.0250	99.8	74-130	WG492583
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.127	101.	60-142	WG492583
Acetone	mg/l	.125	0.140	112.	40-134	WG492583
Acrolein	mg/l	.125	0.142	114.	6-182	WG492583
Acrylonitrile	mg/l	.125	0.126	101.	60-140	WG492583
Benzene	mg/l	.025	0.0258	103.	67-126	WG492583
Bromobenzene	mg/l	.025	0.0253	101.	76-123	WG492583
Bromodichloromethane	mg/l	.025	0.0264	106.	68-133	WG492583
Bromoform	mg/l	.025	0.0246	98.4	60-139	WG492583
Bromomethane	mg/l	.025	0.0246	98.6	45-175	WG492583
Carbon tetrachloride	mg/l	.025	0.0233	93.4	64-141	WG492583
Chlorobenzene	mg/l	.025	0.0246	98.5	77-125	WG492583
Chlorodibromomethane	mg/l	.025	0.0235	94.0	73-138	WG492583
Chloroethane	mg/l	.025	0.0311	125.	49-155	WG492583
Chloroform	mg/l	.025	0.0249	99.5	66-126	WG492583
Chloromethane	mg/l	.025	0.0255	102.	45-152	WG492583
cis-1,2-Dichloroethene	mg/l	.025	0.0237	94.9	72-128	WG492583
cis-1,3-Dichloropropene	mg/l	.025	0.0269	108.	73-131	WG492583
Di-isopropyl ether	mg/l	.025	0.0303	121.	63-139	WG492583
Dibromomethane	mg/l	.025	0.0259	104.	73-125	WG492583
Dichlorodifluoromethane	mg/l	.025	0.0281	112.	39-189	WG492583
Ethylbenzene	mg/l	.025	0.0244	97.6	76-129	WG492583
Hexachloro-1,3-butadiene	mg/l	.025	0.0267	107.	67-135	WG492583
Isopropylbenzene	mg/l	.025	0.0253	101.	73-132	WG492583
Methyl tert-butyl ether	mg/l	.025	0.0300	120.	51-142	WG492583
Methylene Chloride	mg/l	.025	0.0285	114.	64-125	WG492583
n-Butylbenzene	mg/l	.025	0.0271	109.	63-142	WG492583
n-Propylbenzene	mg/l	.025	0.0243	97.4	71-132	WG492583
Naphthalene	mg/l	.025	0.0217	86.9	56-145	WG492583
p-Isopropyltoluene	mg/l	.025	0.0250	100.	69-138	WG492583
sec-Butylbenzene	mg/l	.025	0.0249	99.5	70-135	WG492583
Styrene	mg/l	.025	0.0248	99.3	78-130	WG492583
tert-Butylbenzene	mg/l	.025	0.0242	97.0	72-134	WG492583
Tetrachloroethene	mg/l	.025	0.0245	97.9	67-135	WG492583
Toluene	mg/l	.025	0.0254	102.	72-122	WG492583
trans-1,2-Dichloroethene	mg/l	.025	0.0281	112.	67-129	WG492583
trans-1,3-Dichloropropene	mg/l	.025	0.0268	107.	66-137	WG492583
Trichloroethene	mg/l	.025	0.0252	101.	74-126	WG492583
Trichlorofluoromethane	mg/l	.025	0.0264	106.	54-156	WG492583

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Quality Assurance Report
Level II

L472785

August 16, 2010

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Vinyl chloride	mg/l	.025	0.0270	108.	55-153	WG492583
Xylenes, Total	mg/l	.075	0.0724	96.6	75-128	WG492583
4-Bromofluorobenzene				103.8	75-128	WG492583
Dibromofluoromethane				91.99	79-125	WG492583
Toluene-d8				102.9	87-114	WG492583
2,4,5-T	mg/l	.005	0.00444	88.8	30-136	WG492927
2,4,5-TP (Silvex)	mg/l	.005	0.00485	97.1	33-134	WG492927
2,4-D	mg/l	.005	0.00434	86.8	24-127	WG492927
2,4-DB	mg/l	.005	0.00447	89.3	22-198	WG492927
Dalapon	mg/l	.005	0.00306	61.3	14-121	WG492927
Dicamba	mg/l	.005	0.00475	95.0	31-135	WG492927
Dichloroprop	mg/l	.005	0.00442	88.5	30-122	WG492927
Dinoseb	mg/l	.005	0.00352	70.4	28-183	WG492927
MCPA	mg/l	.5	0.368	73.6	32-153	WG492927
MCPP	mg/l	.5	0.710	142.*	42-133	WG492927
2,4-Dichlorophenyl Acetic Acid				88.52	42-112	WG492927
4,4-DDD	mg/l	.0002	0.000178	88.8	37-142	WG492618
4,4-DDE	mg/l	.0002	0.000170	84.8	33-124	WG492618
4,4-DDT	mg/l	.0002	0.000170	85.3	32-143	WG492618
Aldrin	mg/l	.0002	0.000156	78.1	25-115	WG492618
Alpha BHC	mg/l	.0002	0.000164	82.0	38-119	WG492618
Beta BHC	mg/l	.0002	0.000169	84.7	42-126	WG492618
Delta BHC	mg/l	.0002	0.000165	82.4	24-141	WG492618
Dieldrin	mg/l	.0002	0.000180	90.2	37-130	WG492618
Endosulfan I	mg/l	.0002	0.000185	92.5	37-125	WG492618
Endosulfan II	mg/l	.0002	0.000185	92.7	38-131	WG492618
Endosulfan sulfate	mg/l	.0002	0.000175	87.3	38-131	WG492618
Endrin	mg/l	.0002	0.000173	86.7	37-126	WG492618
Endrin aldehyde	mg/l	.0002	0.000138	69.0	24-154	WG492618
Endrin ketone	mg/l	.0002	0.000175	87.5	37-139	WG492618
Gamma BHC	mg/l	.0002	0.000166	83.1	35-114	WG492618
Heptachlor	mg/l	.0002	0.000163	81.7	21-123	WG492618
Heptachlor epoxide	mg/l	.0002	0.000178	89.0	38-121	WG492618
Hexachlorobenzene	mg/l	.0002	0.000157	78.6	28-115	WG492618
Methoxychlor	mg/l	.0002	0.000176	88.2	55-150	WG492618
Decachlorobiphenyl				87.65	10-122.6	WG492618
Tetrachloro-m-xylene				79.04	15.3-114.2	WG492618

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0245	0.0239	98.0	75-134	2.46	20	WG492583
1,1,1-Trichloroethane	mg/l	0.0241	0.0237	96.0	67-137	1.79	20	WG492583
1,1,2,2-Tetrachloroethane	mg/l	0.0255	0.0250	102.	72-128	2.15	20	WG492583
1,1,2-Trichloroethane	mg/l	0.0250	0.0241	100.	79-123	3.72	20	WG492583
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0281	0.0282	112.	51-149	0.380	20	WG492583
1,1-Dichloroethane	mg/l	0.0313	0.0275	125.	67-133	12.9	20	WG492583
1,1-Dichloroethene	mg/l	0.0269	0.0271	107.	60-130	0.820	20	WG492583
1,1-Dichloropropene	mg/l	0.0258	0.0254	103.	68-132	1.32	20	WG492583
1,2,3-Trichlorobenzene	mg/l	0.0235	0.0241	94.0	63-138	2.47	20	WG492583
1,2,3-Trichloropropane	mg/l	0.0260	0.0252	104.	68-130	3.11	20	WG492583
1,2,3-Trimethylbenzene	mg/l	0.0234	0.0256	93.0	70-127	9.17	20	WG492583
1,2,4-Trichlorobenzene	mg/l	0.0226	0.0245	90.0	65-137	8.10	20	WG492583
1,2,4-Trimethylbenzene	mg/l	0.0249	0.0249	99.0	72-135	0.350	20	WG492583
1,2-Dibromo-3-Chloropropane	mg/l	0.0213	0.0224	85.0	55-134	5.12	20	WG492583

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Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
1,2-Dibromoethane	mg/l	0.0240	0.0239	96.0	75-126	0.390	20	WG492583
1,2-Dichlorobenzene	mg/l	0.0239	0.0242	96.0	75-122	1.20	20	WG492583
1,2-Dichloroethane	mg/l	0.0265	0.0257	106.	63-137	3.04	20	WG492583
1,2-Dichloropropane	mg/l	0.0275	0.0259	110.	74-122	6.28	20	WG492583
1,3,5-Trimethylbenzene	mg/l	0.0253	0.0257	101.	73-134	1.71	20	WG492583
1,3-Dichlorobenzene	mg/l	0.0246	0.0243	98.0	73-131	0.930	20	WG492583
1,3-Dichloropropane	mg/l	0.0250	0.0242	100.	77-119	3.14	20	WG492583
1,4-Dichlorobenzene	mg/l	0.0250	0.0246	100.	70-121	1.39	20	WG492583
2,2-Dichloropropane	mg/l	0.0241	0.0234	96.0	46-151	3.01	20	WG492583
2-Butanone (MEK)	mg/l	0.116	0.113	93.0	53-132	2.99	20	WG492583
2-Chloroethyl vinyl ether	mg/l	0.101	0.101	81.0	0-171	0.0300	27	WG492583
2-Chlorotoluene	mg/l	0.0249	0.0249	100.	74-128	0.0500	20	WG492583
4-Chlorotoluene	mg/l	0.0246	0.0250	98.0	74-130	1.41	20	WG492583
4-Methyl-2-pentanone (MIBK)	mg/l	0.130	0.127	104.	60-142	2.58	20	WG492583
Acetone	mg/l	0.145	0.140	116.	48-134	3.73	20	WG492583
Acrolein	mg/l	0.145	0.142	116.	6-182	2.00	39	WG492583
Acrylonitrile	mg/l	0.143	0.126	114.	60-140	12.7	20	WG492583
Benzene	mg/l	0.0264	0.0258	106.	67-126	2.29	20	WG492583
Bromobenzene	mg/l	0.0252	0.0253	101.	76-123	0.540	20	WG492583
Bromodichloromethane	mg/l	0.0276	0.0264	110.	68-133	4.49	20	WG492583
Bromoform	mg/l	0.0250	0.0246	100.	60-139	1.73	20	WG492583
Bromomethane	mg/l	0.0269	0.0246	107.	45-175	8.59	20	WG492583
Carbon tetrachloride	mg/l	0.0242	0.0233	97.0	64-141	3.43	20	WG492583
Chlorobenzene	mg/l	0.0243	0.0246	97.0	77-125	1.40	20	WG492583
Chlorodibromomethane	mg/l	0.0242	0.0235	97.0	73-138	2.87	20	WG492583
Chloroethane	mg/l	0.0308	0.0311	123.	49-155	1.12	20	WG492583
Chloroform	mg/l	0.0256	0.0249	102.	66-126	2.98	20	WG492583
Chloromethane	mg/l	0.0246	0.0255	98.0	45-152	3.67	20	WG492583
cis-1,2-Dichloroethene	mg/l	0.0238	0.0237	95.0	72-128	0.470	20	WG492583
cis-1,3-Dichloropropene	mg/l	0.0279	0.0269	111.	73-131	3.32	20	WG492583
Di-isopropyl ether	mg/l	0.0296	0.0303	118.	63-139	2.56	20	WG492583
Dibromomethane	mg/l	0.0261	0.0259	104.	73-125	0.680	20	WG492583
Dichlorodifluoromethane	mg/l	0.0282	0.0281	113.	39-189	0.470	24	WG492583
Ethylbenzene	mg/l	0.0235	0.0244	94.0	76-129	3.70	20	WG492583
Hexachloro-1,3-butadiene	mg/l	0.0255	0.0267	102.	67-135	4.32	20	WG492583
Isopropylbenzene	mg/l	0.0242	0.0253	97.0	73-132	4.35	20	WG492583
Methyl tert-butyl ether	mg/l	0.0312	0.0300	125.	51-142	4.14	20	WG492583
Methylene Chloride	mg/l	0.0292	0.0285	117.	64-125	2.45	20	WG492583
n-Butylbenzene	mg/l	0.0251	0.0271	100.	63-142	7.81	20	WG492583
n-Propylbenzene	mg/l	0.0246	0.0243	98.0	71-132	1.15	20	WG492583
Naphthalene	mg/l	0.0246	0.0217	98.0	56-145	12.3	20	WG492583
p-Isopropyltoluene	mg/l	0.0241	0.0250	96.0	68-138	3.79	20	WG492583
sec-Butylbenzene	mg/l	0.0244	0.0249	97.0	70-135	2.10	20	WG492583
Styrene	mg/l	0.0247	0.0248	99.0	78-130	0.560	20	WG492583
tert-Butylbenzene	mg/l	0.0238	0.0242	95.0	72-134	1.83	20	WG492583
Tetrachloroethene	mg/l	0.0245	0.0245	98.0	67-135	0.320	20	WG492583
Toluene	mg/l	0.0263	0.0254	105.	72-122	3.58	20	WG492583
trans-1,2-Dichloroethene	mg/l	0.0289	0.0281	116.	67-129	2.87	20	WG492583
trans-1,3-Dichloropropene	mg/l	0.0277	0.0268	111.	66-137	3.27	20	WG492583
Trichloroethene	mg/l	0.0259	0.0252	104.	74-126	2.56	20	WG492583
Trichlorofluoromethane	mg/l	0.0275	0.0264	110.	54-156	4.04	20	WG492583
Vinyl chloride	mg/l	0.0272	0.0270	109.	55-153	0.600	20	WG492583
Xylenes, Total	mg/l	0.0713	0.0724	95.0	75-128	1.66	20	WG492583
4-Bromofluorobenzene				100.1	75-128			WG492583
Dibromofluoromethane				90.39	79-125			WG492583
Toluene-d8				105.4	87-114			WG492583
2,4,5-T	mg/l	0.00507	0.00444	101.	30-136	13.1	31	WG492927

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Est. 1970

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L472785

August 16, 2010

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
2,4,5-TP (Silvex)	mg/l	0.00529	0.00485	106.	33-134	8.56	30	WG492927
2,4-D	mg/l	0.00468	0.00434	94.0	24-127	7.44	27	WG492927
2,4-DB	mg/l	0.00623	0.00447	124.	22-198	32.9	33	WG492927
Dalapon	mg/l	0.00377	0.00306	75.0	14-121	20.8	31	WG492927
Dicamba	mg/l	0.00539	0.00475	108.	31-135	12.5	25	WG492927
Dichloroprop	mg/l	0.00579	0.00442	116.	30-122	26.8*	26	WG492927
Dinoseb	mg/l	0.00432	0.00352	86.0	28-183	20.4	38	WG492927
MCPA	mg/l	0.409	0.368	82.0	32-153	10.4	31	WG492927
MCPP	mg/l	0.726	0.710	145*	42-133	2.25	29	WG492927
2,4-Dichlorophenyl Acetic Acid				96.64	42-112			WG492927
4,4-DDD	mg/l	0.000191	0.000178	96.0	37-142	7.43	39	WG492618
4,4-DDE	mg/l	0.000183	0.000170	91.0	33-124	7.45	37	WG492618
4,4-DDT	mg/l	0.000184	0.000170	92.0	32-143	7.85	42	WG492618
Aldrin	mg/l	0.000167	0.000156	83.0	25-115	6.34	45	WG492618
Alpha BHC	mg/l	0.000174	0.000164	87.0	38-119	5.85	30	WG492618
Beta BHC	mg/l	0.000182	0.000169	91.0	42-126	6.89	31	WG492618
Delta BHC	mg/l	0.000185	0.000165	92.0	24-141	11.3	41	WG492618
Dieldrin	mg/l	0.000195	0.000180	98.0	37-130	7.78	36	WG492618
Endosulfan I	mg/l	0.000200	0.000185	100.	37-125	7.62	35	WG492618
Endosulfan II	mg/l	0.000200	0.000185	100.	38-131	7.80	36	WG492618
Endosulfan sulfate	mg/l	0.000193	0.000175	96.0	38-131	10.1	37	WG492618
Endrin	mg/l	0.000188	0.000173	94.0	37-126	7.92	37	WG492618
Endrin aldehyde	mg/l	0.000149	0.000138	74.0	24-154	7.51	36	WG492618
Endrin ketone	mg/l	0.000190	0.000175	95.0	37-139	8.43	36	WG492618
Gamma BHC	mg/l	0.000177	0.000166	88.0	35-114	6.20	30	WG492618
Heptachlor	mg/l	0.000174	0.000163	87.0	21-123	6.32	38	WG492618
Heptachlor epoxide	mg/l	0.000192	0.000178	96.0	38-121	7.58	33	WG492618
Hexachlorobenzene	mg/l	0.000166	0.000157	83.0	28-115	5.74	29	WG492618
Methoxychlor	mg/l	0.000190	0.000176	95.0	55-150	7.43	40	WG492618
Decachlorobiphenyl				91.87	10-122.6			WG492618
Tetrachloro-m-xylene				82.29	15.3-114.2			WG492618

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0206	0	.025	82.4	45-152	L472747-09	WG492583
1,1,1-Trichloroethane	mg/l	0.0187	0	.025	74.8	31-161	L472747-09	WG492583
1,1,2,2-Tetrachloroethane	mg/l	0.0225	0	.025	90.1	49-149	L472747-09	WG492583
1,1,2-Trichloroethane	mg/l	0.0216	0	.025	86.4	46-145	L472747-09	WG492583
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0181	0	.025	72.3	14-168	L472747-09	WG492583
1,1-Dichloroethane	mg/l	0.0212	0	.025	84.6	30-159	L472747-09	WG492583
1,1-Dichloroethene	mg/l	0.0170	0	.025	67.8	10-162	L472747-09	WG492583
1,1-Dichloropropene	mg/l	0.0194	0	.025	77.4	14-162	L472747-09	WG492583
1,2,3-Trichlorobenzene	mg/l	0.0212	0	.025	84.6	32-143	L472747-09	WG492583
1,2,3-Trichloropropane	mg/l	0.0224	0	.025	89.7	48-148	L472747-09	WG492583
1,2,3-Trimethylbenzene	mg/l	0.0210	0	.025	83.9	36-141	L472747-09	WG492583
1,2,4-Trichlorobenzene	mg/l	0.0190	0	.025	76.1	27-142	L472747-09	WG492583
1,2,4-Trimethylbenzene	mg/l	0.0208	0	.025	83.2	29-153	L472747-09	WG492583
1,2-Dibromo-3-Chloropropane	mg/l	0.0205	0	.025	81.8	37-148	L472747-09	WG492583
1,2-Dibromoethane	mg/l	0.0199	0	.025	79.7	41-149	L472747-09	WG492583
1,2-Dichlorobenzene	mg/l	0.0214	0	.025	85.5	40-139	L472747-09	WG492583
1,2-Dichloroethane	mg/l	0.0215	0	.025	86.0	29-167	L472747-09	WG492583
1,2-Dichloropropane	mg/l	0.0217	0	.025	86.8	39-148	L472747-09	WG492583
1,3,5-Trimethylbenzene	mg/l	0.0206	0	.025	82.5	33-149	L472747-09	WG492583
1,3-Dichlorobenzene	mg/l	0.0213	0	.025	85.3	32-148	L472747-09	WG492583
1,3-Dichloropropane	mg/l	0.0210	0	.025	84.2	44-142	L472747-09	WG492583
1,4-Dichlorobenzene	mg/l	0.0205	0	.025	82.1	32-136	L472747-09	WG492583

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Quality Assurance Report
Level II

L472785

August 16, 2010

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
2,2-Dichloropropane	mg/l	0.0184	0	.025	73.5	14-158	L472747-09	WG492583
2-Butanone (MEK)	mg/l	0.0990	0	.125	79.2	32-151	L472747-09	WG492583
2-Chloroethyl vinyl ether	mg/l	0.0815	0	.125	65.2	0-175	L472747-09	WG492583
2-Chlorotoluene	mg/l	0.0201	0	.025	80.4	35-147	L472747-09	WG492583
4-Chlorotoluene	mg/l	0.0201	0	.025	80.4	33-147	L472747-09	WG492583
4-Methyl-2-pentanone (MIBK)	mg/l	0.108	0	.125	86.7	40-160	L472747-09	WG492583
Acetone	mg/l	0.114	0	.125	91.6	25-157	L472747-09	WG492583
Acrolein	mg/l	0.0711	0	.125	56.9	0-179	L472747-09	WG492583
Acrylonitrile	mg/l	0.107	0	.125	85.8	37-162	L472747-09	WG492583
Benzene	mg/l	0.0204	0	.025	81.4	16-158	L472747-09	WG492583
Bromobenzene	mg/l	0.0219	0	.025	87.7	37-147	L472747-09	WG492583
Bromodichloromethane	mg/l	0.0232	0	.025	92.7	45-147	L472747-09	WG492583
Bromoform	mg/l	0.0218	0	.025	87.3	38-152	L472747-09	WG492583
Bromomethane	mg/l	0.0188	0	.025	75.3	0-191	L472747-09	WG492583
Carbon tetrachloride	mg/l	0.0176	0	.025	70.6	22-166	L472747-09	WG492583
Chlorobenzene	mg/l	0.0201	0	.025	80.4	33-148	L472747-09	WG492583
Chlorodibromomethane	mg/l	0.0212	0	.025	84.6	48-151	L472747-09	WG492583
Chloroethane	mg/l	0.0232	0	.025	92.7	4-176	L472747-09	WG492583
Chloroform	mg/l	0.0200	0	.025	79.8	37-147	L472747-09	WG492583
Chloromethane	mg/l	0.0172	0	.025	68.6	10-174	L472747-09	WG492583
cis-1,2-Dichloroethene	mg/l	0.0189	0	.025	75.7	29-156	L472747-09	WG492583
cis-1,3-Dichloropropene	mg/l	0.0228	0	.025	91.1	35-148	L472747-09	WG492583
Di-isopropyl ether	mg/l	0.0240	0	.025	96.0	39-160	L472747-09	WG492583
Dibromomethane	mg/l	0.0210	0	.025	83.8	36-152	L472747-09	WG492583
Dichlorodifluoromethane	mg/l	0.0201	0	.025	80.4	0-200	L472747-09	WG492583
Ethylbenzene	mg/l	0.0197	0	.025	78.8	29-150	L472747-09	WG492583
Hexachloro-1,3-butadiene	mg/l	0.0227	0	.025	90.7	28-144	L472747-09	WG492583
Isopropylbenzene	mg/l	0.0186	0	.025	74.2	35-147	L472747-09	WG492583
Methyl tert-butyl ether	mg/l	0.0240	0	.025	96.0	24-167	L472747-09	WG492583
Methylene Chloride	mg/l	0.0213	0	.025	85.3	23-151	L472747-09	WG492583
n-Butylbenzene	mg/l	0.0215	0	.025	86.0	22-151	L472747-09	WG492583
n-Propylbenzene	mg/l	0.0204	0	.025	81.4	26-150	L472747-09	WG492583
Naphthalene	mg/l	0.0190	0	.025	76.1	24-160	L472747-09	WG492583
p-Isopropyltoluene	mg/l	0.0199	0	.025	79.6	28-151	L472747-09	WG492583
sec-Butylbenzene	mg/l	0.0212	0	.025	84.6	32-149	L472747-09	WG492583
Styrene	mg/l	0.0249	0	.025	99.4	38-149	L472747-09	WG492583
tert-Butylbenzene	mg/l	0.0193	0	.025	77.3	36-149	L472747-09	WG492583
Tetrachloroethene	mg/l	0.0855	0.0670	.025	74.2	13-157	L472747-09	WG492583
Toluene	mg/l	0.0214	0	.025	85.4	22-152	L472747-09	WG492583
trans-1,2-Dichloroethene	mg/l	0.0206	0	.025	82.3	11-160	L472747-09	WG492583
trans-1,3-Dichloropropene	mg/l	0.0233	0	.025	93.1	33-153	L472747-09	WG492583
Trichloroethene	mg/l	0.0221	0.00210	.025	80.1	18-163	L472747-09	WG492583
Trichlorofluoromethane	mg/l	0.0208	0	.025	83.4	10-177	L472747-09	WG492583
Vinyl chloride	mg/l	0.0195	0	.025	77.8	0-179	L472747-09	WG492583
Xylenes, Total	mg/l	0.0601	0	.075	80.1	27-151	L472747-09	WG492583
4-Bromofluorobenzene					97.57	75-128		WG492583
Dibromofluoromethane					92.20	79-125		WG492583
Toluene-d8					101.1	87-114		WG492583

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0222	0.0206	88.9	45-152	7.63	21	L472747-09	WG492583
1,1,1-Trichloroethane	mg/l	0.0206	0.0187	82.6	31-161	9.83	23	L472747-09	WG492583
1,1,2,2-Tetrachloroethane	mg/l	0.0252	0.0225	101.	49-149	11.2	22	L472747-09	WG492583
1,1,2-Trichloroethane	mg/l	0.0238	0.0216	95.1	46-145	9.64	20	L472747-09	WG492583
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0194	0.0181	77.4	14-168	6.82	24	L472747-09	WG492583
1,1-Dichloroethane	mg/l	0.0239	0.0212	95.7	30-159	12.3	21	L472747-09	WG492583
1,1-Dichloroethene	mg/l	0.0182	0.0170	72.9	10-162	7.17	23	L472747-09	WG492583

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Quality Assurance Report
Level II

L472785

August 16, 2010

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1-Dichloropropene	mg/l	0.0212	0.0194	84.7	14-162	8.96	23	L472747-09	WG492583
1,2,3-Trichlorobenzene	mg/l	0.0226	0.0212	90.5	32-143	6.71	33	L472747-09	WG492583
1,2,3-Trichloropropane	mg/l	0.0259	0.0224	104.	48-148	14.4	23	L472747-09	WG492583
1,2,3-Trimethylbenzene	mg/l	0.0230	0.0210	91.8	36-141	8.97	25	L472747-09	WG492583
1,2,4-Trichlorobenzene	mg/l	0.0219	0.0190	87.7	27-142	14.2	30	L472747-09	WG492583
1,2,4-Trimethylbenzene	mg/l	0.0217	0.0208	86.6	29-153	4.09	27	L472747-09	WG492583
1,2-Dibromo-3-Chloropropane	mg/l	0.0232	0.0205	92.8	37-148	12.6	27	L472747-09	WG492583
1,2-Dibromoethane	mg/l	0.0229	0.0199	91.5	41-149	13.8	21	L472747-09	WG492583
1,2-Dichlorobenzene	mg/l	0.0234	0.0214	93.6	40-139	9.07	23	L472747-09	WG492583
1,2-Dichloroethane	mg/l	0.0234	0.0215	93.7	29-167	8.48	21	L472747-09	WG492583
1,2-Dichloropropane	mg/l	0.0250	0.0217	99.8	39-148	14.0	20	L472747-09	WG492583
1,3,5-Trimethylbenzene	mg/l	0.0222	0.0206	89.0	33-149	7.53	26	L472747-09	WG492583
1,3-Dichlorobenzene	mg/l	0.0228	0.0213	91.2	32-148	6.71	24	L472747-09	WG492583
1,3-Dichloropropane	mg/l	0.0228	0.0210	91.0	44-142	7.81	20	L472747-09	WG492583
1,4-Dichlorobenzene	mg/l	0.0220	0.0205	88.0	32-136	6.86	23	L472747-09	WG492583
2,2-Dichloropropane	mg/l	0.0200	0.0184	79.8	14-158	8.26	23	L472747-09	WG492583
2-Butanone (MEK)	mg/l	0.114	0.0990	91.0	32-151	13.9	26	L472747-09	WG492583
2-Chloroethyl vinyl ether	mg/l	0.0946	0.0815	75.6	0-175	14.8	75	L472747-09	WG492583
2-Chlorotoluene	mg/l	0.0222	0.0201	88.7	35-147	9.77	24	L472747-09	WG492583
4-Chlorotoluene	mg/l	0.0222	0.0201	88.9	33-147	10.1	25	L472747-09	WG492583
4-Methyl-2-pentanone (MIBK)	mg/l	0.128	0.108	102.	40-160	16.7	28	L472747-09	WG492583
Acetone	mg/l	0.133	0.114	106.	25-157	14.8	26	L472747-09	WG492583
Acrolein	mg/l	0.0828	0.0711	66.3	0-179	15.3	39	L472747-09	WG492583
Acrylonitrile	mg/l	0.122	0.107	97.8	37-162	13.2	24	L472747-09	WG492583
Benzene	mg/l	0.0216	0.0204	86.5	16-158	6.09	21	L472747-09	WG492583
Bromobenzene	mg/l	0.0222	0.0219	88.8	37-147	1.28	23	L472747-09	WG492583
Bromodichloromethane	mg/l	0.0269	0.0232	108.	45-147	15.0	20	L472747-09	WG492583
Bromoform	mg/l	0.0247	0.0218	98.7	38-152	12.3	20	L472747-09	WG492583
Bromomethane	mg/l	0.0205	0.0188	81.8	0-191	8.32	35	L472747-09	WG492583
Carbon tetrachloride	mg/l	0.0190	0.0176	76.1	22-168	7.51	24	L472747-09	WG492583
Chlorobenzene	mg/l	0.0214	0.0201	85.7	33-148	6.42	22	L472747-09	WG492583
Chlorodibromomethane	mg/l	0.0235	0.0212	94.0	48-151	10.5	21	L472747-09	WG492583
Chloroethane	mg/l	0.0245	0.0232	97.9	4-176	5.37	27	L472747-09	WG492583
Chloroform	mg/l	0.0223	0.0200	89.0	37-147	10.9	21	L472747-09	WG492583
Chloromethane	mg/l	0.0177	0.0172	71.0	10-174	3.34	28	L472747-09	WG492583
cis-1,2-Dichloroethene	mg/l	0.0206	0.0189	82.4	29-156	8.48	22	L472747-09	WG492583
cis-1,3-Dichloropropene	mg/l	0.0262	0.0228	105.	35-148	14.1	21	L472747-09	WG492583
Di-isopropyl ether	mg/l	0.0258	0.0240	103.	39-160	7.27	21	L472747-09	WG492583
Dibromomethane	mg/l	0.0241	0.0210	96.6	36-152	14.1	20	L472747-09	WG492583
Dichlorodifluoromethane	mg/l	0.0221	0.0201	88.4	0-200	9.43	26	L472747-09	WG492583
Ethylbenzene	mg/l	0.0211	0.0197	84.4	29-150	6.87	24	L472747-09	WG492583
Hexachloro-1,3-butadiene	mg/l	0.0266	0.0227	106.	28-144	16.1	33	L472747-09	WG492583
Isopropylbenzene	mg/l	0.0193	0.0186	77.2	35-147	3.92	25	L472747-09	WG492583
Methyl tert-butyl ether	mg/l	0.0263	0.0240	105.	24-167	9.01	22	L472747-09	WG492583
Methylene Chloride	mg/l	0.0236	0.0213	94.4	23-151	10.1	21	L472747-09	WG492583
n-Butylbenzene	mg/l	0.0237	0.0215	94.7	22-151	9.66	29	L472747-09	WG492583
n-Propylbenzene	mg/l	0.0210	0.0204	83.9	26-150	2.95	25	L472747-09	WG492583
Naphthalene	mg/l	0.0228	0.0190	91.2	24-160	18.0	37	L472747-09	WG492583
p-Isopropyltoluene	mg/l	0.0203	0.0199	81.0	28-151	1.68	27	L472747-09	WG492583
sec-Butylbenzene	mg/l	0.0216	0.0212	86.5	32-149	2.17	26	L472747-09	WG492583
Styrene	mg/l	0.0260	0.0249	104.	38-149	4.39	23	L472747-09	WG492583
tert-Butylbenzene	mg/l	0.0207	0.0193	82.9	36-149	7.00	26	L472747-09	WG492583
Tetrachloroethene	mg/l	0.0860	0.0855	83.9	13-157	2.80	24	L472747-09	WG492583
Toluene	mg/l	0.0231	0.0214	92.3	22-152	7.75	32	L472747-09	WG492583
trans-1,2-Dichloroethene	mg/l	0.0225	0.0206	90.0	11-160	8.98	23	L472747-09	WG492583
trans-1,3-Dichloropropene	mg/l	0.0266	0.0233	106.	33-153	13.4	22	L472747-09	WG492583
Trichloroethene	mg/l	0.0240	0.0221	87.6	18-163	8.19	21	L472747-09	WG492583
Trichlorofluoromethane	mg/l	0.0224	0.0208	89.7	10-177	7.38	24	L472747-09	WG492583
Vinyl chloride	mg/l	0.0204	0.0195	81.7	0-179	4.85	26	L472747-09	WG492583

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report
Level II

L472785

August 16, 2010

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Xylenes, Total	mg/l	0.0630	0.0601	84.0	27-151	4.80	23	L472747-09	WG492583
4-Bromofluorobenzene				102.4	75-128				WG492583
Dibromofluoromethane				92.6*	79-125				WG492583
Toluene-d8				105.8	87-114				WG492583

Batch number /Run number / Sample number cross reference

WG492583: R1322008: L472785-01
WG492618: R1326868: L472785-01
WG492927: R1327028: L472785-01

* ' Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Farmington, NM 87401

Quality Assurance Report
Level II

L472785

August 16, 2010

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Company Name/Address:
EnviroTech- NM

5796 US. Highway 64
Farmington.NM 87401

Alternate billing information:

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859
A170

Report to: Lynn Berry | Email to: lberry@envirotech-inc.com

Project Description: Key Energy | City/State Collected: NM

Phone: (505) 632-0615 | Client Project #: 98065-0013 | ESC Key:

FAX:

Collected by: N. Allen | Site/Facility ID#: | P.O.#: 15573

Collected by (signature):
Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%
___ Three Day.....25%

Date Results Needed:
Email? __No ✓Yes
FAX? ✓No __Yes

No. of Cntrs

CoCode: ENVIROFNM (lab use only)
Template/Prelogin:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Remarks/Contaminant	Sample # (lab only)
55453 - Inj Water		OT		8/4/10	14:00	2-1L Amber 2-VOAs	Please include QA/QC	477785-01

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Aqueous

pH _____ Temp _____

Remarks: 9669 7460 0229

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐	Condition: OK (lab use only)
Jorge Thompson	8/5/10	11:30			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6 °C	Bottles Received: 4
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 08/06/10	Time: 0820

CoC Seals Intact: Y___ N___ NA ✓
pH Checked: NCF:

2010 Third Quarter Chemical Analysis for UIC-5 Key Energy Injection Well

µRC-5
3 APPLY

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	03-01-11
Chain of Custody:	10492	Date Sampled:	10-07-10
Laboratory Number:	56117	Date Received:	10-07-10
Sample Matrix:	Aqueous	Date Analyzed:	10-15-10
Preservative:		Analysis Requested:	8260 VOC
Condition:	Cool and Intact		

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	460	(ug/L)	1.0	1
Toluene	1,890	(ug/L)	1.0	1
Ethylbenzene	210	(ug/L)	1.0	1
Xylenes, Total	1,690	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	67.2	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	280	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	291	(ug/L)	1.0	1
1-Methylnaphthalene	82.1	(ug/L)	2.0	1
2-Methylnaphthalene	66.1	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client: Key Energy
Sample ID: Inj. Water
Laboratory Number: 56117

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	24.4	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	3.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	4.91	(ug/L)	1.0	1
sec-Butylbenzene	171	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	89.3	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	87.1	% Recovery	74.6-123	1
Toluene-d8	113	% Recovery	84.2-115	1
4-Bromofluorobenzene	98.3	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **Key Farmington UIC-5-INJ Water.**

Analyst

Review

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	8260 Blank 10/15	Date Reported:	03-01-11
Laboratory Number:	1015VBLK	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-15-10
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/L)	1.0	1
Toluene	ND	(ug/L)	1.0	1
Ethylbenzene	ND	(ug/L)	1.0	1
Xylenes, Total	ND	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	ND	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	ND	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	ND	(ug/L)	1.0	1
1-Methylnaphthalene	ND	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: 8260 Blank 10/15
Laboratory Number: 1015VBLK

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	ND	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	1.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	ND	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	82.3	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	84.1	% Recovery	74.6-123	1
Toluene-d8	87.5	% Recovery	84.2-115	1
4-Bromofluorobenzene	90.5	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 56117**

Analyst

Review

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Daily Calibration	Date Reported:	03-01-11
Laboratory Number:	1015V	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-15-10
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
Benzene	100	100	100	80 - 120
Toluene	100	100	100	80 - 120
Ethylbenzene	100	100	100	80 - 120
Xylenes, Total	300	300	100	80 - 120
Methyl tert-butyl ether (MTBE)	100	100	100	80 - 120
1,2,4-Trimethylbenzene	100	100	100	80 - 120
1,3,5-Trimethylbenzene	100	100	100	80 - 120
1,2-Dichloroethane (EDC)	100	100	100	80 - 120
1,2-Dibromoethane (EDB)	100	100	100	80 - 120
Naphthalene	100	100	100	80 - 120
1-Methylnaphthalene	100	100	100	80 - 120
2-Methylnaphthalene	100	100	100	80 - 120
Bromobenzene	100	100	100	80 - 120
Bromochloromethane	100	100	100	80 - 120
Bromodichloromethane	100	100	100	80 - 120
Bromoform	100	100	100	80 - 120
Bromomethane	100	100	100	80 - 120
Carbon Tetrachloride	100	100	100	80 - 120
Chlorobenzene	100	100	100	80 - 120
Chloroethane	100	100	100	80 - 120
Chloroform	100	100	100	80 - 120
Chloromethane	100	100	100	80 - 120
2-Chlorotoluene	100	100	100	80 - 120
4-Chlorotoluene	100	100	100	80 - 120
cis-1,2-Dichloroethene	100	100	100	80 - 120
cis-1,3-Dichloropropene	100	100	100	80 - 120
1,2-Dibromo-3-chloropropane	100	100	100	80 - 120
Dibromochloromethane	100	100	100	80 - 120
Dibromoethane	100	100	100	80 - 120
1,2-Dichlorobenzene	100	100	100	80 - 120
1,3-Dichlorobenzene	100	100	100	80 - 120
1,4-Dichlorobenzene	100	100	100	80 - 120
Dichlorodifluoromethane	100	100	100	80 - 120
1,1-Dichloroethane	100	100	100	80 - 120
1,1-Dichloroethene	100	100	100	80 - 120
1,2-Dichloropropane	100	100	100	80 - 120
1,3-Dichloropropane	100	100	100	80 - 120
2,2-Dichloropropane	100	100	100	80 - 120

envirotech
Analytical Laboratory

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: Daily Calibration
Laboratory Number: 1015V

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
1,1-Dichloropropene	100	100	100	80 - 120
Hexachlorobutadiene	100	100	100	80 - 120
Isopropylbenzene	100	100	100	80 - 120
4-Isopropyltoluene	100	100	100	80 - 120
Methylene Chloride	100	100	100	80 - 120
n-Butylbenzene	100	100	100	80 - 120
n-Propylbenzene	100	100	100	80 - 120
sec-Butylbenzene	100	100	100	80 - 120
Styrene	100	100	100	80 - 120
tert-Butylbenzene	100	100	100	80 - 120
Tetrachloroethene (PCE)	100	100	100	80 - 120
1,1,1,2-Tetrachloroethane	100	100	100	80 - 120
1,1,2,2-Tetrachloroethane	100	100	100	80 - 120
trans-1,2-Dichloroethene	100	100	100	80 - 120
trans-1,3-Dichloropropene	100	100	100	80 - 120
Trichloroethene (TCE)	100	100	100	80 - 120
Trichlorofluoromethane	100	100	100	80 - 120
1,2,3-Trichlorobenzene	100	100	100	80 - 120
1,2,4-Trichlorobenzene	100	100	100	80 - 120
1,1,1-Trichloroethane	100	100	100	80 - 120
1,1,2-Trichloroethane	100	100	100	80 - 120
1,2,3-Trichloropropane	100	100	100	80 - 120
Vinyl Chloride	100	100	100	80 - 120

Surrogates:			Rec. Limits
Dibromofluoromethane	100	% Recovery	78.6-115
1,2-Dichloroethane-d4	100	% Recovery	74.6-123
Toluene-d8	100	% Recovery	84.2-115
4-Bromofluorobenzene	100	% Recovery	78.6-115

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 56117**

Analyst

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spikes	Date Reported:	03-01-11
Laboratory Number:	56117vsp	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-15-10
Condition:	N/A	Analysis Requested:	8260 VOC

Spike	Units: ug/L				Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	460	100	562	100%	85.3 - 120	1.0
Toluene	1,190	100	1,300	101%	73.0 - 123	1.0
Chlorobenzene	106	100	196	95.0%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100	115	115%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100	115	115%	76.1 - 126	1.0

Spike Duplicate	Units: ug/L				Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	460	100	555	99.1%	85.3 - 120	1.0
Toluene	1,190	100	1,230	95.4%	73.0 - 123	1.0
Chlorobenzene	106	100	191	92.8%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100	103	103%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100	102	102%	76.1 - 126	1.0

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 56117**

Analyst

Review

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CHAIN OF CUSTODY RECORD

10492

Client:	Project Name / Location:
KEY ENERGY	KEY FARMINGTON Dic-5-INJ WATER
Client Address:	**Sampler Name:** WAYNE PRICE / PRICELLC
5651 HWY 64 87401	
Client Phone No.:	**Client No.:**
1-505-715-2809	98065-0013

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative: $HgCl_2$	HCl	Ice	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals (see DISSOLVED List)	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE	Cl⁻			Sample Cool	Sample Intact
Inj. Water	10-7-16	2:28 P	56117	Soil Sludge Solid Aqueous	6/1L Ambers			✓			X	X	X	X	X	X			X			Y	Y
		2:35 P		Soil Sludge Solid Aqueous	4/40mL VOA			✓			②				②							Y	Y
		2:33 P		Soil Sludge Solid Aqueous	1/500mL			✓				②	②									Y	Y
		2:33 P		Soil Sludge Solid Aqueous	1/250mL			✓				②			②							Y	Y
		2:33 P		Soil Sludge Solid Aqueous	1/125mL		✓	✓				②							②			Y	Y
				Soil Sludge Solid Aqueous								Cu, Fe, Zn, Mn, Al, Ca, Mg, Na, Li											
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	10-7-16	3:00 PM		10/07/16	3:00PM
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

② CROSS-REFERENCE ANALYSIS TO BOTTLES

INJ PUMP DISCHARGE
MA-NA

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UIC-5
3RD QTR

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TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	10-21-10
Laboratory Number:	56117	Date Sampled:	10-07-10
Chain of Custody:	10492	Date Received:	10-07-10
Sample Matrix:	Aqueous	Date Analyzed:	10-13-10
Preservative:	Cool	Date Digested:	10-12-10
Condition:	Intact	Analysis Needed:	Dissolved Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Arsenic	**0.006**	**0.001**
Aluminum	**0.199**	**0.001**
Barium	**6.22**	**0.001**
Cadmium	**ND**	**0.001**
Chromium	**0.078**	**0.001**
Cobalt	**0.022**	**0.001**
Copper	**0.120**	**0.001**
Iron	**40.8**	**0.001**
Lead	**0.294**	**0.001**
Manganese	**1.31**	**0.001**
Mercury	**0.003**	**0.001**
Molybdenum	**0.007**	**0.001**
Nickel	**0.100**	**0.001**
Selenium	**0.061**	**0.001**
Silver	**0.033**	**0.001**
Zinc	**0.211**	**0.001**

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **Key Farmington UIC-5-INJ Water**

Analyst

Review

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TRACE METAL ANALYSIS
Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	10-13-TM QA/QC	Date Reported:	10-21-10
Laboratory Number:	56117	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	Dissolved Metals	Date Analyzed:	10-13-10
Condition:	N/A	Date Digested:	10-11-10

Blank & Duplicate Conc. (mg/L)	Instrument Blank (mg/L)	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.001	0.006	0.005	25.4%	0% - 30%
Aluminum	ND	ND	0.001	0.199	0.192	3.4%	0% - 30%
Barium	ND	ND	0.001	6.22	5.68	8.7%	0% - 30%
Cadmium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.078	0.070	10.9%	0% - 30%
Cobalt	ND	ND	0.001	0.022	0.017	24.7%	0% - 30%
Copper	ND	ND	0.001	0.120	0.117	2.2%	0% - 30%
Iron	ND	ND	0.001	40.8	37.5	8.1%	0% - 30%
Lead	ND	ND	0.001	0.294	0.290	1.3%	0% - 30%
Manganese	ND	ND	0.001	1.31	1.29	1.3%	0% - 30%
Mercury	ND	ND	0.001	0.003	0.003	0.0%	0% - 30%
Molybdenum	ND	ND	0.001	0.007	0.007	0.0%	0% - 30%
Nickel	ND	ND	0.001	0.100	0.101	1.1%	0% - 30%
Selenium	ND	ND	0.001	0.061	0.062	3.0%	0% - 30%
Silver	ND	ND	0.001	0.033	0.032	1.5%	0% - 30%
Zinc	ND	ND	0.001	0.211	0.205	2.8%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.250	0.006	0.233	90.9%	80% - 120%
Aluminum	0.250	0.199	0.457	102%	80% - 120%
Barium	0.500	6.22	5.50	81.8%	80% - 120%
Cadmium	0.250	ND	0.245	98.1%	80% - 120%
Chromium	0.500	0.078	0.520	90.0%	80% - 120%
Cobalt	0.250	0.022	0.218	80.2%	80% - 120%
Copper	0.500	0.120	0.523	84.3%	80% - 120%
Iron	0.250	40.8	34.0	82.8%	80% - 120%
Lead	0.500	0.294	0.677	85.3%	80% - 120%
Manganese	0.250	1.31	1.40	90.1%	80% - 120%
Mercury	0.100	0.003	0.090	87.1%	80% - 120%
Molybdenum	0.100	0.007	0.089	82.7%	80% - 120%
Nickel	0.500	0.100	0.552	92.1%	80% - 120%
Selenium	0.100	0.061	0.150	93.1%	80% - 120%
Silver	0.100	0.033	0.107	80.7%	80% - 120%
Zinc	0.500	0.211	0.616	86.6%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils.
SW-846, USEPA, December 1996.
Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for Samples 56117**

Analyst

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CATION / ANION ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	10-21-10
Laboratory Number:	56117	Date Sampled:	10-07-10
Chain of Custody:	10492	Date Received:	10-07-10
Sample Matrix:	Aqueous	Date Analyzed:	10-08-10
Preservative:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	**5.22**	s.u.		
Conductivity @ 25° C	**20,800**	umhos/cm		
Total Dissolved Solids @ 180C	**14,800**	mg/L		
Total Dissolved Solids (Calc)	**15,200**	mg/L		
SAR	**23.8**	ratio		
Total Alkalinity as CaCO3	**1,460**	mg/L		
Total Hardness as CaCO3	**4,330**	mg/L		
Bicarbonate as CaCO3	**1,460**	mg/L	23.93	meq/L
Carbonate as CaCO3	**<0.1**	mg/L	0.00	meq/L
Hydroxide as CaCO3	**<0.1**	mg/L	0.00	meq/L
Nitrate Nitrogen	**<0.1**	mg/L	0.00	meq/L
Nitrite Nitrogen	**<0.1**	mg/L	0.00	meq/L
Chloride	**5,960**	mg/L	168.13	meq/L
Fluoride	**362**	mg/L	19.08	meq/L
Phosphate	**0.210**	mg/L	0.01	meq/L
Sulfate	**2,160**	mg/L	44.97	meq/L
Iron	**54.2**	mg/L	1.94	meq/L
Calcium	**1,700**	mg/L	84.83	meq/L
Magnesium	**18.6**	mg/L	1.53	meq/L
Potassium	**532**	mg/L	13.60	meq/L
Sodium	**3,590**	mg/L	156.17	meq/L
Cations			256.12	meq/L
Anions			256.12	meq/L
Cation/Anion Difference			**0.00%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Key Farmington UIC-5-INJ Water**

Analyst

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SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	10-11-10
Lab ID#:	56117	Date Sampled:	10-07-10
Sample Matrix:	Aqueous	Date Received:	10-07-10
Preservative:	Cool	Date Analyzed:	10-08-10
Condition:	Intact	Chain of Custody:	10492

Parameter	Result	
IGNITABILITY:	**Negative**	
CORROSIVITY:	**Negative**	**pH = 5.22**
REACTIVITY:	**Negative**	

RA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
IGNITABILITY:	Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21. *(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)*
CORROSIVITY:	Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22. *(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)*
REACTIVITY:	Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. *(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)*

Reference: 40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments: **Key Farmington UIC-5-INJ Water**

Analyst

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Water Analysis

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	10-28-10
Laboratory Number:	56117	Date Sampled:	10-07-10
Sample Matrix:	Aqueous	Date Received:	10-07-10
Preservative:	Cool	Date Analyzed:	10-27-10
Condition:	Intact	Chain of Custody:	10492

Parameter	Analytical Result	Units
Cyanide (total)	**ND**	mg/L

Reference: U.S.E.P.A., Method 335.3 Cyanide, Total.

Comments: **Key Farmington UIC-5-INJ Water**

Analyst

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EPA METHOD 8041
TCLP PHENOLS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	11-04-10
Laboratory Number:	56117	Date Sampled:	10-07-10
Chain of Custody:	10492	Date Received:	10-07-10
Sample Matrix:	Aqueous	Date Extracted:	10-12-10
Preservative:	Cool	Date Analyzed:	10-26-10
Condition:	Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	**ND**	**0.010**	**200**
p,m-Cresol	**ND**	**0.010**	**200**
2,4,6-Trichlorophenol	**ND**	**0.010**	**2.0**
2,4,5-Trichlorophenol	**ND**	**0.010**	**400**
Pentachlorophenol	**ND**	**0.010**	**100**

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	**98.0%**
	2,4,6-Tribromophenol	**97.4%**

References: Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: **Key Farmington UIC-5-Inj Water**

Analyst

Review

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EPA METHOD 8041
TCLP PHENOLS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	1026ABLK QA/QC	Date Reported:	11-04-10
Laboratory Number:	56117	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-26-10
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate	Instrument	Method	Detection	Sample	Duplicate	Percent
Conc (mg/L)	Blank	Blank	Limit	Conc (mg/Kg)		Diff.
o-Cresol	ND	ND	0.010	ND	ND	0.0%
p,m-Cresol	ND	ND	0.010	ND	ND	0.0%
2,4,6-Trichlorophenol	ND	ND	0.010	ND	ND	0.0%
2,4,5-Trichlorophenol	ND	ND	0.010	ND	ND	0.0%
Pentachlorophenol	ND	ND	0.010	ND	ND	0.0%

ND - Parameter not detected at the stated detection limit.

References:
Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8041, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Comments: **QA/QC for Sample 56117.**

Analyst

Review

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EPA METHOD 8091
Nitroaromatics and Cyclic Ketones

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj Water	Date Reported:	11-04-10
Laboratory Number:	56117	Date Sampled:	10-07-10
Chain of Custody:	10492	Date Received:	10-07-10
Sample Matrix:	Aqueous	Date Extracted:	10-12-10
Preservative:	Cool	Date Analyzed:	10-26-10
Condition:	Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	**ND**	**0.004**	**5.0**
Hexachloroethane	**ND**	**0.004**	**3.0**
Nitrobenzene	**ND**	**0.004**	**2.0**
Hexachlorobutadiene	**ND**	**0.004**	**0.5**
2,4-Dinitrotoluene	**ND**	**0.004**	**0.13**
HexachloroBenzene	**ND**	**0.004**	**0.13**

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorobiphenyl	**84.2%**

References: Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8270, Determination of Semi-Volatile Organics by Capillary Column GC/MS

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: **Key Farmington UIC-5-Inj Water**

Analyst

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EPA METHOD 8091
Nitroaromatics and Cyclic Ketones
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	1026BBLK QA/QC	Date Reported:	11-03-10
Laboratory Number:	56119	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-26-10
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate Conc (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	Percent Diff.
Pyridine	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
Hexachloroethane	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
Nitrobenzene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
Hexachlorobutadiene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
2,4-Dinitrotoluene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**
HexachloroBenzene	**ND**	**ND**	**0.004**	**ND**	**ND**	**0.0%**

ND - Parameter not detected at the stated detection limit.

References:
Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8270, Determination of Semi-Volatile Organics by Capillary Column GC/MS

Comments: **QA/QC for Sample 56117 and 56119.**

Analyst

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	10/26 8100 LBlank	Date Reported:	11-04-10
Laboratory Number:	1026LBLK	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-26-10
Condition:	N/A	Analysis Requested:	8100

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	ND	0.01
Acenaphthylene	ND	0.01
Acenaphthene	ND	0.01
Fluorene	ND	0.01
Phenanthrene	ND	0.01
Anthracene	ND	0.01
Fluoranthene	ND	0.01
Pyrene	ND	0.01
Benzo[a]anthracene	ND	0.01
Chrysene	ND	0.01
Benzo(b)fluoranthene	ND	0.01
Benzo[k]fluoranthene	ND	0.01
Benzo(a)pyrene	ND	0.01
Indeno[1,2,3]pyrene	ND	0.01
Dibenzo[a,h]anthracene	ND	0.01
Benzo(g,h,i)perylene	ND	0.01

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY:	Parameter	Percent Recovery
	1-fluoronaphthalene	89.8

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 56117.**

Analyst

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	11-04-10
Laboratory Number:	56117	Date Sampled:	10-07-10
Chain of custody:	10492	Date Received:	10-07-10
Sample Matrix:	Aqueous	Date Analyzed:	10-26-10
Preservative:	Cool	Date Concentrated:	10-12-10
Condition:	Intact	Analysis Requested:	8100

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	**20.2**	**0.010**
Acenaphthylene	**ND**	**0.010**
Acenaphthene	**ND**	**0.010**
Fluorene	**ND**	**0.010**
Phenanthrene	**ND**	**0.010**
Anthracene	**ND**	**0.010**
Fluoranthene	**ND**	**0.010**
Pyrene	**ND**	**0.010**
Benzo[a]anthracene	**ND**	**0.010**
Chrysene	**ND**	**0.010**
Benzo(b)fluoranthene	**ND**	**0.010**
Benzo[k]fluoranthene	**ND**	**0.010**
Benzo(a)pyrene	**ND**	**0.010**
Indeno[1,2,3]pyrene	**ND**	**0.010**
Dibenzo[a,h]anthracene	**ND**	**0.010**
Benzo(g,h,i)perylene	**ND**	**0.010**

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronaphthalene	**92.4**

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **Key Farmington UIC-5-Inj Water**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 | Ph (505) 632-0615 Fx (800) 362-1879 Fx (505) 632-1865 lab@envirotech-inc.com envirotech-inc.com

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QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	10/26 8100 LBlank	Date Reported:	11-04-10
Laboratory Number:	1026LBLK	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	10-26-10
Condition:	N/A	Analysis Requested:	8100

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	ND	0.01
Acenaphthylene	ND	0.01
Acenaphthene	ND	0.01
Fluorene	ND	0.01
Phenanthrene	ND	0.01
Anthracene	ND	0.01
Fluoranthene	ND	0.01
Pyrene	ND	0.01
Benzo[a]anthracene	ND	0.01
Chrysene	ND	0.01
Benzo(b)fluoranthene	ND	0.01
Benzo[k]fluoranthene	ND	0.01
Benzo(a)pyrene	ND	0.01
Indeno[1,2,3]pyrene	ND	0.01
Dibenzo[a,h]anthracene	ND	0.01
Benzo(g,h,i)perylene	ND	0.01

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY:	Parameter	Percent Recovery
	1-fluoronaphthalene	89.8

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 56117.**

Analyst

Review

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons

Client:	QA/QC	Project #:	N/A
Sample ID:	1026MBL2	Date Reported:	11-04-10
Laboratory Number:	1026Mblk QA/QC	Date Sampled:	N/A
Chain of custody:	N/A	Date Received:	N/A
Sample Matrix:	Aqueous	Date Analyzed:	10-26-10
Preservative:	N/A	Date Concentrated:	10-15-10
Condition:	N/A	Analysis Requested:	8100

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	ND	0.02
Acenaphthylene	ND	0.02
Acenaphthene	ND	0.02
Fluorene	ND	0.02
Phenanthrene	ND	0.02
Anthracene	ND	0.02
Fluoranthene	ND	0.02
Pyrene	ND	0.02
Benzo[a]anthracene	ND	0.02
Chrysene	ND	0.02
Benzo(b)fluoranthene	ND	0.02
Benzo[k]fluoranthene	ND	0.02
Benzo(a)pyrene	ND	0.02
Indeno[1,2,3]pyrene	ND	0.02
Dibenzo[a,h]anthracene	ND	0.02
Benzo(g,h,i)perylene	ND	0.02

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronaphthalene	83.2

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for sample 56117**

Analyst

Review

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	Inj. Water	Date Reported:	11-04-10
Laboratory Number:	56117	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	8100	Date Analyzed:	10-26-10
Condition:	N/A		

Parameter	Sample Result (mg/L)	Duplicate Sample Result (mg/L)	Det. Limit (mg/L)	Percent Difference
Naphthalene	20.2	23.2	0.010	15.1%
Acenaphthylene	ND	ND	0.010	0.0%
Acenaphthene	ND	ND	0.010	0.0%
Fluorene	ND	ND	0.010	0.0%
Phenanthrene	ND	ND	0.010	0.0%
Anthracene	ND	ND	0.010	0.0%
Fluoranthene	ND	ND	0.010	0.0%
Pyrene	ND	ND	0.010	0.0%
Benzo[a]anthracene	ND	ND	0.010	0.0%
Chrysene	ND	ND	0.010	0.0%
Benzo(b)fluoranthene	ND	ND	0.010	0.0%
Benzo[k]fluoranthene	ND	ND	0.010	0.0%
Benzo(a)pyrene	ND	ND	0.010	0.0%
Indeno[1,2,3]pyrene	ND	ND	0.010	0.0%
Dibenzo[a,h]anthracene	ND	ND	0.010	0.0%
Benzo(g,h,i)perylene	ND	ND	0.010	0.0%

ND - Parameter not detected at the stated detection limit.

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 56117**

Analyst

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Analytical Laboratory

EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	Matrix Spike	Date Reported:	11-04-10
Laboratory Number:	56117	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	8100	Date Analyzed:	10-26-10
Condition:	N/A		

Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Naphthalene	20.2	100	93.0	0.010	77.4%	10-122
Acenaphthylene	ND	100	92.1	0.010	92.1%	10-139
Acenaphthene	ND	100	78.0	0.010	78.0%	10-124
Fluorene	ND	100	89.0	0.010	89.0%	10-142
Phenanthrene	ND	100	91.6	0.010	91.6%	10-155
Anthracene	ND	100	81.1	0.010	81.1%	10-126
Fluoranthene	ND	100	94.0	0.010	94.0%	14-123
Pyrene	ND	100	84.4	0.010	84.4%	10-140
Benzo[a]anthracene	ND	100	76.6	0.010	76.6%	10-116
Chrysene	ND	100	92.1	0.010	92.1%	12-135
Benzo(b)fluoranthene	ND	100	71.2	0.010	71.2%	10-199
Benzo[k]fluoranthene	ND	100	80.1	0.010	80.1%	10-150
Benzo(a)pyrene	ND	100	82.2	0.010	82.2%	10-159
Indeno[1,2,3]pyrene	ND	100	101	0.010	101%	10-128
Dibenzo[a,h]anthracene	ND	100	96.7	0.010	96.7%	10-110
Benzo(g,h,i)perylene	ND	100	97.6	0.010	97.6%	10-116

ND - Parameter not detected at the stated detection limit.

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 56117**

Analyst

Review

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Est. 1970

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

Report Summary

Friday October 15, 2010

Report Number: L483251
Samples Received: 10/09/10
Client Project: 98065-0013

Description: Key Energy

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Daphne R Richards

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

October 15, 2010

Date Received : October 09, 2010
Description : Key Farmington Vic-5-Inj Water

Sample ID : 56117-INJ. WATER

Collected By :
Collection Date : 10/07/10 14:28

ESC Sample # : L483251-01

Site ID :

Project # : 98065-0013

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Pesticides						
Aldrin	BDL	0.0050	mg/l	8081A	10/12/10	100
Alpha BHC	BDL	0.0050	mg/l	8081A	10/12/10	100
Beta BHC	BDL	0.0050	mg/l	8081A	10/12/10	100
Delta BHC	BDL	0.0050	mg/l	8081A	10/12/10	100
Gamma BHC	BDL	0.0050	mg/l	8081A	10/12/10	100
Chlordane	BDL	0.050	mg/l	8081A	10/12/10	100
4,4-DDD	BDL	0.0050	mg/l	8081A	10/12/10	100
4,4-DDE	BDL	0.0050	mg/l	8081A	10/12/10	100
4,4-DDT	BDL	0.0050	mg/l	8081A	10/12/10	100
Dieldrin	BDL	0.0050	mg/l	8081A	10/12/10	100
Endosulfan I	BDL	0.0050	mg/l	8081A	10/12/10	100
Endosulfan II	BDL	0.0050	mg/l	8081A	10/12/10	100
Endosulfan sulfate	BDL	0.0050	mg/l	8081A	10/12/10	100
Endrin	BDL	0.0050	mg/l	8081A	10/12/10	100
Endrin aldehyde	BDL	0.0050	mg/l	8081A	10/12/10	100
Endrin ketone	BDL	0.0050	mg/l	8081A	10/12/10	100
Hexachlorobenzene	BDL	0.0050	mg/l	8081A	10/12/10	100
Heptachlor	BDL	0.0050	mg/l	8081A	10/12/10	100
Heptachlor epoxide	BDL	0.0050	mg/l	8081A	10/12/10	100
Methoxychlor	BDL	0.0050	mg/l	8081A	10/12/10	100
Toxaphene	BDL	0.050	mg/l	8081A	10/12/10	100
Pesticides Surrogates						
Decachlorobiphenyl	BDL		% Rec.	8081A	10/12/10	100
Tetrachloro-m-xylene	BDL		% Rec.	8081A	10/12/10	100
Herbicides						
2,4-D	BDL	0.080	mg/l	8151	10/15/10	40
Dalapon	BDL	8.0	mg/l	8151	10/15/10	40
2,4-DB	BDL	0.080	mg/l	8151	10/15/10	40
Dicamba	BDL	0.080	mg/l	8151	10/15/10	40
Dichloroprop	BDL	0.080	mg/l	8151	10/15/10	40
Dinoseb	BDL	0.080	mg/l	8151	10/15/10	40
MCPA	BDL	4.0	mg/l	8151	10/15/10	40
MCPP	BDL	4.0	mg/l	8151	10/15/10	40
2,4,5-T	BDL	0.080	mg/l	8151	10/15/10	40
2,4,5-TP (Silvex)	BDL	0.080	mg/l	8151	10/15/10	40
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	0.00		% Rec.	8151	10/15/10	40

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 10/15/10 16:50 Printed: 10/15/10 16:51
L483251-01 (SV8151) - Diluted due to matrix
L483251-01 (SV8081) - Non-target compounds too high to run at a lower dilution.

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L483251-01	WG502767	SAMP	Aldrin	R1424712	O
	WG502767	SAMP	Alpha BHC	R1424712	O
	WG502767	SAMP	Beta BHC	R1424712	O
	WG502767	SAMP	Delta BHC	R1424712	O
	WG502767	SAMP	Gamma BHC	R1424712	O
	WG502767	SAMP	Chlordane	R1424712	O
	WG502767	SAMP	4,4-DDD	R1424712	O
	WG502767	SAMP	4,4-DDE	R1424712	O
	WG502767	SAMP	4,4-DDT	R1424712	O
	WG502767	SAMP	Dieldrin	R1424712	O
	WG502767	SAMP	Endosulfan I	R1424712	O
	WG502767	SAMP	Endosulfan II	R1424712	O
	WG502767	SAMP	Endosulfan sulfate	R1424712	O
	WG502767	SAMP	Endrin	R1424712	O
	WG502767	SAMP	Endrin aldehyde	R1424712	O
	WG502767	SAMP	Endrin ketone	R1424712	O
	WG502767	SAMP	Hexachlorobenzene	R1424712	O
	WG502767	SAMP	Heptachlor	R1424712	O
	WG502767	SAMP	Heptachlor epoxide	R1424712	O
	WG502767	SAMP	Methoxychlor	R1424712	O
	WG502767	SAMP	Toxaphene	R1424712	O
	WG502767	SAMP	Decachlorobiphenyl	R1424712	J7
	WG502767	SAMP	Tetrachloro-m-xylene	R1424712	J7
	WG503068	SAMP	2,4-D	R1429268	O
	WG503068	SAMP	Dalapon	R1429268	O
	WG503068	SAMP	2,4-DB	R1429268	O
	WG503068	SAMP	Dicamba	R1429268	O
	WG503068	SAMP	Dichloroprop	R1429268	O
	WG503068	SAMP	Dinoseb	R1429268	O
	WG503068	SAMP	MCPA	R1429268	O
	WG503068	SAMP	MCPP	R1429268	O
	WG503068	SAMP	2,4,5-T	R1429268	O
	WG503068	SAMP	2,4,5-TP (Silvex)	R1429268	O
	WG503068	SAMP	2,4-Dichlorophenyl Acetic Acid	R1429268	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
10/15/10 at 16:51:26

TSR Signing Reports: 288

Sample: L483251-01 Account: ENVIROFNM Received: 10/09/10 09:00 Due Date: 10/15/10 00:00 RPT Date: 10/15/10 16:50

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EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L483251

October 15, 2010

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
4,4-DDD	< .00005	mg/l			WG502767	10/12/10 17:51
4,4-DDE	< .00005	mg/l			WG502767	10/12/10 17:51
4,4-DDT	< .00005	mg/l			WG502767	10/12/10 17:51
Aldrin	< .00005	mg/l			WG502767	10/12/10 17:51
Alpha BHC	< .00005	mg/l			WG502767	10/12/10 17:51
Beta BHC	< .00005	mg/l			WG502767	10/12/10 17:51
Chlordane	< .0005	mg/l			WG502767	10/12/10 17:51
Delta BHC	< .00005	mg/l			WG502767	10/12/10 17:51
Dieldrin	< .00005	mg/l			WG502767	10/12/10 17:51
Endosulfan I	< .00005	mg/l			WG502767	10/12/10 17:51
Endosulfan II	< .00005	mg/l			WG502767	10/12/10 17:51
Endosulfan sulfate	< .00005	mg/l			WG502767	10/12/10 17:51
Endrin	< .00005	mg/l			WG502767	10/12/10 17:51
Endrin aldehyde	< .00005	mg/l			WG502767	10/12/10 17:51
Endrin ketone	< .00005	mg/l			WG502767	10/12/10 17:51
Gamma BHC	< .00005	mg/l			WG502767	10/12/10 17:51
Heptachlor	< .00005	mg/l			WG502767	10/12/10 17:51
Heptachlor epoxide	< .00005	mg/l			WG502767	10/12/10 17:51
Hexachlorobenzene	< .00005	mg/l			WG502767	10/12/10 17:51
Methoxychlor	< .00005	mg/l			WG502767	10/12/10 17:51
Toxaphene	< .0005	mg/l			WG502767	10/12/10 17:51
Decachlorobiphenyl		% Rec.	88.49	10-122.6	WG502767	10/12/10 17:51
Tetrachloro-m-xylene		% Rec.	91.17	15.3-114.2	WG502767	10/12/10 17:51
2,4,5-T	< .002	mg/l			WG503068	10/15/10 10:46
2,4,5-TP (Silvex)	< .002	mg/l			WG503068	10/15/10 10:46
2,4-D	< .002	mg/l			WG503068	10/15/10 10:46
2,4-DB	< .002	mg/l			WG503068	10/15/10 10:46
Dalapon	< .002	mg/l			WG503068	10/15/10 10:46
Dicamba	< .002	mg/l			WG503068	10/15/10 10:46
Dichloroprop	< .002	mg/l			WG503068	10/15/10 10:46
Dinoseb	< .002	mg/l			WG503068	10/15/10 10:46
MCPA	< .1	mg/l			WG503068	10/15/10 10:46
MCPP	< .1	mg/l			WG503068	10/15/10 10:46
2,4-Dichlorophenyl Acetic Acid		%	68.74	42-112	WG503068	10/15/10 10:46

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
4,4-DDD	mg/l	.0002	0.000208	104.	37-142	WG502767
4,4-DDE	mg/l	.0002	0.000201	100.	33-124	WG502767
4,4-DDT	mg/l	.0002	0.000225	113.	32-143	WG502767
Aldrin	mg/l	.0002	0.000178	89.2	25-115	WG502767
Alpha BHC	mg/l	.0002	0.000196	98.0	38-119	WG502767
Beta BHC	mg/l	.0002	0.000201	101.	42-126	WG502767
Delta BHC	mg/l	.0002	0.000200	99.8	24-141	WG502767
Dieldrin	mg/l	.0002	0.000212	106.	37-130	WG502767
Endosulfan I	mg/l	.0002	0.000216	108.	37-125	WG502767
Endosulfan II	mg/l	.0002	0.000217	109.	38-131	WG502767
Endosulfan sulfate	mg/l	.0002	0.000215	107.	38-131	WG502767
Endrin	mg/l	.0002	0.000224	112.	37-126	WG502767
Endrin aldehyde	mg/l	.0002	0.000167	83.7	24-154	WG502767
Endrin ketone	mg/l	.0002	0.000205	103.	37-139	WG502767
Gamma BHC	mg/l	.0002	0.000200	100.	35-114	WG502767
Heptachlor	mg/l	.0002	0.000194	96.9	21-123	WG502767
Heptachlor epoxide	mg/l	.0002	0.000208	104.	38-121	WG502767
Hexachlorobenzene	mg/l	.0002	0.000175	87.5	28-115	WG502767
Methoxychlor	mg/l	.0002	0.000229	115.	55-150	WG502767

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L483251

October 15, 2010

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Decachlorobiphenyl				81.39	10-122.6	
Tetrachloro-m-xylene				95.52	15.3-114.2	
2,4,5-T	mg/l	.005	0.00324	64.8	30-136	WG503068
2,4,5-TP (Silvex)	mg/l	.005	0.00320	64.1	33-134	WG503068
2,4-D	mg/l	.005	0.00314	62.9	24-127	WG503068
2,4-DB	mg/l	.005	0.00334	66.9	22-198	WG503068
Dalapon	mg/l	.005	0.00230	45.9	14-121	WG503068
Dicamba	mg/l	.005	0.00326	65.2	31-135	WG503068
Dichloroprop	mg/l	.005	0.00301	60.1	30-122	WG503068
Dinoseb	mg/l	.005	0.00309	61.8	28-183	WG503068
MCPA	mg/l	.5	0.354	70.8	32-153	WG503068
MCPP	mg/l	.5	0.467	93.3	42-133	WG503068
2,4-Dichlorophenyl Acetic Acid				61.21	42-112	WG503068

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
4,4-DDD	mg/l	0.000195	0.000208	97.0	37-142	6.45	39	WG502767
4,4-DDE	mg/l	0.000190	0.000201	95.0	33-124	5.56	37	WG502767
4,4-DDT	mg/l	0.000211	0.000225	106.	32-143	6.42	42	WG502767
Aldrin	mg/l	0.000170	0.000178	85.0	25-115	4.93	45	WG502767
Alpha BHC	mg/l	0.000185	0.000196	92.0	38-119	5.85	30	WG502767
Beta BHC	mg/l	0.000190	0.000201	95.0	42-126	5.86	31	WG502767
Delta BHC	mg/l	0.000188	0.000200	94.0	24-141	5.74	41	WG502767
Dieldrin	mg/l	0.000199	0.000212	100.	37-130	6.17	36	WG502767
Endosulfan I	mg/l	0.000204	0.000216	102.	37-125	5.81	35	WG502767
Endosulfan II	mg/l	0.000204	0.000217	102.	38-131	6.42	36	WG502767
Endosulfan sulfate	mg/l	0.000203	0.000215	102.	38-131	5.35	37	WG502767
Endrin	mg/l	0.000209	0.000224	104.	37-126	6.94	37	WG502767
Endrin aldehyde	mg/l	0.000157	0.000167	78.0	24-154	6.46	36	WG502767
Endrin ketone	mg/l	0.000195	0.000205	97.0	37-139	5.23	36	WG502767
Gamma BHC	mg/l	0.000189	0.000200	94.0	35-114	5.65	30	WG502767
Heptachlor	mg/l	0.000185	0.000194	93.0	21-123	4.48	38	WG502767
Heptachlor epoxide	mg/l	0.000197	0.000208	98.0	38-121	5.44	33	WG502767
Hexachlorobenzene	mg/l	0.000168	0.000175	84.0	28-115	4.30	29	WG502767
Methoxychlor	mg/l	0.000216	0.000229	108.	55-150	5.97	40	WG502767
Decachlorobiphenyl				79.25	10-122.6			WG502767
Tetrachloro-m-xylene				87.61	15.3-114.2			WG502767
2,4,5-T	mg/l	0.00329	0.00324	66.0	30-136	1.48	31	WG503068
2,4,5-TP (Silvex)	mg/l	0.00378	0.00320	76.0	33-134	16.7	30	WG503068
2,4-D	mg/l	0.00303	0.00314	60.0	24-127	3.81	27	WG503068
2,4-DB	mg/l	0.00322	0.00334	64.0	22-198	3.71	33	WG503068
Dalapon	mg/l	0.00221	0.00230	44.0	14-121	3.68	31	WG503068
Dicamba	mg/l	0.00322	0.00326	64.0	31-135	1.16	25	WG503068
Dichloroprop	mg/l	0.00310	0.00301	62.0	30-122	3.18	26	WG503068
Dinoseb	mg/l	0.00329	0.00309	66.0	28-183	6.25	38	WG503068
MCPA	mg/l	0.245	0.354	49.0	32-153	36.3*	31	WG503068
MCPP	mg/l	0.342	0.467	68.0	42-133	30.9*	29	WG503068
2,4-Dichlorophenyl Acetic Acid				45.03	42-112			WG503068

Batch number /Run number / Sample number cross reference

WG502767: R1424712: L483251-01
WG503068: R1429268: L483251-01

* * Calculations are performed prior to rounding of reported values .
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Tax I.D. 62-0814289

Est. 1970

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L483251

October 15, 2010

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Company Name/Address:
EnviroTech- NM

5796 US. Highway 64
Farmington.NM 87401

Alternate billing Information:

Analysis/Container/Preservative

Chain of Custody
Page ___ of ___

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

B177

CoCode: ENVIROFNM (lab use only)
Template/Prelogin
Shipped Via:

Report to: Lynn Berry
Email to: lynnberry@envirotech-inc.com
Project Description: Key Farmington VIC-5-INJ water
City/State Collected
Phone: (505) 632-0615
FAX:
Client Project #: 98005-0013
ESC Key:
Collected by: Wayne Price
Site/Facility ID#:
P.O.#:
Collected by (signature):
Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day.....200%
___ Next Day.....100%
___ Two Day.....50%
Three Day.....25%

Date Results Needed:
Email? __No X Yes
FAX? X No __Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Remarks/Contaminant	Sample # (lab only)
56117 - Inj. Water		Aq/ww		10/7	2:28	2 1L Amber X		480325-01

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Aqueous

pH ___ Temp ___

Remarks: 8695 1787 7248 Flow ___ Other ___

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Condition: OK (lab use only)
Brenda Tate	10/8/10	15:49			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.6°C Bottles Received: 2	CoC Seals Intact: ___ Y ___ N ___ NA ✓
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-08-10 Time: 0800	pH Checked: NCF:

CHAIN OF CUSTODY RECORD

10492

Client:	Project Name / Location:
KEY ENERGY	KEY FARMINGTON D/C-5-ING WATER
Client Address:	**Sampler Name:**
5651 HWY 64 87401	WAYNE PRICE PRICELLC
Client Phone No.:	**Client No.:**
1-505-715-2809	98065-0013

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative: $HgCl_2$	HCl	Ice	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals (see dissolved list)	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE	Cl^-			Sample Cool	Sample Intact
Inj. Water	10-7-16	2:28 P	52117	Soil Solid Sludge Aqueous	6/1L Ambers			✓			X	X	X	X	X	X			X			Y	Y
		2:35 P		Soil Solid Sludge Aqueous	4/40mL VOA			✓			②				②							Y	Y
		2:33 P		Soil Solid Sludge Aqueous	1/500mL			✓				②	②									Y	Y
		2:33 P		Soil Solid Sludge Aqueous	1/250mL			✓				② Mo, Ni										Y	Y
		2:33 P		Soil Solid Sludge Aqueous	1/125mL		✓	✓											②			Y	Y
				Soil Solid Sludge Aqueous								Ag, Al, Co,											
				Soil Solid Sludge Aqueous								Mn,											
				Soil Solid Sludge Aqueous								Zn,											
				Soil Solid Sludge Aqueous								Fe,											
				Soil Solid Sludge Aqueous								Cu,											

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	10-7-16	3:00 PM		10/07/16	3:00PM
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

② CROSS-REFERENCE ANALYSIS TO BOTTLES

INJ PUMP DISCHARGE
MW-NA

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2010 Fourth Quarter Chemical Analysis for UIC-5 Key Energy Injection Well

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EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	03-10-11
Chain of Custody:	11232	Date Sampled:	02-24-11
Laboratory Number:	57329	Date Received:	02-24-11
Sample Matrix:	Aqueous	Date Analyzed:	02-28-11
Preservative:	Cool	Analysis Requested:	8260 VOC
Condition:	Intact		

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	3,370	(ug/L)	1.0	1
Toluene	5,090	(ug/L)	1.0	1
Ethylbenzene	500	(ug/L)	1.0	1
Xylenes, Total	4,700	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	272	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	495	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	ND	(ug/L)	1.0	1
1-Methylnaphthalene	ND	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

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EPA Method 8260B
Volatile Organic Compounds by GC/MS

Client:	Key Energy
Sample ID:	Inj. Water
Laboratory Number:	57329

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	55.4	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	ND	(ug/L)	3.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	ND	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	78.2	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	77.4	% Recovery	74.6-123	1
Toluene-d8	85.6	% Recovery	84.2-115	1
4-Bromofluorobenzene	82.1	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **Key Farmington UIC-5 Inj Water**

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QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	8260 Blank 02/28	Date Reported:	03-10-11
Laboratory Number:	0228BK82	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-28-11
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
Benzene	ND	(ug/L)	1.0	1
Toluene	ND	(ug/L)	1.0	1
Ethylbenzene	ND	(ug/L)	1.0	1
Xylenes, Total	ND	(ug/L)	1.0	1
Methyl tert-butyl ether (MTBE)	ND	(ug/L)	1.0	1
1,2,4-Trimethylbenzene	ND	(ug/L)	1.0	1
1,3,5-Trimethylbenzene	ND	(ug/L)	1.0	1
1,2-Dichloroethane (EDC)	ND	(ug/L)	1.0	1
1,2-Dibromoethane (EDB)	ND	(ug/L)	1.0	1
Naphthalene	ND	(ug/L)	1.0	1
1-Methylnaphthalene	ND	(ug/L)	2.0	1
2-Methylnaphthalene	ND	(ug/L)	2.0	1
Bromobenzene	ND	(ug/L)	1.0	1
Bromochloromethane	ND	(ug/L)	1.0	1
Bromodichloromethane	ND	(ug/L)	1.0	1
Bromoform	ND	(ug/L)	1.0	1
Bromomethane	ND	(ug/L)	1.0	1
Carbon Tetrachloride	ND	(ug/L)	1.0	1
Chlorobenzene	ND	(ug/L)	1.0	1
Chloroethane	ND	(ug/L)	2.0	1
Chloroform	ND	(ug/L)	1.0	1
Chloromethane	ND	(ug/L)	1.0	1
2-Chlorotoluene	ND	(ug/L)	1.0	1
4-Chlorotoluene	ND	(ug/L)	1.0	1
cis-1,2-Dichloroethene	ND	(ug/L)	1.0	1
cis-1,3-Dichloropropene	ND	(ug/L)	1.0	1
1,2-Dibromo-3-chloropropane	ND	(ug/L)	2.0	1
Dibromochloromethane	ND	(ug/L)	1.0	1
Dibromoethane	ND	(ug/L)	2.0	1
1,2-Dichlorobenzene	ND	(ug/L)	1.0	1
1,3-Dichlorobenzene	ND	(ug/L)	1.0	1
1,4-Dichlorobenzene	ND	(ug/L)	1.0	1
Dichlorodifluoromethane	ND	(ug/L)	1.0	1
1,1-Dichloroethane	ND	(ug/L)	1.0	1
1,1-Dichloroethene	ND	(ug/L)	1.0	1
1,2-Dichloropropane	ND	(ug/L)	1.0	1
1,3-Dichloropropane	ND	(ug/L)	1.0	1
2,2-Dichloropropane	ND	(ug/L)	1.0	1

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: 8260 Blank 02/28
Laboratory Number: 0228BK82

Parameter	Concentration (ug/L)	Units	Det. Limit	Dilution Factor
1,1-Dichloropropene	ND	(ug/L)	1.0	1
Hexachlorobutadiene	ND	(ug/L)	1.0	1
Isopropylbenzene	ND	(ug/L)	1.0	1
4-Isopropyltoluene	ND	(ug/L)	1.0	1
Methylene Chloride	42.0	(ug/L)	1.0	1
n-Butylbenzene	ND	(ug/L)	1.0	1
n-Propylbenzene	ND	(ug/L)	1.0	1
sec-Butylbenzene	ND	(ug/L)	1.0	1
Styrene	ND	(ug/L)	1.0	1
tert-Butylbenzene	ND	(ug/L)	1.0	1
Tetrachloroethene (PCE)	ND	(ug/L)	1.0	1
1,1,1,2-Tetrachloroethane	ND	(ug/L)	1.0	1
1,1,2,2-Tetrachloroethane	ND	(ug/L)	1.0	1
trans-1,2-Dichloroethene	ND	(ug/L)	1.0	1
trans-1,3-Dichloropropene	ND	(ug/L)	1.0	1
Trichloroethene (TCE)	ND	(ug/L)	1.0	1
Trichlorofluoromethane	ND	(ug/L)	1.0	1
1,2,3-Trichlorobenzene	ND	(ug/L)	1.0	1
1,2,4-Trichlorobenzene	ND	(ug/L)	1.0	1
1,1,1-Trichloroethane	ND	(ug/L)	1.0	1
1,1,2-Trichloroethane	ND	(ug/L)	1.0	1
1,2,3-Trichloropropane	ND	(ug/L)	2.0	1
Vinyl Chloride	ND	(ug/L)	2.0	1

Surrogates:			Rec. Limits	
Dibromofluoromethane	99.1	% Recovery	78.6-115	1
1,2-Dichloroethane-d4	98.3	% Recovery	74.6-123	1
Toluene-d8	99.0	% Recovery	84.2-115	1
4-Bromofluorobenzene	94.9	% Recovery	78.6-115	1

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 57329.**

Analyst

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Daily Calibration	Date Reported:	03-10-11
Laboratory Number:	0228C	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-28-11
Condition:	N/A	Analysis Requested:	8260 VOC

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
Benzene	100	100	100	80 - 120
Toluene	100	100	100	80 - 120
Ethylbenzene	100	100	100	80 - 120
Xylenes, Total	100	200	200	80 - 120
Methyl tert-butyl ether (MTBE)	100	100	100	80 - 120
1,2,4-Trimethylbenzene	100	100	100	80 - 120
1,3,5-Trimethylbenzene	100	100	100	80 - 120
1,2-Dichloroethane (EDC)	100	100	100	80 - 120
1,2-Dibromoethane (EDB)	100	100	100	80 - 120
Naphthalene	100	100	100	80 - 120
1-Methylnaphthalene	100	100	100	80 - 120
2-Methylnaphthalene	100	100	100	80 - 120
Bromobenzene	100	100	100	80 - 120
Bromochloromethane	100	100	100	80 - 120
Bromodichloromethane	100	100	100	80 - 120
Bromoform	100	100	100	80 - 120
Bromomethane	100	100	100	80 - 120
Carbon Tetrachloride	100	100	100	80 - 120
Chlorobenzene	100	100	100	80 - 120
Chloroethane	100	100	100	80 - 120
Chloroform	100	100	100	80 - 120
Chloromethane	100	100	100	80 - 120
2-Chlorotoluene	100	100	100	80 - 120
4-Chlorotoluene	100	100	100	80 - 120
cis-1,2-Dichloroethene	100	100	100	80 - 120
cis-1,3-Dichloropropene	100	100	100	80 - 120
1,2-Dibromo-3-chloropropane	100	100	100	80 - 120
Dibromochloromethane	100	100	100	80 - 120
Dibromoethane	100	100	100	80 - 120
1,2-Dichlorobenzene	100	100	100	80 - 120
1,3-Dichlorobenzene	100	100	100	80 - 120
1,4-Dichlorobenzene	100	100	100	80 - 120
Dichlorodifluoromethane	100	100	100	80 - 120
1,1-Dichloroethane	100	100	100	80 - 120
1,1-Dichloroethene	100	100	100	80 - 120
1,2-Dichloropropane	100	100	100	80 - 120
1,3-Dichloropropane	100	100	100	80 - 120
2,2-Dichloropropane	100	100	100	80 - 120

EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client: QA/QC
Sample ID: Daily Calibration
Laboratory Number: 0228C

Parameter	Concentration (ug/L)	Result	% Recovered	% Recovery Limits
1,1-Dichloropropene	100	100	100	80 - 120
Hexachlorobutadiene	100	100	100	80 - 120
Isopropylbenzene	100	100	100	80 - 120
4-Isopropyltoluene	100	100	100	80 - 120
Methylene Chloride	100	100	100	80 - 120
n-Butylbenzene	100	100	100	80 - 120
n-Propylbenzene	100	100	100	80 - 120
sec-Butylbenzene	100	100	100	80 - 120
Styrene	100	100	100	80 - 120
tert-Butylbenzene	100	100	100	80 - 120
Tetrachloroethene (PCE)	100	100	100	80 - 120
1,1,1,2-Tetrachloroethane	100	100	100	80 - 120
1,1,2,2-Tetrachloroethane	100	100	100	80 - 120
trans-1,2-Dichloroethene	100	100	100	80 - 120
trans-1,3-Dichloropropene	100	100	100	80 - 120
Trichloroethene (TCE)	100	100	100	80 - 120
Trichlorofluoromethane	100	100	100	80 - 120
1,2,3-Trichlorobenzene	100	100	100	80 - 120
1,2,4-Trichlorobenzene	100	100	100	80 - 120
1,1,1-Trichloroethane	100	100	100	80 - 120
1,1,2-Trichloroethane	100	100	100	80 - 120
1,2,3-Trichloropropane	100	100	100	80 - 120
Vinyl Chloride	100	100	100	80 - 120

Surrogates:			Rec. Limits
Dibromofluoromethane	100	% Recovery	78.6-115
1,2-Dichloroethane-d4	100	% Recovery	74.6-123
Toluene-d8	100	% Recovery	84.2-115
4-Bromofluorobenzene	100	% Recovery	78.6-115

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 57329.**

Analyst

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EPA Method 8260B
Volatile Organic Compounds by GC/MS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Spikes	Date Reported:	03-10-11
Laboratory Number:	02-28 VOA - 57329	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-28-11
Condition:	N/A	Analysis Requested:	8260 VOC

Spike	Units: ug/L				Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	3370	100.0	3,540	102%	85.3 - 120	1.0
Toluene	5,090	100.0	5,130	98.9%	73 - 123	1.0
Chlorobenzene	ND	100.0	67.4	67.4%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100.0	69.3	69.3%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100.0	72.1	72.1%	76.1 - 126	1.0

Spike Duplicate	Units: ug/L				Recovery	Det.
Analyte	Sample	Added	Result	%Recovery	Limits	Limit
Benzene	3370	100.0	3,450	99.4%	85.3 - 120	1.0
Toluene	5,090	100.0	5,330	103%	73 - 123	1.0
Chlorobenzene	ND	100.0	78.3	78.3%	84.7 - 119	1.0
1,1-Dichloroethene	ND	100.0	70.2	70.2%	83.4 - 122	1.0
Trichloroethene (TCE)	ND	100.0	75.1	75.1%	76.1 - 126	1.0

ND = Parameter not detected at the stated detection limit.

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8260,Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry,Test Methods for Evaluating Solid Waste,SW-846, USEPA, July 1992

Comments: **QA/QC for Sample 57329.**

Analyst

Review

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TRACE METAL ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj Water	Date Reported:	03/08/11
Laboratory Number:	57329	Date Sampled:	02/24/11
Chain of Custody:	11232	Date Received:	02/24/11
Sample Matrix:	Aqueous	Date Analyzed:	03/04/11
Preservative:	Cool	Date Digested:	03/03/11
Condition:	Cool & Intact	Analysis Needed:	Total Metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Arsenic	**0.029**	**0.001**
Aluminum	**ND**	**0.001**
Barium	**0.827**	**0.001**
Cadmium	**ND**	**0.001**
Chromium	**0.008**	**0.001**
Cobalt	**0.002**	**0.001**
Copper	**ND**	**0.001**
Iron	**1.73**	**0.001**
Lead	**0.049**	**0.001**
Manganese	**0.761**	**0.001**
Molybdenum	**0.034**	**0.001**
Mercury	**ND**	**0.001**
Nickel	**0.011**	**0.001**
Selenium	**ND**	**0.001**
Silver	**ND**	**0.001**
Zinc	**0.234**	**0.001**

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.

Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **Key Farmington UIC-5 Inj Water**

Analyst

Review

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TRACE METAL ANALYSIS
Quality Control / Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-04-TM QA/QC	Date Reported:	03/08/11
Laboratory Number:	57349	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	Total Dissolved Metals	Date Analyzed:	03/04/11
Condition:	N/A	Date Digested:	03/03/11

Blank & Duplicate Conc. (mg/L)	Instrument Blank (mg/L	Method Blank	Detection Limit	Sample	Duplicate	% Diff.	Acceptance Range
Arsenic	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Aluminum	ND	ND	0.001	0.009	0.010	11.1%	0% - 30%
Barium	ND	ND	0.001	0.009	0.009	0.00%	0% - 30%
Cadmium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Chromium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Cobalt	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Copper	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Iron	ND	ND	0.001	0.007	0.007	0.0%	0% - 30%
Lead	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Manganese	ND	ND	0.001	0.754	0.713	5.46%	0% - 30%
Molybdenum	ND	ND	0.001	0.008	0.008	0.00%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Nickel	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Zinc	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.250	ND	0.251	100%	80% - 120%
Aluminum	0.250	0.009	0.305	118%	80% - 120%
Barium	0.500	0.009	0.501	98.3%	80% - 120%
Cadmium	0.250	ND	0.236	94.5%	80% - 120%
Chromium	0.500	ND	0.442	88.4%	80% - 120%
Cobalt	0.250	ND	0.226	90.2%	80% - 120%
Copper	0.500	ND	0.464	92.8%	80% - 120%
Iron	0.500	0.007	0.500	98.6%	80% - 120%
Lead	0.500	ND	0.517	103%	80% - 120%
Manganese	0.250	0.754	0.851	84.7%	80% - 120%
Molybdenum	0.100	0.008	0.104	96.9%	80% - 120%
Mercury	0.100	ND	0.091	91.1%	80% - 120%
Nickel	0.500	ND	0.440	88.0%	80% - 120%
Selenium	0.100	ND	0.106	106%	80% - 120%
Silver	0.100	ND	0.095	94.9%	80% - 120%
Zinc	0.500	ND	0.482	96.3%	80% - 120%

ND - Parameter not detected at the stated detection limit.

References: Method 3050B, Acid Digestion of Sediments, Sludges and Soils. SW-846, USEPA, December 1996.
Method 6010B, Analysis of Metals by Inductively Coupled Plasma Atomic Emmision Spectorscopy, SW-846, USEPA, December 1996.

Comments: **QA/QC for Sample 57349-57350, 57329**

Analyst

Review

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CATION / ANION ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj Water	Date Reported:	03/03/11
Laboratory Number:	57329	Date Sampled:	02/24/11
Chain of Custody:	11232	Date Received:	02/24/11
Sample Matrix:	Aqueous	Date Analyzed:	02/26/11
Preservative:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Units		
pH	**7.33**	s.u.		
Conductivity @ 25° C	**25,900**	umhos/cm		
Total Dissolved Solids @ 180C	**15,100**	mg/L		
Total Dissolved Solids (Calc)	**14,100**	mg/L		
SAR	**67.7**	ratio		
Total Alkalinity as CaCO3	**1,080**	mg/L		
Total Hardness as CaCO3	**933**	mg/L		
Bicarbonate as CaCO3	**1,080**	mg/L	17.7	meq/L
Carbonate as CaCO3	**< 0.01**	mg/L	0.000	meq/L
Hydroxide as CaCO3	**< 0.01**	mg/L	0.001	meq/L
Nitrate Nitrogen	**24.5**	mg/L	0.395	meq/L
Nitrite Nitrogen	**< 0.01**	mg/L	0.000	meq/L
Chloride	**7,040**	mg/L	199	meq/L
Fluoride	**7.65**	mg/L	0.403	meq/L
Phosphate	**22.7**	mg/L	0.716	meq/L
Sulfate	**859**	mg/L	17.89	meq/L
Iron	**2.48**	mg/L	0.089	meq/L
Calcium	**316**	mg/L	16	meq/L
Magnesium	**35.1**	mg/L	3	meq/L
Potassium	**405**	mg/L	10.4	meq/L
Sodium	**4,750**	mg/L	207	meq/L
Cations			236	meq/L
Anions			236	meq/L
Cation/Anion Difference			**0.04%**	

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments **Key Farmington UIC-5 Inj Water**

Analyst

Review

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SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj Water	Date Reported:	02/28/11
Lab ID#:	57329	Date Sampled:	02/24/11
Sample Matrix:	Aqueous	Date Received:	02/24/11
Preservative:	Cool	Date Analyzed:	02/28/11
Condition:	Intact	Chain of Custody:	11232

Parameter	Result	
IGNITABILITY:	**Negative**	
CORROSIVITY:	**Negative**	**pH = 7.28**
REACTIVITY:	**Negative**	

RCRA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
IGNITABILITY:	Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21. *(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)*
CORROSIVITY:	Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22. *(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)*
REACTIVITY:	Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23. *(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)*
Reference:	40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.
Comments:	**Key Farmington UIC-5 Inj Water**

Analyst

Review

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EPA METHOD 8091
Nitroaromatics and Cyclic Ketones

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	03-11-11
Laboratory Number:	57329	Date Sampled:	02-24-11
Chain of Custody:	11232	Date Received:	02-24-11
Sample Matrix:	Aqueous	Date Extracted:	03-09-11
Preservative:	Cool	Date Analyzed:	03-10-11
Condition:	Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	**ND**	**0.014**	**5.0**
Hexachloroethane	**ND**	**0.014**	**3.0**
Nitrobenzene	**ND**	**0.014**	**2.0**
Hexachlorobutadiene	**ND**	**0.014**	**0.5**
2,4-Dinitrotoluene	**ND**	**0.014**	**0.13**
HexachloroBenzene	**ND**	**0.014**	**0.13**

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorobiphenyl	**3.4%**

References: Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8270, Determination of Semi-Volatile Organics by Capillary Column GC/MS

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: **Key Farmington UIC-5 Inj Water**

Analyst

Review

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EPA METHOD 8091
Nitroaromatics and Cyclic Ketones
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	0310BBLK QA/QC	Date Reported:	03-11-11
Laboratory Number:	57329	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-10-11
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate Conc (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	Percent Diff.
Pyridine	**ND**	**ND**	**0.014**	**ND**	**ND**	**0.0%**
Hexachloroethane	**ND**	**ND**	**0.014**	**ND**	**ND**	**0.0%**
Nitrobenzene	**ND**	**ND**	**0.014**	**ND**	**ND**	**0.0%**
Hexachlorobutadiene	**ND**	**ND**	**0.014**	**ND**	**ND**	**0.0%**
2,4-Dinitrotoluene	**ND**	**ND**	**0.014**	**ND**	**ND**	**0.0%**
HexachloroBenzene	**ND**	**ND**	**0.014**	**ND**	**ND**	**0.0%**

ND - Parameter not detected at the stated detection limit.

References:
Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8270, Determination of Semi-Volatile Organics by Capillary Column GC/MS

Comments: **QA/QC for Sample 57329, 57526.**

Analyst

Review

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EPA METHOD 8041
TCLP PHENOLS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	03-10-11
Laboratory Number:	57329	Date Sampled:	02-24-11
Chain of Custody:	11232	Date Received:	02-24-11
Sample Matrix:	Aqueous	Date Extracted:	03-02-11
Preservative:	Cool	Date Analyzed:	03-04-11
Condition:	Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.012	200
p,m-Cresol	ND	0.012	200
2,4,6-Trichlorophenol	ND	0.012	2.0
2,4,5-Trichlorophenol	ND	0.012	400
Pentachlorophenol	ND	0.012	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	23.3%
	2,4,6-Tribromophenol	4.16%

References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: **Key Farmington UIC Inj Water**

Analyst

Review

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EPA METHOD 8041
TCLP PHENOLS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	0304ABLK QA/QC	Date Reported:	03-10-11
Laboratory Number:	57329	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-04-11
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate Conc (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	Percent Diff.
o-Cresol	ND	ND	0.012	ND	ND	0.0%
p,m-Cresol	ND	ND	0.012	ND	ND	0.0%
2,4,6-Trichlorophenol	ND	ND	0.012	ND	ND	0.0%
2,4,5-Trichlorophenol	ND	ND	0.012	ND	ND	0.0%
Pentachlorophenol	ND	ND	0.012	ND	ND	0.0%

ND - Parameter not detected at the stated detection limit.

References:
Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.
Method 8041, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Comments: **QA/QC for Sample 57329.**

Analyst

Review

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EPA METHOD 8260
AROMATIC / HALOGENATED
VOLATILE ORGANICS

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj Water	Date Reported:	03-03-11
Laboratory Number:	57329	Date Sampled:	02-24-11
Chain of Custody:	11232	Date Received:	02-24-11
Sample Matrix:	Aqueous	Date Extracted:	NA
Preservative:	Cool	Date Analyzed:	02-28-11
Condition:	Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.001	0.2
2-Butanone (MEK)	ND	0.001	200
1,1-Dichloroethene	ND	0.001	0.7
Chloroform	ND	0.001	6.0
Carbon Tetrachloride	ND	0.001	0.5
Benzene	0.412	0.001	0.5
1,2-Dichloroethane	ND	0.001	0.5
Trichloroethene	ND	0.003	0.5
Tetrachloroethene	ND	0.005	0.7
Chlorobenzene	ND	0.003	100
1,4-Dichlorobenzene	ND	0.002	7.5

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	84.8%
	1,4-difluorobenzene	84.5%
	4-bromochlorobenzene	43.8%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8260B, Determination of Volatile Organics using GC/MS

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: **Key Energy UIC-5 Inj Water**

Analyst

Review

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EPA METHOD 8260
AROMATIC / HALOGENATED VOLATILE ORGANICS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	0228VBLK QA/QC	Date Reported:	03-03-11
Laboratory Number:	57329	Date Sampled:	N/A
Sample Matrix:	N/A	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-28-11
Condition:	N/A	Analysis Requested:	TCLP

Blanks & Duplicate Concentration (mg/L)	Detection Limit	Laboratory Blank	Method Blank	Sample Conc.	Duplicate Conc.	Percent Difference
Vinyl Chloride	0.001	ND	ND	ND	ND	0.0%
2-Butanone (MEK)	0.001	ND	ND	ND	ND	0.0%
1,1-Dichloroethene	0.001	ND	ND	ND	ND	0.0%
Chloroform	0.001	ND	ND	ND	ND	0.0%
Carbon Tetrachloride	0.001	ND	ND	ND	ND	0.0%
Benzene	0.001	ND	ND	0.412	0.423	2.76%
1,2-Dichloroethane	0.001	ND	ND	ND	ND	0.0%
Trichloroethene	0.003	ND	ND	ND	ND	0.0%
Tetrachloroethene	0.005	ND	ND	ND	ND	0.0%
Chlorobenzene	0.003	ND	ND	ND	ND	0.0%
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	0.0%

Matrix Spike Concentration (mg/L)	Amount Spiked	Sample Result	Spike Result	Percent Recovery	Acceptable Range
Vinyl Chloride	0.100	ND	0.091	91.1%	26-163
2-Butanone (MEK)	0.100	ND	0.110	110%	43-143
1,1-Dichloroethene	0.100	ND	0.095	94.7%	47-132
Chloroform	0.100	ND	0.087	87.1%	49-133
Carbon Tetrachloride	0.100	ND	0.090	90.1%	43-143
Benzene	0.100	0.412	0.458	89.5%	39-150
1,2-Dichloroethane	0.100	ND	0.091	90.6%	51-147
Trichloroethene	0.100	ND	0.088	88.1%	35-146
Tetrachloroethene	0.100	ND	0.073	73.3%	26-162
Chlorobenzene	0.100	ND	0.072	71.9%	38-150
1,4-Dichlorobenzene	0.100	ND	0.051	51.0%	42-143

References:
Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8260B, Determination of Volatile Organics using GC/MS

Comments: **QA/QC for Sample 57329.**

Analyst

Review

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons

Client:	Key Energy	Project #:	98065-0013
Sample ID:	Inj. Water	Date Reported:	03-11-11
Laboratory Number:	57329	Date Sampled:	02-24-11
Chain of custody:	11232	Date Received:	02-24-11
Sample Matrix:	Aqueous	Date Analyzed:	03-10-11
Preservative:	Cool	Date Concentrated:	03-07-11
Condition:	Intact	Analysis Requested:	8100

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Naphthalene	**ND**	**0.20**
Acenaphthylene	**ND**	**0.20**
Acenaphthene	**ND**	**0.20**
Fluorene	**ND**	**0.20**
Phenanthrene	**ND**	**0.20**
Anthracene	**ND**	**0.20**
Fluoranthene	**ND**	**0.20**
Pyrene	**ND**	**0.20**
Benzo[a]anthracene	**ND**	**0.20**
Chrysene	**ND**	**0.20**
Benzo(b)fluoranthene	**ND**	**0.20**
Benzo[k]fluoranthene	**ND**	**0.20**
Benzo(a)pyrene	**ND**	**0.20**
Indeno[1,2,3]pyrene	**ND**	**0.20**
Dibenzo[a,h]anthracene	**ND**	**0.20**
Benzo(g,h,i)perylene	**ND**	**0.20**

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronaphthalene	**13.6**

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **Key Farmington UIC-5 Inj Water.**

Analyst

Review

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QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	Laboratory Blank	Date Reported:	03-11-11
Laboratory Number:	QA/QC	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-10-11
Condition:	N/A	Analysis Requested:	8100

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Naphthalene	ND	0.2
Acenaphthylene	ND	0.2
Acenaphthene	ND	0.2
Fluorene	ND	0.2
Phenanthrene	ND	0.2
Anthracene	ND	0.2
Fluoranthene	ND	0.2
Pyrene	ND	0.2
Benzo[a]anthracene	ND	0.2
Chrysene	ND	0.2
Benzo(b)fluoranthene	ND	0.2
Benzo[k]fluoranthene	ND	0.2
Benzo(a)pyrene	ND	0.2
Indeno[1,2,3]pyrene	ND	0.2
Dibenzo[a,h]anthracene	ND	0.2
Benzo(g,h,i)perylene	ND	0.2

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY:	Parameter	Percent Recovery
	1-fluoronaphthalene	99.6%

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 57329.**

Analyst

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank 03/10	Date Reported:	03-11-11
Laboratory Number:	0310MBLK QA/QC	Date Sampled:	N/A
Chain of custody:	N/A	Date Received:	N/A
Sample Matrix:	Aqueous	Date Analyzed:	03-10-11
Preservative:	N/A	Date Concentrated:	03-09-11
Condition:	N/A	Analysis Requested:	8100

Parameter	Concentration (mg/L)	Det. Limit (mg/L)
Naphthalene	ND	0.40
Acenaphthylene	ND	0.40
Acenaphthene	ND	0.40
Fluorene	ND	0.40
Phenanthrene	ND	0.40
Anthracene	ND	0.40
Fluoranthene	ND	0.40
Pyrene	ND	0.40
Benzo[a]anthracene	ND	0.40
Chrysene	ND	0.40
Benzo(b)fluoranthene	ND	0.40
Benzo[k]fluoranthene	ND	0.40
Benzo(a)pyrene	ND	0.40
Indeno[1,2,3]pyrene	ND	0.40
Dibenzo[a,h]anthracene	ND	0.40
Benzo(g,h,i)perylene	ND	0.40

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronaphthalene	23.9

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 57329.**

Analyst

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Daily Calibration Report

Client:	QA/QC	Project #:	N/A
Sample ID:	8100 Cal 03-10	Date Reported:	03-11-11
Laboratory Number:	03-10-PAH QA/QC	Date Sampled:	N/A
Chain of custody:	N/A	Date Received:	N/A
Sample Matrix:	Aqueous	Date Analyzed:	03-10-11
Preservative:	N/A	Date Concentrated:	N/A
Condition:	N/A	Analysis Requested:	8100

Parameter	Concentration (mg/L)	Result	% Recovered	% Recovery Limits
Naphthalene	200	200	100	80 - 120
Acenaphthylene	200	200	100	80 - 120
Acenaphthene	200	196	98.2	80 - 120
Fluorene	200	200	99.9	80 - 120
Phenanthrene	200	200	100	80 - 120
Anthracene	200	200	100	80 - 120
Fluoranthene	200	199	99.6	80 - 120
Pyrene	200	201	101	80 - 120
Benzo[a]anthracene	200	201	101	80 - 120
Chrysene	200	200	99.8	80 - 120
Benzo(b)fluoranthene	200	200	99.8	80 - 120
Benzo[k]fluoranthene	200	200	99.8	80 - 120
Benzo(a)pyrene	200	197	98.6	80 - 120
Indeno[1,2,3]pyrene	200	200	99.8	80 - 120
Dibenzo[a,h]anthracene	200	200	100	80 - 120
Benzo(g,h,i)perylene	200	197	98.6	80 - 120

ND - Parameter not detected at the stated detection limit.

SURROGATE RECOVERY	Parameter	Percent Recovery
	1-fluoronaphthalene	100

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 57329.**

Analyst

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	sample duplicate	Date Reported:	03-11-11
Laboratory Number:	57329	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	8100	Date Analyzed:	03-10-11
Condition:	N/A		

Parameter	Sample Result (mg/Kg)	Duplicate Sample Result (mg/Kg)	Det. Limit (mg/Kg)	Percent Difference
Naphthalene	ND	ND	0.20	0.0%
Acenaphthylene	ND	ND	0.20	0.0%
Acenaphthene	ND	ND	0.20	0.0%
Fluorene	ND	ND	0.20	0.0%
Phenanthrene	ND	ND	0.20	0.0%
Anthracene	ND	ND	0.20	0.0%
Fluoranthene	ND	ND	0.20	0.0%
Pyrene	ND	ND	0.20	0.0%
Benzo[a]anthracene	ND	ND	0.20	0.0%
Chrysene	ND	ND	0.20	0.0%
Benzo(b)fluoranthene	ND	ND	0.20	0.0%
Benzo[k]fluoranthene	ND	ND	0.20	0.0%
Benzo(a)pyrene	ND	ND	0.20	0.0%
Indeno[1,2,3]pyrene	ND	ND	0.20	0.0%
Dibenzo[a,h]anthracene	ND	ND	0.20	0.0%
Benzo(g,h,i)perylene	ND	ND	0.20	0.0%

ND - Parameter not detected at the stated detection limit.

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 57329.**

Analyst

Review

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EPA Method 8100
Polynuclear Aromatic Hydrocarbons
Quality Assurance Report

Client:	QA/QC	Project #:	QA/QC
Sample ID:	Matrix Spike	Date Reported:	03-11-11
Laboratory Number:	57329	Date Sampled:	N/A
Sample Matrix:	Aqueous	Date Received:	N/A
Analysis Requested:	8100	Date Analyzed:	03-10-11
Condition:	N/A		

Parameter	Sample Result (mg/Kg)	Spike Added (mg/Kg)	Spiked Sample Result (mg/Kg)	Det. Limit (mg/Kg)	Percent Recovery	SW-846 % Rec. Accept. Range
Naphthalene	ND	100	114	0.20	114%	10-122
Acenaphthylene	ND	100	88.2	0.20	88.2%	10-139
Acenaphthene	ND	100	72.0	0.20	72.0%	10-124
Fluorene	ND	100	60.4	0.20	60.4%	10-142
Phenanthrene	ND	100	54.0	0.20	54.0%	10-155
Anthracene	ND	100	53.2	0.20	53.2%	10-126
Fluoranthene	ND	100	48.4	0.20	48.4%	14-123
Pyrene	ND	100	58.7	0.20	58.7%	10-140
Benzo[a]anthracene	ND	100	59.0	0.20	59.0%	10-116
Chrysene	ND	100	50.3	0.20	50.3%	12-135
Benzo(b)fluoranthene	ND	100	50.3	0.20	50.3%	10-199
Benzo[k]fluoranthene	ND	100	20.9	0.20	20.9%	10-150
Benzo(a)pyrene	ND	100	14.4	0.20	14.4%	10-159
Indeno[1,2,3]pyrene	ND	100	20.9	0.20	20.9%	10-128
Dibenzo[a,h]anthracene	ND	100	16.7	0.20	16.7%	10-110
Benzo(g,h,i)perylene	ND	100	16.7	0.20	16.7%	10-116

ND - Parameter not detected at the stated detection limit.

References: Method 8270, Semi-Volatile Organics by Capillary Column GC/MS
SW-846, USEPA, September 1986.

Comments: **QA/QC for Sample 57329.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

11232

Client:	Project Name / Location:
KEY ENERGY	KEY FARMINGTON UIC-5 INJ WATER
Client Address:	**Sampler Name:** WAYNE PRICE / PRICE LLC
5651 HWY 64 87401	
Client Phone No.:	**Client No.:** 98065-0013
1-505-715-2809	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative H_2O_2	Preservative HCl	Preservative ICE	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with ~~HG~~	PAH (8100)	TPH (418.1)	CHLORIDE	PAH (ESA)	Cl⁻		Sample Cool	Sample Intact
INJ WATER	2/24/11	15:02	57329	Soil Solid Sludge Aqueous	2-40ML			X			X	DISSOLVED + HARD + GEN CHEM	X							X		Y	Y
" "	"	15:02	~~57330~~ TK	Soil Solid Sludge Aqueous	2-40ML			X				Mg, Mn			X								
" "	"	15:02	~~57331~~ TK	Soil Solid Sludge Aqueous	2-1L AMBER			X				Ca, Mg, Al, Cr			X								
" "	"	15:02	~~57332~~ TK	Soil Solid Sludge Aqueous	2-1L AMBER			X				Mn, Al				X							
" "	"	15:02	~~57333~~ TK	Soil Solid Sludge Aqueous	2-1L AMBER			X				Ca, Fe, Zn,							X				
" "	"	15:02	~~57334~~ TK	Soil Solid Sludge Aqueous	1-500ML			X					X										
" "	"	15:02	~~57335~~ TK	Soil Solid Sludge Aqueous	~~1-500ML~~ 1-250ML			X				X											
" "	"	15:02	~~57336~~ TK	Soil Solid Sludge Aqueous	1-125ML			X												X			
				Soil Solid Sludge Aqueous																			
				Soil Solid Sludge Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
WAYNE PRICE SP.	2/24/11	15:26	Wayne Price Jr	2/24/11	15:26
Relinquished by: (Signature) Wayne Price Jr.	2/24/11	15:36	Received by: (Signature)	2/24/11	15:36
Relinquished by: (Signature)			Received by: (Signature)		

RUSH

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Est. 1970

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

Report Summary

Wednesday March 09, 2011

Report Number: L503982
Samples Received: 03/01/11
Client Project: 98065-0013

Description: Key Energy

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Daphne R Richards

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
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Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

March 09, 2011

Date Received : March 01, 2011
Description : Key Farmington UIC-5 INS WATER

ESC Sample # : L503982-01

Site ID :

Sample ID : INJ WATER-57329

Project # : 98065-0013

Collected By : Wayne Price
Collection Date : 02/24/11 15:02

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Pesticides						
Aldrin	BDL	0.000050	mg/l	8081A	03/04/11	1
Alpha BHC	BDL	0.000050	mg/l	8081A	03/04/11	1
Beta BHC	BDL	0.000050	mg/l	8081A	03/04/11	1
Delta BHC	BDL	0.000050	mg/l	8081A	03/04/11	1
Gamma BHC	BDL	0.000050	mg/l	8081A	03/04/11	1
Chlordane	BDL	0.00050	mg/l	8081A	03/04/11	1
4,4-DDD	BDL	0.000050	mg/l	8081A	03/04/11	1
4,4-DDE	BDL	0.000050	mg/l	8081A	03/04/11	1
4,4-DDT	BDL	0.000050	mg/l	8081A	03/04/11	1
Dieldrin	BDL	0.000050	mg/l	8081A	03/04/11	1
Endosulfan I	BDL	0.000050	mg/l	8081A	03/04/11	1
Endosulfan II	BDL	0.000050	mg/l	8081A	03/04/11	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A	03/04/11	1
Endrin	BDL	0.000050	mg/l	8081A	03/04/11	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A	03/04/11	1
Endrin ketone	BDL	0.000050	mg/l	8081A	03/04/11	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A	03/04/11	1
Heptachlor	BDL	0.000050	mg/l	8081A	03/04/11	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A	03/04/11	1
Methoxychlor	BDL	0.000050	mg/l	8081A	03/04/11	1
Toxaphene	BDL	0.00050	mg/l	8081A	03/04/11	1
Pesticides Surrogates						
Decachlorobiphenyl	29.2		% Rec.	8081A	03/04/11	1
Tetrachloro-m-xylene	50.2		% Rec.	8081A	03/04/11	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	03/08/11	1
Dalapon	BDL	0.20	mg/l	8151	03/08/11	1
2,4-DB	BDL	0.0020	mg/l	8151	03/08/11	1
Dicamba	BDL	0.0020	mg/l	8151	03/08/11	1
Dichloroprop	BDL	0.0020	mg/l	8151	03/08/11	1
Dinoseb	BDL	0.0020	mg/l	8151	03/08/11	1
MCPA	BDL	0.10	mg/l	8151	03/08/11	1
MCPP	BDL	0.10	mg/l	8151	03/08/11	1
2,4,5-T	BDL	0.0020	mg/l	8151	03/08/11	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	03/08/11	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	53.7		% Rec.	8151	03/08/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 03/09/11 11:49 Printed: 03/09/11 13:34

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EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L503982

March 09, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
4,4-DDD	< .00005	mg/l			WG524187	03/04/11 11:40
4,4-DDE	< .00005	mg/l			WG524187	03/04/11 11:40
4,4-DDT	< .00005	mg/l			WG524187	03/04/11 11:40
Aldrin	< .00005	mg/l			WG524187	03/04/11 11:40
Alpha BHC	< .00005	mg/l			WG524187	03/04/11 11:40
Beta BHC	< .00005	mg/l			WG524187	03/04/11 11:40
Chlordane	< .0005	mg/l			WG524187	03/04/11 11:40
Delta BHC	< .00005	mg/l			WG524187	03/04/11 11:40
Dieldrin	< .00005	mg/l			WG524187	03/04/11 11:40
Endosulfan I	< .00005	mg/l			WG524187	03/04/11 11:40
Endosulfan II	< .00005	mg/l			WG524187	03/04/11 11:40
Endosulfan sulfate	< .00005	mg/l			WG524187	03/04/11 11:40
Endrin	< .00005	mg/l			WG524187	03/04/11 11:40
Endrin aldehyde	< .00005	mg/l			WG524187	03/04/11 11:40
Endrin ketone	< .00005	mg/l			WG524187	03/04/11 11:40
Gamma BHC	< .00005	mg/l			WG524187	03/04/11 11:40
Heptachlor	< .00005	mg/l			WG524187	03/04/11 11:40
Heptachlor epoxide	< .00005	mg/l			WG524187	03/04/11 11:40
Hexachlorobenzene	< .00005	mg/l			WG524187	03/04/11 11:40
Methoxychlor	< .00005	mg/l			WG524187	03/04/11 11:40
Toxaphene	< .0005	mg/l			WG524187	03/04/11 11:40
Decachlorobiphenyl		% Rec.	97.11	10-122.6	WG524187	03/04/11 11:40
Tetrachloro-m-xylene		% Rec.	24.54	15.3-114.2	WG524187	03/04/11 11:40
2,4,5-T	< .002	mg/l			WG524055	03/08/11 15:04
2,4,5-TP (Silvex)	< .002	mg/l			WG524055	03/08/11 15:04
2,4-D	< .002	mg/l			WG524055	03/08/11 15:04
2,4-DB	< .002	mg/l			WG524055	03/08/11 15:04
Dalapon	< .002	mg/l			WG524055	03/08/11 15:04
Dicamba	< .002	mg/l			WG524055	03/08/11 15:04
Dichloroprop	< .002	mg/l			WG524055	03/08/11 15:04
Dinoseb	< .002	mg/l			WG524055	03/08/11 15:04
MCPA	< .1	mg/l			WG524055	03/08/11 15:04
MCPP	< .1	mg/l			WG524055	03/08/11 15:04
2,4-Dichlorophenyl Acetic Acid		%	67.02	42-112	WG524055	03/08/11 15:04

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
4,4-DDD	mg/l	.0002	0.000214	107.*	0-0	WG524187
4,4-DDE	mg/l	.0002	0.000201	100.*	0-0	WG524187
4,4-DDT	mg/l	.0002	0.000219	110.*	0-0	WG524187
Aldrin	mg/l	.0002	0.000108	54.2	25-115	WG524187
Alpha BHC	mg/l	.0002	0.000179	89.7*	0-0	WG524187
Beta BHC	mg/l	.0002	0.000196	97.9*	0-0	WG524187
Delta BHC	mg/l	.0002	0.000186	93.1*	0-0	WG524187
Dieldrin	mg/l	.0002	0.000206	103.*	0-0	WG524187
Endosulfan I	mg/l	.0002	0.000217	109.*	0-0	WG524187
Endosulfan II	mg/l	.0002	0.000218	109.*	0-0	WG524187
Endosulfan sulfate	mg/l	.0002	0.000203	101.*	0-0	WG524187
Endrin	mg/l	.0002	0.000208	104.*	0-0	WG524187
Endrin aldehyde	mg/l	.0002	0.000153	76.5*	0-0	WG524187
Endrin ketone	mg/l	.0002	0.000201	100.*	0-0	WG524187
Gamma BHC	mg/l	.0002	0.000191	95.7*	0-0	WG524187
Heptachlor	mg/l	.0002	0.000131	65.4	21-123	WG524187
Heptachlor epoxide	mg/l	.0002	0.000206	103.*	0-0	WG524187
Hexachlorobenzene	mg/l	.0667	0.000139	0.209*	28-115	WG524187
Methoxychlor	mg/l	.0002	0.000222	111.*	0-0	WG524187

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L503982

March 09, 2011

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Decachlorobiphenyl				110.8	10-122.6	
Tetrachloro-m-xylene				64.41	15.3-114.2	
2,4,5-T	mg/l	.005	0.00408	81.6	30-136	WG524055
2,4,5-TP (Silvex)	mg/l	.005	0.00371	74.2	33-134	WG524055
2,4-D	mg/l	.005	0.00361	72.3	24-127	WG524055
2,4-DB	mg/l	.005	0.00359	71.8	22-198	WG524055
Dalapon	mg/l	.005	0.00358	71.6	14-121	WG524055
Dicamba	mg/l	.005	0.00345	68.9	31-135	WG524055
Dichloroprop	mg/l	.005	0.00288	57.5	30-122	WG524055
Dinoseb	mg/l	.005	0.00172	34.4	28-183	WG524055
MCPA	mg/l	.5	0.363	72.6	32-153	WG524055
MCPP	mg/l	.5	0.447	89.4	42-133	WG524055
2,4-Dichlorophenyl Acetic Acid				78.81	42-112	WG524055

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
4,4-DDD	mg/l	0.000209	0.000214	104*	-	2.35	39	WG524187
4,4-DDE	mg/l	0.000194	0.000201	97*	-	3.16	37	WG524187
4,4-DDT	mg/l	0.000213	0.000219	106*	-	3.02	42	WG524187
Aldrin	mg/l	0.000101	0.000108	51*	-	6.71	45	WG524187
Alpha BHC	mg/l	0.000180	0.000179	90*	-	0.0951	30	WG524187
Beta BHC	mg/l	0.000195	0.000196	97*	-	0.674	31	WG524187
Delta BHC	mg/l	0.000182	0.000186	91*	-	2.44	41	WG524187
Dieldrin	mg/l	0.000202	0.000206	101*	-	2.08	36	WG524187
Endosulfan I	mg/l	0.000214	0.000217	107*	-	1.75	35	WG524187
Endosulfan II	mg/l	0.000212	0.000218	106*	-	2.58	36	WG524187
Endosulfan sulfate	mg/l	0.000198	0.000203	99*	-	2.41	37	WG524187
Endrin	mg/l	0.000204	0.000208	102*	-	1.88	37	WG524187
Endrin aldehyde	mg/l	0.000152	0.000153	76*	-	0.323	36	WG524187
Endrin ketone	mg/l	0.000196	0.000201	98*	-	2.56	36	WG524187
Gamma BHC	mg/l	0.000192	0.000191	96*	-	0.443	30	WG524187
Heptachlor	mg/l	0.000125	0.000131	62*	-	4.92	38	WG524187
Heptachlor epoxide	mg/l	0.000203	0.000206	102*	-	1.27	33	WG524187
Hexachlorobenzene	mg/l	0.000135	0.000139	0*	-	3.00	29	WG524187
Methoxychlor	mg/l	0.000216	0.000222	108*	-	2.64	40	WG524187
Decachlorobiphenyl				106.2	10-122.6			WG524187
Tetrachloro-m-xylene				63.03	15.3-114.2			WG524187
2,4,5-T	mg/l	0.00404	0.00408	81.0	30-136	0.937	31	WG524055
2,4,5-TP (Silvex)	mg/l	0.00371	0.00371	74.0	33-134	0.0735	30	WG524055
2,4-D	mg/l	0.00364	0.00361	73.0	24-127	0.836	27	WG524055
2,4-DB	mg/l	0.00347	0.00359	69.0	22-198	3.29	33	WG524055
Dalapon	mg/l	0.00320	0.00358	64.0	14-121	11.1	31	WG524055
Dicamba	mg/l	0.00349	0.00345	70.0	31-135	1.27	25	WG524055
Dichloroprop	mg/l	0.00291	0.00288	58.0	30-122	1.08	26	WG524055
Dinoseb	mg/l	0.00206	0.00172	41.0	28-183	18.0	38	WG524055
MCPA	mg/l	0.365	0.363	73.0	32-153	0.429	31	WG524055
MCPP	mg/l	0.465	0.447	93.0	42-133	3.85	29	WG524055
2,4-Dichlorophenyl Acetic Acid				79.41	42-112			WG524055

Batch number /Run number / Sample number cross reference

WG524187: R1599910: L503982-01
WG524055: R1603790: L503982-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Farmington, NM 87401

Quality Assurance Report
Level II

L503982

March 09, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

CHAIN OF CUSTODY RECORD

11232

Client:	Project Name / Location:
KEY ENERGY	KEY FARMINGTON UIC-5 INJ WATER
Client Address:	**Sampler Name:** WAYNE PRICE / PRICE LLC
5651 Hwy 64 87401	
Client Phone No.:	**Client No.:** 98065-0013
1-505-715-2809	

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative: $HgCl_2$	Preservative: HCl	Preservative: Ice	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals (DISSOLVED + MAGG + GEN CHEM)	Cation / Anion	RCI	TCLP with ~~HG~~	PAH (8100)	TPH (418.1)	CHLORIDE	pH (ESC)	Cl⁻		Sample Cool	Sample Intact
INJ WATER	2/24/11	15:02	57329	Soil Solid Sludge Aqueous	2-40 mL			X			X												Y	Y
" "	"	15:02	57330 TK	Soil Solid Sludge Aqueous	2-40 mL			X				Mg, Mn			X									
" "	"	15:02	57331 TK	Soil Solid Sludge Aqueous	2-1L AMBER			X				AL, CO_3			X									
" "	"	15:02	57332 TK	Soil Solid Sludge Aqueous	2-1L AMBER			X				Mn,				X								
" "	"	15:02	57333 TK	Soil Solid Sludge Aqueous	2-1L AMBER			X				Fe, Zn,							X					
" "	"	15:02	57334 TK	Soil Solid Sludge Aqueous	1-500 mL			X				Cu,	X											
" "	"	15:02	57335 TK	Soil Solid Sludge Aqueous	~~1-500 mL~~ 1-250 mL			X				X												
" "	"	15:02	57336 TK	Soil Solid Sludge Aqueous	1-125 mL			X												X				
				Soil Solid Sludge Aqueous																				
				Soil Solid Sludge Aqueous																				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
WAYNE PRICE SP.	2/24/11	15:36	Wayne Price Jr	2/24/11	15:36
Wayne Price Jr.	2/24/11	15:36		2/24/11	15:36
Relinquished by: (Signature)			Received by: (Signature)		

RUSH

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Appendix J
2010 Bradenhead Test Report and MIT Report with chart.

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

MECHANICAL INTEGRITY TEST REPORT

(TA OR UIC)

Date of Test 7-8-10 Operator Key Energy Svc. API # 30-0 45-28653

Property Name Sunco Disposal Well # 1 Location: Unit ___ Sec 2 Twn 29 Rge 12

Land Type:
State ___
Federal ___
Private /
Indian ___

Well Type:
Water Injection ___
Salt Water Disposal /
Gas Injection ___
Producing Oil/Gas ___
Pressure obervation ___

Temporarily Abandoned Well (Y/N): ___ TA Expires: ___

Casing Pres. 0 Tbg. SI Pres. ___ Max. Inj. Pres. ___
Bradenhead Pres. 0 Tbg. Inj. Pres. ___
Tubing Pres. 1795
Int. Casing Pres. N/A

Pressured annulus up to 400 psi. for 30 mins. Test passed/failed

DIST. 3

REMARKS:

OIL CONS. DIV

Packer Set 4282
Top Perf 4380

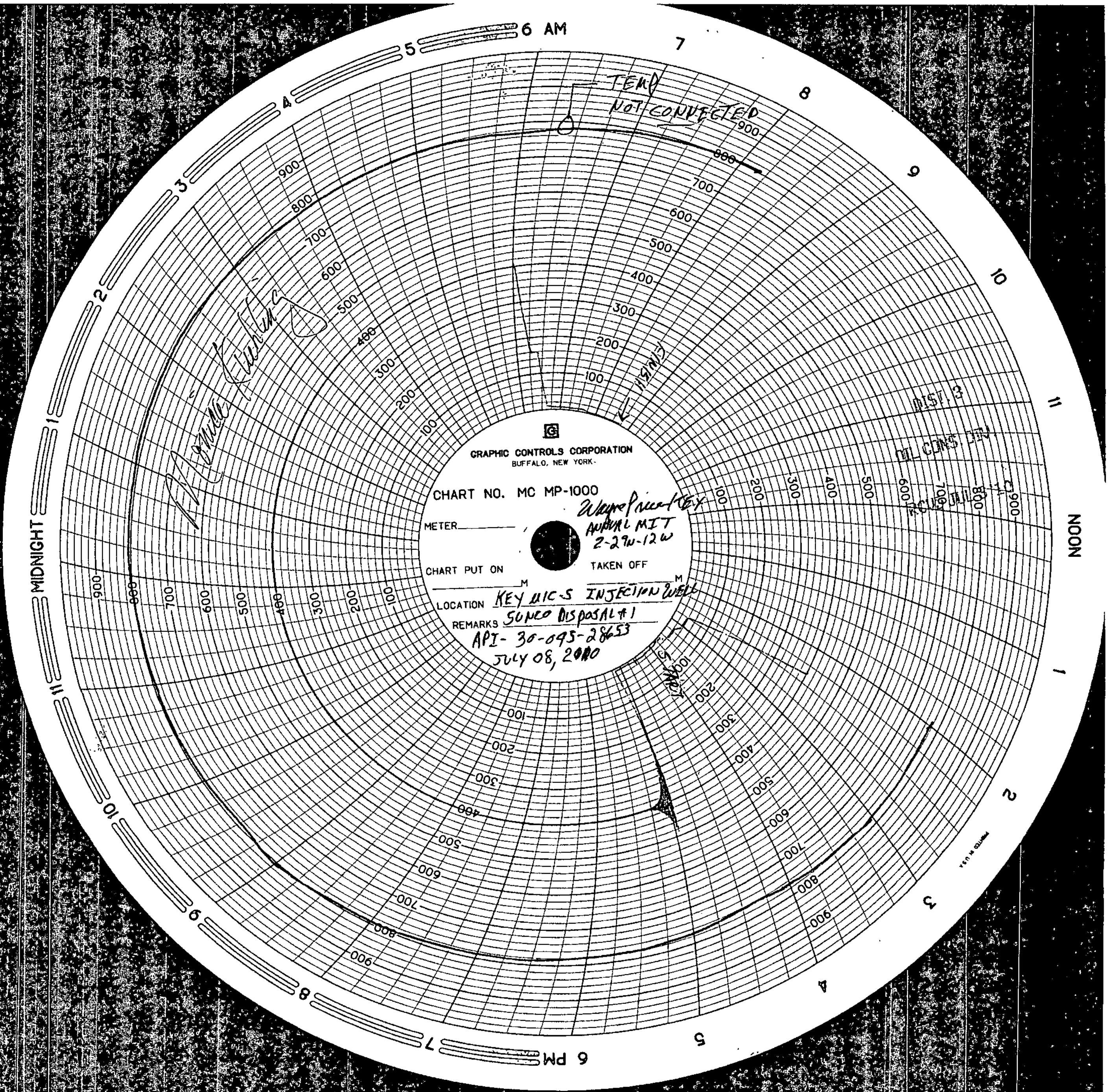
RCVD JUL 8'10

By Wayne Price (Operator Representative)

Witness Monica Kuehling (NMOCD)

KEY - AGENT (Position)

Revised 02-11-02


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
CHART NO. MC MP-1000
METER
CHART PUT ON
TAKEN OFF
LOCATION KEY UIC-5 INJECTION WELL
REMARKS SUNCO DISPOSAL #1
API- 30-045-28653
JULY 08, 2000
Wayne Price/KEY
ANNUAL MIT
2-29N-12W
TEMP NOT CONNECTED
6 AM
NOON
6 PM
MIDNIGHT

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
http://emnrd.state.nm.us/ocd/District III/3district.htm

BRADENHEAD TEST REPORT

(submit 1 copy to above address)

Date of Test 07-8-10 Operator Key Energy Svc. API #30-0 45-28653

Property Name Sunco Disposal Well No. 1 Location: Unit Section 2 Township 29 Range 12

Well Status(Shut-In or Producing) Initial PSI: Tubing 1795 Intermediate N/A Casing 0 Bradenhead 0

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

Testing	PRESSURE Bradenhead BH	Bradenhead Int	Bradenhead Csg	INTERM Int	INTERM Csg
TIME					
5 min					
10 min					
15 min					
20 min					
25 min					
30 min					

FLOW CHARACTERISTICS	BRADENHEAD	INTERMEDIATE
Steady Flow		
Surges		
Down to Nothing		
Nothing	✓	~~DIST. 3~~
Gas		
Gas & Water		OIL CONS. DIV.
Water		RCVD JUL 8 '10

If bradenhead flowed water, check all of the descriptions that apply below:

CLEAR_____ FRESH_____ SALTY_____ SULFUR_____ BLACK_____

5 MINUTE SHUT-IN PRESSURE BRADENHEAD 0 INTERMEDIATE N/A

REMARKS: Nothing when opened.

By Wayne Price Witness Monica Kuehling

KEY - AGENT
(Position)

E-mail address WAYNEPRICE77@EARTHLINK.NET

Appendix K
2010 Supporting Documentation for the AOR

2010

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

13 Records Found Displaying Screen 1 of 1

API Number	ULSTR	Footages
○ 3004508704	J-2-29N-12W	1650 FSL & 1650 FEL
Well Name & Number: MCGRATH B No. 001		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004508713	J-2-29N-12W	1808 FSL & 1920 FEL
Well Name & Number: MCGRATH SRC No. 001		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004508714	L-2-29N-12W	1810 FSL & 900 FWL
Well Name & Number: CORNELL SRC No. 007		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004508797	G-2-29N-12W	1650 FNL & 1650 FEL
Well Name & Number: PRE-ONGARD WELL No. 001		
Operator: PRE-ONGARD WELL OPERATOR		
○ 3004508839	D-2-29N-12W	990 FNL & 990 FWL
Well Name & Number: YOUNG No. 001		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
● 3004508844	C-2-29N-12W	990 FNL & 1650 FWL
Well Name & Number: KATTLER No. 001		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004527635	M-2-29N-12W	1095 FSL & 1310 FWL
Well Name & Number: PRE-ONGARD WELL No. 500		
Operator: PRE-ONGARD WELL OPERATOR		
○ 3004528653	E-2-29N-12W	1595 FNL & 1005 FWL
Well Name & Number: SUNCO DISPOSAL No. 001		
Operator: KEY ENERGY SERVICES, LLC		
○ 3004530486	J-2-29N-12W	1705 FSL & 1450 FEL
Well Name & Number: MCGRATH SRC No. 001R		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004531580	N-2-29N-12W	840 FSL & 1550 FWL
Well Name & Number: CORNELL COM No. 500		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004532241	G-2-29N-12W	1520 FNL & 1900 FEL
Well Name & Number: BECK No. 001R		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
● 3004533573	P-2-29N-12W	760 FSL & 1135 FEL
Well Name & Number: CORNELL COM No. 500S		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004533811	D-2-29N-12W	1000 FNL & 955 FWL

KEY

Well Name & Number: BECK No. 001S

Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP

13 Records Found

Displaying Screen 1 of 1

Continue | Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

16 Records Found Displaying Screen 1 of 1

4

API Number	ULSTR	Footages
○ 3004508641	O -1-29N-12W	790 FSL & 1850 FEL
Well Name & Number: PRE-ONGARD WELL No. 003		
Operator: PRE-ONGARD WELL OPERATOR		
○ 3004508656	M -1-29N-12W	950 FSL & 800 FWL
Well Name & Number: CORNELL No. 002		
Operator: ENERGEN RESOURCES CORPORATION		
○ 3004508661	O -1-29N-12W	1190 FSL & 1650 FEL
Well Name & Number: DUDLEY CORNELL A No. 001		
Operator: BP AMERICA PRODUCTION COMPANY		
○ 3004508782	G -1-29N-12W	1850 FNL & 1850 FEL
Well Name & Number: CORNELL No. 005		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004508783	F -1-29N-12W	1850 FNL & 1850 FWL
Well Name & Number: PRE-ONGARD WELL No. 001		
Operator: PRE-ONGARD WELL OPERATOR		
● 3004508793	E -1-29N-12W	1650 FNL & 990 FWL
Well Name & Number: PRE-ONGARD WELL No. 001		
Operator: PRE-ONGARD WELL OPERATOR		
○ 3004508851	D -1-29N-12W	790 FNL & 790 FWL
Well Name & Number: ALLEN A No. 001		
Operator: BP AMERICA PRODUCTION COMPANY		
○ 3004524129	G -1-29N-12W	1750 FNL & 1750 FEL
Well Name & Number: DUDLEY CORNELL A No. 001E		
Operator: BP AMERICA PRODUCTION COMPANY		
○ 3004524130	K -1-29N-12W	1735 FSL & 1840 FWL
Well Name & Number: PRE-ONGARD WELL No. 1E		
Operator: PRE-ONGARD WELL OPERATOR		
○ 3004526214	L -1-29N-12W	1450 FSL & 790 FWL
Well Name & Number: ALLEN A No. 001E		
Operator: BP AMERICA PRODUCTION COMPANY		
○ 3004529167	G -1-29N-12W	1650 FNL & 1607 FEL
Well Name & Number: HIKE No. 001		
Operator: CHAPARRAL ENERGY LLC		
● 3004529538	A -1-29N-12W	970 FNL & 990 FEL
Well Name & Number: CORNELL No. 005R		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○ 3004529539	I -1-29N-12W	1450 FSL & 1190 FEL

Well Name & Number: CORNELL No. 003R
Operator: THOMPSON ENGR & PROD CORP

○ 3004531612 O -1-29N-12W 760 FSL & 1750 FEL
Well Name & Number: CORNELL No. 002S
Operator: ENERGEN RESOURCES CORPORATION

○ 3004532346 M -1-29N-12W 885 FSL & 660 FWL
Well Name & Number: CORNELL No. 002R
Operator: ENERGEN RESOURCES CORPORATION

○ 3004534348 B -1-29N-12W 720 FNL & 2045 FEL
Well Name & Number: ALLEN COM No. 100
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP

16 Records Found Displaying Screen 1 of 1

Continue Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

9 Records Found — Displaying Screen 1 of 1

	API Number	ULSTR	Footages
○	3004508709	J -3-29N-12W	1650 FSL & 1650 FEL
	Well Name & Number: MCGRATH No. 003		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004508711	K -3-29N-12W	1650 FSL & 1650 FWL
	Well Name & Number: PRE-ONGARD WELL No. 001		
	Operator: PRE-ONGARD WELL OPERATOR		
○	3004508712	I -3-29N-12W	1720 FSL & 990 FEL
	Well Name & Number: MCGRATH A No. 001		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004508801	E -3-29N-12W	1650 FNL & 990 FWL
	Well Name & Number: WALKER No. 001		
	Operator: CONOCOPHILLIPS COMPANY		
○	3004508823	G -3-29N-12W	1320 FNL & 1320 FEL
	Well Name & Number: WALKER SRC No. 001		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004530244	L -3-29N-12W	1675 FSL & 1165 FWL
	Well Name & Number: WALKER No. 100		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004532931	F -3-29N-12W	1630 FNL & 1510 FWL
	Well Name & Number: WALKER No. 100S		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004533580	B -3-29N-12W	165 FNL & 1505 FEL
	Well Name & Number: MCGRATH No. 003S		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004560274	D -3-29N-12W	990 FNL & 990 FWL
	Well Name & Number: WALKER No. 002		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		

9 Records Found — Displaying Screen 1 of 1

Continue | Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

9 Records Found — Displaying Screen 1 of 1

	API Number	ULSTR	Footages
○	3004508517	J -10-29N-12W	1790 FSL & 1760 FEL
	Well Name & Number: BECK A No. 001		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004508523	J -10-29N-12W	1980 FSL & 1980 FEL
	Well Name & Number: PRE-ONGARD WELL No. 001		
	Operator: PRE-ONGARD WELL OPERATOR		
○	3004508601	D -10-29N-12W	1180 FNL & 790 FWL
	Well Name & Number: CORNELL A No. 001		
	Operator: BP AMERICA PRODUCTION COMPANY		
○	3004508605	C -10-29N-12W	1190 FNL & 1840 FWL
	Well Name & Number: CORNELL No. 007		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004523758	A -10-29N-12W	870 FNL & 790 FEL
	Well Name & Number: PRE-ONGARD WELL No. 002		
	Operator: PRE-ONGARD WELL OPERATOR		
●	3004523889	B -10-29N-12W	870 FNL & 1760 FEL
	Well Name & Number: BECK A No. 001E		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004524132	N -10-29N-12W	910 FSL & 1760 FWL
	Well Name & Number: CORNELL A No. 001E		
	Operator: BP AMERICA PRODUCTION COMPANY		
○	3004530381	B -10-29N-12W	875 FNL & 1675 FEL
	Well Name & Number: CORNELL No. 100		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004534452	N -10-29N-12W	1165 FSL & 1510 FWL
	Well Name & Number: BECK 29 12 10 No. 108		
	Operator: SYNERGY OPERATING LLC		

9 Records Found — Displaying Screen 1 of 1

Continue | Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

14 Records Found Displaying Screen 1 of 1

API Number	ULSTR	Footages
3004508475	P -11-29N-12W	1090 FSL & 990 FEL

Well Name & Number: CARROLL CORNELL No. 012
Operator: PRODUCING ROYALTIES INC

3004508515	L -11-29N-12W	1620 FSL & 300 FWL

Well Name & Number: PRE-ONGARD WELL No. 001
Operator: PRE-ONGARD WELL OPERATOR

3004508558	G -11-29N-12W	1980 FNL & 1980 FEL

Well Name & Number: PRE-ONGARD WELL No. 001
Operator: PRE-ONGARD WELL OPERATOR

3004508615	C -11-29N-12W	790 FNL & 1850 FWL

Well Name & Number: CORNELL No. 006
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP

3004513092	D -11-29N-12W	990 FNL & 990 FWL

Well Name & Number: CORNELL C No. 001
Operator: BP AMERICA PRODUCTION COMPANY

3004513218	A -11-29N-12W	990 FNL & 990 FEL

Well Name & Number: PRE-ONGARD WELL No. 010
Operator: PRE-ONGARD WELL OPERATOR

3004520067	O -11-29N-12W	1120 FSL & 1690 FEL

Well Name & Number: PRE-ONGARD WELL No. 001
Operator: PRE-ONGARD WELL OPERATOR

3004522118	A -11-29N-12W	1120 FNL & 860 FEL

Well Name & Number: PAYNE No. 001
Operator: PRODUCING ROYALTIES INC

3004524133	M -11-29N-12W	860 FSL & 1120 FWL

Well Name & Number: PRE-ONGARD WELL No. 1E
Operator: PRE-ONGARD WELL OPERATOR

3004524447	H -11-29N-12W	1750 FNL & 1045 FEL

Well Name & Number: FEDERAL PRI No. 001E
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP

3004529945	H -11-29N-12W	1790 FNL & 790 FEL

Well Name & Number: PAYNE No. 001R
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

3004531503	O -11-29N-12W	790 FSL & 1850 FEL

Well Name & Number: PRE-ONGARD WELL No. 001
Operator: PRE-ONGARD WELL OPERATOR

3004531581	D -11-29N-12W	1200 FNL & 660 FWL

Well Name & Number: CORNELL No. 101
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP

○ 3004532667 I -11-29N-12W 1675 FSL & 1035 FEL

Well Name & Number: PRI No. 003
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

14 Records Found Displaying Screen 1 of 1

Continue Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

20 Records Found — Displaying Screen 1 of 1

API Number	ULSTR	Footages
3004508435	N -12-29N-12W	660 FSL & 1980 FWL
Well Name & Number: CORNELL SRC No. 003		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
3004508444	M -12-29N-12W	790 FSL & 900 FWL
Well Name & Number: CORNELL E No. 001		
Operator: BP AMERICA PRODUCTION COMPANY		
3004508476	O -12-29N-12W	1136 FSL & 1625 FEL
Well Name & Number: CORNELL D No. 001		
Operator: BP AMERICA PRODUCTION COMPANY		
3004508488	I -12-29N-12W	1320 FSL & 1320 FEL
Well Name & Number: CARROLL CORNELL No. 006		
Operator: MCELVAIN OIL AND GAS PROPERTIES INC		
3004508513	L -12-29N-12W	1650 FSL & 330 FWL
Well Name & Number: PRE-ONGARD WELL No. 009		
Operator: PRE-ONGARD WELL OPERATOR		
3004508528	K -12-29N-12W	2200 FSL & 1980 FWL
Well Name & Number: CORNELL SRC No. 004		
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
3004508541	H -12-29N-12W	1650 FNL & 990 FEL
Well Name & Number: PRE-ONGARD WELL No. 008		
Operator: PRE-ONGARD WELL OPERATOR		
3004508598	A -12-29N-12W	990 FNL & 990 FEL
Well Name & Number: PRE-ONGARD WELL No. 001		
Operator: PRE-ONGARD WELL OPERATOR		
3004508612	D -12-29N-12W	660 FNL & 660 FWL
Well Name & Number: PRE-ONGARD WELL No. 002		
Operator: PRE-ONGARD WELL OPERATOR		
3004522119	F -12-29N-12W	1790 FNL & 1680 FWL
Well Name & Number: PAYNE No. 002		
Operator: MCELVAIN OIL AND GAS PROPERTIES INC		
3004522962	E -12-29N-12W	1800 FNL & 800 FWL
Well Name & Number: PAYNE No. 002J		
Operator: MCELVAIN OIL AND GAS PROPERTIES INC		
3004524086	A -12-29N-12W	830 FNL & 790 FEL
Well Name & Number: CORNELL D No. 001E		
Operator: BP AMERICA PRODUCTION COMPANY		
3004524134	F -12-29N-12W	1750 FNL & 1770 FWL

Well Name & Number: PRE-ONGARD WELL No. 1E
Operator: PRE-ONGARD WELL OPERATOR

○ 3004524283 F -12-29N-12W 1750 FNL & 1770 FWL
Well Name & Number: CORNELL E No. 001E
Operator: BP AMERICA PRODUCTION COMPANY

○ 3004530447 H -12-29N-12W 1640 FNL & 1030 FEL
Well Name & Number: CORNELL No. 001R
Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP

○ 3004532665 E -12-29N-12W 795 FNL & 2430 FWL
Well Name & Number: PRI No. 001
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

○ 3004532666 M -12-29N-12W 765 FSL & 1105 FWL
Well Name & Number: PRI No. 002
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

○ 3004533013 J -12-29N-12W 1460 FSL & 1730 FEL
Well Name & Number: PRI No. 002S
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

○ 3004533015 A -12-29N-12W 720 FNL & 1235 FEL
Well Name & Number: PRI No. 001S
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

○ 3004534836 O -12-29N-12W 845 FSL & 1310 FEL
Well Name & Number: CARROLL CORNELL No. 006R
Operator: MCELVAIN OIL AND GAS PROPERTIES INC

20 Records Found Displaying Screen 1 of 1

Continue Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

10 Records Found — Displaying Screen 1 of 1

	API Number	ULSTR	Footages
○	3004508939	L -34-30N-12W	1890 FSL & 800 FWL
	Well Name & Number: PRE-ONGARD WELL No. 001		
	Operator: PRE-ONGARD WELL OPERATOR		
○	3004508945	P -34-30N-12W	870 FSL & 1190 FEL
	Well Name & Number: MCGRATH C No. 001		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004508950	P -34-30N-12W	990 FSL & 330 FEL
	Well Name & Number: HUDSON No. 002		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004508955	N -34-30N-12W	990 FSL & 2310 FWL
	Well Name & Number: PRE-ONGARD WELL No. 002		
	Operator: PRE-ONGARD WELL OPERATOR		
○	3004509052	F -34-30N-12W	1250 FNL & 2310 FWL
	Well Name & Number: PRE-ONGARD WELL No. 001		
	Operator: PRE-ONGARD WELL OPERATOR		
○	3004509071	D -34-30N-12W	790 FNL & 1015 FWL
	Well Name & Number: DUFF GAS COM No. 001		
	Operator: XTO ENERGY, INC		
○	3004525923	B -34-30N-12W	800 FNL & 1730 FEL
	Well Name & Number: MCGRATH No. 004		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004526141	G -34-30N-12W	1770 FNL & 1480 FEL
	Well Name & Number: DUFF GAS COM No. 001E		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004531756	D -34-30N-12W	750 FNL & 995 FWL
	Well Name & Number: JULANDER No. 100		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004533411	M -34-30N-12W	810 FSL & 730 FWL
	Well Name & Number: JULANDER No. 100S		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		

10 Records Found — Displaying Screen 1 of 1

Continue | Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

5 Records Found — Displaying Screen 1 of 1

	API Number	ULSTR	Footages
○	3004508946	P -35-30N-12W	990 FSL & 990 FEL
	Well Name & Number: CARNAHAN COM No. 001		
	Operator: HOLCOMB OIL & GAS INC		
○	3004511770	E -35-30N-12W	1750 FNL & 990 FWL
	Well Name & Number: HUDSON J No. 003		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004520140	L -35-30N-12W	1600 FSL & 1150 FWL
	Well Name & Number: PRE-ONGARD WELL No. 004		
	Operator: PRE-ONGARD WELL OPERATOR		
○	3004525844	P -35-30N-12W	1090 FSL & 1070 FEL
	Well Name & Number: CARNAHAN COM No. 002		
	Operator: MERRION OIL & GAS CORP		
○	3004531355	A -35-30N-12W	1275 FNL & 1205 FEL
	Well Name & Number: CARNAHAN COM No. 001Y		
	Operator: HOLCOMB OIL & GAS INC		

5 Records Found — Displaying Screen 1 of 1

Continue | Go Back

Well File Search - *Select API Number to View*

Please select the API Number you wish to view from the list below by clicking the radio button next to the API Number. Then click the "Continue" button to see the thumbnails for the API you selected. The search results are broken out by groups of 25 on each page. Switching pages can be done by clicking the "Next 25" or "Previous 25" links.

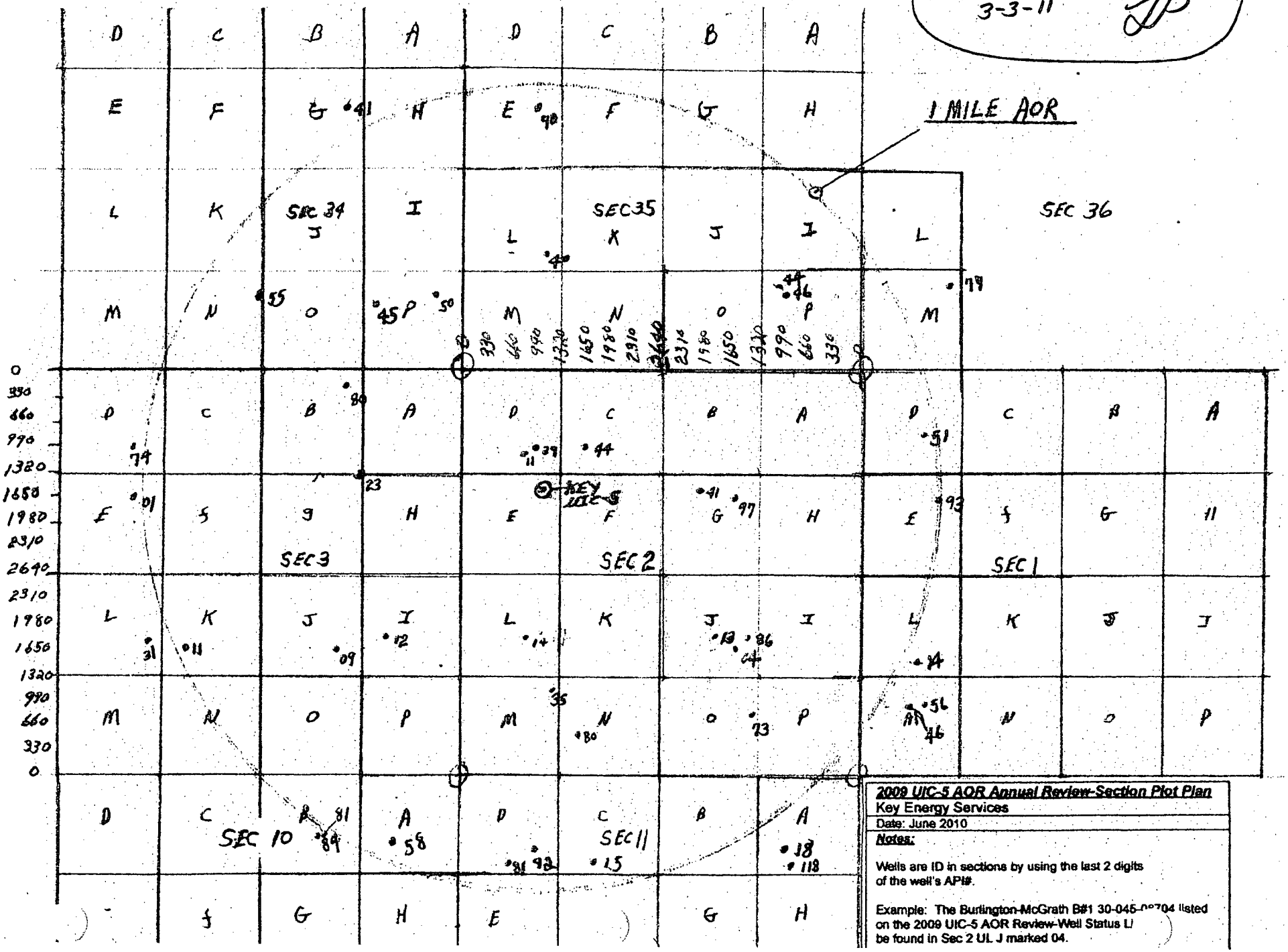
6 Records Found — Displaying Screen 1 of 1

	API Number	ULSTR	Footages
○	3004508986	I -36-30N-12W	1650 FSL & 1100 FEL
	Well Name & Number: STATE COM AH No. 030		
	Operator: CONOCOPHILLIPS COMPANY		
○	3004512188	E -36-30N-12W	1850 FNL & 790 FWL
	Well Name & Number: NEW MEXICO COM N No. 001		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
○	3004524037	N -36-30N-12W	1000 FSL & 1640 FWL
	Well Name & Number: STATE COM AH No. 030E		
	Operator: CONOCOPHILLIPS COMPANY		
○	3004528177	M -36-30N-12W	1140 FSL & 1220 FWL
	Well Name & Number: FC STATE COM No. 024		
	Operator: CONOCOPHILLIPS COMPANY		
○	3004531074	A -36-30N-12W	665 FNL & 665 FEL
	Well Name & Number: NEW MEXICO COM N No. 100		
	Operator: BURLINGTON RESOURCES OIL & GAS COMPANY LP		
●	3004535163	I -36-30N-12W	1643 FSL & 985 FEL
	Well Name & Number: FC STATE COM No. 024S		
	Operator: CONOCOPHILLIPS COMPANY		

6 Records Found — Displaying Screen 1 of 1

Continue | Go Back

2010 YEAR
SCAN RECORDS
3-3-11
LP



2009 UIC-5 AOR Annual Review-Section Plot Plan
Key Energy Services
Date: June 2010

Notes:

Wells are ID in sections by using the last 2 digits of the well's API#.

Example: The Burlington-McGrath B#1 30-045-[illegible]04 listed on the 2009 UIC-5 AOR Review-Well Status Li be found in Sec 2 UL J marked 04.

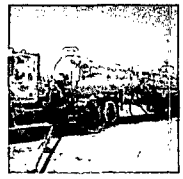
2010 UIC-5 AOR Review--Well Status List

	API#	Well Name	UL	SEC	Ts	Rg	Footage	Within 1 mile	Well Status	Well Depth (ft) Injection/Prod	Casing Program Checked	Cased/Cemented across Injection Zone	Corrective Action Required
	30-045-28653	***Key-Sunco #1***	***E***	***2***	***29n***	***12w***	***1595 FNL & 1005 FWL***	NA	active	4380'-4480'	na	na	na
1	30-45-08704	Burlington-McGrath B #1	J	2	29n	12w	1650 FSL & 1650 FEL	yes	active	TD 2137	yes	na	none
2	30-45-08713	Burlington-McGrath SRC #1	j	2	29n	12w	1808 FSL & 1920 FEL	yes	active	TD 2015	yes	na	none
3	30-45-08714	Burlington-Cornell SRC #7	L	2	29n	12w	1810 FSL & 900 FWL	yes	active	TD 2100	yes	na	none
4	30-45-08797	pre-ongard	g	2	29n	12w	1650 FNL & 1650 FEL	yes	P&A	TD 2125	yes	na	none
5	30-45-08839	Burlington-Young #1	d	2	29n	12w	990 FNL & 990 FWL	yes	active	TD 1500	yes	na	none
6	30-45-08844	Burlington-Kattler #1	c	2	29n	12w	990 FNL & 1650 FWL	yes	active	TD 2045	yes	na	none
7	30-45-27635	pre-ongard	m	2	29n	12w	1095 FSL & 1310 FWL	yes	unknown	TD 1879	no	na	none
8	30-45-30486	Burlington-McGrath SRC #1R	j	2	29n	12w	1705 FSL & 1450 FEL	yes	active	TD 2218	yes	na	none
9	30-45-31580	Burlington-Cornell #500	n	2	29n	12w	840 FSL & 1550 FWL	yes	active	TD 2136	yes	na	none
10	30-45-32241	Burlington-Beck #1R	g	2	29n	12w	1520 FNL & 1900 FEL	yes	active	TD 2225	yes	na	none
11	30-45-33573	Burlington-Cornell #500s	p	2	29n	12w	760 FSL & 1135 FEL	yes	active	TD 2162	yes	na	none
12	30-45-33811	Burlington-Beck #1s	d	2	29n	12w	1000 FNL & 955 FWL	yes	active	TD 2148	yes	na	none
13	30-045-08656	Energen-Cornell #2	m	1	29n	12w	950 FSL & 800 FWL	no	na	na	na	na	none
14	30-045-08793	pre-ongard	e	1	29n	12w	1650 FNL & 990 FWL	yes	P&A	TD 2186	yes	na	none
15	30-045-08851	BP -Allen A #1	d	1	29n	12w	790 FNL & 790 FWL	yes	active	TD 6786	yes	yes	none
16	30-045-26214	BP -Allen A #1E	L	1	29n	12w	1450 FSL & 790 FWL	no	na	na	na	na	na
17	30-045-32346	Energen-Cornell #2R	m	1	29n	12w	885 FSL & 660 FWL	no	na	na	na	na	na
18	30-045-08709	Burlington-McGrath #3	j	3	29n	12w	1650 FSL & 1650 FEL	yes	active	TD 2011	yes	na	none
19	30-045-08711	pre-ongard	k	3	29n	12w	1650 FSL & 1650 FWL	yes	P&A	TD 2100	yes	na	none
20	30-045-08712	Burlington-McGrath A#1	i	3	29n	12w	1720 FSL & 990 FEL	yes	active	TD 6710	yes	yes	none
21	30-045-08801	Conoco-Phillip #1s Walker	e	3	29n	12w	1650 FNL & 990 FWL	no	na	na	na	na	na
22	30-045-08823	Burlington-Walker SCR #1	g	3	29n	12w	1320 FNL & 1320 FEL	yes	active	TD 2058	yes	na	none
23	30-045-30244	Burlington-Walker #1	L	3	29n	12w	1675 FSL & 1165 FWL	yes	active	TD 1940	yes	na	none
24	30-045-32931	Burlington-Walker #100S	f	3	29n	12w	1630 FNL & 1510 FWL	no	na	na	na	na	na
25	30-045-33580	Burlington-McGrath #3s	b	3	29n	12w	165 FNL & 1505 FEL	yes	active	TD 2066	yes	na	none
26	30-045-60274	Burlington-Walker #2	d	3	29n	12w	990 FNL & 990 FWL	no	na	na	na	na	na
27	30-045-23758	pre-ongard well #2	a	10	29n	12w	870 FNL & 790 FEL	yes	active	TD 1848	yes	na	none
28	30-045-23889	Burlington-Beck A#1E	b	10	29n	12w	870 FNL & 1760 FEL	no	na	na	na	na	na
29	30-045-30381	Burlington-Cornell #100	b	10	29n	12w	875 FNL & 1675 FEL	no	na	na	na	na	na
30	30-045-08615	Burlington-Cornell #6	c	11	29n	12w	790 FNL & 1850 FWL	yes	yes	TD 2020	yes	yes	none
31	30-045-13092	BP -Cornell C #1	d	11	29n	12w	990 FNL & 990 FWL	yes	active	TD 6640	yes	yes	none
32	30-045-13218	pre-ongard#10	a	11	29n	12w	990 FNL & 990 FEL	no	na	na	na	na	na
33	30-045-22118	Producing Royalties Inc-Pnyne #1	a	11	29n	12w	1120 FNL & 860 FEL	no	na	na	na	na	na
34	30-045-31581	Burlington-Cornell #101	d	11	29n	12w	1200 FNL & 660 FWL	yes	active	TD 2000	yes	na	none
35	30-045-08945	Burlington-McGrath C#1	p	34	30n	12w	870 FSL & 1190 FEL	yes	active	TD 6605	yes	yes	none
36	30-045-08950	Burlington-Hudson #2	p	34	30n	12w	990 FSL & 330 FEL	yes	active	TD 1961	yes	na	none
37	30-045-08955	pre-ongard#2	n	34	30n	12w	990 FSL & 2310 FWL	yes	P&A	TD 2000	yes	na	none
38	30-045-26141	Burlington-Duff Gas com #1E	g	34	30n	12w	1770 FNL & 1480 FEL	no	na	na	na	na	na
39	30-045-08946	Holcomb O&G-Carnahan	p	35	30n	12w	990 FSL & 990 FEL	yes	P&A	TD 6800	yes	yes	none
40	30-045-11770	Burlington-Hudson J #3	e	35	30n	12w	1750 FNL & 990 FWL	yes	active-recomp	TD 6750	yes	yes	none
41	30-045-20140	pre-ongard#4	I	35	30n	12w	1600 FSL & 1150 FWL	yes	P&A	TD 2121	yes	na	none
42	30-045-25844	Merrion O&G-Carnaham com#2	p	35	30n	12w	1090 FSL & 1070 FEL	yes	active-gas well	TD 6777	yes	yes	none
43	30-045-28177	Conoco-Phillip FC ST com#24	m	36	30n	12w	1140 FSL & 1220 FWL	no	na	na	na	na	na

Notes:

P&A Plugged and Abandoned

Appendix L
2010 Permit Training Documentation



From: wayne price <wayneprice77@earthlink.net>
Subject: **Set-up training folder**
Date: March 3, 2011 4:20:47 PM MST
To: Neil Allen <nallen@keyenergy.com>
Cc: Dan Gibson <dgibson@keyenergy.com>
▷ 1 Attachment, 37.8 KB

Put this attachment in the folder. Over the past year we have touched on all of these topics but you and Steve should read it, sign and put in folder.
If you have any questions, let me know.

PDF

2010-2011 ....pdf (37.8 KB)

To: Key Energy UIC-5/NM1-9 Site Training File

From: Wayne Price-Price LLC.

Subject: 2010-2011 Training Documentation:

Reference: 2010-2011 Compliance Plan:

Price LLC has been contracted by Key Energy to provide on-the-job-training to the site employees and to have a compliance plan in place to ensure that the permit conditions of the site are being met.

In order to make sure the UIC-5 permit conditions are complied with, the following on the job training has been conducted during the course of the year.

The Key Energy UIC-5 permit conditions are attached for reference. Each on-site employee shall take time to read the conditions and ask questions to make sure they understand the permit terms and conditions.

The following has been discussed:

- This permit expires June 1, 2012. A permit renewal application should be submitted no later than February 01, 2012.
- All of the general permit conditions with emphasis on the following:
  - All waste disposed of off-site should receive OCD approval.
  - Only non-hazardous waste may be received at the site.
  - Non-exempt waste must use the C-138 process.
  - 712 waste i.e. waste going to NMED landfills must generally be pre-approved.
  - Waste can only be stored for 180 days on-site.
  - Drums must be maintained properly on secondary containment.
  - If an area is experiencing contamination, then some type of containment must be put in place.
  - All above-ground tanks must have berms and secondary containment. Currently the temporary unloading tanks do not have a liner so any leaks, spills, etc must be picked up immediately.
  - All Tanks shall be labeled.
  - The evaporation ponds are out of service and should not be used. Any fluids that collect in them shall be removed.
  - All underground lines have to be tested.
  - Housekeeping and a daily inspection log shall be kept.
  - All spills greater than 5 bbl's must be reported to OCD.
  - Do not exceed 2400 psi injection pressure.
  - If you work on the well call OCD first and fill out C-103.
  - Check the Hi-pressure cut off at least monthly.
  - The Well must have a MIT & Fall-Test once a year.
  - If the well has a major problem, notify OCD.
  - Maintain both well annulus and tubing pressure charts, gauges, flow meters, etc and routine maintenance.

- Collect Injection water samples every 3 months.
- Record hourly-daily-monthly flow readings and pressures.
- Provide charts, flow and pressure records at the end of the year for the annual report.
- Empty all sumps ASA-Practical. If not call OCD for variance.
- Any waste from tanks must be stored properly before disposal.
- Maintain training records.

Special Note: If unsure about waste status exempt or non-exempt call Price LLC or Corporate office.

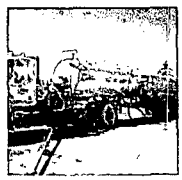
Until further notice do not put any waste in the landfarms. Landfarm samples are required quarterly. Since the landfarm is currently being closed out, these test may vary.

During the course of the year, training was conducted on proper methods for sampling using Chain of Custody and EPA protocols.

Rule of Thumb: If waste is getting on the ground, then corrective actions should be taken immediately.

Emphasis is always on working safe and never take an unnecessary risk.

From: wayne price <wayneprice77@earthlink.net>
Subject: **Re: Farmington Waste Disposal Issues: Training Session**
Date: August 9, 2010 9:53:29 AM MDT
To: wayne price <wayneprice77@earthlink.net>
Cc: Dan Gibson <dgibson@keyenergy.com>, lmolleur@keyenergy.com, HC Putman <HPutman01@keyenergy.com>, Neil Allen <nallen@keyenergy.com>



Please note, any soils that are removed form the landfarm must also be approved by OCD.

On Aug 6, 2010, at 4:47 PM, wayne price wrote:

> Gentlemen:
>
> On all of the recent trips to the site I have conducted on-the-job training concerning waste acceptance specifically exempt and non-exempt waste. Neil, Steve and I have discussed many real time acceptance and denials of non-exempt waste. One good example was waste from a non-oilfield oil treatment site. We have about 8 hours worth of training so far on this issue. I have included EPA guidance document for the employees to read. I recommend we follow that up with some class room and basic test.
>
> I also have researched both permits UIC-5 Sunco well and the NM1-9 Surface Waste Management Facility (which includes the Treatment facility, ponds, 2-concrete treatment mixing impoundments, sumps, etc and Landfarm Cell #1 and Cell #2) and have the following guidance concerning proper waste disposal, classification and notification:
>
> OFF-Site Disposal:

UIC-5 Injection Well, 10 temporary unloading tanks , 2-pump houses, truck unloading areas, chemical tanks, sumps etc.

According to the most recent permit UIC-5 2007 Item 6. reads in part " Key Energy Services LLC shall dispose of all other non-Injected waste at an OCD approved facility." The meaning of the term OCD-Approved facility could mean any OCD permitted facility such as IEI, Environtech, etc. or could even mean our landfarm, or any other site OCD approves.

The second sentence is basically informing Key that "Only oilfield (with emphasis on oilfield) RCRA-exempt and non-hazardous waste may be disposed of in our and other Class I wells.
Class II well i.e. SWD's can generally only take exempt waste generated from oilfield exploration and production activities.

The third sentence is a statement that requires proper waste determination per RCRA to be made prior to disposing of waste at any OCD-approved facility. The C-138 forms generally accomplish this requirement. So if you dispose of waste off-site, the facility will have you fill out a C-138, just like you have our customers. Special Note: Since the majority of our waste 60-90% is usually exempt waste, and all of the non-exempt waste has to be certified non-hazardous using the C-138 form; then the EPA mixture rule per RCRA is considered to remain exempt. Therefore, when you send waste off-site that is generated from the waste we receive, then this waste remains exempt. See attached RCRA training document pg 13-17 mixing waste.

However, if you spill a raw or neat chemical that is not mixed with our waste, it will be considered non-exempt and possibly hazardous. You cannot mix that waste with ours to make it exempt.

The last sentence: "Any waste stream that is not listed in the discharge permit application must be approved by the OCD on a case-by-case basis"

I have researched the files and cannot find where we listed waste streams, therefore until further notice I recommend that, any waste we send off-site that is generated from the UIC-5 Injection Well part of the facility will need OCD approval.
Example: The waste sludge we generate from cleaning out

our tanks at the Injection well. I would notify OCD before you proceed.

Dan, I recommend when Key renegotiates the new permit we include waste streams and disposal sites so we can eliminate the bottleneck with OCD.

NM1-9 Surface Waste Management Facility (idle treatment tanks, sumps, ponds, 2-concrete mixing containments and landfarm).

There is no general permit condition that requires OCD's approval before sending waste off-site. Therefore, I recommend that Key abide by OCD's general rule for disposal:

19.15.34.13 METHODS FOR DISPOSAL OF OTHER OIL FIELD WASTE: Persons shall dispose of other oil field waste by transfer to an appropriate permitted or registered surface waste management facility or injection facility or applied to a division-authorized beneficial use.
Persons may transport recovered drilling fluids to other drill sites for reuse provided that such fluids are transported and stored in a manner that does not constitute a hazard to fresh water, public health, safety or the environment.

Other words, take the waste to an OCD-approved facility.

Example: Solid waste generated in the idle treatment system sumps or dirt from non-reportable drips.

Special Landfarm Note: Any landfarm soils removed from the cell must also have OCD approval.

On-site Disposal:

Note: The permit is still active and so the concrete mixing

impoundments may be used for temporary storage and mixing as long as you do not retain free liquids for more than 24 hours. The landfarm is still active and can be used, but only in areas where the cell has not received any material. If you add new waste on top of existing waste "OCD Must Approve."

These are only recommendations and training guidance from Price LLC. Any actual policy concerning waste disposal should come from Key's management.

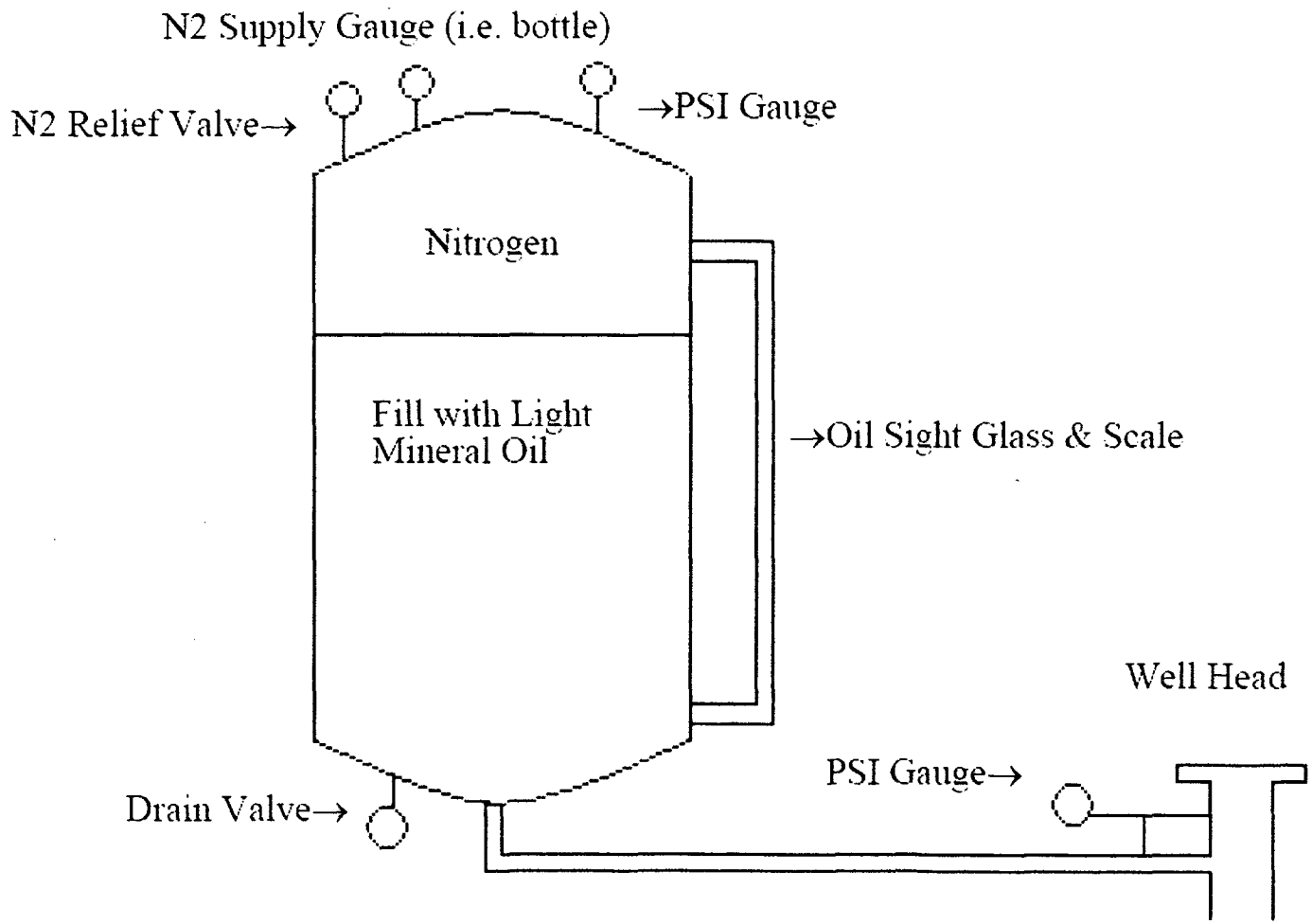
PS: Please read the attached EPA guidance.

<oil-gas exempt waste book.pdf>

Appendix M

Annulus Continuous Pressure and Monitoring Device

Preliminary Design


N2 Supply Gauge (i.e. bottle)
N2 Relief Valve→
→PSI Gauge
Nitrogen
Fill with Light
Mineral Oil
→Oil Sight Glass & Scale
Well Head
PSI Gauge→
Drain Valve→